

APPENDIX 1.1: LOCATION OF SPECIFIED INFORMATION IN THE ES

Specified Information in Part 1 of the EIA Regulations		Location within ES
4(2)	The EIA must identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the proposed development on the following factors—	
4(2)(a)	Population and human health	Population assessment provided within Chapter 4: Socio-Economics
4(2)(b)	biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC .	Chapter 6: Ecology
4(2)(c)	land, soil, water, air and climate.	Climate has been scoped out of the EIA with agreement from NCC (Appendix 1.4 Scoping Opinion). Assessment of air quality is included as Chapter 8. Assessment of Flooding, Drainage and Water Environment has been scoped out of the EIA with agreement from NCC. Assessment of land (ground conditions) has been scoped out of the EIA with agreement from NCC.
4(2)(d)	material assets, cultural heritage and the landscape.	Volume II: Heritage, Townscape and Visual Impact Assessment
4(2)(e)	the interaction between the factors referred to in sub-paragraphs (a) to (d).	Chapter 10: Residual Effects, Mitigation and Cumulative Effects.
4(3)	The effects referred to in paragraph (2) on the factors set out in that paragraph must include the operational effects of the proposed development, where the proposed development will have operational effects.	'Summary of Residual Effects' provided within Technical Chapters 4 – 9.
4(4)	The significant effects to be identified, described and assessed under paragraph (2) include the expected significant effects arising from the vulnerability of the proposed development to major accidents or disasters that are relevant to that development.	Major Accidents or Disasters has been scoped out of the EIA with agreement from NCC (Appendix 1.4 Scoping Opinion).
4(5)	The relevant planning authority or the Secretary of State must ensure that they have, or have access as necessary to, sufficient expertise to examine the environmental statement.	
Specified Information in Schedule 5 of the EIA Regulations		Location within ES
3	An environmental statement is a statement which includes at least—	

(a)	a description of the proposed development comprising information on the site, design, size and other relevant features of the development.	Chapter 2: Description of Site, Surroundings and Background
(b)	a description of the likely significant effects of the proposed development on the environment.	'Likely Significant Environmental Effects' of each technical chapter (i.e. Technical Chapters 4-9). Chapter 10: Residual Effects, Mitigation and Cumulative Effects.
(c)	a description of any features of the proposed development, or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment.	Chapter 10: Residual Effects, Mitigation and Cumulative Effects.
(d)	a description of the reasonable alternatives studied by the developer, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment	Chapter 3: Proposed Development, Demolition, Construction and Description of Alternatives.
(e)	a non-technical summary of the information referred to in subparagraphs (a) to (d).	Volume IV – Non-Technical Summary
(f)	any additional information specified in Schedule 4 relevant to the specific characteristics of the particular development or type of development and to the environmental features likely to be significantly affected.	Volume III – Appendices
4.	An environmental statement must -	
(a)	where a scoping opinion or direction has been issued in accordance with regulation 15 or 16, be based on the most recent scoping opinion or direction issued (so far as the proposed development remains materially the same as the proposed development which was subject to that opinion or direction)	Volume III – Appendices: ES Vol III Appendix 2.4 EIA Scoping Opinion.
(b)	include the information reasonably required for reaching a reasoned conclusion on the significant effects of the development on the environment, taking into account current knowledge and methods of assessment.	Chapter 1: Introduction and EIA Methodology 'Assessment methodology' of each technical chapter (i.e. Technical Chapters 4-9 and Volume II)
(c)	be prepared, taking into account the results of any relevant UK environmental assessment, which are reasonably available to the person preparing the environmental statement, with a view to avoiding duplication of assessment.	Volume III, Appendix 1.5 Cumulative Schemes
5.	In order to ensure the completeness and quality of the environmental statement—	
(a)	the developer must ensure that the environmental statement is prepared by competent experts.	ES Vol III Appendix 1.6 Competency Statement.
(b)	the environmental statement must be accompanied by a statement from the developer outlining the relevant expertise or qualifications of such experts.	ES Vol III Appendix 1.6 Competency Statement.



NOVEMBER
2021

Request for an EIA Scoping Opinion

Anglia Square, Norwich

Iceni Projects Limited on behalf of
Weston Homes PLC

November 2021

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HOMES PLC

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Request for an EIA Scoping Opinion
ANGLIA SQUARE, NORWICH

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APPENDICES

A1. SITE LOCATION PLAN

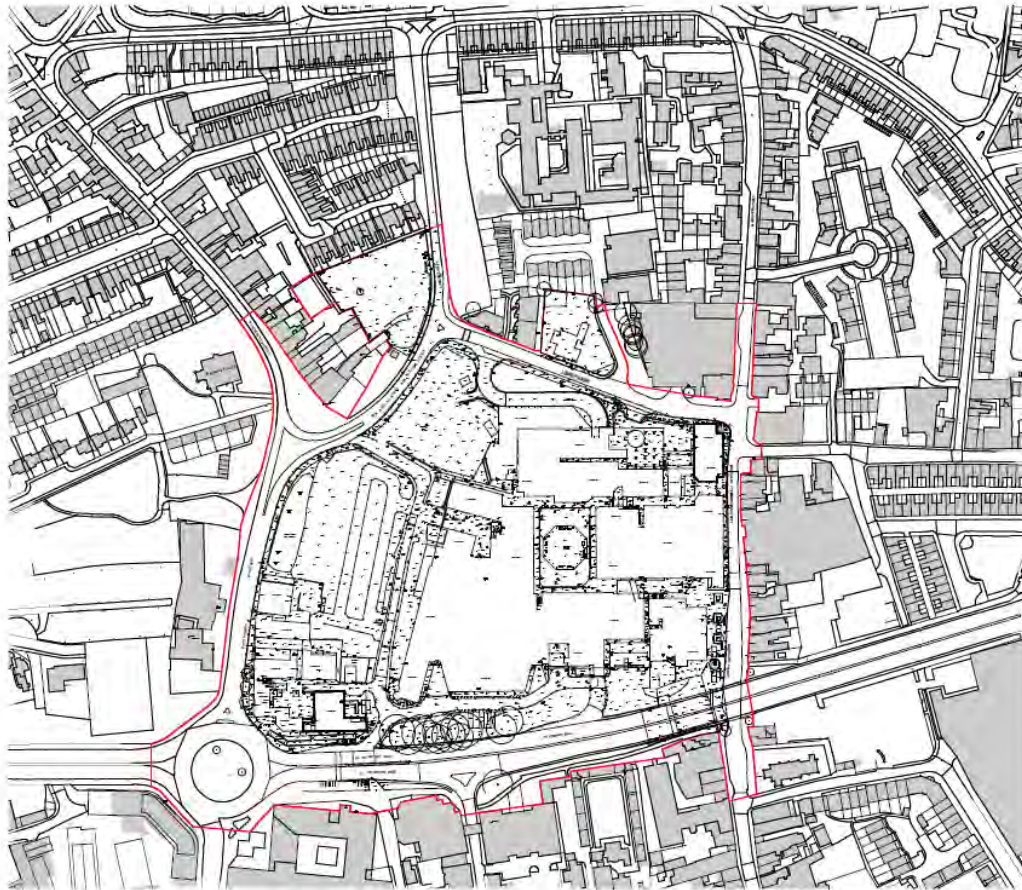
A2. ILLUSTRATIVE MASTERPLAN

A3. INDICATIVE LIST OF PLANNING APPLICATION SUPPORTING
DOCUMENTS

1. INTRODUCTION

- 1.1 This request for a Scoping Opinion from Norwich City Council ('NCC') has been prepared by Icen Projects Ltd on behalf of Weston Homes PLC ('the Applicant') under Regulation 15 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 ('the EIA Regulations')¹, in relation to the Proposed Development of Anglia Square ('hereafter referred to as 'the Site') located within the northern part of Norwich city centre.
- 1.2 The Site comprises 7 hectares (ha) of land at Anglia Square in Norwich city centre. A Site Location Plan is included at **Appendix A1** of this document and in the Figure below.

Figure 1.1 Site Location Plan



¹ Her Majesty's Stationery Office, (2018); The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended by the Town and Country Planning and Infrastructure Planning (Environmental Impact Assessment) (Amendment) Regulations 2018))

1.3 It is proposed that the Applicant intends to submit a full (detailed) planning application for the Proposed Development of the Site. The key components of the Proposed Development are outlined below, and further details are provided in **Section 3** of this report:

1.4 The development proposals (hereafter referred to as the 'Proposed Development') comprise:

"A Full Planning Application for the phased demolition and redevelopment of Anglia Square commercial centre, neighbouring buildings and surface carparks, to provide a residential-led mixed-use development, comprising up to 1,100 residential dwellings, (flats and houses) with ancillary amenity spaces, up to 6,000 sq m flexible use commercial space, related ancillary uses, (including meanwhile uses, public conveniences, community hub), public realm (open spaces and pedestrian streets and squares), landscaping, car parking, cycle parking, servicing, access and associated works."

The Requirement for EIA

1.5 It is considered that the above proposals constitute EIA Development, as it falls within the category of 10(b) of Schedule 2 as described in the EIA Regulations, as an 'urban development project' of more than 150 residential units. For Schedule 2 developments, the EIA Regulations require that an EIA is undertaken where the development is *"likely to have significant effects on the environment by virtue of factors such as its nature, size and location"*.

1.6 In line with Regulation 17(1) of the EIA Regulations, the Applicant confirms its intention to submit an Environmental Statement for the above development, as it has been determined that this application will be required to be the subject to EIA to ensure that likely significant effects are identified and mitigation and monitoring measures are put in place.

1.7 The information provided within this document identifies the likely significant effects of the Proposed Development and the assessments that might be required under the scope of an EIA. In accordance with section 15(2) of the EIA Regulations, this request includes the following:

- a plan sufficient to identify the land (**Appendix A1**);
- a brief description of the nature and purpose of the development, including its location and technical capacity (**Sections 2 and 3** of this document);
- an explanation of the likely significant effects of the development on the environment (**Section 6** of this document); and

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- such other information or representations as the person making the request may wish to provide or make (contained throughout this report).

1.8 The EIA process is an integral part of formulating the Proposed Development and will inform and guide all aspects of the Proposed Development design. At the time of preparing this Request for a Scoping Opinion the detailed design for the proposals is still evolving, however there is a sufficient level of certainty over the key development and environmental parameters to enable this Scoping Request to be submitted and for the Council to issue a formal Scoping Opinion. The Proposed Development is described in **Section 3**.

The Purpose of EIA

- 1.9 The purpose of an EIA is to establish the nature of the development and the environment in which it is located, and to identify the likely significant effects that may arise in the environment as a result. This includes consideration of the existing scenario at the beginning of the process (i.e. the baseline) compared with the scenario once the Proposed Development has been implemented.
- 1.10 The proposed content of the ES and the methodologies to be adopted in the assessment of various effects are specified in this document, in order to enable the Council to respond on the potential scope of the EIA. Where no impacts have been identified or where potential impacts have been identified, but where they are considered not to result in significant environmental effects, these are suggested to be scoped out of the EIA.

2. DESCRIPTION OF THE SITE AND SURROUNDINGS

Site Description and Context

- 2.1 This section describes the site's location, physical characteristics and urban surroundings.
- 2.2 The site is approximately 7ha in size and is located within the northern part of Norwich city centre, comprising the existing Anglia Square Shopping Centre, and adjoining and adjacent land described below. It is located wholly within the NCC administrative boundary. The site location is shown on the location plan in Appendix A1.
- 2.3 The main site area, known as Anglia Square, is bounded by New Botolph Street and Pitt Street to the west, Edward Street to the north, Magdalen Street to the east and St Crispin's Road to the south. The Site comprises the entirety of the land within this area, except for a vacant two storey retail unit (the former Barclays Bank) site within the north-eastern corner of the site and the two storey Surrey Chapel site within the south-west frontage of the site (which are both in separate ownerships). In addition, the Site comprises a parcel of land to the northwest of New Botolph Street/west of Edward Street, and an area of land to the north of Edward Street and west of Beckham Place, both currently used for surface level car parking.
- 2.4 The Site currently comprises the Anglia Square Shopping Centre and its associated public realm and adjoining land. Anglia Square was extensively redeveloped during the 1960s following the construction of St Crispin's Road. On the eastern part of the Site, is the existing Anglia Square public space and surrounding retail units, the now vacant Hollywood Cinema and roof level open car parking above, with pedestrian access via stairs from Anglia Square, and the retail units fronting Magdalen Street, above which are the centre administrative office and a vacant nightclub.
- 2.5 The northern part of the Site includes the vacant and structurally unsound multi-storey car park, whilst the central and southern part of the Site is dominated by the vacant office building Sovereign House (part seven, part eight storeys in height). To the west of the main structures of Anglia Square can be found 'RCP Parking Anglia Square Surface' (land south of Upper Green Lane) together with a second area of surface level car parking, 'RCP Parking LTD' (land west of Botolph Street). The south-western section of the Site, between Pitt Street and Botolph Street, consists of a cluster of one and two storey buildings of varying design and layout, comprising of Surrey Chapel, Norwich Men's Shed, Print to the People, Danyar Super Shine Hand Car Wash and other vacant commercial premises. The south-eastern part of the Site includes Gildengate House, a seven-storey office building, currently part vacant and part occupied as artists' studio spaces on a temporary basis, over retail units to Anglia Square and Magdalen Street, and a large rectangular two storey building accommodating a discount retailer, which fronts Anglia Square public space.

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- 2.6 It should be noted that when the application for full planning permission is submitted, it is anticipated that the site area will be smaller (approximately 4.6 hectares). This is because, to ensure the EIA scoping request is robust, the site boundary for this EIA scoping request incorporates surrounding roads (St Crispins Road, Magdalen Street, Edward Street, New Botolph Street, St Augustines Street, and Pitt Street) and associated pathways and landscaped areas, and land under the flyover, in case highway, paving or landscaping improvements are identified as being necessary through the planning process and such off-site works are secured via planning obligation and S278 Agreements.
- 2.7 The Site is currently served by vehicular access points from New Botolph Street to the west, Edward Street to the north and St Crispin's Road to the south. Upper Green Lane provides vehicular access internally from the flyover to the south to the upper parts of the site (including the cinema and the entrance to the vacant multi-storey car park), above the pedestrianised shopping area below. Pedestrian access to the shopping centre is predominantly facilitated by two pedestrian routes (Sovereign Way and Anne's Walk) from Magdalen Street to the east, and from Botolph Street to the west.
- 2.8 The Site is accessible by public transport and on foot, with four bus stops adjacent to the Site. Norwich train station is approximately 1.3km south east of the Site. This station provides services to and from main towns such as Peterborough in approximately an hour and a half, Bury St Edmunds in 55 minutes and Ipswich in 38. The latter route continues to London Liverpool Street. There is also an extensive park and ride scheme within Norwich, with Anglia Square served by routes A140 and A1151, thus providing ease of access from the P and R car parks at Hareford and Sprowston, Thickthorn and Norwich airport.
- 2.9 The Site is situated within the City Centre Conservation Area. The nearest Site of Special Scientific Interest (SSSI) is approximately 0.6 miles east of the Site; however, the Site does not fall within this SSSI impact zone.
- 2.10 Immediately to the east of the Site is 75 Magdalen Street, a Grade II Listed Building. Within the Site, 43-45 Pitt Street are locally listed buildings. There are additional listed buildings slightly further from the Site, which lies within their setting.
- 2.11 There are no sites of international importance such as SPAs, Special Areas of Conservation (SACs) or Ramsar sites within the Application Site boundary.
- 2.12 The Site falls within Flood Zone 1, and consequently it has a low probability of flooding. The River Wensum flows approximately 500m south of the Site. However, the Site does experience some surface water run-off from the higher ground to the north and west.

3. PROPOSED DEVELOPMENT

- 3.1 The Description of Development is currently proposed to comprise the following:

"A Full Planning Application for the phased demolition and redevelopment of Anglia Square commercial centre, neighbouring buildings and surface carparks, to provide a residential-led mixed-use development, comprising up to 1,100 residential dwellings, (flats and houses) with ancillary amenity spaces, up to 6,000 sqm flexible use commercial space, related ancillary uses, (including meanwhile uses, public conveniences, community hub), public realm (open spaces and pedestrian streets and squares), landscaping, car parking, cycle parking, servicing, access and associated works."

Proposed Development

- 3.2 The application proposals are currently being finalised by the team in consultation with the Council and various stakeholders. However, the following parameters have been established:

Demolition:

- Demolition and clearance of all existing structures within the site in a phased manner. This phasing will be established in the submitted Environmental Statement.

Uses and Height:

- Up to 1,100 residential units, comprising a mixture of typologies and tenures to be agreed through the pre-application phase and presented in the submitted Environmental Statement;
- Up to 6,000 sqm of commercial retail net internal area space;
- The heights of the tallest elements of the Proposed Development will be up to 38.3m AOD (up to 8 storeys). The final height and floorspace mix will be determined during the preapplication process, however, assumptions have been made where relevant in the technical scopes;
- The creation within the residential areas of spaces of defined character, with squares, streets, lanes, residential mews and residential courtyards;
- Ground floor active frontages and community spaces through the retention of Anglia Square and the continuation of St Augustines Street into Botolph Street.

Access (see Figure 3.1 for an illustrative site access diagram):

- Vehicle access to the Site will be provided via Cherry Lane to the south, Pitt Street to the west, and Edward Street to the North;
- Emergency service routes provided on Magdalen Street to the east and Botolph Street to the west;
- A mobility hub will be provided on the south west corner of the Site.;
- A taxi drop off area will be provided in the north of the site on Edward Street;
- Across the Site, a total of up to 440 spaces will be provided for vehicle parking. Surrey Chapel will retain its own existing 9 spaces outwith the application boundary, accessed via Cherry Lane. Up to 2,000 cycle parking spaces will be provided at 100 per cent of the required standards.

Figure 3.1 Illustrative Site Access



Public Realm and Landscaping

- 3.3 The Proposed Development will also incorporate a range of landscape features, including planting, green and blue infrastructure and areas of public realm. The design of the public realm areas will be influenced by the existing streetscape and surrounding area, and will encourage pedestrian and cycle movements through the Site.

Construction programme

- 3.4 The construction of Anglia Square will take place over several phases allowing for key assets to be retained and function during construction. Construction of the Proposed Development is anticipated

to take place over approximately 11 years from 2022 to 2033. Full details will be provided within the EIA Report.

- 3.5 An Illustrative Masterplan for the Site is shown in Appendix A2 and a full list of documents anticipated to be submitted as part of the wider planning application is included at Appendix A3.

Details on Decommissioning

- 3.6 The Proposed Development comprises a residential-led mixed use scheme and does not include any infrastructure (e.g. power stations or gas holders) that would require decommissioning. Once constructed, the Proposed Development is considered to be permanent, and therefore consideration of decommissioning will not be detailed within this assessment. It is anticipated that any decommissioning of the Proposed Development would encounter similar impacts as during the construction period, but in reverse, and would be dealt with under relevant legislation in the event it is required.

Consideration of Alternatives

- 3.7 In accordance with Regulation 18 of the EIA Regulations, the ES will present a description of the reasonable alternatives to the Proposed Development which were considered by the Applicant as part of the design evolution process. This section will include details on the location, size and scale of the alternative designs considered and an indication of the main reasons for the selection of the chosen option. This will also include a comparison of the likely environmental effects of the chosen option against the reasonable alternatives considered.
- 3.8 The ES will consider the following scenarios:
- The 'do nothing' scenario: i.e. where no development occurs at the Site. Taking into consideration the planning context of the Site, this scenario is considered unlikely. However, with respect to the current state of the environment (the baseline conditions) the EIA Regulations stipulate an ES must provide: "...an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed..."; and
 - Alternative designs: a summary of the main alternatives considered, such as alternative distributions of land uses, alternative building layouts, alternative building scales and other design matters.
- 3.9 With the exception of the public roads, the Site is within the Applicant's control. The Applicant has not considered any alternative sites for the Proposed Development. Consequently, 'alternative sites' will not be considered within the ES.

4. THE STRUCTURE OF THE EIA REPORT

Scoping

- 4.1 The findings of the EIA process will be reported in the form of an Environmental Statement (ES). The proposed content of this ES and the methodologies to be adopted in the assessment of various effects are specified in this report, in order to enable the Council to respond on the potential scope of the EIA. Where no impacts have been identified or where potential impacts have been identified, but where they are considered not to result in significant environmental effects, these are suggested to be scoped out from assessment as part of the EIA.
- 4.2 Regulation 15 of the EIA Regulations sets out the requirements for obtaining a 'Scoping Opinion' from the relevant planning authority. This Report sets out the framework within which the ES will be produced and the topic areas and information that will be contained within the document.
- 4.3 Paragraph 036 of the EIA chapter of the National Planning Practice Guidance (PPG)² provides guidance regarding the scope of an ES, emphasising that the focus should be on the 'main' or 'significant' environmental effects to which a development is likely to give rise, and that the ES should be no longer than is necessary to properly assess those effects. The EIA should only address those significant environmental effects of the Proposed Development and as such, the remainder of this Report outlines effects of this kind. It also outlines where a particular matter will not be significantly impacted upon by the Proposed Development and the reasons for this conclusion, with the aspiration of scoping out this particular matter.
- 4.4 The PPG further explains that a Scoping Opinion from the Local Planning Authority (LPA) should be proportionate, which involves being tailored to the specific characteristics of the development and the main environmental features likely to be significantly affected.
- 4.5 Based on the above, the following sets out the proposed scope and structure of the ES relating specifically to those matters that are considered could have a significant effect on the environment.

Table 4.1 Scope and Structure of the ES

	Chapter	Responsibility
1	Introduction and EIA Methodology	Iceni Projects

² Ministry of Housing, Communities and Local Government (MHCLG), (2014); National Planning Practice Guidance – Environmental Impact Assessment (updated July 2017)

2	Description of Site, Surroundings and Background	Iceni Projects
3	Proposed Development, Construction and Description of Alternatives	Iceni Projects
4	Air Quality	Aether/SES
5	Archaeology	RPS
6	Ecology	Ecology Solutions
7	Highways, Traffic and Transport	Iceni Projects
8	Noise and Vibration	SES
9	Socio-Economics	Iceni Projects
10	Residual Impacts, Mitigation and Cumulative Effects	Iceni Projects (with input from whole ES team)

4.6 A separate volume detailing the Heritage, Townscape and Visual Impact (prepared by Iceni Projects) will also be included.

4.7 Those matters not considered to be significantly affected by the Proposed Development, and therefore, appropriate to be scoped out of the EIA are as follows:

- Arboriculture;
- Daylight, Sunlight and Overshadowing;
- Energy, Sustainability and Climate Change;
- Flooding, Drainage and Water Environment;
- Ground Conditions and contamination;
- Health;
- Major Accidents and Disasters;
- Waste; and
- Wind Environment and Microclimate.

4.8 Although the above issues are not considered to have significant environmental effects such that they are required to be included within the EIA, they will be addressed where relevant in the

supporting documents for the planning application. A full indicative list of documents anticipated to be submitted as part of the planning application is provided at Appendix A3 (subject to further discussion and agreement with NCC).

Non-Technical topic Chapters

- 4.9 These non-technical ES chapters will be prepared by Icen Projects to set out the context under which the Proposed Development will be assessed.

Introduction and EIA Methodology

- 4.10 This chapter of the ES will set out the context and background of the Site and the planning application, including details of the EIA process and availability of the document once submitted.
- 4.11 A list of the EIA Consultant Team will also be appended to this chapter. As required under the EIA Regulations, the EIA will be undertaken by competent experts and the ES will be accompanied by a statement outlining the relevant expertise and qualifications of such experts.
- 4.12 The general methodology to be applied throughout the ES will also be included within this chapter (based on **Section 5** of this Report). Notably, the criteria for the assessment of significant effects will be outlined and will be based on conclusions from the review of the sensitivity of affected receptors and the magnitude of any potential impacts identified.

Description of the Site, Surroundings and Background

- 4.13 This chapter of the ES will describe the existing Site and its current context, with consideration of key designations and constraints. A brief planning history of the Site will also be provided, with reference to relevant policy as appropriate.

Proposed Development, Construction and Alternative Considerations

- 4.14 This chapter of the ES will provide a description of the Proposed Development, including potential environmental considerations and constraints sufficient to inform the technical assessments.
- 4.15 It will also set out the proposed programme of activities and methods likely to be employed for the construction of the Proposed Development. This will include details on the proposed hours of work, types of plant and equipment to be used, as well as any environmental management and mitigation measures to be implemented to minimise potential adverse impacts in relation to social and environmental receptors.
- 4.16 The ES will also provide a description of the main alternatives considered by the developer as part of the evolution of the Proposed Development's design. This will include an assessment of:

-
- 'Do Nothing' scenario – i.e. no development taking place; and
 - Alternative uses and designs – the ES will summarise the alternative scheme options which could be accommodated on-site (such as alternative layouts or positioning of buildings).

5. TECHNICAL CHAPTERS METHODOLOGY

Proposed EIA Methodology

- 5.1 This section describes the principles of the EIA. It describes the approach that will be taken within the ES to identify and mitigate, where appropriate, against significant environmental effects.
- 5.2 The assessment methodology used may vary between each subject area and may be qualitative or quantitative in nature.
- 5.3 Each chapter will identify those sensitive receptors which are largely constant throughout the ES, but which may alter depending upon the subject under assessment. Receptors may include people and man-made or natural resources.

General Methodology

- 5.4 The EIA will be carried out in accordance with the following key stages of analysis, in consultation with the relevant authorities, statutory consultees and other relevant parties where appropriate:
- Establishment of overall scope and methodology of the EIA (commenced through the provision of this Report);
 - Identification of key sensitive receptors against which to assess potential impact;
 - Establishment of baseline conditions;
 - Identification of potential impacts;
 - Assessment of magnitude and significance of effects; and
 - Promotion of mitigation to limit significant adverse effects to an acceptable level.
- 5.5 In accordance with the EIA Regulations, NPPG and best practice guidance, this ES will include:
- A description of the development that will comprise information on the siting design and size of the Proposed Development along with the physical characteristics of the Site and its surrounding uses;
 - An outline of the main alternatives considered by the developer as part of the development and the reasons for selecting the preferred development option. It will also describe the ways in which the final design has been refined during the EIA process to minimise any potential impacts;

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- The relevant planning policy context within each subject area;
 - Assessment of potential impacts, provision of proposed mitigation;
 - Assessment of cumulative and interaction of effects; and
 - Residual effects and conclusions.
- 5.6 The assessments will be undertaken by competent technical experts.
- 5.7 The EIA will ensure that all potential significant effects associated with the Proposed Development, both during the construction and the various operational phases, are evaluated and suitable mitigation put in place, in order to reduce any significant adverse impacts to an acceptable level.
- 5.8 Consideration will be given to effects, which may be positive, negative or neutral, short or long term, permanent or temporary, direct or indirect. The logic used to identify the key effects for investigation and for the rejection of others will be clearly explained and justified.
- 5.9 The assessment will include a review of the impacts associated with the following scenarios:
- The existing baseline (i.e. the 'do nothing' scenario);
 - With the Proposed Development (future baseline); and
 - Cumulative / in-combination effects.
- 5.10 A Non-Technical Summary (NTS) will be provided alongside the ES to outline, in non-technical terms, the principal findings of the EIA and the mitigation proposed.

Assessing Significance

- 5.11 The criteria to be used for the assessment of significance will be outlined and will be based upon conclusions reached through the review of the sensitivity of the effected receptors and the magnitude of any potential identified impact.
- 5.12 In general terms, and where topic specific criteria are not defined, the following will be applied:

Table 5.1 Categories of Effects Being Considered

Magnitude of Impact	Criteria for Assessing Impact Magnitude
Major	Total loss or major / substantial alteration to key elements / features of the baseline (pre-development) conditions such that the post development character / composition / attributes will be fundamentally changed.
Moderate	Loss or alteration to one or more key elements / features of the baseline conditions such that post development character / composition / attributes of baseline will be materially changed.
Minor	A minor shift away from baseline conditions. Change arising from loss / alteration will be discernible / detectable but not material. The underlying character / composition / attributes of the baseline condition will be similar to the pre-development circumstances / situation.
Negligible	Very little change from baseline conditions. Change barely distinguishable, approximating to a “no change” situation

- 5.13 Each individual ES chapter will define within their opening sections (through the use of matrices) the significance criteria to be used. A coherent approach will be taken to the assessment of significance throughout the ES and will be classified as follows.

Table 5.2 Sensitivity of Receptors

Sensitivity	Example of the Receptor
High	The receptor / resource has little ability to absorb / change without fundamentally altering its existing character or its importance on an international or national level.
Moderate	The receptor / resource has moderate capacity to absorb change without significant altering its existing character or its importance (high).
Low / Very Low	The receptor / resource is tolerant of change without detriment to its character, which is regarded as low or no local importance.

- 5.14 The significance of an environmental effect is determined with reference to the magnitude of the impact and the sensitivity of the receptor. The significance and impact may be either positive or negative. To determine the significance of an effect, reference will be drawn to the impact significance matrix as set out below.

Table 5.3 Generic Likely Effects Matrix

Receptor Sensitivity	Magnitude of Impact			
	High	Medium	Low	Very Low
High	Major Adverse / Beneficial	Major Adverse / Beneficial	Moderate Adverse / Beneficial	Minor Adverse / Beneficial

Receptor Sensitivity	Magnitude of Impact			
	High	Medium	Low	Very Low
Medium	Major Adverse / Beneficial	Moderate Adverse / Beneficial	Minor Adverse / Beneficial	Negligible
Low	Moderate Adverse / Beneficial	Minor Adverse / Beneficial	Negligible	Negligible
Very Low	Minor Adverse / Beneficial / Negligible	Negligible	Negligible	Negligible

Notes: The significance of the effect is defined by the shaded grey areas – see discussion below for definitions relating to these

- 5.15 The nature of the effect will also be considered and, based on this, it will be determined whether any mitigation measures are required.

Table 5.4 Nature of Effect

Type of Effect	Description
Adverse	Detrimental or negative effects to an environmental / socio-economic resource or receptor.
Negligible	Effects which are below the levels of perception, within normal bounds of variation or within the margin of forecasting error, these effects are unlikely to influence decision-making, irrespective of other effects.
Beneficial	Advantageous or positive effect to an environmental / socio-economic resource or receptor.

Structure of the ES Technical Chapters

- 5.16 Each technical chapter of the ES will cover the following sections:

- Introduction;
- Legislation and Policy Context;
- Assessment Methodology and Significance Criteria;
- Baseline Conditions;
- Assessment of Effects (both construction and operational);
- Mitigation Measures;

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- Residual Impacts and Monitoring;
 - Effect Interactions and Cumulative Effects; and
 - Summary and Conclusion.

Effect Assessment Methodology

- 5.17 **Section 6** of this report sets out the scope and methodology to be adopted in each of the individual technical ES chapters. Where it is considered that a topic area may be 'scoped out' of the EIA, a justification for this conclusion is provided.

EIA Consideration of Major Accidents and Disasters, Human Health and Climate Change

- 5.18 **Section 6** of this report sets out the scope and methodology to be adopted in each of the individual technical ES chapters. Where it is considered that a topic area may be 'scoped out' of the EIA, a justification for this conclusion is provided.

6. TOPICS TO BE SCOPED INTO THE EIA

- 6.1 This section of the report sets out the proposed scope and methodology for each of the topic area to be included within the EIA.

Air Quality

Assessment Methodology

- 6.2 During the operational phase of the development there is the potential for air quality impacts at both existing and proposed sensitive receptors. The following scope of works for the air quality assessment is proposed.
- 6.3 A nitrogen dioxide (NO₂) diffusion tube survey will be undertaken for six months at nine locations around the Anglia Square site. The survey commenced on the 1st November 2021 and covers key locations where residential use is planned at ground floor level as well as a background location.
- 6.4 The dispersion model ADMS Roads will then be used to estimate NO₂ and particulate matter (PM₁₀ and PM_{2.5}) concentrations at selected sensitive receptor locations. These two pollutants are the ones most significant to assessment for any exceedances of the air quality objectives. Five model runs will be undertaken:
1. The base year 2021 (to allow model verification to be undertaken utilising the results from the diffusion tube survey outlined above and also where appropriate the results from the Council's own monitoring).
 2. Without development in 2033 assuming no improvement in the road traffic fleet or background concentrations from the base year
 3. With development in 2033 (i.e. taking into account the traffic flow data) assuming no improvement in the road traffic fleet or background concentrations from the base year
 4. Without development in 2033 assuming an improvement in the road traffic fleet as provided in Defra's emission factor toolkit
 5. With development in 2033 assuming an improvement in the road traffic fleet as provided in Defra's emission factor toolkit.
- 6.5 Current and anticipated traffic flows will be obtained from the Transport Consultants. Where appropriate street canyons and traffic queues will be considered in the modelling. Meteorological data for Norwich will be used in the dispersion model. Background pollutant concentrations will be obtained from the monitoring data and / or the latest Defra background maps.

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- 6.6 The predicted pollutant concentrations will be compared against the relevant air quality objectives as detailed in the 2010 UK's Air Quality Strategy (AQS) Regulations. The impact of the development will be assessed against the criteria provided in EPUK and IAQM's Land Use Planning and Development Control: Planning for Air Quality (2017).

Potential Receptors

- 6.7 The proposed development site is located within the administrative area of Norwich City Council (NCC). NCC has declared one air quality management area (AQMA) covering the centre of the city, broadly covering an area within the inner ring road. This was declared in 2012 due to exceedances of the annual mean NO₂ objective. The proposed development is located within the AQMA. Therefore, air quality is a potential concern.
- 6.8 As outlined above, dispersion modelling will be undertaken to estimate pollutant concentration at sensitive receptor locations both across the proposed development site and at existing locations adjacent to roadsides where traffic levels are predicted to increase. Previous modelling undertaken for the site showed that particulate matter concentrations were below the annual and daily mean air quality objectives in all scenarios and this is not expected to change. For NO₂, in the "no improvement" scenario, exceedances of the annual mean objective were predicted at a few locations. However, in the "with improvement" scenario, NO₂ concentrations objectives were estimated to be met at all locations. There were no predicted exceedances of the hourly mean NO₂ objective in any scenario. For NO₂ this is still likely to be the case, but the updated monitoring and modelling will confirm this.

Consultation

- 6.9 To date, consultation has been undertaken with the Public Protection Officer at Norwich City Council and the Transport Consultants. This has incorporated reviewing the current nitrogen dioxide monitoring undertaken by the Council around the Anglia Square site and discussing the new locations that will be monitored by the applicant to further enhance the accuracy of the dispersion modelling that will be undertaken. Discussions have also been held with the Transport Consultants to understand the information that will be made available for the Air Quality Assessment.

Archaeology

- 6.10 There are no designated archaeological heritage assets as defined in the NPPF recorded on the study site. The site is located within an Area of Main Archaeological Interest, as defined by Norwich City Council.
- 6.11 The archaeological evidence from the study area recorded in the Norfolk HER and other resources suggests a low potential for archaeology of the early Prehistoric periods. The potential for late

Prehistoric archaeology is uncertain. The archaeological potential of the study site for the Roman period is thought to be low.

- 6.12 The site has a high archaeological potential for the Anglo-Saxon, Medieval and Post Medieval periods. In particular elements of the late Saxon city defences may be present. Features associated with occupation and industrial activity from these periods are likely to be represented. Burials have been recorded on the site associated with the Saxon and Medieval churchyard of St Olave's, in the south, and that of St Botolph's adjacent to the southwestern boundary of the site. Structural remains of the Church of St Olave's could conceivably be present, as material from the church has been found reused in a Post Medieval building on site.
- 6.13 Past post-depositional impacts as a result of previous nineteenth and twentieth century developments are considered to have had a severe widespread negative archaeological impact.
- 6.14 The Proposed Development comprises a comprehensive retail and residential development. The scale of the proposed development suggests that there will be a widespread impact on surviving below-ground archaeological deposits.
- 6.15 On the basis of the available evidence it is reasonable to conclude that archaeological remains relating to St Botolph's and St Olave's Church and the Late Saxon city defences would be of regional importance, whilst any other archaeological remains now present on the study site would be of local importance.
- 6.16 Recommendations for any future work will be made by the local planning authority advised by the Norfolk County Archaeologist. On the basis of the available information, and the expected negative impact of the proposed development, further archaeological mitigation will likely be required. This is expected to include supplementary evaluation, excavation, post-excavation and publication works. On the basis of previous discussions relating to previous applications, it is suggested that these works can follow planning consent secured by appropriate archaeological planning conditions.
- 6.17 An ES Chapter examining archaeology will be prepared which summarises relevant legislation. The chapter summarises relevant legislation, policy and guidance and describes the methods used to gather baseline information and assess impacts. It will then present a summary of the currently available baseline archaeological information, including an assessment of the potential for previously unrecorded archaeological remains to be present, drawing upon an Archaeological Impact Assessment.
- 6.18 The archaeological chapter of the ES will assess the likely significant effects of the Proposed Development upon Archaeological remains and will be supported by an Archaeological Impact Assessment. The potential effects of the proposed development upon the significance of

archaeological assets as a result of physical loss or change in setting during the construction and post construction phases will be assessed and mitigation measures proposed as appropriate. Residual effects following the implementation of mitigation measures will then be assessed, along with the cumulative effects associated with the Proposed Development in combination with surrounding development activity.

- 6.19 This chapter will be prepared following discussions with the City of Norwich's archaeological advisors at Norfolk County Council, and the scope of the assessment will be agreed with them in advance.
- 6.20 Earlier schemes proposed on the site have been supported by archaeological evaluation, the results of which will be incorporated in the Archaeological Impact Assessment.

Ecology

- 6.21 The Ecology Chapter will assess the likely significant effects associated with the Proposed Development. Mitigation measures will be identified, where appropriate, to avoid, reduce or offset any significant adverse effects identified; enhancements to deliver benefits will also be set out.
- 6.22 The methodology for the Ecology Chapter will have due regard to the assessment criteria guidance issued by the Chartered Institute for Ecology and Environmental Management (CIEEM). This is the current industry guidance for ecological assessment. It is not considered to be prescriptive but provides guidance to practitioners for refining their own methodologies.
- 6.23 The ecological baseline for the site has been informed by a series of surveys undertaken in 2018 pursuant to the previous application, to be complemented by updates to be completed in advance of the submission. An Extended Phase 1 Habitat Survey of the site was completed, followed by a series of bat surveys. The site is dominated by a series of large buildings and hardstanding, with minimal vegetation, and is considered to offer no significant opportunities for other wildlife. The field work was supported by a detailed desk study, encompassing existing biological records and an assessment of local statutory and non-statutory designations.
- 6.24 It is proposed that all ecological receptors are scoped out, save for statutory designations which are considered to be within the Zone of Influence, which is consistent with the EIA work undertaken in 2018. These include Broadland Special Protection Area (SPA), Broadland Ramsar Site, The Broads Special Area of Conservation (SAC) and River Wensum SAC, Sites of Special Scientific Interest (SSSIs) underlying these designations, and other SSSIs in the area. The site is not adjacent to any of these statutory designations, and therefore significant direct effects are not likely. The assessment will therefore consider likely significant indirect effects on these designations.

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- 6.25 As part of previous assessment work in 2018, Natural England has been consulted on the approach to assessment of effects on statutory designations. Further consultation will be undertaken, assuming that Natural England has capacity to engage with the process.
- 6.26 As required under the Conservation of Habitats and Species Regulations 2017 (as amended), a separate Habitats Regulations Assessment (HRA) process will be completed in respect of the international designations listed above. Though this is undertaken in parallel to the EIA, there will naturally be overlap between the two. Full regard will be had to advice received from Natural England in this respect.

Heritage, Townscape and Visual Impact

- 6.27 The EIA process for Built Heritage, Townscape and Visual Impact Assessment will seek to determine the significance of any effects to Built Heritage, Townscape and Visual sensitive receptors arising from the proposed development and, where necessary, identify steps required to mitigate those effects. This volume of the ES will cover two methodological approaches to assessing impact, one being related to Built Heritage Assets, and the other to Townscape and Visual Impact Assessment. The two processes overlap, and are intrinsically interlinked (not least because townscape sensitivity is closely linked to heritage sensitivity), but their methodologies are discrete. Accordingly, this element of the ES will carefully differentiate between the two different analyses.
- 6.28 In terms of background, there are a series of existing assessments, summarised by the Secretary of State in his decision (2020) as a result of the called-in application (the Inquiry Scheme). In this regard, the assessment will take these assessments into consideration, alongside a robust process of assessment of the new proposal. In advance of the submission of the application, it is intended to agree a baseline understanding of the significance of relevant heritage assets with Norwich City Council officers and Historic England.

Assessment Methodology

- 6.29 In relation to **built heritage**, the methodology for assessing the significance of heritage assets, the contribution of the settings of these assets to their significance, and the impact of the proposed development, will follow best practice guidance published by Historic England, *The Setting of Heritage Assets Historic Environment Good Practice Advice in Planning Note 3* (2017)
- 6.30 The EIA process for **the Townscape and Visual Impact Assessment** (TVIA) element, seeks to determine the significance of any effects on sensitive Townscape and Visual receptors arising from development and, where necessary, to identify steps required to mitigate those effects where they are adverse in nature.

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- 6.31 The TVIA assessment methodology will be informed by best practice guidance set out in '*Guidelines for Landscape and Visual Impact Assessment*' (GLVIA), Third Edition (2013), as well as Environmental Impact Assessment (EIA) regulations and national and regional guidance.
- 6.32 The purpose of the TVIA is to describe the baseline condition of the Site and its surrounding area and assess the potential impacts and likely effects of the proposed development on the townscape and landscape resource as a whole and on visual receptors, i.e. the human experience of particular views.

Methodology

- 6.33 The first stage of this assessment will focus on the identification of assets (establishing the baseline position) likely to experience an effect as a result of the proposed development. It has already been identified that several assets lie within the vicinity of the site. However, given the large number of designated heritage assets (largely listed buildings) within the vicinity of the site, it cannot be assumed that these will uniformly experience an effect, given Norwich's varied development pattern, and the variations in proposed building heights.
- 6.34 Mirroring the previous application, the starting point for an assessment is that it will scope in Grade I and Grade II* buildings, registered parks and gardens; Scheduled Monuments and Conservation Areas within 1k of the site; Grade II listed buildings within 500m of the site; and locally listed buildings within 250m.

Baseline Position

- 6.35 It is apparent that parameters have already been set with respect to a baseline position by the views of the Inspector and Secretary of State decision. However, given that the overall visual influence of the proposed development will be significantly reduced when compared to the previous scheme, it is clearly appropriate and proportionate to consider how this scope can be reduced. We are therefore working to agree a reduced Scope with Historic England and Norwich City Council. As such, it is appropriate to establish a Baseline Position based on the outcome of the Inquiry scheme and a robust understanding of the new current scheme and the visual envelope.
- 6.36 A Zone of Visual Influence process (with data developed by Cityscape) will be developed, based on the submission scheme massing, to allow a more detailed scoping out of assets where no effect will arise. In the interim, a 'point in time' ZVI has been produced, to allow a position that can feed into and inform the assessment process throughout pre-application discussions. In principle, assets will be scoped in if the ZVI, and a detailed site visit, suggests that there is the potential for visual effects, and therefore effects on their significance. This scoping will be revisited once the massing for the scheme is frozen for submission, and agreed as a final scoping with NCC and HE prior to submission.

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- 6.37 Using the overlaid ZVI/viewpoint and ZVI/heritage asset mapping, a revised scoping approach would be tested against the views as previously produced. This process is essentially in train through the advancement of several key views. A tabulated approach to identifying views and heritage assets that can potentially be omitted from the assessment, and those which should be included, will be developed, alongside a key third category of assets and views: “marginals”. These are receptors where from comparative assessment, it has been established that the base scheme has a nil or marginal impact, but where further changes to the scheme may generate the potential for greater impact. These marginals would be retained within scope at the outset, but may fall away later, once assessed against the final scheme.
- 6.38 For the purposes of the EIA, the heritage significance of the receptors will be provided using the established hierarchy of ‘receptor sensitivity’ used throughout the ES, following the EIA regulations and national and regional guidance. A table will be provided showing how this relates to the heritage designations of the sensitive receptors.
- 6.39 We will then assess the Magnitude of Impact of the proposed development on the setting of the heritage assets and determine the Significance of Effect arising from the development, following the tabular assessment matrix methodology used throughout the ES.
- 6.40 If any of the adverse effects on the sensitive receptors are determined to be ‘significant’ for the purposes of the EIA regulations then they will be subject to further mitigation and justification.
- 6.41 In the first instance, the baseline conditions will be agreed upon with the Council and Historic England with the production of a Heritage and Townscape Baseline Assessment. As part of this baseline, a preliminary viewpoint study will be produced, again building on the information provided by the Zone of Visual Influence Study.
- 6.42 In view of the steps taken above and on the basis that the proposed scheme would have a more limited impact on its surroundings than the appeal scheme, a Candidate Viewpoint Study will form part of this Baseline assessment. The views on which an assessment will be based will be agreed with Norwich City Council and Historic England.
- 6.43 These views will be selected and agreed upon based on the potential visual prominence of the proposed development and its likely effects on the existing environment. This includes a variety of short and medium distance townscape views, from within the area in which the site sits. The methodology for the assessment of effects on townscape and visual receptors will consider the effects on the townscape resource as a whole and on visual receptors, i.e. the human experience of particular townscape views. The heritage assessment, although approached differently, will be relevant to the townscape assessment and the judged effect of the proposed development on the identified heritage assets will inform the sensitivity of each viewpoint within the visual assessment.

Each viewpoint will be selected in order to assess the proposed development at 'maximum exposure' and also at 'maximum conjunction' with sensitive elements in the built environment.

6.44 The assessments of visual effects will be based upon the comparison of an 'existing' photograph and a 'proposed' visual representation, informed by visiting the Site and desk-based research and analysis. The assessments are structured under the following components:

- Existing: a description of the existing context visible in the view, which seeks to evaluate its townscape qualities and visual amenity observed;
- Sensitivity of the view: this considers both the qualities arising from the townscape and the susceptibility of people experiencing it;
- Proposed: a description of the design and visual appearance of the Proposed Development and mitigation achieved through the design process;
- Magnitude of change: a quantitative assessment of the magnitude, or level, of change expected to arise from the Proposed Development within the view; and
- Residual effect: this is a combined assessment which considers the sensitivity of the view and the magnitude of change, resulting in the overall effect, and an assessment of the qualitative aspects of the design to determine whether the residual effect is 'beneficial', 'neutral or balanced' or 'adverse' in nature.

6.45 At this early stage of the project we would anticipate the following measures are to be considered in terms of mitigating potential impacts, should they be required, through the following approaches:

- Consideration of the cumulative effects should be monitored and incorporated within the scope. It should be agreed with the council whether these emerging or committed scheme(s) should be demonstrated within visual material such as the AVRs and separate assessment provided. There is potential to mitigate against high visual impact should committed schemes within the vicinity of the proposed development establish a future baseline appropriate to higher elements within this area.
- High quality design, considered form and contextual materiality will be most effective in mitigating the impact of a taller building on this site, contributing to what can be considered a high-quality element. The proposed development heights are anticipated to potentially have a high visual impact, however any perceived harm caused by this can be mitigated by the introduction of high-quality design.

Consultation

- 6.46 As part of the assessment process, consultation will continue to be sought with officers at Norwich City Council, and with Historic England. There is anticipated to be on-going dialogue between ourselves and these stakeholders throughout the process up to submission.

Summary of Receptors and Potential Impacts

- 6.47 At this stage in the process, it is anticipated that the proposed development will generate limited harm and to some degree positive effects upon the significance of heritage assets within the vicinity of the Site, and upon the surrounding townscape. The current shopping centre with its associated commercial buildings does not contribute positively towards its surroundings, and there are significant opportunities to remove poor quality architectural features, and open land (including hard standing car parking), and introduce a cohesive new development that respects its surroundings and adds townscape value.
- 6.48 The proposed development will result in an increase in the height of some parts of the Site, and in these instances, a careful approach will be required to assessment to ensure that no significant harmful impacts arise to designated heritage assets or to townscape receptors and views. The proposed approach, through detailed assessment, consultation, and design mitigation, would be likely to generate a significant enhancement in particular to the immediate surroundings, and accordingly to the rich heritage context of Norwich and the settings of listed buildings within the vicinity of the site.

Highways, Traffic and Transport

- 6.49 The Highways, Traffic and Transport chapter will be prepared by Iceni Transport. This will include an assessment of the impact of the Proposed Development on the existing transport network, both during the construction phase and the operational phase. The assessment will also identify any transport changes in proximity to the Proposed Development and suitable mitigation measures as appropriate. A separate Transport Assessment (TA) will also be prepared in relation to the Proposed Development and will be submitted as a standalone document with the planning application. The TA will form the basis of the ES chapter; however, the ES will include an assessment of the potential environmental impacts in accordance with the 'Guidelines for the Environmental Assessment of Road Traffic, IEMA, 2004' document.

Assessment Methodology

- 6.50 Given the sustainable location of the site within Norwich City Centre, and to encourage the use of more sustainable modes of travel in the future as per policy guidelines, the proposed development will have a low number of parking spaces, and as a result there will be a significant reduction in car parking on the site when compared to the extant permission / uses on the Site, as well as the recent planning application which secured Transport / Highways sign-off. Whilst not yet finalised, it is

expected that there will be a total of up to 440 car parking spaces across the whole scheme. The Anglia Square centre currently has a total of 1,172 public car parking spaces (721 located in the multi-storey car parks and 451 across the multiple surface car parks). The proposals therefore result in a reduction of circa 800 parking spaces, so resultingly the proposed development is anticipated to have a significant reduction in vehicular traffic associated with the site. Furthermore, the proposed car parking is intended to serve the new residential uses in the majority and as such the turnover of each space will be considerably less than those used for Anglia Square under its current public car parking use. It is therefore considered that there will be no impact on the local road network if and when the Proposed Development becomes operational, and as such no further assessment / analysis work with regards to vehicular trips is required. Notwithstanding, a few automatic traffic count surveys are being undertaken on the key local roads to the Site to determine how traffic levels have changed over recent years, and the survey data will be compared to that provided in surveys from the previous application to ascertain what levels of growth there has been. Further details and clarifications on this assessment will be included within the TA.

- 6.51 Consideration will also be given to the sustainable travel options for the site including travel by bus, train, foot and cycle, and proximity to local amenities and facilities. A multi-modal trip generation assessment will be undertaken which will include obtaining a total person trip rate to ascertain the total number of trips expected as a result of the Proposed Development, and then applying this total trip generation to modal split percentages, which are anticipated to be based on either local Travel Plan data or Census travel to work data. Once this multi-modal trip generation has been undertaken, the numbers will be reviewed in context with the local, existing infrastructure to determine capacity and whether any improvements are necessary.
- 6.52 In addition to the above, the ES Chapter will consider the impact of construction vehicles on the local highway network and this will make use of traffic survey data from the ATCs, and the previous, growth surveys to analyse the impact.

Summary of receptors and potential impacts

- 6.53 The potential receptors are defined as the people making journeys within the study area for each transport mode, and may include nearby local residents or employees, pedestrians, cyclists and users of local community facilities such as hospitals, schools, or places of worship.
- 6.54 The potential impacts of the Proposed Development in relation to highways, traffic and transport are identified in the Table below.

Table 6.1 Potential Transport Impacts: Construction and Operation

Potential Impact	To be Assessed in the EIA?	Justification
Severance	Yes	Increases in traffic during the construction phase has the potential to impede access to key local facilities.
Driver delay	Yes	Increases in traffic in the construction phase has the potential to lead to an adverse effect upon the capacity of local junctions that may in turn result in a material increase in delays to journeys.
Pedestrian delay and amenity	Yes	Changes in traffic flows can affect the ability of people to crossroads and the relative pleasantness of a journey.
Fear and intimidation	Yes	The volume of traffic, and its Heavy Goods Vehicles (HGV) composition, can result in vulnerable road users perceiving a road to pose a hazard to safety during the construction phase of the Proposed Development.
Accidents and safety	Yes	Material increases in traffic flows have the potential to exacerbate an existing road safety problem during the construction phase.
Hazardous loads	No	It is considered highly unlikely that the Proposed Development will generate any hazardous loads during the construction phase.

- 6.55 Adverse effects will be considered for mitigation and specific mitigation measures put forward, where practicable. Mitigation measures considered may include modification of the project, compensation and the provision of alternative solutions (including alternative technology) as well as pollution control, where appropriate. The extent of the mitigation measures and how these will be effective will be discussed. Where the effectiveness is uncertain or depends upon assumptions about operating procedures, data will be introduced to justify the acceptance of these assumptions. Clear details of when and how the mitigation measures will be carried out will be given. When certainty of impact magnitude and/or effectiveness of mitigation over time exists, monitoring programmes will be proposed to enable subsequent adjustment of mitigation measures, as necessary. The opportunity for enhancement measures will also be considered, where appropriate.
- 6.56 The residual effects, i.e. the effects of the proposed development assuming implementation of proposed mitigation, will be determined. The residual effects represent the overall likely significant effect of the development on the environment having taken account of practicable/available mitigation measures.

Consultation

- 6.57 Iceni Transport have already started undertaking consultation on this scheme; pre-application meetings were held virtually with Norwich City Council and Norfolk County Council Highways on the 21st October 2021, and 9th November. The aim of this ongoing consultation is to define the detailed methodology for the assessment to inform the TA as well as the ES Chapter. The EIA Chapter will

provide full details of the scoping, including meetings, that has been undertaken in the lead up to the planning application being submitted.

Noise and Vibration

- 6.58 The National Planning Policy Framework (NPPF) was published in March 2012 and revised in July 2018, February 2019 and July 2021. In respect of noise, the document states in Chapter 15, Paragraph 174 that;

“Planning policies and decisions should contribute to and enhance the natural and local environment by... preventing new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of ... noise pollution”.

- 6.59 It goes on to advise in Chapter 15, paragraph 185 that:

“Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

a) Mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;

b) Identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; and

c) Limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.

- 6.60 Paragraph 186 states:

“Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or ‘agent of change’) should be required to provide suitable mitigation before the development has been completed.”

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- 6.61 BS8233:2014 Sound insulation and noise reduction for buildings - Code of practice, provides recommendations for the control of noise in and around buildings. It suggests appropriate criteria and limits for different situations, which are primarily intended to guide the design of new or refurbished buildings undergoing a change of use, rather than to assess the effect of changes in the external noise climate.
- 6.62 A noise assessment is proposed to be submitted as supplementary evidence to support the planning application for the redevelopment of Anglia Square, Norwich.
- 6.63 The purpose of the assessment will be to evaluate the noise environment in which the site is located and to determine what (if any) mitigation measures will be required to meet the internal noise levels as desired by BS8233:2014.
- 6.64 Due to the size of the development site, monitoring will consist of three fixed monitoring stations which will measure noise continuously over 24 hour periods.
- 6.65 A technical report will then be prepared and issued with any recommendations for approval by the Local Planning Authority.
- 6.66 SES do not consider there to be any significant noise impacts that cannot be mitigated at the detailed design stage of the proposed scheme.
- 6.67 The findings of the assessment will inform an Environmental Statement Chapter, including commentary on construction noise, that will be included as part of the Environmental Impact Assessment for the proposed development.

Socio- Economics

- 6.68 The purpose of the Socio-Economic assessment will be to consider the key socio-economic impacts associated with the proposed redevelopment at both the construction and operational stages. The assessment will form part of the Environmental Statement.

Key Issues

- 6.69 It is anticipated that the main impacts will be two-fold; linked first to the redevelopment of Anglia Square with associated flexible commercial and community uses development; and secondly, linked to the development of up to 1,100 residential units.
- 6.70 The assessment will consider the impacts upon commercial floorspace provision (including office, retail, restaurants and cafes, workshop and leisure facilities) in the northern Norwich City Centre and the consequent impact on employment and the local labour market. The proposals include a net

reduction in commercial floorspace which is likely to lead to an overall decrease in jobs but will provide higher quality floorspace which makes more efficient use of this key town centre site. This could be expected to lead to wider regeneration effects. The proposals could lead to the displacement of existing occupiers and businesses particularly during the construction phase. One of the key challenges is linked to the impact of the development on the existing community.

- 6.71 The provision of up to 1,100 residential units will lead to an increase in the local population. The additional population arising from the residential elements of the proposal will result in an increased demand for social and community facilities including: education, healthcare, open-space, sport and recreation, libraries, places of worship, community halls and leisure facilities.
- 6.72 The Socio-Economic assessment would be considered alongside a standalone Health Impact Assessment accompanying the planning application but scoped out of the Environmental Statement (see Section 7 below).

Methodology

- 6.73 In order to assess the likely Socio-Economic impacts of the proposal; the existing level of employment floorspace and jobs supported on the application site will be established to provide a baseline position for on-site conditions and to allow consideration of the net effects (both positive and negative). The wider city centre will also be considered subject to the availability of data.
- 6.74 A review will be undertaken of the economic and labour market characteristics of Norwich City Centre including its demographic profile, job growth, indices of deprivation, unemployment rates, commuting patterns, income levels and relevant housing market factors. Using data from the Office for National Statistics (via Nomis), Ministry for Levelling Up, Housing and Communities and other recognised data sources, this will establish any strengths and weaknesses of the local economy that the proposals may affect. Incidents of crime in the area will be established.
- 6.75 A baseline assessment identifying the current provision of housing and community resources (e.g. provision of education³, healthcare⁴, open-space⁵, sport and recreation⁶ and other community facilities within the local area) will be undertaken, along with an assessment of any deficiencies or surplus capacity in such provision and any new facilities already planned. Taking account of the city centre location of the Site, a radius of c.1.6km is proposed as this is considered to reflect a

³ Source: Department for Education and <https://get-information-schools.service.gov.uk/>

⁴ Source: NHA Digital and <https://www.nhs.uk/service-search>

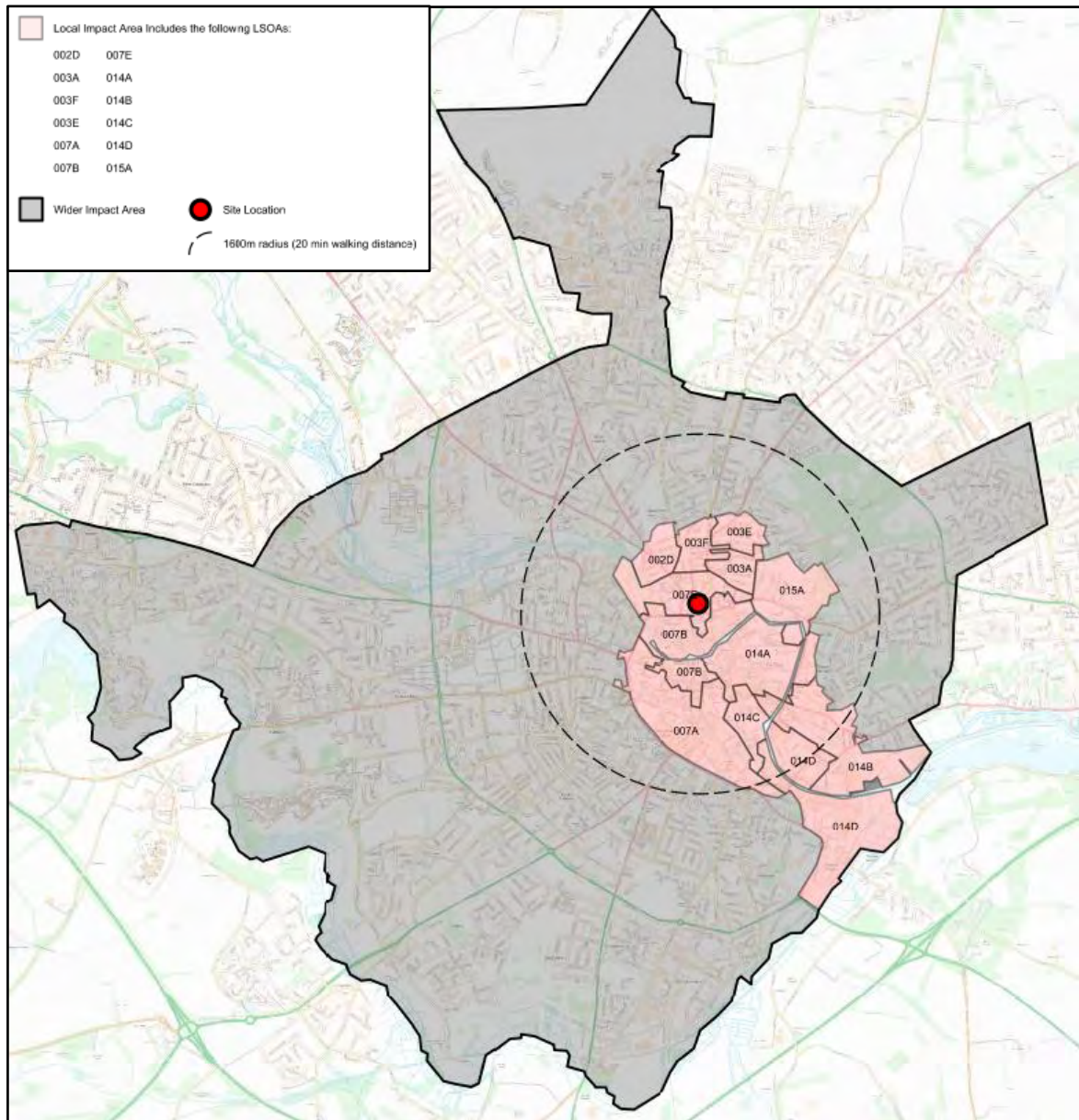
⁵ Source: https://www.norwich.gov.uk/info/20230/parks_and_open_spaces

⁶ Source: Sport England Active Power Places

reasonable walking distance (equivalent to 20 minutes) for residents to access social and community facilities.

- 6.76 It is likely that the most significant socio-economic effects will predominantly be felt close to the Site, particularly those in relation to social infrastructure and community facilities. Spatial characteristics, walking distances, the retail hierarchy, socio-economic characteristics and the neighbourhood character area all indicate that the strongest functional relationships are most likely to be within the Norwich northern city centre area. The extent of this area is taken to form the 'Local Impact Area' for the purposes of this assessment and the corresponding Local Super Output Areas (LSOAs) are used for the collection of data. The extent of the local impact applied may be varied for some receptors to meet best practice; in these instances, this will be clearly highlighted within the assessment. Taking account of the scale of the Development, the Site location in a Large District Centre as well as commuting patterns, it is very likely that some of the Development effects may be spread over a broader geographical area including the wider local authority administrative area of Norwich. On this basis, for the purposes of this assessment, this area is considered to form an appropriate 'Wider Impact Area'.
- 6.77 The figure below highlights the Site, 1,600m walking distance, Local Impact Area (highlighted in pink), and the Wider Impact Area of Norwich (highlighted in grey).

Figure 1 Anglia Square Local and Wider Impact Area Map



Source: Icen Analysis

- 6.78 The likely employment impacts of the proposals (commercial, community and residential uses) will be assessed by estimating employment generation both from the construction stage of the scheme and for the operation of the Proposed Development. Displacement of occupiers will be considered. For the operational impacts, estimates will be made from experience of similar facilities elsewhere and by use of typical employment densities⁷ applied to the proposed amount of floorspace for the different components of the scheme.

⁷ Source: HCA Employment Density Guide 2015

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- 6.79 Appropriate employment multipliers will be applied to direct employment on the Site to estimate the indirect and induced employment generated by the proposals, taking account of expected additional expenditure within the local economy. Net additional employment impacts will be assessed by taking account of existing employment on the Site and any potential for displacement of jobs from existing facilities in the area.
- 6.80 Any effects of the development on stimulating additional spin off investment or other economic activities in the local and wider economy will also be evaluated, including the potential contribution to economic development/ regeneration strategies for Norwich and the benefits arising from the provision of the proposed housing. Consideration will also be given to the cumulative impact with other committed and Proposed Developments in the area as agreed in consultation with the local planning authority.
- 6.81 The significance of each of these overall economic effects will be assessed, taking into account deprivation, local unemployment levels, economic activity rates, commuting patterns and housing needs.
- 6.82 The social impacts of the proposal will be established. The new residential accommodation and arising population will be assessed for its effects upon the need and demand for community facilities over the existing baseline position. This will include education, healthcare, open-space, sport, recreation and other community facilities. The significance of each of these social and community effects will be assessed, taking into account the existing or future committed provision of facilities identified at the baseline stage. The assessment will also consider integration and cohesion between new and existing communities through the provision of shared public realm and amenity spaces or new community infrastructure. It will also consider the effect on existing businesses in terms of potential displacement or disruption during construction.
- 6.83 The evaluation of impacts of the proposals will be based on an assessment of the magnitude of the impact and the importance of the identified receptor. Impacts will be identified on a matrix basis from major adverse through to major beneficial, representing the scale of impacts above and beyond the baseline position. Impacts will be evaluated on a net additional basis taking account of existing employment on the Site and any potential displacement of jobs from existing facilities in the area and where possible, the scale of impact will be quantified in relation to current levels of provision under each receptor. The duration of the impacts will also be taken into account.
- 6.84 Mitigation measures will be identified to maximise the positive impacts of the Proposed Development and to offset any potentially significant adverse impacts.

-
- 6.85 Consideration will also be given to the cumulative impacts of the Proposed Development with other committed and proposed developments in the area as agreed through consulting with the local planning authority.

Consultation

- 6.86 The assessment will be carried out in consultation with officers of Norwich City Council including the Planning, Economic Development and Neighbourhood officers. Norfolk County Council as the Local Education Authority will also be consulted. Local service providers including the Clinical Commissioning Group will also be consulted.

Residual Impacts, Mitigation and Cumulative Effects

- 6.87 This chapter of the ES will summarise the residual impacts (during both the construction and operational phases of the Proposed Development) arising as a result of the Proposed Development (taking into consideration any mitigation measures proposed) and identify significant adverse and beneficial effects.
- 6.88 The cumulative assessment will also be discussed in this chapter, and will consider the following:
- Type 1 Effects (Effect Interactions): The combined effect of individual effects, for example noise, airborne dust or traffic on a single receptor; and
 - Type 2 Effects (Cumulative Effects): The combined effects of nearby development schemes which are either consented or under construction which may, on an individual basis not be significant but, cumulatively, have a likely significant effect.
- 6.89 An overarching summary of the conclusions presented in the ES will be provided which will include a statement as to whether the benefits of the Proposed Development outweigh the constraints.
- 6.90 A provision list of cumulative schemes to be assessed within the ES is set out below, subject to agreement with the Council.

Cumulative Schemes for Consideration

- 6.91 The below table sets out those schemes have been identified for consideration in the cumulative assessment based on the following criteria:
- Proposed by way of the submission of a planning application and subject to a high certainty of being delivered, permitted/with a resolution to grant planning permission or under construction;
 - Located within 1km of the site boundary, spatially linked to the Site by means of the local road network or visible in views to and from the site; and

- Which are 10,000sqm in floor area or would give rise to more than 150 residential units;

OR

- Exceptional schemes that do not fit within the above parameters.

Location	App. Ref. and Description	Status
Barrack Street Development Site Barrack Street Norwich	18/01286/F | Demolition of existing buildings and structures; erection of 218 dwellings; conversion, refurbishment and extension of two Grade II Listed Cottages, erection of 310sqm of commercial floorspace (Class A1-A5 use) and 152sqm of Museum floorspace (D1 use), with associated works	Approved (April 2019)
St Annes Wharf King Street Norwich Norfolk	04/00605/F: The demolition of existing buildings to slab level and the development of the following mixes; 437 residential units ,2128 sq m of A1,A2 , A3 and D2 uses(max.2000 sq m A1),the provision of 305 car parking spaces, riverside walkway, public open space and hard and soft landscaping including external lighting ,seating, bollards, walkways, cycle paths, steps and ramps, internal access roads, delivery bays, boundary enclosure, new vehicle and pedestrian and cycle access points, alteration of existing access points and associated infrastructure works	Approved (March 2006) Under construction
Land North Of Carrow Quay Kerrison Road Norwich	11/02104/O: Outline application with full details of access for residential-led development of between 200 and 250 No. residential flats (Use Class C3) and 140 car parking spaces with commercial office space (Class B1a), groundsman's facilities (Class B8), community uses (Class D1/D2) and associated works including Riverside Walk and access road	Approved (June 2013) Over 1km away, but uses same road network
	13/01270/RM: Reserved Matters with full details of external appearance, landscape, layout and scale of development, to provide 250 No. residential flats (Class C3), 113sqm offices (Class B1a), 279sqm groundsman's facilities (Class B8), and 401sqm of flexible office space (Class B1a) and community uses (Class D1/D2) with 126 No. parking spaces, associated highways works and provision of a Riverside Walk, consequent to previous outline planning permission 11/02104/O 'Outline application with full details of access for residential-led development of between 200 and 250 No. residential flats (Class C3) and 140 No. car parking spaces with commercial office space (Class B1a), groundsman's facilities (Class B8), community uses (Class D1/D2) and associated works including Riverside Walk and access road'.	Approved (November 2013)

Location	App. Ref. and Description	Status
Car Park Rear Of Premier Travel Inn Duke Street Norwich	18/01552/F | Redevelopment of car park site to provide student accommodation (revised proposal)	Approved (November 2019)
Mary Chapman Court Norwich	18/01524/F: Demolition of student accommodation block, erection of new build academic and residential accommodation for Norwich University of the Arts, including works to riverside walk and other associated external works	Approved (January 2019)
St Crispins House Duke Street Norwich NR3 1PD	17/01391/F Change of Use application in respect of the conversion and extension of an existing 3, 4 and 5 storey office building (B1 use class) to student accommodation (sui generis use class) containing 614 student bed spaces and communal accommodation at ground floor level, to include common room facilities and a gymnasium. Associated external works.	Approved (March 2018)
	20/00474/MA: Amendment of previous permission 17/01391/F to allow revised internal layouts and associated external alterations, inclusion of common room at sixth floor, consolidation of binstore and plant rooms and revised cycle and temporary parking arrangements.	Approved (August 2020)

6.94 Those discounted from consideration in cumulative terms are detailed below.

Location	App. Ref. and Description	Status	Reason for exclusion
Site at Rear of 67-69 Magdalen Street, Norwich, NR3 1AA	19/01352/F | Construction of 9no. flats	Approved (January 2020)	Small scale development
St Peters House 23 Cattle Market Street Norwich NR1 3D	18/01891/NCD | Notice of chargeable development (Community Infrastructure Levy): change of use from offices (Class B1(a)) to residential (Class C3) to provide 53 residential units.	Approved (May 2019)	Small scale development and no new built development
Land at St Faiths Road Old Catton	20141955 | Mixed Use Development of 340 Residential Dwellings with 5,640 sqm of Small Business Units (Outline)	Outline Approval (18th May 2016)	Approximately 4km away, not likely to have a cumulative impact
The Quad, All Saints Green, Norwich	16/00790/F: Construction of a 244 student bedroom development with management facilities and amenities; flexible office/business space with independent	Approved (October 2016)	Now built out and forms part of baseline

Location	App. Ref. and Description	Status	Reason for exclusion
	access, and associated landscaped courtyard (revised)		
Land And Buildings North East Side Of Spitfire Road Norwich	17/00016/F: Construction of hotel with associated parking, landscaping and highways works	Approved (December 2017)	Considered last time but approximately 3.5km away and not likely to have a cumulative impact
Norwich Airport Amsterdam Way Norwich NR6 6JA	21/01196/O | Outline application with all matters reserved except access from Broadland Northway (A1270) for up to 60,000 sqm (GEA) of aviation-related uses (Use Classes E(g)(ii), E(g)(iii), B2, B8 and F1(a)) and up to 60,000sqm (GEA) of general employment (Use Classes E(g)(ii), E(g)(iii), B2 and B8).	Awaiting Decision	Over 4km away, not approved, and not likely to have a cumulative impact
Car Park Barn Road Norwich	18/01315/F | Construction of 302 student bedroom courtyard development above a car park of 128 spaces and associated landscaping.	Approved (November 2018)	Construction complete, now forms part of the baseline
Three Score Site Land South Of Clover Hill Road Norwich	Various planning applications	Various approvals since 2013	Over 4km away and not likely to have a cumulative impact
Crown Place, St Stephens Street Norwich, NR1 3QN	17/00357/F: Redevelopment of St Stephens Tower for student accommodation with vertical extensions, demolition of ancillary structures to facilitate a new link building and landscaping.	Approved (September 2017)	Construction complete, now forms part of the baseline
36 - 42 Duke Street Norwich NR3 3AR	16/00699/F: Demolition of existing showroom and construction of 37 No. apartments	Approved (February 2017)	Construction complete, now forms part of the baseline

7. TOPICS TO BE SCOPED OUT OF THE EIA

7.1 As set out in **Section 5** of this Report, some topic areas are considered to result in non-significant impacts on the environment or are considered to be non-EIA issues. The purpose of the EIA is to assess only those matters considered to have the potential to result in significant impacts. Non-significant topic areas in respect of the Proposed Development are considered below.

7.2 Text explaining why these topics have not been included in the EIA, including the justification presented below, will be included in the EIA Methodology chapter of the ES.

Arboriculture

7.3 The Site does not have any Tree Protection Orders (TPO) within its boundary, or indeed in the close vicinity. There are TPO's in place for Duke Street, St Crispins House (0.10 miles), Thomas Tawell House, Magpie Road (0.11 miles) and Horse Chestnut (0.13 miles).

7.4 The ecology work as part of the ES will evaluate any other arboriculture related issues.

Daylight, Sunlight and Overshadowing

7.5 The site is located on a brownfield site within Norwich. Although there are a variety of land uses surrounding the Site typical of an urban centre, the majority of them comprise retail and commercial properties, noting that some residential properties are nearby. Due to the separation distance between the Proposed Development and the majority of nearby residential receptors, no significant environmental effects in relation to daylight, sunlight and overshadowing are anticipated and it is therefore proposed that a daylight and sunlight assessment is scoped out of the EIA.

7.6 Considering the scale and massing of the Proposed Development, a standalone daylight, sunlight and overshadowing technical assessment will be prepared and submitted as part of the planning application. This assessment will be carried out in accordance with BRE Guidelines and will consider the daylight and sunlight impacts of the Proposed Development. This assessment will consider the impacts on existing receptors in the area as well as future on-site residents and amenity spaces.

Wind Environment and Microclimate

7.7 The Proposed Development is an inner-city area with predominantly commercial properties and main roads in the vicinity. The maximum height and layout of the Proposed Development have been set out in Section 3 of this report, and the heights of the tallest buildings are modest in nature against the existing surrounding developments, and the existing buildings on site to be demolished.

-
- 7.8 As such, it is not anticipated that the scale of the Proposed Development will result in significant impacts with respect to wind microclimate. However, a Microclimate and Wind Assessment will be prepared as part of the planning application.

Flooding, Drainage and Water Environment

- 7.9 Having regard to the latest EA Flood Risk data, it would appear that the Site is located entirely within Flood Zone 1 and thus is considered to be at low risk of flooding from main rivers and the sea. It is however noted that the Flood Risk from Surface Water mapping shows an overland flow path across the Site, thought to be related to the Dalymond Ditch, a watercourse incorporated into the public sewer network. The significant surface water risk to the Site has been assessed by the consultant team and measures are to be included in the development to mitigate this risk and not increase flood risk. The assessment and mitigation measures are to be detailed in the Flood Risk Assessment that is to be submitted as part of this application.
- 7.10 The provision of an appropriate drainage strategy creates the opportunity to result in a net improvement within the Site in this regard, and surface water runoff will be managed via on-site attenuation features with water discharging at agreed rates. Due to the risk of aquifer contamination we do not envisage that infiltration of surface water to the ground would be viable.
- 7.11 The construction of a significant number of new residential dwellings will result in a notable increase in foul drainage flows leaving the Site, which will need to be appropriately managed. Anglian Water have confirmed their existing network will be able to take the increased flows without the need for upgrading their foul water network.
- 7.12 Consequently, it is considered that the Proposed Development will be safe, will not increase flood risk and will not detrimentally affect third parties. The development will be designed in accordance with the objectives of the Local Authority, NPPF and the Environment Agency. As such, there are no likely significant effects arising from the Proposed Development in this regard which would require further assessment through an EIA.

Ground Conditions

- 7.13 A phase one study has been undertaken on the Site to assess the existing ground conditions and the potential impact to the proposed development. The risk to groundwater is considered to be moderate as the site is underlain by White Chalk Sub-Group. Foundation design is anticipated to be that of piled foundations and as such does pose a risk to the underlying lying aquifer due to piling works that could present a preferential pathway.
- 7.14 The site represents a moderate risk to human health, controlled waters, buildings and the environment in terms of contamination, and as such further intrusive investigation works are

anticipated. Due to the Site's previous commercial uses, there is the potential for contaminants to be present and therefore a Tier II Intrusive Investigation is proposed to be carried out to assess the underlying ground conditions.

- 7.15 Once analysis results have been received following the Intrusive Investigation, a Remediation Method Statement will be prepared to address any high levels of contamination that may be present.
- 7.16 This can be in the form of removal of contaminants, treatment in situ or capping, thus severing any potential pollutant pathway.
- 7.17 On this basis, it is considered unnecessary to include it within the ES. However, the desktop study will be supported in support of the planning application.

Human Health

- 7.18 The Proposed Development does not include any land uses that would be considered to pose a significant risk to human health and the Site is not located in close proximity to any land uses that would pose a risk to human health of future residents or users of the Proposed Development.
- 7.19 Noise and air quality impacts of the Proposed Development on human health will be considered within the respective EIA chapters. The new residential accommodation and arising population will be assessed for its effects upon the need and demand for community facilities over the existing baseline position. This will include education, healthcare, open-space, sport, recreation and other community facilities.
- 7.20 With this taken into account, the Environmental Statement will include consideration and assessment of the Proposed Development on human health. It is therefore proposed to submit a standalone Health Impact Assessment with the planning application, rather than being included as a part of the EIA. The Health Impact Assessment would be prepared in accordance with the Greater Norwich Development Partnership's HIA Advice Note (2012) and Public Health England's Health Impact Assessment in Spatial Planning Guidance (2020). We would seek to agree the scope and proposed methodology with the planning and public health officers separate to the EIA procedures.

Major Accidents and Disasters

- 7.21 Regulation 4 and Schedule 4 of the EIA Regulations sets out the need to consider whether there are likely to be any significant effects on the environment or the Proposed Development arising from vulnerability of the Proposed Development to major accidents and disasters.

-
- 7.22 Major accidents and disasters are defined as “*man-made and natural events which are considered to be likely and are anticipated to result in substantial harm that the normal functioning of the project is unable to cope with/rectify*”⁸.
- 7.23 A project’s vulnerability to major accidents and natural disasters should be considered in terms of the likelihood of the project itself to cause a major man-made accident, and in terms of a project being affected by an external man-made accident or by a natural disaster. It should also be considered whether the design, construction or operation of the Proposed Development could increase impacts on nearby receptors.
- 7.24 Due to the nature and surroundings of the Proposed Development it is not considered relevant or likely to pose a risk to future site users or surrounding receptors. Any risks such as fires etc will be managed or avoided, through the regulatory framework and the control measures implemented at the local and/or national government level.
- 7.25 In some cases, this risk management process will be further supported with project-specific information and assessments which form part of the EIA and the wider planning process.
- 7.26 Consequently, it is considered that the vulnerability of the Proposed Development to major accidents and disasters will be adequately managed throughout the lifetime of the project. As such, it is considered that the vulnerability of the Proposed Development to such events, is in itself, unlikely to result in any further significant effects on existing or future human and environmental receptors.
- 7.27 Therefore, specific consideration of major accidents and natural disasters will be scoped out of the EIA as they will be appropriately managed through the regulatory framework and control measures to be implemented at the local and / or national level and are considered where relevant in the ES technical assessments, e.g. flood risk. This will be sign-posted in the introductory chapters of this ES for ease of reference.

Waste

- 7.28 In accordance with the EIA Regulations, the ES will include details of waste anticipated to be generated during the construction and operational phases. These details will consider mitigation commitments where appropriate. A summary of the waste minimisation and management methods to be applied will also be provided and will align with the details submitted with any waste management plans submitted with the application.

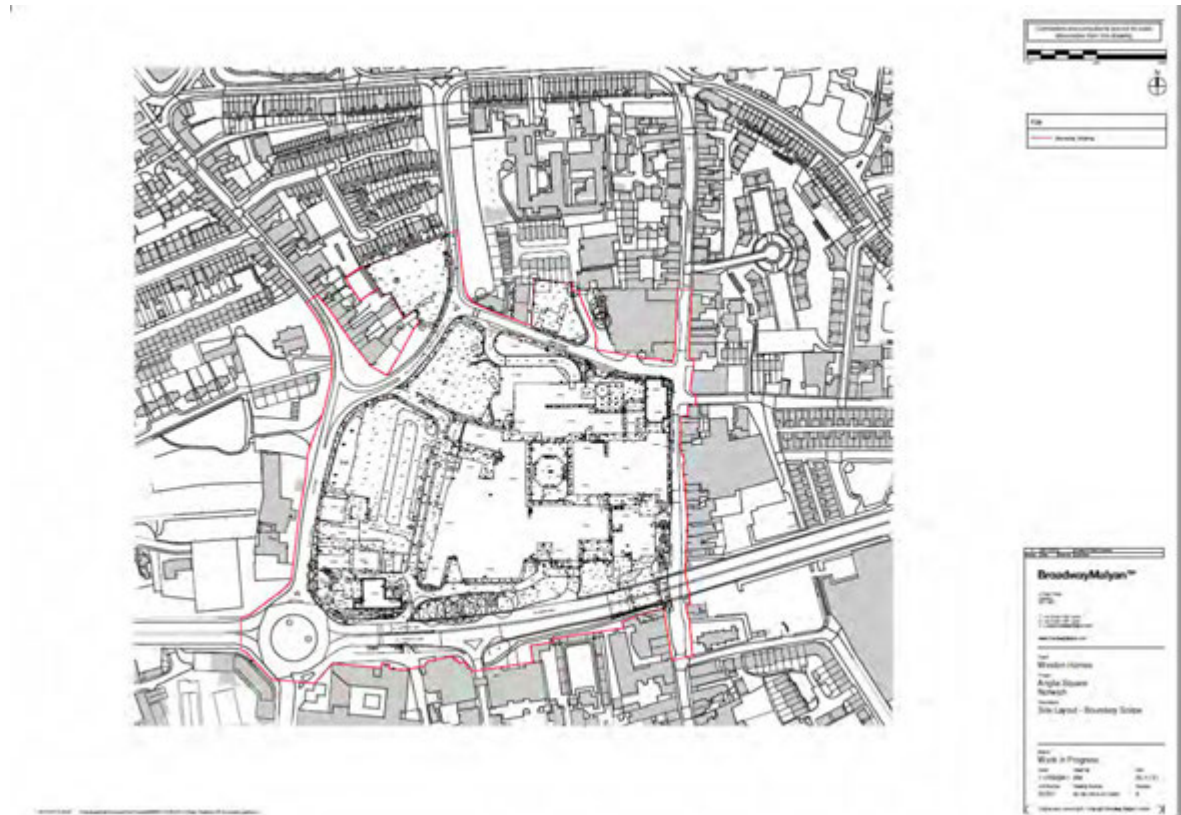
⁸ WSP, (2016); Assessing the Risks of Major Accidents and Disasters in EIA (IEMA Quality Mark Article)

-
- 7.29 It is proposed that the impacts associated with the waste generated during the construction of the Proposed Development can be effectively mitigated by the preparation and implementation of a Site Waste Management Plan (SWMP). It is proposed that the preparation of this would be controlled via an appropriately worded planning condition attached to any planning consent and this would be agreed with the local authority. The SWMP will ensure that sustainable waste management practices will be embedded into the design and construction of the Proposed Development. This would be a live document to be updated throughout the construction process.

8. CONCLUSION

- 8.1 This document has been prepared to accompany a formal request for Norwich City Council to issue a Scoping Opinion in relation to the Proposed Development at Anglia Square as identified on the Site Location Plan at **Appendix A1**.
- 8.2 Details regarding the Proposed Development and the potential nature and extent of the impacts have been provided to enable the Council to determine the scope of the EIA.
- 8.3 The guidance provided within the PPG emphasises that the focus of an Environmental Statement should be on the 'main' or 'significant' environmental effects resulting from a development. As such, an Environmental Statement should be proportionate and not be any longer than is necessary to assess properly those effects.
- 8.4 A request is made of the Local Planning Authority for their Opinion as to the proposed scope of the assessment required. This Report has sought to identify those likely significant impacts of the Proposed Development that would require assessment as part of the EIA, in addition to those matters which are deemed of limited significance and can therefore be scoped out.
- 8.5 An assessment of cumulative impacts will be considered, and we also request that the Council provide a list of cumulative developments considered appropriate for including in this EIA.
- 8.6 We look forward to receiving the Council's formal Opinion within the relevant timescales and would be pleased to discuss any matters arising with the Council in due course.

A1. SITE LOCATION PLAN



A2. ILLUSTRATIVE MASTERPLAN



A3. INDICATIVE LIST OF PLANNING APPLICATION SUPPORTING DOCUMENTS

- Application Forms and Certificates
- Scheme Plans
- Design and Access Statement
- Archaeological Field Evaluation
- Retail and/or Leisure Strategy and Impact Assessment
- Energy Strategy
- Water Strategy
- Construction & Environmental Management Plan Statement
- Sustainability Assessment
- Flood Risk Assessment & SuDS Strategy
- Landscape Design and Report Masterplan
- Arboricultural Assessment
- Ecological assessment
- Open Space Assessment
- Transport Statements, Assessments and Travel Plan
- Contamination Land Investigation
- Noise Impact Assessment
- Air Quality Assessment
- Statement of Community Involvement
- Planning Obligations Statement / Draft HoT
- Street Scenes

-
- Affordable Housing Statement
 - Social Economic and Health Impact Assessment
 - Planning Statement
 - Sunlight and Daylight Assessment
 - Townscape and Visual Impact Assessment and Verified Views
 - Microclimate and Wind Assessment



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Tracy Armitage,
Norwich City Council,
City Hall
Norwich
Norfolk NR2 1NH

Thursday, 20 January 2022

BY EMAIL

Dear Tracy,

ANGLIA SQUARE, NORWICH – EIA SCOPING NOTE

I write with reference to the forthcoming planning application for the above redevelopment. Weston Homes (the 'Applicant') intend to submit a hybrid planning application for the residential-led redevelopment of Anglia Square, Norwich. Iceni Projects, on behalf of the Applicant, requested an EIA Scoping Opinion from NCC in November 2021 in relation to the Applicant's forthcoming application. The EIA Scoping Opinion Request described the proposed development as a *detailed* planning application comprising 'redevelopment of Anglia Square to provide up to 1,100 residential dwellings and up to 6,000sqm flexible use commercial space'. A Scoping Opinion is due to be received on Monday 24 January.

In response to comments from NCC and other stakeholders during the pre-application process, the Applicant has continued to progress the development proposals and planning strategy set out in the November 2021 Scoping Opinion Request.

This letter sets out the implications of the amended description of development and planning strategy and should be read in conjunction with the November 2021 Scoping Opinion Request, which is provided as an enclosure.

Site and Proposed Development

Following discussions with NCC, the Applicant has firmed up the development proposals and is now proposing a *hybrid* application for the following:

"A hybrid (part full / part outline) planning application for the phased demolition and redevelopment of Anglia Square commercial centre, neighbouring buildings and surface carparks, to provide a residential-led mixed-use development, comprising up to 1,100 residential dwellings, (flats and houses) with ancillary amenity spaces, up to 8,000 sqm flexible use commercial space (including meanwhile uses, public conveniences, community hub), related ancillary uses, public realm (open spaces and pedestrian streets and squares), landscaping, car parking, cycle parking, servicing, access and associated works."

The proposals are hereafter referred to as the 'Proposed Development'. The key change to the description of development included in the November 2021 Scoping Opinion Request are:

- Change from detailed to hybrid planning application;
- Inclusion of a basement;
- Increase in commercial space (to include meanwhile uses, public conveniences, community) by up to 2,000sqm; and
- Increase in car parking spaces (from 440 to 500).

The indicative full/outline elements of the application are shown in Appendix A. The exact extent of these boundaries are subject to ongoing discussion with NCC and will be confirmed in the Environmental Statement.

The increase in commercial space and number of car parking spaces will facilitate scheme evolution through the pre-application process. This will be confirmed in the Environmental Statement.

There would be no changes to the building heights previously considered in the 2021 Scoping Opinion Request.

Consideration of the Revised Development Proposals

There have been no significant changes to the baseline environment from that described in the 2021 Scoping Opinion Request. Following a review of the current planning strategy and development proposals, the conclusions of the November 2021 Scoping Opinion Request and in consultation with topic specialists, the conclusions made in the November 2021 Scoping Opinion Request are considered to remain valid. No amendments are required to the assessment methodologies for Air Quality, Archaeology, Ecology, Highways, Traffic and Transport, Noise and Vibration or Socio-Economics.

Regarding the Heritage, Townscape and Visual Impact Assessment – you will note that we are in the process of agreeing a viewpoint position with NCC and Historic England, as part of ongoing discussions separate to the wider EIA scoping process. A series of either wirelines or clay models will be submitted with the hybrid application (for the outline component). Some of these views will be rendered in a subsequent Reserved Matters Application. This will be confirmed in the Environmental Statement.

Given the above, we request that NCC considers the updated description of development and planning strategy in its Scoping Opinion, due on Monday 24 January.

I would be grateful for your consideration of the enclosed scope and approach at your earliest opportunity. Should you wish to discuss further please do not hesitate to contact us.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Jaulim', with a stylized flourish extending from the bottom right.

James Jaulim
Associate, Planning

Email: JJaulim@iceniprojects.com

Mobile: 07799 369 968



RED LINE:
367 Units in phase
79 HA Units - 21% of Phase

BLUE LINE:
Total 1064 Units
697 Units in phase
30 HA Units - 4% of Phase

Key

Notes:

Rev

-

5m

10m

15m

20m

25m

↑

PLANNING

Title

MASTER PLAN - GROUND FLOOR

Site

WH179 ANGLIA SQUARE

Date

DEC 2021

Drawn

PEM

Checked

DM

Scale

1:500@A1 / 1:1000@A3

Drawing No.

WH179_10_P_MP.00

Rev

-

Weston
Homes

General Notes

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Ref:21/01738/EIA2
Date: 20th January 2022
Contact: Tracy Armitage (Senior planner)

Lorna O' Carroll
Iceni Projects

Dear Ms O'Carroll,

Town and Country Planning (Environmental Impact Assessment) Regulations 2017

Environmental Scoping response: Anglia Square: Mixed use re-development.

I refer to your emails 29th dated November 2021 and 20th January 2022 and your request for a Scoping Opinion for the above project under Regulation 15 of the Town and Country Planning (Environmental Impact Assessment) 2017.

The local planning authority has consulted statutory and non-statutory bodies. Responses have been received from:

- Historic England
- Natural England
- Environment Agency
- Norfolk County Council
- Highway Authority
- Norfolk Constabulary
- Lead Local Flood Authority
- Norwich City Council – Public Protection
- Norwich Airport

Consultation responses are appended in full to this letter.

The Request for an EIA Scoping Opinion document describes the project and section 6 sets out proposed topics to fall within the scope of the EIA. Each topic is addressed below.

Air Quality

The council's environmental protection officer has commented and her responses are attached for your consideration. In addition, you should have regard to the consultation response received from Norfolk County Council: Public Health Team.

Archaeology

Account should be taken of the Historic Environment Services consultation response and comments made about paragraph 6.1.3 of the Request for an EIA Scoping Opinion document. They comment that the Archaeology chapter of the Environmental Statement (ES) is an opportunity to further an understanding of the depth and nature of varying impacts from previous construction across the site and more accurately map the location and extent of the 1970s excavations on Botolph Street and St Georges Street. They comment that a detailed appreciation of the amount of truncation caused by the construction of Anglia Square in 1966-70 is required to inform future archaeological mitigation. As the amount and type of archaeological mitigation is likely vary across the site this could have a bearing on the programme of phased demolition and redevelopment.

Ecology

This chapter will need to address the impact of development on nationally and internationally protected nature conservation interests and geodiversity sites in the area, with particular emphasis on reducing visitor pressure on and improving water quality in Natura 2000 sites and the wider habitats of the Broads. Your attention is drawn to the emerging Greater Norwich Plan (Policy 3), the associated Sustainability Appraisal Report and evidence documents.

Heritage, Townscape and Visual Impact

Account should be taken of the Historic England consultation response. In relation to this topic the Request for an EIA Scoping Opinion document makes reference to ongoing dialogue with Historic England and Norwich city council regarding the methodology and assessment process, this approach is supported.

Highways, traffic and transport

The approach has been informed by dialogue with the Highway Authority and their response is appended to this letter. In addition you should have regard to the consultation response received from Norfolk County Council: Public Health Team in relation to the consideration of access for population groups such as vulnerable pedestrians, wheelchair users, those with sensory deprivation, and other mobility-limiting disabilities

Noise and vibration

No comment – see general comment below regarding the demolition/construction phase of development.

Socio-Economics

Account should be taken of consultation responses received from Norfolk Constabulary and Norfolk County Council: Public Health Team. The former recommends the scope of this topic is extended to include crime and disorder, this recommendation is supported by the local planning authority. Public Health recommend that the assessment includes an active consideration of the skills levels and needs of the local population, this is also endorsed.

Further topics for consideration

As part of the call-in inquiry process the Planning Inspectorate requested the submission of additional environmental information. In particular additional information was requested pertaining to demolition activities and waste. This matters along with other information requested previously should inform the ES

General comment: Given the scale, complexity and duration of demolition and construction activities it is essential there is a comprehensive description of these activities and that detailed consideration be given to the impact of this phase of development in each of the topic chapters. This is particularly the case in relation to: air quality; highways/access; noise and vibration and socio-economic. There should be sufficient information to enable a comprehensive programme of mitigation to be identified.

In relation to socio-economic impacts, the demolition/construction phase has the potential to result in a significant adverse impact over a number of years. Understanding the impact of each phase of construction on the functioning of the large district centre and the local population's access to both day-to-day shopping and public space, will be essential in identifying appropriate mitigation to limit these impacts. There is the potential for health impacts on the local population. Impacts identified in the ES should be integrated into the Health Impact Assessment.

I trust the above scoping opinion will be helpful but I can offer further assistance if you think it would be useful, through ongoing dialogue during the ES preparation. Council officers in Design and Conservation, Highways and Environmental Protection will be able to provide further guidance on the Statement.

Yours faithfully

A handwritten signature in black ink, appearing to read 'Sarah Ashurst', with a long horizontal line extending to the right.

Sarah Ashurst
Head of planning and regulatory services



Historic England

Planning
Norwich City Council
City Hall
St. Peter's Street
NORWICH
Norfolk
NR2 1NH

Direct Dial: 01223 582721

Our ref: PL00760662

Your Ref: 21/01738/EIA2

20 December 2021

Dear Sir/Madam

**ANGLIA SQUARE INC. LAND AND BUILDINGS NORTH & WEST, NORWICH
ENVIRONMENTAL ASSESSMENT (EIA) SCOPING OPINION**

Thank you for your letter consulting us about the above EIA Scoping Report. This development could, potentially, have an impact on designated heritage assets and their settings in the area around the site. In line with the advice in the National Planning Policy Framework (NPPF), we would expect an Environmental Statement to contain a thorough assessment of the likely effects which the proposed development might have upon those elements which contribute to the significance of these assets. Given the scale of the proposed development there is potential for a visual impact on heritage assets at some distance from the site as well as on substantial areas of the city centre conservation area.

We would expect an Environmental Statement to consider the potential impacts on any grade I, II* and II listed buildings, Scheduled Monuments and Registered historic parks as well as non-designated features of historic, architectural, archaeological or artistic interest, since these can also be of national importance and make an important contribution to the character and local distinctiveness of an area and its sense of place. This information is available via the local authority Historic Environment Record (www.heritagegateway.org.uk) and relevant local authority staff.

We would strongly recommend that you involve the Conservation Officer of the local planning authority and the archaeological staff at the County Council in the development of this assessment. They are best placed to advise on: local historic environment issues and priorities; how the proposal can be tailored to avoid and minimise potential adverse impacts on the historic environment; the nature and



Historic England, Brooklands, 24 Brooklands Avenue, Cambridge CB2 8BU
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Please note that Historic England operates an access to information policy.
Correspondence or information which you send us may therefore become publicly available.



design of any required mitigation measures; and opportunities for securing wider benefits for the future conservation and management of heritage assets.

As noted above, because of the nature of the proposed use and the surrounding townscape character this development could have potential to be visible across a large area and could, as a result, affect the significance of heritage assets at some distance from this site itself. We would therefore expect the assessment to clearly demonstrate that the extent of the proposed study area is of the appropriate size to ensure that all heritage assets likely to be affected by this development have been included and can be properly assessed. It is important that the assessment is designed to ensure that all impacts are fully understood. Section drawings and techniques such as photomontages are a useful part of this.

The assessment should also take account of the potential impact which associated activities (such as construction, servicing and maintenance, and associated traffic) might have upon perceptions, understanding and appreciation of the heritage assets in the area. The assessment should also consider, where appropriate, the likelihood of alterations to drainage patterns that might lead to in situ decomposition or destruction of below ground archaeological remains and deposits and can also lead to subsidence of buildings and monuments.

Given the proximity of highly graded designated heritage assets in the area which fall within the remit of Historic England and the effect of a development of such scale on the conservation area we consider there is likely to be a significant impact from the development on them. We are therefore likely to have substantive comments to make and would welcome the chance to comment on any assessment carried out and further details of the proposals.

If you have any queries about any of the above, or would like to discuss anything further, please contact me.

Yours sincerely,

David Eve
Inspector of Historic Buildings and Areas
david.eve@HistoricEngland.org.uk



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Date: 20 December 2021
Our ref: 376916
Your ref: 21/01738/EIA2



Norwich City Council

BY EMAIL ONLY

Consultations
Hornbeam House
Crewe Business Park
Electra Way
Crewe
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CW1 6GJ

T 0300 060 900

Dear Sir/Madam

Environmental Impact Assessment Scoping consultation (Regulation 15 (4) of the Town and Country Planning EIA Regulations 2017): EIA scoping opinion request for the phased demolition and redevelopment of Anglia Square commercial centre, neighbouring buildings and surface carparks, to provide a residential-led mixed-use development, comprising up to 1,100 residential dwellings, (flats and houses) with ancillary amenity spaces, up to 6,000 sq m flexible use commercial space, related ancillary uses, (including meanwhile uses, public conveniences, community hub), public realm (open spaces and pedestrian streets and squares), landscaping, car parking, cycle parking, servicing, access and associated works.

Location: Anglia Square Including Land And Buildings To The North And West Anglia Square Norwich

Thank you for seeking our advice on the scope of the Environmental Statement (ES) in the consultation dated 07 December 2021 ,received on 07 December 2021.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

A robust assessment of environmental impacts and opportunities based on relevant and up to date environmental information should be undertaken prior to a decision on whether to grant planning permission. Annex A to this letter provides Natural England's advice on the scope of the Environmental Impact Assessment (EIA) for the proposed development.

Further guidance is set out in Planning Practice Guidance on [environmental assessment, natural environment and climate change](#).

Should the proposal be amended in a way which significantly affects its impact on the natural environment then, in accordance with Section 4 of the Natural Environment and Rural Communities Act 2006, Natural England should be consulted again.

Please note that Natural England must be consulted on Environmental Statements.

Please send any new consultations or further information on this consultation to consultations@naturalengland.org.uk.

Yours faithfully

Amy Knafler
Consultations Team

Annex A – Natural England Advice on EIA Scoping

General Principles

[Schedule 4](#) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, sets out the information that should be included in an Environmental Statement (ES) to assess impacts on the natural environment. This includes:

- A description of the development – including physical characteristics and the full land use requirements of the site during construction and operational phases
- Expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation etc.) resulting from the operation of the proposed development
- An assessment of alternatives and clear reasoning as to why the preferred option has been chosen
- A description of the aspects of the environment likely to be significantly affected by the development including biodiversity (for example fauna and flora), land, including land take, soil, water, air, climate (for example greenhouse gas emissions, impacts relevant to adaptation, cultural heritage and landscape and the interrelationship between the above factors
- A description of the likely significant effects of the development on the environment – this should cover direct effects but also any indirect, secondary, cumulative, short, medium, and long term, permanent and temporary, positive, and negative effects. Effects should relate to the existence of the development, the use of natural resources (in particular land, soil, water and biodiversity) and the emissions from pollutants. This should also include a description of the forecasting methods to predict the likely effects on the environment
- A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment
- A non-technical summary of the information
- An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the applicant in compiling the required information

Further guidance is set out in Planning Practice Guidance on [environmental assessment](#) and [natural environment](#).

Cumulative and in-combination effects

The ES should fully consider the implications of the whole development proposal. This should include an assessment of all supporting infrastructure.

An impact assessment should identify, describe, and evaluate the effects that are likely to result from the project in combination with other projects and activities that are being, have been or will be carried out. The following types of projects should be included in such an assessment (subject to available information):

- a. existing completed projects;
- b. approved but uncompleted projects;
- c. ongoing activities;
- d. plans or projects for which an application has been made and which are under consideration by the consenting authorities; and
- e. plans and projects which are reasonably foreseeable, i.e. projects for which an application has not yet been submitted, but which are likely to progress before completion of the development and for which sufficient information is available to assess the likelihood of cumulative and in-combination effects.

Environmental data

Natural England is required to make available information it holds where requested to do so. National datasets held by Natural England are available at <http://www.naturalengland.org.uk/publications/data/default.aspx>.

Detailed information on the natural environment is available at www.magic.gov.uk.

Natural England's SSSI Impact Risk Zones are a GIS dataset which can be used to help identify the potential for the development to impact on a SSSI. The dataset and user guidance can be accessed from the [Natural England Open Data Geoportal](#).

Natural England does not hold local information on local sites, local landscape character, priority habitats and species or protected species. Local environmental data should be obtained from the appropriate local bodies. This may include the local environmental records centre, the local wildlife trust, local geo-conservation group or other recording society.

Biodiversity and Geodiversity

General principles

The [National Planning Policy Framework](#) (paragraphs 174-175 and 179-182) sets out how to take account of biodiversity and geodiversity interests in planning decisions. Further guidance is set out in Planning Practice Guidance on the [natural environment](#).

The potential impact of the proposal upon sites and features of nature conservation interest and opportunities for nature recovery and biodiversity net gain should be included in the assessment.

Ecological Impact Assessment (EclA) is the process of identifying, quantifying, and evaluating the potential impacts of defined actions on ecosystems or their components. EclA may be carried out as part of the EIA process or to support other forms of environmental assessment or appraisal. [Guidelines](#) have been developed by the Chartered Institute of Ecology and Environmental Management (CIEEM).

Local planning authorities have a [duty](#) to have regard to conserving biodiversity as part of their decision making. Conserving biodiversity can include habitat restoration or enhancement. Further information is available [here](#).

Designated nature conservation sites

The proposal is unlikely to adversely impact any European or internationally designated nature conservation sites (including 'habitats sites' under the NPPF) or nationally designated sites (Sites of Special Scientific Interest, National Nature Reserves or Marine Conservation Zones).

Regionally and Locally Important Sites

The ES should consider any impacts upon local wildlife and geological sites, including local nature reserves. Local Sites are identified by the local wildlife trust, geoconservation group or other local group and protected under the NPPF (paragraph 174 and 175). The ES should set out proposals for mitigation of any impacts and if appropriate, compensation measures and opportunities for enhancement and improving connectivity with wider ecological networks. Contact the relevant local body for further information.

Protected Species

The conservation of species protected under the Wildlife and Countryside Act 1981 and the Conservation of Habitats and Species Regulations 2017 is explained in Part IV and Annex A of Government Circular 06/2005 [*Biodiversity and Geological Conservation: Statutory Obligations and their Impact within the Planning System*](#).

The ES should assess the impact of all phases of the proposal on protected species (including, for example, great crested newts, reptiles, birds, water voles, badgers and bats). Natural England does not hold comprehensive information regarding the locations of species protected by law. Records of protected species should be obtained from appropriate local biological record centres, nature conservation organisations and local groups. Consideration should be given to the wider context of the site, for example in terms of habitat linkages and protected species populations in the wider area.

The area likely to be affected by the development should be thoroughly surveyed by competent ecologists at appropriate times of year for relevant species and the survey results, impact assessments and appropriate accompanying mitigation strategies included as part of the ES. Surveys should always be carried out in optimal survey time periods and to current guidance by suitably qualified and, where necessary, licensed, consultants.

Natural England has adopted [standing advice](#) for protected species, which includes guidance on survey and mitigation measures. A separate protected species licence from Natural England or Defra may also be required.

District Level Licensing for Great Crested Newts

District level licensing (DLL) is a type of strategic mitigation licence for great crested newts (GCN) granted in certain areas at a local authority or wider scale. A [DLL scheme for GCN](#) may be in place at the location of the development site. If a DLL scheme is in place, developers can make a financial contribution to strategic, off-site habitat compensation instead of applying for a separate licence or carrying out individual detailed surveys. By demonstrating that DLL will be used, impacts on GCN can be scoped out of detailed assessment in the Environmental Statement.

Priority Habitats and Species

Priority Habitats and Species are of particular importance for nature conservation and included in the England Biodiversity List published under section 41 of the Natural Environment and Rural Communities Act 2006. Most priority habitats will be mapped either as Sites of Special Scientific Interest, on the Magic website or as Local Wildlife Sites. Lists of priority habitats and species can be found [here](#). Natural England does not routinely hold species data. Such data should be collected when impacts on priority habitats or species are considered likely.

Consideration should also be given to the potential environmental value of brownfield sites, often found in urban areas and former industrial land. Sites can be checked against the (draft) national Open Mosaic Habitat (OMH) inventory published by Natural England and freely available to [download](#). Further information is also available [here](#).

An appropriate level habitat survey should be carried out on the site, to identify any important habitats present. In addition, ornithological, botanical, and invertebrate surveys should be carried out at appropriate times in the year, to establish whether any scarce or priority species are present.

The Environmental Statement should include details of:

- Any historical data for the site affected by the proposal (e.g. from previous surveys)
- Additional surveys carried out as part of this proposal

- The habitats and species present
- The status of these habitats and species (e.g. whether priority species or habitat)
- The direct and indirect effects of the development upon those habitats and species
- Full details of any mitigation or compensation measures
- Opportunities for biodiversity net gain or other environmental enhancement

Ancient Woodland, ancient and veteran trees

The ES should assess the impacts of the proposal on any ancient woodland, ancient and veteran trees, and the scope to avoid and mitigate for adverse impacts. It should also consider opportunities for enhancement.

Natural England maintains the Ancient Woodland [Inventory](#) which can help identify ancient woodland. The [wood pasture and parkland inventory](#) sets out information on wood pasture and parkland.

The [ancient tree inventory](#) provides information on the location of ancient and veteran trees.

Natural England and the Forestry Commission have prepared [standing advice](#) on ancient woodland, ancient and veteran trees.

Biodiversity net gain

Paragraph 174 of the NPPF states that decisions should contribute to and enhance the natural and local environment by minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

Biodiversity Net Gain is additional to statutory requirements relating to designated nature conservation sites and protected species.

The ES should use an appropriate biodiversity metric such as [Biodiversity Metric 3.0](#) together with ecological advice to calculate the change in biodiversity resulting from proposed development and demonstrate how proposals can achieve a net gain.

The metric should be used to:

- assess or audit the biodiversity unit value of land within the application area
- calculate the losses and gains in biodiversity unit value resulting from proposed development
- demonstrate that the required percentage biodiversity net gain will be achieved

Biodiversity Net Gain outcomes can be achieved on site, off-site or through a combination of both. On-site provision should be considered first. Delivery should create or enhance habitats of equal or higher value. When delivering net gain, opportunities should be sought to link delivery to relevant plans or strategies e.g. Green Infrastructure Strategies or Local Nature Recovery Strategies.

Opportunities for wider environmental gains should also be considered.

Landscape

Landscape and visual impacts

The environmental assessment should refer to the relevant [National Character Areas](#). Character area profiles set out descriptions of each landscape area and statements of environmental opportunity.

The ES should include a full assessment of the potential impacts of the development on local landscape character using [landscape assessment methodologies](#). We encourage the use of Landscape Character Assessment (LCA), based on the good practice guidelines produced jointly by

the Landscape Institute and Institute of Environmental Assessment in 2013. LCA provides a sound basis for guiding, informing, and understanding the ability of any location to accommodate change and to make positive proposals for conserving, enhancing or regenerating character.

A landscape and visual impact assessment should also be carried out for the proposed development and surrounding area. Natural England recommends use of the methodology set out in *Guidelines for Landscape and Visual Impact Assessment 2013* ((3rd edition) produced by the Landscape Institute and the Institute of Environmental Assessment and Management. For National Parks and AONBs, we advise that the assessment also includes effects on the 'special qualities' of the designated landscape, as set out in the statutory management plan for the area. These identify the particular landscape and related characteristics which underpin the natural beauty of the area and its designation status.

The assessment should also include the cumulative effect of the development with other relevant existing or proposed developments in the area. This should include an assessment of the impacts of other proposals currently at scoping stage.

To ensure high quality development that responds to and enhances local landscape character and distinctiveness, the siting and design of the proposed development should reflect local characteristics and, wherever possible, use local materials. Account should be taken of local design policies, design codes and guides as well as guidance in the [National Design Guide](#) and [National Model Design Code](#). The ES should set out the measures to be taken to ensure the development will deliver high standards of design and green infrastructure. It should also set out detail of layout alternatives, where appropriate, with a justification of the selected option in terms of landscape impact and benefit.

Heritage Landscapes

The ES should include an assessment of the impacts on any land in the area affected by the development which qualifies for conditional exemption from capital taxes on the grounds of outstanding scenic, scientific, or historic interest. An up-to-date list is available at www.hmrc.gov.uk/heritage/lbsearch.htm.

Connecting People with nature

The ES should consider potential impacts on access land, common land, public rights of way and, where appropriate, the England Coast Path and coastal access routes and coastal margin in the vicinity of the development, in line with NPPF paragraph 100. It should assess the scope to mitigate for any adverse impacts. Rights of Way Improvement Plans (ROWIP) can be used to identify public rights of way within or adjacent to the proposed site that should be maintained or enhanced.

Measures to help people to better access the countryside for quiet enjoyment and opportunities to connect with nature should be considered. Such measures could include reinstating existing footpaths or the creation of new footpaths, cycleways, and bridleways. Links to other green networks and, where appropriate, urban fringe areas should also be explored to help promote the creation of wider green infrastructure. Access to nature within the development site should also be considered, including the role that natural links have in connecting habitats and providing potential pathways for movements of species.

Relevant aspects of local authority green infrastructure strategies should be incorporated where appropriate.

Soils and Agricultural Land Quality

Soils are a valuable, finite natural resource and should also be considered for the ecosystem services they provide, including for food production, water storage and flood mitigation, as a carbon

store, reservoir of biodiversity and buffer against pollution. It is therefore important that the soil resources are protected and sustainably managed. Impacts from the development on soils and best and most versatile (BMV) agricultural land should be considered in line with paragraphs 174 and 175 of the NPPF. Further guidance is set out in the Natural England [Guide to assessing development proposals on agricultural land](#).

As set out in paragraph 211 of the NPPF, new sites or extensions to sites for peat extraction should not be granted planning permission.

The following issues should be considered and, where appropriate, included as part of the Environmental Statement (ES):

- The degree to which soils would be disturbed or damaged as part of the development
- The extent to which agricultural land would be disturbed or lost as part of this development, including whether any best and most versatile (BMV) agricultural land would be impacted.

This may require a detailed Agricultural Land Classification (ALC) survey if one is not already available. For information on the availability of existing ALC information see www.magic.gov.uk.

- Where an ALC and soil survey of the land is required, this should normally be at a detailed level, e.g. one auger boring per hectare, (or more detailed for a small site) supported by pits dug in each main soil type to confirm the physical characteristics of the full depth of the soil resource, i.e. 1.2 metres. The survey data can inform suitable soil handling methods and appropriate reuse of the soil resource where required (e.g. agricultural reinstatement, habitat creation, landscaping, allotments and public open space).
- The ES should set out details of how any adverse impacts on BMV agricultural land can be minimised through site design/masterplan.
- The ES should set out details of how any adverse impacts on soils can be avoided or minimised and demonstrate how soils will be sustainably used and managed, including consideration in site design and master planning, and areas for green infrastructure or biodiversity net gain. The aim will be to minimise soil handling and maximise the sustainable use and management of the available soil to achieve successful after-uses and minimise off-site impacts.

Further information is available in the [Defra Construction Code of Practice for the Sustainable Use of Soil on Development Sites](#) and

The British Society of Soil Science Guidance Note [Benefitting from Soil Management in Development and Construction](#).

Air Quality

Air quality in the UK has improved over recent decades but air pollution remains a significant issue. For example, approximately 85% of protected nature conservation sites are currently in exceedance of nitrogen levels where harm is expected (critical load) and approximately 87% of sites exceed the level of ammonia where harm is expected for lower plants (critical level of 1µg) ^[1]. A priority action in the England Biodiversity Strategy is to reduce air pollution impacts on biodiversity. The Government's Clean Air Strategy also has a number of targets to reduce emissions including to reduce damaging deposition of reactive forms of nitrogen by 17% over England's protected priority sensitive habitats by 2030, to reduce emissions of ammonia against the 2005 baseline by 16% by 2030 and to reduce emissions of NO_x and SO₂ against a 2005 baseline of 73% and 88%

^[1] [Report: Trends Report 2020: Trends in critical load and critical level exceedances in the UK - Defra, UK](#)

respectively by 2030. Shared Nitrogen Action Plans (SNAPs) have also been identified as a tool to reduce environmental damage from air pollution.

The planning system plays a key role in determining the location of developments which may give rise to pollution, either directly, or from traffic generation, and hence planning decisions can have a significant impact on the quality of air, water and land. The ES should take account of the risks of air pollution and how these can be managed or reduced. This should include taking account of any strategic solutions or SNAPs, which may be being developed or implemented to mitigate the impacts on air quality. Further information on air pollution impacts and the sensitivity of different habitats/designated sites can be found on the Air Pollution Information System (www.apis.ac.uk).

Information on air pollution modelling, screening and assessment can be found on the following websites:

- SCAIL Combustion and SCAIL Agriculture - <http://www.scail.ceh.ac.uk/>
- Ammonia assessment for agricultural development <https://www.gov.uk/guidance/intensive-farming-risk-assessment-for-your-environmental-permit>
- Environment Agency Screening Tool for industrial emissions <https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit>
- Defra Local Air Quality Management Area Tool (Industrial Emission Screening Tool) – England <http://www.airqualityengland.co.uk/laqm>

Water Quality

The planning system plays a key role in determining the location of developments which may give rise to water pollution, and hence planning decisions can have a significant impact on water quality, and land. The assessment should take account of the risks of water pollution and how these can be managed or reduced. A number of water dependent protected nature conservation sites have been identified as failing condition due to elevated nutrient levels and nutrient neutrality is consequently required to enable development to proceed without causing further damage to these sites. The ES needs to take account of any strategic solutions for nutrient neutrality or Diffuse Water Pollution Plans, which may be being developed or implemented to mitigate and address the impacts of elevated nutrient levels. Further information can be obtained from the Local Planning Authority.

Climate Change

The ES should identify how the development affects the ability of the natural environment (including habitats, species, and natural processes) to adapt to climate change, including its ability to provide adaptation for people. This should include impacts on the vulnerability or resilience of a natural feature (i.e. what's already there and affected) as well as impacts on how the environment can accommodate change for both nature and people, for example whether the development affects species ability to move and adapt. Nature-based solutions, such as providing green infrastructure on-site and in the surrounding area (e.g. to adapt to flooding, drought and heatwave events), habitat creation and peatland restoration, should be considered. The ES should set out the measures that will be adopted to address impacts.

Further information is available from the [Committee on Climate Change's \(CCC\) Independent Assessment of UK Climate Risk](#), the [National Adaptation Programme \(NAP\)](#), the [Climate Change Impacts Report Cards](#) (biodiversity, infrastructure, water etc.) and the [UKCP18 climate projections](#).

The Natural England and RSPB [Climate Change Adaptation Manual](#) (2020) provides extensive information on climate change impacts and adaptation for the natural environment and adaptation focussed nature-based solutions for people. It includes the Landscape Scale Climate Change Assessment Method that can help assess impacts and vulnerabilities on natural environment features and identify adaptation actions. Natural England's [Nature Networks Evidence Handbook](#)

(2020) also provides extensive information on planning and delivering nature networks for people and biodiversity.

The ES should also identify how the development impacts the natural environment's ability to store and sequester greenhouse gases, in relation to climate change mitigation and the natural environment's contribution to achieving net zero by 2050. Natural England's [Carbon Storage and Sequestration by Habitat report](#) (2021) and the British Ecological Society's [nature-based solutions report](#) (2021) provide further information.

Contribution to local environmental initiatives and priorities

The ES should consider the contribution the development could make to relevant local environmental initiatives and priorities to enhance the environmental quality of the development and deliver wider environmental gains. This should include considering proposals set out in relevant local strategies or supplementary planning documents including landscape strategies, green infrastructure strategies, tree and woodland strategies, biodiversity strategies or biodiversity opportunity areas.



Norwich City Council
Development Control
City Hall St. Peters Street
Norwich
Norfolk
NR2 1NH

Our ref: AE/2021/126737/01-L01
Your ref: 21/01738/EIA2
Date: 24 December 2021

Dear Sir/Madam

EIA SCOPING OPINION REQUEST FOR FOR THE PHASED DEMOLITION AND REDEVELOPMENT OF ANGLIA SQUARE COMMERCIAL CENTRE, NEIGHBOURING BUILDINGS AND SURFACE CARPARKS, TO PROVIDE A RESIDENTIAL-LED MIXED-USE DEVELOPMENT, COMPRISING UP TO 1,100 RESIDENTIAL DWELLINGS, (FLATS AND HOUSES) WITH ANCILLARY AMENITY SPACES, UP TO 6,000 SQ M FLEXIBLE USE COMMERCIAL SPACE, RELATED ANCILLARY USES, (INCLUDING MEANWHILE USES, PUBLIC CONVENIENCES, COMMUNITY HUB), PUBLIC REALM (OPEN SPACES AND PEDESTRIAN STREETS AND SQUARES), LANDSCAPING, CAR PARKING, CYCLE PARKING, SERVICING, ACCESS AND ASSOCIATED WORKS.

ANGLIA SQUARE INCLUDING LAND AND BUILDINGS TO THE NORTH AND WEST ANGLIA SQUARE, NORWICH

Thank you for your consultation dated 7 December 2021. We have reviewed the EIA scoping document as submitted. There are few constraints within our remit so our comments are limited at this stage. We are however including information on Groundwater and Contaminated Land.

Groundwater and Contaminated Land

Groundwater is particularly sensitive in this location because the proposed development site is within source protection zone 2. We agree that further contaminated land assessments should be provided given the previous commercial uses of the site. These must satisfactorily demonstrate to the local planning authority that the risks to controlled waters have been fully understood and can be addressed through appropriate measures.

We trust this advice is useful.

L. Edson

Yours faithfully

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Cont/d..

L. Robson

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Response to Anglia Square EIA scoping request

Norfolk County Council Public Health Response

21 December 2021

General

This response is based upon the request dated November 2021 and assumes a redevelopment comprising up to **1,100 homes** of mixed property type and **6,000 sq m of variously used land** (retail, green space, ancillary etc.). It also assumed that (pp.6-7) there will be phased demolition, no structure greater than eight storeys (similar to current buildings), up to 440 car parking spaces and up to 2,000 cycle parking spaces. If these matters change over time views may be revised.

Comments are made on content and extent of the report and do not necessarily indicate any preferred outcome nor design options.

It is also noted that (p.41, s.7.20) that a separate **Health Impact Assessment** will be submitted as part of the planning application. As referenced, this should follow the most up to date guidance on composition and methodology of HIAs and incorporate all factors from various submissions (as well as any other relevant considerations) which may impact human health. These impacts may be positive, neutral or negative and whilst welcoming a comprehensive HIA, would at this early stage suggest there should be a rigorous focus upon impacts upon those with already worse health outcomes and broader population inequalities. Nothing said in response to this EIA scoping request should preclude future comments or suggestions on any HIA submitted in due course.

Scoped out topics

It is noted from a human health perspective that “Daylight, sunlight & overshadowing” and “Heath” are proposed to be scoped out (p.10, s.4.7). These are further investigated in Chapter 7 (p.39 onwards).

Daylight etc.

Even though there are no plans to build to a greater height than currently in existence, the changing nature of the development and location of residential and retail properties may affect the relationship between light and current use. It is noted that a separate report on this will be produced and therefore it is agreed this need not form part of the EIA. This should however be a factor to be considered within the wider HIA (as previously noted) as it may impact human health.

Health

As previously agreed above a wider HIA is to be welcomed. Consequently, this need not be scoped in at EIA stage. Whilst access to healthcare services is just one of many factors impacting human health, it is noted that impacts on this are discussed in s.6.75 (and elsewhere) within the socio-economic heading. On this basis it appears sensible to scope out other health factors within the EIA framework.

Methodology

The process to identify those at risk or indeed benefit alongside the scales to assess impact and effect all appear sensible and capable of considering the variety of factors under consideration. As previously stated this is a view about the approach and scope rather than individual outcomes.

Topics

Air Quality

- Consideration of impacts during demolition/construction could be considered (if not already explicitly scoped in)
- S.6.3 could also include exposure for individuals employed on the site as well the residential population given there may be likely longer-term exposure during a working day and need for consideration how to avoid or mitigate this
- S.6.6 makes reference to the 2010 Statutory Air Quality Strategy. Given the time frame of the process, construction and use of the site, it is suggested that scope ought to consider implications of the Environment Act 2021 and the direction of travel for new air quality targets. Whilst these are currently unknown and not yet law, it is likely that new targets will be in force in the coming year to 18 months and that these may include not just targets on concentration but also proportions of the population likely to be exposed

Highways etc.

- Provision of car parking and reduced retail parking should consider not only impacts on traffic flows but also any consequences on accessibility for sections of the population, such as those with a disability, who are less able to make use of active/public transport options
- Similar considerations could be scoped into s.6.51 around active travel more generally and the needs of populations groups such as vulnerable pedestrians, wheelchair users, those with sensory deprivation, and other mobility-limiting disabilities.

Socio-economics

- It is noted that many of the key aspects have been scoped in and/or will form part of a subsequent HIA
- S.6.74 could also include an active consideration of the skills levels and needs of the local population in poor employment or not in the jobs market to enable them to better access jobs which may arise from the various demolition, construction, and operational opportunities of the development. Without targeted support there is a likelihood that local populations may miss out on such opportunities
- S.6.77 – when considering access to services within a 1,600m radius consideration could be given to both the needs of the less active and also physical/psychological barriers reducing access such as busy roads, feelings of safety, lighting etc.

Norfolk County Council Comments on:

Anglia Square Environmental Impact Assessment Consultation

December 2021

1. Preface

- 1.1. The officer-level comments are made on a without prejudice basis and the County Council reserves the right to make further comments on the Environmental Impact Assessment (EIA) and any subsequent planning application/s on the above site.
- 1.2. The schedule provides a series of comments on the EIA.

2. Introductory Comments

- 2.1. The County Council welcomes the opportunity to comment on the above EIA. The County Council has not commented on all the matters set out in the consultation document, but has instead concentrated on responding to the key strategic issues affecting the Authority in respect of its:
 - Infrastructure delivery role
 - Minerals and Waste planning
 - Historic Environment Service

3. Community – Focus on supporting sustainable development

- 3.1 The County Council welcomes the inclusion of enhancement of community facilities/ services and the specific reference to education. Both education and library contributions were previously identified as essential policy requirements and we the County Council would expect funding for any additional places or services to be provided funded through the Community Infrastructure Levy (CIL).

The County Council also welcomes the socio-economic impacts that are factored into the EIA, particularly in relation to jobs and education.
- 3.2 Should you have any queries with the above comments please call or email Naomi Chamberlain (Senior Planner) on 01603 638422 or naomi.chamberlain@norfolk.gov.uk

4. Public Health

- 4.1 Please see attached comments
- 4.2 Should you have any queries with the above comments please call or email Phil Shreeve (Advanced Public Health Officer) on 01603 638365 or phil.shreeve@norfolk.gov.uk

5. Minerals and Waste

- 5.1 The land included in the EIA Scoping opinion request is underlain by a Mineral Safeguarding Area (sand and gravel). However, it is considered that prior extraction of minerals would not be appropriate for the redevelopment of Anglia Square and the surrounding area within the red line due to:
- the constrained site location within an urban area, and
 - the likelihood that any mineral resources underlying the site would have been removed or sterilised by the original Anglia Square development.

In addition, it is considered that the redevelopment of Anglia Square and the surrounding area would be likely to produce a substantial amount of secondary aggregate from the demolition of the existing buildings, which should be reused within the redevelopment if possible. Any reuse of secondary aggregate should be documented within the Site Waste Management Plan, including estimated tonnages.

- 5.2 Should you have any queries with the above comments please call or email Richard Drake (Senior Planner) on 01603 222349 or richard.drake@norfolk.gov.uk

6.1 Historic Environment Service

- 6.2 The County Council is pleased below-ground archaeology has been scoped into the EIA.

6.3

As outlined in the scoping request document Anglia Square is located in an area of high archaeological potential and sensitivity. Below ground archaeological remains are highly likely to include;

- Remains relating to the Late Anglo-Saxon defences
- Extensive evidence of settlement activity of Late Anglo-Saxon, medieval and post medieval date.
- The remains of the Churches St Olave and St Botolph and their associated burial grounds

If/when redevelopment of Anglia Square is consented the level of mitigation required will result in the largest urban archaeological projects seen in the east of England for many years.

6.4

The County Council regard the below statement within paragraph 6.1.3 of the scoping request document as a vague generalisation not backed by detailed evidence:

'Past post-depositional impacts as a result of previous nineteenth and twentieth century developments are considered to have had a severe widespread negative archaeological impact'

Whilst some elements of the 1966-70 Anglia Square development, such as the two partly subterranean former nightclubs, have caused severe truncation of archaeological features and deposits the impact of the substructure of the main

1966-70 Anglia Square buildings remains at best only partly quantified. This issue was raised in relation to a previous application in 2018. Construction plans from the 1966-70 build and other sources were consulted and it was concluded that the depth and nature of impacts from previous construction differed significantly across the site.

No detailed deposit model was produced, and the information was not presented in detailed graphical form that would inform future archaeological mitigation.

The Environmental Statement chapter is an opportunity to address the above issue and more accurately map the location and extent of the 1970s excavations on Botolph Street and St Georges Street.

In order to have anything like a realistic programme of phased demolition and redevelopment as the amount and type of archaeological mitigation will vary between phases a detailed appreciation of the amount of truncation caused by the construction of Anglia Square in 1966-70 is required.

- 6.5 Should you have any queries with the above comments please call or email John Percival (Historic Environment Senior Officer) on 01603 869275 or john.percival@norfolk.gov.uk

Planning Officer
Norwich City Council
City Hall
Norwich
Norfolk
NR2 1NHNCC contact number: 0344 800 8020
Text Relay - 18001 0344 800 8020Your Ref: 21/01738/EIA2
Date: 14 January 2022My Ref: 9/4/21/1738
Tel No.: 01603 638009
Email: liz.poole@norfolk.gov.uk

Dear Tracy,

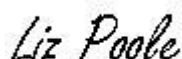
EIA scoping opinion request for for the phased demolition and redevelopment of Anglia Square commercial centre, neighbouring buildings and surface carparks, to provide a residential-led mixed-use development, comprising up to 1,100 residential dwellings, (flats and houses) with ancillary amenity spaces, up to 6,000 sq m flexible use commercial space, related ancillary uses, (including meanwhile uses, public conveniences, community hub), public realm (open spaces and pedestrian streets and squares), landscaping, car parking, cycle parking, servicing, access and associated works. Anglia Square Including Land And Buildings To The North and West, Anglia Square, Norwich.

Thank you for your consultation regarding the scoping request.

The highway authority will require a full Transport Assessment and Travel Plan, the details of which should be scoped with the highway authority in advance of any application being submitted.

Should you have any queries regarding the above, please do not hesitate to contact me.

Yours sincerely

Major and Estate Development Team Manager
for Executive Director for Community and Environmental ServicesPlease be aware it is the applicants responsibility to clarify the boundary with the public highway. Private structures such as fences or walls will not be permitted on highway land. The highway boundary may not match the applicants title plan. Please contact the highway research team at highway.boundaries@norfolk.gov.uk for further details.



NORFOLK
CONSTABULARY
Our Priority is You

Planning Services
Norwich City Council
Via email

Norfolk Constabulary

Norwich Police Station
Bethel Street
Norwich
Norfolk
NR2 1NN

Your Ref: 21/01738/EIA2

Date: 10th December 2021

Tel: 101

Mobile: 07810813530

Email: penny.turner@norfolk.pnn.police.uk

www.norfolk.police.uk

Non-Emergency Tel: 101

Dear Planning,

Proposal: EIA scoping opinion request for the phased demolition and redevelopment of Anglia Square commercial centre, neighbouring buildings and surface car parks, to provide a residential-led mixed-use development, comprising up to 1,100 residential dwellings, (flats and houses) with ancillary amenity spaces, up to 6,000 sq m flexible use commercial space, related ancillary uses, (including meanwhile uses, public conveniences, community hub), public realm (open spaces and pedestrian streets and squares), landscaping, car parking, cycle parking, servicing, access and associated works. Location: Anglia Square Including Land and Buildings to The North and West Anglia Square Norwich

Thank you for inviting comment on the above EIA scoping opinion request. As a Designing Out Crime Officer (DOCO) my role within the planning process is to give advice on behalf of Norfolk Constabulary in relation to the layout, environmental design and the physical security of buildings, based upon the established principles of '**Designing out Crime**'. Recommendations also take into account local and national crime trends and the risks associated with specific building types.

Please consider the following comments in parallel to proactive policing activity/initiatives within Anglia Square development:

- The adoption of CPTED¹ principles in building design and development across Anglia Square site. This would help protect new dwellings, existing buildings, commercial developments from loss.
- Access to local amenity areas must be balanced by the potential for the criminal to use the same highways & byways to commit crime and escape detection. Unnecessary pedestrian and vehicular permeability should be reconsidered or removed.
- Communal areas (*including public open spaces*) & leisure facilities should be assessed to prevent the occurrence of anti-social behaviour.
- Secure boundary treatments should be considered proportionate to criminal statistics and not solely aesthetic considerations
- Suitable security lighting provides safety for occupiers and visitors, reduces the fear of crime² and is a significant deterrent for the criminal, who seeks to avoid being seen.
- Ongoing vigilance, effective natural surveillance and speedy reporting of emergency, urgent or suspicious activity will benefit all who live, work and visit Anglia Square.

¹ Crime Prevention Through Environmental Design

² Secured by Design, New Homes 2019

I would like to take this opportunity on behalf of Norfolk Constabulary to refer to Secured by Design (SBD). This is a police initiative based upon the principles of "designing out crime" and incorporates the latest security standards to address emerging criminal methods of attack.

Secured by Design aims to achieve a good standard of security for buildings and the immediate environment. It attempts to deter criminal and anti-social behaviour within developments by introducing appropriate design features that enable Natural Surveillance and create a sense of place where residents, businesses and legitimate business users are able to go about their daily routine, without undue fear of crime or insecurity. I strongly encourage that SBD Certification should be sought for each stage of the development. Secured by Design Commercial 2015 and Homes 2019 Design Guides and application forms can be found on the website www.securedbydesign.com.

The provision for car parking should consider the design criteria laid down in the police owned 'ParkMark' initiative to ensure the safety of people and vehicles (further information can be found at www.parkmark.co.uk); and with the importance placed on cycles in preference and/or reduced car reliance, it is paramount that placement of the cycle parking spaces (x 2000) is securely thought out, providing natural surveillance for guardianship as well as quality parking structures. For the residents' secure storage facilities should be provided with restricted access control. There is secure cycle information within the SBD guides.

Whilst I am unable to make specific comments in relation to 'designing out crime' at this stage I would like to note the following:

6.71 The provision of up to 1,100 residential units will lead to an increase in the local population. The additional population arising from the residential elements of the proposal will result in an increased demand for social and community facilities including: education, healthcare, open-space, sport and recreation, libraries, places of worship, community halls and leisure facilities.

3.3 The Proposed Development will also incorporate a range of landscape features, including planting, green and blue infrastructure and areas of public realm. The design of the public realm areas will be influenced by the existing streetscape and surrounding area, and will encourage pedestrian and cycle movements through the Site.

- The passive surveillance of the street by residents within their homes and high levels of street activity are desirable as they have both been proven to influence the behaviour of the criminal, but they are no guarantee of lower crime, which evidence proves is achieved primarily through the control and limitation of permeability. Permeability is perhaps the greatest threat to a site, as it has proven capacity to facilitate both anti-social behaviour and act as a classic attack and escape route for criminals. Whilst it is accepted that through routes will be included within development layouts, the designer must ensure that the security of the development is not compromised by excessive permeability, for instance by allowing the criminal legitimate access to the rear or side boundaries of dwellings, or by providing too many or unnecessary segregated footpaths (Secured By Design Homes 2019, Section 8.3).
- Secured by Design recommends that routes for pedestrians, cyclists and vehicles should be integrated to provide a network of supervised areas to reduce crime and anti-social behaviour.

Public Spaces: Depending on the use of space and commercial outlets involved, the development could attract a terror threat and the applicant may have to produce a Counter Terrorism Response plan to ensure an adequate response to a CT Attack.

The use of the open space and vehicular access to it, may need to consider anti-terrorist issues - vehicles should not be permitted where people are able to gather. The applicant may need to

consider the use of Hostile Vehicle Mitigation (HVM), particularly on approaches where a vehicle may be able to build up speed due to the straight run up, and the CTSA will want as early consultation as possible.

The Government has reiterated that designing out crime and designing in community safety should be central to the planning and delivery of new development. Specifically the Planning Practice Guidance on Design reminds practitioners that local authorities are duty bound to adhere to Section 17 of the Crime and Disorder Act 1998 and exercise their functions with due regard to their likely effect on crime and disorder, and do all that they reasonably can to prevent crime and disorder

The National Planning Policy Framework July 2021 requires that:

“Planning policies and decisions should aim to achieve healthy, inclusive and safe places which... are safe and accessible so that crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion....

Although Norfolk is considered a low crime area, we are able to offer help and advice on reducing crime still further with the intention of creating safe environments. I would recommend early consultation with the Police Designing Out Crime Officer to assist with designing in good security processes with developers and builders at the outset, to provide a future development that reduces the opportunity for crime and the fear of crime.

Yours sincerely

Penny Turner

Penny Turner
Designing Out Crime Officer
Norfolk Constabulary



From: [Penny Turner](#)
To: [Substation](#)
Subject: PAC Anglia Square Including Land And Buildings To The North And West 21/01/2018/182
Date: 21 December 2021 07:05:20

Good morning Planning,

I have already submitted my DOCD response but also wish to pass on the below comments from our Police Traffic Management Officer - for inclusion within Norfolk Constabulary's input on the EIA Scoping request:

This is clearly a huge, exciting and significant project in the centre of Norwich City and clearly issues and suggestions from all parties need to be fully considered, consulted and developed with all parties being involved.

From a Traffic Management point of view, being an 11 year project, it has to be right and although very early days, I do have some observations to make.

1. We need to encourage the use of more sustainable modes of travel for this development going forward as outlined in the plan. With a proposed 1100 residential dwellings brings with it the associated traffic not only for the residential units but also the commercial vehicles which will be servicing them and the retail commercial aspects of the development. Serious consideration will need to ensure the correct sustainable (non-motorised) transport infrastructure is in place (electric charging units/hubs, secure cycle parking) for example. Not forgetting that Diesel/Petrol vehicles by 2033 will have hopefully been significantly phased out.
2. The development would be on the outskirts of Norwich City which has excellent transport links. We need to ensure there is a significant reduction in car parking on the site and maybe develop it to encourage more residential units that do not require a large amount of car parking space which leads on from my sustainable transport comments above.
3. The report states "The Anglia Square centre currently has a total of 1,172 public car parking spaces (721 located in the multi-storey car parks and 451 across the multiple surface car parks). The proposal therefore result in a reduction of circa 800 parking spaces, so resultingly the proposed development is anticipated to have a significant reduction in vehicular traffic associated with the site".
Although I don't doubt the correctness of this statement in respect of the number of spaces currently available, I would query whether or not they are currently all used to good effect and whether or not there will in fact be a reduction of circa 800 spaces? If this is the case it must be welcomed.
4. The site would need to include all sustainable travel options for the site including travel by bus, train, foot and cycle, as its proximity to local amenities and facilities benefits the user of individual non-motorised transport and encourage the use of more sustainable transport options. This will include shared use foot/cycleways, toucan crossings and priority junctions for cycles etc.

Kind regards,

Jack

Mr. Jack Adewu,
Force Traffic Management Officer,
Norfolk Constabulary,
Roads and Armed Policing Team,
Room 2.1.3,
Police OCC,
Falconers Chase,
WYMONDHAM,
Norfolk,
NR18 0MW
Tel: 01553 424825
Mob: 07917 068 925

Kind regards, Penny

Penny Turner

Designing Out Crime Officer
Norfolk Police
Community Safety Neighbourhood Policing Team
Mobile: 07810813530
Email: penny.turner@norfolk.pnn.police.uk

This e-mail carries a disclaimer

Go here to view [Norfolk Constabulary Disclaimer](#)

Norwich - Anglia Square including land and buildings to the north and west of Anglia Square - EIA scoping opinion request for the phased demolition and redevelopment and residential-led mixed-use development, including up to 1,100 residential dwellings, (flats and houses) with ancillary amenity spaces, up to 6,000 sq m flexible use commercial space, related ancillary uses, and associated works

I refer to your request for comment on the above EIA scoping request (Ref no 21/01738/EIA2) received by Norfolk Constabulary.

Norfolk Constabulary have asked that NPS make the following comment, on their behalf, in response to the consultation regarding key socio-economic considerations that should be included in the EIA so that the assessment properly considers the impact on policing resources which would result from this proposal.

Planning Policy

In relation to planning policy background, you will be aware that Central Government planning guidance places great emphasis on the role of the Police. The National Planning Policy Framework (NPPF) gives significant weight to achieving inclusive and safe communities (in section 8). This is highlighted by the provision of paragraph 92, which states

Planning policies and decisions should aim to achieve healthy, inclusive and safe places which.....

b) are safe and accessible, so that crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion

Furthermore, at a development plan level, the Greater Norwich Local Plan (GNLP), submitted for Examination in July 2021, includes the following clear healthy and vibrant communities' objective

To grow vibrant, healthy communities giving people a high quality of life in well-designed developments with good access to jobs, services and facilities, helping to close the gap between life chances in disadvantaged and other communities.

All new development can result in extra pressure being placed on a range of existing infrastructure (and you will be aware that Appendix 1 of the GNLP recognises this covers a range of infrastructure types, including police infrastructure).

Role of Norfolk Constabulary

Norfolk Constabulary have the key responsibility for policing, making Norfolk a safe place where people want to live, work, travel and invest, and delivering the above GNLP objective. A key element of this is supporting healthy communities, increasing people's safety and wellbeing including by ensuring that crime and disorder does not undermine community cohesion (giving people a high quality of life).

Norfolk Constabulary consider that it is important that where major new development is proposed, the impact of the development is identified, and proposals makes provision to mitigate the impact and ensure that NPPF requirements are met in relation to achieving inclusive and safe communities.

EIA Scope requirements

The EIA scoping identifies socio-economic impacts as important, but it fails to include the following considerations

- implications in relation to crime and disorder (including fear of crime), and
- effect on social cohesion (and quality of life).

It is noted that para 6.71 of the scoping report recognises that *‘the provision of up to 1,100 residential units will lead to an increase in the local population... (and) ... the additional population arising from the residential elements of the proposal will result in an increased demand for social and community facilities’*. However, the report fails to recognise that adequate police infrastructure and facilities is a key element to limiting crime and disorder along with delivering a cohesive community. It is considered that these matters should be specifically addressed within the EIA.

In addition, paragraph 6.82 also fails to reference the impact on crime and disorder considerations, nor the mitigation measures / increased resources that may be required by the police associated with such a significant development to offset adverse impacts.

The EIA should acknowledge the impact of higher density and higher rise development on the Airwaves coverage required by Norfolk Constabulary.

In relation to this socio-economic consideration, as recognised in paragraph 6.85, this EIA should consider the development individually, and cumulatively with other developments in the area.

Conclusion

It is requested that the EIA scope addresses the issue of crime and disorder, the impact that the proposal will have on police resources plus outlines what additional provision / mitigation will be made to ensure that police have sufficient resources.

To inform the EIA work, I would highlight the study and report by Arup commissioned by the National Police Estates Group ‘Improving the Status of the Emergency Services within the English Planning System’. The Arup study included quantifying the costs of police requirements.

Copy to – Duncan Potter – Norfolk Constabulary (Head of Estates)

via e-mail

Tracy Armitage
Planning Services,
Norwich City Council,
City Hall,
Norwich,
NR2 1NH

NCC contact number: 0344 800 8020

Textphone: 0344 800 8011

Your Ref: 21/01738/EIA2
Date: 23 December 2021

My Ref: FW2021_1051
Tel No.: 0344 800 8020
Email: llfa@norfolk.gov.uk

Dear Ms Armitage,

Town and Country Planning (Development Management Procedure) (England) Order 2015

EIA scoping opinion request for the phased demolition and redevelopment of Anglia Square commercial centre, neighbouring buildings and surface car parks, to provide a residential-led mixed-use development, comprising up to 1,100 residential dwellings, (flats and houses) with ancillary amenity spaces, up to 6,000 sq m flexible use commercial space, related ancillary uses, (including meanwhile uses, public conveniences, community hub), public realm (open spaces and pedestrian streets and squares), landscaping, car parking, cycle parking, servicing, access and associated works at Anglia Square Including Land And Buildings To The North And West Anglia Square Norwich.

Thank you for your consultation on the above site, received on 07 December 2021. We have reviewed the request as submitted and wish to make the following comments:

- The applicant has provided a covering letter requesting an Environmental Impact Assessment (EIA) Scoping Opinion from you, the Local Planning Authority (LPA) (Request for an EIA Scoping Opinion Anglia Square, Norwich | Icen Projects Ltd | Ref: 21-405 | Rev: N/A | Dated November 2021).
- We welcome the inclusion of references to onsite flood risk throughout the letter.
- We welcome the inclusion of Section 7, with specific reference to the section titled 'Flooding, Drainage and Water Environment'.
- The current review of flood risk is quite basic however we welcome that the applicant indicates that a Flood Risk Assessment (FRA) and Surface Water Drainage Strategy will be undertaken and submitted as part of the application.
- We note that the site is affected by significant surface water flooding in the 3.33%, 1.0% and 0.1% AEP events as shown by the [Environment Agency \(EA\) Risk of Flooding from Surface Water \(RoFSW\) maps](#). The majority of this identified flood

risk is concentrated to areas surrounding the building structures/in the road networks. We would expect this to be addressed as part of any future FRA and Drainage Strategy along with all other sources of flooding. Updated modelling is recommended.

- According to Lead Local Flood Authority (LLFA) datasets (extending from 2011 to present day) we have 1 record of internal flooding (dated 2021) and 2 records of external anecdotal flooding (dated 2021) in the wider vicinity of the site. The LLFA highlight the importance of considering surface water, groundwater and flooding from ordinary watercourses in the best interest of development in the area.
- In terms of flood risk, the applicant has stated “there are no likely significant effects arising from the Proposed Development in this regard which would require further assessment through an EIA.” We would advise that the benefits of a full EIA will only support the site development and far outweigh the loss of not doing so, but ultimately, we recognise that it is the responsibility of the LPA to decide whether a full EIA is required or not.
- We note that the LLFA has previously provided advice for a scoping consultation (LLFA Ref: FWP/18/4/5880). We would advise that the previous response is reviewed and comments made by the LLFA are acknowledged as part of your review.

Whether or not an EIA is required we consider that the following issues should be considered and addressed:

We strongly recommend that any EIA includes, or any planning application for development is accompanied by a flood risk assessment (FRA) / surface water drainage strategy to address:

- All sources of flood risk, including those from ordinary watercourses, surface water and groundwater to the development.
- How surface water drainage from the development will be managed on-site and show compliance with the written Ministerial Statement HCWS 161 by ensuring that Sustainable Drainage Systems (SuDS) are put in place.
- How any phasing of the development will affect the overall drainage strategy and what arrangements, temporary or otherwise, will need to be in place at each stage of the development in order to ensure the satisfactory performance of the overall surface water drainage system for the entirety of the development.

This supporting information would assess the potential for the development to increase the risk of flooding from the proposal or how surface water runoff through the addition of hard surfaces will be managed. It will show how this will be managed to ensure that the development does not increase flood risk on the site or elsewhere, in line with National Planning Policy Framework (NPPF) (Paragraph 167).

In this particular case this would include appropriate information on:

- Appropriate assessment and mitigation of all sources of surface water flooding onsite/originating from offsite that may affect the development, in addition to risk of groundwater flooding. Updated modelling is recommended.

- Sustainable Drainage Systems (SuDS) proposals in accordance with appropriate guidance including “Non-statutory technical standards for sustainable drainage systems” March 2015 by Department for Environment, Food and Rural Affairs.
- At least one feasible proposal for the disposal of surface water drainage should be demonstrated and in many cases supported by the inclusion of appropriate information. It is important that the SuDS principles and hierarchies have been followed in terms of:
 - surface water disposal location, prioritised in the following order: disposal of water to shallow infiltration, to a watercourse, to a surface water sewer, combined sewer / deep infiltration (generally greater than 2m below ground level).
 - the SuDS components used within the management train (source, site and regional control) in relation to water quality, quantity, biodiversity and amenity.
 - identifying multifunctional benefits including amenity and biodiversity.
- The drainage strategy should also contain a maintenance and management plan detailing the activities required and details of who will adopt and maintain all the surface water drainage features for the lifetime of the development.

Please note, if there are any works proposed as part of this application that are likely to affect flows in an ordinary watercourse, then the applicant is likely to need the approval of the County Council. In line with good practice, the Council seeks to avoid culverting, and its consent for such works will not normally be granted except as a means of access. It should be noted that this approval is separate from planning.

Further guidance for developers can be found on our website at <https://www.norfolk.gov.uk/rubbish-recycling-and-planning/flood-and-water-management/information-for-developers>

Yours sincerely,

Rosie Chubbock
Assistant Flood Risk Officer

Lead Local Flood Authority

Disclaimer

We have relied on the accuracy and completeness of the information supplied to us in providing the above advice and can take no responsibility for incorrect data or interpretation, or omissions, in such information. If we have not referred to a particular issue in our response, it should not be assumed that there is no impact associated with that issue.

From: Oldfield, Lesley
Sent: 06 January 2022 17:05
To: Armitage, Tracy
Subject: Anglia Square - 21/01738/EIA2

Hi Tracy

I am just aware that I haven't commented on the above Scoping Application from an air quality perspective. Apologies for this.

I have no objection to what has been proposed in the above application, only suffice to say that the document refers to there being no air quality issues identified with the previous application. I don't know if this needs to be qualified but there were only considered to be no AQ issues identified as relevant receptors on the main site were to be located first floor and above. Where relevant receptors were located at ground floor level, mitigation was required.

As I understand it, the new proposal will house relevant receptors at ground floor level and hence why a detailed AQ assessment with recommended mitigation where necessary, is required.

If you require any further information, please do just come back to me.

Kind Regards
Lesley Oldfield
Public Protection Officer
Norwich City Council

From: Oldfield, Lesley <lesleyoldfield@norwich.gov.uk>
Sent: 13 January 2022 14:56
To: Armitage, Tracy <tracyarmitage@norwich.gov.uk>
Subject: 21/01738/EIA2 - Anglia Square - Air Quality

Dear Tracy

In response to the above scoping application, I have the following comments.

In Norwich the main pollutant of concern is NO₂. Anglia Square lies within the Air Quality Management Area declared for NO₂ and hence the proposed development must have no more than an insignificant impact on current NO₂ pollutant levels. This must be clearly demonstrated in the EIA. Where NO₂ pollutant levels at the façade of any relevant receptor is calculated to be above the annual mean national objective level, mitigation measures must be recommended.

The other pollutant of concern is particulates and especially PM_{2.5}. Although Norwich's measured PM₁₀ levels does not breach any national objective levels and measured PM_{2.5} meets the current WHO guideline level, it is anticipated that, over the lifetime of the demolition and construction phases, legislation concerning these pollutants is likely to be revised. In addition, and given the health risks concerned and particularly with PM_{2.5}, a detailed Construction & Demolition Environmental Policy (in line with the IAQM report 2018 - Guidance on Monitoring in the Vicinity of Demolition & Construction Sites) is required and particulate monitoring for both PM₁₀ & PM_{2.5} throughout the period of demolition & construction is recommended. Any appropriate co-location studies must be carried out in advance of the commencement of site operations.

I have no further comments at this stage.

Regards
Lesley Oldfield
Public Protection Officer
Norwich City Council

Norwich Airport Limited
FAO: Airport Safeguarding
Amsterdam Way
Norwich. NR6 6JA
Email: safeguarding@norwichairport.co.uk
www.norwichairport.co.uk

Date: 05 January 2022

Your Ref: 21/01738/EIA2
Our Ref: NIA 03321

Anglia Square Including Land And Buildings To The North And West Anglia Square Norwich

Dear Planning Department Norwich City Council

I refer to your letter dated 08/12/2021 in which you seek our comments on title Planning Application.

There is insufficient information for an accurate assessment of the impact the title development would have on the safe operation of aircraft operating in the vicinity of Norwich Airport.

With this in mind, we **OBJECT** to the above proposal unless the following conditions are met and applied to the grant of any Outline Planning Permission:

- **Condition:** No building or structure to be constructed on the development site, whether temporary or permanent, shall exceed an elevation of 15 metres above existing ground levels, which are estimated to be no greater than 38.3 metres AOD. The absence of specific plans necessitates this condition.
Reason: Development exceeding this height could penetrate the Obstacle Limitation Surface (OLS) and/or have an impact on our published Instrument Flight Procedures (IFPs) surrounding Norwich Airport and endanger aircraft movements and the safe operation of the aerodrome.
Reason: In order to avoid any building or structure on the application site endangering the safe movement of aircraft and the operation of Norwich Airport aircraft through interference with communication, navigational aids and surveillance equipment.
Further information can be found on the Airport Operators Associations (AOA) website, please refer to Advice Note 1 – Aerodrome Safeguarding – An Overview - <https://www.aoa.org.uk/wp-content/uploads/2016/09/Advice-Note-1-Aerodrome-Safeguarding-An-Overview-2016.pdf>.

- **Condition:** Lighting schemes required during construction and for the completed development shall be of a flat glass, full cut off design, mounted horizontally, and shall ensure that there is no light spill above the horizontal.

Reason: To avoid endangering the safe operation of aircraft through confusion with aeronautical ground lights or glare.

Further information can be found on the Airport Operators Associations (AOA) website, please refer to Advice Note 2 – ‘Lighting Near Aerodromes’ - <https://www.aoa.org.uk/wp-content/uploads/2016/09/Advice-Note-2-Lighting-2016.pdf>.
- **Condition:** Landscaping proposals included within this development shall be arranged to ensure that hazardous species of birds are not attracted to the site, as this may create an unacceptable increase in the birdstrike risk to aircraft.

Reason: To avoid endangering the safe movement of aircraft and the operation of Norwich Airport through the attraction of birds and an increase in the bird hazard risk of the application site.

Further information can be found on the Airport Operators Associations (AOA) website, please refer to Advice Note 3 ‘Wildlife Hazards around Aerodromes’ – <http://www.aoa.org.uk/wp-content/uploads/2016/09/Advice-Note-3-Wildlife-Hazards-2016.pdf>.
- **Condition:** Development shall not commence until details of the Sustainable Urban Drainage Schemes (SUDS) have been submitted, and approved in writing, by the Local Planning Authority and agreed with Norwich Airport. The submitted plan shall include details of:

 1. Attenuation times
 2. Profiles & dimensions of water bodies
 3. Details of marginal planting

No subsequent alterations to the approved SUDS scheme are to take place unless first Submitted, and approved in writing, by the Local Planning Authority and agreed by Norwich Airport.

Reason: To avoid endangering the safe movement of aircraft and the operation of Norwich Airport through the attraction of birds and an increase in the bird hazard risk of the application site.

Further information can be found on the Airport Operators Associations (AOA) website, please refer to Advice Note 3 ‘Wildlife Hazards around Aerodromes’ - <http://www.aoa.org.uk/wp-content/uploads/2016/09/Advice-Note-3-Wildlife-Hazards-2016.pdf>.
- **Condition:** The applicant shall ensure that any use of cranes during the construction phases of the proposed development, are completed in accordance with British Standard 7121 and CAP 1096. Norwich Airport shall be notified of plans to erect these cranes 6 to 8 weeks in advance. The notification should include:

 1. the date the crane will be erected,
 2. the anticipated duration of the cranes existence, OSGB grid coordinates of the crane’s proposed position to 6 figures each of Eastings and Northings,
 3. the proposed height of the crane Above Ordnance Datum (AOD), and
 4. contact telephone numbers of the crane operator and the site owner for use in an emergency.

For queries and crane application requests, please email: safeguarding@norwichairport.co.uk

Reason: To ensure that construction operations and tall equipment on the application

site or on any adjoining land do not breach the Obstacle Limitation Surface (OLS) and/or have an impact on our published Instrument Flight Procedures (IFP's) surrounding Norwich Airport and endanger the movement of aircraft and the safe operation of the aerodrome.

Reason: To ensure the development does not endanger the safe movement of aircraft or the operation of Norwich Airport through interference with communication, navigational aids and surveillance equipment.

Further information can be found on the Airport Operators Associations (AOA) website, please refer to Advice Note 4 'Cranes and Other Construction Issues' –

<https://www.aoa.org.uk/wp-content/uploads/2016/09/Advice-Note-4-Cranes-2016.pdf>.

As the application is for outline approval, it is important that Norwich Airport Ltd is consulted on all Reserved Matters relating to siting and design, external appearance, lighting schemes, SUDS and landscaping proposals.

It is important that any conditions requested in this response are applied to a planning approval. Where a Planning Authority proposes to grant permission against the advice of Norwich Airport Ltd, or not to attach letters/conditions which Norwich Airport Ltd has advised, it shall notify Norwich Airport Ltd, and the Civil Aviation Authority as specified in Circular 01/03: Safeguarding aerodromes, technical sites and military explosives storage areas.

Yours Sincerely

NAL Safeguarding

Appendix 1.5 Cumulative Schemes

Application Reference	Location	Description	Status
18/01286/F	Barrack Street Development Site Barrack Street Norwich	Demolition of existing buildings and structures; erection of 218 dwellings; conversion, refurbishment and extension of two Grade II Listed Cottages, erection of 310sqm of commercial floorspace (Class A1-A5 use) and 152sqm of Museum floorspace (D1 use), with associated works.	Approved (April 2019)
04/00605/F	St Annes Wharf King Street Norwich Norfolk	The demolition of existing buildings to slab level and the development of the following mixes; 437 residential units ,2128 sq m of A1,A2 , A3 and D2 uses (max.2000 sq m A1),the provision of 305 car parking spaces, riverside walkway, public open space and hard and soft landscaping including external lighting ,seating, bollards, walkways, cycle paths, steps and ramps, internal access roads, delivery bays, boundary enclosure, new vehicle and pedestrian and cycle access points, alteration of existing access points and associated infrastructure works.	Approved (March 2006) Under construction
11/02104/O	Land North Of Carrow Quay Kerrison Road Norwich	Outline application with full details of access for residential-led development of between 200 and 250 No. residential flats (Use Class C3) and 140 car parking spaces with commercial office space (Class B1a), groundsman's facilities (Class B8), community uses (Class D1/D2) and associated works including Riverside Walk and access road	Approved (June 2013) Over 1km away, but uses same road network
13/01270/RM		Reserved Matters with full details of external appearance, landscape, layout and scale of development, to provide 250 No. residential flats (Class C3), 113sqm offices (Class B1a), 279sqm groundsman's facilities (Class B8), and 401sqm of flexible office space (Class B1a) and community uses (Class D1/D2) with 126 No. parking spaces, associated highways works and provision of a Riverside Walk, consequent to previous outline planning permission 11/02104/O 'Outline application with full details of access for residential-led development of between 200 and 250 No. residential flats (Class C3) and 140 No. car parking spaces with commercial office space (Class B1a), groundsman's facilities (Class B8), community uses (Class D1/D2) and associated works including Riverside Walk and access road'	Approved (November 2013)

Application Reference	Location	Description	Status
18/01552/F	Car Park Rear Of Premier Travel Inn Duke Street Norwich	Redevelopment of car park site to provide student accommodation (revised proposal)	Approved (November 2019)
18/01524/F	Mary Chapman Court Norwich	Demolition of student accommodation block, erection of new build academic and residential accommodation for Norwich University of the Arts, including works to riverside walk and other associated external works	Approved (January 2019)
17/01391/F	St Crispins House Duke Street Norwich NR3 1PD	Change of Use application in respect of the conversion and extension of an existing 3, 4 and 5 storey office building (B1 use class) to student accommodation (sui generis use class) containing 614 student bed spaces and communal accommodation at ground floor level, to include common room facilities and a gymnasium. Associated external works.	Approved (March 2018)
20/00474/MA		Amendment of previous permission 17/01391/F to allow revised internal layouts and associated external alterations, inclusion of common room at sixth floor, consolidation of binstore and plant rooms and revised cycle and temporary parking arrangements.	Approved (August 2020)



Anglia Square, Norwich Environmental Statement

Appendix 1.6 - Statement of Competence

Iceni Projects Limited on behalf
of Weston Homes PLC
Partnerships

March 2022

Iceni Projects Ltd.

Da Vinci House, 44 Saffron Hill, London, ECN1 8FH

T: 020 3640 8508 **F:** 020 3435 4228 **W:** iceniprojects.com

QUALITY ASSURANCE

Document Title	Anglia Square EIA Coordination and Management
Job Number:	21/405
Date:	March 2022

EIA STATEMENT OF COMPETENCE

Background

Directive 2014/52/EU of the European Parliament requires that, for all developments considered to constitute an Environmental Impact Assessment development ('EIA development'), the EIA report (i.e. the Environmental Statement) is prepared by 'competent experts'. In addition, the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended)¹ section 18 (5)(b) states that *"the Environmental Statement must be accompanied by a statement from the developer outlining the relevant expertise or qualifications of such experts"*.

As such, this Statement of Competence has been prepared by Icen Projects, as lead EIA Coordinator for the Proposed Development, to outline the capability of the company and the competency of the individuals responsible for undertaking and reporting the EIA.

Icen Projects

Icen Projects ('Icen') is a registrant of the Institute of Environmental Management and Assessment ('IEMA') EIA Quality Mark programme. Icen is a leading provider of environmental services with a thorough understanding of the UK town and country planning system and the EIA Regulations, which enables us to ensure that we deliver comprehensive and robust Environmental Statements. Icen have managed numerous EIA projects across the UK and we clearly and concisely understand the impact of development on the environment.

Competent Experts

Summaries of the qualifications and experience of the EIA Project Manager, responsible for the checking and review of the Environmental Statement, and the EIA Project Management Team, responsible for the coordination of the EIA are presented below.

EIA Project Manager, MRTPI, PIEMA

The EIA Project Manager is an Associate within the Strategic Planning Team at Icen Projects with over 12 years' professional experience, specialising in EIA and is a practitioner member of IEMA. The EIA Manager has significant experience in the preparation and coordination of EIAs for a range of residential, commercial, mixed-used and infrastructure projects around the UK.

EIA Project Coordinator, PIEMA

The EIA Project Coordinator is a Senior EIA Consultant within the Strategic Planning Team with over five years' professional experience specialising in EIA and is a practitioner member of IEMA. The EIA Coordinator has experience in the preparation and coordination of EIAs.

¹ Her Majesty's Stationery Office, (2018); The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended)

Appendix 1.5 Competency Statement

Chapter	Consultant	Statement
Volume I, Chapter 4 Socio-Economics	Iceni Projects	<p>This chapter has been prepared by a Director (B. Soc,Sci, MRUP, MRTPI, MIED) and Associate (MPlan, MRTPI, AIEMA), respectively, within Iceni Projects' Strategic Planning Team. The Director has ten years' post-qualification experience and undertaking socio-economic assessments for EIA Development across the UK for a variety of residential, commercial and mixed-use schemes.</p> <p>The Associate has eight years' post-qualification experience and has worked on several EIA projects and socio-economic chapters for a variety of schemes across England and Scotland.</p>
Volume I, Chapter 5 Archaeology	RPS Group	<p>RPS Group Heritage are one of the largest heritage teams within the UK, with a proven track record relating to the successful delivery of sustainable major urban developments involving effects on archaeology, both within London – including the recent Sugar Quay and Bank End development - and also other cities across the country, including the French Quarter, Southampton, the Bath, Southgate development and the Westgate, Oxford development. The Westgate redevelopment project was awarded “Best Archaeological Project” at the national British Archaeological Awards in 2016. The archaeological team lead for the Anglia Square project has over 20 years' experience in the heritage sector and is a Full Member of the Chartered Institute for Archaeologists (the UK's leading professional body for archaeologists) and is also a Fellow of the Society of Antiquaries of London.</p>
Volume I, Chapter 6 Ecology	Ecology Solutions	<p>Ecology Solutions is a leading ecology consultancy practice. With over 35 years' experience in the field, we provide specialist advice and services to clients in the private and commercial sectors, negotiating extensively with local planning authorities, governmental departments and non-governmental organisations.</p> <p>The Ecology ES Chapter has been prepared and checked by a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM) with over 17 years' professional experience, including drafting numerous Ecological Impact Assessments (EclA) and ES chapters for varying types of schemes and developments.</p>
Volume I, Chapter 7 Highways, Traffic and Transport	Iceni Projects	<p>This ES Chapter has been prepared by a Director of Transportation at Iceni Projects Ltd. They are a Member of the Royal Town Planning Institute (MRTPI), a Fellow of the Chartered Institution of Highways and Transportation (FCIHT), Fellow of the Institute of Highway Engineers (FIHE) and Chartered Member of the Institute of Logistics and Transportation (CMILT). The Director holds a BSc (Hons) in “Planning and the Environment”, together with a MSc in “Transportation Planning and Management”.</p> <p>The Director benefits from over 30 years' experience in the design, implementation and assessment of transportation related matters in both the public and private sectors.</p>

Chapter	Consultant	Statement
Volume I, Chapter 8 Air Quality	Aether	<p>A Director at Aether Ltd is the principal author for this work. Aether Ltd is an air quality and climate change consultancy that specialises in the compilation and development of emission inventories, the application of policies and measures to reduce emissions and undertaking air quality assessments for planning applications. They have worked at Aether for thirteen years and prior to that worked for AEA Technology (now part of Ricardo) for 8 years and has a Bachelor of Science in Environmental Sciences from the University of East Anglia and a Masters in Environmental Technology from Imperial College, London. They are a member of the Institute of Air Quality Management and the Institute of Environmental Sciences.</p> <p>The Director has undertaken and provided technical input on many air quality assessments across their 20+ year career in the air quality consulting field. They provided technical input and acted as an expert witness at the Anglia Square planning inquiry in 2020. Other projects have included multi-use large scale developments and industrial sites. The work involves data collection and detailed dispersion modelling to predict pollutant concentrations without and with development. Monitoring work has also been undertaken to enhance modelling results where applicable. Building on this work, they have also conducted reviews of annual local authority air quality reports for Defra and air quality assessments for planning applications on behalf of the GLA for many years.</p>
Volume I, Chapter 9 Environmental Noise	Stansted Environmental Services Ltd	<p>This chapter of the ES has been prepared by the Managing Director of Stansted Environmental Services Ltd, (SES). They have over 18 years' experience working in the field of noise assessments related to the construction industry.</p> <p>The Managing Director is a Chartered Health and Safety Practitioner with the Institute of Occupational Safety and Health (IOSH), a Corporate Member of the Institute of Acoustics (IOA), an Associate Member of the Chartered Institute of Environmental Health (CIEH) as well as an Incorporated Member of the Association for Project Safety (APS). This chapter of the ES assesses the likely significant noise effects of the Development at nearby sensitive locations during the construction and operational phases. SES was commissioned by Weston Homes Plc to carry out an environmental noise assessment for the proposed Development at the Site known as Anglia Square, Norwich.</p>
Volume II Heritage, Townscape and Visual Impact	Iceni Projects	<p>Volume II was produced by the Heritage and Townscape team at Iceni Projects Ltd by suitably qualified experienced professionals. Specifically, it is authored by the Director – Heritage & Townscape - MA (Cantab) MSc IHBC MCIfA; Associate - BA (Hons) MSc IHBC; Consultant - MA (Hons) MSt (Cantab).</p>

Appendix 3.1 – Detailed Planning Drawings

DRAWING NUMBER	TITLE	SCALE
	SITE LOCATION PLAN	
35301-ZZ-00-DR-A-01-0200	Hybrid Application Site Plan - Block Plan on Existing OS Base	1:500@A1
35301-ZZ-00-DR-A-01-0201	Hybrid Application - Existing Site Plan - Demo	1:500@A1
35301-ZZ-00-DR-A-01-0300	Hybrid Application Site Plan - Block Plan on Proposed Layout	1:500@A1
35301-ZZ-00-DR-A-01-0301	Detailed Application Plan - Block Plan on Proposed Layout	1:500@A1
35301-ZZ-00-DR-A-01-1000	Hybrid Application - Location Plan on Existing OS Base	1:1250@A1
	SITE PLANS	
35301-ZZ-00-DR-A-01-0100	Masterplan - Level 00	1:500@A1
35301-ZZ-01-DR-A-01-0101	Masterplan - Level 01	1:500@A1
35301-ZZ-02-DR-A-01-0102	Masterplan - Level 02	1:500@A1
35301-ZZ-03-DR-A-01-0103	Masterplan - Level 03	1:500@A1
35301-ZZ-04-DR-A-01-0104	Masterplan - Level 04	1:500@A1
35301-ZZ-05-DR-A-01-0105	Masterplan - Level 05	1:500@A1
35301-ZZ-06-DR-A-01-0106	Masterplan - Level 06	1:500@A1
35301-ZZ-07-DR-A-01-0107	Masterplan - Level 07	1:500@A1
35301-ZZ-99-DR-A-01-0099	Masterplan - Level B01	1:500@A1
35301-ZZ-00-DR-A-01-0199	Masterplan - Roof Level	1:500@A1
	DETAIL PLANS & ELEVATIONS	
35301-ZA-00-DR-A-03-0100	GA Plan - Block A - Level 00	1:200@A1
35301-ZA-01-DR-A-03-0101	GA Plan - Block A - Level 01	1:200@A1
35301-ZA-02-DR-A-03-0102	GA Plan - Block A - Level 02	1:200@A1
35301-ZA-03-DR-A-03-0103	GA Plan - Block A - Level 03	1:200@A1
35301-ZA-04-DR-A-03-0104	GA Plan - Block A - Level 04	1:200@A1
35301-ZA-05-DR-A-03-0105	GA Plan - Block A - Level 05	1:200@A1
35301-ZA-06-DR-A-03-0106	GA Plan - Block A - Level 06	1:200@A1
35301-ZA-07-DR-A-03-0107	GA Plan - Block A - Level 07	1:200@A1
35301-ZA-99-DR-A-03-0099	GA Plan - Block A - Level B01	1:200@A1
35301-ZA-00-DR-A-05-0300	Elevations - Block A - North	1:100@A1
35301-ZA-00-DR-A-05-0301	Elevations - Block A - East	1:100@A1
35301-ZA-00-DR-A-05-0302	Elevations - Block A - South	1:100@A1
35301-ZA-00-DR-A-05-0303	Elevations - Block A - West	1:100@A1
35301-ZA-00-DR-A-05-0304	Elevations - Block A - East Internal	1:100@A1
35301-ZA-00-DR-A-05-0305	Elevations - Block A - West Internal	1:100@A1
35301-ZA-00-DR-A-05-0306	Elevations - Block A - South Internal	1:100@A1
35301-ZA-00-DR-A-05-0307	Elevations - Block A - North Internal	1:100@A1
35301-ZA-XX-DR-A-21-0010	Bay Study - Block A1 - South Corner	1:50@A1
35301-ZA-XX-DR-A-21-0020	Bay Study - Block A2 - South Corner	1:50@A1
35301-ZA-XX-DR-A-21-0030	Bay Study - Block A2 - South Link	1:50@A1

35301-ZB-00-DR-A-03-0100	GA Plan - Block B - Level 00	1:200@A1
35301-ZB-01-DR-A-03-0101	GA Plan - Block B - Level 01	1:200@A1
35301-ZB-02-DR-A-03-0102	GA Plan - Block B - Level 02	1:200@A1
35301-ZB-03-DR-A-03-0103	GA Plan - Block B - Level 03	1:200@A1
35301-ZB-XX-DR-A-05-0300	Elevations - Block B1 - Elevations, South, East, North & West Elevations	1:100@A1
35301-ZB-XX-DR-A-05-0301	Elevations - Block B2 - Elevations, South, East, North & West Elevations	1:100@A1
35301-ZB-XX-DR-A-21-0010	Bay Study - Block B1	1:50@A1
35301-ZB-XX-DR-A-21-0020	Bay Study - Block B2	1:50@A1
35301-ZC-00-DR-A-03-0100	GA Plan - Block C - Level 00	1:200@A1
35301-ZC-01-DR-A-03-0101	GA Plan - Block C - Level 01	1:200@A1
35301-ZC-02-DR-A-03-0102	GA Plan - Block C - Level 02	1:200@A1
35301-ZC-03-DR-A-03-0103	GA Plan - Block C - Level 03	1:200@A1
35301-ZC-XX-DR-A-05-0300	Elevations - Block C - North & East	1:100@A1
35301-ZC-XX-DR-A-05-0301	Elevations - Block C - South & West	1:100@A1
35301-ZC-XX-DR-A-21-0010	Bay Study - Block C	1:50@A1
35301-ZD-00-DR-A-03-0100	GA Plan - Block D - Level 00	1:200@A1
35301-ZD-01-DR-A-03-0101	GA Plan - Block D - Level 01	1:200@A1
35301-ZD-02-DR-A-03-0102	GA Plan - Block D - Level 02	1:200@A1
35301-ZD-03-DR-A-03-0103	GA Plan - Block D - Level 03	1:200@A1
35301-ZD-04-DR-A-03-0104	GA Plan - Block D - Level 04	1:200@A1
35301-ZD-05-DR-A-03-0105	GA Plan - Block D - Level 05	1:200@A1
35301-ZD-XX-DR-A-05-0300	Elevations - Block D - North & East	1:100@A1
35301-ZD-XX-DR-A-05-0301	Elevations - Block D - South & West	1:100@A1
35301-ZD-XX-DR-A-21-0010	Bay Study - Block D	1:50@A1
35301-ZJ-00-DR-A-03-0100	GA Plan - Block J3 - Level 00	1:200@A1
35301-ZJ-01-DR-A-03-0101	GA Plan - Block J3 - Level 01	1:200@A1
35301-ZJ-02-DR-A-03-0102	GA Plan - Block J3 - Level 02	1:200@A1
35301-ZJ-XX-DR-A-05-0300	Elevations - Block J3 - East, North, South & West Elevations	1:100@A1
35301-ZD-XX-DR-A-21-0010	Bay Study - Block J3 - East Magdalen Street	1:50@A1
35301-ZKL-00-DR-A-03-0100	GA Plan - Block K&L - Level 00	1:200@A1
35301-ZKL-01-DR-A-03-0101	GA Plan - Block K&L - Level 01	1:200@A1
35301-ZKL-02-DR-A-03-0102	GA Plan - Block K&L - Level 02	1:200@A1
35301-ZKL-03-DR-A-03-0103	GA Plan - Block K&L - Level 03	1:200@A1
35301-ZKL-04-DR-A-03-0104	GA Plan - Block K&L - Level 04	1:200@A1
35301-ZKL-05-DR-A-03-0105	GA Plan - Block K&L - Level 05	1:200@A1
35301-ZKL-06-DR-A-03-0106	GA Plan - Block K&L - Level 06	1:200@A1
35301-ZKL-07-DR-A-03-0107	GA Plan - Block K&L - Level 07	1:200@A1
35301-ZKL-XX-DR-A-05-0300	Elevations - Block KL - North & East	1:100@A1

35301-ZKL-XX-DR-A-05-0301	Elevations - Block KL - South & West	1:100@A1
35301-ZKL-XX-DR-A-05-0302	Elevations - Block KL - East & West Internal	1:100@A1
35301-ZKL-XX-DR-A-05-0303	Elevations - Block KL - South & North Internal	1:100@A1
35301-ZK-XX-DR-A-21-0010	Bay Study - Block K1 - West Anglia Square	1:50@A1
35301-ZK-XX-DR-A-21-0020	Bay Study - Block K2 - East Magdalen Street	1:50@A1
35301-ZK-XX-DR-A-21-0030	Bay Study - Block K - North Annes Walk	1:50@A1
35301-ZK-XX-DR-A-21-0040	Bay Study - Block K - South Botolph Street	1:50@A1
35301-ZL-XX-DR-A-21-0010	Bay Study - Block L - Stump Cross	1:50@A1
35301-ZM-00-DR-A-03-0100	GA Plan - Block M - Level 00	1:200@A1
35301-ZM-01-DR-A-03-0101	GA Plan - Block M - Level 01	1:200@A1
35301-ZM-02-DR-A-03-0102	GA Plan - Block M - Level 02	1:200@A1
35301-ZM-03-DR-A-03-0103	GA Plan - Block M - Level 03	1:200@A1
35301-ZM-04-DR-A-03-0104	GA Plan - Block M - Level 04	1:200@A1
35301-ZM-05-DR-A-03-0105	GA Plan - Block M - Level 05	1:200@A1
35301-ZM-06-DR-A-03-0106	GA Plan - Block M - Level 06	1:200@A1
35301-ZM-XX-DR-A-05-0300	Elevations - Block M - South & West	1:100@A1
35301-ZM-XX-DR-A-05-0301	Elevations - Block M - East & North	1:100@A1
35301-ZM-XX-DR-A-05-0302	Elevations - Block M - East & West Internal	1:100@A1
35301-ZM-XX-DR-A-05-0303	Elevations - Block M - South Internal	1:100@A1
35301-ZM-XX-DR-A-21-0010	Bay Study - Block M - South Anglia Square	1:50@A1
35301-ZM-XX-DR-A-21-0020	Bay Study - Block M - North Edward Street	1:50@A1
35301-ZZ-XX-DR-A-04-0001	Site Sections - Section 01, 02 & 03	1:500@A0
35301-ZZ-XX-DR-A-04-0002	Site Sections - Section 04, 05 & 06	1:500@A0
35301-ZZ-XX-DR-A-05-0001	Street Elevations - Magdalen Street and Edward Street	1:200@A0
35301-ZZ-XX-DR-A-05-0002	Street Elevations - Botolph Street	1:200@A0
ANG-PLA-XX-XX-DR-L-0001	Landscape Masterplan	1:500@A1
ANG-PLA-XX-XX-DR-L-0002	Landscape Masterplan Roof Level	1:500@A1
ANG-PLA-XX-XX-DR-L-1000	Hardworks Site Plan	1:500@A1
ANG-PLA-XX-XX-DR-L-2000	Softworks Site Plan	1:500@A1
ANG-PLA-XX-XX-DR-L-4000	Furniture Site Plan	1:500@A1
ANG-PLA-XX-XX-DR-L-8001	Anglia Square Detail Area	1:200@A1
ANG-PLA-XX-XX-DR-L-8002	St Georges Gardens Detail Area	1:200@A1

Appendix 3.2 Parameter Plans and Outline Drawings

DRAWING NUMBER	TITLE	SCALE
	PARAMETER PLANS	
35301-AO1-PP-100	Parameter Plans - Architecture Layout - Proposed Building Heights	1:500@A1
35301-AO1-PP-200	Parameter Plans - Architecture - Land Use - Ground Floor	1:500@A1
35301-AO1-PP-201	Parameter Plans - Architecture - Land Use - First Floor	1:500@A1
35301-AO1-PP-202	Parameter Plans - Architecture - Land Use - Second Floor	1:500@A1
35301-AO1-PP-203	Parameter Plans - Architecture - Land Use - Third Floor	1:500@A1
35301-AO1-PP-204	Parameter Plans - Architecture - Land Use - Fourth Floor	1:500@A1
35301-AO1-PP-205	Parameter Plans - Architecture - Land Use - Fifth Floor	1:500@A1
35301-AO1-PP-206	Parameter Plans - Architecture - Land Use - Sixth Floor	1:500@A1
35301-AO1-PP-207	Parameter Plans - Architecture - Land Use - Seventh Floor	1:500@A1
35301-AO1-PP-300	Parameter Plans - Architecture - Access	1:500@A1
35301-AO1-PP-400	Parameter Plans - Architecture - Development Parcel	1:500@A1
35301-AO1-PP-500	Parameter Plans - Architecture - Public Realm	1:500@A1
	OUTLINE ELEVATIONS	
35301-ZE-XX-DR-A-05-0300	Elevations - Block E1 & E2	1:100@A1
35301-ZE-XX-DR-A-05-0301	Elevations - Block E1 & E2	1:100@A1
35301-ZE-XX-DR-A-05-0302	Elevations - Block E1 & E2	1:100@A1
35301-ZE-XX-DR-A-05-0303	Elevations - Block E1 & E2	1:100@A1
35301-ZE-XX-DR-A-05-0304	Elevations - Block E3	1:100@A1
35301-ZE-XX-DR-A-05-0305	Elevations - Block E3	1:100@A1
35301-ZF-XX-DR-A-05-0300	Elevations - Block F	1:100@A1
35301-ZF-XX-DR-A-05-0301	Elevations - Block F	1:100@A1
35301-ZF-XX-DR-A-05-0302	Elevations - Block F	1:100@A1
35301-ZF-XX-DR-A-05-0303	Elevations - Block F	1:100@A1
35301-ZF-XX-DR-A-05-0304	Elevations - Block F	1:100@A1
35301-ZG-XX-DR-A-05-0300	Elevations - Block G	1:100@A1
35301-ZG-XX-DR-A-05-0301	Elevations - Block G	1:100@A1
35301-ZG-XX-DR-A-05-0302	Elevations - Block G	1:100@A1

35301-ZG-XX-DR-A-05-0303	Elevations - Block G	1:100@A1
35301-ZG-XX-DR-A-05-0304	Elevations - Block G	1:100@A1
35301-ZG-XX-DR-A-05-0305	Elevations - Block G	1:100@A1
35301-ZG-XX-DR-A-05-0306	Elevations - Block G	1:100@A1
35301-ZG-XX-DR-A-05-0307	Elevations - Block G	1:100@A1
35301-ZH-XX-DR-A-05-0300	Elevations - Block H	1:100@A1
35301-ZH-XX-DR-A-05-0301	Elevations - Block H	1:100@A1
35301-ZF-XX-DR-A-05-0302	Elevations - Block H	1:100@A1
35301-ZF-XX-DR-A-05-0303	Elevations - Block H	1:100@A1
35301-ZJ-XX-DR-A-05-0301	Elevations - Block J	1:100@A1
35301-ZJ-XX-DR-A-05-0302	Elevations - Block J	1:100@A1
35301-ZJ-XX-DR-A-05-0303	Elevations - Block J	1:100@A1
35301-ZJ-XX-DR-A-05-0304	Elevations - Block J	1:100@A1



CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP)

For

ANGLIA SQUARE, NORWICH

Project Reference: ENV001-ANGL-049

Site Address: Anglia Square
Norwich
Norfolk
NR13 1DZ

Customer: Weston Homes Plc
Weston Group Business Centre
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Document Control

Publication Title	Construction Environmental Management Plan
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Principal Contractor	Weston Homes Plc Weston Group Business Centre Parsonage Road Takeley Essex CM22 6PU

Preparation of this Construction Environmental Management Plan has been completed using information provided by Weston Homes Plc

Principal Contractor: Weston Homes Plc

Date: March 2022

Prepared and Approved By:

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Managing Director

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1. Introduction

Stansted Environmental Services Limited has been appointed by Weston Homes Plc to produce a Construction Environmental Management Plan (CEMP) in support of a hybrid (part detailed/part outline) planning application at Anglia Square, Norwich. Permission is sought for redevelopment of the site to provide flexible commercial and other non-residential floor space and up to 1,100 new residential dwellings (the Proposed Development).

The aim of the Construction Environmental Management Plan (CEMP) is to set out the responsibilities with regards to compliance with legislation and to implement any mitigation measures. This CEMP details management measures to minimise environmental impact from the construction phase of the development.

The CEMP forms a framework within which the measures will be implemented throughout the project. This framework provides project-specific management measures and is a dynamic document which should be reviewed if activities or conditions onsite change that may influence management measures.

This document has been developed to avoid, minimise and mitigate against any construction effects on the environment and surrounding community. It should be considered a living document with reviews being undertaken at set intervals and new information added as appropriate.

For the purposes of this document, the working area is defined as any area where there will be a requirement for temporary or permanent works to facilitate the construction of the development. This includes areas required for access, temporary construction and temporary storage areas.

2. Regulatory Framework and Planning Conditions

The CEMP is required to implement the core principles of the local planning policies which encompass environmental controls required with due consideration to relevant environmental legislation.

The CEMP provides the framework for which commitments made in the Environmental statement (ES) or any requirements of planning conditions can be realised. The CEMP outlines the contractor's approach to environmental management throughout the construction phases with the primary aim of reducing any adverse impacts from construction on local sensitive receptors.

The project currently does not benefit from planning consent, and this CEMP has been prepared as supporting evidence for the current planning application.

The CEMP seeks to ensure the following criteria are in place during the course of the development;

- Ensure that environmental management, controls and safety procedures that will need to be adopted during the development of the Site are in place,
- Thereby providing a tool to ensure the continuous review of any likely environmental effects as a result of the construction activities.
- Ensure that all enabling, demolition and construction works cause the minimum
- Disruption to the local residents and members of the public. More specifically, the CEMP aims to:
- Ensure that relevant mitigation measures are implemented.
- Ensure that relevant legislation, Government and industry standards, and construction industry codes of practice and good practice standards are implemented.

3. Site Location and Operating Hours

3.1. Project Description

The Site is located in a highly accessible position within the northern part of Norwich City Centre and comprises a significant element of the Anglia Square/Magdalen Street/St Augustines Large District Centre, (the LDC). It is thus of strategic importance to the City, and accordingly has been identified for redevelopment for many years within various local planning policy documents, including the Northern City Centre Area Action Plan 2010, (NCCAAP), (now expired), the Joint Core Strategy for Broadland, Norwich and South Norfolk 2014, (JCS), and NCC's Anglia Square and Surrounding Area Policy Guidance Note 2017, (PGN). The Site forms the principal part of an allocation (GNLP 0506) in the emerging Greater Norwich Local Plan (GNLP).

The development proposal seeks to comprehensively redevelop the Site to provide up to 8,000 sq m Net Internal Area, (NIA), flexible commercial and other non-residential floor space and up to 1,100 new residential dwellings (the Proposed Development). These figures are maxima in view of the hybrid nature of the application. This proposes part of the scheme designed in full, to accommodate 6,062 sq m non-residential floor space and 367 dwellings, with the remaining large part of the Site for later detailed design as a "Reserved Matters" application, up to those maxima figures.

Figures 1 and 2 below and overleaf in this document refers to the proposed development detailed above.



Figure 1: Site Plan

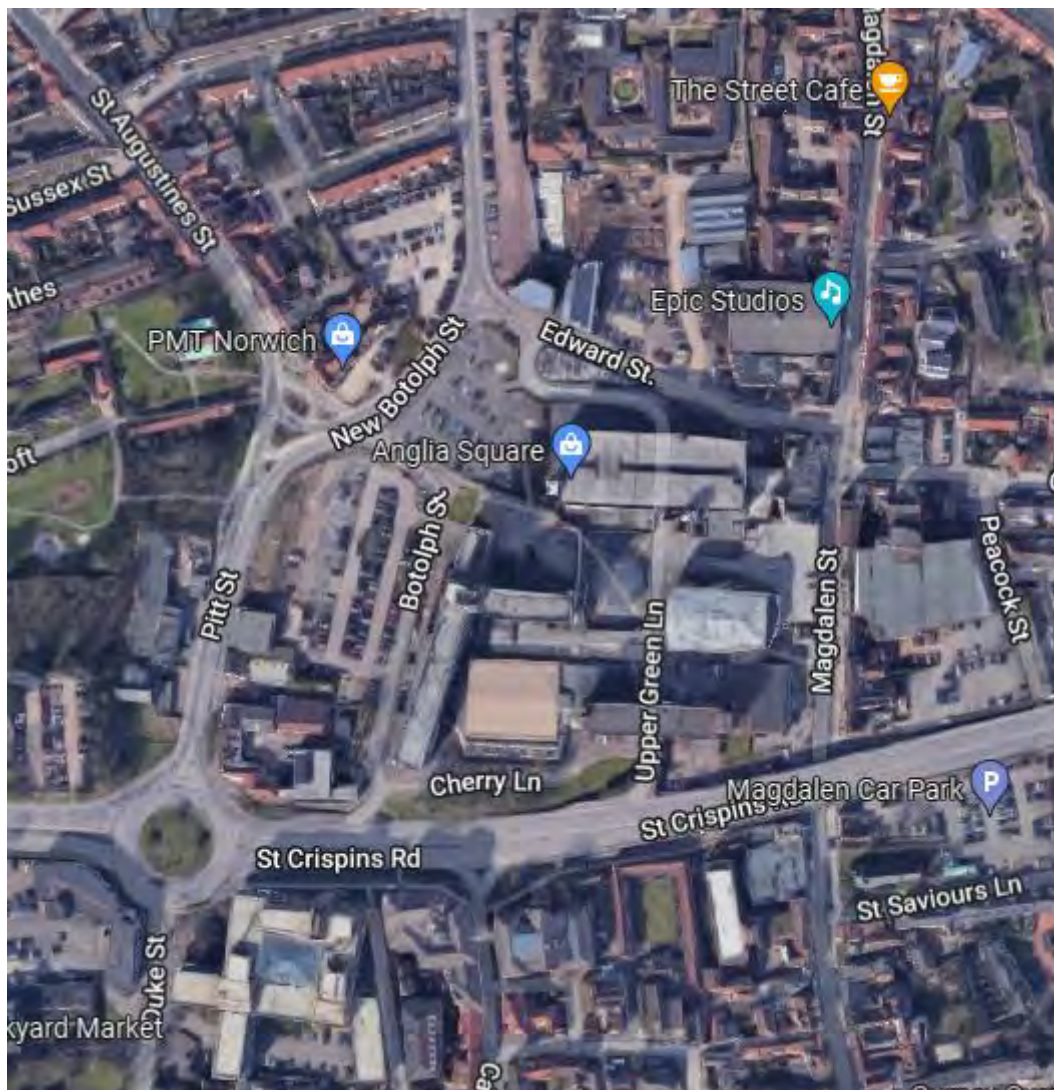


Figure 2: Aerial view of site from Google Maps

3.2. Site Operating Hours

The proposed operating hours are outlined below. During the construction period it may be necessary in exceptional circumstances to work outside the prescribed working hours. Should this occur, the hours and duration of these works will be subject to consultation with the Local Authority / Council.

Official site working hours would be:

- Monday – Friday: 7:30am - 6:00pm
- Saturday 8:00 – 1:00pm
- Sunday/Bank Holidays: No Work

In order to maintain these working hours, contractor(s) will require a period of 30 minutes before and at the end of the working shift to start up and close down the works activities.

4. Construction Programme, Methodology and Management

It is anticipated that construction of the proposed development will take approximately 99 months (8 ¼ years) following receipt of planning consent.

Table 1 below will be updated following receipt of planning approval with target completion dates.

Construction Stage	Start	End
Demolition*	Oct 2022	Sep 2026
Excavation and Piling**	Jan 2023	Apr 2028
Sub structure**	Apr 2023	Apr 2028
Super structure**	June 2023	Dec 2030
Fit out Testing and Commissioning** (services)	Mar 2024	Dec 2030

Table 1: Proposed completion stage dates

* In three separate phases

** In four separate phases

4.1. Method of Construction

The proposed buildings will consist of reinforced concrete frames and will be built using traditional construction methods and facilitated by tower cranes, hoists and forklifts.

Construction phase works will include;

1. Hoarding and security of the site
2. The establishment of the welfare compound for the construction phase of the project
3. Demolition of existing buildings
4. Removal of hard standing and reuse of site won materials (crushed concrete/hardcore)
5. Removal of material and underground obstructions
6. Foundations
7. Construction of the buildings in a progressive and phased manner
8. Internal works
9. Pre completion testing
10. Landscaping and final works
11. Programmed handovers and occupation

A Construction Phase Health and Safety and Environmental plan will be prepared for this which will include the following details;

- Organisational chart and responsibilities
- Health and Safety and Environmental monitoring
- Generic Risk Assessment
- Method Statement checking process
- Site specific plans i.e. lifting plans, temporary works, pollution prevention
- Accident and incident investigation
- Emergency arrangements

The information in the above-mentioned document will highlight the safety checks and procedures that should be in place during the construction of this development. All Personnel will be inducted into this document

4.2. Construction Site Access and Vehicle Route

Logistics Plan

Weston Homes will also prepare a Construction Logistics Plan (CLP) for the development. The controls detailed within the plan will be implemented prior to commencement of the development.

A site access and delivery drawing will be generated showing the vehicle access and egress points so as to not interrupt normal day to day traffic movements.

The CLP will be developed to ensure that the following objectives are met;

- *Demonstrate that construction materials will be delivered, waste removed in a safe, efficient and environmentally –friendly way;*
- *Identify deliveries and procurements that could be reduced, retimed or even consolidated particularly during peak periods*
- *Help cut congestion on local roads and ease pressure on the environment*
- *Reduce CO₂ emissions by reducing multiple deliveries*
- *Help subcontractors and suppliers to reduce fuel costs*

The site management team will provide subcontractors with information regarding the public transport time table and delivery routes to site. Car sharing will be encouraged where applicable and smart procurement will be implemented to reduce multiple deliveries to site. A booking system will be in place for deliveries to minimise disruption to the public.

4.3. Construction Site Security

A 2.4m high construction hoarding, or similar, will be erected around the working site which will include gated access. Banksman will aid HGVs in entering and exiting the Site, and open and close the gates.

Only authorised personnel will be permitted on Site. All visitors will be required to enter through the main entrance gate to the Site and report to the Project Manager/Site Manager.

All visitors will be required to sign in and out to ensure that Site management are aware of the number of people on-site in the event of an emergency.

Visitors will be required to undergo induction training, wear the necessary PPE i.e. safety helmet, hi-visibility attire, safety footwear and will be accompanied by a representative on-site at all times.

The hoarding and all storage areas will be checked on a daily basis to ensure that it is maintained in good condition and remains secure.

All entrance and exit gates into the Site will be secure at all times.

All mobile plant/equipment will be parked safely and locked within a designated area to prevent tampering, and keys to all plant/equipment will be kept in a secured location.

4.4. Traffic Management and Plant Management

Weston Homes will also produce a Traffic Management Plan which will be in place as part of the site set up. To ensure that the targets set out in the plan are met, Weston Homes will have a trained traffic marshal/banksman/signaller on site to direct and monitor delivery to site.

It is expected that the following plant shown below will be used on site;

- Fixed tower crane(s)
- Forklift truck(s)
- 1x bunded diesel tank
- Tipping skips and accessories
- Excavator(s)
- Concrete crusher
- Dumper(s)
- Piling Rig(foundation stage)

The following traffic and plant management checks will also be implemented;

- Delivery vehicles whenever practical will avoid 'peak public traffic hours' to reduce traffic congestion and nuisance to the existing road and highway network.
- To avoid construction traffic congestion and nuisance to the surrounding area, all suppliers and contractors will be made aware of traffic routes.
- Site entrances will be maintained and kept clean and clear. There will be a road sweeper in operation when required and in line with the works activities to ensure no mud is left on the public path and access roads.
- All materials will be loaded within the site compound as shown on the Site set up plan to minimise congestion.
- For environmental and road safety all material containers leaving site will be appropriately covered to avoid soiling of the roads and public path.
- Engines of all vehicles, mobile and fixed plant on site are not left running unnecessarily.
- Using low emission vehicles and plant fitted with catalysis, diesel particulate filters or similar devices.
- Use of low sulphur fuels in plant and vehicles will be recommended where possible.
- All plants used on site will be well maintained, with routine servicing of plant to be completed in accordance with the manufacturer's recommendations and records maintained for the work undertaken.
- All project vehicles, including off-road vehicles, will hold current MOT certificates, where applicable and where required due to the age of the vehicle and that they will comply with exhaust emission regulations for their class.

4.5. Construction Noise

Weston Homes are aware that the site is located in a residential area and as such subcontractors will be made aware of the sensitive receptors and the requirement to use the correct tools during work.

The potential noise sources from work undertaken in connection with this project may include:

- Earthworks
- Demolition
- Concrete Crushing
- Site Clearance
- Excavations
- Transportation

- Cleaning
- Construction
- Waste Management

The site team will implement the necessary management and operational controls in order to minimise any adverse impacts on the local community from construction activities

Work hours will be as per those stated within the approved planning permission. Work and noise outside of these agreed hours is strictly prohibited without prior agreement of the local authority.

Contractors will ensure the implementation of best practicable means to reduce noise levels and to ensure compliance with acceptable levels. The best practicable mean for reducing noise will also be discussed during site induction and also carried out during toolbox talks.

Where there is a noise or vibration issue from site, the Site team will review the subcontractor's method statement and identify as reasonably practicable strategies to control noise at source.

The maximum level of vibration level at construction sites will be required to meet the criterion set out in BS 5228-2:2009 as 0.3mm/s.

Weston Homes do not envisage any vibration issues during the course of the project however any complaint from the neighbours or other sensitive receptors will be investigated.

Monitoring of noise and vibration will be undertaken when:

- Agreed levels are likely to be exceeded
- Upon receipt of substantiated complaints
- At the request of the Local Planning Authority following any substantiated complaints

The site team will implement the following checks to ensure that noise is kept to a minimum;

- Plant not in continual operational use will be switched off and noise suppression covers will be used where practicable.
- Vehicle noise will be kept to a minimum. (e.g. excessive revving of vehicles will not be permitted)
- Where possible noisy plant and equipment will be sited away from sensitive noise boundaries.
- Where reasonably practicable, fixed items of construction plant should be electrically powered in preference to diesel or petrol driven.
- Where this is not possible, noise emission will be controlled accordingly following a risk assessment.
- Loading and unloading of vehicles, dismantling of site equipment, such as scaffolding, will be conducted in such a manner that noise generation is kept to a minimum.
- Reversing alarms will be set to the minimum required setting by the HSE, and consideration given to the use of alternative types of alarm, e.g. White noise that has less potential for annoyance.

4.6. Construction Waste

In April 2008 it became mandatory for any construction project of value over £300,000 to manage their site waste under the Site Waste Management Regulations 2008. This legislation has subsequently been repealed, but it remains good practice for site work management plans to be developed during the course of the construction works.

Weston Homes will take all reasonable steps to ensure that:

- a) All waste from the site is dealt with in accordance with the waste duty of care in Section 34 of the Environmental Protection Act 1990 and the Environmental Protection (Duty of Care) Regulations 1991; and

- b) Materials will be handled efficiently and waste managed appropriately.
- c) A Site Waste Management Plan will be prepared for the development.

A Site Waste Management provides a structure for waste delivery and disposal at all stages during a construction project.

The Site Waste Management Plan will outline estimates of quantities of the waste types produced during the course of the project. It will identify waste management actions and controls proposed for each waste type including re-use, recycling, recovery and disposal

The waste hierarchy which will be implemented on site is as follows;

Prevention/Reduction: Good planning will reduce the amount of waste generated

Re-use: Products and material can sometimes be used again, for the same or a different purpose.

Recycling and composting- Resources can often be recovered from waste.

Disposal- Only if none of the above options offer an appropriate solution should waste be disposed of.

i. Waste Segregation

Wherever possible, different types of waste should be segregated as they are produced to allow for correct disposal. The site team will review the logistics and also puts checks to prevent pollution and cross contamination of waste on site.

4.7. Air Quality and Dust Management from Construction Activities

An Air Quality and Dust Risk Assessment will be prepared and included as part of the Construction Phase Health and Safety Plan.

Monitoring arrangements will be agreed following completion and acceptance of the Dust Risk Assessment however the following best practice control measures will be implemented as part of the development process to control dust levels;

- Ensure all wagons and stockpiled material are covered
- Stockpiled materials and waste to be piled no higher than the hoarding level
- Exposed soils to be dampened down during dry weather periods
- Limit the quantities of dusty materials received
- Minimise handling and drop heights for waste
- Avoid idling mobile plant and ensure generator exhausts and flues do not point directly to the ground and/ or placed near sensitive receptors
- Wheel washing at entry and exit point of site to avoid 'trackout'
- Run-off from water suppression or wheel washing prohibited from entering local and/ or highway interceptors
- Vehicle movements on site are controlled by a site speed limit of 5mph
- Dust suppression netting (monaflex) to be used on areas of scaffolding
- Cutting of silica-based materials will be contained within enclosures with continuous dust suppression
- Welfare area to be swept to avoid a build of debris
- Temporary hardstanding (ideally asphalt) site haul/ tracking routes to be put in place and routinely swept
- Materials and waste to be covered to avoid airborne debris
- Ensure plant such as generator exhausts and flues do not point directly to the ground
- Burning of any material shall be strictly prohibited

Should the Air Quality and Dust Risk Assessment conclude that there is a dust risk associated with an elevated risk of dust soiling, then a continuous dust monitoring station will be set up to monitor PM10 levels so as to ensure the effectiveness of the control measures implemented as part of the Construction Phase (Health and Safety) Plan.

The Air Quality and Dust Risk Assessment will identify relevant site boundaries where the monitoring stations will need to be set up. In this event, Weston Homes will instruct SES to install an MCERT PM10 Aeroqual Dust Sentry (or similar) to the hoarding on the identified boundary of the site which will take into account the nearest sensitive receptors.

The continuous monitor will allow for accurate real-time 15-minute logs of airborne PM10 to allow site to comply with generically adopted Air Quality trigger levels; 'amber' 150µg/m³ and 'red' 250µg/m³ alerts along with a 24-hour 250µg/m³ limit.

With this system the site management team will receive automatic email alerts so that when dust level trigger levels are breached, action can be taken immediately to reduce these to the adopted levels. This also allows for a full investigation of events which can be included in monthly reports.

In the event of a complaint, SES can also attend the site and undertake monitoring using an instantaneous handheld dust monitor such as a Casella Microdust Pro or similar.

i. Emissions from vehicle

As previously noted, a Construction Logistics Plan will be produced for the site and the aim will be to ensure smart delivery management and smart procurement of materials for this project. This strategy will be enforced during the tender stage by the Weston Homes Commercial team for subcontractors who intend to work on this project.

As part of the CLP and procurement targets, subcontractors will be encouraged so far as reasonably practicable to prefabricate materials off site prior to delivery to site.

This strategy will minimise multiple deliveries, reduce emissions from the vehicles and maintain the neighbourhood air quality.

ii. Emissions from Construction on site activities

Some of the proposed checks and strategies to control emissions will include the following;

- a. Site Management will endeavour to locate machinery and dust generating activities away from receptors.
- b. As part of the CLP and procurement target, subcontractors will be encouraged as far as is reasonably practicable to prefabricate material off site prior to delivery to site.
- c. Smart procurement will minimise multiple deliveries, reduce emissions from vehicle and maintain the neighbourhood air quality.
- d. Site management will endeavour to minimise cutting, grinding and sawing on site.
- e. Where such activities must take place subcontractors will be required to spray water preferably from a water efficient spray pump over the material as it is being cut. This will reduce the amount of dust generated.
- f. Site Management will check that cement, sand, fine aggregates and other fine powders are sealed after use.
- g. Mud and debris will be cleaned as they become dust once they dry out.
- h. For all activities involving release of silica dust and persons carrying out sweeping activities, all personnel will be expected to be face fit tested and wear a suitable Face Fit P3 mask.

Site transport that creates substantial amounts of dust must ensure the following;

- Hierarchy of prevention is implemented:
- Adequate ventilation provided, or
- Water Suppression System used, or
- Local Ventilation Systems (vacuum) systems used

Where the above hierarchy cannot be implemented, those exposed to the dust must wear Respiratory Protection Equipment (RPE) – to grade APF 40 (full face respirator with filter to P3 standard).

To ensure that the Construction Logistics Plan strategies set out with respect to reducing emissions from subcontractor deliveries to site are achieved, delivery check sheets will be reviewed (quarterly) during progress meetings.

5. Environmental Management and Monitoring

Controls will need to be developed following investigations with respect to the following and will be expanded upon as part of the Construction Phase Health and Safety Plan;

- Controlled Waters
- Groundwater
- Ground Contamination

Site investigation works completed onsite will never give a 100% confidence level as to the exact ground conditions per square metre of the site.

There are various scenarios that may be encountered during excavation, such as the identification of a former underground storage tank or other underground structure, identification of discoloured soils, a localised but significant change in the type of material encountered and/or detection of unusual or “chemical” odours in the soils,

If any of the above situations arise, or any other unexpected scenario with regards to the potential for contamination, the following Method Statement will need to be followed:

Method Statement for Previously Unidentified Contamination

There is the possibility that sources of contamination may be present on the site that was previously unforeseen. In the event of identification of such conditions, this method statement should be followed by the Contractors:

- Should such contamination be identified or suspected during the site clearance or ground works, these should be dealt with accordingly.
- Any Employee of the Principal Contractor, or a subcontractor who discovers an area of ‘contaminated land’ or comes across ‘polluted’ ground water, during the course of construction will report the matter immediately to the Site Manager, or in his absence, the most senior member of staff at the site.
- The Site Manager will inform Stansted Environmental Services Ltd, at the earliest opportunity, and in the meantime instruct staff to stop works in the specific area.
- A member of staff from Stansted Environmental Services Ltd will inspect the site and carry out/or arrange for an appropriate risk assessment to take place.
- The matter will be recorded, and reported to Groundwork consultants in the first instance, then the Local Authority and/or the Environment Agency.
- Samples will be taken if required to determine the contamination levels and to determine classification of the waste.
- Where the waste is removed from site, it will be transported to an appropriate landfill site, and detailed logs recorded.
- Work will only re-commence in the affected area when Stansted Environmental Services Ltd have informed the Site Manager that the matter is completed, (guidance, where appropriate, will be obtained from the appointed consultant, the Local Authority and/or the Environment Agency, should a change in the methodology be required).
- Details of the incident, the assessment, and remedial action taken will be logged by the appointed consultant and added to the Health and Safety File on site.

5.1. Piling and Foundations

This information will be updated following completion of field investigation works.

5.2. Pollution, Prevention and hazardous material storage

Chemicals and hazardous materials such as fuels and lubricants may be stored on site during the construction phase of the project. These include but are not limited to:

- Fuels
- Oils
- Lubricants
- Paint and Coating
- Adhesives and resins
- Solvents
- Compressed gases
- Cements and binders

Measures will be developed, implemented, maintained and monitored in order to comply with the Water Resources Act (1991) section 85 and associated Regulations.

The following list shows measures that will be put in place to prevent pollution and would conform to the best practice policy proposed by the Environment Agency (EA) via the Pollution Prevention Guidelines (PPGs):

- the handling, use and storage of hazardous materials to be undertaken in line with the EA's Pollution Prevention Guidelines (e.g. PPG2 Above Ground Oil Storage Tanks);
- adequately bunded and secure areas with impervious walls and floor for the temporary storage of fuel, oil and chemicals on site during construction;
- drip trays to collect leaks from diesel pumps or from standing plant;
- oil interceptor(s) fitted to all temporary discharge points and for discharge from any temporary oil storage/ refuelling areas;
- development of pollution control procedures in line with the EA's Pollution Prevention Guidelines, and appropriate training for all construction staff;
- Provision of spill containment equipment such as absorbent material on site.

There is a potential that hazardous waste will be stored on the site and therefore it must be stored in accordance with the Environment Agency Pollution Prevention Guidance (PPG2) so as not to cause any water/land contamination.

Pollution Prevention Guidelines (PPGs) are based on relevant legislation and reflect current good practice. Although some of the pollution prevention guidance documents have been withdrawn/archived, the information detailed in some of the document are still good practises for pollution prevention. The following Pollution Prevention guidance document are listed below;

PPG2: Above ground oil storage tanks: Provides information about storing oil in above-ground storage tanks, for new installations and existing tanks. The guidance is for small to medium size commercial oil storage. It gives advice on choosing, installing, using and maintaining oil tanks and how to deal with spills.

PPG3: Use and design of oil separators in surface water drainage systems: provides information about choosing and using oil interceptors to comply with environmental law and prevent pollution. It gives information about choosing, installing and maintaining an oil separator. Oil separators can be fitted to surface water drains to protect the aquatic environment.

PPG7 Refuelling facilities: It includes guidance on planning, designing, operating and maintaining refuelling facilities, plus information on storing other related, non-fuel products and dealing with environmental incidents.

PPG13: Vehicle Washing & Cleaning: provides information on how to comply with the law and prevent pollution when washing and cleaning vehicles. It includes advice on dealing with effluent, waste management and storing and using chemicals.

PPG26 Drums and intermediate bulk containers: gives information to store and handle drums and intermediate bulk containers (IBCs). It provides advice on choosing drums and IBCs, designing storage areas, delivery and handling, maintenance, dealing with spills and waste management.

The Pollution Prevention Guidelines are available to view on

<https://webarchive.nationalarchives.gov.uk/20140328090931/http://www.environment-agency.gov.uk/business/topics/pollution/39083.aspx>

All contractors will be familiar with and apply the relevant best practice listed in the above guidance documents.

The Environment Agency incident hotline number is 0800807060

Fuels and oil

All fuel and oil will be stored in accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001 and they will be handled in such a way that risk of pollution is minimised, this will include: Fuel and oil storage tanks will comply with the Control of Pollution (Oil Storage) (England) Regulations 2001 and will be locked when not in use.

Storage areas will not be located within 10m of the watercourse or highway gully.

Mobile bowsters will be bunded and will comply with the Control of Pollution (Oil Storage) (England) Regulations 2001 and will be locked when not in use.

Drums will be stored in bunded areas with a minimum capacity of 25% of the total volume contained within the bund, or 110% of the largest container, whichever is greater. Drums will be maintained in good condition, fitted with lids and labelled to indicate the contents.

Trained operatives only will carry out refuelling of plant and equipment.

Static combustion engine plant (e.g. compressors, lighting sets) will be integrally bunded or placed on drip trays.

Plant will be regularly checked for leaks and will be regularly maintained.

Spill kits will be provided within close proximity to fuel and oil storage areas and operatives will be trained in their use.

6. Communication and Neighbourhood Liaison

6.1. Neighbourhood Liaison

Due to the location of the site within a residential area, it is recognised that effective communication with people who may be affected by the project is maintained to show good neighbourhood relations during the course of this project.

The maintenance of good relations, effective communication and implementation of strategies to reduce disruption will form an important aspect of the successful management of this project.

The following action will be implemented;

- I. Site information which include contact name for project manager, site manager and community liaison contact number will be displayed in front of site entrance.
- II. Site working hours will be displayed on site.
- III. Effective communication and notices will be in place for advanced works that may cause disruption.
- IV. The site will be registered with the Considerate Constructors Scheme and all work will be carried out in accordance with the code of considerate practice guidance.

6.2. Considerate Constructors

Considerate Constructors seek to improve the image of the construction industry by striving to promote and achieve the best practice under the Code.

Enhancing the Appearance

Constructors should ensure sites appear professional and well managed.

- Ensuring that the external appearance of the sites enhances the image of the industry
- Being organised, clean and tidy
- Enhancing the appearance of facilities
- Raising the image of the workforce by their appearance

Respecting the Community

Constructors should give utmost consideration to their impact on neighbours and the public.

- Informing, respecting and showing courtesy to those affected to the work
- Minimising the impact of deliveries, parking and work on the public highway
- Contributing to and supporting the local community and economy
- Working to create a positive and enduring impression, and promoting the Code

Protecting the Environment

Constructors should protect and enhance the environment.

- Identifying, managing and promoting environmental issues
- Seeking sustainable solutions, and minimising waste, the carbon footprint and resources
- Minimising the impact of vibration, and air, light and noise pollution
- Protecting the ecology, the landscape, wildlife, vegetation and water courses

Securing everyone's Safety

Constructors should contain the highest level of safety performance.

- Having systems that care for the safety of the public, visitors and the workforce
- Minimising security risks to neighbours
- Having initiatives for continuous safety improvement
- Embedding attitudes and behaviours that enhance safety performance

Caring for the Workplace

Constructors should provide a supportive and caring working environment.

- Providing a workplace where everyone is respected, treated fairly, encouraged and supported
- Identify personal development needs and promoting training
- Caring for health and wellbeing of the workforce
- Providing and maintaining high standards of welfare

The Code of Considerate Practice outlines the Schemes expectations of all registered sites and companies, describing those areas that are considered fundamental by the Scheme in helping improve the image of construction.

6.3. Communication

Effective communication of the environmental controls set out and construction safe practices is deemed a requirement for the successful management of this project.

To ensure the above is achieved, the CEMP will be distributed to the project team, including sub-contractors, to ensure that the environmental requirements are communicated effectively. Key activities and environmentally sensitive operations will also be briefed to staff and Contractors.

The Contractor will define procedures for internal and external communication. The client may require that any communication with external parties such as environmental regulators or the public is undertaken through a nominated client representative.

The agreed CEMP will be published on the project website.

During the construction phase, internal communication will include regular progress meetings, which should cover:

- Training undertaken
- Progress reports
- Inspections, audits and non-conformance
- Complaints received
- Visits by external bodies and the outcome or feedback from such visits
- Objective / target achievement, including reporting on environmental performance.

External communication may include letter drops or meetings, and liaison with statutory authorities. This will be overseen by a Weston Homes representative.

6.4. Complaints and non-conformances

A formal complaints procedure will be developed and the procedure will include the following;

- Date of the complaint
- Time
- Nature of the complaint- All complaints are put into one of the following categories: Noise, Dirt and Dust. Parking, Safety, Inconsiderate Behaviour, Road Conditions and Vehicle Movements, Environmental Concerns, Pedestrian Access Obstruction, Property Damage, Site Lighting, Working Hours and Other.
- Actions or investigation carried out with updates
- Communication updates with the complainant

The project manager and site management will be the first point of contact with respect to any complaint and will carry out all investigations and respond to external complainants.

7. Monitoring and CEMP Review

CEMP Review

The CEMP is a live document and the project team on site will ensure that controls outlined in the CEMP are properly implemented and regularly monitored to ensure their effectiveness.

Changes to the controls will be instigated if they are not achieving their objectives.

The CEMP will be revised once new changes have been implemented to address the environmental controls set out. The aim is to ensure control set out remains consistent with environmental regulatory requirements and also meet conditions of planning approval.

Environmental monitoring

Scheduled monitoring of environmental performance will be conducted during the course of the development. This will enable the overall effectiveness of established environmental measures and compliance procedures to be assessed, and allow areas of underperformance to be identified so corrective actions can be taken to strengthen environmental safeguards or improve outcomes.

Safety Inspections

Regular inspections will be carried out on all construction activities and work areas in order to check compliance with this CEMP and regulatory conditions. The results of these inspections shall be recorded as part of the Health and safety auditing procedure.

Event Based Inspections

Event based checks shall be conducted by the Project Manager following any significant event such as rainfall of sufficient quantity to generate run off, high winds, the receipt of an environmental complaint, issue of a non-compliance report or any exceedance in monitoring results. Event based checks will be recorded on a separate inspection form detailing the reasons, observations, findings and outcomes of the inspection which should then be recorded and actions closed out.

Performance and Progress meeting

A regular progress meeting will be held with the stakeholders and the subcontractors to discuss the construction updates and check that controls are effective.

-----END OF REPORT-----

APPENDIX 4.1- POLICY CONTEXT

- 1.1 This section briefly reviews the policy context relating to the socio-economic aspects of the Proposed Development scheme at the national and local levels.

National Planning Policy Framework (2021)

- 1.2 The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these are expected to be applied.

Achieving Sustainable Development

- 1.3 At the heart of the NPPF is a presumption in favour of sustainable development. Paragraph 8 sets out three objectives:

- **'an economic objective** to help build a strong, responsive and competitive economy';
- **'a social objective** to support strong, vibrant and healthy communities'; and
- **'an environmental objective** to protect and enhance the natural, built and historic environment'.

- 1.4 Other paragraphs relevant to this socio-economic assessment are:

- **Paragraph 81** states that planning policies and decisions should support new business investment opportunities and help foster economic growth and productivity by taking into account both local business needs and wider opportunities for development.
- **Paragraph 86** demonstrates the importance of ensuring the vitality of town centres "by taking a positive approach to their growth, management and adaptation." As a component of this, planning policies should recognise the supportive role that residential development can play in ensuring the vitality of town centres.
- **Paragraph 87** outlines the requirement for Local Planning Authorities to apply a 'sequential test' for development proposals that include main town centre uses that are not within the existing centre, nor in accordance with an up-to-date plan. If there are no suitable sites within the existing centre boundary, then 'edge of centre' locations should be considered as the next most suitable option.
- **Paragraph 88** elaborates further, stating that the suitability of an edge of centre site is in part determined by its accessibility to the existing town centre. All opportunities to maximise this factor should be taken.

- **Paragraph 92** outlines the need for healthy and safe communities by requiring that developments foster opportunities social interaction, provide a safe, accessible and crime-free environment, and enable and support healthy lifestyles.
- **Paragraphs 119** supports development that make the effective use of land. This is partially achieved by encouraging a mix of uses on the same land in order to provide a variety of social, economic and environmental benefits. Available brownfield land which is suitable for redevelopment should be prioritised.

Norwich City Council Local Plan

1.5 Norwich City Council Local Plan consists of three main documents and a variety of Supplementary Planning Documents;

- The 'Joint Core Strategy', which sets out the strategy for regeneration and growth;
- 'Development Management Policies', which provides detailed policies to guide and implement this strategy;
- Site allocations and Site Specific Policies; and
- Supplementary Planning Documents which provide additional guidance to support specific local plan policies.

Joint Core Strategy for Broadland, Norwich and South Norfolk (2011), amended January 2014

1.6 The Joint Core Strategy (JCS) for Broadland, Norwich and South Norfolk is the key planning policy document for the Greater Norwich area and was adopted on 22 March 2011, with amendments adopted 2014. It forms part of the Local Plans for the districts of Broadland, Norwich and South Norfolk setting out the broad vision for the growth of the area and containing strategic policies for the period 2008 – 2026.

1.7 The JCS is split between area-wide policies (policy 1-8) and policies for places (policy 9-19). Highlighted below are those elements of these policies relevant to the Site.

1.8 The JCS (Policy 4: Housing Delivery) sets the overall housebuilding levels needed to achieve the ambitious housing growth required in the greater Norwich area to 2026. For the city of Norwich, the new dwelling requirement over this period (calculated from a base date of April 2008) is 8,592 dwellings. Policy 4: Housing Delivery also promotes a mix of dwelling types and sizes on sites for 5 or more dwellings, and a requirement for 33% affordable homes on sites providing 16 dwellings or more (or over 0.6ha), with an overall strategic tenure split for affordable homes as 85% social rented and 15% intermediate tenures. Policy 4 also highlights that the proportion of affordable housing sought may be

reduced and the balance of tenures amended where it can be demonstrated that site characteristics, including infrastructure provision, together with the requirement for affordable housing would render the site unviable in prevailing market conditions, taking account of the availability of public subsidy to support affordable housing. The Council highlight that this will contribute to providing balanced communities and to meet the needs of the area.

- 1.9 Policy 5: The Economy states that the local economy will be developed in a sustainable way to support jobs and economic growth both in urban and rural locations. Ensuring the economy is sustainable will provide for a rising population and develop its role as an engine of the wider economy.
- 1.10 Policy 7: Supporting Communities states “*all development will be expected to maintain or enhance the quality of life and the well-being of communities...*” which includes providing appropriate and accessible health facilities, education facilities and community infrastructure and cohesion through access to new and improved community spaces. Thus the JCS highlights within Policy 8: Culture, Leisure and Entertainment that the cultural offer is an important and valued part of the area so therefore existing cultural assets and leisure facilities must be maintained and enhanced.
- 1.11 Policy 11: Norwich City Centre promotes an enhanced regional role for the city centre as the main focus for retail, leisure and office development, with housing and educational development reinforcing its vibrancy. Redevelopment of brownfield sites will contribute to the economic, social, physical and cultural regeneration of the city centre. Policy 1: Norwich City Centre states that housing densities in the city centre will generally be high but that family housing will also be provided to achieve a social mix. The policy also identifies the Northern City Centre in particular for comprehensive regeneration, with the objective of achieving physical and social regeneration, facilitating public transport corridor enhancements, and utilising significant redevelopment opportunities.
- 1.12 Policy 12: The Remainder of the Norwich Urban Area states that new retailing, services, offices and other centre uses will be encouraged at a scale appropriate to its form and function to meet the shopping needs of residents of north Norwich and provide for a mix of activities.
- 1.13 Policy 19: The Hierarchy of Centres states the retail hierarchy of centres; thus the primary retail area is at the highest level and the large district centres of Anglia Square/ Magdalen Street and Riverside are at the second level. Policy 19: Hierarchy of Centres states that the large district centres meet the daily needs of their local resident populations and also have the potential for additional employment, leisure and shopping uses.

Development Management Policies Plan (2014)

- 1.14 In accordance with the NPPF, Policy DM1: Achieving and delivering Sustainable Development states that development proposals will be expected (through their design, configuration, visual appearance, location, means of access and spatial and functional relationship to existing uses and facilities) to

“enhance and extend accessible opportunities for employment, education and training, stimulate competition and support business whilst enabling balanced, sustainable economic growth in the Norwich economy.”

- 1.15 Policy DM2: Ensuring Satisfactory Living and Working Conditions outlines that outdoor space around new homes can be provided as private gardens or as communal amenity space and it should be integral to the overall design of the development.
- 1.16 Policy DM8: Planning Effectively for Open Space and Recreation states that all development involving the construction of new dwellings is required to contribute to the provision, enhancement and maintenance of local open space by means of on-site provision or indirect contribution through the community infrastructure levy (CIL).
- 1.17 It further highlights that for developments of 100 dwellings and above, the plan will be required to provide for informal publicly accessible recreational open space on-site, as an integral part of the overall design and landscaping of the development. The policy also states that developments of 100 child bed spaces or more, should include the on-site provision of younger children’s playspace (of at least 150 sq.metres with a minimum of four different pieces of equipment) unless there is a play area of equivalent standard within 400 metres walking distance of the site. In addition, Policy DM8 outlines that as an indicative guide, on-site open space and landscape should not be generally less than 20% of the Site.
- 1.18 Policy DM18: Promoting and Supporting Centres states that development for retail, leisure and other main town centres uses as defined in the NPPF, will be permitted within the city centre primary and secondary retail areas, large district centres and existing and proposed district and local centres.
- 1.19 To implement the JCS and also support the objectives of the NPPF in relation to the vitality of town centres and healthy communities, Policies DM20 Protecting and Supporting City Centre Shopping and DM21 Protecting and Supporting District and Local Centres seek to manage the use of ground floors in the primary shopping area and in local and district centres to protect their retail, commercial and community functions, in particular to sustain the vitality of a strong, vibrant and diverse primary shopping area which has exhibited generally low levels of vacancy at a time when many other centres are in decline.
- 1.20 Within Policy DM21 Protecting and Supporting District and Local Centres it is stated that change of use involving the permanent loss of shops or shopping floor space will be permitted where they would not result in the proportion of A1 retail uses at ground floor level falling below 60% (in the case of district centres). Policy DM21 Protecting and Supporting District and Local Centres also states that the beneficial use of upper floors will be permitted where the use is compatible with surrounding uses.

Site Allocations and Site Specific Policies

- 1.21 Anglia Square is allocated within the Site Allocations and Site Specific Policies document however, supporting text in the document relates to the facilities that Anglia Square provides as a district centre and does not therefore address redevelopment. Many site allocations (eg. RM20 Starling Road) suggest that such development will contribute to the area wide regeneration proposed in the plan.

Anglia Square and Surrounding Area: Policy Guidance Note (March 2017)

- 1.22 The Council adopted a Policy Guidance Note and its immediate surroundings in March 2017, specifically to assist bringing forward the comprehensive redevelopment of the Site, which was being discussed with NCC by the joint applicants for the Proposed Development. This was seen as necessary in view of the expiry of the NCCAAP.
- 1.23 Following consultation, the guidance note was adopted in March 2017, to assist with the achieving a viable and deliverable form of comprehensive development on the site which is acceptable in policy terms, delivers the Council's long-held aspirations for the site and stimulates the regeneration of the wider Northern city centre area.
- 1.24 Paragraph 5.4 outlines the proposed vision for Anglia Square including the "*enhancement of a strong and diverse District Centre function serving the wider suburban areas of North Norwich*" which will all be supported by new residential development contributing to meeting the housing needs of Greater Norwich.
- 1.25 Paragraph 5.5 outlines the proposed objectives including:
- Reinvigorate the local area's economy, including providing for new employment opportunities;
 - Provide significant levels of residential development in order to make effective use of the sustainable city centre location & and,
 - Encourage the development of a balanced community including contributing to the provision of enhanced community facilities and recreational opportunities to meet local needs and complement existing local community and the diverse mix of uses that already exist within this part of the city.
- 1.26 Paragraph 7.18 suggests that although Anglia Square falls outside of the Office Development Priority Area (OPDA), it still provides a significant opportunity to connect other local sites and deliver other desirable uses which would support local facilities for example convenience and comparison retail and leisure uses.
- 1.27 With Paragraph 7.79 suggesting that the provision of certain community facilities would be appropriate within the development itself, this can assist existing local facilities and proposed facilities to serve both the established community and future new residents.

Open Space and Play Supplementary Planning Document (2015)

- 1.28 The Open Space and Play Supplementary Planning Document (SPD) interprets Development Management Policy DM8 Planning Effectively for Open Space and Recreation, and supports strategic policy JCS1 in the Joint Core Strategy (Climate Change and Environmental Assets).
- 1.29 The SPD states that the Council's expectation in most circumstances is that open space and playspace should normally be provided on site for schemes over the threshold specified in Policy DM8. In circumstances where there is already a play area within 400m of the site, or where there are other factors precluding on site provision, developers may instead provide for improvement, enhancement or reprovision of any such established play areas through a planning obligation.
- 1.30 The SPD encourages a flexible, case by case approach to negotiations on open space and playspace provision so that new housing development, wherever proposed, is able to address local needs for open space and playspace directly arising from it in the most beneficial and cost effective way.

Main Town Centre Uses and Retail Frontages Supplementary Planning Document (2014)

- 1.31 The Main Town Centre Uses and Retail Frontages SPD supports and interprets policy DM20: Protecting and Supporting district and local centres of the Norwich Development Management Policies and Policy 11: Norwich City Centre of the Greater Norwich Joint Core Strategy (JCS); both policies relate to the development and expansion and positive management of uses in Norwich City Centre to achieve the most beneficial mix of uses to secure its continued vitality.
- 1.32 Section 4 Frontage Zone Definitions highlights city centre frontage zones and large district centres. Magdalen Street/ Anglia Square is defined as zone LD01.
- 1.33 The SPD makes reference to the Northern City Centre Area Action Plan (NCCAAP), with the change of use within the district centre being assessed and determined under Policy LU2 (Large District Centres). The NCCAAP required that the proportion of A1 retail uses at ground floor level should not fall below 70%, and it also prohibited the change of use of ground floor shop units to residential. As stated above the NCCAAP has reached its 10 year timeframe and legally is no longer part of the adopted plan so therefore these requirements no longer stand.

New Greater Norwich Local Plan 2022 - 2038 – Regulation 19 Draft (March 2021)

- 1.34 The new Greater Norwich Local Plan 2022 – 2038 entered the Regulation 19 stage on the 22nd of March 2021, and the draft local plan was published. The plan lays out a series of draft policies which correspond to different strategic objectives set within Norwich.

- 1.35 Policy 1 The Growth Strategy outlines the broad strategic approach to population growth and housing. The Norwich urban area is positioned at the top of the settlement hierarchy for the Greater Norwich area, and is set to deliver 26,019 of the proposed 49,492 new homes over the plan period.
- 1.36 Policy 2 Sustainable Communities lists a variety of measures which should be taken to ensure that all new development within the plan boundary is sustainable. In part, this policy regards high-density development within urban areas, and states that such proposals should seek to make effective use of brownfield land.
- 1.37 Policy 5 Homes regards the delivery of homes in a variety of size and type to meet a range of different housing needs. New homes should be of high quality and designed in a way which can help produce a mixed and inclusive community of residents.
- 1.38 Policy 6 The Economy sets out the need for new employment land. This should be provided in locations which the local population can reach sustainably. A mixture of small and larger sites are encouraged.
- 1.39 Policy 7.1 The Norwich Urban Area including the fringe parishes provides a development strategy of the Norwich urban area, including the 'Northern City Centre'. Anglia Square (the site) is promoted as a site with significant capacity to provide a significant element of new housing, retail and leisure provision, and public realm improvements in the Northern City Centre area.
- 1.40 Anglia Square is directly regarded within the draft local plan under [Policy GNLP0506](#) as a site within the urban centre that could come forward for development, and is expected to accommodate around 800 homes. The Council set out a suite of criteria that the proposed development would be required to meet in order to be given planning permission.
- 1.41 Though similar proposals on the site were withdrawn in 2018, the Council maintain the suitability of Anglia Square to accommodate medium to high density residential led mixed-use development. Additionally, the council recognise that to ensure the scheme's viability, additional support such as external funding may be required to ensure its delivery.

Norwich Economic Strategy (2019 – 2024)

- 1.42 The new economic strategy for Norwich provides an overview of the local economy and the opportunities and challenges involved for the next five years from publication. The strategy looks to strong local institutional partnerships with neighbouring councils and the New Anglia LEP.
- 1.43 The document lays out four strategic objectives which new economic developments in Norwich should help to achieve:

- **Objective 1**, to enhance productivity and competitiveness within Norwich;
- **Objective 2**, develop the skills of the local population and expand employment opportunities;
- **Objective 3**, create necessary infrastructure to encourage the growth of businesses; and
- **Objective 4**, to raise the profile of Norwich to encourage speculative investment.

Norfolk and Suffolk Economic Strategy- Strategy for Growth and Opportunity

- 1.44 New Anglia Local Enterprise Partnership (LEP) works with businesses, local authority partners and education institutions to drive the growth and enterprise in Norfolk and Suffolk.
- 1.45 In November 2017, New Anglia LEP published their economic strategy which identifies the Norwich Area as one of the seven engines of growth and one of their “priority places” where evidence shows that there are significant opportunities and a commitment for continued growth within the area.
- 1.46 Their economic strategy also reflects the evolving needs and opportunities of the growing local economy and how it can respond in a fast-changing world.
- 1.47 This document was set to be superseded in 2021 but the new plan has yet to be published.

Norfolk and Suffolk Local Industrial Strategy (2020)

- 1.48 The Local Industrial Strategy is the next stage in the evolution and implementation of the Norfolk and Suffolk Economic Strategy. It will build on the Economic Strategy but be a deeper and more focused piece of work.
- 1.49 It focuses on three opportunity areas: clean energy, agri-food and ICT/digital creative. The strategy also recognises a number of underpinning sectors such as ports and logistics and culture and the visitor economy which underpin the economy.
- 1.50 The golden thread which runs through the Local Industrial Strategy is clean growth, with Norfolk and Suffolk positioned as the UK’s clean growth region. The Local Industrial Strategy has been adopted by local partners and is now awaiting Government approval.

Norfolk and Suffolk COVID-19 Economic Recovery Restart Plan (2020)

- 1.51 Through the combined input of commitments of Local Authority, private sector, third sector and education organisations, this report presents a strategy for post-pandemic Economic recovery.

- 1.52 Within this document, Norwich is identified as the urban centre of Norfolk that leads the county in growth and innovation, yet experiences high levels of inequality and low-wage workers. In this it is noted that there are supply-side issues relating to retail, culture and hospitality sectors.

Appendix 4.2- Community Infrastructure Audit

Education Provision

Children's Centres within 2 miles of Anglia Square			
Name of facility	Postcode	Distance from the site (miles)	School Type
North City Children's Centre	NR3 3HR	0.56	Children's Centre
City and Eaton Children's Centre	NR2 2SA	0.72	Children's Centre
Thorpe Hamlet & Heartsease Children's Centre	NR1 4HT	0.9	Children's Centre
Catton Grove, Fiddlewood and Mile Cross (CFM) Children's Centre	NR3 3PY	1.34	Children's Centre
Spixworth and Sprowston Children's Centre	NR7 8EW	1.67	Children's Centre
Dussindale Children's Centre	NR7 9XD	1.75	Children's Centre
East City and Framingham Earl Area Children's Centre	NR1 2LR	1.85	Children's Centre

Primary Schools within 2 miles of Anglia Square					
Name of Facility	Postcode	Distance from the Site (miles)	No of pupils	School Capacity	School Type
Angel Road Infant School	NR3 3HR	0.56	269	270	Community
Charles Darwin Primary School	NR1 1DJ	0.59	296	420	Free schools
Mousehold Infant & Nursery School	NR3 4RS	0.59	256	322	Community
The Free School Norwich	NR1 3NX	0.79	168	168	Free schools
Bignold Primary School and Nursery	NR2 2SY	0.85	498	420	Academy Converted
Nelson Infant School	NR2 4EH	0.96	161	190	Community
Lionwood Infant and Nursery School	NR1 4AN	1.06	218	262	Academy Converted
St. Clements Hill Primary Academy	NR3 4AR	1.1	90	420	Free school
Recreation Road Infant School	NR2 3PA	1.22	334	360	Community
Wensum Junior Academy	NR2 4HB	1.22	189	240	Academy sponsor led
Lakenham Primary School	NR1 2HL	1.33	430	420	Foundation school
Heartsease Primary Academy	NR7 9UE	1.4	454	436	Academy Converted
Mile Cross Primary School	NR3 2QU	1.44	449	470	Community
Catton Grove Primary School	NR3 3TP	1.44	688	866	Community
St Francis of Assisi Catholic Primary School	NR2 3QB	1.53	206	315	Academy Converted
Colman Infant School	NR4 7AW	1.66	175	180	Community
Falcon Junior School	NR7 8NT	1.73	467	480	Community

St William's Primary School	NR7 0AJ	1.8	414	420	Community
Cecil Gowing Infant School	NR7 8NZ	1.74	174	180	Community
Colman Junior School	NR4 7AU	1.76	235	240	Community
Henderson Green Primary School	NR5 8DX	1.83	171	210	academy sponsor led
Edith Cavell Academy and Nursery	NR1 2LR	1.84	223	262	academy sponsor led
Trowse Primary School	NR14 8TH	1.87	136	135	Community
Old Catton CoFE VC Junior School	NR6 7DS	1.87	211	240	voluntary controlled school
Tuckswood Academy	NR4 6BP	1.95	300	310	academy sponsor led
Garrick Green Infant School	NR6 7AL	1.96	146	180	Academy Converted
Heather Avenue Infant School	NR6 6LT	1.97	130	168	Academy Converted
Magdalen Gates Primary School	NR3 1NG	0.25	193	210	Community
George White Junior School	NR3 4RG	0.7	309	324	Academy Converted
Angel Road Junior School	NR3 3HS	0.52	321	360	Community
Lionwood Junior School	NR1 4HT	1	289	360	Academy Converter
Avenue Junior School	NR2 3HP	1.19	465	480	Community

Secondary Schools within 2 miles of Anglia Square

Name of Facility	Postcode	Distance from the Site (miles)	No of pupils	School Capacity	School Type
Jane Austen College	NR3 1DD	0.23	1048	1100	free school
Sewell Park Academy	NR3 4BX	0.8	599	750	academy sponsor led
Notre Dame High School, Norwich	NR1 3PB	0.87	1474	1378	academy converter
The Open Academy	NR7 9DL	1.37	591	750	academy sponsor led
The Hewett Academy, Norwich	NR1 2PL	1.53	298	1493	academy sponsor led
Sprowston Community Academy (Primary and Secondary)	NR7 8NE	1.61	1423	1767	academy sponsor led
City of Norwich School	NR4 6PP	1.84	1684	1750	academy converter

Healthcare Provision

General Practices (GPs) within 2 miles of Anglia Square

Name of General Practice	Postcode	Distance from the Site (miles)	Accepting patients	Number of patients	Number of GPs	Patients per GP
Dr Claridge & Partners (Gurney Practice)	NR3 1LN	0.1 miles	y	16949	12	1412
Oak Street Medical Practice	NR3 3DL	0.3 miles	y	7735	7	1105
Magdalen Medical Practice	NR3 4LF	0.5 miles	y	13829	11	1257
Lawson Road Surgery	NR3 4LE	0.5 miles	y	8070	4	2018
Prospect Medical Practice	NR3 2HW	0.7 miles	y	6816	4	1704

Beechcroft and Old Palace Medical Practice	NR2 4JA	0.7 miles	y	6821	7	974
Norwich Practices Health Centre And Walk In Centre	NR1 1RB	0.7 miles	y	10697	7	1528
West Pottergate Medical Practice	NR2 4BX	0.7 miles	y	4723	2	2362
Adelaide Street Health Centre (Wensum Valley Medical Practice)	NR2 4JL	0.8 miles	y	12563	5	2513
St. Stephens Gate Medical Practice	NR2 2TJ	0.9 miles	y	18477	13	1421
Newmarket Road Surgery	NR2 2HL	1.2 miles	y			
Trinity & Bowthorpe Medical Practice	NR2 2BQ	1.1 miles	y	11027	6	1838
Lionwood Medical Practice	NR1 4NU	1.1 miles	Unknown	11146	2	5573
Lakenham Surgery	NR1 3JJ	1.3 miles	y	8637	5	1727
Woodcock Rd Surgery	NR3 3UA	1.3 miles	y	8250	5	1650
Bacon Road Medical Centre	NR2 3QX	1.6 miles	y	4606	4	1152

Dentists within 2 miles of Anglia Square				
Name of Practice	Postcode	Distance to the Site (Miles)	Accepting new patients?	Dental Staff
Cotman House Dental Surgery	NR3 1RN	0.3 miles	Only by referral	1
Palace Plain Orthodontic Practice	NR3 1RN	0.3 miles	Only by referral	5
mydenitist, Barrack Street	NR3 1TL	0.4 miles	Yes	14
Treetops Dental Practice	NR2 1DS	0.5 miles	Only by referral	6
Peacock & Shreshtha Dental Practice	NR1 1LG	0.5 miles	Only by referral	8
mydentist, Upper Goat Lane	NR2 1EW	0.5 miles	Yes	3
Cathedral Street Dental Practice	NR1 1LX	0.6 miles	Yes	3
Orford Hill Dental Surgery	NR1 3QD	0.7 miles	No	5

Community Facilities

Open Space and Parks and Gardens				
Name	Distance from Site	Area (ha)	Typology	Access
Gildencroft, NR3 1DS	0.2 miles (5 minute walking distance)	0.4	Children and YP Play (including children's playground and equipment), Casual football, Basketball court	Freely Accessible
Wensum Pak, NR3 2DD	0.6 miles (12 minute walking distance)	4	Children and YP Play	Freely Accessible

Waterloo Park, NR3 3HX	0.8 miles (17 minute walking distance)	0.52	Sports pitches/ courts, Children and YP Play	Freely Accessible
Sewell Park, NR3 4BX	0.7 miles (14 minute walking distance)	0.51	Children and YP Play	Freely Accessible
Gertrude Road, NR3 4RN	1.1 miles (22 minute walking distance)	0.6	Open Space and Children and YP Play	Freely Accessible
St Georges Street, NR3 1AB	1 mile (21 minute walking distance)	0.02	Open Space, Children and YP Play	Freely Accessible
Chapelfields Gardens, NR2 1NY	1 mile (22 minute walking distance)	3.22	Open Space, Children and YP Play including children's play area equipment	Freely Accessible
Jenny Lind, NR2 2SW	1.2 miles (26 minute walking distance)	0.18	Open Space, Children and YP Play, multi-use games area, basketball, football	Freely Accessible
Belvoir Street, NR2 3AZ	1.1 miles (22 minute walking distance)	0.06	Football Pitch, Multi use Games Area, Children and YP Play	Freely Accessible
Westend Street Gardens, NR2 4JD	1.1 miles (23 minute walking distance)	0.5	Maintained gardens, open space and tarmac court	Freely Accessible
St Batholomews, NR2 4GZ	1.2 miles (24 minute walking distance)	0.3	Open Space	Freely Accessible
Mousehold Heath	1 miles (20 minute walking distance)	92.2	Nature Reserve (largest in Norwich), Open Space	Freely Accessible
Pointers Field, NR3 2RB	1 mile (20 minute walking distance)	0.04	Open Space, Children and YP Play, climbing wall, trail, basketball and football.	Freely Accessible
Ketts Cave, NR3 1NH	0.6 miles (12 minute walking distance)	0.7	Football pitch, Basketball court , Multi Use Games Area	Freely Accessible
St Clements Park, NR3 3QD	1.3 miles (25 minute walking distance)	1.7	Open Space	Freely Accessible
Sloughbottom Park, NR3 2BN	1.4 miles (28 minute walking distance)	10.6	Extensive Outdoor Activities including BMX, basketball and cricket	Freely Accessible
Woodrow Pilling Park NR1 4PA	1.5 miles (30 minute walking distance)	2.9	Extensive Outdoors	Freely Accessible

Milecross Gardens, NR3 2RS	1.5 miles (30 minute walking distance)	0.5	Activity Trail	Freely accessible
Peterson Road, NR3 2QL	1.5 miles (31 minute walking distance)	0.5	Children's playground and open space	Freely Accessible
City Road, NR1 2HG	1.6 miles (34 minute walking distance)	0.7	Bowls, Tennis Courts	Restricted Access
Borrowdale Drive, NR1 4LZ	1.6 miles (34 minute walking distance)	0.3	Open Space	Freely Accessible
Rider Haggard Road, Heartsease, NR7 9UT	1.7 miles (33 minute walking distance)	8.6	Nature Reserve	Freely Accessible
Heartsease, Sale Road, NR7 9TW	1.7 miles (35 minute walking distance)	9.3	Basketball, football, multi-use games area, skate park	Freely Accessible
Jubilee Park, NR1 2EX	1.8 miles (34 minute walking distance)	1.4	Basketball, football, multi-use games area and skate park	Freely Accessible
Greenfields, Ives Road, NR6 6DG	2 miles (41 minute walking distance)	0.4	Basketball court, 5 a side football pitch with goals, Multi Use Gaming Area, Skate park	Freely Accessible
Heigham Park, NR2 3HW	2.1 miles (44 minute walking distance)	2.7	Bowls, Tennis (grass)	Freely Accessible
Tuckswood Centre	2.3 miles (47 minute walking distance)	0.3	Open Space	Freely Accessible
Lea Bridges Park, Coleburn Road, NR1 2PA	2.4 miles (48 minute walking distance)	3.8	Basketball and football	Freely Accessible
Marlpit Lane	2.4 miles (31 minute walking distance)	0.6	Skate park, and children's play area	Freely accessible
Harford Park, Ipswich Road, NR4 6LQ	2.5 miles (50 minute walking distance)	1.6	Extensive outdoor activities	Freely Accessible
Eaton Park - South Park Avenue, NR4 7AU	2.5 miles (52 minute walking distance)	80	Extensive outdoor activities including Foot golf, football, skate park, crazy golf, boat pond and a café and pavilion	Freely accessible
Danby Close Children's Play Ground, NR4 6LD	2.6 miles (52 minute walking distance)	1.1	Open Space	Freely accessible
Enfield Road, NR5 8LF	3 miles (1 hour 2 minute walking distance)	0.6	Football pitch, basketball, multi-use games area	

Earlham Park, NR4 7TJ	3.1 miles (1 hour 3 minute walking distance)	27	Extensive Outdoor Activities	Freely Accessible
Eaton Green, NR4 6LR	3.1 miles (1 hour 2 minute walking distance)	0.1	Football Pitch	Freely Accessible
Wilberforce Road, NR5 8NQ	3.3 miles (1 hour 7 minute walking distance)	0.6	Open Space	Freely Accessible
Bendish Way, NR5 9NN	4 miles (1 hour 21 minute walking distance)	0.2	Open Space	Freely Accessible
Chapel Break Village Centre	4 miles (1 hour 22 minute walking distance)	1.2	Football pitch	Freely Accessible
Atkinson Close, NR5 9NE	4.1 miles (1 hour 23 minute walking distance)	0.3	Football pitch	Freely accessible

Gyms within 2 miles of Anglia Square			
Name	Distance from Site	Address	Typology
Phoenix Gym Norwich	0.4 miles (7 mins)	2 - 3, St Marys Works, Norwich NR3 3AF	Gym
Complete Fitness Ltd	0.6 miles (13 mins)	2 Marriott Close, Heigham St, Norwich NR2 4UX	Gym
The Gym Norwich	0.6 miles (13 mins)	6-8 Little London St, Norwich NR2 1EA	Gym
Pure Gym	1.1 miles (23 mins)	125 Copenhagen Way, Norwich NR3 2RT	Gym
Norman Centre	1.7 miles (35 mins)	Bignold Rd, Norwich NR3 2QZ	Gym
The Gym Group Norwich City	0.7 miles (14 mins)	6-8 Little London St, Norwich NR2 1EA	Gym
Pure Gym	0.9 miles (19 mins)	28 Castle Mall, Norwich NR1 3DD	Gym
Nuffield Health Fitness & Wellbeing Gym	0.6 miles (13 mins)	Barrack St, Norwich NR3 1TS	Gym
Pure Gym	1 mile (20 mins)	Wherry Rd, Norwich NR1 1WX	Gym

Sports halls within 2 miles of Anglia Square			
Name	Distance from Site	Address	Typology
Norwich School Sports Hall	0.4 miles (8 mins)	Norwich School, 71a The Close, Norwich NR1 4DD	Sports Hall
Angel Road Junior School	0.6 miles (11 mins)	Angel Road Junior School, Angel Rd, Norwich NR3 3HS	Sports Hall
Sewell Park Academy	0.9 miles (18 mins)	Sewell Park Academy, St Clements Hill, Norwich NR3 4BX	Sports Hall

Wensum Sports Centre	1 mile (20 mins)	Wensum Sports Centre, 169 King St, Norwich NR1 1QW	Sports Hall
Recreation Road Sports Centre	1.5 miles (30 mins)	Recreation Road Sports Centre, Recreation Rd, Norwich NR2 3JA	Sports Hall
Notre Dame High School	1.1 miles (21 mins)	Notre Dame High School Norwich, Surrey St, Norwich NR1 3PB	Sports Hall and Activity Hall
Town Close School	1.5 miles 30 (mins)	Town Close House Preparatory School, 14 Ipswich Rd, Norwich NR2 2LR	Sports Hall
Catton Grove Primary School	1.6 miles (32 mins)	Catton Grove Primary School, Weston Rd, Norwich NR3 3TP	Sports Hall
Norman Centre	1.6 miles (31 mins)	Norman Centre, Bignold Rd, Norwich NR3 2QZ	Sports Hall
Norwich High School for Girls	1.8 miles (35 mins)	Norwich High School for Girls, 95 Newmarket Rd, Norwich NR2 2HU	Sports Hall
The Hewett Academy	1.8 miles (35 mins)	The Hewett Academy, Cecil Rd, Norwich NR1 2PL	Sports Hall
UEA Sports Park	3.0 miles (1 hour)	University of East Anglia, Norwich Research Park, Norwich NR4 7TJ	Sports Park

Sports Pitches/ Courts within 2 miles of Anglia Square			
Name	Distance from Site	Address	Typology
Norwich School	0.4 miles (8 mins)	Norwich School, 71a The Close, Norwich NR1 4DD	Cricket Pitch
Angel Road Junior School	0.6 miles (11 mins)	Angel Road Junior School, Angel Rd, Norwich NR3 3HS	Rounders and Cricket Pitch
Sewell Park Academy	0.9 miles (18 mins)	Sewell Park Academy, St Clements Hill, Norwich NR3 4BX	Full sized Football Pitch , Rugby Pitch, Cricket Pitch, Rounders Pitch
Britannia Barracks	1 mile (21 mins)	Cafe Britannia, Britannia Rd, Norwich NR1 4LU	Full sized Football Pitch and Cricket Pitch
Wensum Sports Centre	1 miles (20 mins)	Wensum Sports Centre, 169 King St, Norwich NR1 1QW	Squash Court
Carrow Road, Norwich City FC	1.4 miles (27 mins)	Carrow Road Stadium, Carrow Rd, Norwich NR1 1JE	Football Pitch
Sloughbottom Park	1.4 miles (28 mins)	Sloughbottom Park, 33 Valpy Ave, Norwich NR3 2EN	Full sized Football Pitch
Woodrow Pilling Park	1.5 miles (30 mins)	Woodrow Pilling Park, Pilling Park Rd, Norwich NR1 4PA	Cricket Pitch
Recreation Road Sports Centre	1.5 miles (30 mins)	Recreation Road Sports Centre, Recreation Rd, Norwich NR2 3JA	Full sized Football Pitch
Town Close School	1.5 miles 30 (mins)	Town Close House Preparatory School, 14 Ipswich Rd, Norwich NR2 2LR	Rounders Pitch
Catton Grove Primary School	1.6 miles (32 mins)	Catton Grove Primary School, Weston Rd, Norwich NR3 3TP	Junior Football Pitch
The Hewett Academy	1.8 miles (35 mins)	The Hewett Academy, Cecil Rd, Norwich NR1 2PL	Cricket Pitch
Norwich High School for Girls	1.8 miles (35 mins)	Norwich High School for Girls, 95 Newmarket Rd, Norwich NR2 2HU	Rounders, Hockey and Lacrosse Pitch

Saint Francis of Assisi Roman Catholic School	1.9 miles (38 mins)	Saint Francis of Assisi Roman Catholic School, Jessopp Rd, Norwich NR2 3QB	Rounders Pitch
Waterloo Park	0.8 miles (15 mins)	Waterloo Park, Angel Rd, Norwich NR3 3HX	Tennis Courts
Lakeham Recreation Ground	1.6 miles (32 mins)	Tennis LAKENHAM RECREATIONAL GROUND, 70-88 City Rd, Norwich NR1 2HL	Tennis Courts
Heigham Park, Recreation Rd	1.7 miles (34 mins)	Heigham Park, Recreation Rd, Norwich NR2 3PA	Tennis Courts
The Hewett Academy	1.8 miles (35 mins)	The Hewett Academy, Cecil Rd, Norwich NR1 2PL	Tennis Courts
East Anglia Tennis & Squash Club	2 miles (39 mins)	East Anglia Tennis & Squash Club, Lime Tree Rd, Norwich NR2 2NQ	Tennis Courts

Swimming Pools within 2 miles of Anglia Square

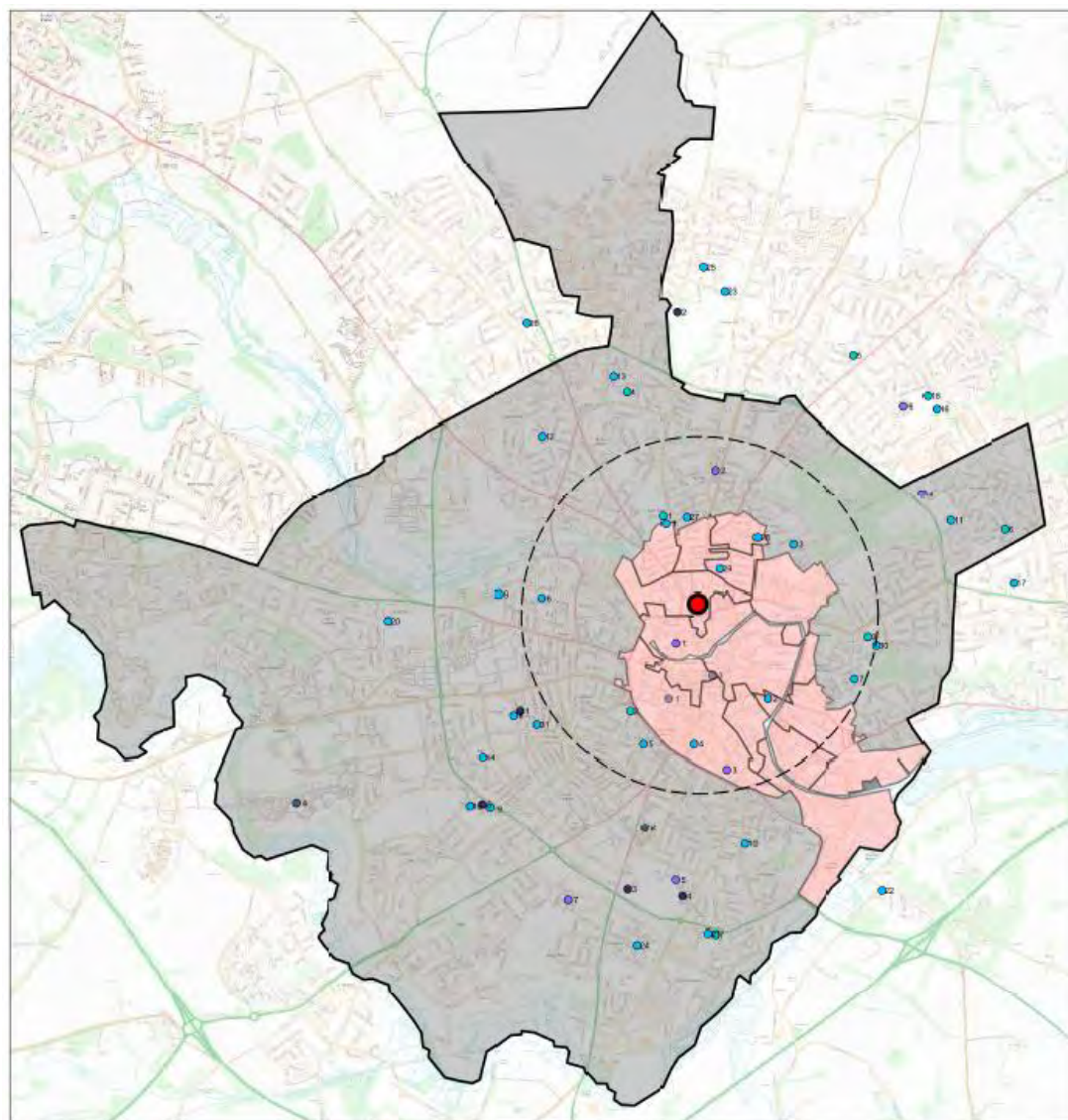
Name	Distance from Site	Address	Typology
Nuffield Health Fitness & Wellbeing Gym	0.6 miles (13 mins)	Nuffield Health Fitness & Wellbeing Gym, Barrack St, Norwich NR3 1TS	Swimming Pool
Riverside Leisure Centre	1.3 miles (25 mins)	Riverside Leisure Centre, Wherry Rd, Norwich NR1 1WX	Swimming Pool
The Hewett Academy	1.8 miles (35 mins)	The Hewett Academy, Cecil Rd, Norwich NR1 2PL	Swimming Pool
Norwich High School for Girls	1.8 miles (35 mins)	Norwich High School for Girls, 95 Newmarket Rd, Norwich NR2 2HU	Swimming Pool

Community Centres within 2 miles of Anglia Square

Name	Distance from Site	Address	Function/Details
Belvedere Community Centre	0.8 miles	Belvedere Community Centre Belvoir Street NR2 3AZ United Kingdom	Bar/social club, bike rack, disabled access, disabled toilets, free parking and kitchen.
Cadge Road Community Centre	1.0 miles	Cadge Road Community Centre Cadge Road NR5 8DF United Kingdom	Bar/social club, bike rack, disabled access, disabled toilets, free parking and kitchen.
Wensum Community Centre	1.1 miles	Wensum Community Centre Hotblack Road Norwich NR2 4HG United Kingdom	Bar/social club, bike rack, disabled access, disabled toilets, free parking and kitchen.
Pilling Park Community Centre	1.3 miles	Pilling Park Rd Pilling Park Rd Norwich NR1 4PA United Kingdom	Bar/social club, bike rack, disabled access, disabled toilets, free parking, kitchen and secure gardens.
Jubilee Community Centre	1.5 miles	Jubilee Community Centre Long John Hill NR1 2EX United Kingdom	Bar/social club, bike rack, disabled access, disabled toilets, free parking, kitchen and secure gardens.
Frere Road Community Centre	1.7 miles	Frere Road Community Centre Frere Road NR7 9UT United Kingdom	Disabled access, disabled toilets and kitchen

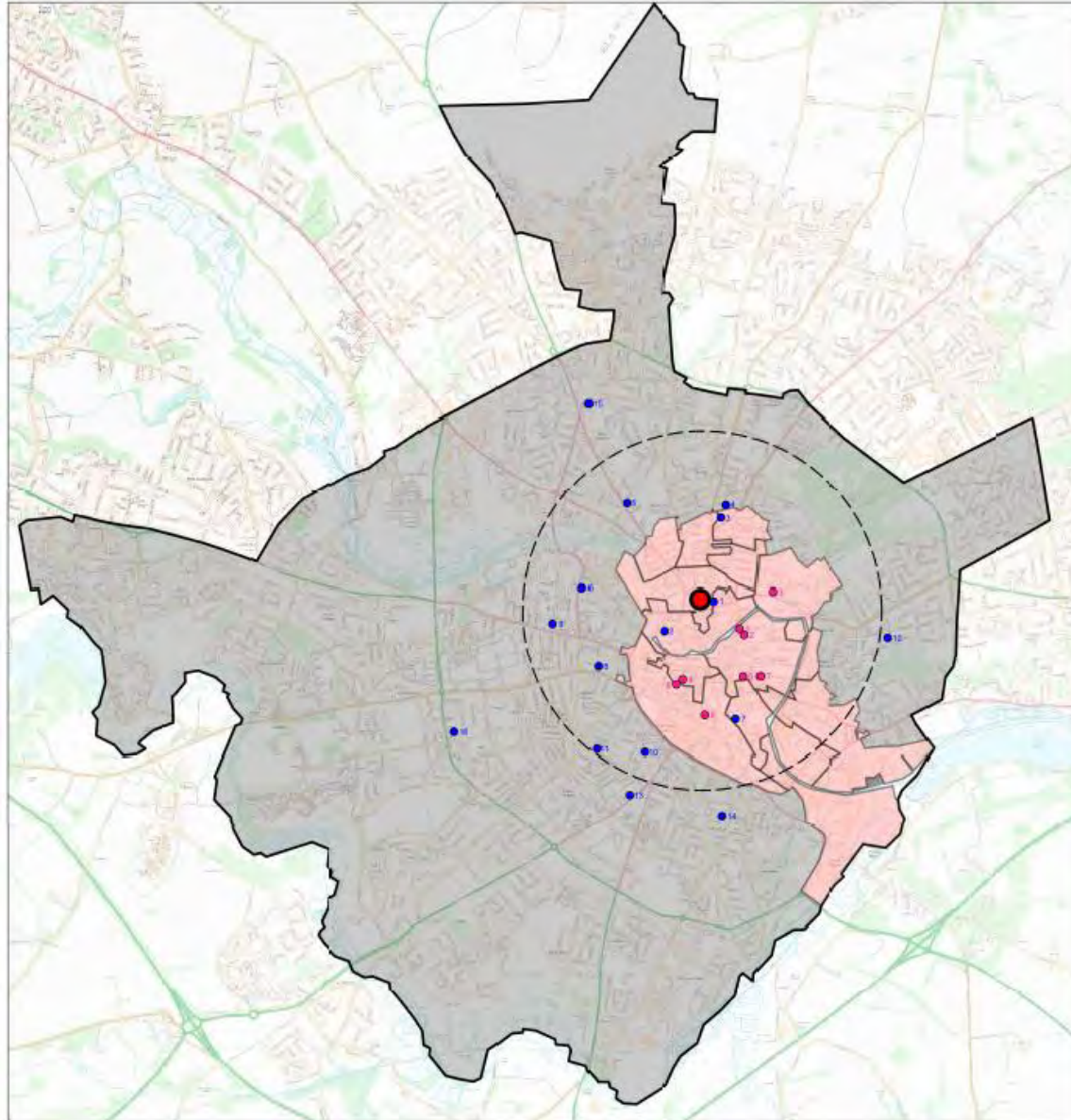
Greenfields Community Centre	1.7 miles	Greenfield Ives Road NR6 6DY United Kingdom	Adjacent playground, disabled access, disabled toilets, free parking and kitchen.
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Places of Worship within 1 mile of Anglia Square		
Name	Distance from Site	Address
Saint Augustine's Church	0.2 miles	St Augustines St, Norwich NR3 3BE
Russian Orthodox Church	0.4 miles	134 Oak St, Norwich NR3 3BP
City Gates Church	0.2 miles	39 Cowgate, Norwich NR3 1SZ
Surrey Chapel	0.2 miles	2-6 Botolph St, Norwich NR3 1DU
St Edmunds Church	0.3 miles	Fishergate, Norwich NR3 1GU
Norwich Buddhist Centre	0.5 miles	14 Bank St, Norwich NR2 4SE
Bangladesh Islamic Centre	0.8 miles	Rose Lane, Norwich, NR1 1PT
Greek Orthodox Church	0.9 miles	5 Recorder Rd, Norwich NR1 1NR



- Children's Centres
 - 1 North City Children's Centre
 - 2 City and Easton Children's Centre
 - 3 Thorpe Hamlet & Healdssea Children's Centre
 - 4 Catton Grove, Hildewood and Mile Cross (CPM) Children's Centre
 - 5 Sprowston and Sprowston Children's Centre
 - 6 Dissindle Children's Centre
 - 7 East City and Framingham Earl Area Children's Centre
 - Primary Schools
 - 1 Angel Road Infant School
 - 2 Charles Darwin Primary School
 - 3 Mousehold Infant & Nursery School
 - 4 The Tree School Norwich
 - 5 Biggles Primary School and Nursery
 - 6 Nelson Infant School
 - 7 Lockwood Infant and Nursery School
 - 8 Recreation Road Infant School
 - 9 Wensum Junior Academy
 - 10 Lakenham Primary School
 - 11 Healdssea Primary Academy
 - 12 Mile Cross Primary School
 - 13 Catton Grove Primary School
 - 14 St Francis of Assisi Catholic Primary School
 - 15 Colman Infant School
 - 16 Falcon Junior School
 - 17 St William's Primary School
 - 18 Oak Green Infant School
 - 19 Colman Junior School
 - 20 Rendelham Green Primary School
 - 21 East David Academy and Nursery
 - 22 Timewise Primary School
 - 23 Old Catton C of E VC Junior School
 - 24 Tudorwood Academy
 - 25 Garlick Green Infant School
 - 26 Heather Avenue Infant School
 - 27 Magdalen Gates Primary School
 - 28 George White Junior School
 - 29 Angel Road Junior School
 - 30 Lockwood Junior School
 - 31 Averae Junior School
 - Specialist Education
 - 1 The Parkside School
 - 2 Hall School
 - 3 Harford Manor School
 - 4 Wherry School
 - 5 The Clare School
 - Secondary Schools
 - 1 Jane Austen College
 - 2 Sewell Park Academy
 - 3 Notre Dame High School
 - 4 The Open Academy
 - 5 The Hewett Academy
 - 6 Sprowston Community Academy
 - 7 City of Norwich School
 - Further Education
 - 1 Sir Isaac Newton Sixth Form Free School
 - 2 Norwich City College of Further and Higher Education
 - 3 Norwich University of the Arts
 - 4 University of East Anglia
- Wider Impact Area ● Site Location
 ■ Local Impact Area 1660m radius (20 min walking distance)

Client		FUTORCH HOUSE, 114-116 CHAWING CROSS ROAD LONDON EC3N 1JH		
Weston Homes		Tel: +44 (0)20 3048 0888	Email: info@westonhomes.com	
Project		Angia Square		
Drawing Title		Sub Ref: 15-053	Drawn: JMM	
Education		Scale: 1:35000@A3	Date: 02.03.2016	
		Drawing no: 002	Rev:	



Dentists

- 1 Colman House Dental Surgery NR3 1RN4
- 2 Palace Plain Orthodontic Practice NR3 1RN
- 3 mydentist, Banack Street NR3 1TL
- 4 Troscops Dental Practice NR2 1DS
- 5 Peacock & Shresthja Dental Practice NR1 1LG
- 6 mydentist, Upper Goat Lane NR2 1EW
- 7 Cathedral Street Dental Practice NR1 1LX
- 8 Orford Hill Dental Surgery NR1 3GD

GPs

- 1 Dr Clendge & Partners (Gurney Practice) NR3 1LN
- 2 Oak Street Medical Practice NR3 3DL
- 3 Magdalen Medical Practice NR3 4LF
- 4 Lawson Road Surgery NR3 4LE
- 5 Prospect Medical Practice NR3 2HW
- 6 Beechcroft and Old Palace Medical Practice NR2 4JA
- 7 Norwich Practices Health Centre And Walk In Centre NR1 1RB
- 8 West Pottergate Medical Practice NR2 4SX
- 9 Adelaide Street Health Centre NR2 4JL
- 10 St. Stephens Gate Medical Practice NR2 2TJ
- 11 Trinity & Bowthorpe Medical Practice NR2 2BQ
- 12 Lionwood Medical Practice NR1 4NU
- 13 Newmarket Road Surgery NR2 2HL
- 14 Lakesham Surgery NR1 3JJ
- 15 Woodcock Rd Surgery NR3 3UA
- 16 Bacon Road Medical Centre NR2 3QX

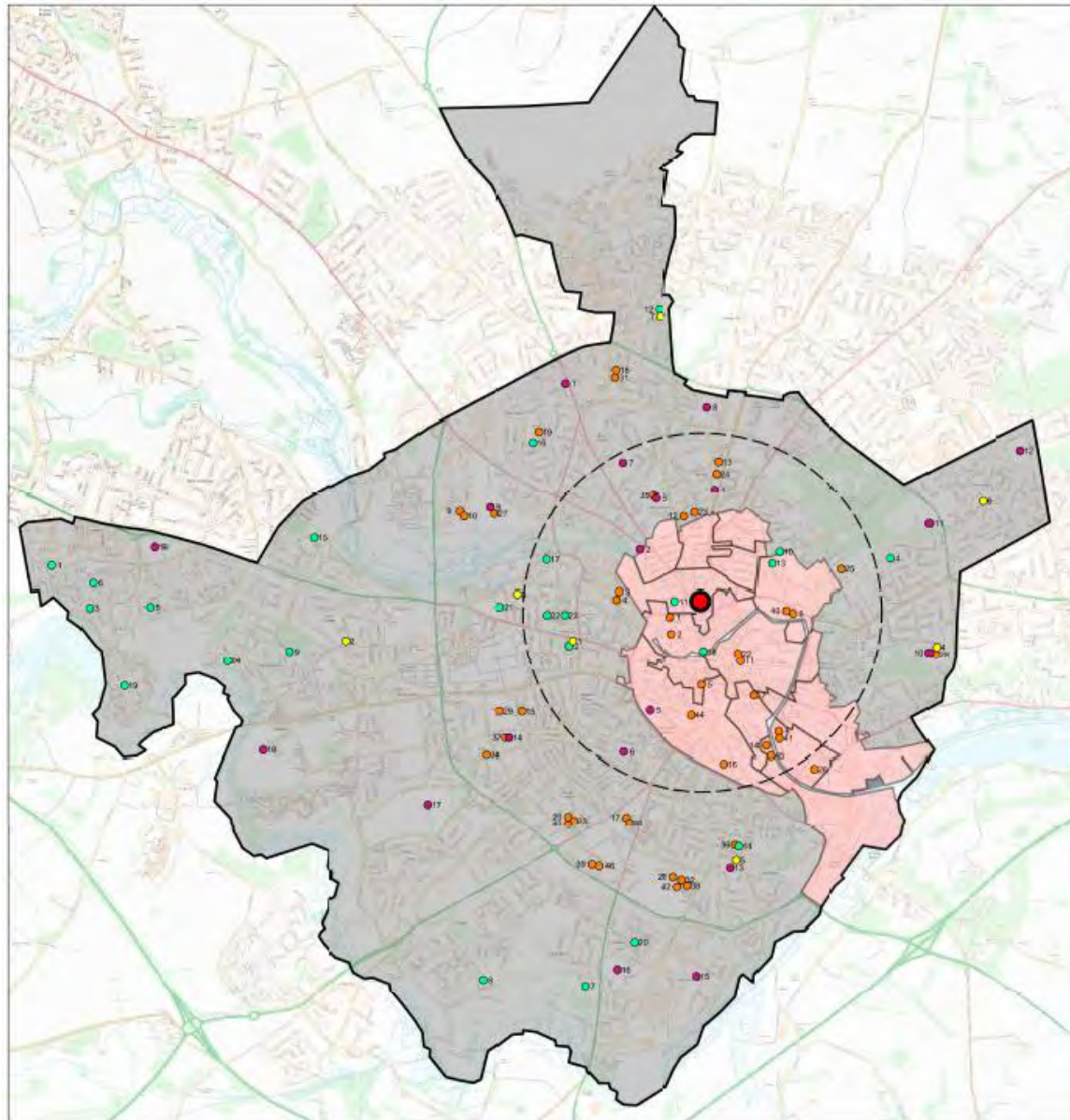
Wider Impact Area

Site Location

Local Impact Area

1660m radius (20 min walking distance)

Client		FUTORPOT HOUSE, 114-118 CHAIRING CROSS ROAD LONDON EC2N 6JH		iceni
Weston Homes		1	+44 (0) 20 354 0555	
		16	mar@iceniexperts.com	
Project		Anglia Square	Job Ref: 16-253	Drawn: NLM
Drawing Title		Scale: 1:35000@A1	Date: 02.03.16	
GPs & Dentists		Drawing no: 001	Rev:	



<ul style="list-style-type: none"> Community Centre 1 Belvedere Community Centre 2 Cadogan Road Community Centre 3 Wensum Community Centre 4 Piling Park Community Centre 5 Jubilee Community Centre 6 Friar Road Community Centre 7 Greenfields Community Centre Open Space 1 Adelson Close, NR3 5NE 2 Belvoir Street, NR3 5AZ 3 Bends Way, NR3 5NN 4 Broomfield Drive, NR1 1AJ 5 Bolethorpe Cynoway, Swafford Street, NR5 9ET 6 Chapel Brook Village Centre, NR3 9LU 7 Clary Close Childrens Play Ground, NR4 6LD 8 Ector Green, Lindford Drive, NR4 6LB 9 Erford Road, NR3 5J7 10 Gilmuts Road, NR3 4RN 11 Gills Way, NR3 1GS 12 Greenfields, Juno Road, NR3 6DG 13 Kettle Cove, NR1 1NH 14 City Road, NR1 2HG 15 Marjals Lane Open Space, NR5 5XN 16 Holston Road, NR3 2DL 17 St Edmunds, NR2 4GE 18 St Georges Street, NR3 1AB 19 The Riverside Childrens Play Ground, NR3 5H2 20 Tuckwood Centre, NR4 21 Wensum View, NR3 4LD 22 West End Street, NR2 4EP 23 Westend Street Gardens, NR2 4UD 24 Wilton Road, NR5 5ND Park and Gardens 1 Milecross Gardens, NR3 2RS 2 Wensum Park, NR3 2DD 3 Wake too Park, NR3 3HX 4 Sewall Park, NR3 4BX 5 Chapelfield Gardens, Chapelfield East, NR2 1NY 6 Janny Lind, NR2 2BW 7 Potters Field, NR3 2RB 8 St Clements Park, NR3 3DD 9 Sloughbottom Park, NR3 2BN 10 Wensum Piling Park, NR1 4PA 11 Rider Haggard Road, Heatsgate, NR7 9UT 12 Heerbesse, Sale Road, NR7 9TW 13 Jubilee Park, NR1 2EX 14 Hegham Park, NR2 3HW 15 Lea Bridge Park, Colburn Road, NR1 3PA 16 Herbert Park, Ipswich Road, NR4 6DQ 17 Ector Park - South Park Avenue, NR4 7SU 18 Earham Park, NR4 7TJ 19 Bolethorpe Park, NR5 5ED 	<ul style="list-style-type: none"> Sports & Recreation 1 The Gym Group Norwich City 2 Phoenix Gym Norwich 3 Complete Fitness Ltd 4 Pure Gym 5 The Gym Norwich 6 Nutfield Health 7 Pure Gym 8 Pure Gym 9 Norman Centre 11 Norwich School Sports Hall 12 Angel Road Junior School 13 Seward Park Academy 14 Wensum Sports Centre 15 Recreation Road Sports Centre 16 Nettle Dame High School 17 Town Close School 18 Cotten Grove Primary School 19 Norman Centre 20 Norwich High School for Girls 21 The Hewett Academy 22 Norwich School 23 Angel Road Junior School 24 Seward Park Academy 25 Bittern Bantocks 26 Carrow Road, Norwich City FC 27 Sloughbottom Park 28 Woodrow Piling Park 29 Recreation Road Sports Centre 30 Town Close School 31 Cotten Grove Primary School 32 The Hewett Academy 33 Norwich High School for Girls 34 Saint Francis of Assisi RC School 35 Waterloo Park 36 Lakenham Recreation Ground 37 Hegham Park, Recreation Rd 38 The Hewett Academy 39 East Angles Tennis & Squash Club 40 Nutfield Health 41 Riverside Leisure Centre 42 The Hewett Academy 43 Norwich High School for Girls
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<ul style="list-style-type: none"> Wider Impact Area Local Impact Area Site Location 1600m radius (20 min walking distance) 	
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Client	WESTON HOMES, 114-115 CHURCH CROSS ROAD, NORWICH NR3 5BN	iceni
	1 - 146333 3545 556 15 - 146333 3545 556	
Project	Anglia Square	
Drawing Title	Community Facilities	
	Job Ref: 16-353	Drawn: NM
	Scale: 1:5000@A3	Client: 02.05.16
	Drawing no: 003	Rev:

APPENDIX 4.3- FIGURES

Figure 4.1 Local and Wider Impact Area

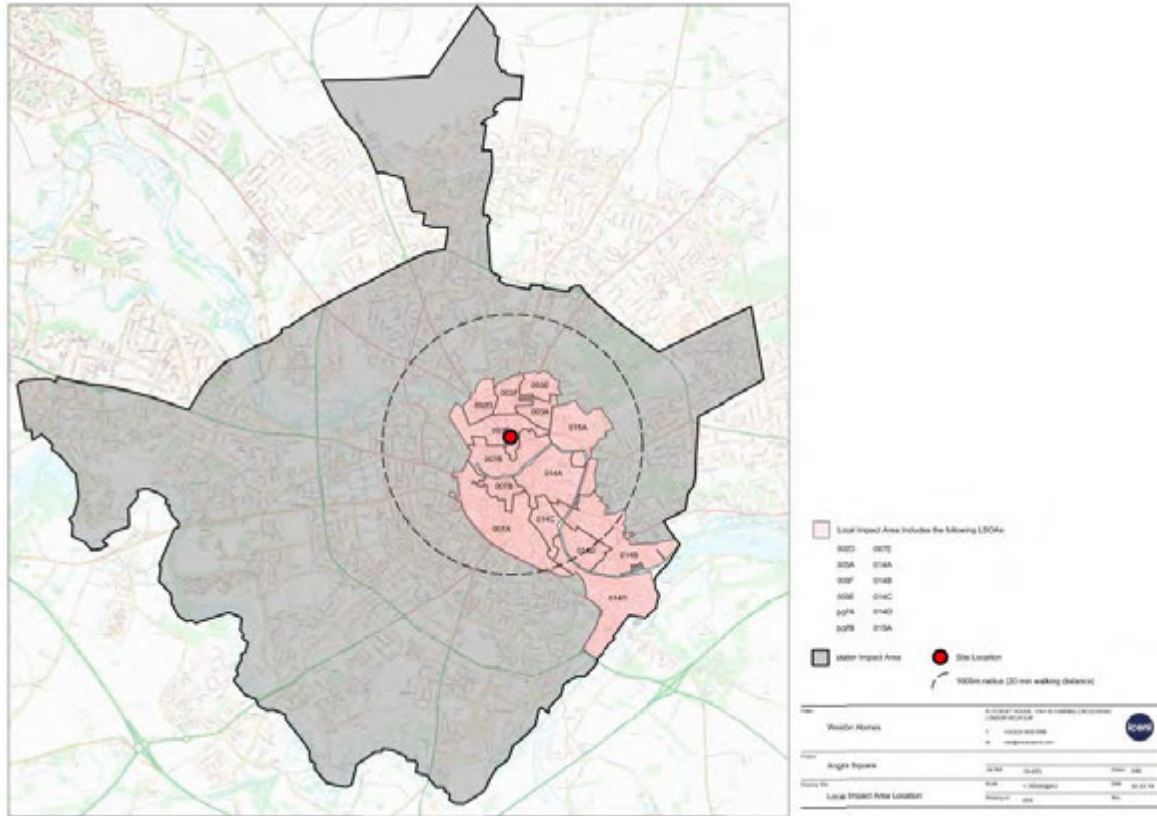
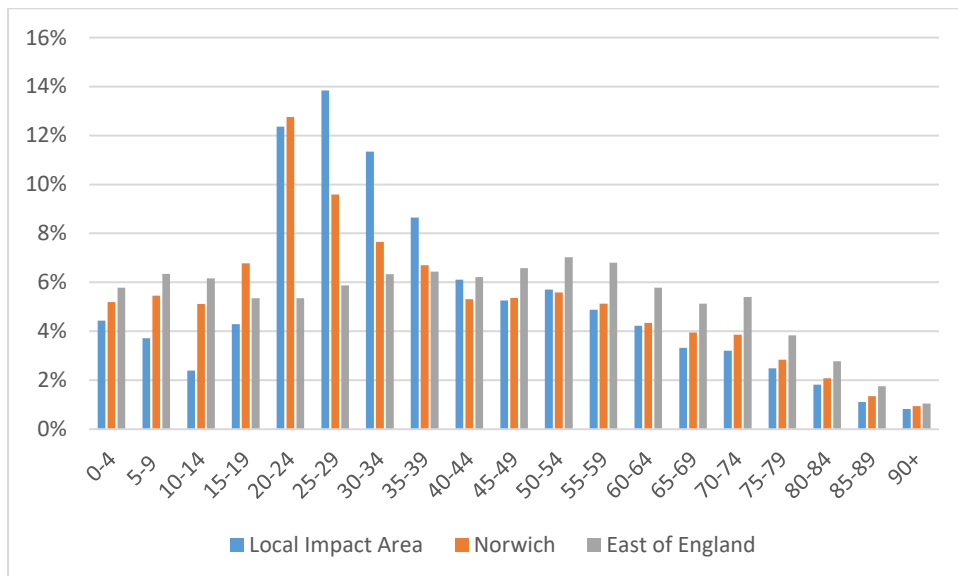
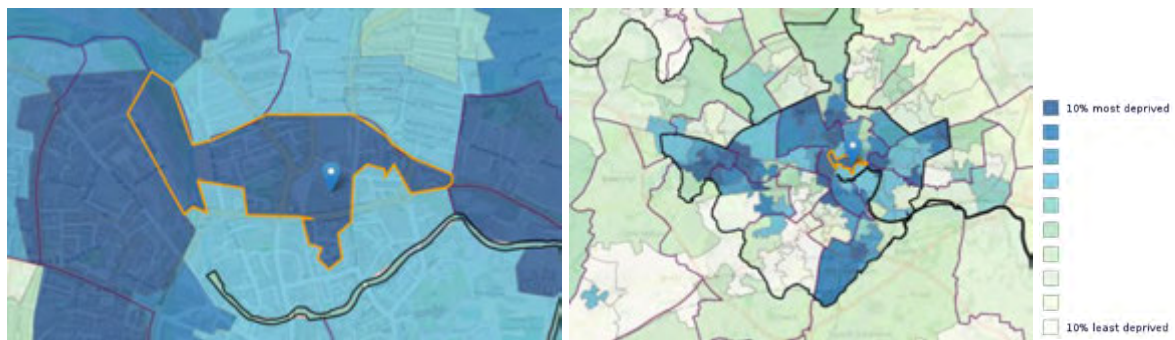


Figure 4.2 Population of the Local Impact Area, Norwich and East of England



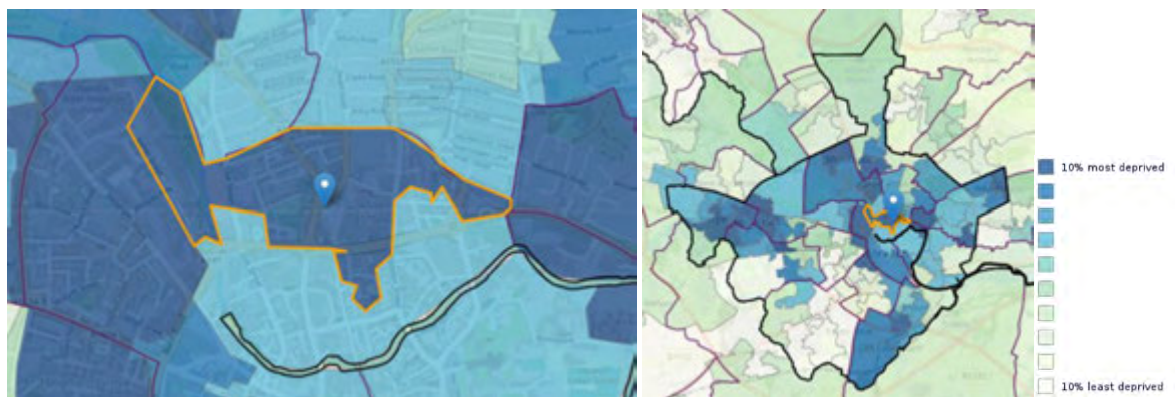
Source: ONS: Mid-2020 Population Estimates

Figure 4.3 Deprivation in terms of Health and Disability in Local Impact Area and Norwich



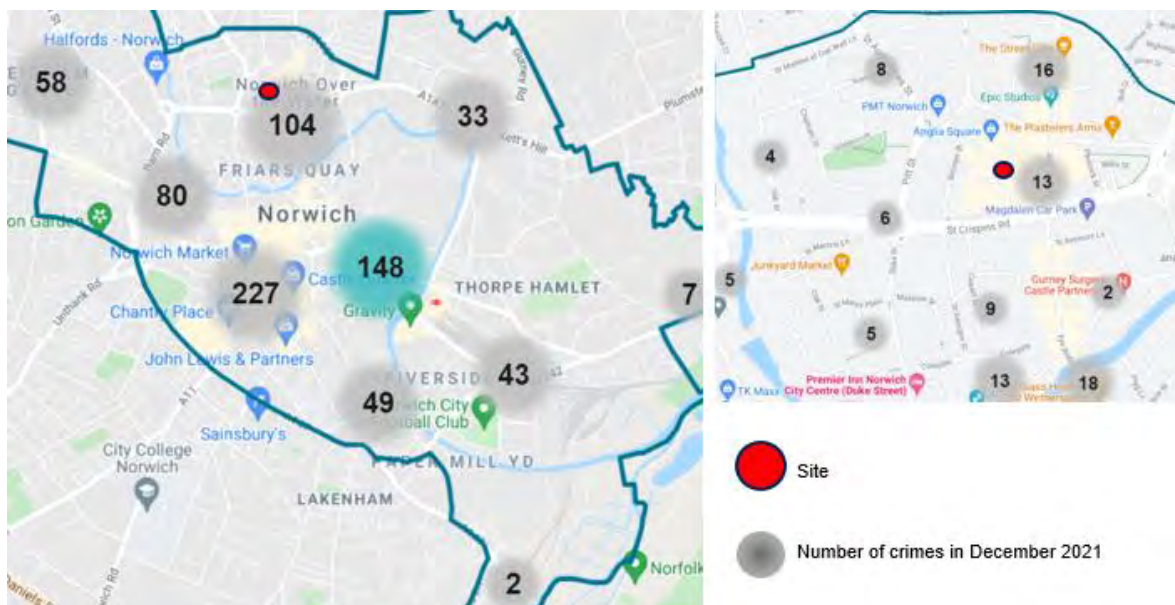
Source: English Indices of Multiple Deprivation 2019

Figure Error! No text of specified style in document..4 Deprivation- IMD Average Rank in the Local Impact Area and Norwich



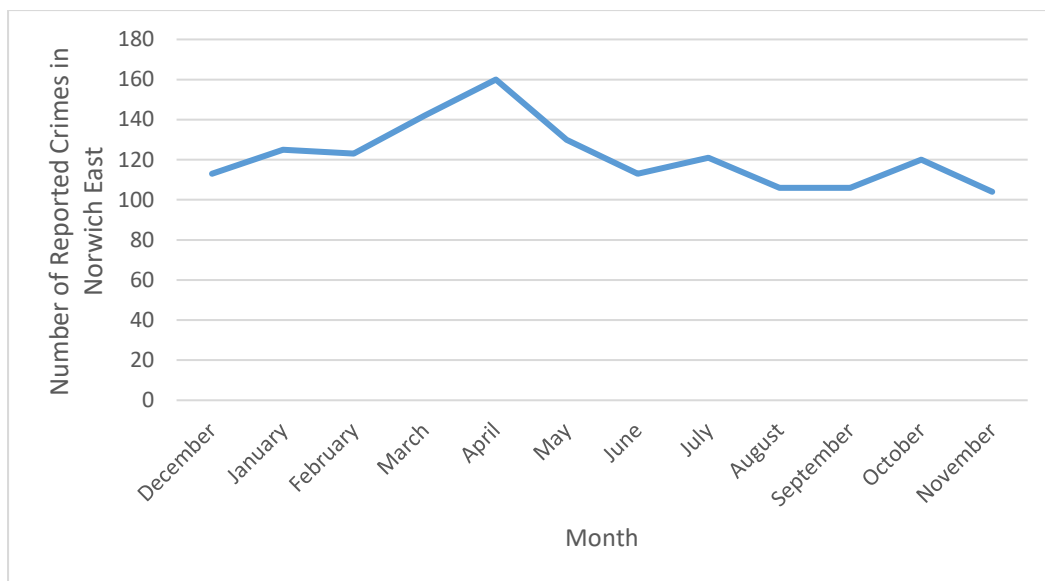
Source: English Indices of Multiple Deprivation 2019

Figure 4.5 Crimes Reported in December 2021 within Norwich East



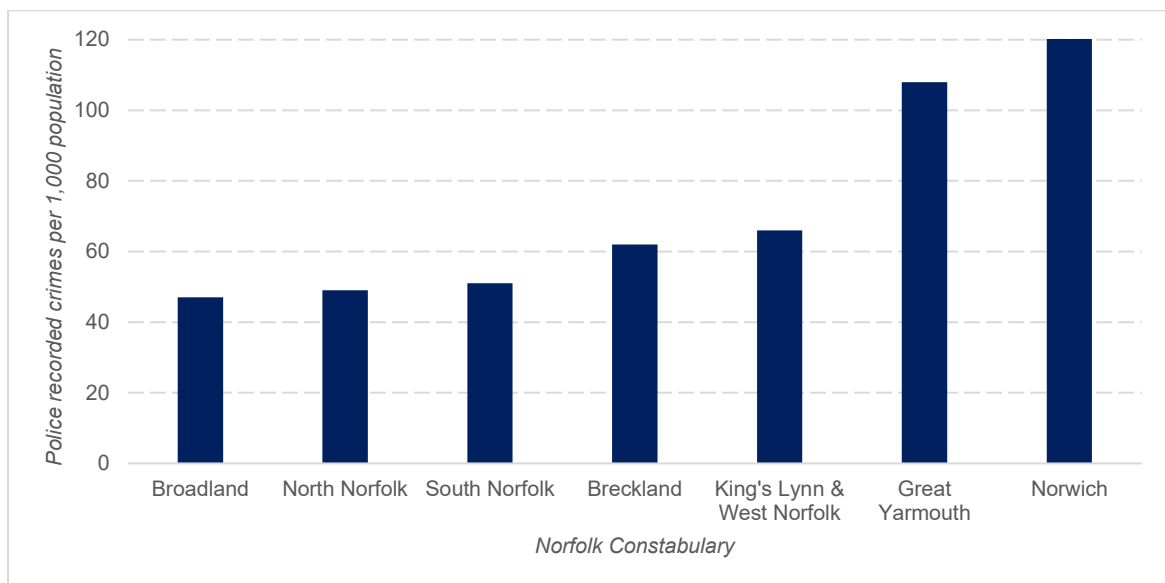
Source: Police.UK Norfolk Constabulary - Norwich East; Available; <https://www.police.uk/pu/your-area/norfolk-constabulary/norwich-east/?tab=CrimeMap>

Figure 4.6 Crimes Reported in Norwich East (from Dec 2020 to Nov 2021)



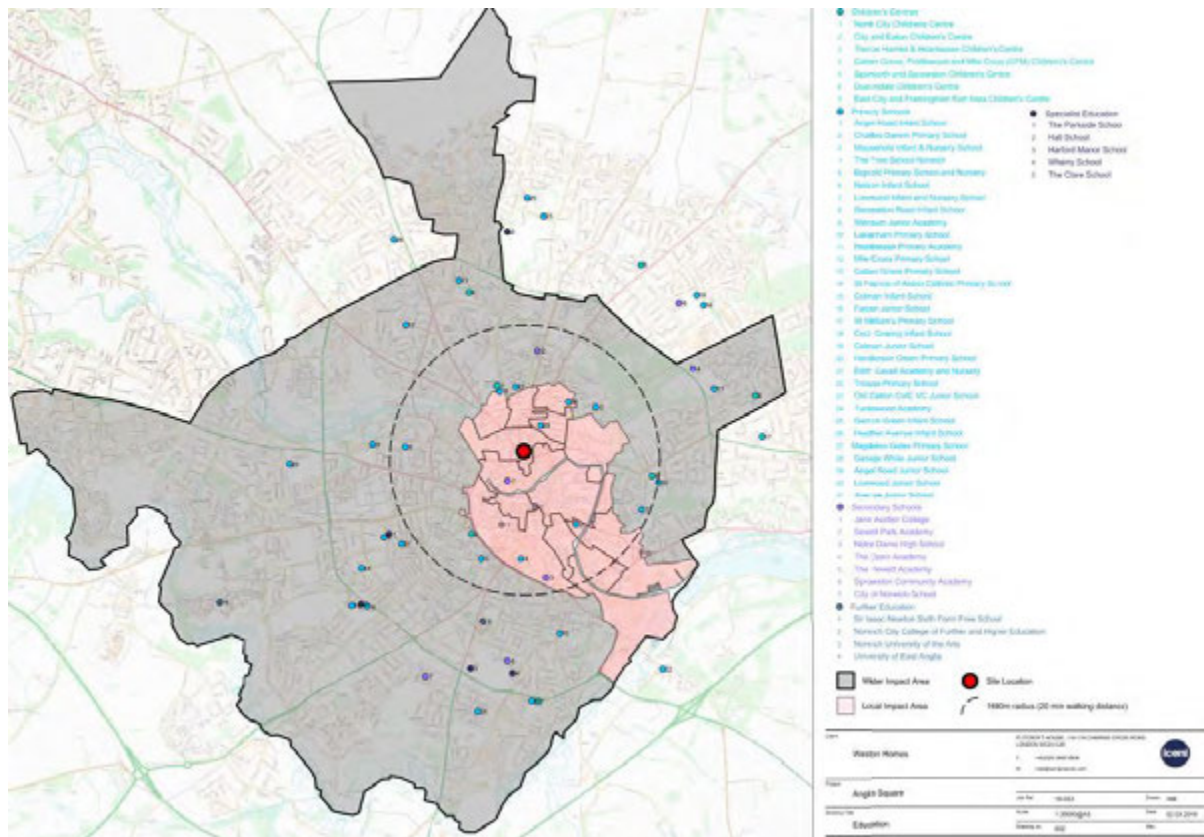
Source: Police.UK Norfolk Constabulary - Norwich East; <https://www.police.uk/pu/your-area/norfolk-constabulary/norwich-east/?tab=Statistics>

Figure 4.7 Police Recorded Crimes per 1,000 population across Norfolk Constabulary Force Area



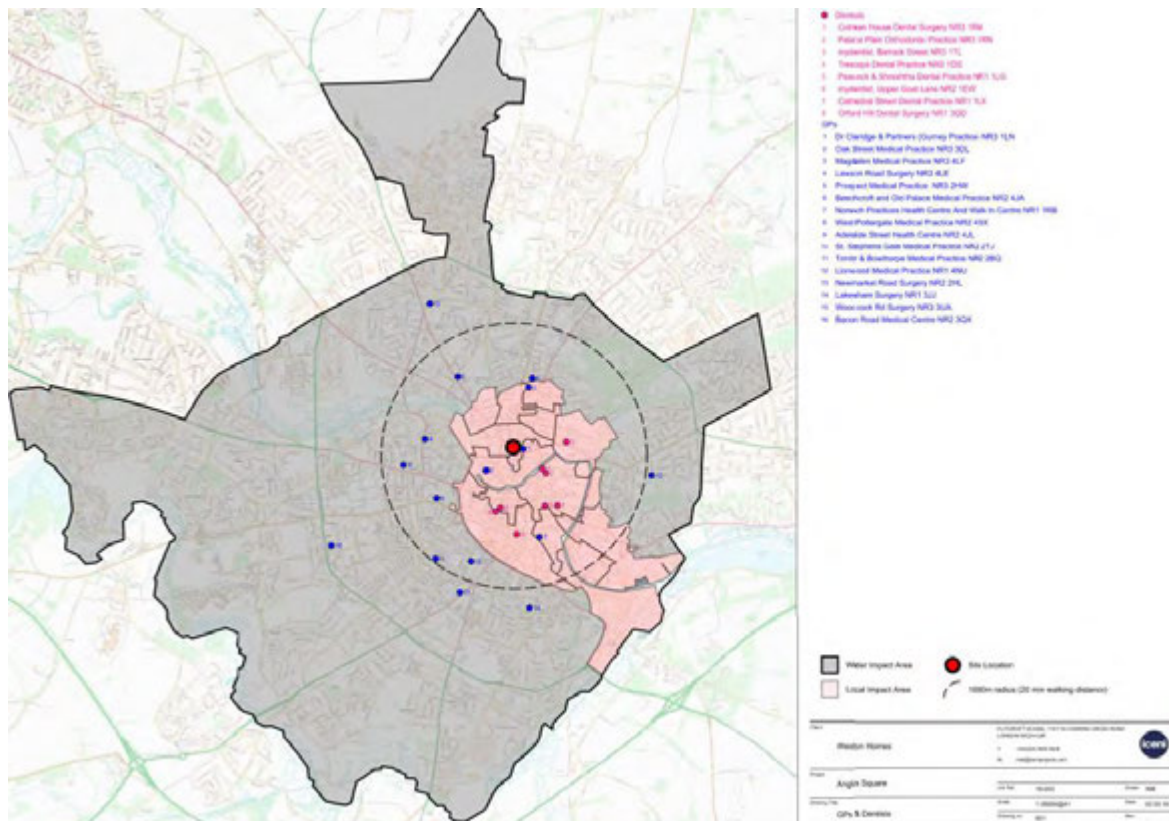
Source: Police.UK; available; <https://www.police.uk/norfolk/F31/performance/compare-your-area/>

Figure 4.8 Education Provision in Local and Wider Impact Area



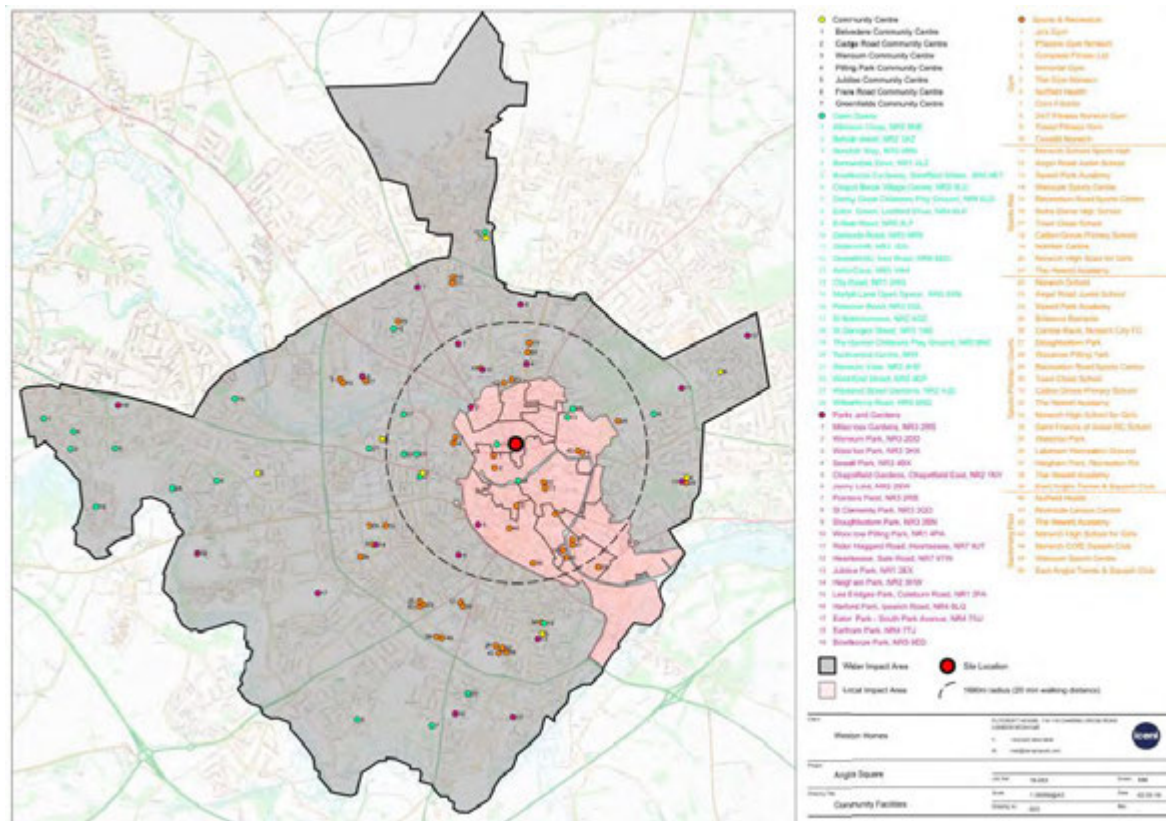
Source: Norfolk County Council School Finder & Gov.UK; enlarged version available at Appendix 4.2

Figure 1.9 GP and Dental Practice Provision in the Local and Wider Impact Areas



Source: NHS Choices; available; <https://www.nhs.uk/pages/home.aspx>; enlarged version available at Appendix 4.2

Figure 4.10 Community Centres, Open Space, Parks & Gardens and Sports and Recreation Facilities in Local and Wider Impact Area



Source: Various sources; please see in text footnotes; enlarged version also available at Appendix 4.2

APPENDIX 4.4- GLOSSARY AND ABBREVIATIONS

Glossary and Abbreviations

Term / Abbreviations	Definition
Economic Activity Rates	People who are economically active, expresses as a percentage of the total population.
Economically Active	People who are either in employment or unemployed.
Employment Rate	The number of people in employment expressed as a percentage of all people aged 16-64.
Unemployed	Refers to people without a job who were available to start work in the two weeks following their interview and who had either looked for work in the four weeks prior to interview or were waiting to start a job they had already obtained.
National Planning Policy Framework	The NPPF sets out the Government's planning policies for England and how these are expected to be applied.
Earnings by Residence	The figures show the median earnings in pounds for employees living in the area who are on adults' rates of pay and whose pay was not affected by absence. Figures for earnings come from the Annual Survey of Hours and Earnings (ASHE). The ASHE is based on a 1 per cent sample of employees, information on whose earnings and hours is obtained from employers. The survey does not cover self-employed. Information relates to a pay period in April.
Earnings by Place of Work	The figures show the median earnings in pounds for employees working in the area who are on adults' rates of pay and whose pay was not affected by absence. Figures for earnings come from the Annual Survey of Hours and Earnings (ASHE). The ASHE is based on a 1 per cent sample of employees, information on whose earnings and hours is obtained from employers. The survey does not cover self-employed. In 2004 information related to the pay period which included 21 April.
Working Age Population	Population aged 16-64 years old.
Job Density	The level of jobs per resident aged 16-64. For example, a job density of 1.0 would mean that there is one job for every resident aged 16-64.

Qualifications	<p>Qualifications data are only be available from the APS for calendar year periods, for example, Jan to Dec 2005. The variables show the total number of people who are qualified at a particular level and above, so data in this table are not additive. Separate figures for each NVQ level are available in the full Annual Population Survey data set (Query data). The trade apprenticeships are split 50/50 between NVQ level 2 and 3. This follows ONS policy for presenting qualifications data in publications.</p> <ul style="list-style-type: none"> • No Qualifications - No formal qualifications held. • Other Qualifications - includes foreign qualifications and some professional qualifications. • NVQ 1 Equivalent- e.g. fewer than 5 GCSEs at grades A-C, foundation GNVQ, NVQ 1, intermediate 1 national qualification (Scotland) or equivalent. • NVQ 2 Equivalent - e.g. 5 or more GCSEs at grades A-C, intermediate GNVQ, NVQ 2, intermediate 2 national qualification (Scotland) or equivalent. • NVQ 3 Equivalent - e.g. 2 or more A levels, advanced GNVQ, NVQ 3, 2 or more higher or advanced higher national qualifications (Scotland) or equivalent. • NVQ 4 Equivalent and Above - e.g. HND, Degree and Higher Degree level qualifications or equivalent.
Standard Occupation	<p>Occupations are classified according to the Standard Occupation Classification 2010. Major Groups:</p> <ul style="list-style-type: none"> • (1) managers, Directors and Senior Officials • (2) Professional Occupations • (3) Associate Professional & Technical • (4) Administrative and secretarial • (5) Skilled Trades Occupations • (6) Caring, Leisure and other service occupations • (7) Sales and customer service • (8) Process Plant and Machine Operatives • (9) Elementary Occupations

ARCHAEOLOGICAL IMPACT ASSESSMENT

Anglia Square, Norwich, Norfolk

JAC27722
Anglia Square,
Norwich
Version 02
(Revision 2022)

30th March 2022

Document status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
01	First issue to the Client	Serena Ranieri	Gillian King	Duncan Hawkins	09.03.2022
02	Second issue to the Client	Serena Ranieri	-	Duncan Hawkins	30.03.2022

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Prepared by:

RPS

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T +44 20 3691 0500
E serena.ranieri@rpsgroup.com

Prepared for:

Weston Homes PLC

EXECUTIVE SUMMARY

This archaeological impact assessment on the site of Anglia Square, Norwich, Norfolk (the study site) has been prepared by RPS on behalf of Weston Homes PLC to clarify its below ground archaeological potential in relation to the proposed development.

In terms of relevant, nationally significant designated heritage assets, no World Heritage Sites, Scheduled Monuments, Historic Wrecks or Historic Battlefields lie within the study site.

In terms of relevant local designations, the study site is located within an Area of Main Archaeological Interest, as defined by Norwich City Council.

This assessment has established that the site has **high** potential for archaeological remains dating to the Saxon-Early Medieval, Medieval and Post Medieval periods; whilst, the potential for human activity dating to the Prehistoric and Roman periods is expected to be **low**.

Previous archaeological investigations undertaken at the site have revealed evidence for the Late Saxon defensive ditch and Saxon – Medieval occupation, both in the form of domestic and industrial activity. Burials have also been recorded on site in association with the Saxon and Medieval churchyard of St Olave's and more burials could be present in association with the Church of St Botolph. Structural remains of the Church of St Olave have not been identified during investigations, but material from the church was found reused in a Post Medieval building to the south-west of the site. Post – Medieval remains have included 15th and 16th century structural remains of buildings fronting the former line of St George and St Botolph Street, along with garden soil, extraction pits and rubbish pits.

If any of these remains are encountered, these are likely to be up to regional significance. If any remains of other periods are observed, these are expected to be mostly of local significance.

Past post-depositional impacts, mostly as a result of late 19th and 20th century developments, are considered to have had a severe, widespread negative impact on any earlier archaeology that may have been present on site, especially within the footprint of the existing Anglia Square complex and at the north-eastern end of the site. Here, structural works or previous demolition remains associated with a large 19th century industrial building, appear to have truncated all archaeology down to natural deposits. Conversely, despite some known truncation, good preservation of archaeological deposits has been established elsewhere within the site, especially within the north-west and west car park, along with the open area under of the flyover.

The development proposal seeks to comprehensively redevelop the study site to provide up to 8,000 sqm Net Internal Area, (NIA), flexible commercial and other non-residential floorspace and up to 1,100 new residential dwellings (the Proposed Development). These figures are maxima in view of the hybrid nature of the application. This proposes part of the scheme designed in full to accommodate 5,808 sqm non-residential floorspace and 367 dwellings, with the remaining large part of the study site for later detailed design as a "Reserved Matters" application, up to those maxima figures. None of the buildings will have a basement, except for "Building A" which will be erected within the same location of the Multi Storey Car Park which already has a lower ground floor.

It is expected, therefore, that demolition and construction activity for the proposed development could have a widespread, negative impact on any buried archaeological features and deposits that may be present at the study site, especially where deposit survival is considered to be medium to high.

In the light of this, a phased programme of archaeological works is expected to be undertaken to avoid the physical loss of archaeological assets. This may comprise further evaluation work to verify and augment the results of the previous work on the site and to inform the scope of subsequent archaeological mitigation, which is likely to comprise archaeological excavation, recording and analysis leading to publication.

However, recommendations for any future work will be made by the Local Planning Authority advised by the Norfolk County Archaeologist. It is considered that such work could be undertaken post-consent, secured by a planning condition.

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1 INTRODUCTION AND SCOPE OF STUDY

- 1.1 This archaeological impact assessment has been prepared by Serena Ranieri of RPS on behalf of Weston Homes (the Applicant) in support of a hybrid (part detailed/part outline) planning application submitted to Norwich City Council (NCC) for the comprehensive redevelopment of Anglia Square and various parcels of mostly open surrounding land (the study site) as shown within a red line on drawing '35301-ZZ-00-DR-A-01-0200'.
- 1.2 The study site (Fig 1) is located in a highly accessible position within the northern part of Norwich City Centre and comprises a significant element of the Anglia Square/Magdalen Street/St Augustine's Large District Centre, (the LDC). It is thus of strategic importance to the City, and accordingly has been identified for redevelopment for many years within various local planning policy documents, including the Northern City Centre Area Action Plan 2010, (NCCAAP), (now expired), the Joint Core Strategy for Broadland, Norwich and South Norfolk 2014, (JCS), and NCC's Anglia Square and Surrounding Area Policy Guidance Note 2017, (PGN). The Site forms the principal part of an allocation (GNLP 0506) in the emerging Greater Norwich Local Plan (GNLP).
- 1.3 The study site is centred at TG 2302 0935 within Norwich City Council (see Figs 1, 2a and 2b, and Plates 1-14). Overall, the site measures approximately 4.13ha.
- 1.4 This application follows a previous application on a somewhat smaller development parcel, (NCC Ref. 18/00330/F) made jointly by Weston Homes Plc as development partner and Columbia Threadneedle Investments, (CTI), the Site's owner, for a residential-led mixed use scheme consisting of up to 1250 dwellings with decked parking, and 11,000 sqm GEA flexible ground floor retail/commercial/non-residential institution floorspace, hotel, cinema, multi-storey public car park, place of worship, and associated public realm and highway works. This was subject to a Call-in by the Secretary of State (PINS Ref. APP/G2625/V/19/3225505) who refused planning permission on 12th November 2020, (the 'Call in Scheme').
- 1.5 In April 2021, following new negotiations with Site owner CTI, Weston Homes decided to explore the potential for securing planning permission for an alternative scheme via an extensive programme of public and stakeholder engagement, from the earliest concepts to a fully worked up application. The negotiations with CTI have secured a "Subject to Planning" contract to purchase the Site, (enlarged to include the south-eastern part of Anglia Square fronting Magdalen Street and St Crispins Road), which has enabled a completely fresh approach to establishing a redevelopment scheme for Anglia Square. This has resulted in a different development brief for the scheme, being to create a replacement part of the larger LDC suited to the flexible needs of a wide range of retail, service, business and community uses, reflective of trends in town centre character, integrated with the introduction of homes across the Site, within a highly permeable layout, well connected to its surroundings.
- 1.6 The new development proposal seeks to comprehensively redevelop the study site to provide up to 8,000 sqm Net Internal Area, (NIA), flexible commercial and other non-residential floorspace and up to 1,100 new residential dwellings (the Proposed Development). These figures are maxima in view of the hybrid nature of the application. This proposes part of the scheme designed in full, to accommodate 5,808 sqm non-residential floorspace and 367 dwellings, with the remaining large part of the study site for later detailed design as a "Reserved Matters" application, up to those maxima figures (Fig 25).
- 1.7 This archaeological impact assessment commissioned by Weston Homes, therefore, aims to establish the archaeological potential of the site, and impact of the proposed development, and to provide guidance on ways to accommodate any archaeological constraints identified.
- 1.8 Figures 2a and 2b spatially summarise relevant cultural heritage designations and archaeological findspot references in relation to the study site, primarily using data provided by the Greater London Historic Environment Record (GLHER).

ARCHAEOLOGICAL IMPACT ASSESSMENT

- 1.9 In terms of relevant, nationally significant designated heritage assets, no World Heritage Sites, Scheduled Monuments, Historic Wrecks or Historic Battlefields lie within the study site.
- 1.10 In terms of relevant local designations, the study site is located within an Area of Main Archaeological Interest, as defined by Norwich City Council.
- 1.11 In accordance with relevant policy and guidance on archaeology and planning, including 'Standard and Guidance for Historic Environment Desk-Based Assessments' (Chartered Institute for Archaeologists, 2014, revised 2020), this assessment draws together the available archaeological, topographic and land-use information in order to clarify the likely archaeological potential and significance of the study site.
- 1.12 This desk-based assessment comprises an examination of evidence on the Norwich Historic Environment Record (NHER), an examination of historic cartographic map and other sources, including Norwich Archive.
- 1.13 The assessment thus enables relevant parties to assess the cultural heritage potential of the site and to consider the need for design, civil engineering, and heritage solutions to the cultural heritage potential identified.

2 PLANNING BACKGROUND AND DEVELOPMENT PLAN FRAMEWORK

- 2.1 National legislation regarding archaeology, including scheduled monuments, is contained in the Ancient Monuments and Archaeological Areas Act 1979, amended by the National Heritage Act 1983 and 2002, and updated in April 2014.
- 2.2 In March 2012, the government published the National Planning Policy Framework (NPPF), which was most recently updated in July 2021. The NPPF is supported by the National Planning Practice Guidance (NPPG), which was published online 6th March 2014 and has since been periodically updated.
(<https://www.gov.uk/government/publications/national-planning-policy-framework--2>)
- 2.3 The NPPF and NPPG are additionally supported by three Good Practice Advice (GPA) documents published by Historic England: GPA 1: The Historic Environment in Local Plans; GPA 2: Managing Significance in Decision-Taking in the Historic Environment (both published March 2015). The second edition of GPA3: The Setting of Heritage Assets was published in December 2017.

National Planning Policy

- 2.4 Section 16 of the NPPF, entitled Conserving and enhancing the historic environment provides guidance for planning authorities, property owners, developers and others on the conservation and investigation of heritage assets. Overall, the objectives of Section 16 of the NPPF can be summarised as seeking the:
- Delivery of sustainable development;
 - Understanding the wider social, cultural, economic and environmental benefits brought by the conservation of the historic environment;
 - Conservation of England's heritage assets in a manner appropriate to their significance; and
 - Recognition that heritage makes to our knowledge and understanding of the past.
- 2.5 Section 16 of the NPPF recognises that intelligently managed change may sometimes be necessary if heritage assets are to be maintained for the long term. Paragraph 194 states that planning decisions should be based on the significance of the heritage asset and that level of detail supplied by an applicant should be proportionate to the importance of the asset and should be no more than sufficient to review the potential impact of the proposal upon the significance of that asset.
- 2.6 *Heritage Assets* are defined in Annex 2 of the NPPF as: a building, monument, site, place, area or landscape positively identified as having a degree of significance meriting consideration in planning decisions. They include designated heritage assets (as defined in the NPPF) and assets identified by the local planning authority during the process of decision-making or through the plan-making process.
- 2.7 Annex 2 also defines *Archaeological Interest* as a heritage asset which holds or potentially could hold evidence of past human activity worthy of expert investigation at some point.
- 2.8 A *Designated Heritage Asset* comprises a: World Heritage Site, Scheduled Monument, Listed Building, Protected Wreck Site, Registered Park and Garden, Registered Battlefield or Conservation Area.
- 2.9 *Significance (for heritage policy)* is defined as: The value of a heritage asset to this and future generations because of its heritage interest. This interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting.

- 2.10 *Setting* is defined as: The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral.
- 2.11 In short, government policy provides a framework which:
- Protects nationally important designated Heritage Assets;
 - Protects the settings of such designations;
 - In appropriate circumstances seeks adequate information (from desk based assessment and field evaluation where necessary) to enable informed decisions;
 - Provides for the excavation and investigation of sites not significant enough to merit *in-situ* preservation.
- 2.12 The NPPG reiterates that the conservation of heritage assets in a manner appropriate to their significance is a core planning principle, requiring a flexible and thoughtful approach. Furthermore, it highlights that neglect and decay of heritage assets is best addressed through ensuring they remain in active use that is consistent with their conservation. Importantly, the guidance states that if complete, or partial loss of a heritage asset is justified, the aim should then be to capture and record the evidence of the asset's significance and make the interpretation publicly available. Key elements of the guidance relate to assessing harm. An important consideration should be whether the proposed works adversely affect a key element of the heritage asset's special architectural or historic interest. Additionally, it is the degree of harm, rather than the scale of development, that is to be assessed. The level of 'substantial harm' is considered to be a high bar that may not arise in many cases. Essentially, whether a proposal causes substantial harm will be a judgment for the decision taker, having regard to the circumstances of the case and the NPPF. Importantly, harm may arise from works to the asset or from development within its setting. Setting is defined as the surroundings in which an asset is experienced and may be more extensive than the curtilage. A thorough assessment of the impact of proposals upon setting needs to take into account, and be proportionate to, the significance of the heritage asset and the degree to which proposed changes enhance or detract from that significance and the ability to appreciate it.
- 2.13 In considering any planning application for development, the planning authority will be mindful of the framework set by government policy, in this instance the NPPF, by current Development Plan Policy and by other material considerations.

Local Planning Policy

Emerging Local Plan

- 2.14 There is an emerging development plan, the Greater Norwich Local Plan (GNLP) which is being prepared by Broadland DC, South Norfolk Council, NCC and Norfolk County Council, (the Partnership), that will supersede the Joint Core Strategy for Broadland, Norwich and South Norfolk (2014) (JCS) and Norwich Site Allocations and Site Specific Policies Local Plan (2014) (NSASSP) once adopted. The GNLP Reg 19 version was submitted to the Secretary of State for examination on 30th July 2021.
- 2.15 The examination process is underway, for which hearing sessions took place during February and March 2022. As a result of the hearings, many policies, including the emerging allocation for the study site were subject to debate, addressing their soundness and the consequential need for amendment, alongside requests for additional information by the Inspectors. It is therefore considered likely the Council will prepare and consult upon Modifications or at least minor changes to both policy text and supporting text, relevant to this application. This process, and the publication

of the Inspectors' report may extend beyond the determination of this application, and so final GNLP policy wording may not be available at that stage.

- 2.16 Paragraph 48 of the National Planning Policy Framework 2021 (NPPF) requires decision makers to give weight to relevant policies of emerging Local Plans according to the stage of preparation, the extent of unresolved objections, and the degree of consistency between emerging policies and the NPPF. In this instance, there are currently unresolved objections, in respect of some of which the Inspectors have requested additional information, and accordingly there are likely to be Modifications to some policies relevant to this application before they can be considered sound. On this basis, it is considered that in respect of those policies, the emerging development plan currently holds limited weight in decision making. In this context, those policies are not considered in detail.
- 2.17 Selected policies from the New Greater Norwich Local Plan (GNLP, draft 2021) and the 2014 Core Strategy are shown below, focusing upon those pertinent to the historic environment.

New Greater Norwich Local Plan (GNLP) from 2018 to 2038 (draft Feb-March 2021)

POLICY 3 – ENVIRONMENTAL PROTECTION AND ENHANCEMENT

THE NATIONAL PLANNING POLICY FRAMEWORK STATES THAT PLANS SHOULD SET OUT A POSITIVE STRATEGY FOR THE CONSERVATION AND ENJOYMENT OF THE HISTORIC ENVIRONMENT, INCLUDING HERITAGE ASSETS MOST AT RISK THROUGH NEGLECT, DECAY OR OTHER THREATS.

THE GREATER NORWICH AREA HAS NUMEROUS HERITAGE ASSETS. CONSEQUENTLY, THE HISTORIC ENVIRONMENT IS CENTRAL TO THE CHARACTER AND QUALITY OF LIFE OF THE GREATER NORWICH AREA AND IS A SIGNIFICANT FACTOR IN ITS ECONOMIC SUCCESS THROUGH ENCOURAGING TOURISM AND INWARD INVESTMENT. CONSERVING AND ENHANCING THE HISTORIC ENVIRONMENT WILL CONTINUE TO REINFORCE WHAT MAKES GREATER NORWICH AN ATTRACTIVE PLACE TO LIVE IN, WORK AND VISIT.

AS WELL AS THE HISTORIC ASSETS THAT ARE EASILY VISIBLE, THERE ARE ALSO THOSE THAT ARE HIDDEN BELOW GROUND. AS A LONG SETTLED AND PRODUCTIVE AREA, GREATER NORWICH HAS A SIGNIFICANT ARCHAEOLOGICAL HERITAGE WHICH DEVELOPMENT CAN HELP TO REVEAL.

AS SUCH, IT IS IMPORTANT TO RECOGNISE THAT THE HISTORIC CHARACTER OF THE AREA IS MADE UP OF A MULTITUDE OF HERITAGE ASSETS. INDIVIDUALLY, SOME MAY BE MORE IMPORTANT THAN OTHERS, BUT EVEN THE LESSER ONES ARE IMPORTANT IN CONTRIBUTING TO OVERALL CHARACTER AND QUALITY. ALL THE DIFFERENT ELEMENTS OF THE HISTORIC ENVIRONMENT NEED TO BE TAKEN INTO CONSIDERATION AND CONSERVED AND ENHANCED WHERE POSSIBLE AS PART OF THE DEVELOPMENT OF THE AREA. GUIDANCE FOR THIS CAN BE OBTAINED THROUGH A WIDE RANGE OF EXISTING RESOURCES, SUCH AS LANDSCAPE CHARACTER ASSESSMENTS, CONSERVATION AREA APPRAISALS, LISTED BUILDING AND SCHEDULED ANCIENT MONUMENTS INFORMATION AND ARCHAEOLOGICAL RECORDS; BUT IT IS USUALLY NECESSARY TO UNDERTAKE A HERITAGE IMPACT ASSESSMENT IN ACCORDANCE WITH GUIDELINES PRODUCED BY HISTORIC ENGLAND AND LOCAL VALIDATION REQUIREMENTS TO UNDERSTAND THE IMPACT OF A PROPOSAL ON THE SIGNIFICANCE OF A HERITAGE ASSET. THIS WOULD INCLUDE THE IMPACT OF DEVELOPMENT ON THE SETTING OF A HERITAGE ASSET, WHICH CAN CONTRIBUTE TO ITS SIGNIFICANCE, AND CAN BE UNDERMINED BY PROPOSALS THAT HAVE SUBSTANTIAL MASS OR HEIGHT THAT CONTRASTS WITH NEIGHBOURING HISTORIC BUILDINGS AND THE WIDER AREA.

THE STRATEGIC APPROACH TO HERITAGE IS FIRST TO CONSIDER THE POTENTIAL LOCATION OF DEVELOPMENT, FOR EXAMPLE DOES THE LOCATION ITSELF "FIT" WELL IN RELATION TO ADJOINING SETTLEMENTS, AND DOES IT AVOID INTRUDING IN IMPORTANT VIEWS OF HISTORIC ASSETS? THIS IS ADDRESSED THROUGH THE GROWTH STRATEGY SET OUT IN POLICY 1.

FOLLOWING FROM THIS, THE DESIGN OF THE DEVELOPMENT NEEDS TO RESPECT THE HISTORIC ENVIRONMENT, BE APPROPRIATE TO ITS SETTING, SEEK TO ENHANCE THE LOCALITY AND PROVIDE MEASURES TO FURTHER THE UNDERSTANDING OF LOCAL HERITAGE ISSUES. DEVELOPMENT SHOULD THEREFORE DRAW UPON EXISTING HISTORIC CHARACTER TO LEAD TO MORE POSITIVE CHANGE IN THE BUILT AND HISTORIC ENVIRONMENT.

IN CERTAIN CASES, AN ELEMENT OF HARM TO THE HISTORIC ENVIRONMENT RESULTING FROM DEVELOPMENT MAY BE UNAVOIDABLE: BUT THIS WILL ONLY BE JUSTIFIED IF THE BENEFITS OF THE DEVELOPMENT OUTWEIGH THE HARM, AND THE HARM IS KEPT TO A MINIMUM, TAKING INTO ACCOUNT THE RELATIVE IMPORTANCE OF THE HERITAGE ASSETS IN ACCORDANCE WITH NATIONAL POLICY.

THE POLICY ALSO INCLUDES A FLEXIBLE APPROACH TO THE USE OF HISTORIC ASSETS TO ACHIEVE THEIR RETENTION WHILST RETAINING THEIR HISTORIC SIGNIFICANCE, AND IN THIS RESPECT PARTICULAR ENCOURAGEMENT WILL BE GIVEN TO PROPOSALS FOR RESTORING THOSE ASSETS THAT ARE AT RISK OF BEING LOST. HISTORIC SIGNIFICANCE POTENTIALLY COVERS A BROAD RANGE OF ISSUES SUCH AS ARTISTIC, AESTHETIC, ARCHITECTURAL, CULTURAL AND SOCIAL CONSIDERATIONS.

THE BUILT AND HISTORIC ENVIRONMENT

THE DEVELOPMENT STRATEGY OF THE PLAN AND THE SITES PROPOSED FOR DEVELOPMENT REFLECT THE AREA'S SETTLEMENT STRUCTURE OF THE CITY, TOWNS AND VILLAGES, RETAINING THE SEPARATE IDENTITIES OF INDIVIDUAL SETTLEMENTS.

DEVELOPMENT PROPOSALS WILL BE REQUIRED TO CONSERVE AND ENHANCE THE BUILT AND HISTORIC ENVIRONMENT THROUGH:

1. BEING DESIGNED TO CREATE A DISTINCT SENSE OF PLACE AND ENHANCE LOCAL CHARACTER TAKING ACCOUNT OF LOCAL DESIGN AND OTHER GUIDANCE, UNDERTAKING A HERITAGE IMPACT ASSESSMENT IF SIGNIFICANT IMPACTS MIGHT ARISE, AND PROVIDING MEASURES SUCH AS HERITAGE INTERPRETATION TO FURTHER THE UNDERSTANDING OF LOCAL HERITAGE ISSUES;
2. AVOIDING HARM TO DESIGNATED AND NON-DESIGNATED HERITAGE ASSETS AND HISTORIC CHARACTER, UNLESS THERE ARE OVERRIDING BENEFITS FROM THE DEVELOPMENT THAT OUTWEIGH THAT HARM OR LOSS AND THE HARM HAS BEEN MINIMISED;
3. PROVIDING A CONTINUED OR NEW USE FOR HERITAGE ASSETS WHILST RETAINING THEIR HISTORIC SIGNIFICANCE.

IN APPLYING THE ABOVE, REGARD WILL BE GIVEN TO THE LEVEL OF IMPORTANCE OF THE HERITAGE ASSET.

Core Strategy 2014

POLICY DM9 SAFEGUARDING NORWICH'S HERITAGE

THE HISTORIC ENVIRONMENT AND HERITAGE ASSETS ALL DEVELOPMENT MUST HAVE REGARD TO THE HISTORIC ENVIRONMENT AND TAKE ACCOUNT OF THE CONTRIBUTION HERITAGE ASSETS MAKE TO THE CHARACTER OF AN AREA AND ITS SENSE OF PLACE (DEFINED BY REFERENCE TO THE NATIONAL AND LOCAL EVIDENCE BASE RELATING TO HERITAGE, INCLUDING RELEVANT DETAILED ADVICE IN CONSERVATION AREA APPRAISALS).

DEVELOPMENT SHALL MAXIMISE OPPORTUNITIES TO PRESERVE, ENHANCE, OR BETTER REVEAL THE SIGNIFICANCE OF DESIGNATED HERITAGE ASSETS AND THAT OF ANY OTHER HERITAGE ASSETS SUBSEQUENTLY IDENTIFIED THROUGH THE DEVELOPMENT PROCESS. IT WILL ALSO PROMOTE RECOGNITION OF THE IMPORTANCE OF THE HISTORIC ENVIRONMENT THROUGH HERITAGE INTERPRETATION MEASURES.

WHERE PROPOSALS WHICH INVOLVE THE UNAVOIDABLE LOSS OF ANY DESIGNATED OR LOCALLY IDENTIFIED HERITAGE ASSET ARE ACCEPTED EXCEPTIONALLY UNDER THIS

POLICY, A LEGALLY BINDING COMMITMENT FROM THE DEVELOPER MUST BE MADE TO IMPLEMENT A VIABLE SCHEME BEFORE ANY WORKS AFFECTING THE ASSET ARE CARRIED OUT.

LOCALLY IDENTIFIED HERITAGE ASSETS

WHERE LOCALLY IDENTIFIED HERITAGE ASSETS ARE AFFECTED BY DEVELOPMENT PROPOSALS, THEIR SIGNIFICANCE SHOULD BE RETAINED WITHIN DEVELOPMENT WHEREVER REASONABLY PRACTICABLE. DEVELOPMENT RESULTING IN HARM TO OR LOSS OF SIGNIFICANCE OF A LOCALLY IDENTIFIED ASSET WILL ONLY BE ACCEPTABLE WHERE:

- A) THERE ARE DEMONSTRABLE AND OVERRIDING BENEFITS ASSOCIATED WITH THE DEVELOPMENT; AND
- B) IT CAN BE DEMONSTRATED THAT THERE WOULD BE A REASONABLY PRACTICABLE OR VIABLE MEANS OF RETAINING THE ASSET WITHIN A DEVELOPMENT.

IN THE DEFINED AREAS OF ARCHAEOLOGICAL INTEREST, DEVELOPMENT THAT WILL DISTURB REMAINS BELOW GROUND WILL ONLY BE PERMITTED WHERE IT CAN BE DEMONSTRATED THROUGH AN ASSESSMENT THAT:

- A) THERE IS LITTLE LIKELIHOOD OF REMAINS BEING FOUND AND MONITORING OF WORKS WILL TAKE PLACE DURING CONSTRUCTION; OR
- B) REMAINS WHICH SHOULD BE PRESERVED IN SITU CAN BE PROTECTED AND PRESERVED DURING CONSTRUCTION AND SIGNIFICANT ARTEFACTS ARE DISPLAYED AS PART OF THE DEVELOPMENT; OR
- C) REMAINS THAT WOULD NOT JUSTIFY PRESERVATION IN SITU WILL BE REMOVED AND DISPLAYED IN AN APPROPRIATE LOCATION AND CONTEXT.

OTHER HERITAGE ASSETS

CONSIDERATION WILL BE GIVEN TO THE PROTECTION OF HERITAGE ASSETS WHICH HAVE NOT BEEN PREVIOUSLY IDENTIFIED OR DESIGNATED BUT WHICH ARE SUBSEQUENTLY IDENTIFIED THROUGH THE PROCESS OF DECISION MAKING, OR DURING DEVELOPMENT. ANY SUCH HERITAGE ASSETS, INCLUDING ARTEFACTS, BUILDING ELEMENTS OR HISTORICAL ASSOCIATIONS WHICH WOULD INCREASE THE SIGNIFICANCE OF SITES AND/OR ADJOINING OR CONTAINING BUILDINGS, WILL BE ASSESSED FOR THEIR POTENTIAL LOCAL HERITAGE SIGNIFICANCE BEFORE DEVELOPMENT PROCEEDS. WHERE HERITAGE ASSETS NEWLY IDENTIFIED THROUGH THIS PROCESS ARE DEMONSTRATED BY EVIDENCE AND INDEPENDENT ASSESSMENT TO HAVE MORE THAN LOCAL (I.E. NATIONAL OR INTERNATIONAL) SIGNIFICANCE, THERE WILL BE A PRESUMPTION IN FAVOUR OF THEIR RETENTION, PROTECTION AND ENHANCEMENT. WHERE HERITAGE ASSETS NEWLY IDENTIFIED THROUGH THIS PROCESS ARE DEMONSTRATED TO HAVE LOCAL SIGNIFICANCE, DEVELOPMENT PROPOSALS AFFECTING THEM WILL BE DETERMINED IN ACCORDANCE WITH THE CRITERIA FOR EXISTING LOCALLY IDENTIFIED HERITAGE ASSETS AS SET OUT IN THIS POLICY. ANY ASSESSMENT OF LOCAL SIGNIFICANCE SHOULD BE MADE IN ACCORDANCE WITH THE CRITERIA SET OUT IN APPENDIX 7 OF THIS PLAN.

HISTORIC ENVIRONMENT RECORD

DEVELOPMENT PROPOSALS AFFECTING DESIGNATED AND LOCALLY IDENTIFIED HERITAGE ASSETS WILL BE EXPECTED TO SHOW THAT THE SIGNIFICANCE OF THESE ASSETS HAS BEEN ADEQUATELY ASSESSED AND TAKE INTO ACCOUNT BY REFERENCE TO THE HISTORIC ENVIRONMENT RECORD AND THE RELEVANT LOCAL EVIDENCE BASE. WHERE A HERITAGE ASSET IS LOST OR ITS SIGNIFICANCE HARMED THE ASSET MUST BE RECORDED AND PLACED ON THE HISTORIC ENVIRONMENT RECORD.

- 2.18 In line with relevant planning policy and guidance, this impact assessment seeks to clarify the site's archaeological potential and the likely significance of that potential and the need or otherwise for additional mitigation measures.

3 GEOLOGY AND TOPOGRAPHY

Geology

- 3.1 The bedrock geology of the study site is shown by the British Geological Survey (BGS online 2021) as Chalk Formations, including Lewes Nodular Chalk Formation, Seaford Chalk Formation, Newhaven Chalk Formation and Culver Chalk Formation. This bedrock geology is overlain by Alluvium (Clay, Silt, Sand and Gravel).
- 3.2 This sequence has been confirmed by borehole log data collected in 1977 (Fig 4 and Appendix 1) during standpipe installation works at various locations at the western end of the study site, within the existing car park, between Pitt Street and Botolph Street. These logs record 'Fill' deposits, which appear to contain material relating to human activity (archaeology), generally between 2.5m and 3m thick, to a depth of 1.8- 2.1mOD. Below these, are sand and gravel deposits (alluvium and gravel terrace), overlaying natural chalk formation.
- 3.3 The archaeological investigation undertaken within the site in 2007 (ENF118577, Appendix 2, Percival and Westall 2007) revealed the top of sands and gravels at c 3.8m OD, 1.7m below the modern ground surface across Area 3 (Window Samples 1 to 9), at the north-west of the study site (Fig 5). This would seem to be the general level of the upper horizon of geologically-derived deposits. What are probably backfilled quarry pits, were recorded in Window Samples 5, 7 and 9. The depth of these quarry pits varied from 2.2m to 3.6m below the modern ground surface (2.67mOD and 1.90mOD). Window Samples 2 and 3 instead revealed a deeper rubble-filled disturbance connected with the construction or destruction of these Victorian buildings, between 2m and 2.9m below the modern ground surface.
- 3.4 As part of the same phase of investigation, Window Samples 10 to 15 across Area 2 (Fig 5) were arranged in a line from north-west to south-east, in order to detect the Late Saxon defensive ditch. Analysis of all samples suggests that a backfilled cellar or a similar structure, such as foundations/demolition rubble associated with a large industrial building, occupied the whole of Area 2 as shown on the Ordnance Survey Plans from 1885 to 1938 (Figs 16 to 18). Natural deposits of sands and gravels were recorded between 1.7m and 2.4m below the modern ground surface in Window Samples 13 to 15. No earlier archaeological remains/deposits were observed within the perimeter of the investigation samples.
- 3.5 The archaeological evaluation in 2010 (ENF124825; Appendix 3, OAE 2010), in the vicinities of Botolph Street and Pitt Street (Fig 6), revealed the top of natural sands and sandy gravels (orange and yellow/brown) between c 2m and 3.5mOD, overlain by approximately 2 - 3m of archaeological deposits/features. Where the Late Saxon ditch was found in Trench 8, this was cut into the natural from a level of 2.15mOD and its base was located at a c 0.20mOD, indicating that the ditch was almost 2m deep.
- 3.6 The latest archaeological monitoring of five geotechnical pits (OAE 2018, Fig 7, Appendix 4) at the south-western corner of Anglia Square, under the Magdalen Street flyover, did not reach natural deposits due to shallow depth of the pits, but revealed good preservation of archaeology observed between 0.2m and 0.35m below the present ground level.
- 3.7 Based on the above, we can conclude that where archaeological investigations were undertaken at the study site, a general good level of archaeological preservation was observed above natural deposits. However, at places, this was reduced by the impact of late 19th – early 20th century construction activity and demolition, especially within the footprint of the existing Anglia Square complex and at the north-eastern end of the site, where structural/demo remains associated with a large 19th industrial building appear to have truncated any earlier archaeology that may have been present down to natural deposits.

Topography

- 3.8 The site comprises a mixed commercial and office development, with retail buildings focused on Anglia Square to the east. Ground level carpark areas occupy areas to the north and west, and a multi-storey carpark occupies the northeast of the site. A strip of land along the western boundary is currently undeveloped and is occupied by a grassy mound (possible spoil heap).
- 3.9 The majority of the site is bounded to the south by St Crispins Road, to the west by Pitt Street, to the northwest by New Botolph Street, to the northeast by Edward Street, and to the east by Magdalen Street. Two additional areas of the site are located on the north sides of New Botolph Street and Edward Street (Figs 1 and 23 and Plates 1-14).
- 3.10 The current topography of the site gently slopes from c 6m OD in the northwest to c 4.4m OD in the south-east. The natural landscape is thought to have been originally more undulating and has been levelled by human development over time (Williams 2010).
- 3.11 The site is located c 300m north-east of a large bend in the River Wensum. Several former tributary streams ran into the Wensum, including the Dalymond, which is thought to have flowed from the Magpie Road and Magdalen Street, across Fishergate (Williams 2010).

4 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND WITH ASSESSMENT OF SIGNIFICANCE

Timescales used in this report

Prehistoric

Palaeolithic	900,000 -	12,000 BC
Mesolithic	12,000 -	4,000 BC
Neolithic	4,000 -	1,800 BC
Bronze Age	1,800 -	600 BC
Iron Age	600 -	AD 43

Historic

Roman	AD 43 -	410
Saxon/Early Medieval	AD 410 -	1066
Medieval	AD 1066 -	1485
Post Medieval	AD 1486 -	1799
Modern	AD 1800 -	Present

Introduction

- 4.1 This chapter reviews the available archaeological evidence for the study site and the archaeological/historical background of the general area, and, in accordance with NPPF, considers the potential for any as yet to be discovered archaeological evidence on the study site.
- 4.2 What follows comprises a review of the archaeological findings within a 250m study area of the study site held at the Norwich Historic Environment Record (NHER), together with a historic map regression exercise charting the development of the study area from the 14th century until the present day.
- 4.3 In terms of designated heritage assets, no World Heritage Sites, Scheduled Monuments, Historic Wrecks or Historic Battlefield sites lie within the 250m study area (Figs 2a and 2b). The site is, however, located within an Area of Main Archaeological Interest, as designated by Norwich County Council (Fig 2a).
- 4.4 The NHER records data within the study area relating to all periods of human activity. The site has been extensively investigated through various phases of archaeological works in the 1970s, 2007, 2010 and 2018. These revealed substantial archaeological remains including Saxon town defences and burials within St Olave's Churchyard. The map regression demonstrates that the site was already developed by the 17th century and has undergone significant stages of redevelopment in particular in the 19th and 20th centuries. However, despite this, a good level of archaeological survival has been established in areas of the study site, especially within the existing car parks and other areas located outside the perimeter of the existing Anglia Square complex (Fig 8).
- 4.5 Chapter 5 subsequently considers the site conditions and whether the proposed development will impact the theoretical archaeological potential identified below.

Previous Archaeological Work

- 4.6 Various phases of archaeological investigations have been undertaken at the study site over the past 47 years. The results of these works are summarised below in chronological order and represented on Figures 3 to 8.

Archaeological Excavations at Anglia Square, Norwich (1974-1976)

- 4.7 Two important excavations (NHER 170 and NHER 284, Figs 2a and 3) took place on the study site between 1974 and 1976, with a third (NHER 281) located on the far side of Botolph Street, to the immediate north.
- 4.8 The earliest feature discovered during these excavations was the ditch which formed the northern limit of the Late Saxon town defences, probably dating from the early 10th century. The ditch was recorded as being almost 2m deep, being cut into the natural at c 2.15m OD. The fills of the ditch indicate an initial natural build-up of deposits, followed by dumping of organic and domestic waste. The ditch fell into gradual disuse and was completely infilled by the 12th century. In Trench 8 (OAE 2010, Fig 6) there was also levelling of a gravel bank on the east side of the ditch (55296, Fig 2a). A projection of the northern limit of the Late Saxon ditch can be seen on Fig 8.
- 4.9 The archaeological excavations also revealed good evidence for iron-working industry, which was established in the area, and reached its peak in the 13th and early 14th centuries. From the mid-14th century, the area of the development site seems to have been developed as a series of properties, mostly rented out, and eventually all the frontages seem to have been built up. The site was largely abandoned after the plague of 1578, and then re-laid on different alignments in the early 17th century. Within the outline of NHER281 (Fig 3), disturbance from cellars and road-widening was severe, with any stratigraphy on the frontage removed. Very little evidence of the rear ranges of medieval buildings was found, and most of the earlier occupation was represented by extensive pit-digging. The majority of the structural remains was thought to date from the 17th century.

Phase of Boreholes at Anglia Square, Norwich (1977)

- 4.10 A series of boreholes were carried in 1977 (Figs 4 and 8, Appendix 1) during standpipe installation works at various locations across the western end of the study site, in the car park between Pitt Street and Botolph Street. All logs contained deposits described as ‘fills’, possibly material relating to human activity (archaeology), generally between 2.5m and 3m thick. Below these, at c 1.8m - 2.1mOD, were sand and gravel deposits (alluvium and gravel terrace), overlaying natural chalk formation.

Archaeological Evaluation at Anglia Square, Norwich (Phase 1)

- 4.11 The archaeological investigation by Norfolk Archaeological Unit (NAU 2007, Figs 5 and 8; Appendix 2) included the excavation of nine trenches and 15 window samples to the north and west of Anglia Square, in the vicinities of Pitt Street, Botolph Street and Edward Street. The Late Saxon defensive ditch was found (Trenches 6 and 7), as well as evidence of occupation on the St. George’s Street and Pitt Street frontages. Cultivation features found in the south of the area examined, probably related to Cherry Ground, an area of open land that was not built on until the late 18th century. In the far north of the area examined, only evidence of Victorian and 20th century structures was found. This area had been part of St. Margaret’s Croft, which remained largely undeveloped until the 19th century. The excavation of Trench 13, along with the results of the window samples, proved instead that Area 2 had been heavily disturbed by the construction of industrial buildings and removal of underground fuel tanks in the 20th century.
- 4.12 The window samples 1 to 9 across Area 3, at the north-west of the site (Fig 5) revealed undisturbed sands and gravels at c 3.8m OD, 1.7m below the modern ground surface. This would seem to be

the general level of the upper horizon of geologically-derived deposits. What are probably backfilled quarry pits, similar to those found in Trench 12, were recorded in Window Samples 5, 7 and 9. The depth of these quarry pits varied from 2.2m to 3.6m below the modern ground surface.

- 4.13 Most of Area 3, above the undisturbed sands and gravels or backfilled quarry pits, was covered with a garden soil type material with an average depth of 0.5m and overlain by between 0.6m and 1.5m of rubble from demolition of the Victorian housing and industrial buildings that occupied Area 3 until the mid-20th century. However, towards the north-western corner of Area 3, a deeper rubble-filled disturbance connected with the construction or demolition of these Victorian buildings was encountered in Window Samples 2 and 3. The base of this disturbance was between 2m and 2.9m below the modern ground surface.
- 4.14 Window Samples 10 to 15 across Area 2 (Fig 5) were arranged in a line from north-west to south-east, in order to detect the Late Saxon defensive ditch. Multiple attempts were made to take Window Samples 10, 11 and 12. In the end, Window Sample 10 reached a depth of 2m below the modern ground surface, Window Sample 11 was driven to a depth of 3m before an obstruction was encountered, and only 1m was recovered from Window Sample 12. The majority of the deposits in these samples consisted of rubble of various sorts. Analysis of the samples suggested that a backfilled cellar or similar structure, such as foundations or demo rubble, associated with a large industrial building, occupied the whole of Area 2 as shown on the Ordnance Survey Plans from 1885 to 1938 (Figs 16 to 18). The excavation of Trench 13 proved that the eastern side of Area 2 had been heavily disturbed by the construction and removal of underground fuel tanks in the 20th century. Undisturbed sands and gravels were recorded between 1.7m and 2.4m below the modern ground surface in Window Samples 13 to 15. The untruncated level of these deposits on the western side of Area 2 is probably about 1.7m below the modern ground surface (2.3m OD).

Archaeological Evaluation at Anglia Square, Norwich (Phase 2)

- 4.15 The Oxford Archaeology evaluation excavated a further eight Trenches in 2010 (Fig 6, Appendix 3). These works confirmed the line of the Late Saxon defensive ditch within Trench 8. The depth, profile and fills of the ditch revealed were similar to the segment which had been previously excavated further south by NAU in 2007 (Trenches 6 and 7, Fig. 3). A number of large medieval quarry pits occupied the northern part of the site and cut through the later fills of the ditch. Later in the medieval period this area formed open ground or backyards.
- 4.16 The southern part of the development area was thought to have been the site of St Olave's Church (Trenches 14, 16 and 17). Although the church itself was not located, three of the trenches contained burials, indicating that this area lay within the graveyard of St Olave's. The church fell out of use by the Dissolution and material from it was identified and possibly re-used in one of the post medieval buildings presently standing on site.
- 4.17 For much of the post-medieval period the whole site appears to have been open ground or yards behind street frontage development of Pitt Street, Botolph Street and St George's Street. It was not until the late 18th century that the southern part of the site became closely built up. The demolished remains of these buildings can be seen lying just below the present ground surface. The northern part of the site did have the same infill behind the frontages, although 20th century development has made an impact truncating some of the archaeological horizons.

Archaeological Watching Brief of Geotechnical pits (2018)

- 4.18 The Archaeological monitoring of five geotechnical pits located to the south-western corner of Anglia Square and under Magdalen Street flyover was undertaken in September 2018 (Figs 7 and 8, Appendix 4). These all measured 1m by 1m and were excavated to a depth of 1.1m below ground level.

- 4.19 The monitoring of these small test pits has provided a glimpse of the surviving archaeology in this area of the site. No archaeological work was undertaken during the construction of Anglia Square and the flyover in the late 1960s and early 1970s. Therefore, the level of survival of archaeological deposits through the 20th century redevelopment is unknown.
- 4.20 The archaeological monitoring of these five test pits has clearly shown that there is good survival of archaeology outside the perimeter of the Anglia Square buildings. Archaeological deposits and remains were observed between 0.2m and 0.35m below the present ground level. Evidence of walls in several test pits suggests that the post-medieval building pattern survives, including elements of the now lost Botolph Street. Below the remains of these buildings a buried soil was present which has been interpreted as an early post-medieval soil horizon. Survival of the post-medieval deposits across the site, therefore, indicates that earlier archaeological deposits may be sealed and preserved at a greater depth.

Negative archaeological results from nearby sites

- 4.21 A recent archaeological evaluation at the former Hunter's Squash Club (49737, Fig 2a), just to the west of the north-eastern end of the site, uncovered little surviving evidence of activity prior to the industrial use of the site in the 19th century. In particular, there were no extant remains in the trenched areas relating to either the Late Saxon defences or the medieval/post-medieval periods (Birks 2007). However, these trenches were not fully excavated, and it may be that the depth was insufficient to expose earlier remains. Alternatively, it is possible that the redevelopment of the area, when the crêpe factory (Figs 16 and 17) was constructed, may have removed earlier evidence. The report points out that the area immediately to the north (St Margaret's Croft) was open ground in the medieval and post-medieval periods, and the site lies some distance from the former Botolph Street frontage. On balance, the likelihood seems to be that the area remained undeveloped until the 19th century.
- 4.22 Another archaeological watching brief was recently carried out at the NNAB Activity Centre during groundworks associated with the construction of a new building (52832, Fig 2a). The site is located c 20m north of the north-eastern end of the study site and also revealed no archaeological finds or features. However, from NHER record, it is not clear to what depth the new building foundations were excavated and therefore, if any archaeology could have survived underneath the building formation level. All in all, based on the industrial development of this area during the 20th century, it appears that if any earlier archaeological remains were present, these would have probably been compromised by modern post depositional impact.

Prehistoric

- 4.23 NHER does not record any finds or features of Prehistoric date within the study site. The earliest evidence recorded during excavations on site relates to Roman and Saxon periods. However, reports on archaeological work carried out in the 1970s along Botolph Street and George Street (Norfolk Archaeology 1975 and 1976, Fig 3) do not detail the depth of excavation; therefore, it is uncertain if this was sufficient to determine a complete lack of Prehistoric evidence.
- 4.24 Archaeological works carried out on site in 2007 (ENF118577; Appendix 2, Percival and Westall 2007) and 2010 (ENF124825; Appendix 3, OAE 2010) in the vicinities of Botolph Street and Pitt Street identified sands and sandy gravels (generally orange or yellow/brown) as the earliest naturally occurring deposits across the investigated area. No Prehistoric evidence was found.
- 4.25 Elsewhere in the study area, a concentration of in-situ worked flints indicating a knapping site, dated to the Upper Palaeolithic was identified during an archaeological evaluation, c 110m south-east of the site (55569, Fig 2a and ENF125580, Fig 2b) and 150m north of the River Wensum. The assemblage contained large blades and is most likely an example of a Terminal Upper Palaeolithic 'long blade' industry. Long blade assemblages, such as this, appear to be associated with activity

during the Late Glacial/Early Post-glacial (Late Pleistocene/Early Holocene) period. The flints appeared to be at the top of a gravel deposit and extended beyond the limit of the archaeological excavation. Evidence of later Prehistoric date, dating to the Late Mesolithic were recovered from deposits overlying the natural gravels.

- 4.26 Further evidence of Prehistoric activity within the study area includes residual finds of Mesolithic and Neolithic flints recovered during archaeological works at Cowgate/Magdalen Street, c 10m east of the site (MNF168, Fig 2); Duke Street, c 80m south-west of the site (51027, Fig 2a), and Fishergate, c 300m south-east of the site, along the River Wensum (40497 and 41303, Fig 2a).
- 4.27 No *in situ* evidence relating to the Bronze and Iron Age is recorded within the study area, but undated Prehistoric finds were found residual in later archaeological features during excavation works at 54a St Augustine's Street (26475, Fig 2a), c 200m north-west of the study site, 12 Oak Street (26535, Fig 2a) c 300m north-west of the study site and rear of Cat and Fiddle, Magdalen Street (43297, Fig 2a), less than 50m north-east of the study site.
- 4.28 The historic setting of the study site in close proximity to the Wensum River and former tributaries may suggest a possible focus of prehistoric activity related to the watercourse. However, given the lack of Prehistoric evidence identified during archaeological interventions at the study site, we can conclude that the overall archaeological potential for Prehistoric activity can be defined as low. If Prehistoric archaeology is present on site, this is likely to be in the form of residual finds.

Roman

- 4.29 The only evidence for Roman activity found within the study site is a worn coin identified at Sovereign House (22, Fig 2a). No other evidence was found during any phase of archaeological interventions undertaken at study site.
- 4.30 Elsewhere in the study area, the only evidence of Roman activity includes residual pottery sherds recovered during archaeological investigations at Starling Road (52926, Fig 2a), c 180m north of the study site; at 63-65 Duke Street (39367, Fig 2a), c 160m south of the study site and at Zipfel's Court, Magdalen Street (49838, Fig 2a), c 70m north-east of the site. The only other find of Roman date is a copper alloy lamp from St Augustine's Gate (MNF648, Fig 2a), c 250m north-west of the study site, found in the late-18th century.
- 4.31 During the Roman period, the main focus of human activity in the area of Norwich appears to be outside the existing town centre and c 5km south from the study site, at the Roman town of *Venta Icenorum*. Therefore, given the paucity of evidence of Roman activity identified during previous archaeological interventions at the study site and within the surrounding study area, we can conclude that the potential for Roman archaeology is low.

Saxon - Early Medieval

- 4.32 The name Norwich is derived from the Saxon place name *Noruic*, meaning 'North harbour or trading centre' (Mills 2011).
- 4.33 Alan Carter (1978) has argued that the Late Saxon town represents the amalgamation of several pre-existing smaller Middle Saxon settlements that were situated along a short stretch of the Wensum valley. Within this scheme, *Norwic* came to pre-eminence probably in the 8th century, while the adjacent settlements of *Westwic*, *Needham*, *Conesford* and *Coslany* were eventually subsumed within the growing town.
- 4.34 A Late Saxon defensive ditch, which enclosed Norwich north of the River Wensum has been observed at numerous locations across the study site and the wider study area (170, 281, 284, 852, 50581, 161, 302 840, 732 and 834, Fig 2a). Archaeological excavations at the study site have enabled to locate fairly accurately the course of the Late Saxon ditch (Figs 3 and 4). This is shown orientated north-south along the east side of Botolph Street (former St George's Street, 170, 281,

284, 50581 in Fig 2a and Figs 5 to 8), then diverting eastwards, at the northern corner of Botolph Street, towards Edward Street. The ditch has been recorded as being almost 2m deep, being cut into the natural at c 2.15m OD. The fills of the ditch indicate an initial natural build-up of deposits, followed by dumping of organic and domestic waste. In Trench 8 (OAE 2010, Fig 6) there was also levelling of a gravel bank on the east side of the ditch (55296, Fig 2a) and in Trench 7 (NAU 2007, Fig 3) a lens of mortar suggests possible building activity in the area (50581, Fig 2a).

- 4.35 Further south, particularly along Fishergate, c 215m south-east of the site, good evidence for Saxon/Early Medieval occupation and industry has been uncovered. Excavations revealed a series of pits and ditches together with evidence of metal working in the form of slag and crucible fragments (4102, Fig2a). A post-built timber structure and a causeway (26515, Fig 2a), as well as ditching and fencing with possible consolidation of brushwood and timber (732, Fig2a; Ayers 1994), and further Late Saxon and early Medieval pits containing pottery sherds (26521, Fig2a) were recorded.
- 4.36 Evidence of iron working, along with Late Saxon pottery, was also found at Colgate, approximately 230m south of the site (716, Fig2a). 11th and 12th century industrial activity, including ironworking, smelting and smithing, along with postholes and features relating to timber structures were uncovered at Oak Street, c 235m south-west of the study site (26535, Fig2a; Adams 2000). At Blackfriars Street, c 110m south-east of the site, hammerscale and slag were recovered from Saxon cultivation deposits indicating blacksmithing within the area, along with postholes of possible structures containing Late Saxon/Early Medieval pottery (55569, Fig2a; House 2011).
- 4.37 Archaeological interventions at Land off Oak Street, approximately 225m south-west of the site, have identified various Saxo-Norman features, including a series of Late Saxon pits containing horn which has suggested possible horn working within the vicinity. Recorded on site, were also the foundations of a substantial building, interpreted as a possible church (39691, Fig 2a). Other excavation further south on Oak Street uncovered Late Saxon gravel surfaces and post-holes suggesting the presence of structures (48921, Fig 2a).
- 4.38 A considerable concentration of pre-Conquest churches was established across the Norwich area (Ayers 1994). Skeletal remains recovered during 1960s works at the study site, at the original junction of Botolph Street and Magdalen Street, are thought to be from the churchyard of St Botolph's Church (587, Fig 2a). The church, thought to be located north of Stump Cross, to the east of the site, possibly marks the location of a gate where Botolph Street would have originally penetrated the defensive ditch (Ayers 1994).
- 4.39 St Olave's Church (452, Fig 2a), established in the Late Saxon period and demolished in 1546, is located on historic maps in the south-west corner of the site (Figs 9 and 10). Modern Ordnance Survey Maps and the NHE records locate the church, slightly further south, in proximity of Pitt Street roundabout (Fig 17 and 18). No archaeological interventions have been able to identify the exact location of the church, however, material from the church is thought to have been reused in later Post Medieval buildings at the south-west of the site (OAE 2010, Trench 18, Fig 6). Furthermore, multiple Late Saxon/Medieval burials thought to belong to the churchyard of St Olave's were uncovered during archaeological investigations undertaken at the south-west of the study site in 1967 (97, Fig 2a) and later in 2010 by Oxford Archaeology (55296, Fig2a and Fig 6; OAE 2010). *In situ* burials were exposed in Trenches 14, 16 and 17, and disarticulated human remains were found in Trench 19 (Fig 6). No evidence of human remains was found in Trench 1 (Fig 6) or Trench 20 suggesting these locations were outside of the boundary of the burial ground. The northern extent of St Olave's Churchyard is believed to be in line with modern property boundaries running along the northern edge of existing Cherry Tree Opening (OAE 2010, Fig 6).
- 4.40 Human remains from a single burial were disturbed during the excavation of a trench c 100m to the west of the study site (61622, Fig 2a). The location, not far from the lost medieval church of St Olaves (452, Fig 2a), suggests that these could be evidence that the associated graveyard extended into this area.

- 4.41 Other churches dating to the Saxon period in the study area include All Saint's Church and St Paul's Church. All Saint's Church, likely to have been located c 40m east of the study site, was mentioned in the Domesday of 1166 and was later taken down in 1550 (589, Fig 2a). St Paul's Church (378, Fig2a) was located 150m east of the site, on the current site of St Paul's Square, but has also been demolished, with no remains of the church surviving above ground. Residual Middle and Late Saxon pottery sherds have also been found during various archaeological interventions across the study area (51566, 48911, 26500 and 26398).
- 4.42 A large concentration of residual Late Saxon pottery found within Medieval garden soil is suggestive of contemporary activity in the vicinity of Magdalen Street, c 40m east of the site (51609, Fig 2a). A Late Saxon nummular brooch was also recovered from a Medieval context, c 220m east of the site (41193, Fig 2). Further evidence of residual Middle and Late Saxon pottery sherds has been found during archaeological interventions in various sites across the study area (51566, 48911, 26500 and 26398).
- 4.43 Based on the above, we can conclude that the focus of the Saxon/Early Medieval occupation and industrial activity lies to the south of the study site along the River Wensum, with an emphasis on metal working. In relation to this, our site appears to be located at the northern periphery of the enclosed settlement, with the course of the defence ditch running across the site, as already identified from previous archaeological investigations (Figs 5 and 8). Therefore, given that archaeology of this period has already been found at the study site and across the study area, we can conclude a high potential for further Saxon/Early Medieval remains at the site. These are likely to be associated with the Late Saxon defensive ditch (Figs 6 to 8 for its projected alignment), and burials associated with St Olave's and St Botolph's Church, in the south-west and east of the site respectively. Structural remains of St Olave's Church and St Botolph's Church may also be present.
- 4.44 As previous excavations on site have primarily targeted areas at the western/northern end of the site, outside of the defensive enclosure, there is a high potential for evidence of occupation in the east of the site within the interior of the enclosed settlement. However, the level of preservation across various areas of the site will depend on the impact that past depositional activity, especially the construction of Anglia Square, may have had on any earlier archaeology. If any remains of this period are encountered at the study site, these are likely to be of regional significance.

Medieval

- 4.45 During the Medieval period, the Late Saxon defensive ditch saw deliberate infilling, which included the use of mortar as observed in Trench 7 (NAU 2017, 50581, Fig 2a).
- 4.46 A new defensive ditch was cut in 1253, but it was later replaced by a new city wall established around 1294 -1343 (26592 Fig 2a). Its course has been traced by documentary evidence and previous excavations running east-west across the study area, c 150m north (at its closest point) of the study site (see Fig. 2a; 26155, 26451, 420). However, the new defences encompassed a larger settlement area, which included the whole study site (384, Fig 2a). Sections of the Medieval town wall still exist, along with remains of a number of towers that were incorporated along its length.
- 4.47 A modern reconstruction of Norwich Parishes c 1300 (Fig 9) shows the original road layout in the Medieval period, which depicts the site within the epicentre of the Medieval settlement. This layout was retained through whole the Post-Medieval period until the 1960s, when considerable redevelopment of the area and the establishment of Anglia Square dramatically changed the topography of the study site.
- 4.48 There is considerable evidence from archaeological interventions and documentary records for the Medieval occupation of the site, and the wider study area. Settlement within the site appears to be focussed along street frontages.
- 4.49 The 1970s excavations at the study site (Norfolk Archaeology 1975 and 1976, 170 and 284 on Fig2a), along Botolph Street and former St George's Street, found a series of cut features,

occupation layers and finds relating to settlement and industry dating from the 11th to the 17th century. The construction of modern cellars had truncated the archaeology along the street frontages; however, where archaeological features were observed, these included: 11th- 12th century post holes, 12th century pits containing iron slag, horn cores and pottery, a 13th-14th century possible clay walled building and 13th to 15th century yard levels (170, Fig 3; Norfolk Archaeology 1975). Thirteen to 15th century hearths with associated ash and slag indicating iron working were also found, along with possible 15th century timber buildings and chalk floor (281 and 284, Fig 3; Norfolk Archaeology 1976).

- 4.50 Archaeological excavations in 2007 (NAU 2007; 50584, Figs 2a and 5) observed further 11th -13th century pitting, along with a clay floor surface, a possible hearth and a well. These were found on the west side of former St George's Street (Trench 4).
- 4.51 As discussed in paragraph 4.36, several burials were also located in the area of 'Cherry Ground', within the churchyard of St Olave's in the south-west corner of the site (OAE 2010; 55296, Figs 2a and 6). The exact location of the Church itself is yet to be identified, but it is currently thought to be in the south-western corner of the study site (Fig 12).
- 4.52 More skeletal remains were uncovered at the eastern end of the site, this time during the construction of Anglia Square in the 1960s. These were found within the presumed location of St Botolph's Church, which was demolished in 1548 (587, Fig 2a). The exact location of the church and the extent of the churchyard still remain uncertain.
- 4.53 Stump Cross at the time was formerly regarded as the centre of Norwich Over-the-Water (26429; Figs 2a and 10). This was the site of a Medieval cross located on the boundary of the south-east corner of the site, under the pavement of Magdalen Street. This was one of the places in Norwich where the accession of a new monarch was publically announced. It was demolished in the late 16th century, re-established in 1640 and removed in 1644.
- 4.54 Evidence of Medieval activity found within the study site was also observed in other locations within the study area. Pitting, a common occurrence for this period, was found c 70m south-east of the study site (51027 and 351, Fig 2a), c 130m to the south-east (37510 and 40497, Fig 2a) and c 60m to 200m to east/north-east (49838, 43297 and 41193; Fig 2a). This was often related to or suggestive of industrial activity, including gravel/sand extraction, tanning, metal working and horn working.
- 4.55 More substantial development of the study area took place in the Late Medieval period, with evidence of stone and flint buildings, and more intense industrial activity (41021, 351, 41303, 840 in Fig 2a; ENF149430, Fig 2b) and the establishment of several hospitals/almshouses (379, 628 and 346; Fig 2a) and priories (381, 430 and 234: Fig 2a). As in the Late Saxon/Early Medieval period, the concentration of settlement appears to be located to the south of the study site.
- 4.56 Based on the above evidence, we can conclude that from the 13th century onwards, the study site would have lain at the centre of the Medieval settlement of Norwich. Recent archaeological investigations at the study site have indeed confirmed presence of archaeological remains dating to this period and therefore, a high archaeological potential for further remains of Medieval date can be expected within the remnant of the site. However, the level of preservation of these deposits across the site will depend on the impact that past depositional activity, especially the construction of Anglia Square, may have had on any archaeology present at the site (Figs 8 and Figs 24). If any Medieval archaeology is encountered at the site, this is likely to be of regional significance.

Post Medieval & Modern (including map regression exercise)

- 4.57 Evidence from archaeological investigations at the west and north of the site demonstrate continued occupation and industrial activity, from the Medieval time up to the Post Medieval period. This can be mainly seen along Botolph Street (former St George's Street) frontage, in the north-west of the

site, with early-15th century timber buildings being replaced by stone structures, and more tenements being established in the 16th century, with a complex of yards and buildings (281, 284, 170 in Fig 3; Norfolk Archaeology 1975 and 1976). Many extraction pits and rubbish pits were also excavated in the west of the site containing 15th -16th century pottery, including imported German stoneware, and Dutch and English slipware (OAE 2010, 50584, Fig 2a; Trench 2, 3 and 5 on Fig 6).

- 4.58 The 1696 Cleer Map of Norwich (Fig 10) largely correlates with the archaeological evidence emerged from past archaeological investigations at the site, clearly showing buildings with yards occupying the frontage of Pitt Street, St George Street, Botolph Street and the west side of Snail Gate (Calvert Street). Areas of land, especially in the northern parts of the site, appear to be largely undeveloped/open ground, and the site of St Olave's Church is represented at the south-western corner of the site, north of Cherry Alley. Stump Cross is shown at the south-eastern corner of the site and today's Pitt Street, which flanks the study site to the west, is St Augustus Street (Fig 12).
- 4.59 As already discussed, St Olave's Church is known to have been demolished in 1546 and archaeological evidence suggests that material from the church was reused in a Post Medieval building exposed during archaeological evaluation undertaken at the site in 2010 (OAE 2010). However, the church of St Olave continues to be represented on historic maps until 1746 (Fig 12). This map also shows another church located to the east of the site, likely to be St Botolph's Church.
- 4.60 Little change can be seen at the site over most of the 18th century (Fig 11, 1727 Corbridge Map of Norwich; Fig 12, 1746 Blomefield Map; Fig 13, 1783 Smith Map of Norwich). By the end of the 18th century (Fig 14, 1789 Hochstetter Map of Norwich) there is an increase in development across the site, though an area to the north and patches of land across the site, including the east of Snail Gate, still remained horticultural plots or yards. Archaeological evidence from investigations undertaken at the site, confirms the construction of cellared buildings along the street frontages in the eighteenth and nineteenth centuries (170, 50584, and 50581 on Fig 2). During this period, St Augustus Street became known as St Olave's or St Tooley's and Pitt Street (Fig 12), which later changed to Pitt Street (Fig 13).
- 4.61 Between 1830 (Fig 15) and 1886 (Fig 16) several changes can be seen across the site. Intense development takes place with buildings being removed, replaced, and newly constructed in a mixture of domestic dwellings and often industrial buildings/spaces. After this, very little change occurs at the site for the first part of the 20th century (Fig 17, 1907 Ordnance Survey Map and Fig 18, 1914 Ordnance Survey Map), except for the construction of a large clothing factory on the eastern half of the site, where once were gardens.
- 4.62 Between 1928 (Fig 19) and 1938 (Fig 20) a number of buildings at the northern end of the site were demolished and replaced by other buildings. These included the demolition of the "Crape Manufactory" and the "Boot and Shoe Manufactory" to make space for a new Picture Theatre, just north of Botolph Street. Excavations in 2010 uncovered Post-Medieval wall footings within this vicinity.
- 4.63 Between 1938 (Fig 20) and 1956 (Fig 21), significant redevelopment took place across the whole site, especially to the east of Calvert Street, where a number of buildings were demolished and replaced with few more factories, including a group of new buildings constructed to the south of the of the former "Clothing Factory". To the west of Calvert Street, a couple of small buildings were erected within the backyard spaces. North of the original Botolph Street, the Picture Theatre, now the Odeon, appears to have been extended southwards. Two new buildings, identified as dry cleaning works, were built fronting onto St George's Street (present day Botolph Street). A number of buildings have also been demolished along Pitt Street and another factory in the north-eastern part of the site which was replaced by a playing field. Additionally, a row of terraced houses along "Rose Yard" have also been replaced by a new "Engineering and Wrapping Machine works" and few more buildings have been erected in the south-eastern corner of the site, south of the shoe factory and west of Green Lane.

- 4.64 By 1978-83 (Fig 22) major redevelopment of the area, especially within the footprint of the study site, has seen the restructuring of the road layout with the truncation and removal of Calvert Road and Botolph Street in part, and the construction of new access roads at the northern end and southern end of the site. Edward Street has also been laid out by this time. Widespread demolition has taken place across the site, with the removal of all domestic buildings as well as the Odeon Cinema, the shoe factory, printing works and public house. A shopping centre focused on the new Anglia Square has been built at the eastern end of the site, along with a multi-storey carpark to the north, and Sovereign House occupying a large area in the south. Two large areas in the north and west of the site were established as open car parks and remain in this form today. A garage and filling station have been built on the former playing field in the north-eastern part of the site and a new warehouse has replaced the "Engineering and Wrapping Machine works". The Shoe Factory, previously a "Silk Mill" has also been demolished.
- 4.65 More recently, a number of buildings at the western end of the site, including the previously identified dry cleaning works, have been demolished. The land has been incorporated into the existing carpark. Along with this, a warehouse in the north-western part of the site and the garage with filling station at the north-eastern end of the site have been demolished and replaced by more carparks.
- 4.66 Based on the above, the study site has a known potential for remains dating to the Post Medieval and Modern periods. These are likely to relate to 15th and 16th century occupation along street frontages which will include private footings of private dwellings, along with open areas, pitting and/garden activity. However, the majority of the remains are expected to be associated with the highly density development occurred at the site between the late 19th and mid-20th century. These are thought to have truncated, at places, any earlier Post Medieval archaeology that may have been present at the site.

Assessment of Significance (Designated and Non-Designated Assets)

- 4.67 Existing national policy guidance for archaeology (the NPPF as referenced in section 2) enshrines the concept of the 'significance' of heritage assets. Significance as defined in the NPPF centres on the value of an archaeological or historic asset for its 'heritage interest' to this or future generations.
- 4.68 No designated archaeological heritage assets as defined in the NPPF are recorded on or in close proximity to the study site.
- 4.69 The assessment has identified an overall low potential for archaeological evidence for the early Prehistoric and Roman periods, and a high potential for the Saxon - Early Medieval, Medieval and Post-Medieval periods. Intensive archaeological investigation in the western part of the site has confirmed that archaeological remains of regional importance are present within the study site, relating to St Olave's Church and burial ground, and the Late Saxon city defences. Given that the focus of previous archaeological investigation lies outside of the Saxon defensive ditch, the potential for Saxon settlement remains in the east of the site would also be of regional significance.
- 4.70 Any other archaeological remains now present on the study site are expected to be of local importance.
- 4.71 As identified by this assessment, archaeological potential by period and the likely significance of any archaeological remains which may be present is summarised in table form:

Period:	Identified Archaeological Potential	Identified Archaeological Significance
Prehistoric	Low	Low (Local)

ARCHAEOLOGICAL IMPACT ASSESSMENT

	Isolated finds in later contexts may be encountered	
Roman	Low Isolated finds in later contexts may be encountered	Low (Local)
Saxon/Early Medieval	High potential for the Late Saxon defensive ditch and burials associated with St Olave's and St Botolph's Church, in the south-west and east of the site respectively. There is also high potential for evidence of occupation in the east of the site within the interior of the enclosed settlement. However, the level of preservation across various areas of the site will depend on the impact that past post-depositional activity, especially the construction of Anglia Square, has had on earlier archaeology.	Moderate (Regional Significance)
Medieval	High potential for remains Medieval date can be expected within the remnant of the site. From the 13 th century onwards, the study site would have lain at the centre of the Medieval settlement of Norwich. Recent archaeological investigations at the study site have indeed confirmed presence of archaeological remains and activity dating to this period. However, the level of preservation of these deposits across the site will depend on the impact that past post-depositional activity, especially the construction of Anglia Square, has had on earlier archaeology.	Moderate (Regional Significance)
Post Medieval and Modern	High potential for remains of Post Medieval and Modern periods. These are likely to relate to 15 th and 16 th century occupation along street frontages which will include private footings of private dwellings, along with open areas, pitting and/garden activity. However, the majority of the remains are expected to be associated with the highly density development occurred at the site between the late 19 th and mid-20 th century. These are thought to have truncated, at places, any earlier Post Medieval archaeology that may have been present at the site.	Low (Local)

5 SITE CONDITIONS, THE PROPOSED DEVELOPMENT & REVIEW OF POTENTIAL DEVELOPMENT IMPACTS ON ARCHAEOLOGICAL ASSETS

Site Conditions

- 5.1 The site comprises a mixed commercial and office development, with retail buildings focused on Anglia Square to the east. Ground level car parks occupy areas to the north and west, and a multi-storey car park with a basement occupies the north of the site. A strip of land along the western boundary is currently undeveloped and is occupied by a grassy mound (possible spoil heap). The majority of the site is bounded to the south by St Crispins Road, to the west by Pitt Street, to the northwest by New Botolph Street, to the northeast by Edward Street, and to the east by Magdalen Street. Two additional areas of the site are located on the north sides of New Botolph Street and Edward Street (Figs 1 and 23; Plates 1-14).
- 5.2 Past developments will have had a variable impact on the below ground archaeology. Documents held in the Norfolk Record Office, detailing the development plans and engineering methodologies of the present multi-storey car park and retail complex, clearly demonstrate a severe and widespread negative impact has taken place; resulting from the cutting of foundations and services, and the excavation of basements/lift shafts. The plans are supported by film and photographic evidence; however, all documents are subject to copyright and cannot be reproduced in any form until 70 years after the death of the architect. The documents are freely accessible at the Record Office and **Appendix 5** lists the relevant reference numbers along with a brief description of content and depth.
- 5.3 The impact of the surface car parking to the north and west of the site is considered to be low.
- 5.4 The destructive impact of nineteenth century cellared buildings upon below ground archaeology has already been demonstrated through previous excavation (NAU 2007 and OAE 2010 and, Appendix 2 and 3). The construction of these buildings occupying existing and former street frontages are considered likely to have had a severe, localised impact on below ground archaeological deposits.
- 5.5 Pre-nineteenth century developments are considered to have a moderate and localised impact on earlier archaeology.
- 5.6 A deposit survival plan (Fig 24) has been produced to show the predicted level of archaeological survival across the site based on the negative impact that past post-depositional activity, especially from the late 19th century onwards, may have had on any archaeology present on site. Where archaeological investigations have been undertaken, the results of these works have been used to refine the level of predicted archaeological survival in that particular area; for other areas, especially within the footprint of the Anglia Square building, where archaeological investigations have not been undertaken, this could only be estimated based on the information made available.

Proposed Development

- 5.7 The new development proposal seeks to comprehensively redevelop the study site to provide up to 8,000 sqm Net Internal Area, (NIA), flexible commercial and other non-residential floorspace and up to 1,100 new residential dwellings (the Proposed Development). These figures are maxima in view of the hybrid nature of the application. This proposes part of the scheme designed in full, to accommodate 6,062 sqm non-residential floorspace and 367 dwellings, with the remaining large part of the study site for later detailed design as a "Reserved Matters" application, up to those maxima figures (Fig 25). None of the buildings will have a basement, except for "Building A" which will be erected within the same location of the Multi Storey Car Park which already has a lower

ground floor (Fig 26). All remaining buildings will have piled foundations, with the only exception of buildings B and C, which are expected to have trench foundations.

- 5.8 The scale of the development has the potential to impact negatively on any undesignated archaeological assets within the site. The construction of the complex will include extensive demolition and construction activities which are likely to involve significant earthworks, foundations and piling, all of which have the potential to impact negatively on buried archaeological features and deposits within the site.
- 5.9 However, the almost total absence of basements, as part of the proposed development, along with the use of dispersed pile clusters in some areas, combined with the depth of the archaeological deposits encountered to date on site will allow some archaeological remains to be preserved *in situ*. Elsewhere, where predicted impact from the proposed development cannot be avoided, a phased programme of archaeological works is expected to be undertaken to avoid the physical loss of archaeological assets. This may comprise further evaluation work to verify and augment the results of the previous work on the site and to inform the scope of subsequent archaeological mitigation, which is likely to comprise archaeological excavation, recording and analysis leading to publication.

Review of Potential Development Impacts on Heritage Assets

- 5.10 There are no designated archaeological assets within the site. However, this assessment has established that there is a high potential for previously unrecorded archaeological remains of Saxon, Early and Late Medieval and Post Medieval date to be present within the site, considered to be of regional significance.
- 5.11 The almost complete absence of basements as part of the proposed development, along with the use of dispersed pile clusters in some areas, combined with the depth of the archaeological deposits encountered to date on site will allow some archaeological remains to be preserved *in situ*.
- 5.12 Elsewhere, localised impacts such as high density pile clusters, deep lift shaft pits or impacts on burial grounds have the potential to result in the complete loss of significance and negatively impact any underlying archaeology that may be present. Therefore, in the light of this, and using the methodology outlined above and utilising professional judgement, a phased programme of archaeological works is expected to be undertaken to avoid the loss of archaeological assets. This may comprise further evaluation work to verify and augment the results of the previous work on the site and to inform the scope of subsequent archaeological mitigation, which is likely to comprise archaeological excavation, recording and analysis leading to publication.

6 SUMMARY AND CONCLUSIONS

- 6.1 This archaeological impact assessment on the site of Anglia Square, Norwich, Norfolk (the study site) has been prepared by RPS on behalf of Weston Homes PLC to clarify its below ground archaeological potential in view of the proposed development.
- 6.2 In terms of relevant, nationally significant designated heritage assets, no World Heritage Sites, Scheduled Monuments, Historic Wrecks or Historic Battlefields lie within the study site.
- 6.3 In terms of relevant local designations, the study site is located within an Area of Main Archaeological Interest, as defined by Norwich City Council.
- 6.4 This assessment has established that the site has **high** potential for archaeological remains dating to the Saxon-Early Medieval, Medieval and Post Medieval periods; whilst, the potential for human activity dating to the Prehistoric and Roman periods is expected to be **low**.
- 6.5 Previous archaeological investigations undertaken at the site have revealed evidence for the Late Saxon defensive ditch and Saxon – Medieval occupation, both in the form of domestic and industrial activity. Burials have also been recorded on site in association with the Saxon and Medieval churchyard of St Olave's and more burials could be present in association with the Church of St Botolph. Structural remains of the Church of St Olave have not been identified during investigations, but material from the church was found reused in a Post Medieval building to the south-west of the site. Post – Medieval remains have included 15th and 16th century structural remains of buildings fronting the former line of St George and St Botolph Street, along with garden soil, extraction pits and rubbish pits.
- 6.6 If any of these remains are encountered, these are likely to be up to regional significance. If any remains of other periods are observed, these are expected to be mostly of local significance.
- 6.7 Past post-depositional impacts, mostly as a result of late 19th and 20th century developments, are considered to have had a severe, widespread negative impact on any earlier archaeology that may have been present on site, especially within the footprint of the existing Anglia Square complex and at the north-eastern end of the site. Here, structural works or previous demolition remains associated with a large 19th century industrial building, appear to have truncated all archaeology down to natural deposits. Conversely, despite some known truncation, good preservation of archaeological deposits has been established elsewhere within the site, especially within the north-west and west car park, along with the open area under of the flyover.
- 6.8 The new development proposal seeks to comprehensively redevelop the study site to provide up to 8,000 sqm Net Internal Area, (NIA), flexible commercial and other non-residential floorspace and up to 1,100 new residential dwellings (the Proposed Development). These figures are maxima in view of the hybrid nature of the application. This proposes part of the scheme designed in full, to accommodate 6,062 sqm non-residential floorspace and 367 dwellings, with the remaining large part of the study site for later detailed design as a "Reserved Matters" application, up to those maxima figures (Fig 25). None of the buildings will have a basement, except for "Building A" which will be erected within the same location of the Multi Storey Car Park which already has a lower ground floor (Fig 26).
- 6.9 It is expected, therefore, that demolition and construction activity for the proposed development could have a widespread, negative impact on any buried archaeological features and deposits that may be present at the study site, especially where deposit survival is considered to be medium to high.
- 6.10 In the light of this, a phased programme of archaeological works is expected to be undertaken to avoid the physical loss of archaeological assets. This may comprise further evaluation work to verify and augment the results of the previous work on the site and to inform the scope of subsequent archaeological mitigation, which is likely to comprise archaeological excavation, recording and analysis leading to publication.

- 6.11 However, recommendations for any future work will be made by the Local Planning Authority advised by the Norfolk County Archaeologist. It is considered that such work could be undertaken post-consent, secured by a planning condition.

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Cartographic

1300 Norwich Parishes Reconstruction Map of Property Ownership

1696 Cleer Map of Norwich

1727 Corbridge Map of Norwich

1746 Blomefield Map of Norwich

1783 Smith Map of Norwich

1789 Hochstetter Map of Norwich

1830 Dallinger Map of Norwich

1886 Ordnance Survey

1907 Ordnance Survey

1914 Ordnance Survey

1928 Ordnance Survey

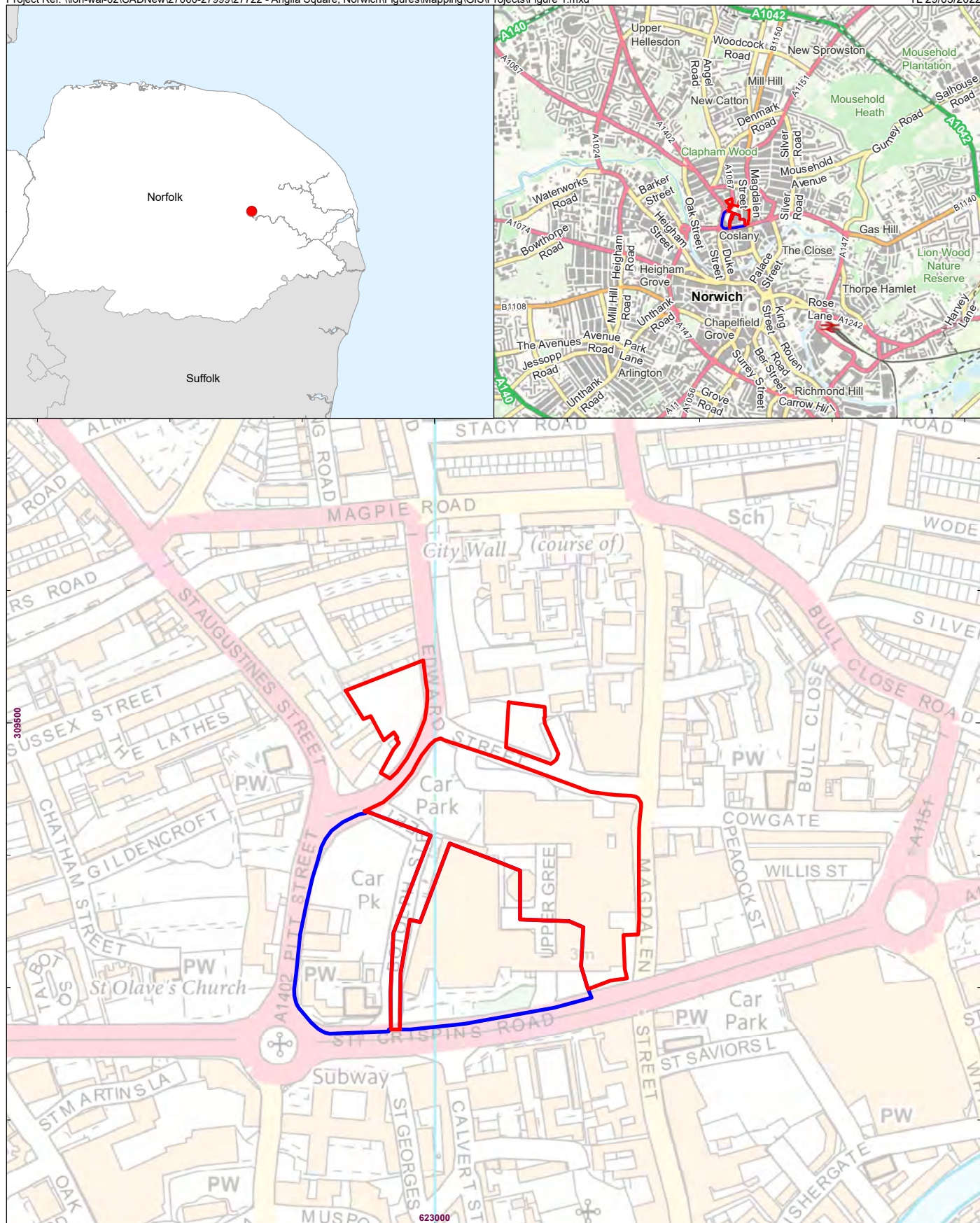
1938 Ordnance Survey

1956-57 Ordnance Survey

1978-83 Ordnance Survey

2021 Google Earth View

Figures



 Site Boundary

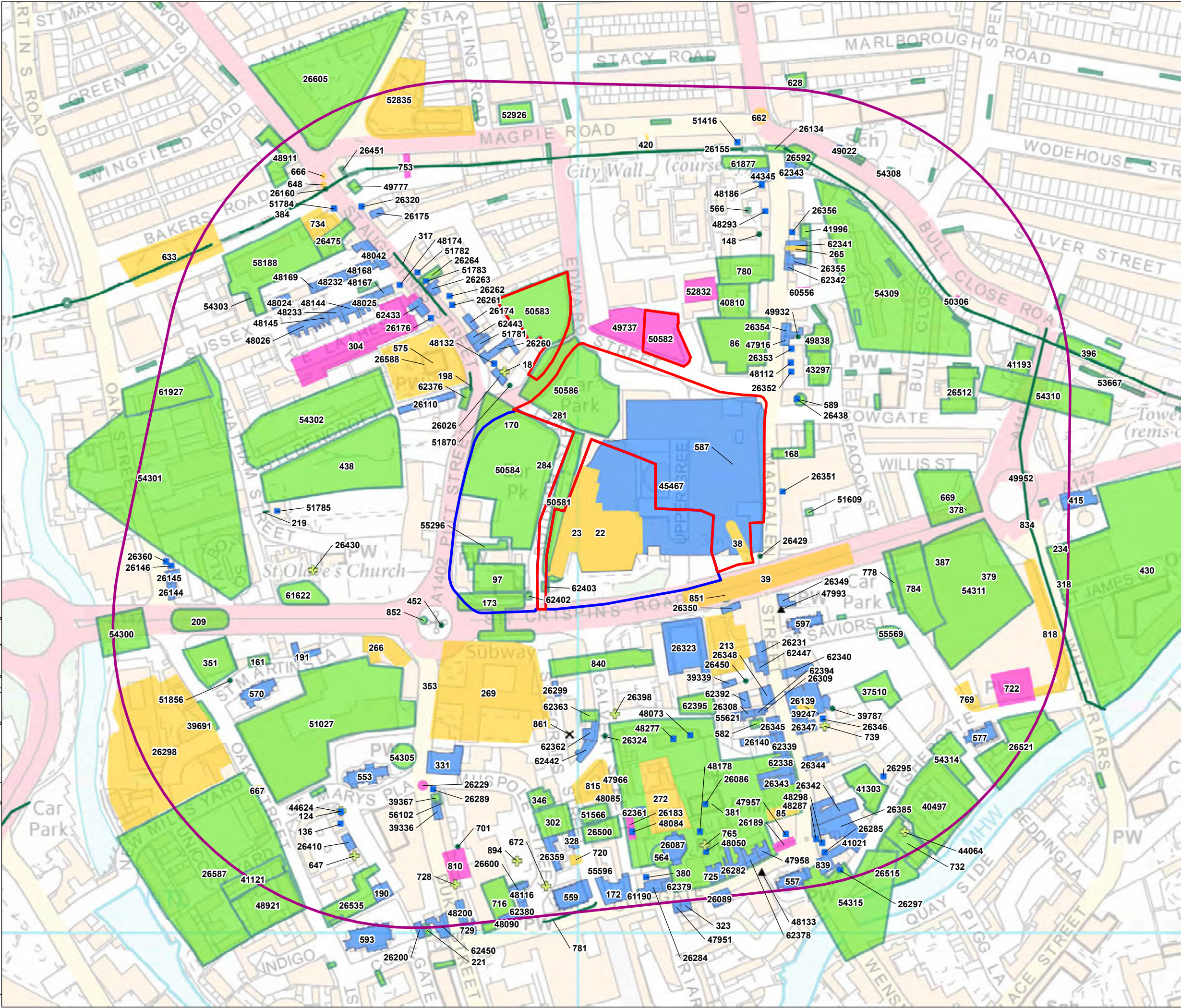


0 50 100m
Scale at A4: 1:4,000

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Figure 1

Site Location



Legend

- Redline
- Blueline
- Search Buffer 250m

Designated Heritage Assets:

Non-designated Heritage Assets:

Previous Archaeological Work:

Historic Landscape Characterisation:

- HER Record (linear)

HER Record (point)

- HER Building
- Find Spot
- Monument
- Negative evidence
- Structure

HER Record (polygon)

- HER Building
- Find Spot
- Monument
- Negative evidence

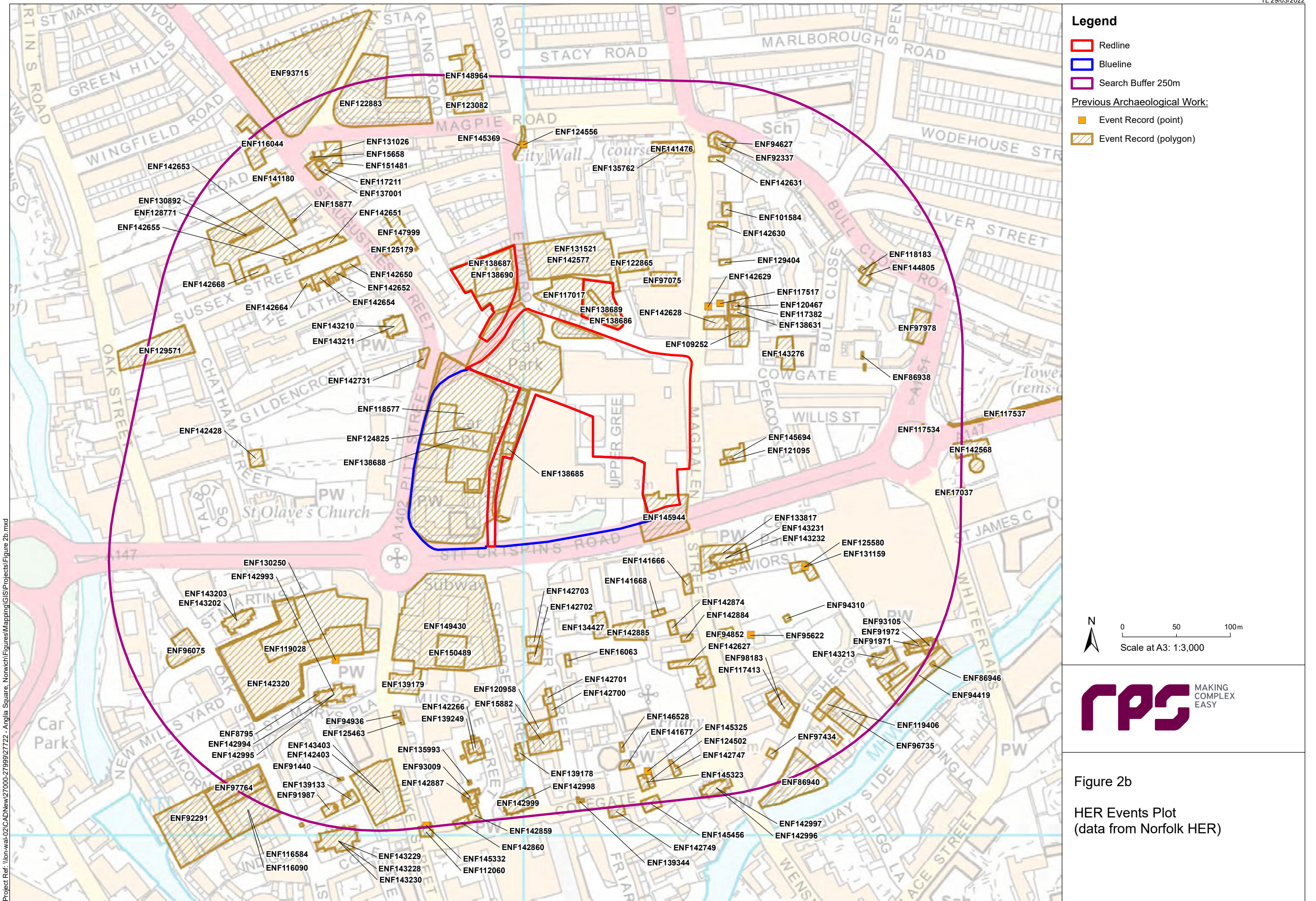


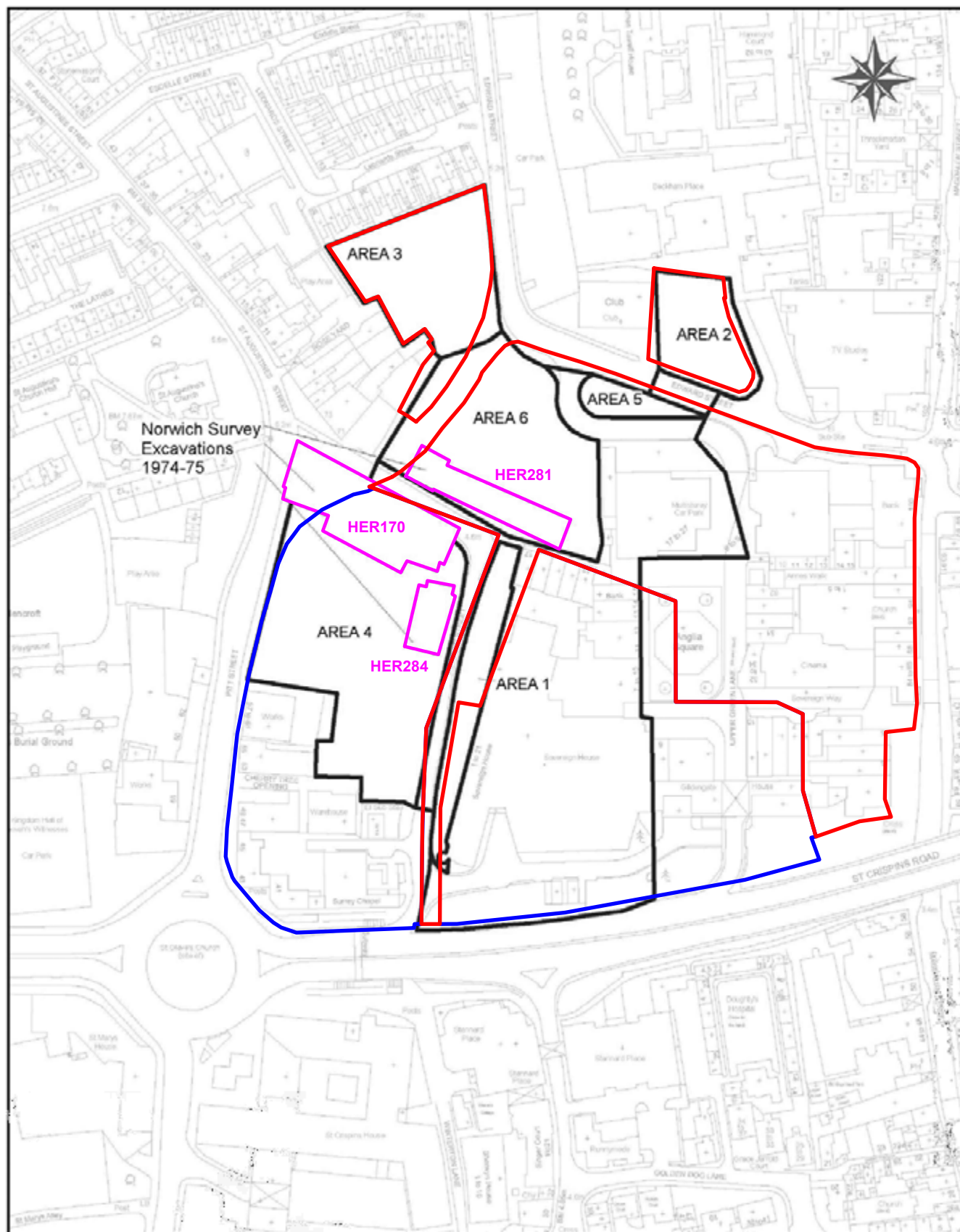
0 50 100m
Scale at A3: 1:3,000



Figure 2a

HER Records Plot
(data from Norfolk HER)





- Site Boundary
- Blueline

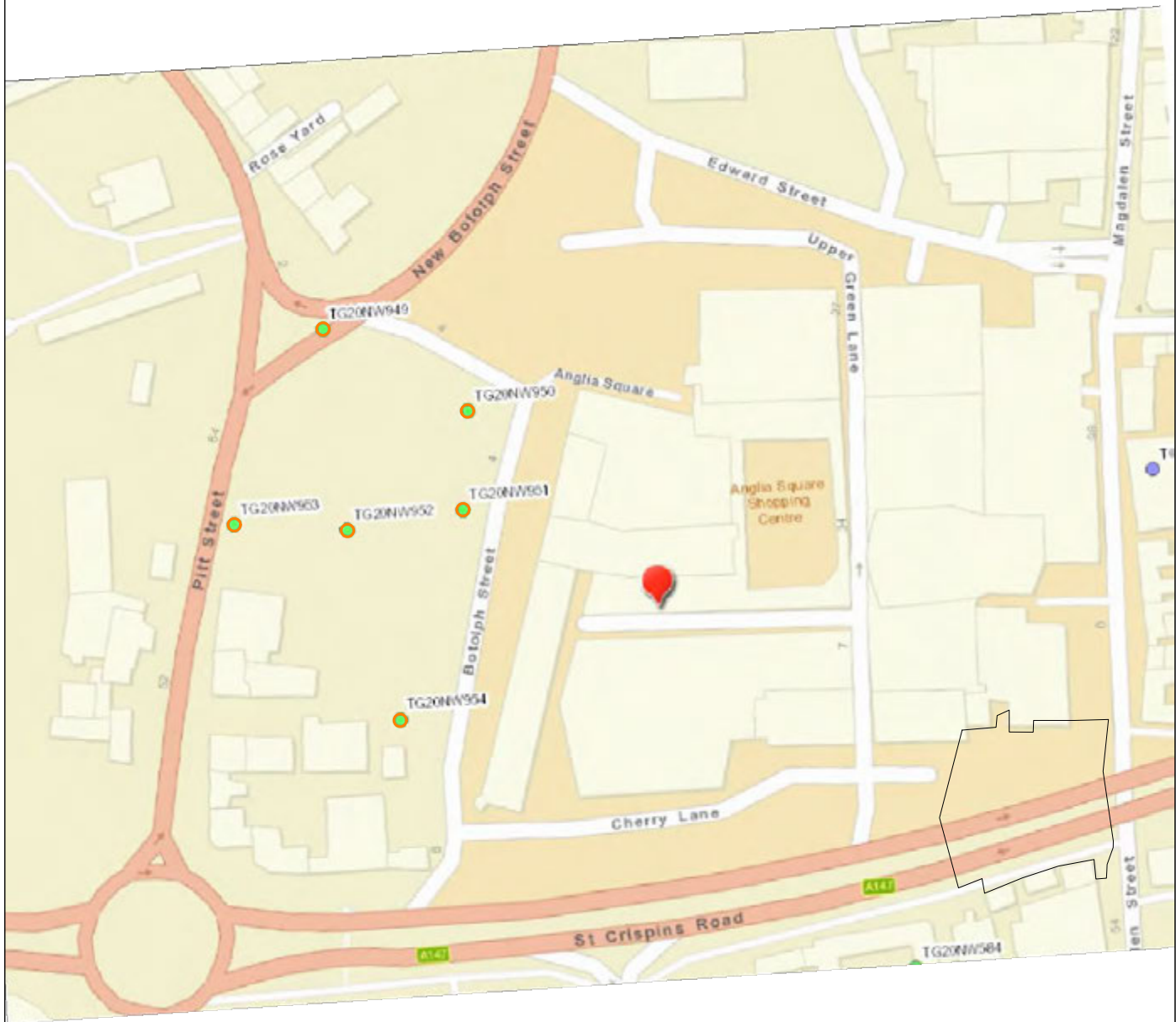




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Figure 3

1975-76 Archaeological
Excavation Location Plan



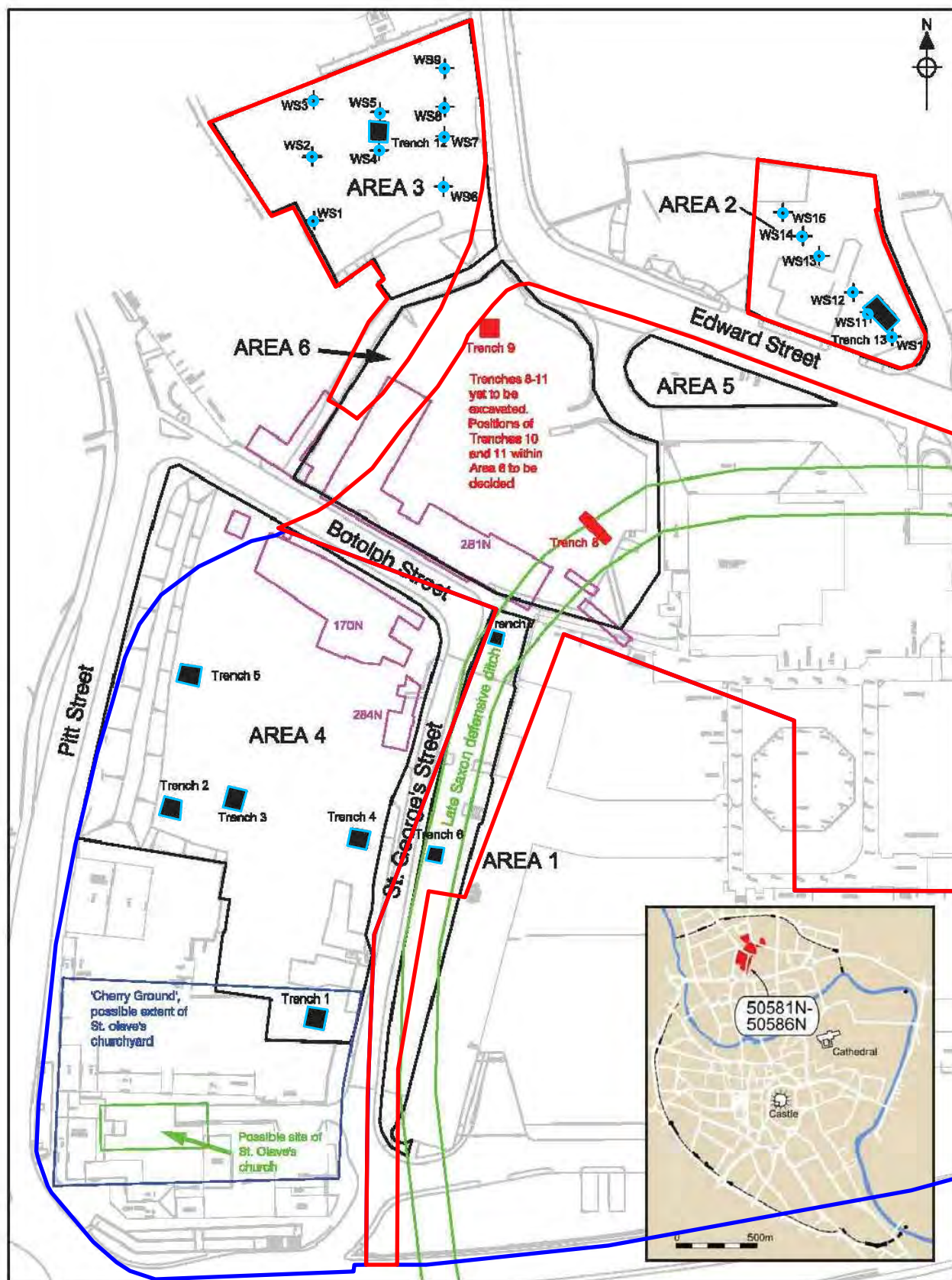
-  Site Boundary
-  Blueline



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Figure 4
1977 Borehole Location Plan



- Site Boundary
- Blueline

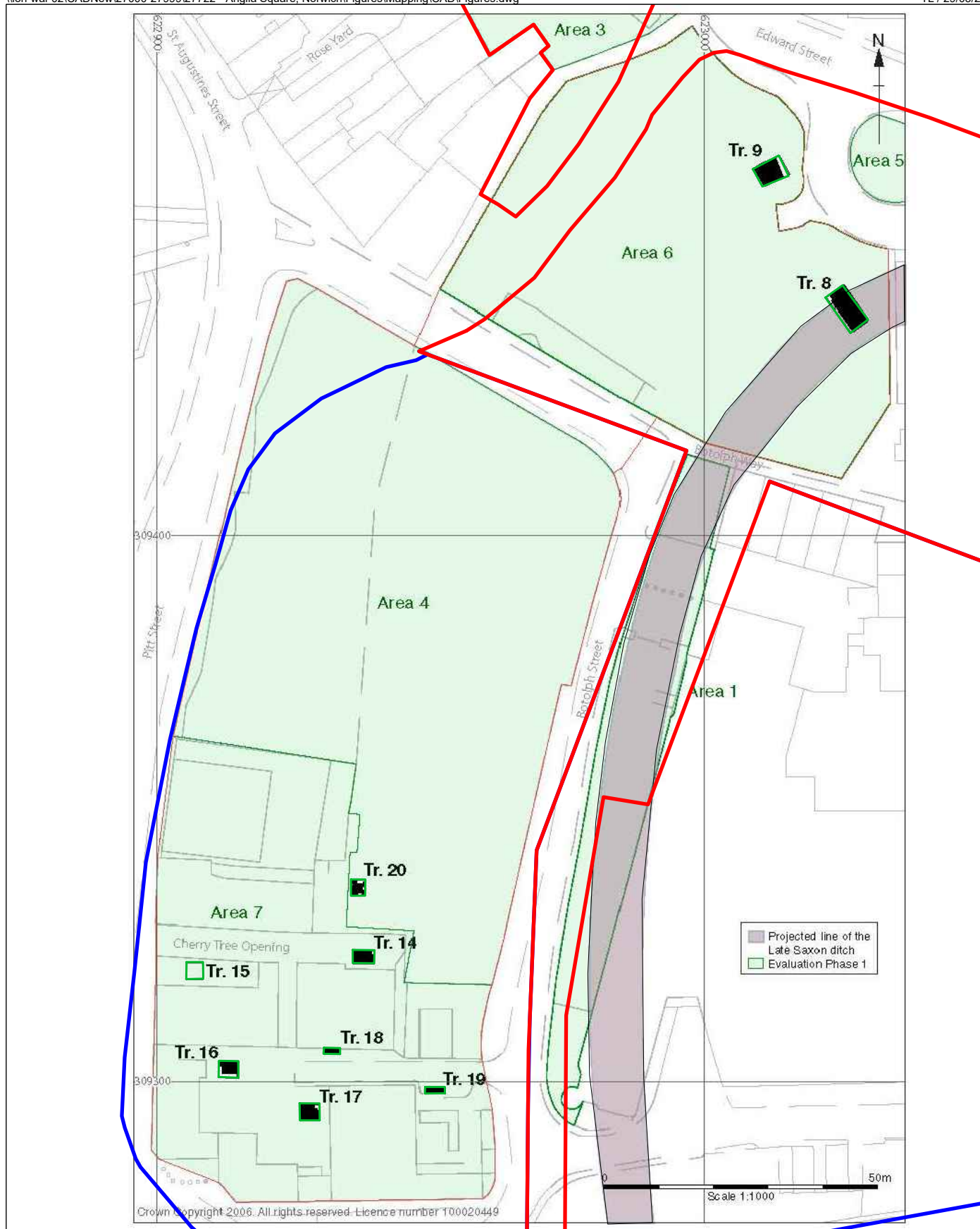


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Figure 5

2007 Trench Location Plan
(from Percival and Westall, 2007)



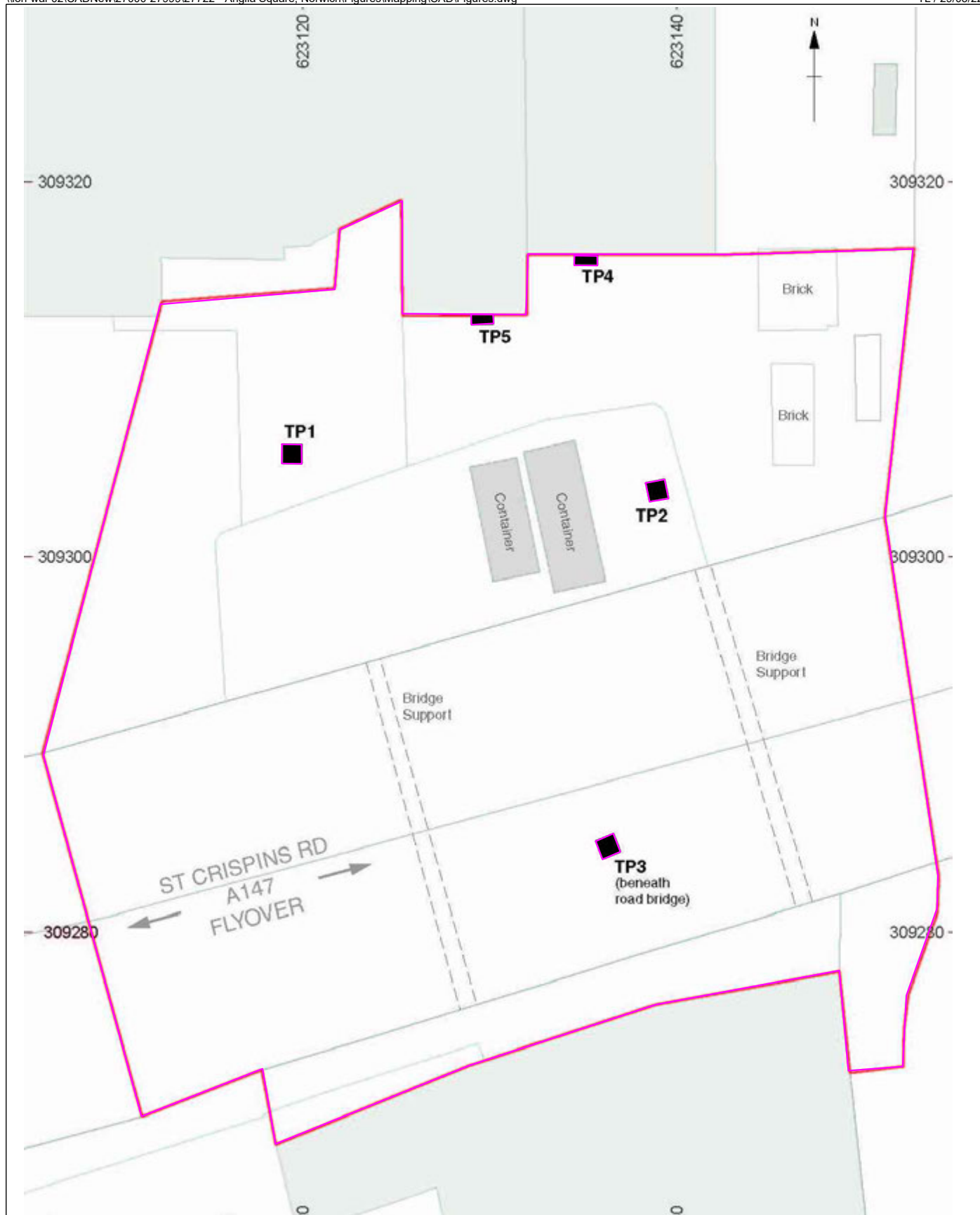
- Site Boundary
- Blueline



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Figure 6
2010 Trench Location Plan
(from OAE, 2010)



- Site Boundary
- Blueline

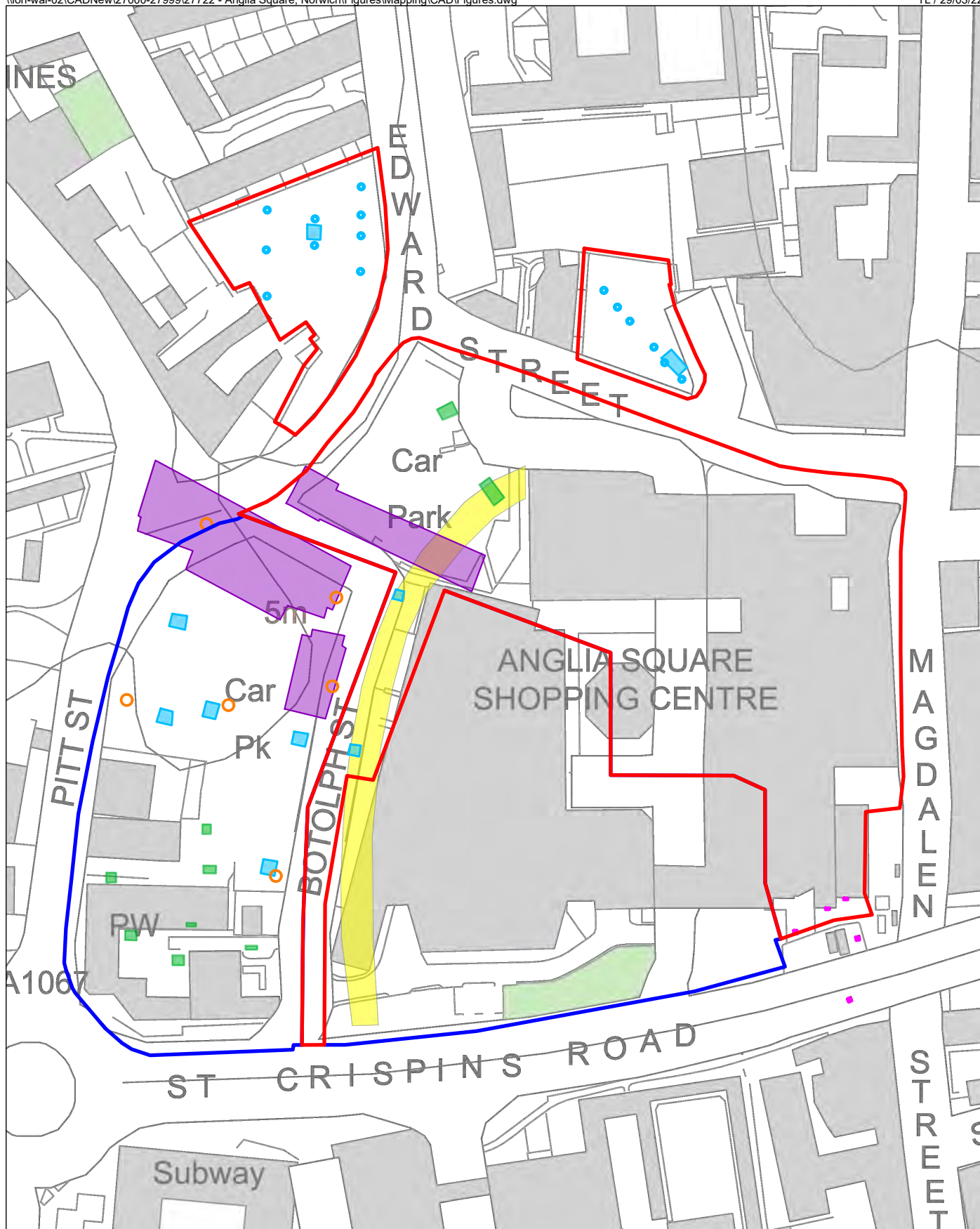


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Figure 7

2018 Geotechnical pits location
plan



Site Boundary

Blueline

1975-76 Excavations

1977 Boreholes

2007 Trenches & Boreholes
(Percival & Westall)



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2010 OAE Trenches

2018 OAE Trenches


Projected Saxon Ditch

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Figure 8
Location plan of all archaeological and
geotechnical investigations undertaken
at the site from 1975-2018



 Site Boundary (approximate)

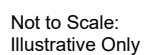
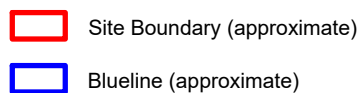
 Blueline (approximate)



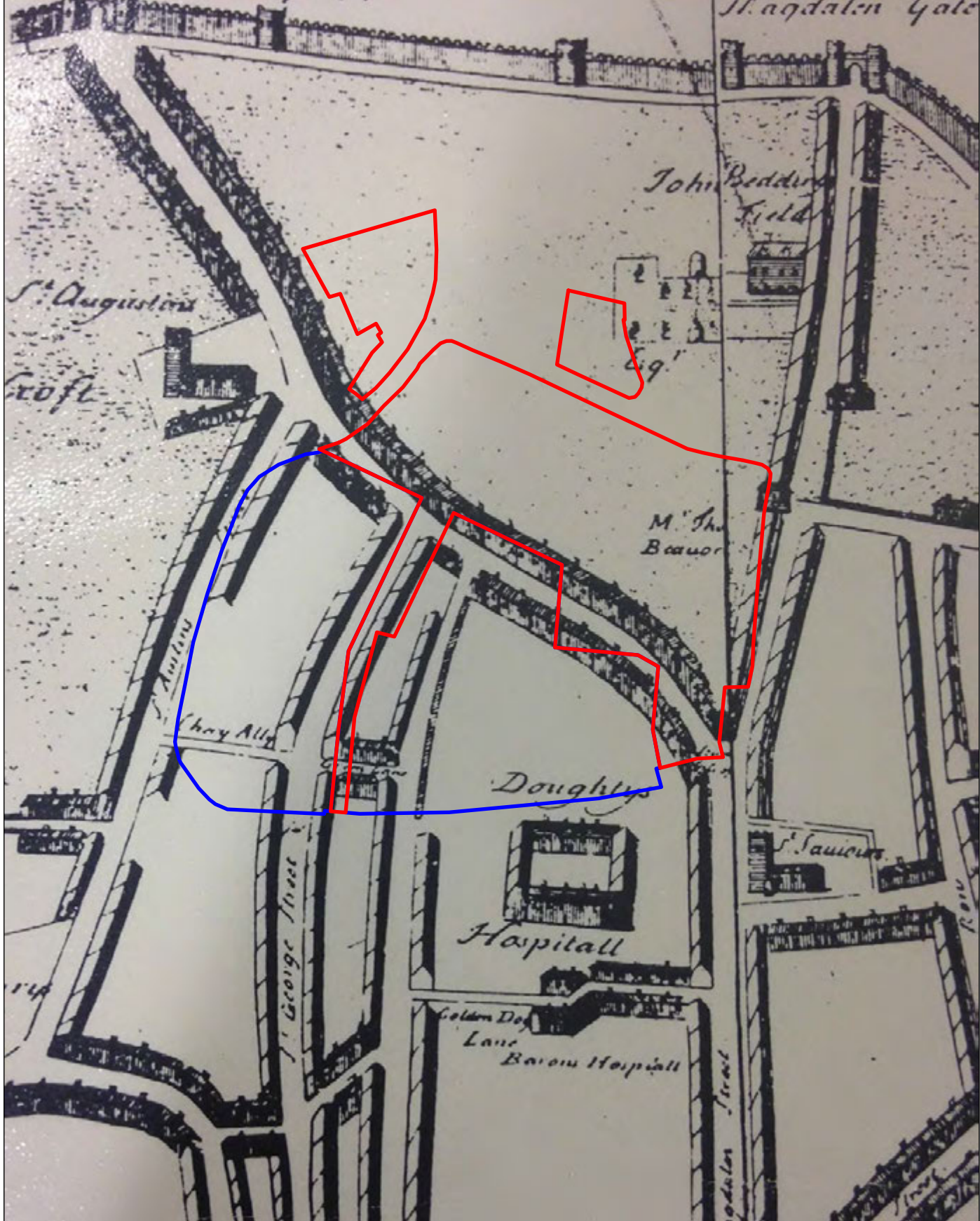
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Figure 9
c.1300 Norwich Parishes
Reconstruction of Property
Ownership



1696 Cleer Map of Norwich



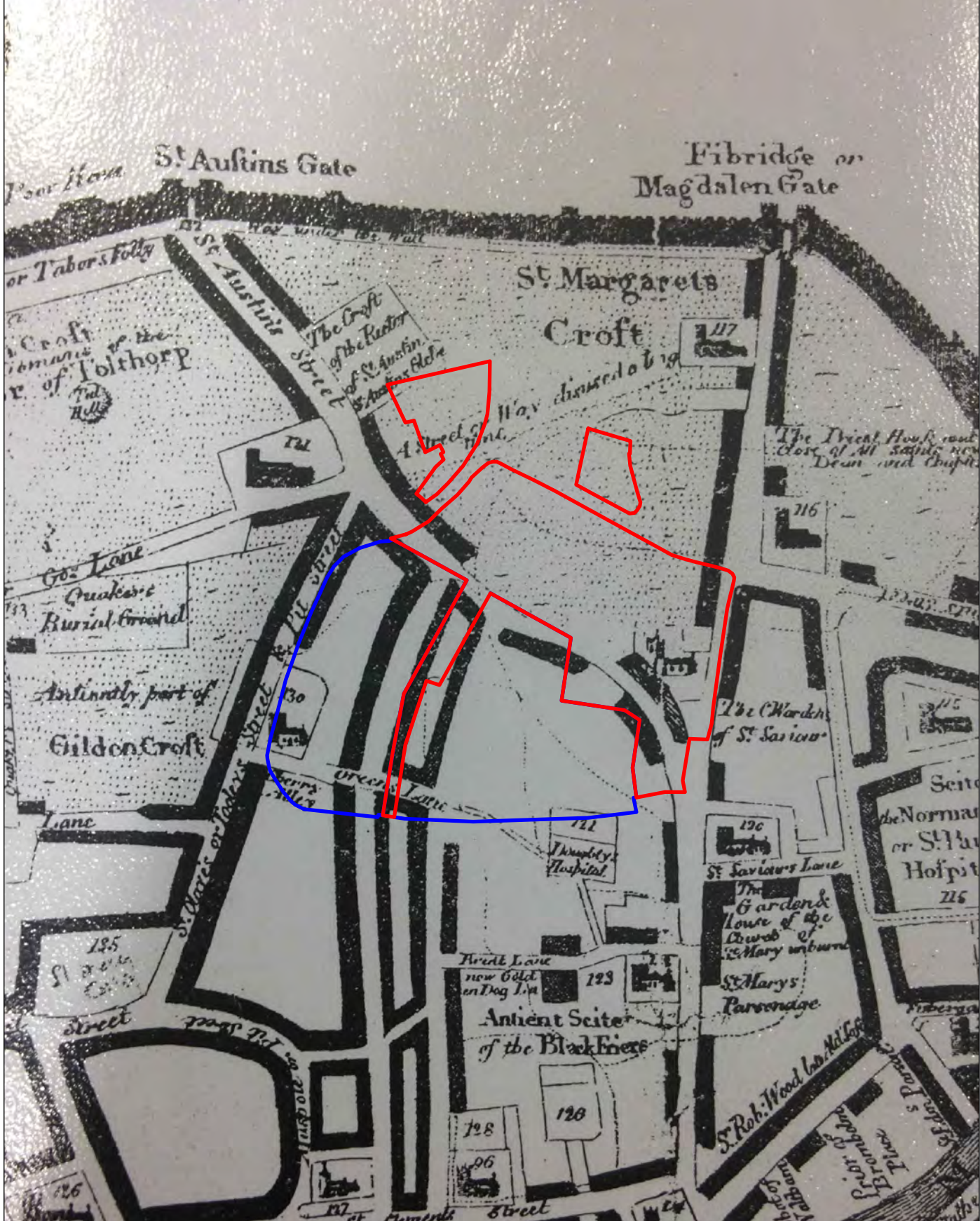
-  Site Boundary (approximate)
-  Blueline (approximate)





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Figure 11
1727 Corbridge Map of Norwich



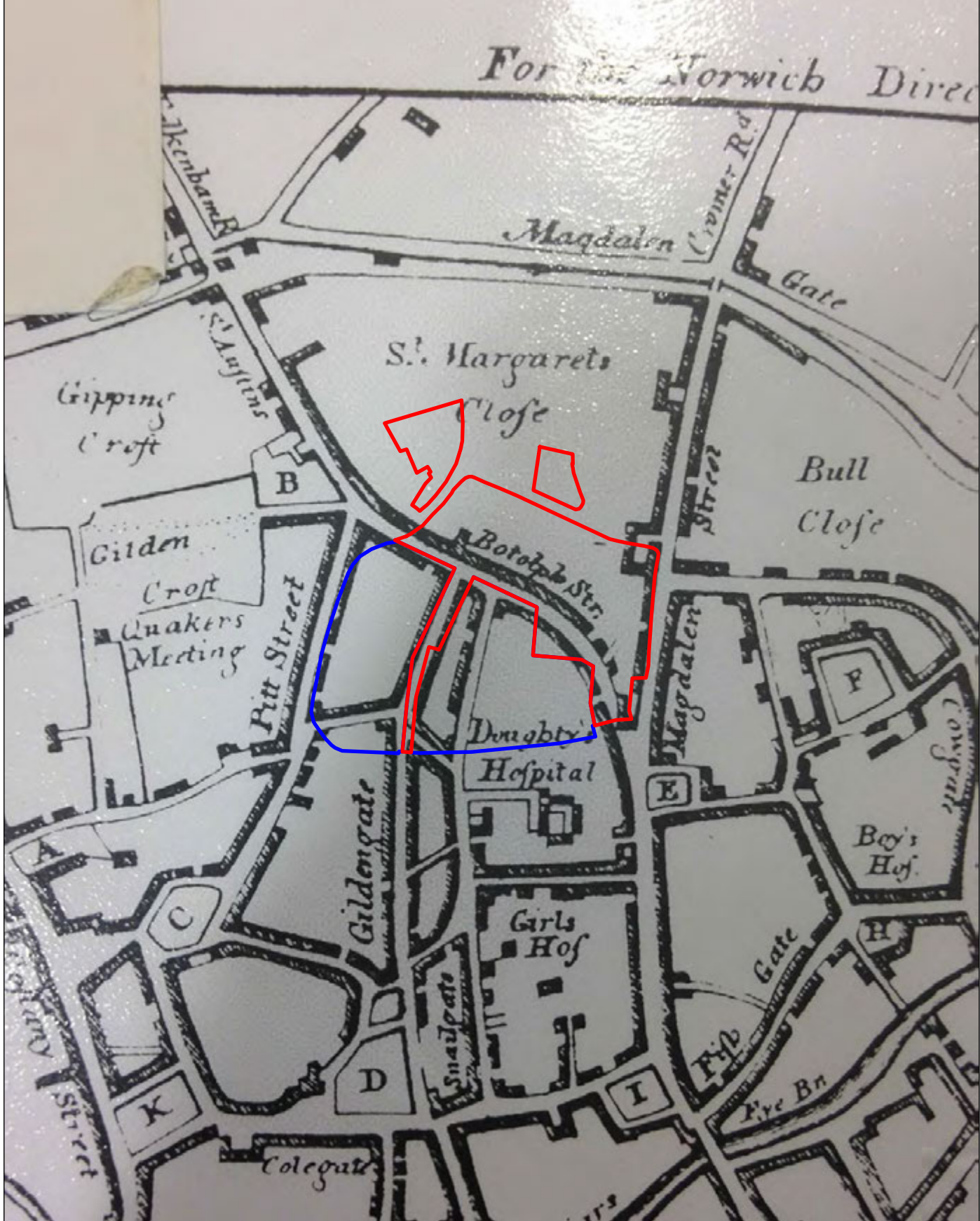
-  Site Boundary (approximate)
-  Blueline (approximate)



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Figure 12
1746 Blomefield Map of Norwich



Site Boundary (approximate)

Blueline (approximate)

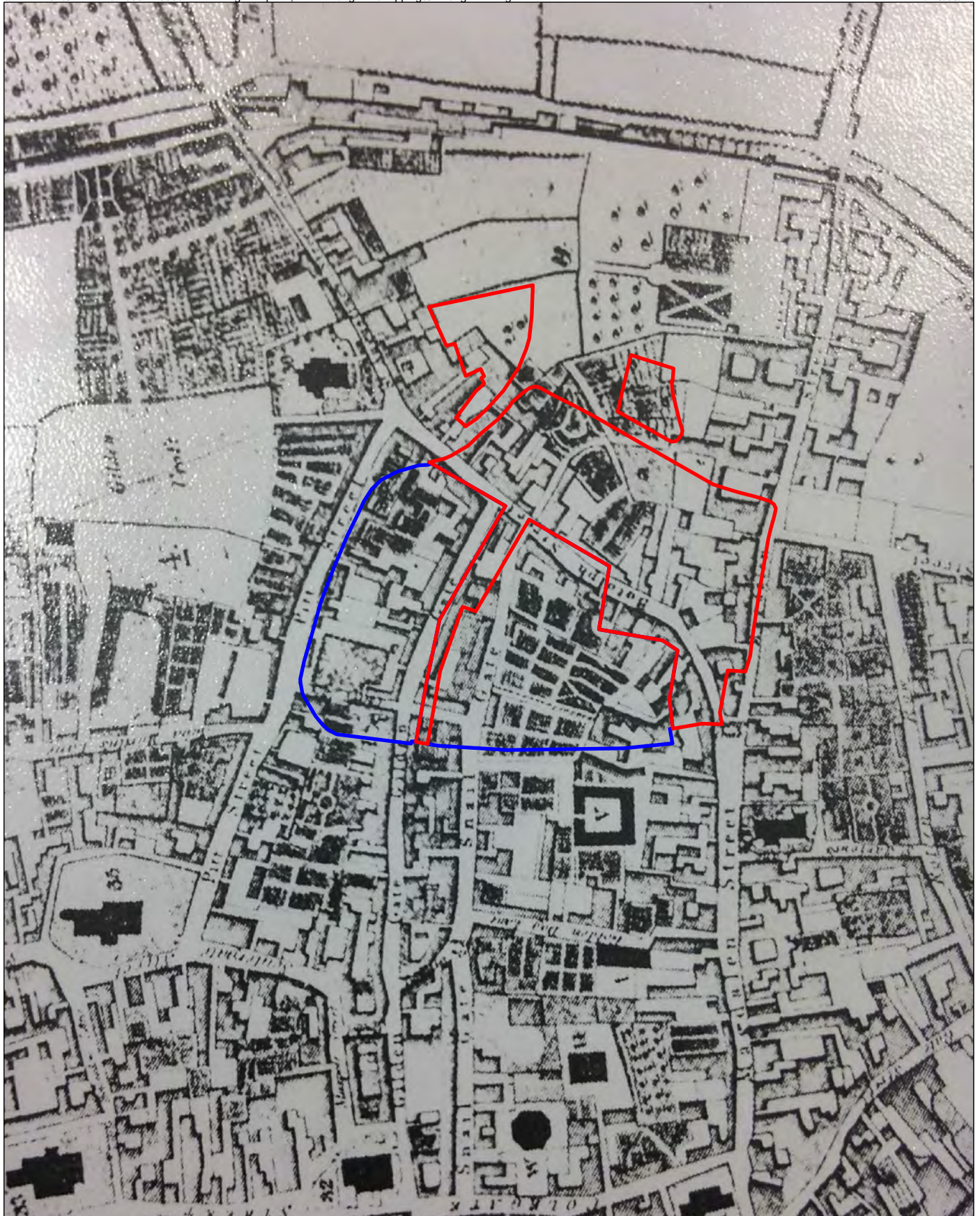



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Figure 13

1783 Smith Map of Norwich



 Site Boundary (approximate)

 Blueline (approximate)





Not to Scale:
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Figure 14

1789 Hochstetter Map of Norwich



-  Site Boundary (approximate)
-  Blueline (approximate)





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Figure 15

1830 Dallinger Map of Norwich



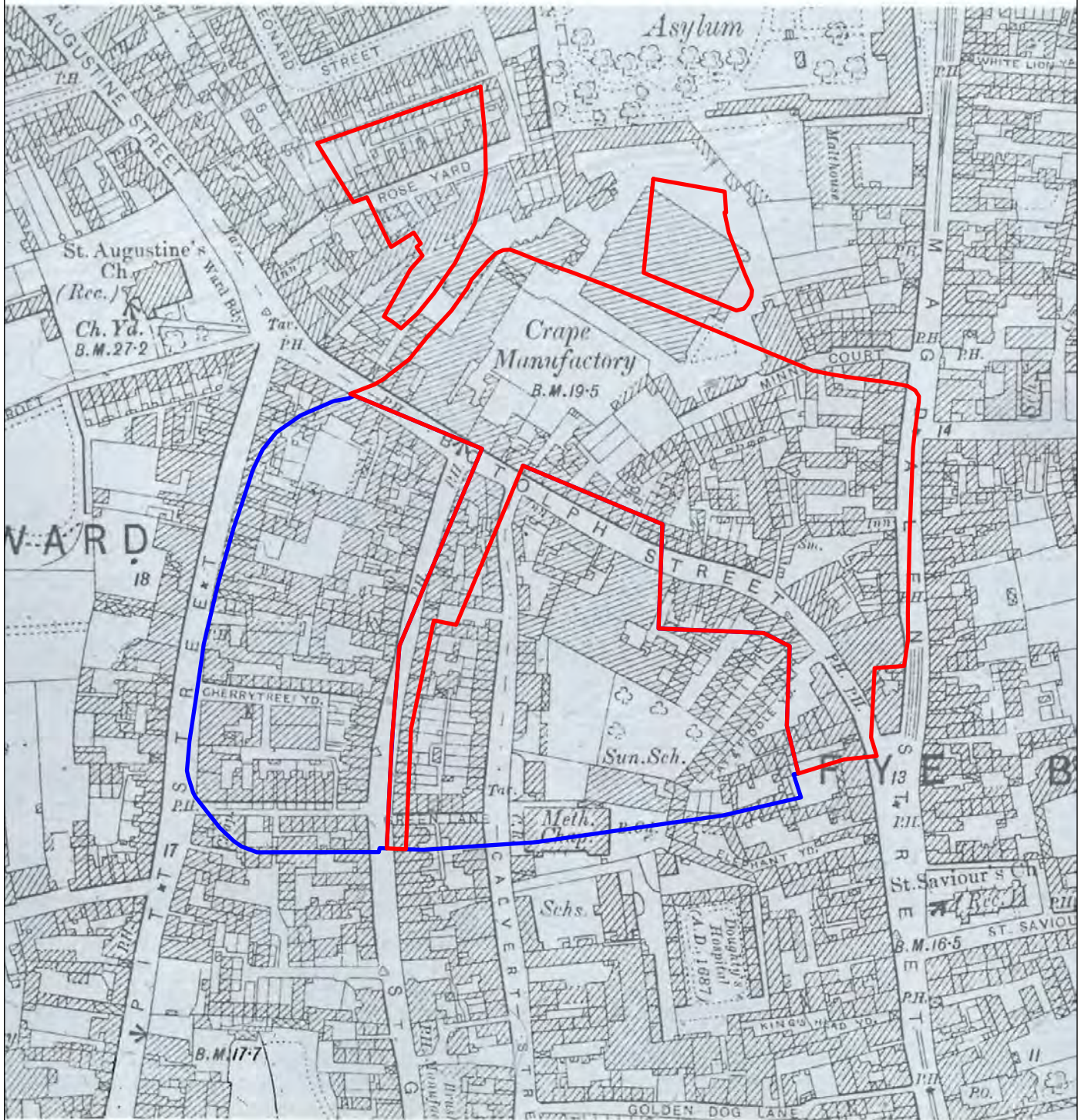
-  Site Boundary
-  Blueline





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Figure 16
1886 Ordnance Survey Map



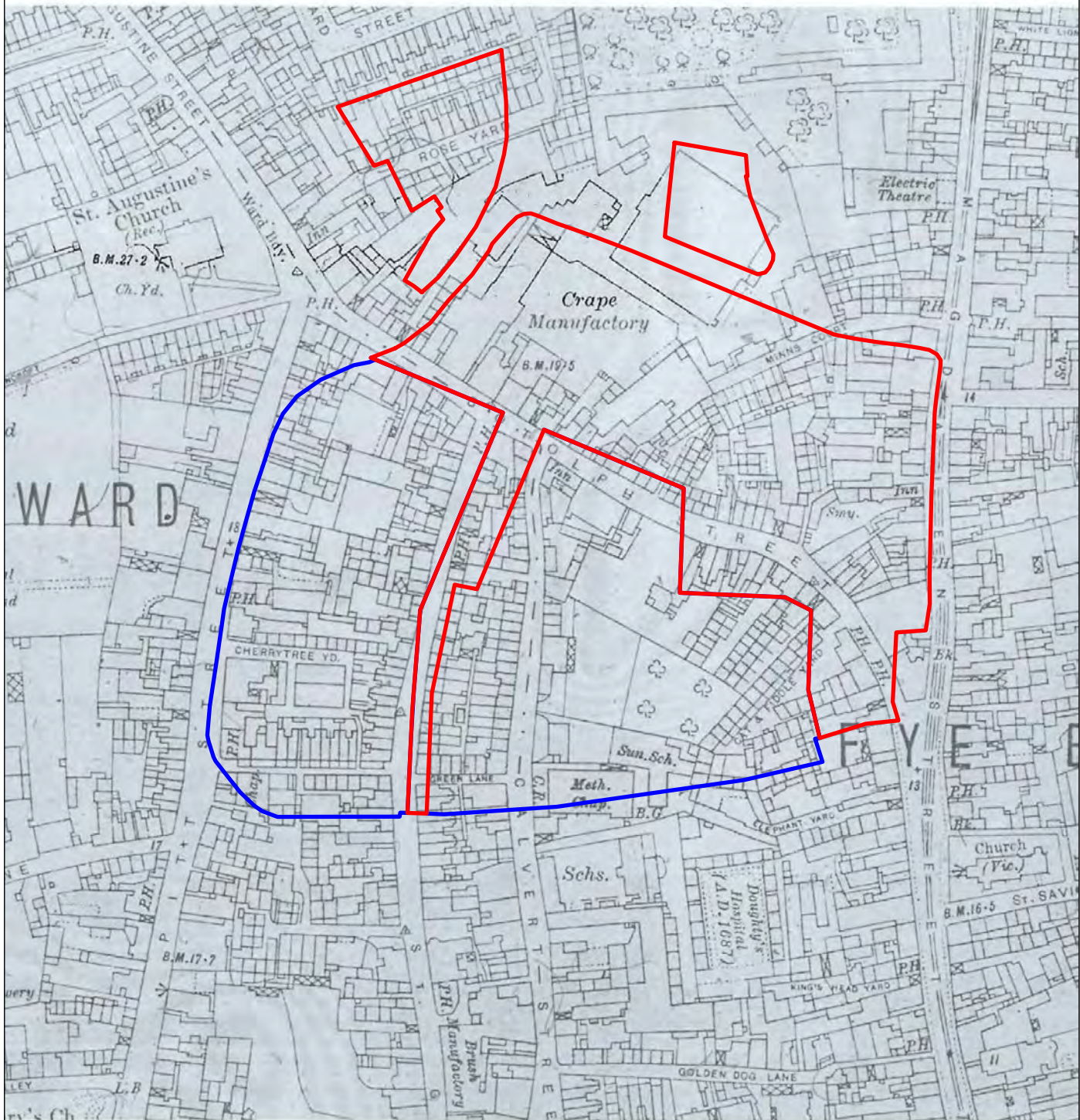
-  Site Boundary
-  Blueline





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Figure 17
1907 Ordnance Survey Map



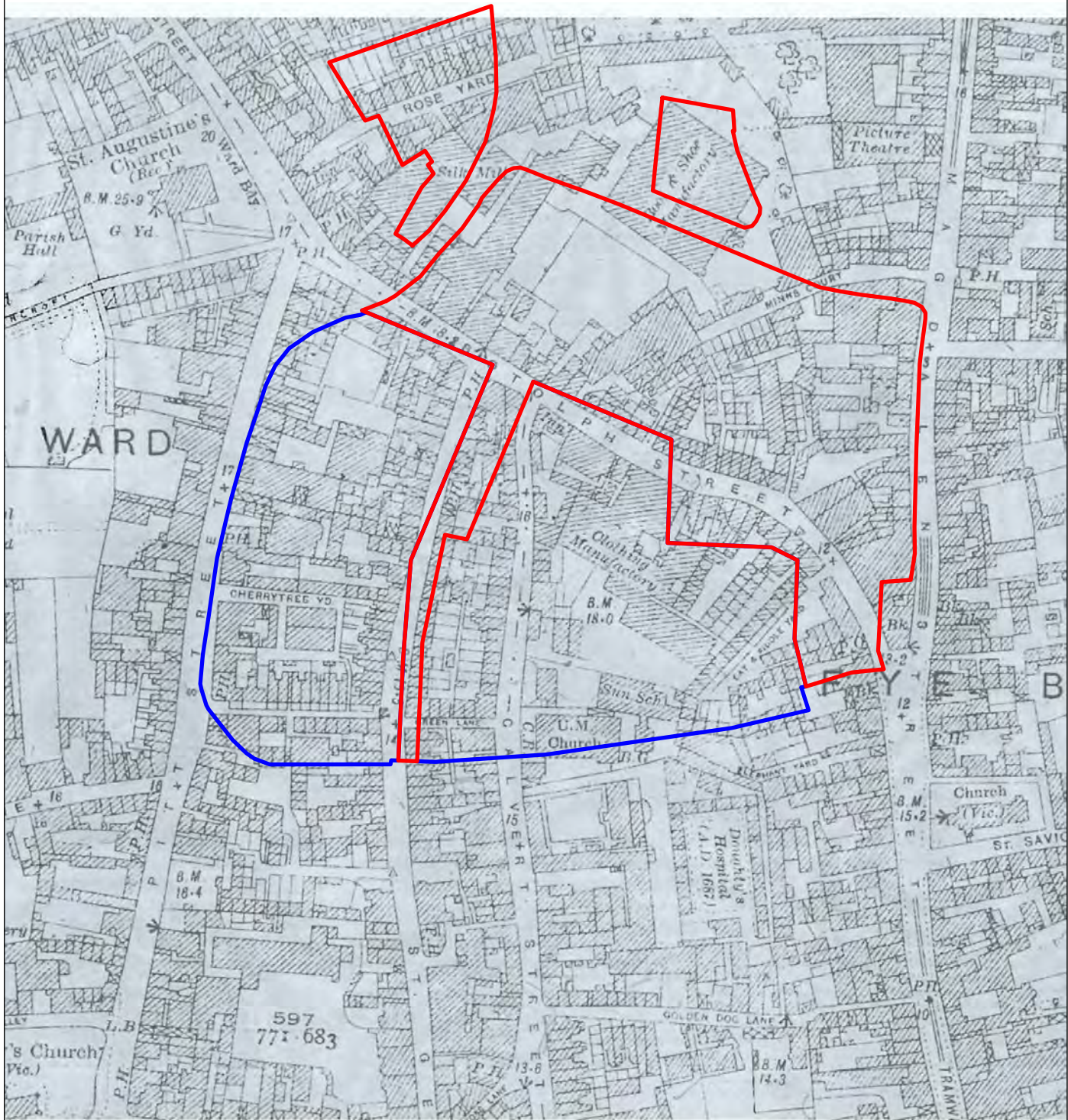
-  Site Boundary
-  Blueline





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Figure 18
1914 Ordnance Survey Map



-  Site Boundary
-  Blueline

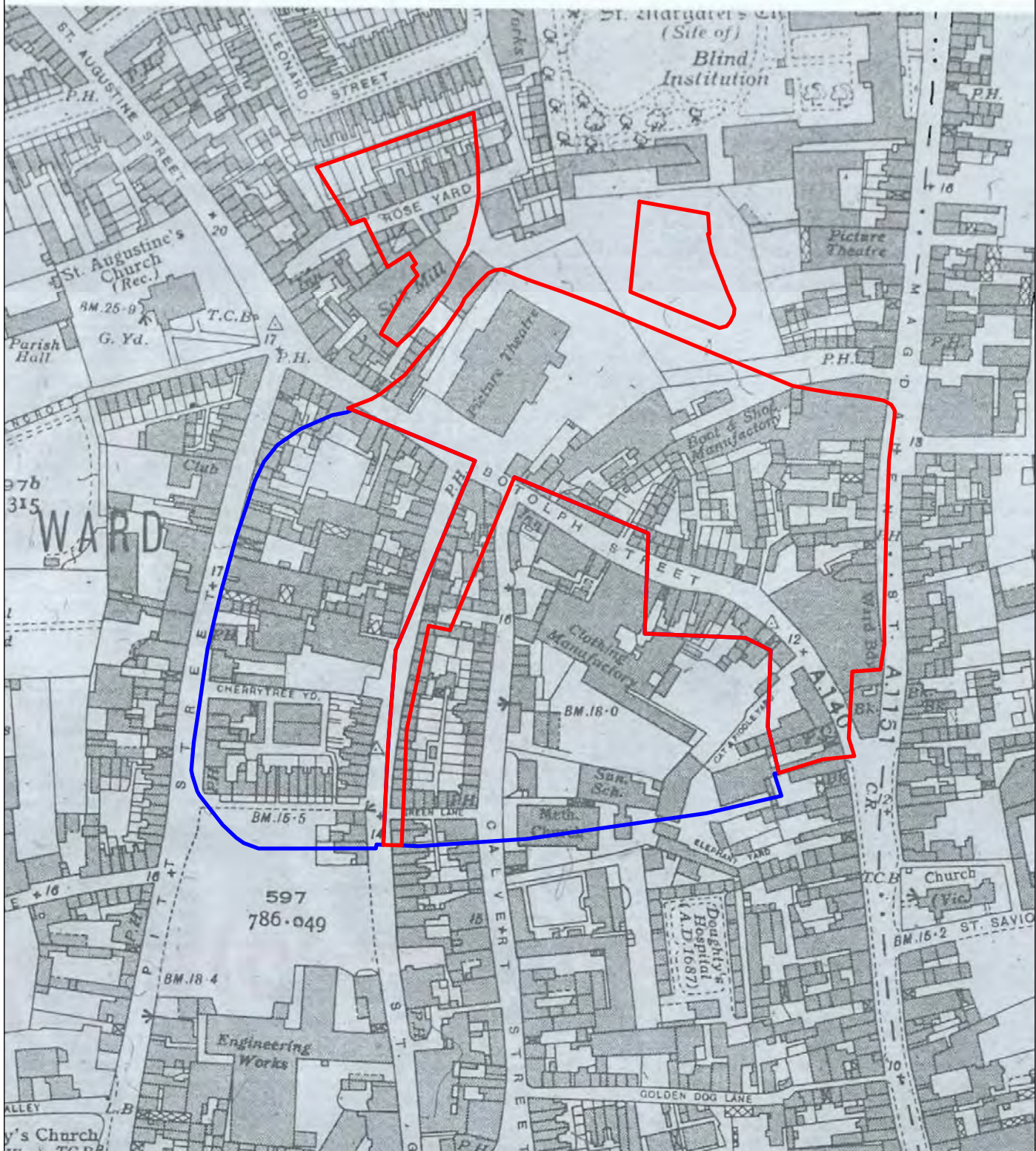




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Figure 19

1928 Ordnance Survey Map



-  Site Boundary
-  Blue line

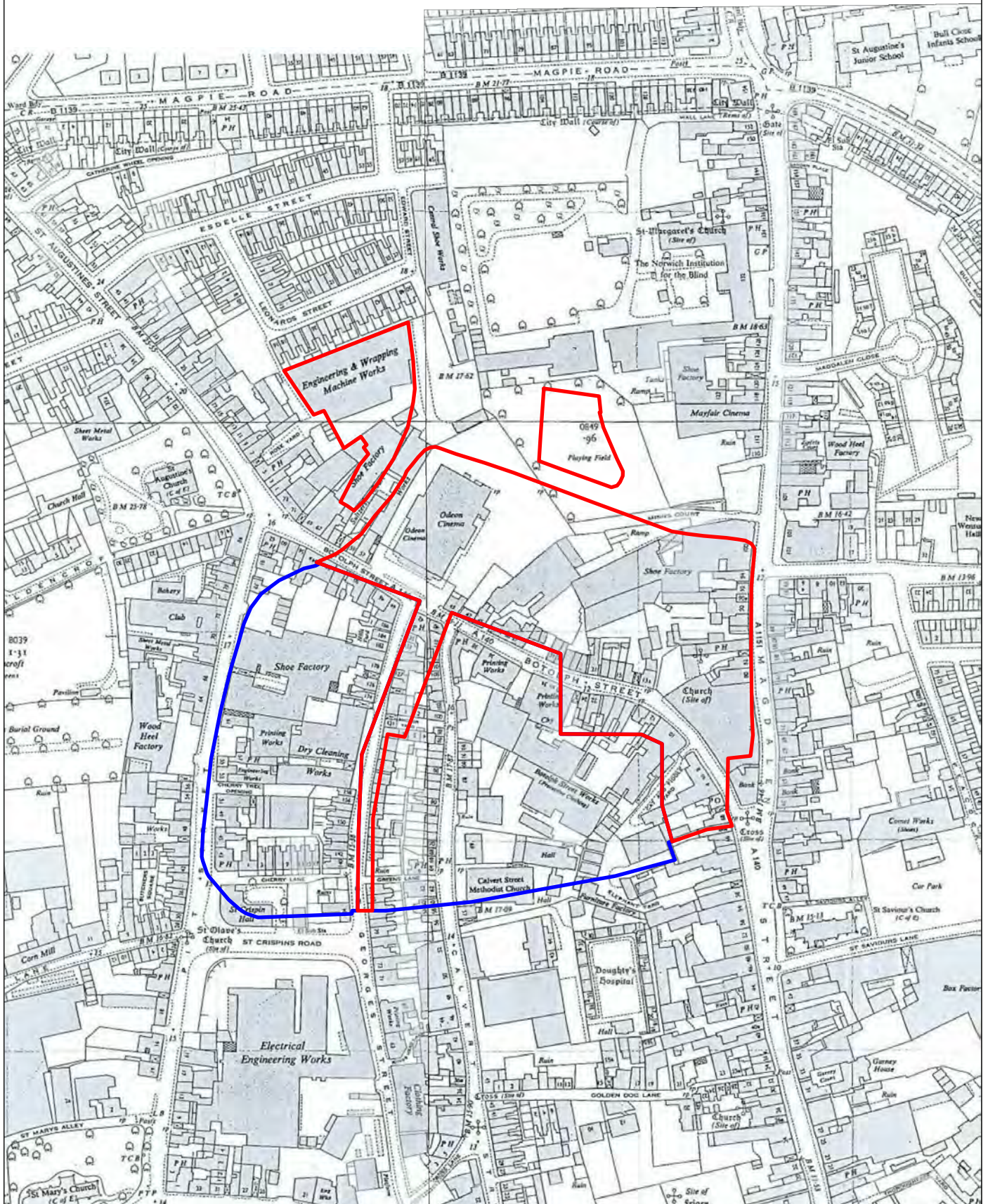


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Figure 20

1938 Ordnance Survey Map



- Site Boundary
- Blueline

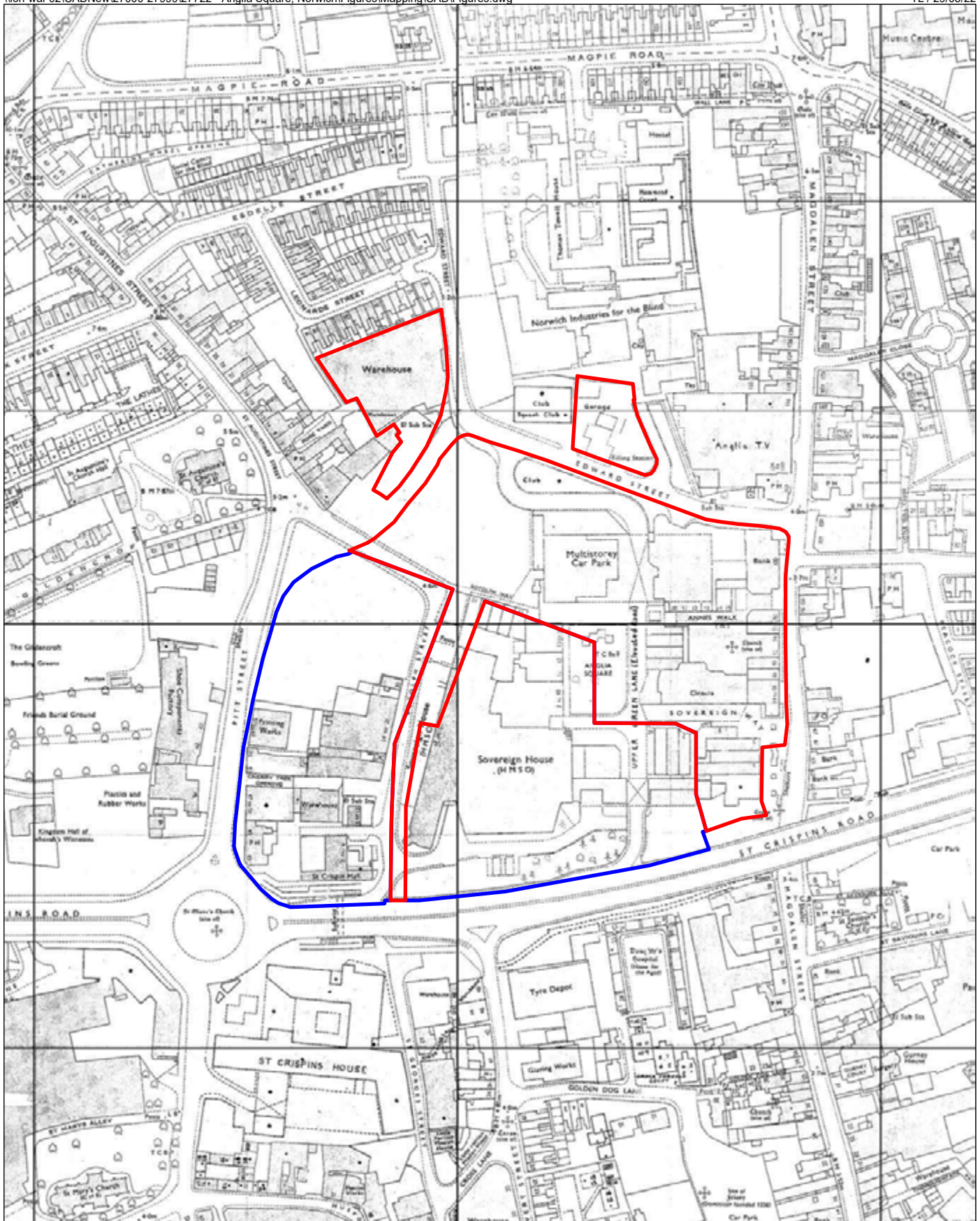


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Figure 21

1956-57 Ordnance Survey Map



-  Site Boundary
-  Blueline

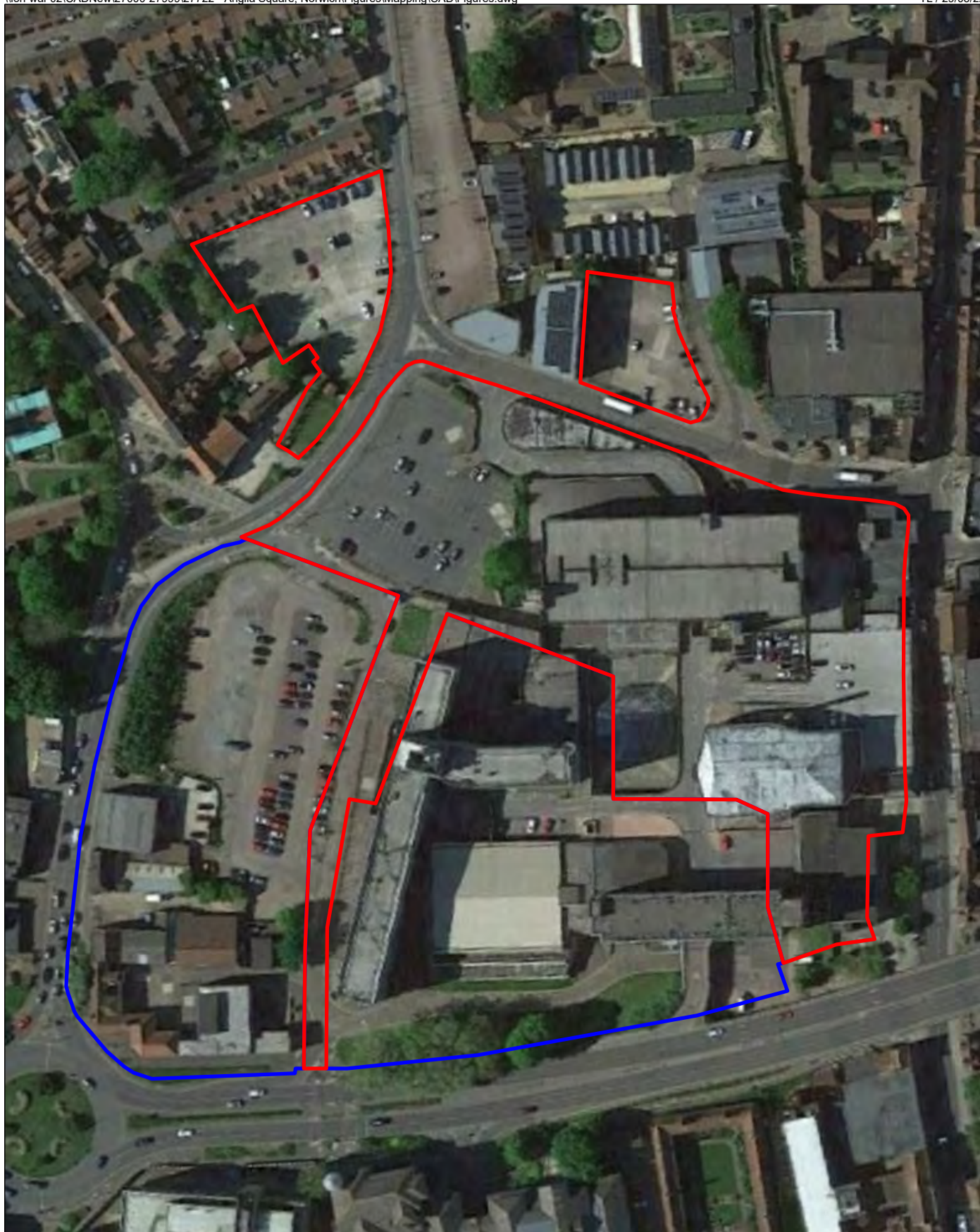


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Figure 22

1978-83 Ordnance Survey Map



- Site Boundary
- Blueline

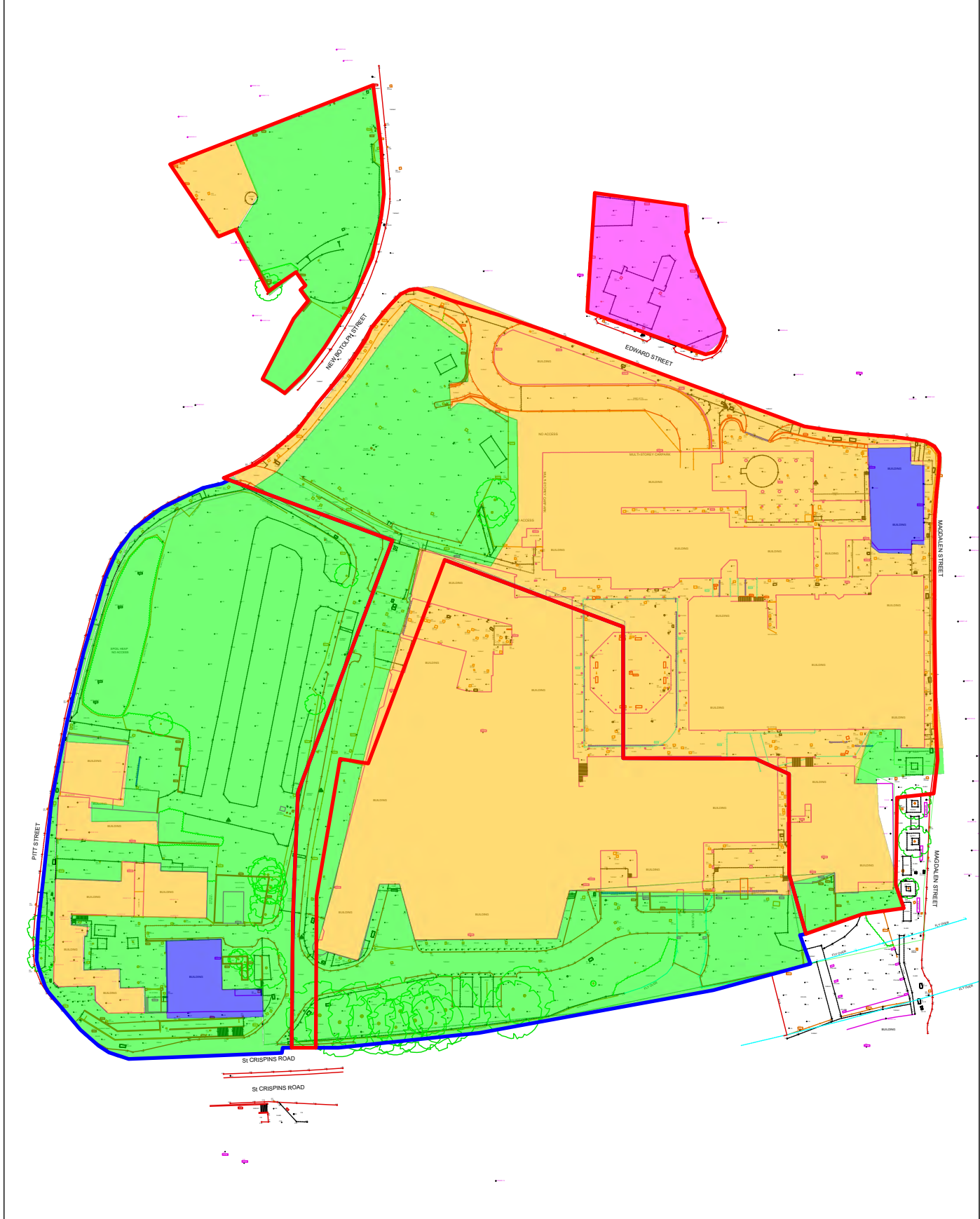


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Figure 23

2021 Google Earth Image



Site Boundary

Blueline

Medium-high level of archaeological survival

Medium-low level of archaeological survival



Not to Scale:
Illustrative Only

Low level of archaeological survival

Bank retained

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Figure 24

Deposit Survival Plan

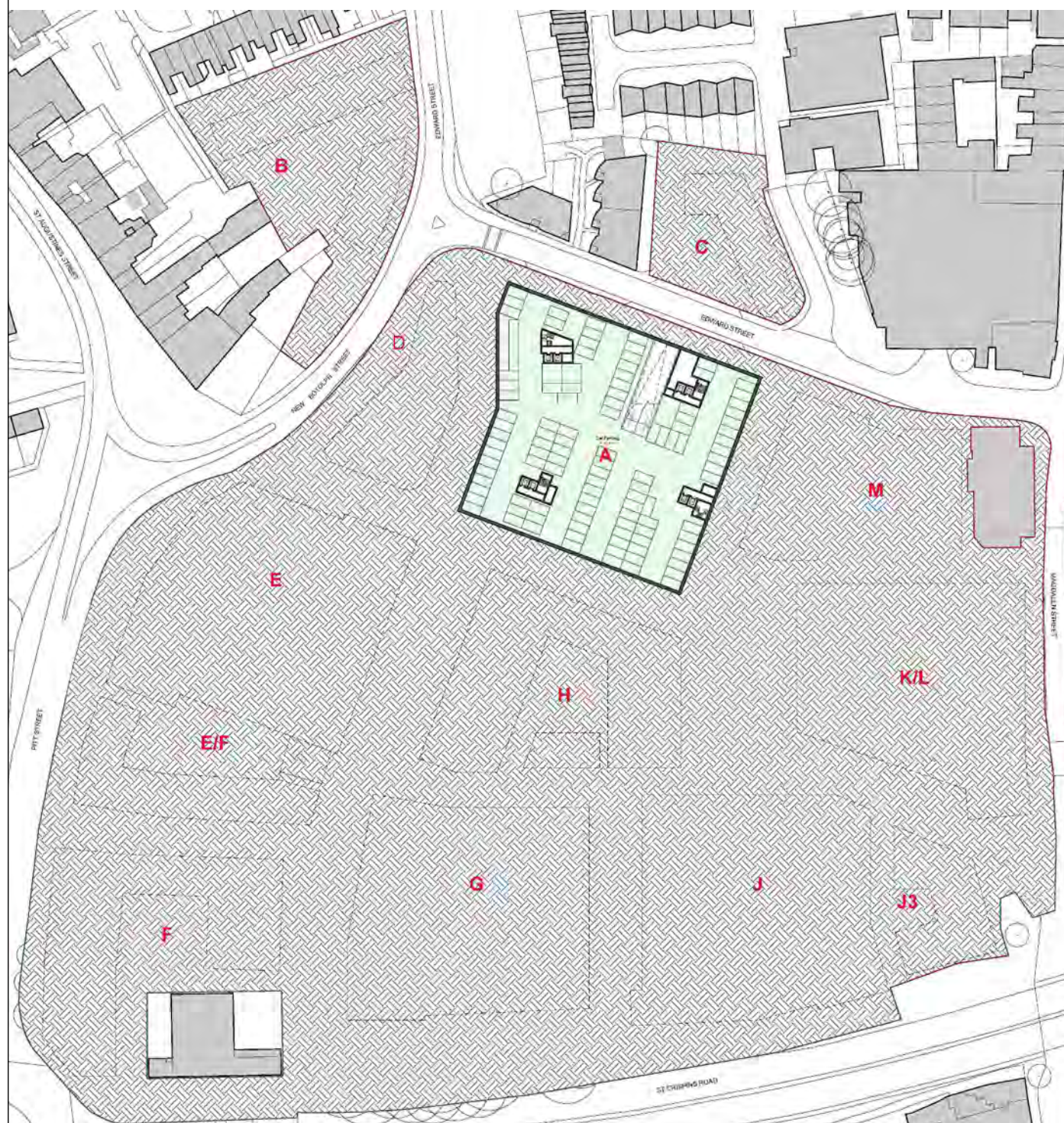


Not to Scale:
Illustrative Only



Figure 25

Proposed Development
Ground Floor Plan



Not to Scale:
Illustrative Only



Figure 26

Building A, proposed
basement development plan



rpsgroup.com

Plates



Plate 1: View of northeast boundary of site, looking west along Edward Street



Plate 2: View of multi-story car park and northern car park in foreground, facing southeast



Plate 3: View of northern access road, facing south



Plate 4: View of northern car park, facing south



Plate 5: Northern access to Botolph Street, facing southeast



Plate 6: Waste mound occupying disused land in east of site, facing southeast



Plate 7: View of buildings fronting Pitt Street, facing southeast



Plate 8: View of south face of Sovereign House



Plate 9: View of looking north along Botolph Street



Plate 10: View of buildings in south of site, facing northeast



Plate 11: View of car park entrance, facing northwest on Botolph Street



Plate 12: Northwest pedestrian access to Anglia Square, facing east



Plate 13: View of northwest car park showing raised ground, facing northwest

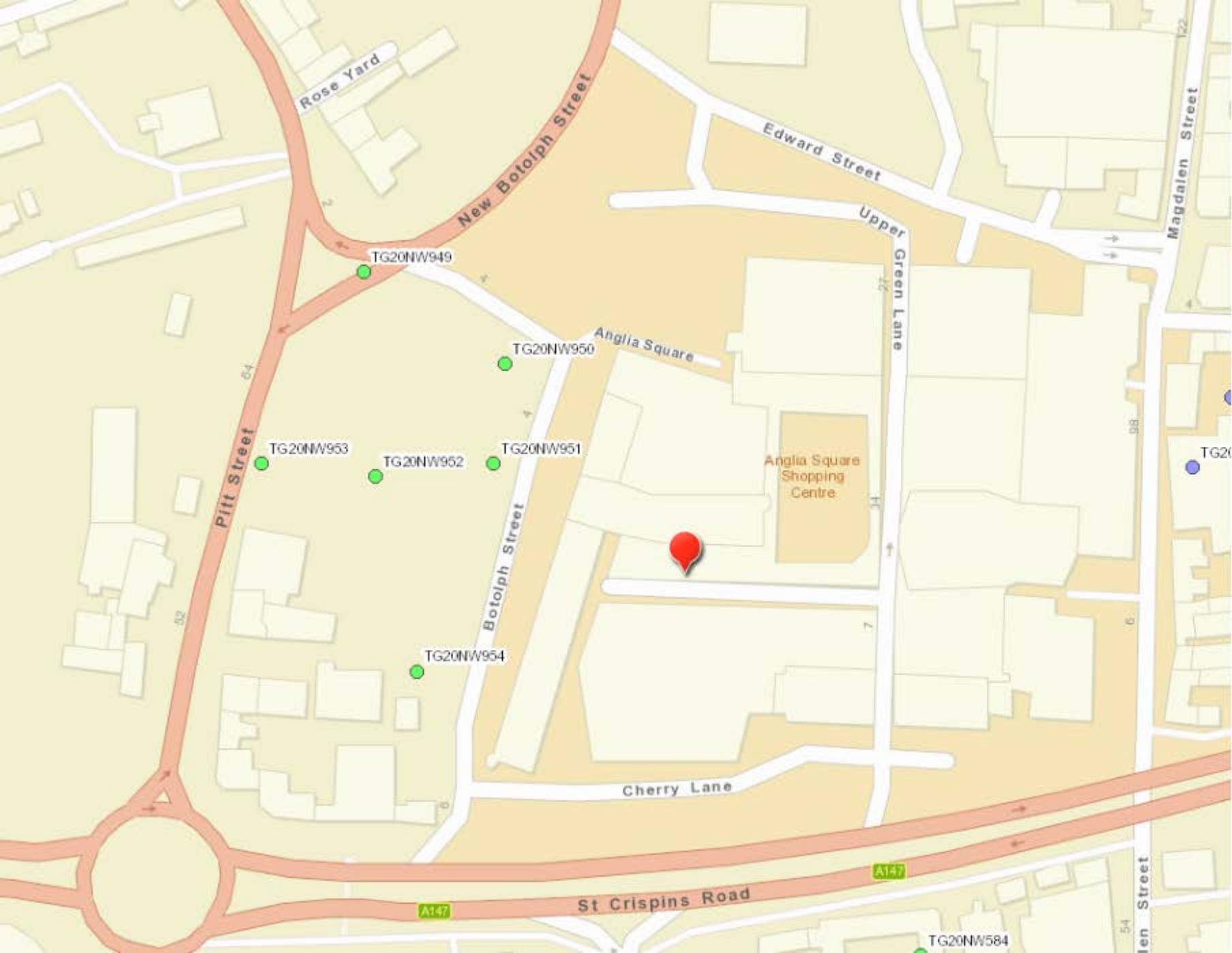


Plate 14: View of Anglia Square, facing southwest

Appendices

Appendix 1

**Geotechnical borehole logs from
1977 site investigation
(BGS 2022)**



Crown Building

NORWICH

229 094





BOREHOLE LOG

Borehole No. 2

Notes:-

Ground Level Approx 4.7m A.O.D

Date 4th - 5th May 1977

Description of Strata	Legend	Sample	Depth (m)	Approx O.D (m)	Remarks
FILL: silty, clayey sand with brick rubble, stones and charcoal fragments		•	0	4.7	
FILL: brickwork			0.5	3.8	
SAND & GRAVEL: fine to medium brown sand and stones, with occasional cobbles		•	2.9 3.1	1.8 1.6	Water entry, 3.4m depth
[Alluvium?]		•	4.0	0.7	
CHALK: structureless remoulded chalk with pieces and fragments of intact chalk, cream white, sometimes orange white, containing flints		•	4.5 4.7	0.2 0	
		•	9.0	-1.3	
		•	9.7	-2.0	
		•	8.2	-3.5	
		•	10.0	-5.3	contd

Crown Building

TG 20 NW/181
NORWICH
229 094

BOREHOLE LOG

Borehole No. 2 contd

Notes

British Geological Survey

Ground Level

Date

Description of Strata

Legend

Sample

Depth

Approx

Depth

Approx

Depth

Approx

CHALK: contd from Sheet 4

14

10.0

-5.3

17

10.2

-5.5

17

10.5

-5.8

17

11.7

-7.0

17

13.5

-8.8

17

14.0

-9.5

13

14.7

-10.0

14

15.0

-10.3

14

15.3

-10.6

End of borehole

CIVIL ENGINEERING LABORATORY, Condington

FGE/557 Sheet No 6

Crown Building

TG 20 NW/1st

NORWICH

229 094

BOREHOLE LOG

Borehole No 3

No. 3

Ground Level Approx 4.7m A.O.D.

Standpipe installed to 6.0m depth

Dats 30th - 31st May & 1st - 2nd June 1977

Description of Strata	Legend	Sample	Depth (m)	Approx O.D. (m)	Remarks
FILL: silty sand, bricks & brick work			0	4.7	
FILL: silty, clayey sand with brick and concrete rubble, pieces of glass, wood and stones			0.9	4.1	
			1.7	3.0	
SAND & GRAVEL: fine to medium, variably silty and clayey, brown sand with stones			2.8	1.9	
[Alluvium?]			3.2	1.5	
			4.7	0	
SAND & GRAVEL: medium to coarse, brown to light brown sand and stones with cobbles in places			5.9	-0.9	
[1st Terrace Gravel?]			6.2	-1.5	
			7.2	-2.5	
CHALK: structureless remoulded chalk with pieces and fragments of intact chalk, cream white sometimes orange white, containing flints			8.3	-3.6	
			8.5	-3.8	
			8.9	-4.2	
			10.0	-5.3	

contd

* SPT's attempted - 2 blows for 750mm, then 2 blows for further 750mm

TG 20 NW/151

Crown Building

NORWICH

229.094

BOREHOLE LOG

Borehole No. 3 contd.

Ground Level

Date

No. 2

Description of Strata	Legend	Sample	Depth (m)	Approx. C.U. (m)	Remarks
CHALK: contd. from Sheet G		(2)	10.0	-5.3	
		(9)	10.2	-5.5	
			10.5	-5.8	
		(18)	11.5	-6.8	*SPT attempted - 6 blows for 450mm, then 5 blows for 300mm
		(5)	12.0	-7.3	
			13.2	-8.5	
		(11)	13.5	-8.8	
			14.7	-10.0	
		(34)	15.0	-10.3	
			16.2	-11.5	
		(19)	16.5	-11.8	
		(22)			
			17.7	-13.0	
		(16)	18.0	-13.3	
		(41)	18.5	-13.6	
					End of borehole

Crown Building

TG 20 NW 151

NORWICH

BOREHOLE LOG

229.094





Borehole No. 4

Note:-

Ground Level Approx. 5.4m A.O.D.

Standpipe installed to 23.0m depth

Data 28th - 29th April & 2nd - 3rd May 1977

Description of Strata	Legend	Sample	Depth (m)	Approx. O.D. (m)	Remarks
FILL: concrete (0-1m), resting on silty sand, brick rubble and stones			0	5.4	
		②	0.9	4.5	
SAND & GRAVEL: Fine to medium variably silty, orange brown sand and stones; cobbles in places. Sandier at top		I	1.7	3.7	
			2.2	3.2	
[Alluvium?]		③	3.2	2.2	
					4.1m depth
					Water entry, 4.5m depth
		④	4.7	0.7	
			5.2	0.2	
SAND & GRAVEL: medium to coarse, brown sand and stones with cobbles in places. Layer of remoulded chalk and sand with stones, 0.5m at base			9.2	-0.8	
[1st Terrace Gravel?]		⑤	7.7	-2.3	
			8.5	-3.1	
			9.0	-3.6	
CHALK: cont'd on Sheet B		I	9.5	-4.1	
			10.0	-4.6	

cont'd

Crown Building

NORWICH

229 094

BOREHOLE LOG

Borehole No. 4 contd.

Notes:-

Ground Level

Date

Description of Strata

Legend

Sample

Depth (m)

Approx O.D. (m)

Remarks

CHALK: structureless remoulded chalk with pieces and fragments of intact chalk cream to orange white, orange in places, containing flints

10.0

-4.9

10.4

-5.0

*SPT attempted - test equipment sank under own weight 10.4m to 12.4m depth

13.5

-8.1

14.0

-8.5

14.3

-8.8

*SPT attempted - test equipment sank under own weight 13.5m to 13.8m depth, then 3 blows for 200mm, followed by 7 blows for 300mm and 18 blows for further 300mm

18.0

-10.6

17.5

-12.1

19.0

-13.6

19.7

-14.3

20.0

-14.9

contd.

Crown Building

NORWICH

BOREHOLE LOG

229094

Borehole No. 5

(Name:)

British Geological Survey

Ground Level Approx 5.0m A.O.D.

Standpipe installed to 20.0m depth

Data 5th-6th & 9th-12th May 1977

Description of Strata	Legend	Sample	Depth (m)	Approx. O.D. (m)	Remarks
FILL: broken brick and miscellaneous rubble (in old cellar) Layer of silty clayey sand with broken metal pipework at base - has a strong silty smell			0	5.0	
SAND & GRAVEL: fine to medium brown sand and stones. Becomes sandier below approx 5.2m depth			3.2	1.8	3.5m depth
[Alluvium?]			4.5	0.5	Water entry, 4.4m depth
			6.0	1.0	
			7.5	2.5	
			8.5	3.5	
CHALK & SAND: variably sandy remoulded chalk with fragments of intact chalk, stones and patches of sand			8.8	3.8	* SPT attempted - 1 blow for 500mm
[Drift deposit]			10.0	5.0	contd

Crown Building

NORWICH

229 094

BOREHOLE LOG

Borehole No. 5 cental

Notes:

British Geological Survey

Ground Level

Date

Description of Strata

Legend

Sample

Depth (m)

Approx. O.D. (m)

Remarks

CHALK & SAND: cental from Sheet 11

[Drift deposit]

British Geological Survey

British Geological Survey

British Geological Survey

CHALK: structureless remoulded chalk with pieces and fragments of chalk cream to orange white, orange in places, containing flints

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

10.0	- 5.0
10.3	- 5.3
12.0	- 7.0
12.5	- 7.5
13.5	- 8.5
15.0	- 10.0
16.5	- 11.5
18.0	- 13.0
19.5	- 14.5
20.0	- 15.0

cental

Crown Building

NORWICH

BOREHOLE LOG

229 094





Borehole No. ⑥

Notes:-

Ground Level Approx 4.5m AOD

Standpipe installed to 19.0m depth

Date 23rd - 27th May 1977

Description of Strata	Legend	Sample	Depth (m)	Approx O.D. (m)	Remarks
FILL: silty sand with brick and concrete rubble and stones			0	4.5	
FILL: silty, variably clayey sand with stones, brick fragments and patches of clay			0.8 1.1	3.6 3.4	
SAND & GRAVEL: fine to medium brown to brown grey sand and stones. Layer of silty fine sand with clay partings, 0.5m at base. Soil has strong oily smell and contains scattered dark fatty patches			2.4 2.9	2.1 2.0	
			3.8	0.6	
			5.2 5.4	0.7 0.9	
SAND & GRAVEL: medium to coarse, orange brown sand and stones with cobbles in places. Becomes clayey 8.7m to 8.9m depth			6.9	2.4	
			8.4	3.9	
			9.9 10.0	5.4 5.5	

contd.

Crown Building

TG 20 NW 15
NORWICH
229 094

BOREHOLE LOG

Borehole No. ⑥ centd.

Notes:-

Ground Level

Date

Description of Strata	Legend	Sample	Depth (m)	Approx. O.D. (mm)	Remarks
SAND & GRAVEL: centd. on Sheet 14		10-0	-5-5		
		10-3	-5-8		
CHALK: structureless remoulded chalk with pieces and fragments of intact chalk cream to orange white, orange in places, containing flints		11-2	-6-7		
		11-5	-7-0		
		12-7	-8-2		
		13-0	-8-5		
		14-2	-9-7		
		15-7	-11-2		
		17-2	-12-7		
		18-7	-14-2		
		19-0	-14-5		End of borehole

Appendix 2

Percival and Westall 2007
An Archaeological Evaluation at Anglia Square
Norwich.
Phase 1
NAU Archaeology 2007

Report № 1538a

An Archaeological Evaluation at Anglia Square, Norwich Phase 1

NHER 50581N, 50582N, 50583N and 50584N



John W. Percival and Suzanne Westall

November 2007

BAU1538

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- 2.0 Geology and Topography
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- 4.0 Methodology
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- Table 2 Chronology of the Anglia Square Area in the 20th Century

Location: Botolph Street, Pitt Street & Edward Street (Anglia Square),
Norwich
District: Norwich
Grid Ref: TG 2298 0941
HER No.: 50581N, 50582N, 50583N & 50584N
Date of fieldwork: 13th September 2007 to 14th November 2007

Summary

During September, October and November 2007, NAU Archaeology excavated nine trenches to the north and west of Anglia Square, in the vicinities of Pitt Street, Botolph Street and Edward Street. The Late Saxon defensive ditch was found, as well as evidence of occupation on the St. George's Street and Pitt Street frontages. Cultivation features found in the south of the area examined, probably related to Cherry Ground, an area of open land that was not built on until the late 18th century. In the far north of the area examined, only evidence of Victorian and 20th century structures was found. This area had been part of St. Margaret's Croft, which remained largely undeveloped until the 19th century.

1.0 Introduction

During September, October and November 2007, NAU Archaeology excavated nine trenches to the north and west of Anglia Square in the vicinities of Pitt Street, Botolph Street and Edward Street (Fig. 1). This work formed the first phase of an archaeological evaluation, prior to the proposed extensive redevelopment of Anglia Square and its environs. It was initially envisaged that ten trenches would be excavated during the first phase of the evaluation and three during the second phase but, due to the largely negative results from Window Samples taken in Area 3 (see below), it was decided by Norfolk Landscape Archaeology, Norwich City Council's archaeological advisors, that Trench 11 should be moved from Area 3 into Area 6 (Fig. 1). Similarly, it was not realised at the time the initial trench plan was agreed that Area 5, the former Fat Pauly's Snooker Club, consists of at least one level of basement at a depth of well over 2m below the current level of Edward Street. As a result, Trench 10 has now been moved from Area 5 to Area 6. The exact locations and configuration of trenches to be excavated in Area 6 is still to be agreed, subject to consideration of the results in this report.

Table 1, below, summarises the location and dimensions of all trenches excavated or yet to be excavated, and the depths of all excavated trenches.

Trench	Area	HER No	Dimensions	Depth if excavated	Notes
1	4	50584N	4m by 4m	1.7m below modern ground level (2.9m OD)	
2	4	50584N	4m by 4m	1.7m below modern ground level (3.3m OD)	
3	4	50584N	4m by 4m	2.4m below modern ground level (2.2m OD)	
4	4	50584N	4m by 4m	1.8m below modern ground level (2.8m OD)	
5	4	50584N	4m by 4m	2.5m below modern ground level (2.7m OD)	
6	1	50581N	3m by 3m	3.7m below modern ground level (0.8m OD)	

Trench	Area	HER No	Dimensions	Depth if excavated	Notes
7	1	50581N	3m by 3m	3.1m below modern ground level (1.4m OD)	
8	6	50586N	2m by 8m	To be excavated Phase 2	
9	6	50586N	4m by 4m	To be excavated Phase 2	
10	6	50586N	4m by 4m	To be excavated Phase 2	moved from Area 5
11	6	50586N	4m by 4m	To be excavated Phase 2	moved from Area 3
12	3	50583N	4m by 4m	2.5m below modern ground level (3.0m OD)	
13	2	50582N	3.5m by 7m	2.4m below modern ground level (1.7m OD)	

Table 1: Location and dimensions of all trenches; depths of excavated trenches

Areas 1 to 4, examined during Phase 1 of the evaluation, consisted of a total of 10989m² or just over 1 hectare. Area 6, the area to be examined during Phase 2 of the evaluation, measures 4046m² or 0.4 hectares.

This report was commissioned and the work funded by Centenary Ashcroft LLP, part of the Anglia Square Partnership, through their project managers, PDCM Ltd.

Due to time constraints, this report does not include full reports on all the finds, artefacts and ecofacts recovered during Phase 1 of the evaluation. For this reason an NHER finds summary appendix has not been included in this report. The pottery has been dated by Sue Anderson of CFA Archaeology and these spot-dates pegged to the stratigraphic sequence for each trench. Full data on all classes of finds from both phases of the evaluation will be included in the Phase 2 evaluation report.

The programme of archaeological work described in this report was undertaken in accordance with a Project Design and Method Statement prepared by NAU Archaeology (Ref: BAU1538/AH) and agreed with Ken Hamilton, Norfolk Landscape Archaeology.

The work was designed to assist in defining the character and extent of any archaeological remains within the proposed redevelopment area, following the guidelines set out in *Planning and Policy Guidance 16 – Archaeology and Planning* (Department of the Environment 1990). The results will enable decisions to be made by the Local Planning Authority with regard to the treatment of any archaeological remains found.

The site archive is currently held by NAU Archaeology and on completion of the project will be deposited with Norfolk Museums and Archaeology Service, following the relevant policy on archiving standards.

2.0 Geology and Topography

The topography of north Norwich within the city walls is not dramatic. In very general terms, the Anglia Square area slopes gently from the north-west to the south-east. Area 1 lies at an elevation of c. 4.4m OD, Area 2 at c. 4.2m OD, Area 3 at 5.5m OD, and Area 4 rises from c. 4.5m in the east to c. 5.2m in the west. As

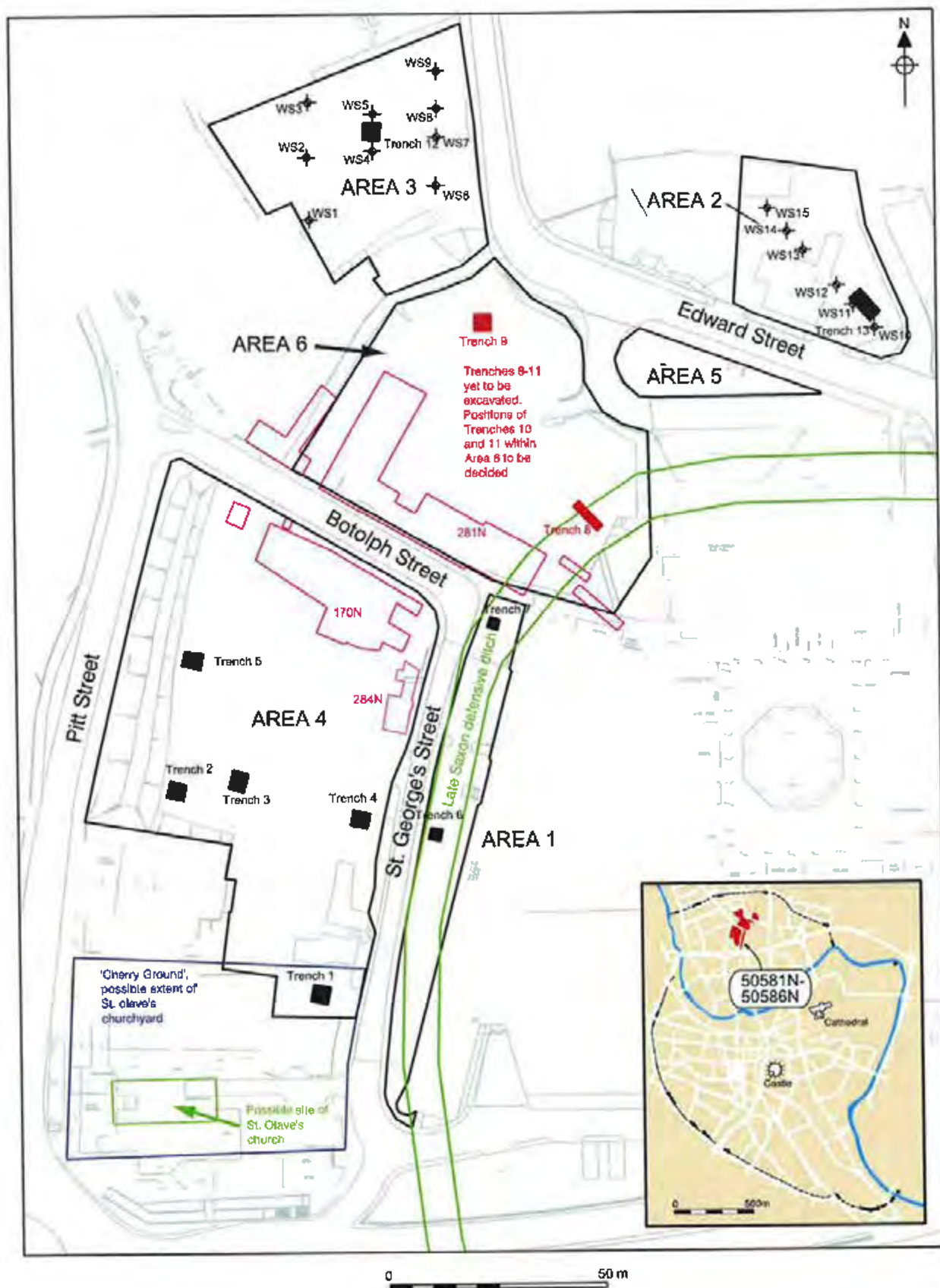


Figure 1. Site and trench locations: scale 1:1250

Hutcheson and Penn noted (2007, 2), "The underlying palaeotopography was probably more varied and undulating than is now the case; relatively recent developments will have smoothed the topography".

This area lies mainly on alluvial deposits, with sand and gravel river terraces in the north-west corner of the proposed redevelopment area (British Geological Survey 1:50,000). The Dalymond, one of the former tributary streams of the Wensum, may have lain to the north of Area 2 (Campbell 1975, map 5, Ayers 2003, Fig. 2). Most recent archaeological investigations in the vicinity of Anglia Square (e. g. Birks 2007, Emery 2006, Watkins 2007) have failed to locate any trace of the Dalymond.

3.0 Archaeological and Historical Background

The previously known archaeological and historical data for the proposed development area has been thoroughly explored by Hutcheson and Penn (2007). The contents of their report shall not be repeated here in any detail but, for the sake of clarity, it is perhaps worth briefly discussing the subject of street names in the environs of Anglia Square. Prior to the construction of Anglia Square and the Inner Link Road, the north-to-south aligned element of Botolph Street continued southwards and formed part of St. George's Street and it is referred to by that name throughout this report (Fig. 1). Confusingly, in the late 19th century, the northern section of St George's Street was known as Middle Street or St. George's Middle Street (Sandred and Lindström 1989, 91-92).

Table 2, below, gives the briefest outline of the chronology of Anglia Square and its environs in the 20th century.

Date	Activity	Source
1940	Two buildings destroyed by bombing on Botolph Street and St. George's Street	Banger 2002, 16
1942	Further buildings destroyed on Magdalen Street and Calvert Street	< www.the-plunketts.freemove.co.uk >
April 1943	'Baedeker' bombing raids. Multiple buildings destroyed on Calvert Street, Pitt Street and at least one on St. George's Street	Banger 2002, 59 and < www.the-plunketts.freemove.co.uk >
1961	Compulsory purchase of the Duke of Sussex PH located on the corner of Botolph Street and St. George's Street	< www.norfolkpubs.co.uk > and photograph by George Plunkett on < www.the-plunketts.freemove.co.uk >
1966-67	Demolition and clearance of buildings on Botolph Street, Pitt Street and St. George's Street	The photographs of George Swain on < www.norlink.norfolk.gov.uk >; Pevsner and Wilson 1997, 290
1968-71	Construction of Anglia Square, including Sovereign House, and the creation of Edward Street	Pevsner and Wilson 1997, 289
1971	Anglia Square opened	Pevsner and Wilson 1997, 289
Mid 1990s	Demolition of filling station buildings on Area 2 and landscaping/clearance of Area 4 to create car parks	Author's memory

Table 2: Chronology of the Anglia Square Area in the 20th Century

4.0 Methodology

The objective of this evaluation was to determine, as far as reasonably possible, the presence or absence, location, nature, extent, date, quality, condition and significance of any surviving archaeological deposits within the parts of the proposed development area examined.

Machine excavation was carried out with a hydraulic 360° excavator using a toothless ditching bucket under constant archaeological supervision. Trenches 6 and 7 were shored. After machine excavation to a depth of approx. 1.2m, the upper deposits were recorded in section and plan. At this point, the remnants of post-medieval and Victorian masonry structures were removed by machine and the trenches shored with steel sheets and hydraulic walings. Hand excavation within central sondages in Trenches 6 and 7 then commenced. Once these sondages had reached a depth of 1.2m and had been recorded, baulks within the trenches were removed. Further waling was installed and hand excavation continued.

All other trenches within the evaluation were excavated without shoring, the deeper deposits being investigated mostly by hand-dug central sondages.

Spoil, exposed surfaces and features were scanned with a metal detector. All metal-detected and hand-collected finds (other than those which were obviously modern) were retained for inspection.

All archaeological features and deposits were recorded using NAU Archaeology *pro forma* sheets. Trench locations, plans and sections were recorded at appropriate scales, and colour and monochrome photographs were taken of all relevant features and deposits.

All levels have been related to the control network of survey stations established by Aworth Survey Consultants and detailed in their drawing, no. 2719.

Bulk samples were taken from fills of the Late Saxon defensive ditch in Trenches 6 and 7. These samples will be processed with a view to finding suitable carbonised material for radiocarbon dating.

In general terms, weather conditions during the fieldwork were good. The exception to this was during the excavation of Trench 4 when heavy rain caused the trench to flood.

5.0 Results from Trenches

Descriptions of the remains found in each trench have been broken down into broad phases. Despite the relative proximity of some of the trenches to each other, no attempt has been made to harmonise their phasing. This is due to the disparate nature of the remains found.

Trench 1 (Area 4, 50584N) Fig. 2

Trench 1, Phase 1: Post-medieval horticulture

Undisturbed orange-coloured sands [08] were found at the relatively shallow depth of 1.1–1.7m across Trench 1.

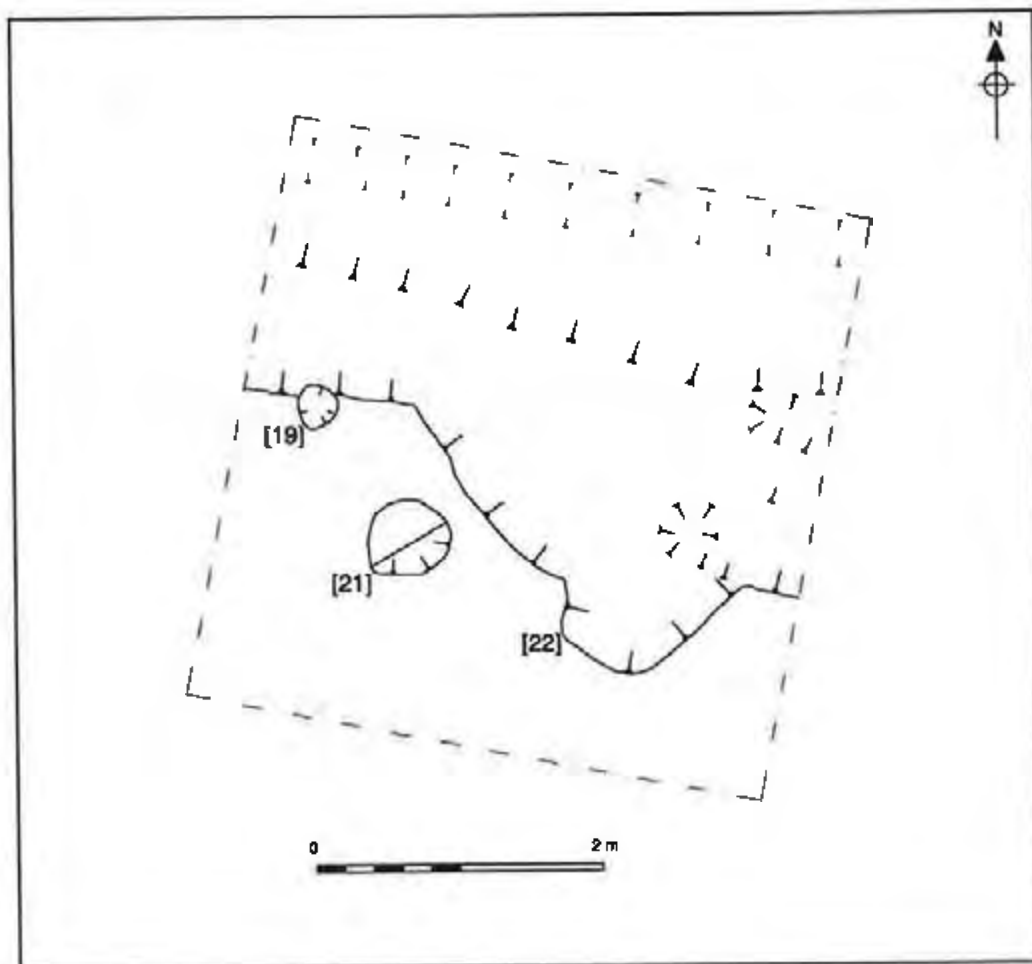


Figure 2. Plan of Trench 1. Scale 1:50

The earliest features identified were a series of east-west aligned furrows, [22], which were cut into the sands on the north side of the trench. They were cut in a stepped pattern (Plate 1), each furrow being slightly deeper than the last, and, judging by their size and form, were probably spade-dug. This suggests the area around Trench 1 was used as a garden. Two further features cut into the natural, [19] and [21], small pits 0.3m and 0.6m in diameter and 0.2m deep, were probably contemporary with this horticultural activity and represent deeper planting of taller plants or trees. The fills of these features were very similar to that of the furrows – a rich and soft dark brown, garden soil type deposit ([05],) which was almost a metre deep in places and filled not only the furrows ([22]) but also overlay the rest of the trench. This deposit contained a range of pottery dated to the 16th century as well as residual sherds dated to the Late Saxon and early medieval periods. The depth of [05] suggests systematic manuring and perhaps the importation of topsoil/garden soil from elsewhere. A small patch of crushed mortar, [06], was seen at the base of the garden soil [05]. An uneven and patchy layer of soft brown silt and orange sand, [07], occurred in places between deposit [05] and the 'natural' sands [08]. This layer had the characteristics of subsoil and showed evidence of root disturbance, further confirming the horticultural nature of the lower deposits recorded in Trench 1.

Later in the post-medieval period, a deep, flat-bottomed pit, [04], was cut into the surface of garden soil deposit [05]. The fill of this pit ([03],) was largely made up of mortar and fragmented ceramic building material, probably demolition or construction waste from a nearby building, wall, or well. Pit fill [03] also contained residual pottery dated to the 15th to 16th centuries.

In other places, the upper part of context [05] contained lenses of brick dust and coal cinders. This indicates that although formation of the garden soil layer [05] began in the 16th century it was in use into the 19th century.



Plate 1 West-facing section of Trench 1 prior to excavation of all features



Plate 2 Looking west across the base of Trench 1 after the excavation of all features

Trench 1, Phase 2: Late C20th Car Park

As with other trenches in Area 4, the entire area of Trench 1 was covered in a modern (late 20th century) layer of crushed brick concrete rubble and redeposited topsoil. Unlike elsewhere in the area, surface deposits in Trench 1 also contained a heavy concentration of recent, plastic and metal-based rubbish within that rubble. This was particularly noticeable in the western baulk of the trench (Plate 2), where the deposit was up to 0.8m thick. It is likely that this corner of the site was temporarily used as a dumping ground in recent times. Until approximately 10 years ago most of Area 4 was waste ground overgrown with Buddleia and other shrubs, and rich in accumulated urban debris. This debris was cleared, the area flattened, the bank adjacent to the Pitt Street frontage created in its present form, and the present c. 0.15m thick gravel surface laid when the area was converted for use as a car park.

Trench 2 (Area 4 50584N) Figs. 3 & 4

Trench 2, Phase 1: Post-medieval pits and building

Activity in Trench 2 may have begun with the extraction of sand: evidenced by two pits, [267] and [283], cut into the undisturbed sands and backfilled with sandy silt containing chalk and charcoal flecks. One of the fills of [283] contained pottery dated to the 16th century. Both pits were truncated by later date rubbish pits, [258] and [274]. Pottery dated to the 15th to 17th centuries was found in the fill of pit [258]. Across the top of these pits was a thick layer (c. 0.4m deep) of garden soil ([228]). This deposit was cut by further pits, [257] and [276]. The latter may have

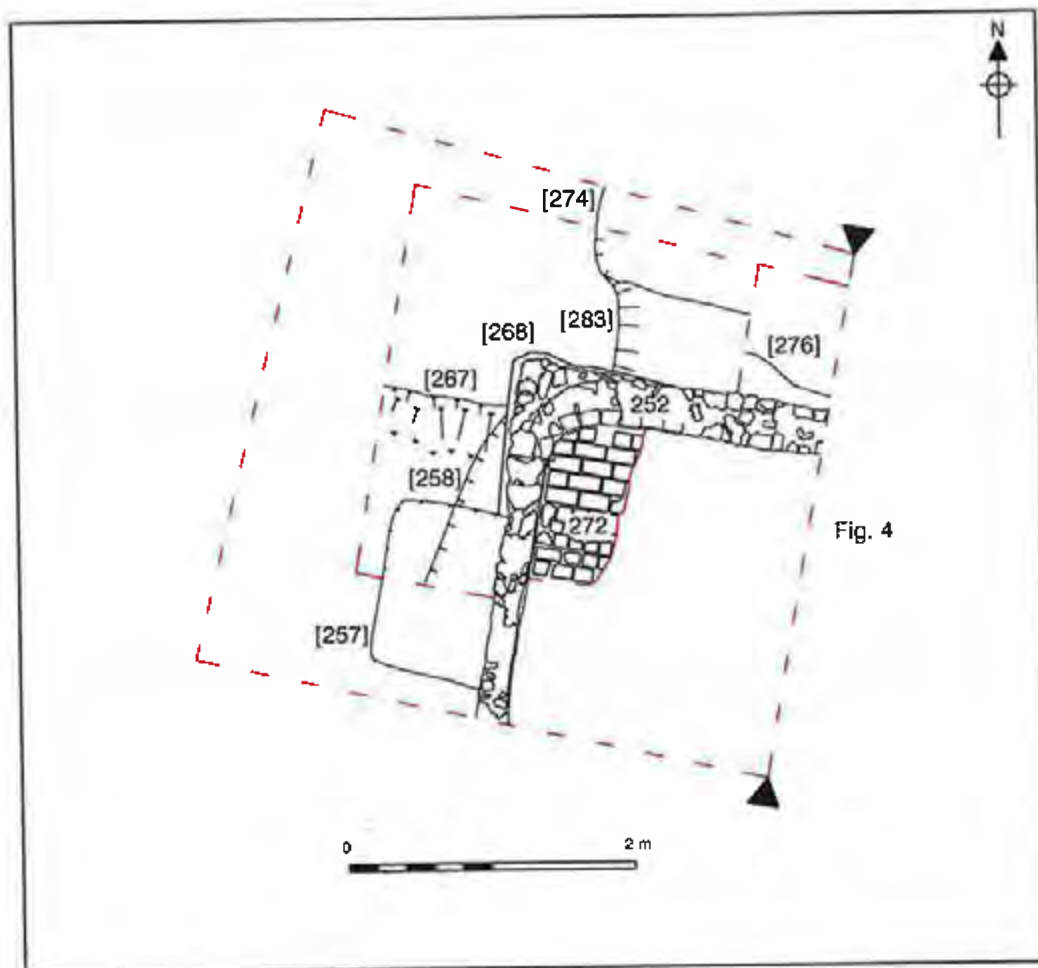


Figure 3. Plan of Trench 2. Scale 1:50

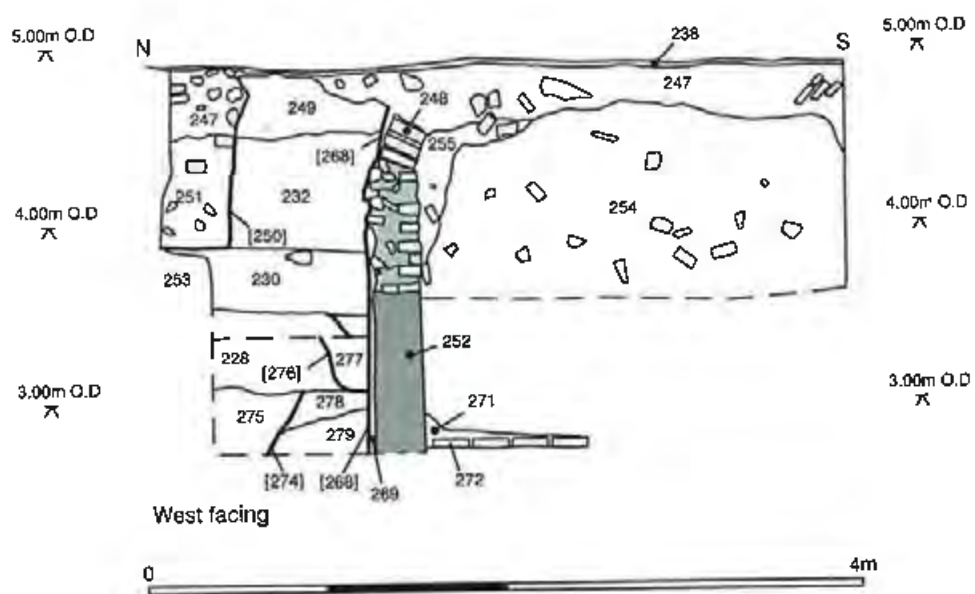


Figure 4. Trench 2, section. Scale 1:40

been linear rather than a pit, but was truncated by a later feature. Pit [257] had a series of fills, the uppermost of which ([260],) contained occasional mortar and brick or tile fragments, as well as pottery dated to the 18th century. Perhaps contemporary with [276] and [257] was a dump of charcoal-rich material, [229], which overlay the garden soil deposit [228].

This sequence of features was capped by a deep layer of probable garden soil up to c. 1m thick. This may represent a long period when little activity took place in the area of Trench 2. On the northern edge of the trench the garden soil layers were cut by an east-to-west aligned wall, [251], of probable 18th century date. It probably formed a property boundary and may have been the southern wall of a building located immediately north of the trench. This wall was roughly constructed of reused brick, flint and limestone fragments bonded with a brittle, light yellow lime mortar.

Trench 2, Phase 2: Victorian cellar and associated structures

Three walls of a cellar of unusual form and appearance were exposed within Trench 2. It is likely that this structure was built in the second half of the 19th century. The northern and southern walls and the very base of the eastern wall were all neatly constructed from reused red brick, flint and limestone (and given the context number [252]). The north-western corner was interesting in that it had a curved interior face (Plate 3). This

curve was also apparent on the exterior of the wall directly beneath its junction with the ceiling, [248], which was vaulted and composed entirely of soft 'Norfolk Red' type bricks, in common use in the Victorian era. The floor, [272], was also of red brick. The eastern wall, [235], which was mostly of flint, was more roughly constructed than the rest, employing a lot more mortar and only occasional brick. Its inner surface was rendered to blend in with the others, but the difference in its construction, along with the mismatched foundation (which was



Plate 3 Looking south at curved wall [252] of Victorian cellar in Trench 2

part of [248]), suggests that it was built after completion of the vaulted ceiling, perhaps initially being left open with only temporary props on top of the foundations, to allow access for work on the ceiling.

All in all, the relative depth of the floor and the vaulted ceiling of this cellar suggest a specialist industrial or commercial function. In general terms, it is reminiscent of an ice house or cold store. A brief examination of White's 1883 street directory, in conjunction with the Ordnance Survey 1:500 plan of 1885, did not yield any clear results: the premises of which the [252]/[248] cellar was a part, is described as a shop. A more detailed examination of late 19th and early 20th century maps and street directories would probably yield better results.

Wall [251], which ran across the northern edge of the trench, was capped by a later wall [237], constructed of soft 'Norfolk Red' type bricks of late 19th century appearance. On the western side of the trench, this wall returned to the south. Between wall [237] and the western wall of the cellar, [235], a sunken passageway with a cobbled surface [302] existed. It was probably constructed after wall [235] and related to the cellar in some way. The Ordnance Survey 1885 plan shows buildings which correspond exactly with the position of wall [237].

Trench 2, Phase 3: 20th century

Most of [248], the vaulted ceiling to the cellar, was destroyed when the building above it was demolished, and the cellar was filled with demolition rubble [255]. Although demolition deposit [255] contained pottery dated to the late 19th or early 20th centuries, demolition of the [252]/[248] structure may have been carried out in the 1940s.

Following this episode, which must have encompassed the demolition of the [237] building, a wall of London Stock type bricks with a massive irregular concrete foundation was constructed along the northern edge of the trench. This wall, [253], was one of a number of similar structures of mid 20th century date that could be seen projecting through the gravel car park surface in the central-western part of Area 4. They probably belonged to one or more industrial buildings, similar to that extant at 57-61 Pitt Street and currently occupied by Morris Printing. This building, or buildings, probably had a fairly short life span as it too had probably been demolished by the late 1960s. Deposits relating to the creation of the car park in the 1990s were relatively thin in the area of Trench 2.

Trench 3 (Area 4 50584N) Figs. 5 & 6

Trench 3, Phase 1: Post-medieval pits and garden soils

Undisturbed geological material in this trench consisted of stone-less pale orange sands [104]. Above this, truncated elements of a 0.2m thick layer of subsoil-like material was recorded. The earliest features in Trench 3 were two intercutting pits, [212] and [207]. These features were possibly dug initially for the extraction of sand, but were later filled with domestic refuse. The fills of the earliest pit, [212], contained pottery dated to the 15th or 16th centuries, whilst the fills of [207] yielded ceramics dated to the late 16th or early 17th centuries.

The edges of these features were later clipped by another quarry pit – [204] – less deep than the first two and filled with silt rather than domestic waste. Above this were several mounded layers of silt and garden soils, containing patches of crushed mortar and building rubble. The appearance of part of this sequence of deposits suggests that these were deliberately dumped, having been brought in from elsewhere. Two elements within this sequence of deposits ([119] and [227],) contained pottery dated to the 15th to 16th centuries.

The nature of the deposits which sealed the early post-medieval quarry pits suggests that the area of Trench 3 was used as a yard or garden throughout the post-medieval period. The 1885 Ordnance Survey 1:500 plan clearly shows the area around Trench 3 and to the north of it as a garden. All of the earlier cartographic sources (see Hutcheson and Penn 2007 and Frostick 2002) indicate

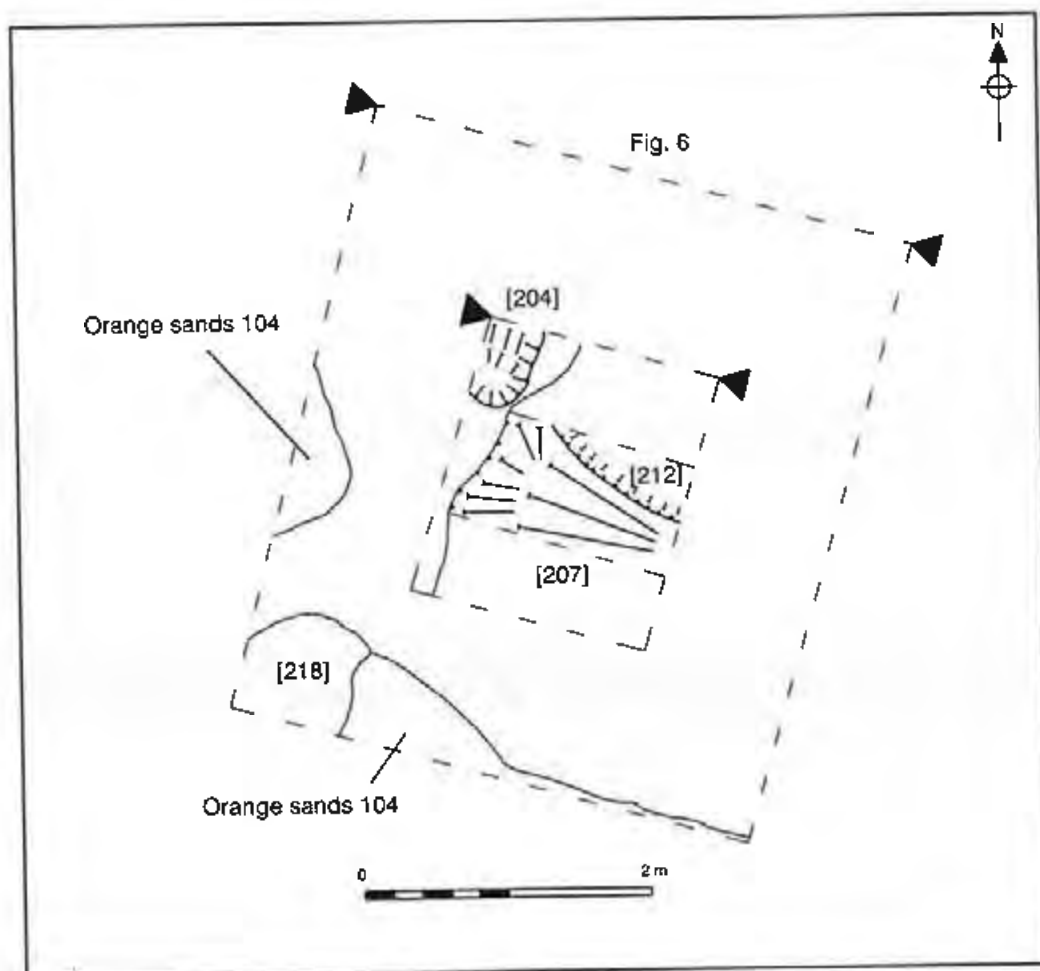


Figure 5. Plan of Trench 3. Scale 1:50

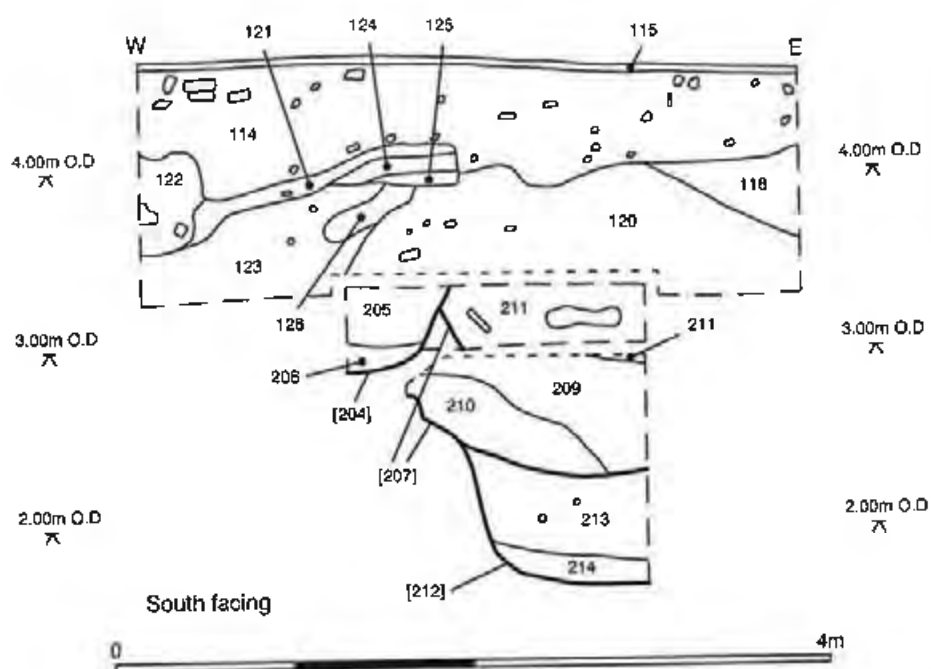


Figure 6. Trench 3, section. Scale 1:40

an open area in the middle of the 'block' formed by Pitt Street, Botolph Street and St. George's Street.

Another pit probably dating to the late post-medieval period, [218], was cut into the dumps and garden soil. It was filled with demolition rubble from a brick-built structure.

Trench 3, Phase 2: Victorian garden features

The upper deposits of the dump/garden soil sequence were cut by the construction trench for an insubstantial brick wall ([116]=[226]) of soft, deep red bricks. This ran on an east-to-west alignment along the southern edge of the trench and is visible on the Ordnance Survey 1:500 plan of 1885, which delineates garden paths. At least two further cuts ([220] and [127],) were recorded immediately below the gravel car park surface. These probably resulted from the removal of services following the clearance of buildings in Area 4 in the mid 20th century.

Trench 4 (Area 4 50584N) Figs 7 & 8

Trench 4, Phase 1: Pits and building - 11th to 14th centuries

Trench 4 contained stratigraphically complex archaeological features and layers not all of which are illustrated on Figs. 7 and 8

Undisturbed geological material in this trench consisted of fine yellow-brown sands. Activity began with an irregularly shaped pit, [69], probably created through sand extraction. Its fill, [70], contained no finds, but subsequent features contained pottery dated to the 11th to 13th centuries. Pit [69] was overlain by several layers of silty sand ([77], [189], [201], [202] and [203], not illustrated), some of which contained lenses of redeposited yellow sand. Although disturbed and to some extent churned by human activity, these layers had many of the characteristics of subsoil.

Towards the south-west corner of the trench, the subsoil like layers were cut by a sequence of pits, the earliest of which, [52], was overlain by another: [86]. One of the fills of pit [86], context [88], contained pottery dated to the 11th to 13th centuries. Pit [86] was in turn cut by another pit, [81]=[53]. This feature yielded pottery from three of its fills that was dated to the 12th to 13th centuries. A single, more isolated pit, [49], was located towards the centre of the trench. The upper fill of this pit, context [50], contained pottery dated to the 11th to 14th centuries.

Possibly contemporary with the latest of these pits was a fragmentary, banded clay floor surface (recorded with context numbers [192], [193], [194], [195], [196], [197], [198] [199] and [200], not illustrated). The upper surface of the floor was burnt, suggesting the presence of a hearth. As there were no contemporary walls or structural features immediately adjacent to this hearth, it may have been a central fireplace, within a domestic building fronting onto St. George's Street – but no structural evidence of the building was recorded. Given the probable date of the hearth, the building may well have been of timber and left relatively scant remains that were obliterated or masked by later walls and other features.

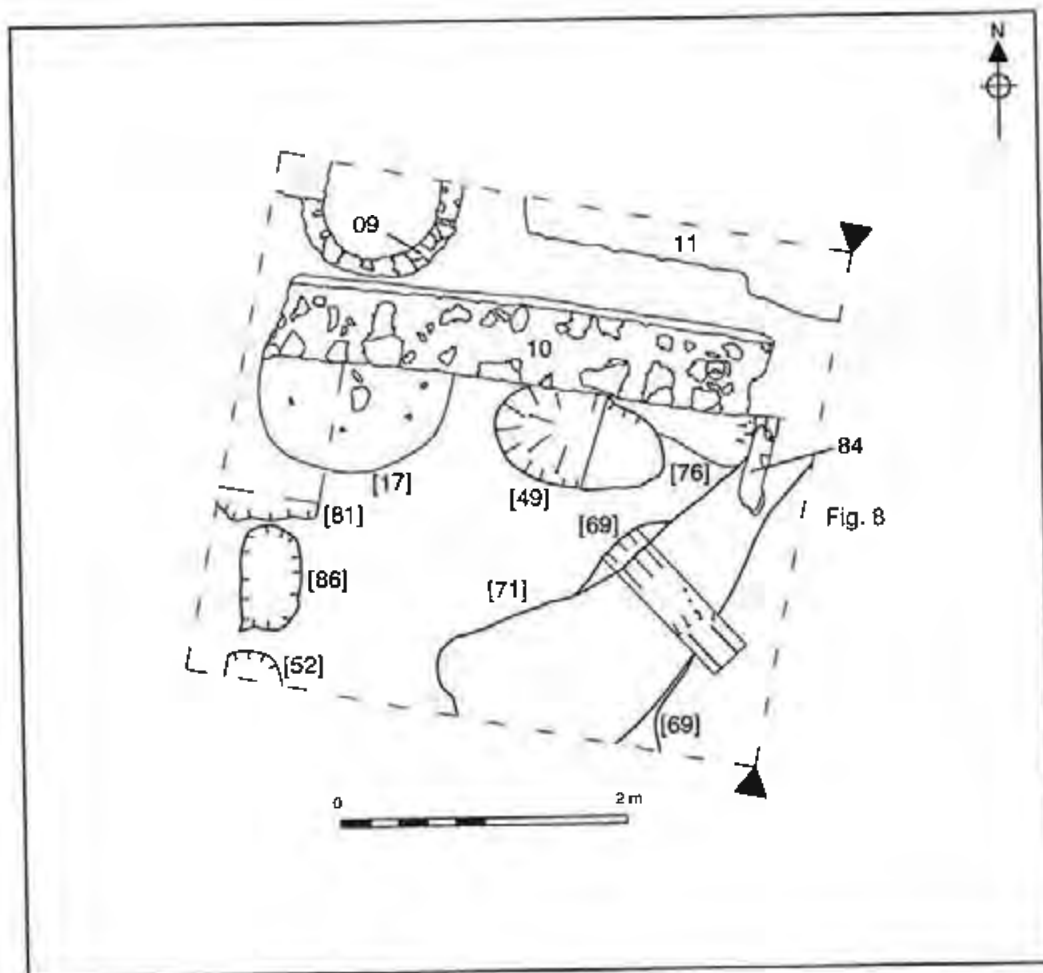


Figure 7. Plan of Trench 4. Scale 1:50

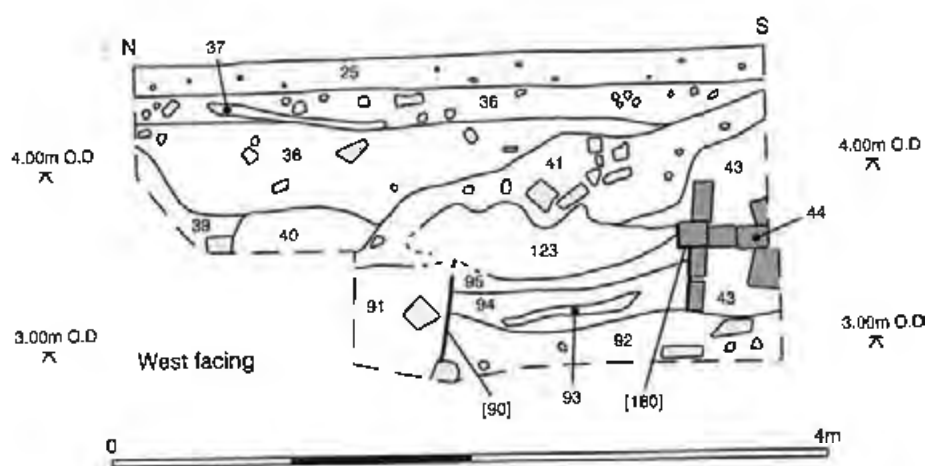


Figure 8. Trench 4, section. Scale 1:40

Trench 4, Phase 2: Pits and masonry buildings - 15th to 16th centuries

On the north side of the trench, pit [49] was cut by pit [76] which contained occasional small fragments of brick or tile. The hearth ([193] etc.) was heavily truncated by what appeared to be an irregularly-shaped ditch, [71]=[90]. The upper fill of this ditch contained pottery dated to the 15th to 16th centuries. Due to the size of the trench, only a very limited sample of this ditch could be excavated and, as a result, its purpose remains unclear. It is thought to have predated all of the structural features described below.

The upper fill of pit [49] was overlain by [78] – the bedding layer for a substantial east-to-west-aligned flint and mortar wall, [10]. The southern face of wall [10] bore evidence of plaster, indicating that the interior of the building (of which it was a part,) lay on this side. The general size and form of wall [10] indicates that the building may have had a timber superstructure at first floor level.

The possible hearth ([193] etc.) was cut by two slots or post-holes: [54] and [55]. Little can be said about these possible structural features other than they were probably associated with the mortar pad, [17], which overlay them. This pad lay at its western end of wall [10], adjacent to its southern face (and therefore on the interior of the building). It was probably the denuded remains of a stair-base or similar, representing an alteration to the building. A second alteration to this building was evidenced by wall [84], a thin north-to-south-aligned structure of flint and brick. This wall ran at right angles to wall [10] from its eastern end and represented an internal subdivision of the building. It is tempting to link this subdivision with occupation by immigrant Dutch 'strangers', who settled in north Norwich in massive numbers in the late 16th century. The sheer number of migrants and their relative poverty led to overcrowding (Pound 2004, 42), and thus to the multiple occupancy and subdivision of many buildings.

Another flint and mortar wall, [11], ran almost parallel to [10] 0.5m to its north, and was recorded in the south-facing baulk of Trench 4. The proximity of walls [10] and [11] indicates that the space between them was a property boundary which ran at right-angles to St. George's Street. The division of street frontages into rectilinear burgage plots was a common form of land organisation throughout the medieval period.

Trench 4, Phase 3: Later post-medieval pits and well - 17th to 19th centuries

The Ordnance Survey 1:500 plan of 1885 shows the northern wall of a building that fronted onto St. George's Street occupying the space in between walls [10] and [11]. It is likely that this building replaced the buildings evidenced by walls [10] and [11] some time in the 18th or 19th centuries. No traces of this replacement building were recorded archaeologically, however.

A well, [09], recorded at the western end of wall [11] may have been associated either with the wall [11] building or with its replacement. After the well had ceased to serve its primary function and had been backfilled, the top was capped with a rudimentary brick floor and a crude brickwork superstructure ([24],) which may have served some sort of storage function.

It is possible that the site was left as an open area for a time after demolition of the buildings associated with walls [10] and [11]; thick layers of dumped material ([182] and [32]) appeared to overlie [10]. These layers consisted largely of

reworked, topsoil-like material and mortar-rich building debris, and had been cut – and recut – by pits [46] and [47]. The upper fill of the later pit, [47], contained clay tobacco pipe stem fragments. It is likely, therefore, that the pits date to the late 17th to 19th centuries.

Trench 4, Phase 4: 20th century

A cellar or coal bunker [44] (Fig. 8) constructed of concrete blocks was seen cutting earlier deposits in the south-east corner of the trench. It was filled with a large amount of coal, ash, clinker and burnt debris. The exact size of the feature is not known but, in the part exposed, the burnt deposit described filled the construction and spilled out over the top. A mid 20th century date for this structure seems likely. Above it, the upper 0.4m to 0.6m of the trench was composed of layers of dumped material (e. g. [25] and [36], mostly dating from the late 1960s when the area was cleared and from subsequent releveling in the 1990s, prior to the creation of the current car park.

Trench 5 (Area 4 50584N) Figs 9 & 10

Trench 5, Phase 1: Medieval well and possible late medieval building.

The earliest feature in Trench 5 was [296]: a root hole or animal burrow not fully exposed by the excavation but estimated to be about 0.4m x 0.4m in size and with a verified depth of 0.26m. The fill of this hole was a light brown silty sand, [295]. It was overlain by [294], a layer of much darker and heavier loamy soil, approximately 0.5m deep and flecked with chalk and charcoal, which extended right across the sondage in the centre of the trench. This layer predated all of the other features recorded in the trench and was, in effect, a buried topsoil, containing pottery dated to the 10th to 11th centuries.

Layer [294] was partially truncated by the construction cut [280] for well [159]. This construction cut was unusual in that it was considerably larger than the well-shaft itself. It appeared to have been so for a depth of 1.6m – after which it narrowed to the width of the shaft itself. The results of augur testing indicate that the well shaft itself was more than twice as deep. The well wall rose above the upper level of deposit [294] (which would probably have formed the ground surface at that time,) by at least 0.35m and was built in a series of 'lifts' or stages. Patterns in the fills of the construction cut suggest that it was backfilled in corresponding stages (Plate 4): a section of the wall would have been built, then the cut backfilled to the top of that section; another section would then have been constructed, followed by more backfilling, and so on. The result is that the outer surface of the wall has the appearance of a series of petticoats, the base of each new segment of the wall being wider than its top and also wider than the



Plate 4 Looking west at wall [159] and its construction cut [280] in Trench 5

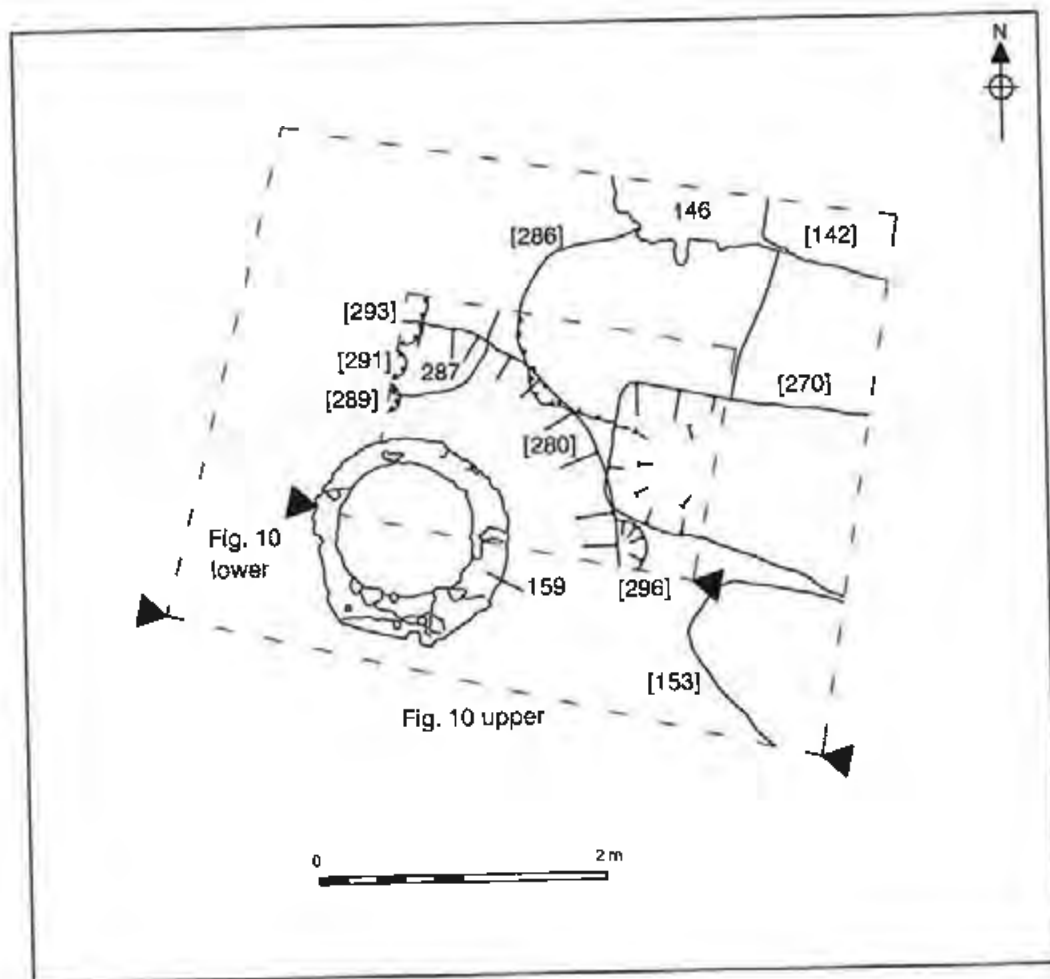


Figure 9. Plan of Trench 5. Scale 1:50

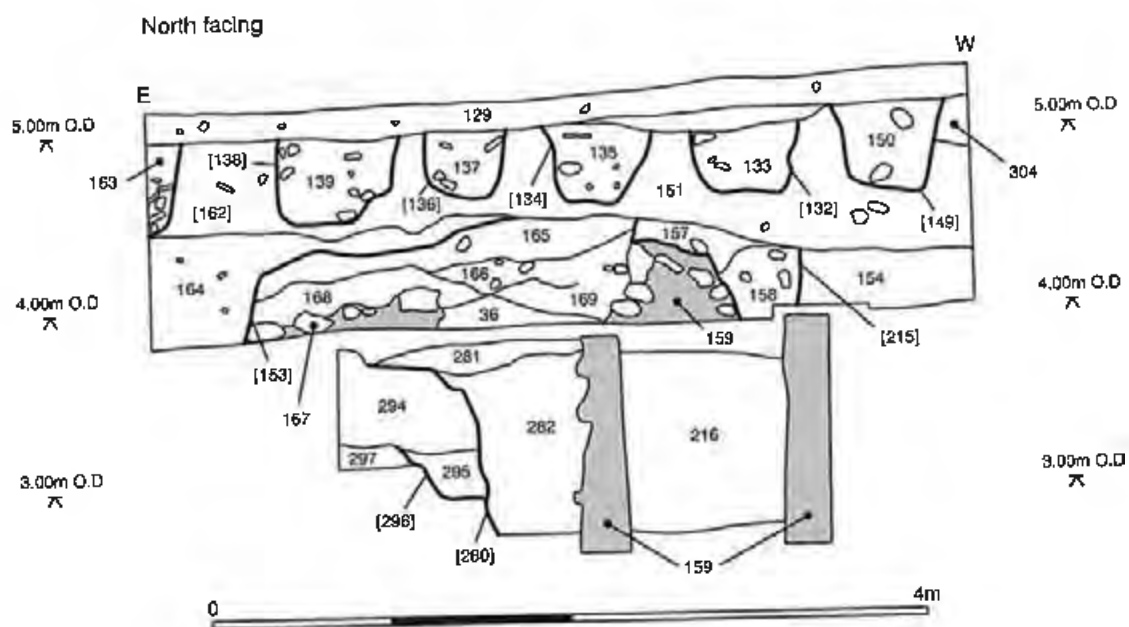


Figure 10. Trench 5 sections. Scale 1:40.

top of the segment below. The inner surface of the well wall is, in contrast, very straight and flat, and has an even finish.

The lower fill of the well construction cut, context [282], contained pottery dated to the 13th century. The upper fill of the construction cut for the well was [281], a mottled deposit which extended across much of the rest of the trench, sealing the buried topsoil-like deposit [294]. It contained pottery dated to the 13th and 14th centuries.

On the north side of the well (within the area of the construction cut), deposit [281] was cut by three possible post-holes: [289], [291] and [293] – which were arranged in a rough line. It is possible that they represent a structure associated with the well – perhaps a windlass or hoist to enable water-filled buckets to be raised more easily. One of the post-holes ([289]) appears to cut the edge of another ([291]), suggesting that the holes were not entirely contemporary and may instead represent different phases of the aforementioned construction. This is perfectly possible as the well was clearly in use for a fairly long period of time: up to c. 200 years.

On the east side of the trench, deposit [281] was cut by a reasonably shallow (0.4m deep), flat-bottomed pit: [286]. This feature was filled with material very similar to the garden soil deposit [294], into which it was cut. It contained pottery dated to the late 14th to early 16th centuries. Sealing this pit and the well-side post-holes lay two possible surface layers; the first ([287],) was made of gravel, the second ([155],) of crushed mortar. These are possibly the last evidence of medieval activity within the trench.

An east-to-west-aligned fragment of wall ([146],) was recorded towards the northern margin of the trench; little remained of this wall, suggesting that it had been demolished quite comprehensively – perhaps just a few decades after it was built. The wall was probably part of a building, the greater part of which would have lain north of Trench 5.

Trench 5, Phase 2: Early post-medieval pits.

Following the demolition of wall [146], a series of probable post-Medieval deposits were laid down on top of both it and well [159]. The well itself was backfilled with topsoil-like material ([216],) which contained pottery dated to the 15th to 16th centuries.

Around this time, the south-east corner of pit [286] was cut by another pit ([270]) – slightly elongated in shape and full of an ashy, grey-brown soil, rich in charcoal, and pottery dated to the 16th century. This was subsequently cut on its south-eastern side by a later, very deep but less wide pit ([153]), the base of which was filled with a burnt, extremely charcoal-rich deposit ([301]), over which was a layer of very compact, heavy yellow-brown clay ([174]) with frequent chalk flecks, and lumps of mortar and brick at its base. A deep deposit of rich, soft, dark brown loam ([164],) overlay this and formed the main fill of the pit. The basal and uppermost fills of this pit contained pottery dated to the 15th to 16th centuries. Beside the well, a further pit ([215]) appears to have been cut through the overlying post-Medieval layers. This was backfilled with crushed mortar.

Trench 5, Phase 3: Late post-medieval to 20th century.

Overlying the whole trench was a deep layer ([151]) of dark, almost black, sandy silt with occasional inclusions of brick, mortar, and charcoal. This layer of garden soil-like material formed the ground surface from the 17th or 18th century until the mid 20th century. Close to Trench 5, there was evidence on the surface of the same (or a very similar,) mid 20th century industrial building as that recorded as wall [237] in Trench 2. Deposit [151] was cut by a large pit, [142], while a series of later, flat-bottomed and square-sided linear features ran north-south across the trench. These were backfilled with modern brick rubble and mortar and were probably the result of removal of elements of the afore-mentioned mid 20th century industrial building and/or other structures, either during the late 1960s clearance of the area or during the landscaping that took place during the conversion of Area 4 for use as a car park.

A capping layer of sandy silt covers the modern features mentioned above, and over this is a further layer of gravel – the modern car park surface.

Trench 6 (Area 1 50581N) Figs.11, 12 & 13

Trench 6, Phase 1: Late Saxon defensive ditch infilled in the 11th to 12th centuries.

Evidence of the defensive ditch which enclosed Norwich north of the River Wensum in the Late Saxon period was found in the base of Trench 6, at a depth of c. 3.7m below the present ground surface. Due to the relatively limited size of the trench, only the western edge of the ditch ([92]) was located (Plate 5). The results from this trench, when combined with those from Trench 7, 1970s excavations at Botolph Street and St. George's Street (sites 281N and 284N, Evans and Davison 1985), and 1980s excavations at Calvert Street slightly to the south (site 840N; see Hutcheson and Penn 2007, 9), enable the course of the ditch to be plotted with some accuracy and certainty for some 200m (Fig. 1).

Due to the technical difficulties of maintaining a recordable section inside driven shoring sheet the upper ditch fills were in effect recorded in a central sondage. Not all of the fill discussed below are illustrated on Fig. 12.

The base of ditch [92] was cut into geologically-derived orange sandy gravels and lay beneath the level of the current water table. Its initial fill, [93], was a layer of silt and gravel, much of it probably collapse from the sides. Over this lay a thick layer of sticky, sandy clay ([68]). Both layers were devoid of finds, suggesting a natural build-up of deposits. The next layer, [45], was more sandy and very rich in pot and bone, suggesting that the ditch may have been used, at least for a while, for the dumping of domestic waste. This fill contained pottery



Plate 5 Looking east at ditch cut [92] in Trench 6

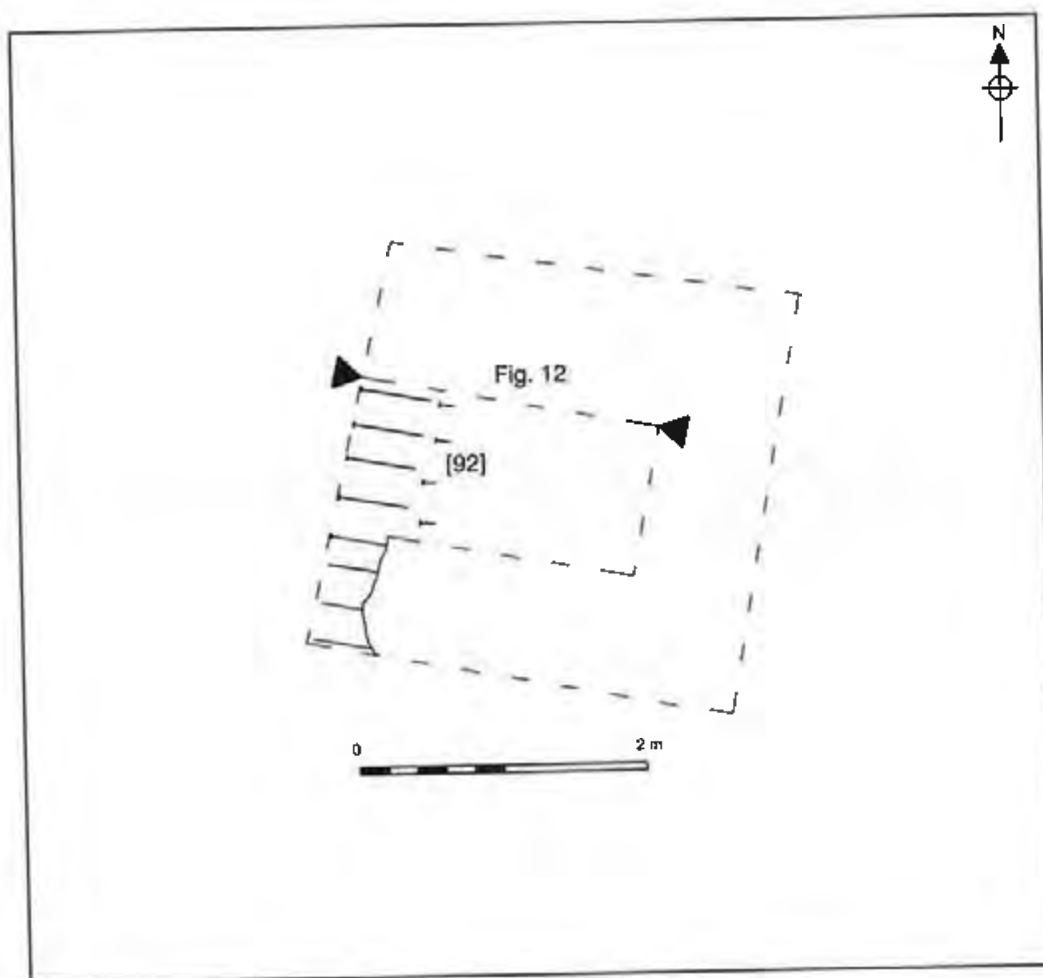


Figure 11. Plan of Trench 6 Phase 1. Scale 1:50

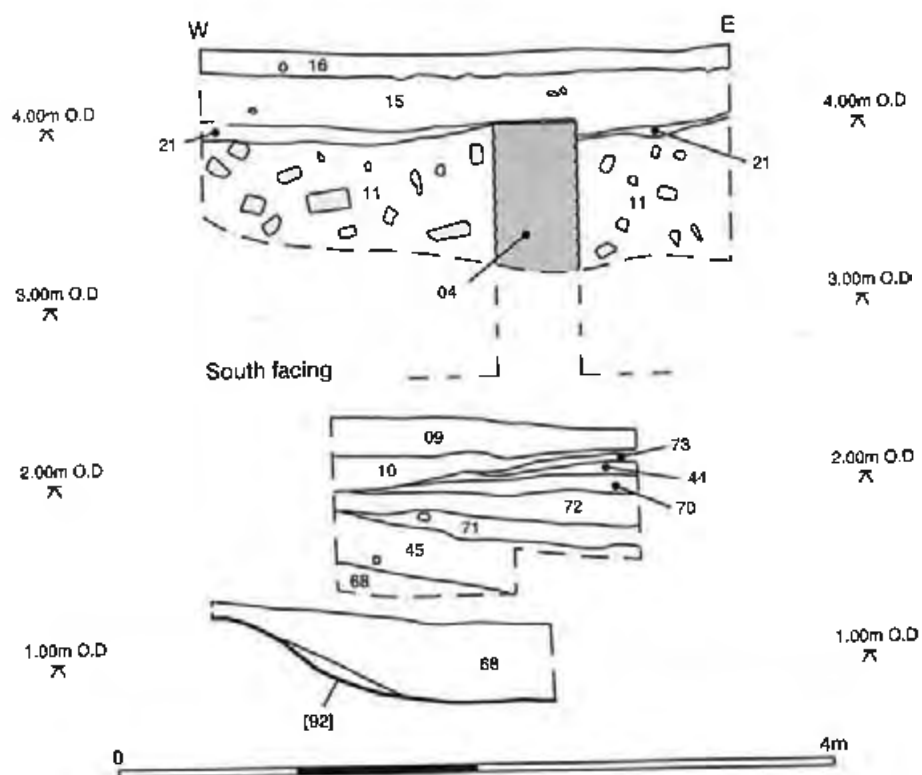


Figure 12. Trench 6, sections. Scale 1:40

dated to the 11th to 12th centuries. Above it were a series of layers of sand (contexts [45], [69], [70], [71], [72], [74]) and varying from dark brown to orange and all devoid of finds. These probably represent layers of collapse from the upper banks of the ditch (the upper layer of natural in this area being a very fine, pale orange sand,) and may have accumulated quite rapidly, perhaps as a result of heavy rain. The upper layer of sand, [74], was overlain by a similar deposit, [44], which contained pottery dated to the 11th to 12th centuries. Above this was a thin layer of orangey-brown sand [73], suggesting another phase of silting with material washed in from the sides, and, over that, were a series of sandy deposits [08], [09] and [10], all of which contained pottery dated to the 11th to 12th centuries. Above these, four further layers of sandy silt, all devoid of pottery, were recorded.

Trench 6, Phase 2: Medieval ditch and external surface

The uppermost of the sandy ditch fills, [38]=[27], was cut by [77]: a small, shallow ditch following the same line of orientation as the Late Saxon defence. This feature contained fills similar to those of the Saxon ditch, with an initial layer of mid-brown sandy silt ([75]) in its base, topped by an upper fill of light brown sandy silt ([26]). It was possibly a boundary or roadside ditch of medieval date. Very little of this

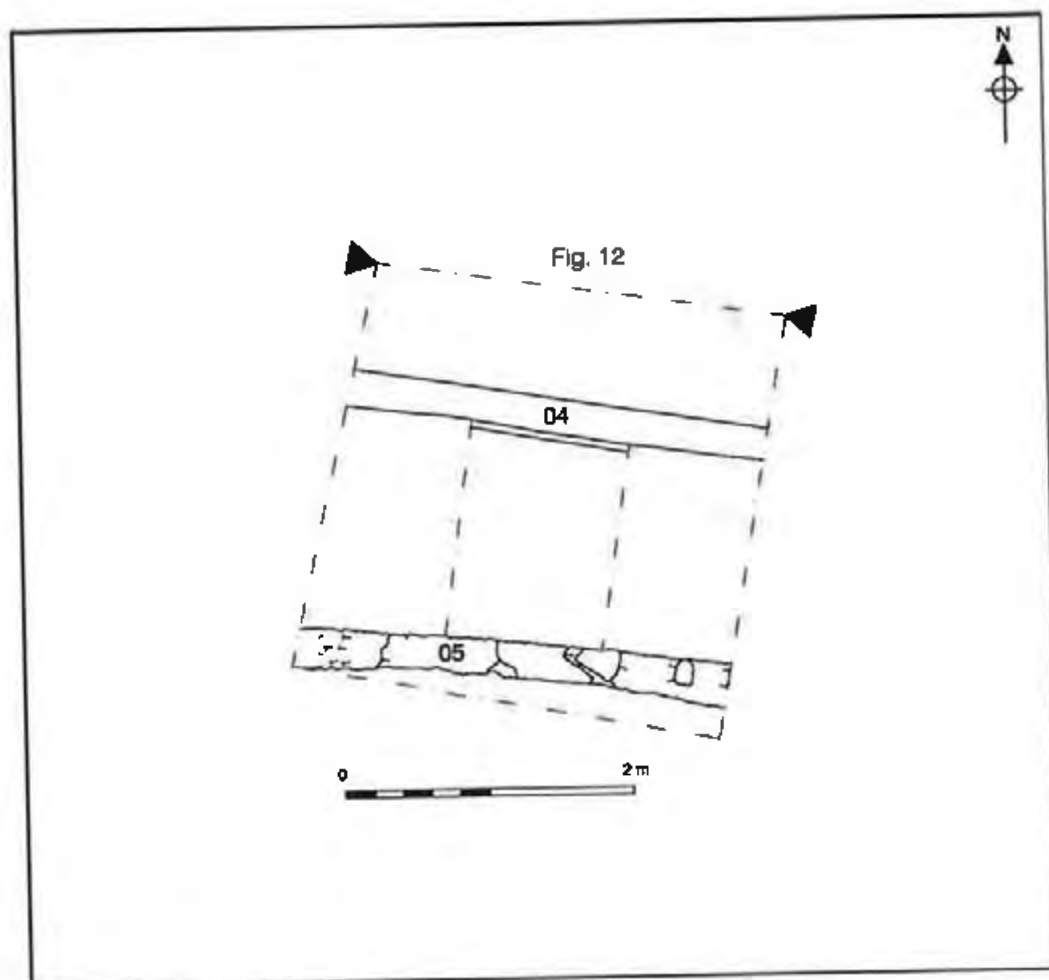


Figure 13. Plan of Trench 6 Phase 3. Scale 1:50

feature and the make-up layers which overlay it survived due to the presence of two cellars (see below).

Overlying the ditch and fills described above were six more layers of sand and silt: [19], [20], [22], [23], [24] and [25]. It is possible that, within these, [22] formed a sandy gravel yard surface or path.

Trench 6, Phase 3: Post-medieval and Victorian cellars; 1960s clearance

A flint and mortar-walled cellar (cut [43], wall [05]) of probable post-medieval date had heavily truncated almost all of the above deposits, down to the layer below [38]=[27]. The cellar had a floor of flattish, red bricks, edged by square tiles of a yellow fabric on the north side, where it was cut by a later wall (Plate 6). The floor [03] was situated 40-70mm below the base of the post-medieval wall [05] (the variation is due to the wall having an uneven base,) and was probably a replacement floor of 19th century date, set at a lower level than the original. Both wall [05] and floor [03] were coated in a thin layer of coal dust. Although coal was probably imported into Norwich during the medieval and post-medieval periods, its use is unlikely to have become ubiquitous until the arrival of the railways in the mid 19th century

As mentioned above, floor surface [03] was truncated on its northern side by an east-west-running wall of red brick: [04]. This was the southern wall of a cellar of Victorian or Edwardian date, floored with yellow bricks laid in a regular pattern. This later cellar was filled in with brick rubble [11], probably from demolition of the building to which it belonged. The post-Medieval cellar also contained some heavy brick and flint rubble ([17],) but was mainly filled with layers of silt mixed with small



Plate 6 Looking east at the post-medieval and Victorian cellars in Trench 6

amounts of rubble (contexts [01], [02], [12], [13], [14], [17], [18], [28], [29] [30] [31], and 41)). It appears to have been filled in after construction of the Victorian/Edwardian cellar as the fills do not appear to have been cut by the foundation trench for the later cellar wall. Both cellars were almost certainly connected with the Crown and Anchor public house (see below). This and other buildings on the eastern side of St George's Street were demolished in around 1966 or 1967, to make way for Sovereign House. The land immediately west of Sovereign House, between it and the road, was then levelled (with layers [15] and [21],) and covered in asphalt ([16]) so that it could be used as a car park.

Trench 7 (Area 1 50581N) Figs 14, 15 & 16

The central trench of deposits in this trench were recorded in section other than the south facing section, due to minor collapses. For this and other reasons Fig. 15 does not illustrate all of the deposits discussed.

Trench 7, Phase 1: Late Saxon defensive ditch and fills.

The Late Saxon defensive ditch was also identified in Trench 7, where the eastern bank of a deep ditch, [94], was discovered (Plate 7). The initial fills of this ditch (in numeric rather than stratigraphic order contexts [95] to [108] inclusive,) appeared to be a mix of naturally accumulated silts and redeposited yellow sands and gravels, slumped or washed in from the sides. None of these layers contained any pottery or other dateable finds. These deposits were overlain by two layers of deliberate backfill: [51] and [53]. These deposits were much darker and more topsoil-like than those below them. Deposit [51] contained a lens of mortar ([52]), suggesting that there was building activity taking place close by. It may be that these deposits relate to the creation of Botolph Street (the line of which ran across Trench 7 according to the Ordnance Survey 1:500 plan of 1885).

Trench 7, Phase 2: Late Medieval mortar-rich deposits.

Layer [51] was overlain by alternating deposits of mortar/stone dust (or possibly very pale sand) ([48], [50], [62], [66],) and brown silt/sand ([33], [47]=[60], [61], [64], [65]). The uppermost mortar layer ([32],) was very thin but, although patchy in places, quite hard, suggesting a deliberately laid surface. Another layer ([50],) was overlain by a patch of cinders ([49]). It is thus likely that these mortar-rich deposits represent a deliberate episode of ground making within the late medieval line of Botolph Street. The mortar was probably derived from the many masons' yards recorded as having existed in the area in the 14th and 15th centuries (Evans and Davison 1985, 88-90). Deposit [32] perhaps represents the former road surface of Botolph Street, whilst [49] may represent an episode of repair.

Trench 7, Phase 3: Post-medieval and Victorian cellars; 1960s clearance

A cellared building of probable late 18th or 19th century date was constructed cutting into the mortar and silt layers. The earliest element of this building was wall [46], which formed the northern side of the Duke of Sussex Public House (Plate 9 and see below). On the outer (northern) side of this wall, a thick layer of iron-pan, [58], had formed, probably as the result of natural processes and water leaching through the layers of iron-rich soil above. The iron-pan had formed around a layer of gravel which sat at (but not under) the base of wall [46]. It is probable that the iron pan had formed on an exposed gravelled surface which neatly abutted the



Plate 7 Looking north at ditch cut [94] in trench 7



Plate 8 Looking South at cellar wall [46] in Trench 7

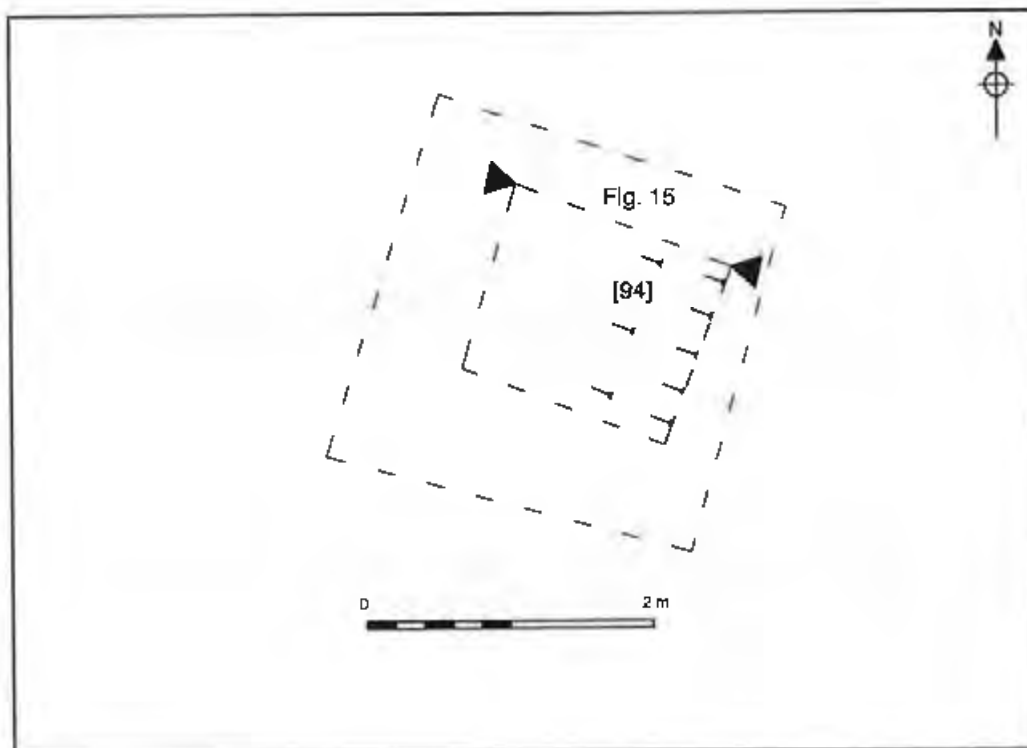


Figure 14. Plan of Trench 7 Phase 1. Scale 1:50

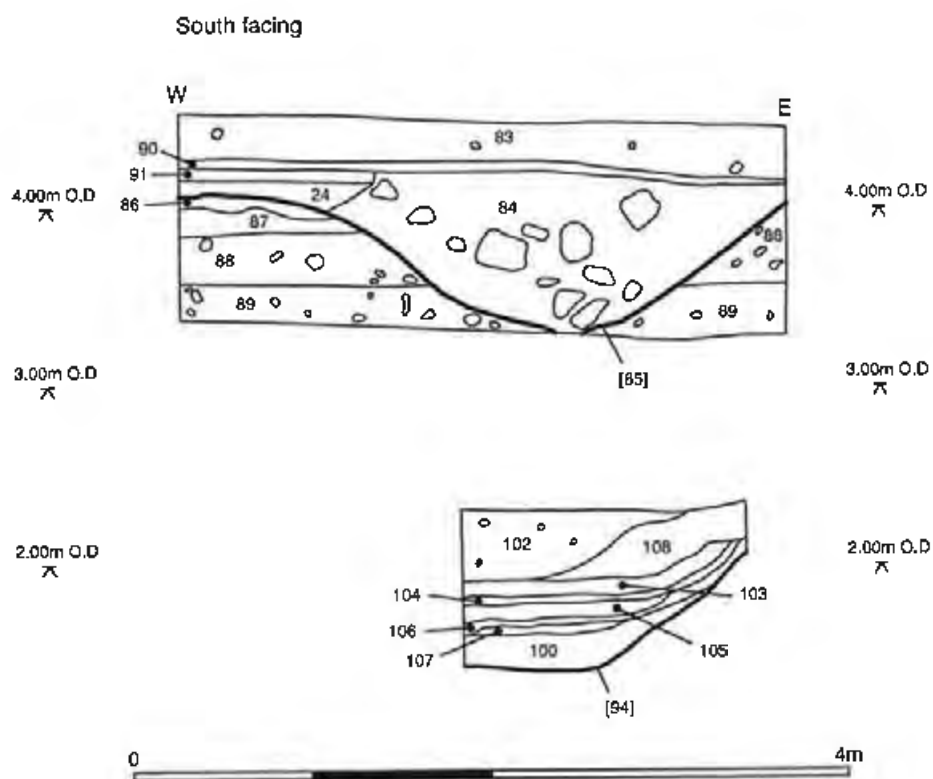


Figure 15. Trench 7 sections. Scale 1:40.

very base of wall [46]. Cartographic evidence indicates that this gravelled surface probably formed the southern edge of Botolph Street. The iron-pan was sampled and examined. This examination indicated that the material making up deposit [58] was not slag or any other of industrial waste.

The sand layer [57], which immediately overlay [58], was also rich in iron-pan and heavily mottled with ferric granules. Above this sat a layer of dark brown silty sand [54]=[63], into which two narrow pipe or drainage channels, [56] and [109], had been cut. They were filled with yellow gravel ([55], [110]).

Demolition rubble, [89], on the outer side of wall [46], was interpreted as dating from a Victorian phase of demolition and rebuilding. Wall [46] was capped in at least one place by a distinctly Victorian rebuild or repair, [82], made



Plate 9 Duke of Sussex PH
photographed by the late
George Plunkett in 1938

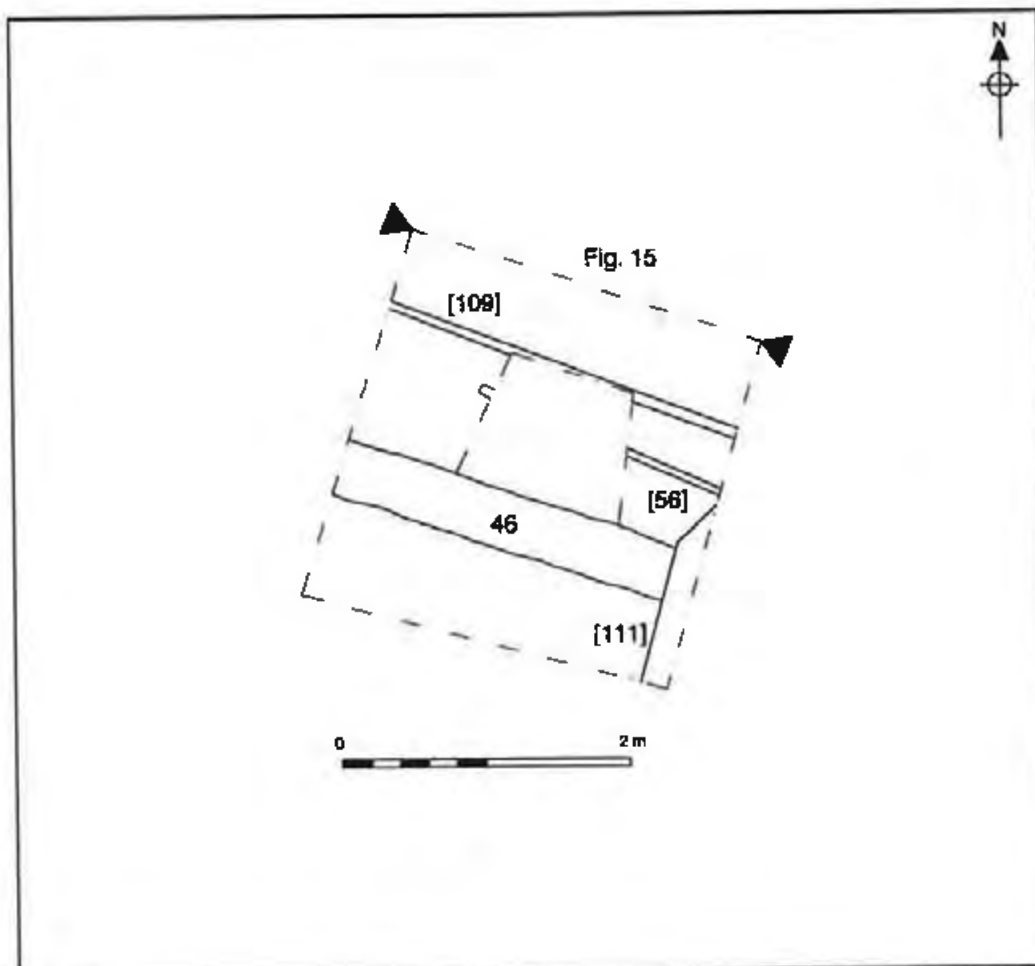


Figure 16. Plan of Trench 7 Phase 3. Scale 1:50

of soft red bricks; layer [89] may relate to this phase of repair. The inside of the building demarcated by wall [46] was filled with modern brick rubble, [81], from more recent demolition of a Victorian building, probably in c. 1966 to 1967. A deliberate make-up layer ([80],) had been laid on top of the rubble and an asphalt surface ([79]) on top of that. At some stage, the asphalt and the remains of the Victorian building beneath were partially removed and new make-up and asphalt layers were laid down. A temporary gravel surface ([90],) succeeded this phase, and a modern (imported,) sandy topsoil ([83],) was later laid on top of that.

Trench 12 (Area 3 50583N) Figs. 17 & 18

Trench 12, Phase 1: Gravel extraction and late post-medieval/Victorian use of St. Margaret's Croft.

There was no evidence of activity in the area of Trench 12 prior to the excavation of two quarry pits, [37] and [51], which were dug into the light yellow-orange sands and gravels at the base of the trench (Plate 10). The earliest of these quarry pits, [51], was large, deep and irregular and took up all of the area within the central sondage. Only the western edge of pit [37] was recorded as most of this feature must have lain slightly to the east of Trench 12. Both pits seem to have been backfilled with the spoil created from their excavation. One of the fills of pit [51], [44], contained one small sherd of pottery dated to the 11th to 14th centuries. It is likely, however, that this was a residual find, and a post-medieval date for the extraction pits seems more likely.

Trench 12 was located within the area of St. Margaret's Croft and one of medieval and post-medieval Norwich's open areas. Cartographic evidence indicates that St. Margaret's Croft remained free of buildings until the second half of the 19th century (Hutcheson and Penn, 2007).

A layer of former garden soil, [11], which overlay the backfilled extraction pits, probably relates to horticultural activity during the last c. 150 years of St. Margaret's Croft. This material was up to 0.5m thick and contained pottery dated to the late 18th to mid-19th centuries.

Trench 12, Phase 2: Late Victorian terraced houses and mid 20th century industrial building.

The afore-mentioned former garden soil, [11], was overlain by a series of walls, of soft red brick, with associated brick and Portland cement floors. The 1885 Ordnance survey 1:500 plan shows that Trench 12 was located north of a street or alley called Rose Yard but the walls and floors uncovered could not have been associated with the small cottages that initially occupied the northern side of Rose Yard. Further cartographic



Plate 10 Looking north into Trench 12 when fully excavated

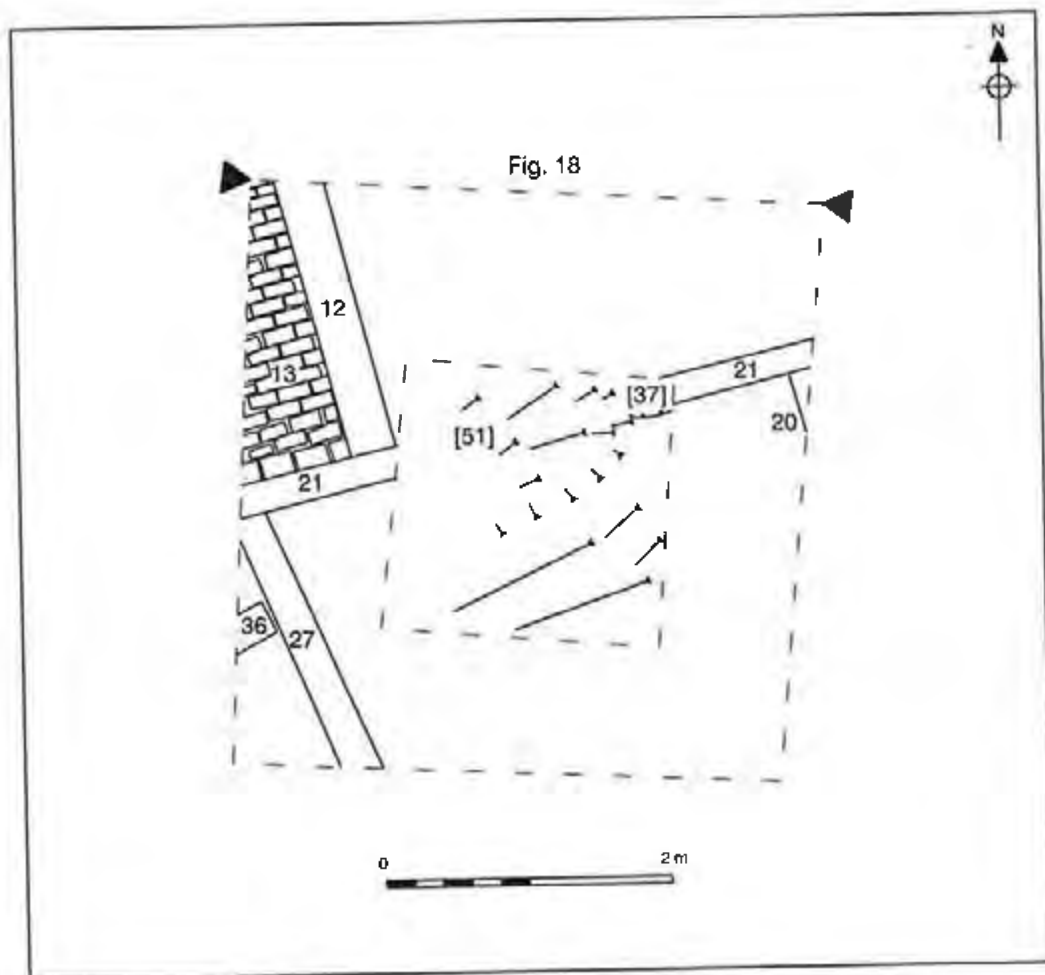


Figure 17. Plan of Trench 12. Scale 1:50

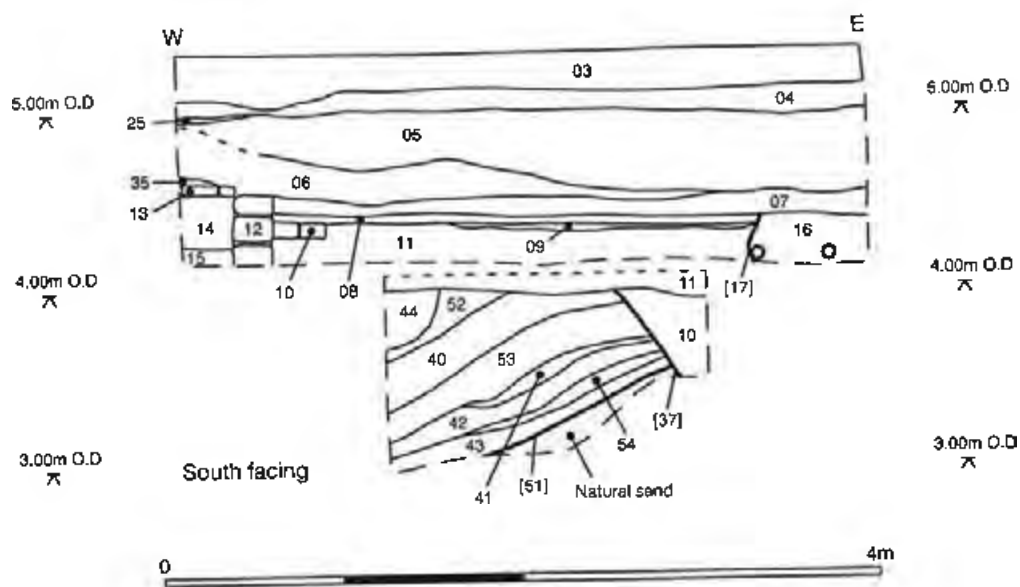


Figure 18. Trench 12, sections. Scale 1:40

evidence indicates that, by 1905, the cottages had been replaced by terraced houses identical to the extant examples on Leonard Street and Esdelle Street, north of Area 3, and it is these that we have found evidence of. It is likely that the terraced houses remained in place until the 1940s or 1950s but, by 1957, they had been replaced with a warehouse or industrial building, the concrete floor of which ([03],) is still extant.

Trench 13 (Area 2 50582N) Fig. 19

The positioning of this trench was informed by the results of Window Samples 10 to 15 (see below). Window Samples 13 to 15 were located across the western side of Area 2, where undisturbed sands and gravels were located at levels no deeper than c. 2.0m OD, or 2m below the modern ground surface – indicating that the Late Saxon defensive ditch did not run across this western side. The results from Window Samples 10, 11 and 12 were less conclusive and, as the main objective of Trench 13 was to locate the Late Saxon ditch, it was therefore decided to locate it in the eastern part of Area 2.

Trench 13 measured 3.5m by 7m and was aligned northwest-to-southeast, at a right-angle to the projected line of the Late Saxon ditch. Initial machine excavation to a depth of approximately 1.2m below the modern ground surface (about 3.0m OD) only revealed ground disturbances of 20th century date. Further exploratory machine excavation at the southeast end of the trench uncovered the remains of a substantial, rectangular reinforced concrete structure, [05] (Plate 11), which extended to a depth of at least 2.5m below the modern surface (1.7m OD). The concrete structure and the whole area of the trench was filled with grey silty sands ([03] and

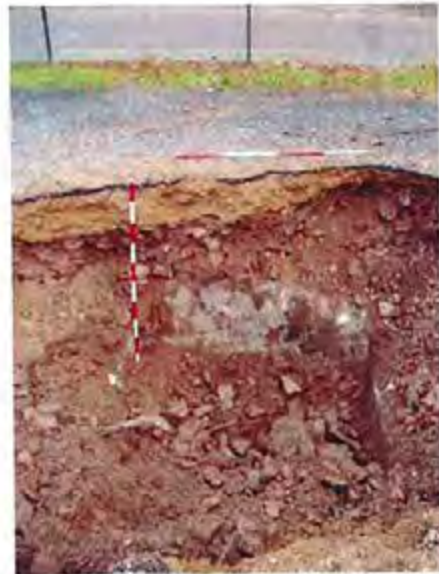


Plate 11 Looking east at concrete structure [05] in Trench 13



Plate 12 Looking southeast down Trench 13 at concrete structure [05] with steel pipe-work in foreground

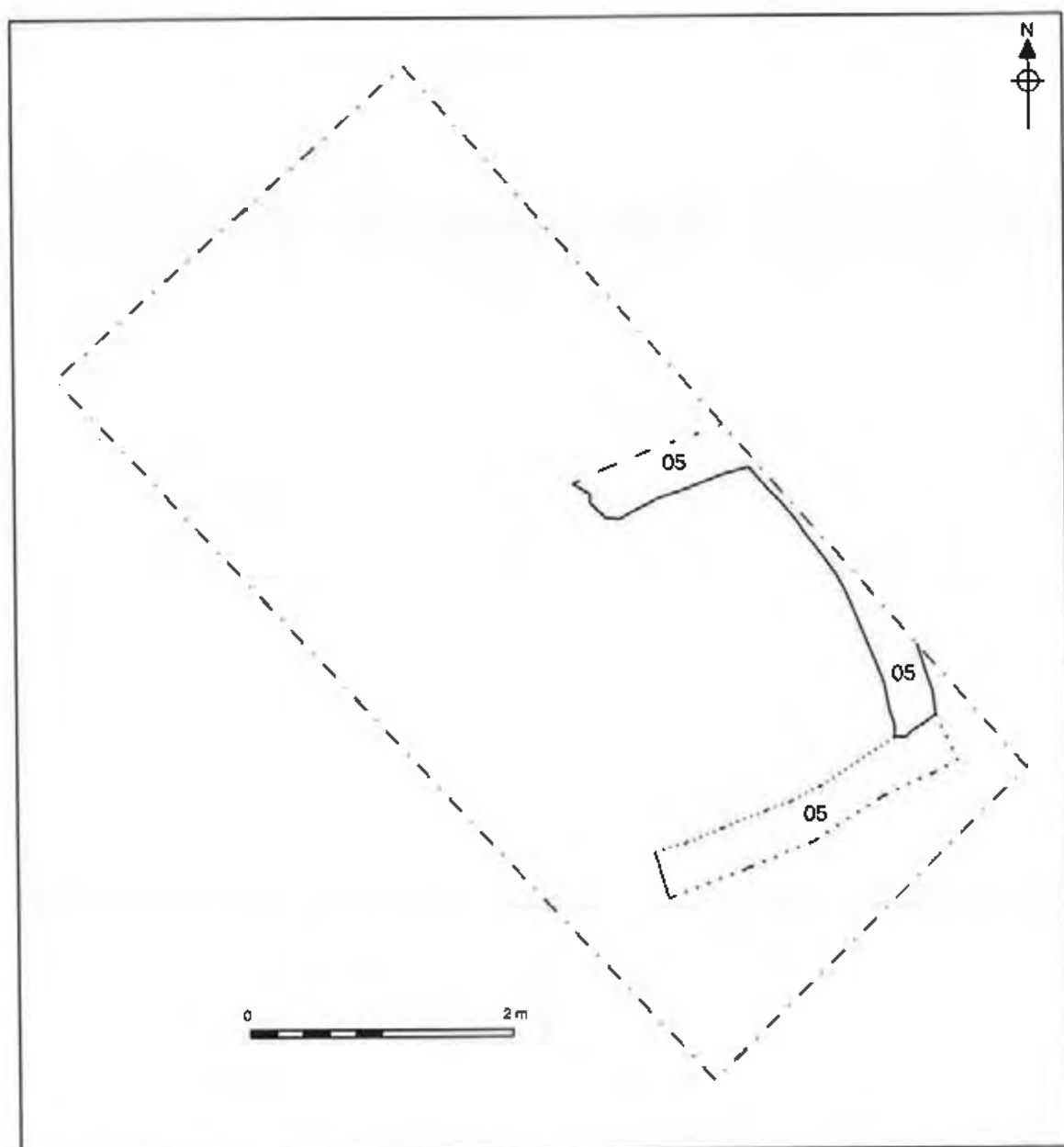


Figure 19. Plan of Trench 13. Scale 1:50

[04],) which contained many large fragments of concrete and steel pipe (Plate 12) as well as other debris such as brick rubble and reinforcing rods; this material was overlain by about 0.4m of yellowish sand and gravel hoggin, topped by a thick, if somewhat fragmentary, asphalt surface. The lowest elements of deposits [03] and [04] smelt strongly of diesel and were undoubtedly heavily contaminated with hydro-carbons. The concrete structures had at some stage almost certainly contained fuel tanks of some sort.

It was not possible to shore the trench without removing concrete structure [05], which almost certainly also had a concrete floor. Neither was it possible to dig out or break up the structure without the loose, rubble-rich side of the trench collapsing. Therefore, after recording the structure from the extant ground surface, the trench was backfilled.

Assuming that the floor of concrete structure [05] and any bedding layers beneath it are no more than 0.5m thick, it is theoretically possible that, if the Late Saxon defensive ditch does run through Area 2, between 0.3m and 0.9m of the base of the ditch may yet survive. This calculation is based on all of the recorded basal levels of the ditch and assumes that the base is relatively flat.

6.0 Results from Window Samples

Area 3, 50582N: Window Samples 1 to 9 Figs. 20-28

Area 3 was located wholly within the previously mentioned St. Margaret's Croft, a 'green space' within the city that was not built on intensively until the late 19th century. The results from Window Samples 1 to 9 reflect this and indicate that the sequence of deposits recorded in Trench 12 is a good representation of Area 3 as a whole.

Undisturbed sands and gravels were commonly found in this area as high as 3.8m OD, 1.7m below the modern ground surface. This would seem to be the general level of the upper horizon of geologically-derived deposits. What are probably backfilled quarry pits, similar to those found in Trench 12, were recorded in Window Samples 5, 7 and 9. The depth of these quarry pits varied from 2.2m to 3.6m below the modern ground surface. Quarrying activity thus appeared to have been fairly localised and in the form of opencast pits, not more than a few metres across and less than 2m deep in relation to the ground surface at their time of excavation.

The whole of Area 3 above the undisturbed sands and gravels or backfilled quarry pits was covered with a garden soil type material with an average depth of 0.5m, and overlain by between 0.6 and 1.5m of rubble from demolition of the Victorian housing and industrial buildings that occupied Area 3 until the mid 20th century. Towards the north-western corner of Area 3, a deeper rubble-filled disturbance connected with the construction or destruction of these Victorian buildings, was encountered in Window Samples 2 and 3. The base of this disturbance was between 2m and 2.9m below the modern ground surface.

Area 2, 50582N: Window Samples 10 to 15 Figs. 29-34

The window samples in this area were arranged in a line from northwest to southeast, in order to detect the Late Saxon defensive ditch.

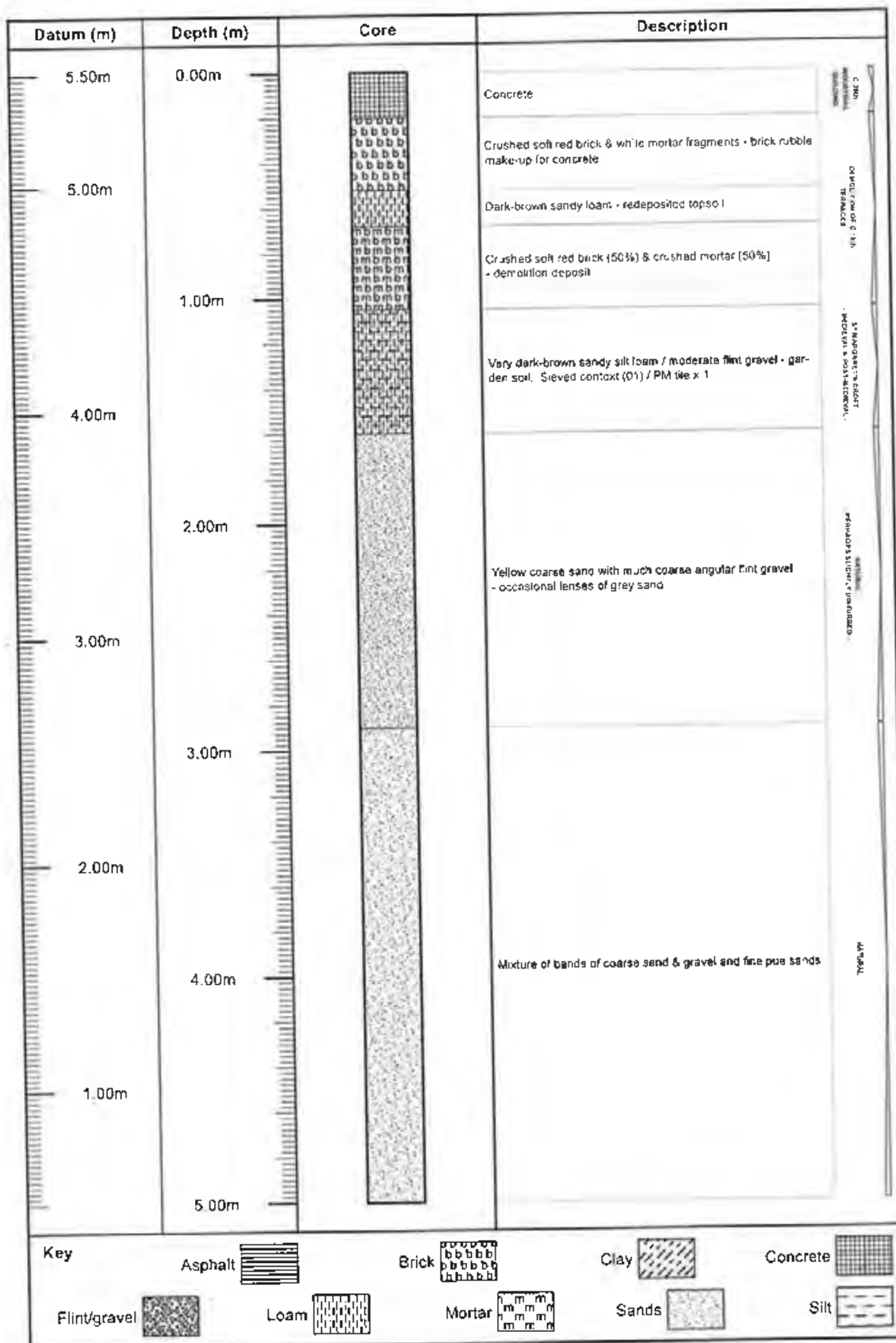


Figure 20. Window Sample 1

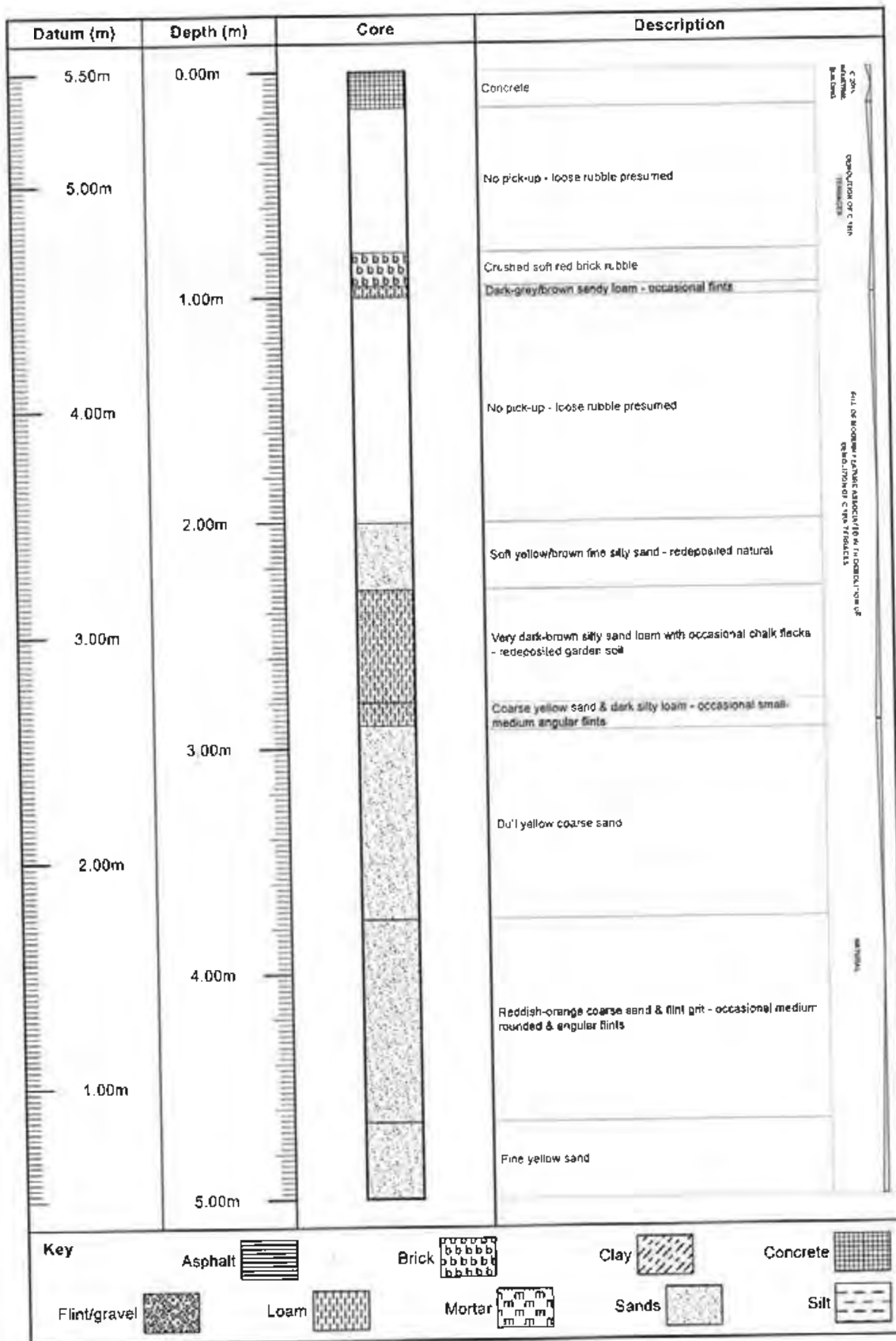


Figure 21. Window Sample 2

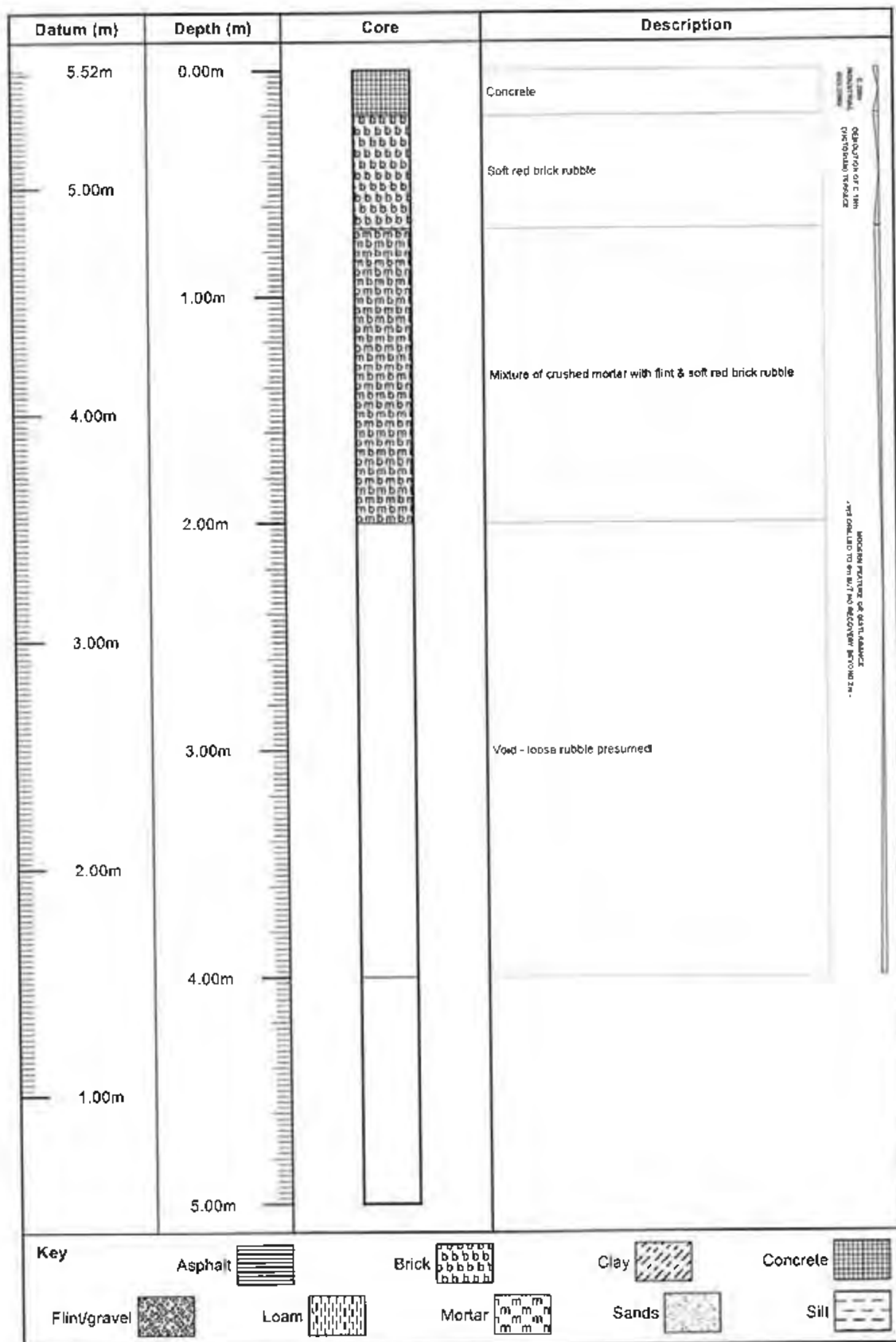


Figure 22. Window Sample 3

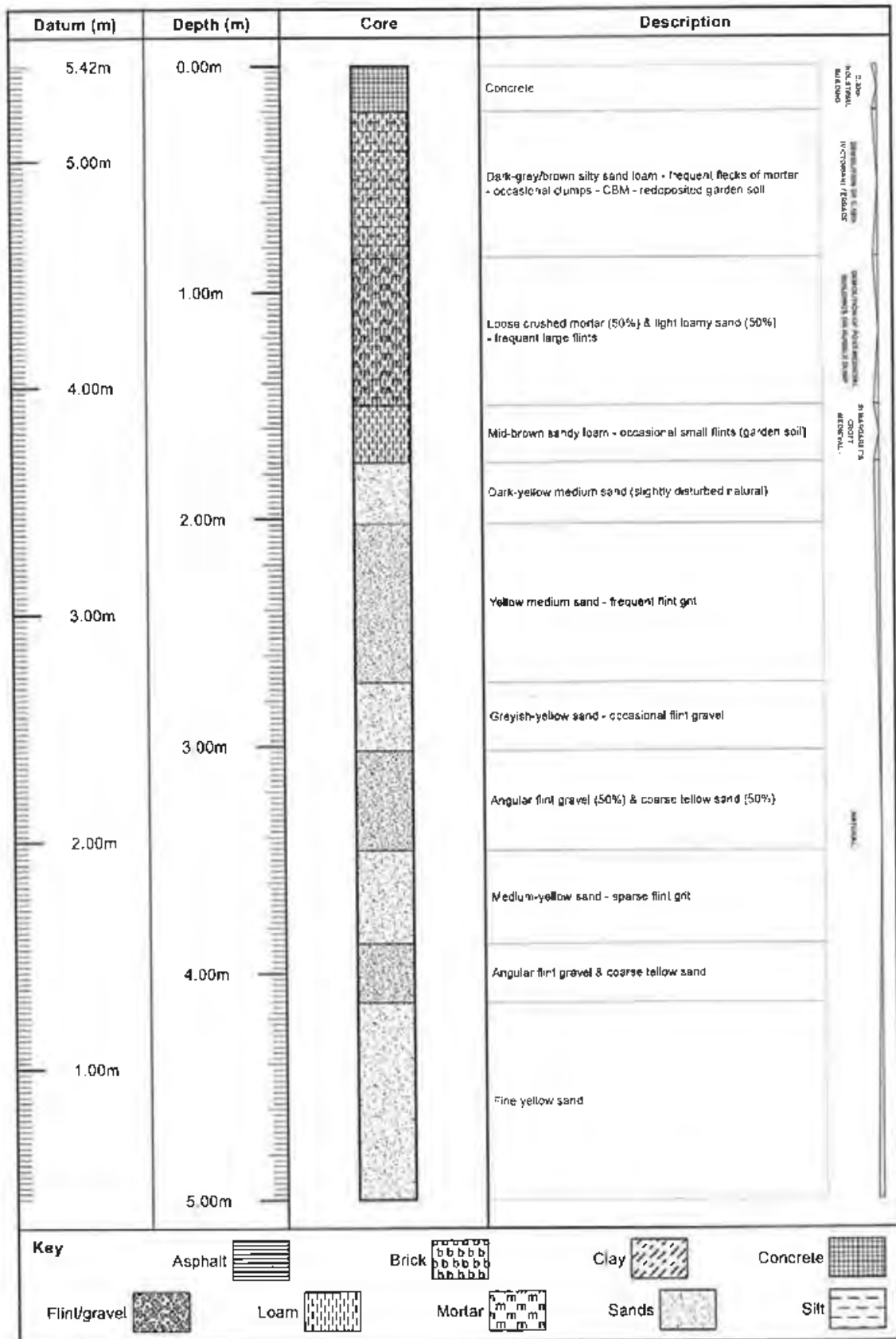


Figure 23. Window Sample 4

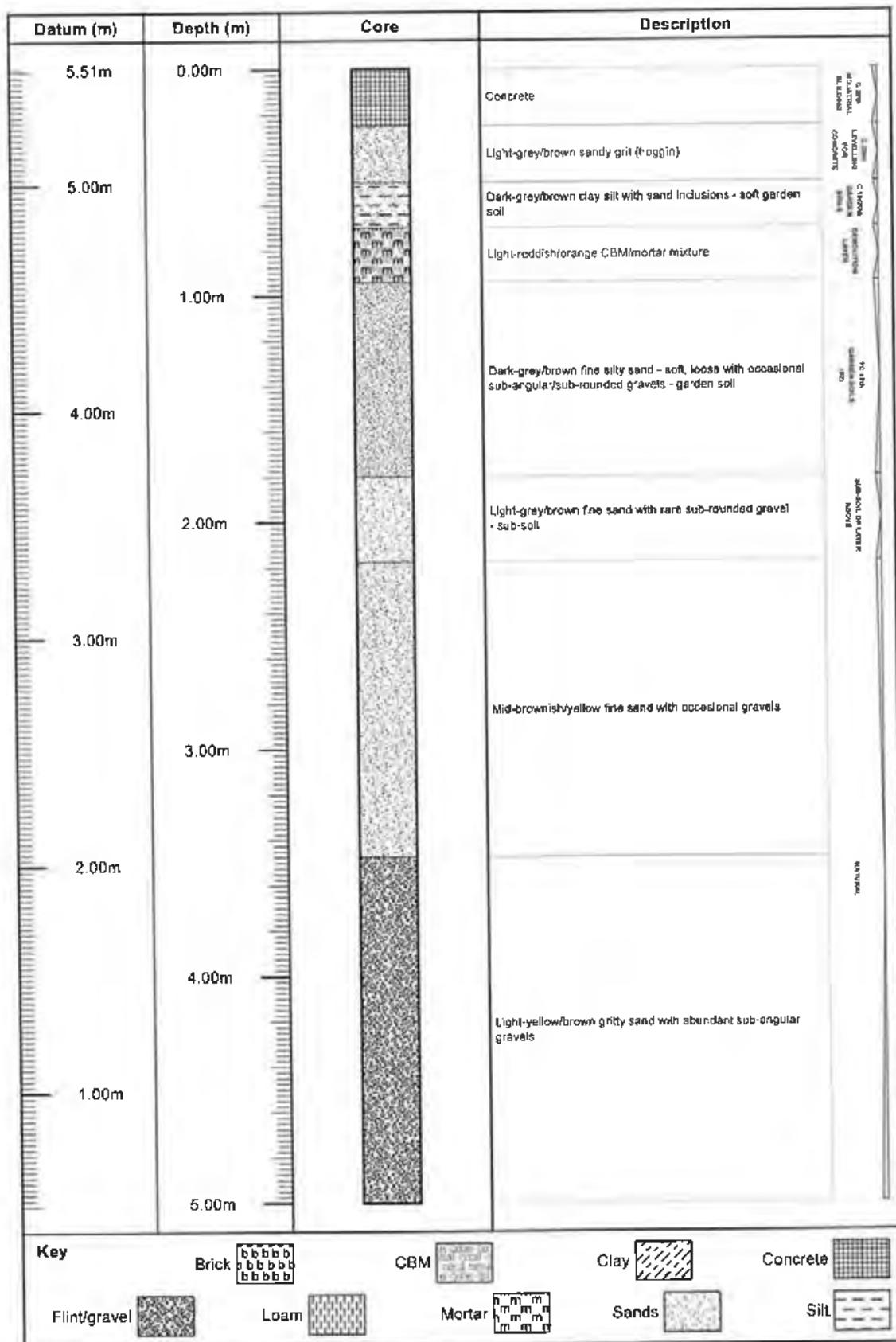


Figure 24. Window Sample 5

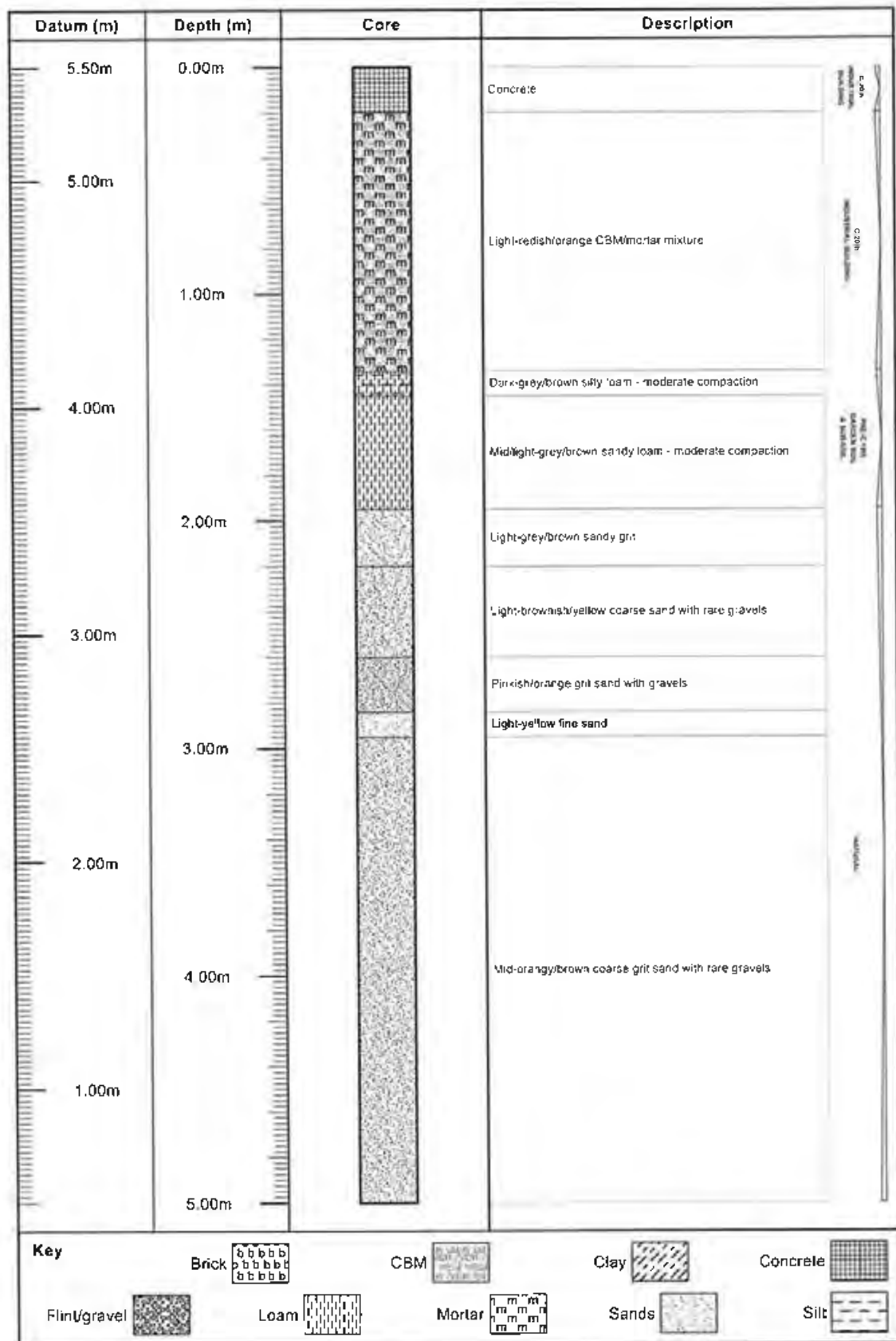


Figure 25. Window Sample 6

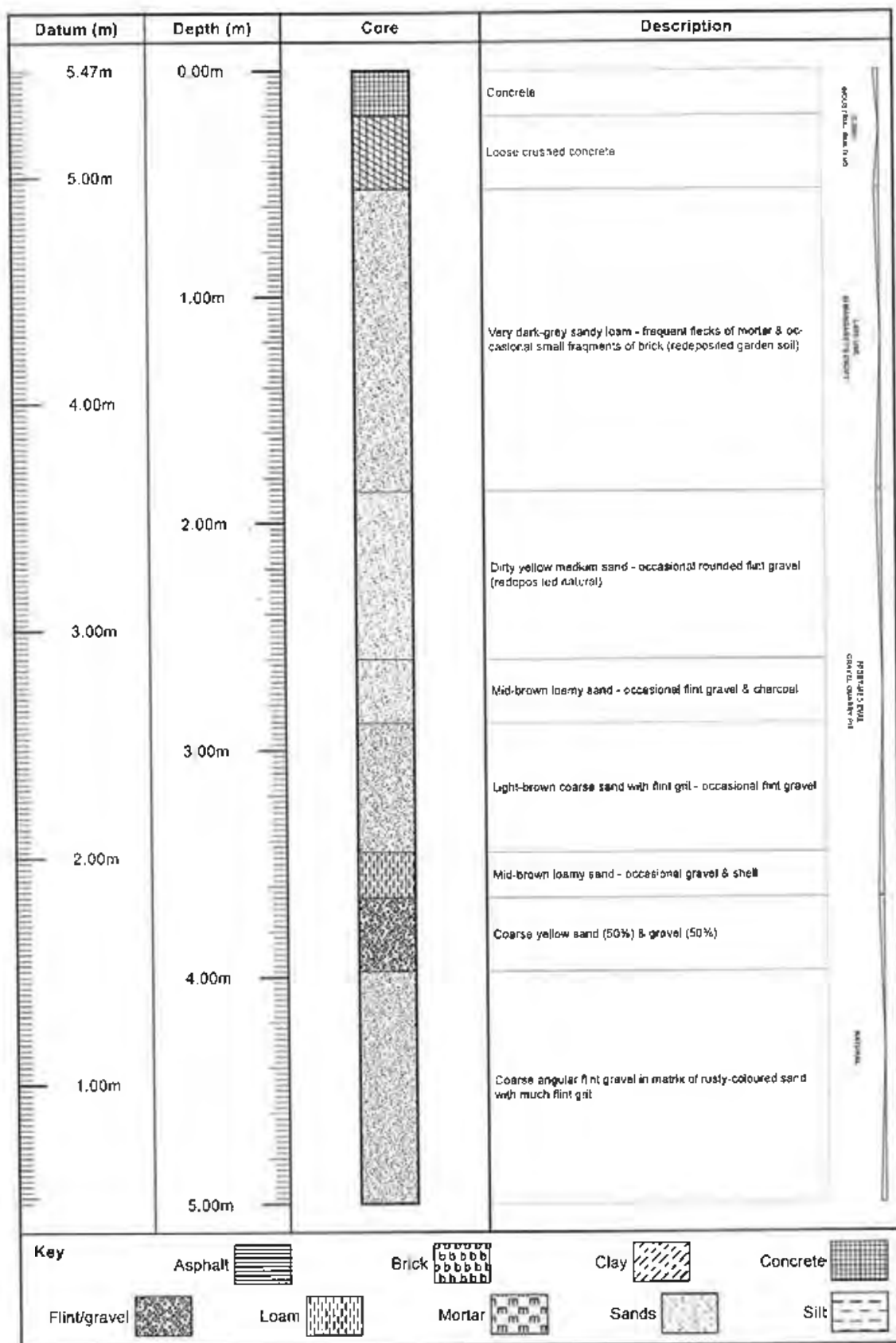


Figure 26. Window Sample 7

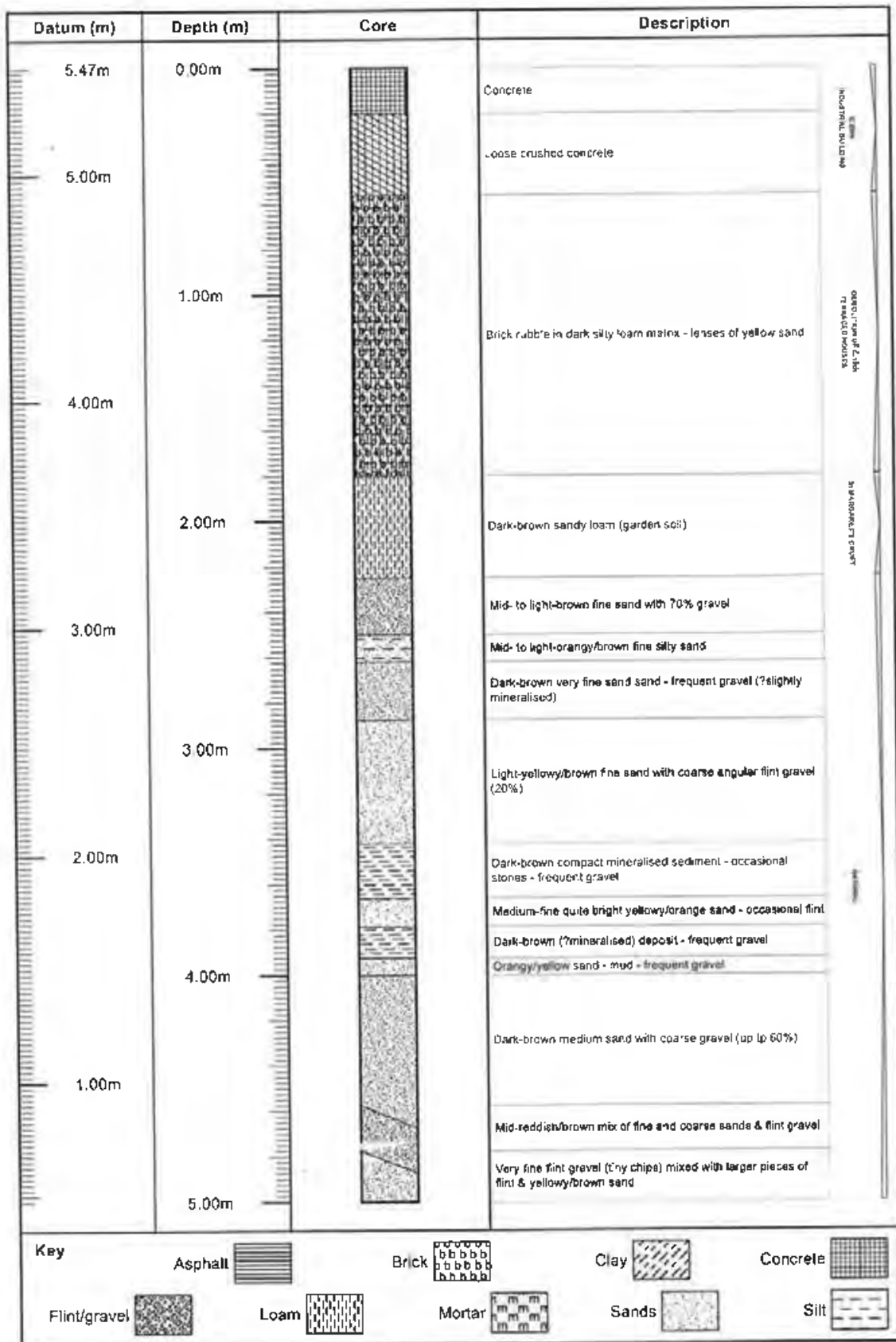


Figure 27. Window Sample 8

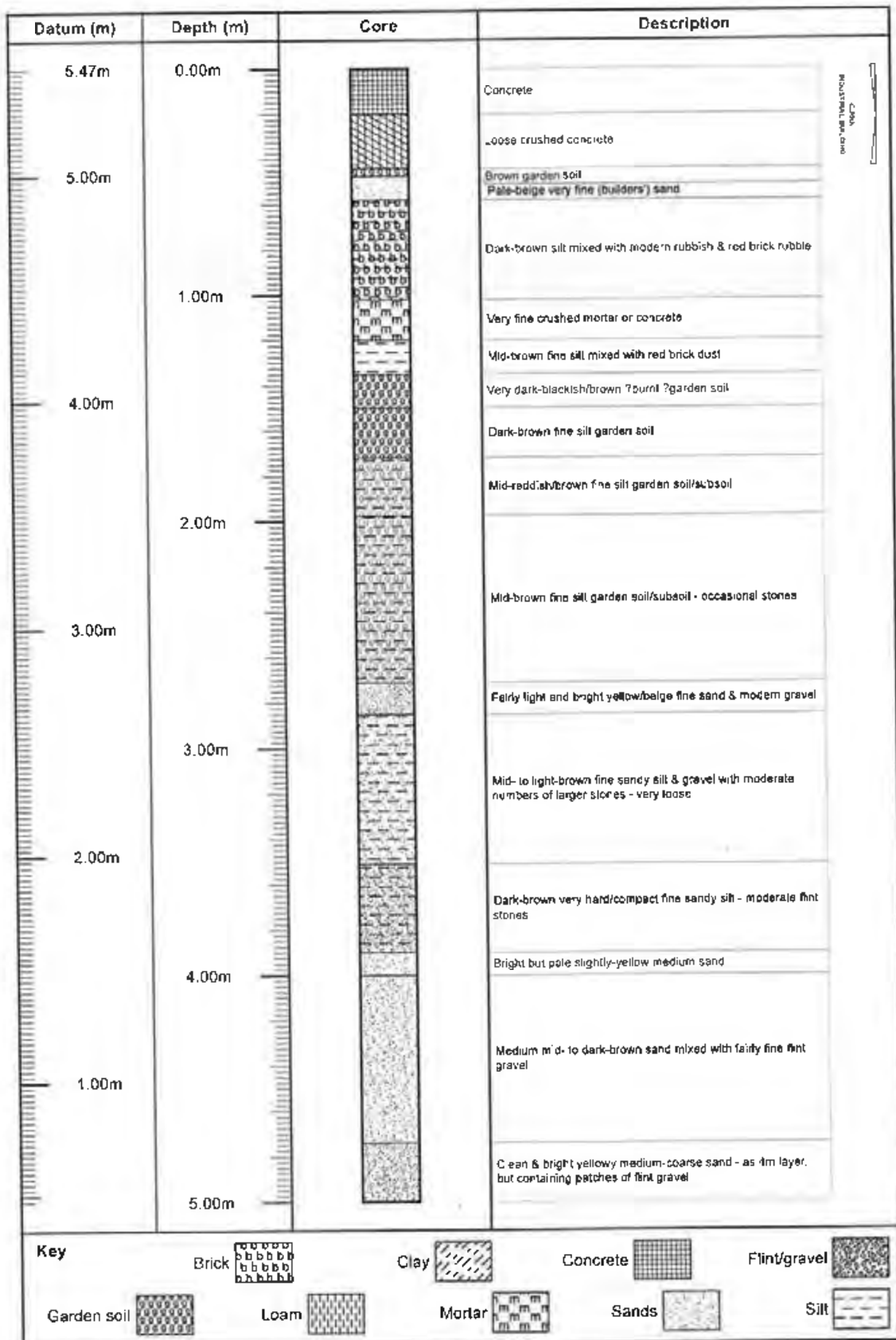


Figure 28. Window Sample 9

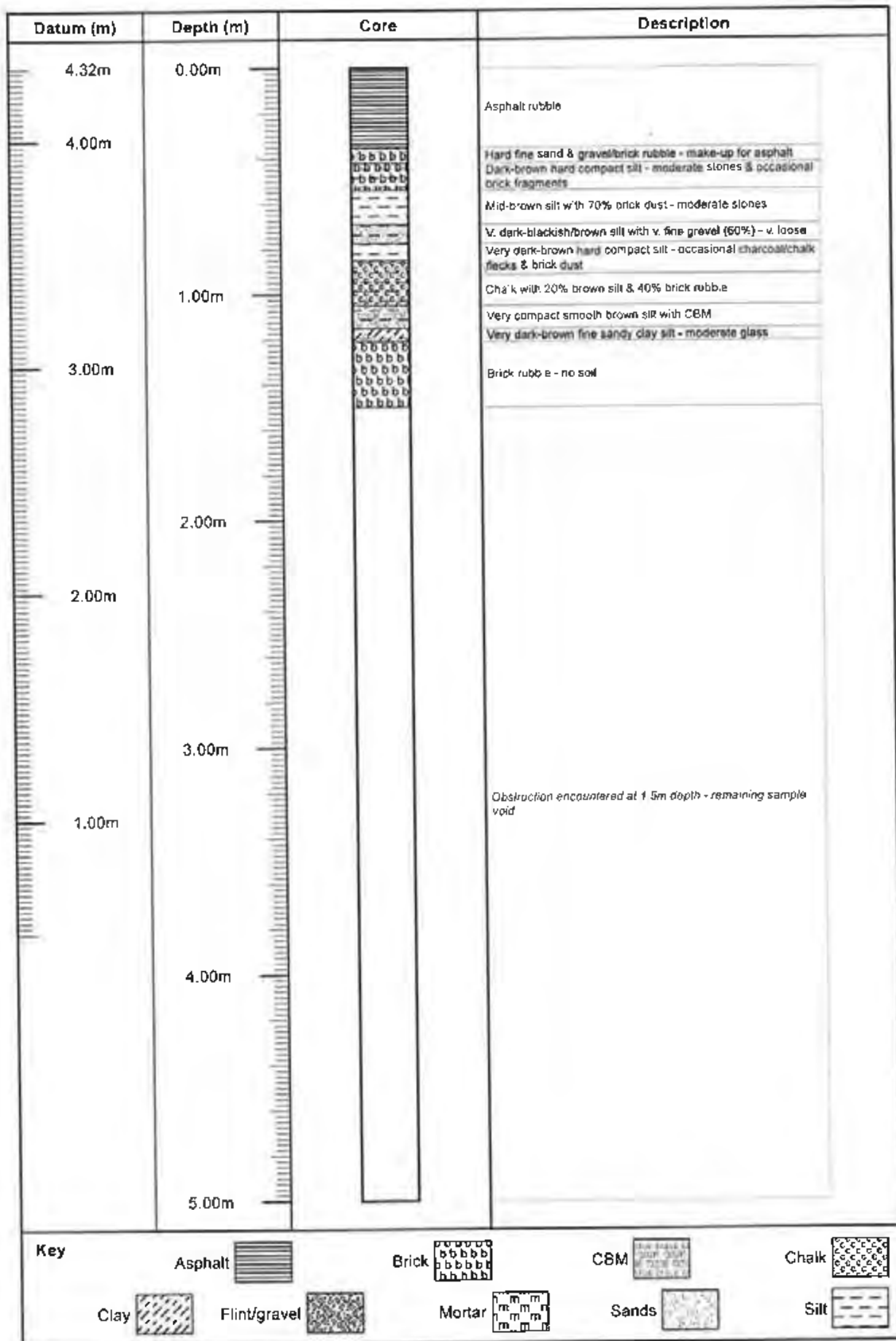


Figure 29. Window Sample 10

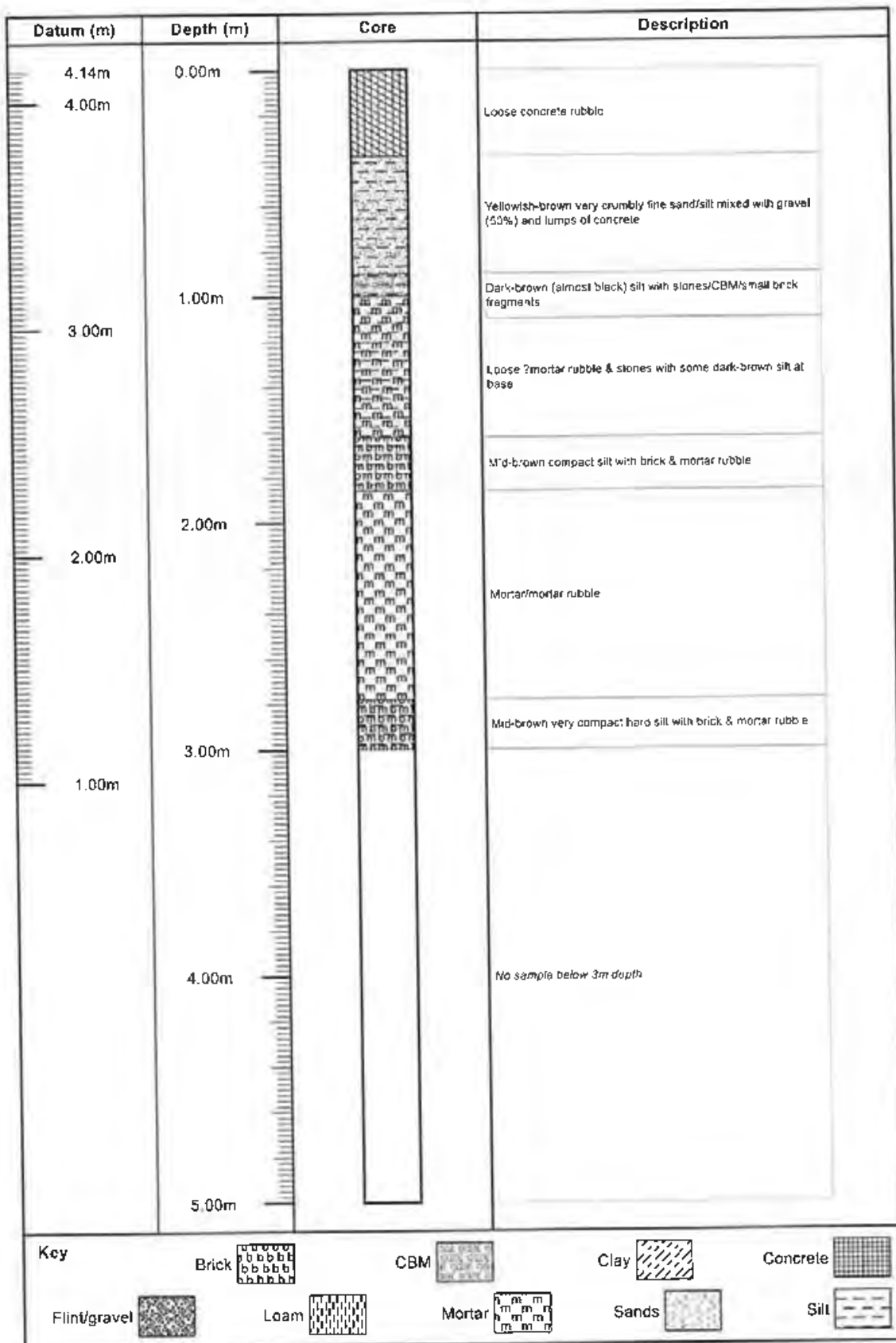


Figure 30. Window Sample 11

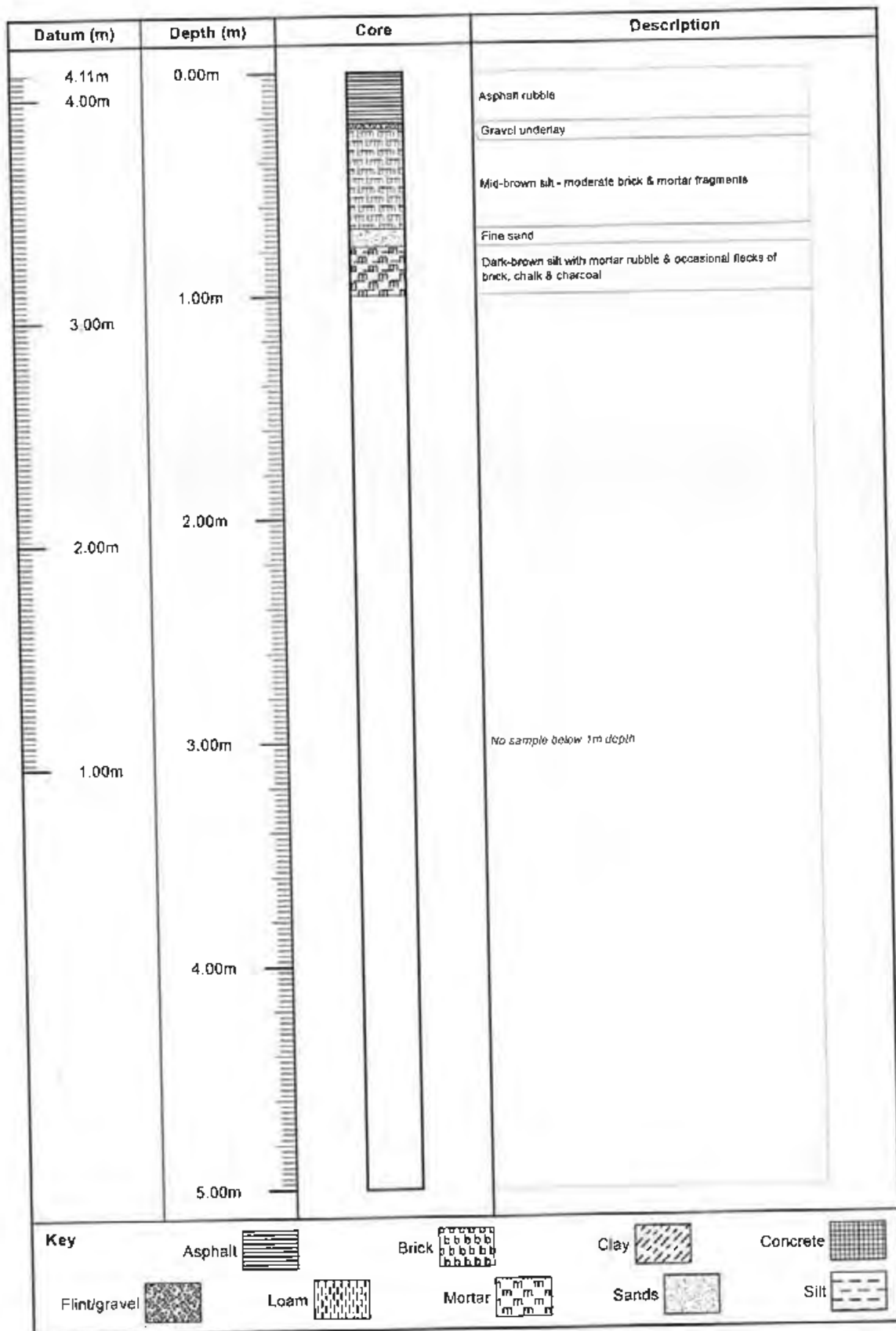


Figure 31. Window Sample 12

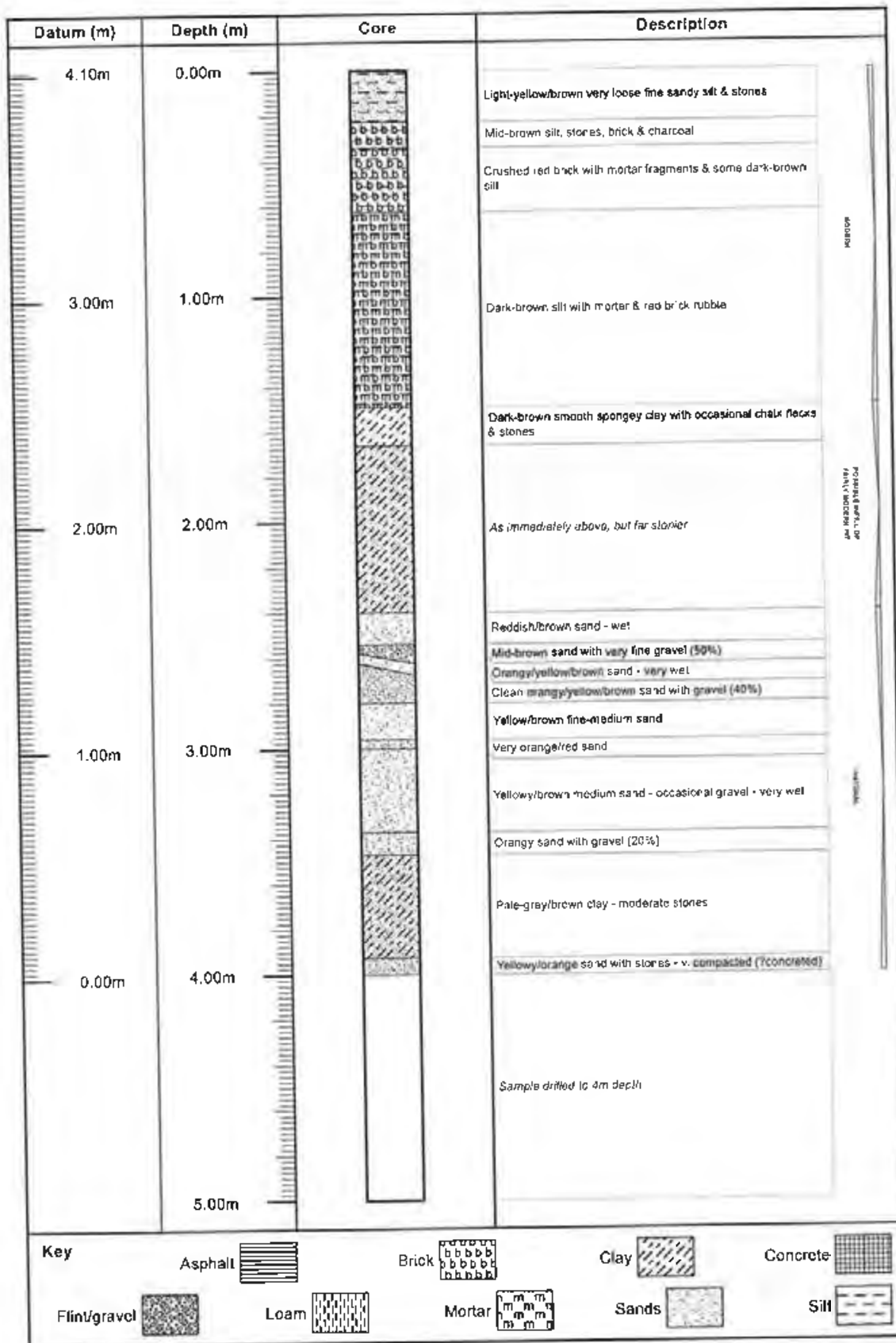


Figure 32. Window Sample 13

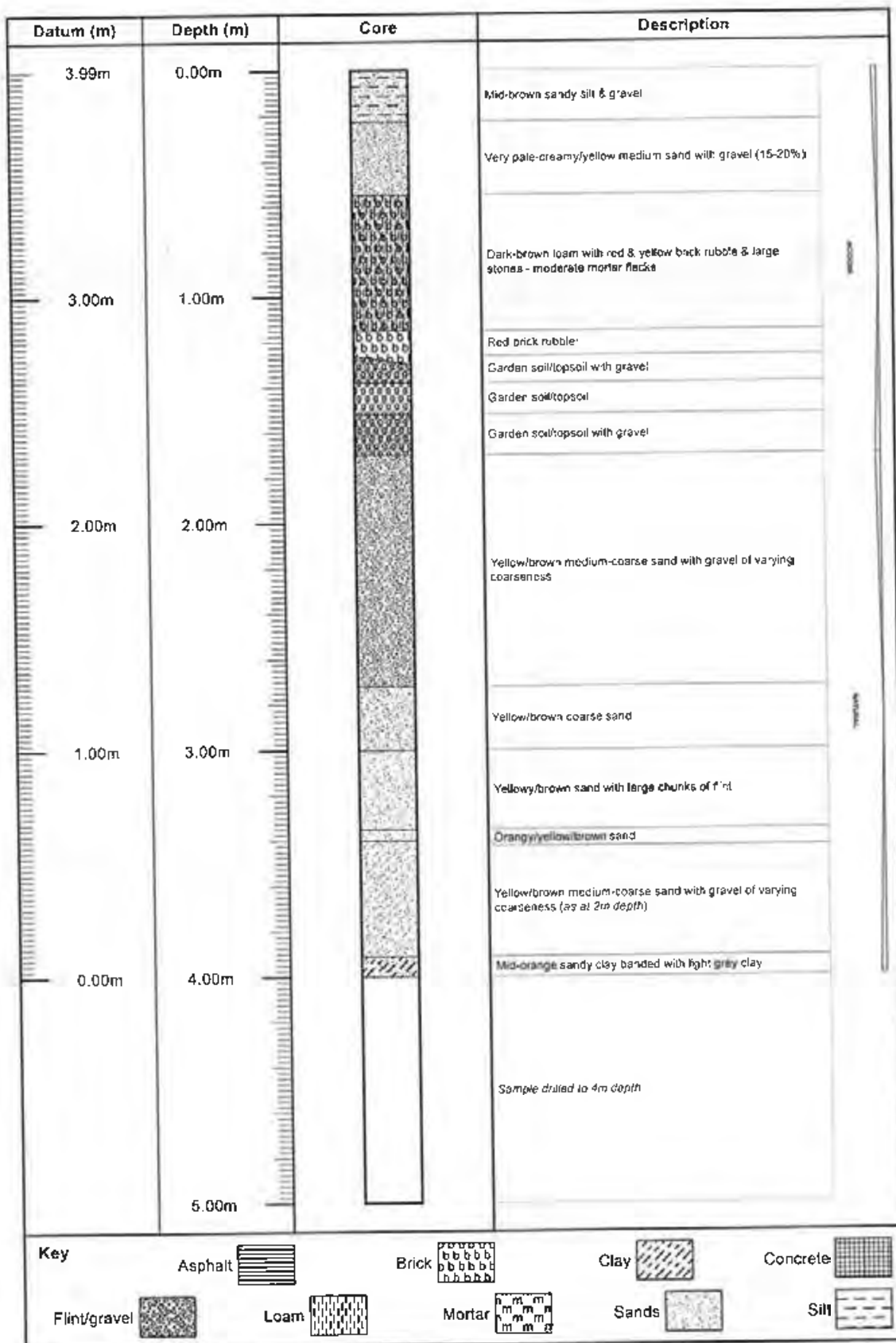


Figure 33. Window Sample 14

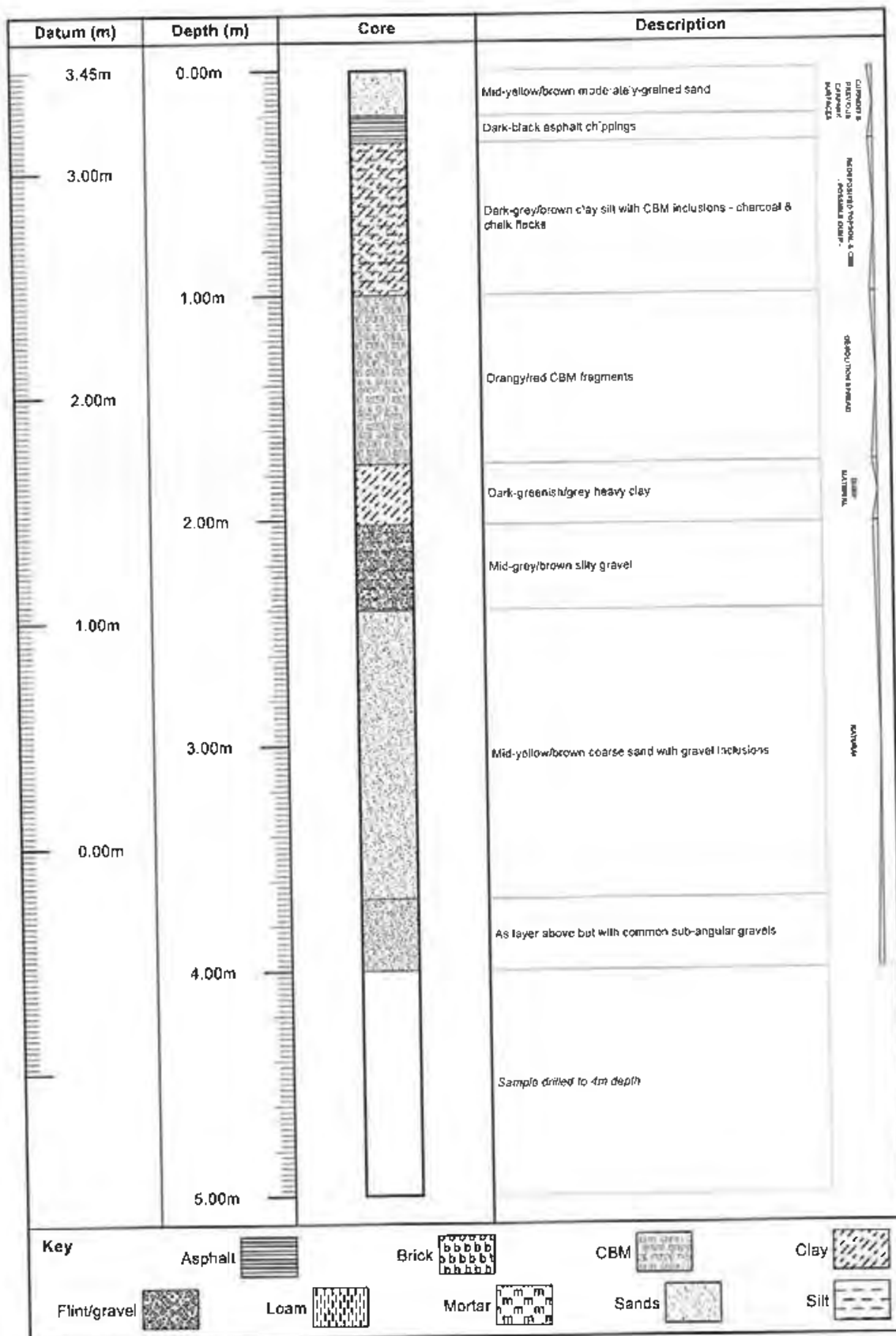


Figure 34. Window Sample 15

Multiple attempts were made to take Window Samples 10, 11 and 12. In the end, Window Sample 10 reached a depth of 2m below the modern ground surface, Window Sample 11 was driven to a depth of 3m before an obstruction was encountered, and only 1m was recovered from Window Sample 12. The majority of the deposits in these samples consisted of rubble of various sorts. Analysis of the samples suggested that a backfilled cellar or similar structure probably occupied the eastern side of Area 2 and the Ordnance survey 1:500 plan of 1885 shows the whole of Area 2 as covered by a large, presumably industrial, building. The excavation of Trench 13 proved that the eastern side of Area 2 had been heavily disturbed by the construction and removal of underground fuel tanks in the 20th century.

Undisturbed sands and gravels were recorded between 1.7m and 2.4m below the modern ground surface in Window Samples 13 to 15. The untruncated level of these deposits on the western side of Area 2 is probably about 1.7m below the modern ground surface (2.3m OD). A possible feature, filled with chalk flecked clay, was recorded in Window Sample 13. This feature is most likely to be of late post-medieval date. A rubble-filled disturbance associated with construction or demolition of the Victorian industrial building was encountered in Window sample 15. The uppermost metre of Window Samples 13 to 15 was mostly taken up with rubble-rich deposits, probably the result of ground clearance in the 1960s.

7.0 Conclusions

Area 1

The Late Saxon defensive ditch

In terms of basal levels, planar position, and the date and nature of their fills, there can be little doubt that the large cuts recorded in the bases of Trench 6 and 7 do represent parts of the Late Saxon town defensive ditch. In the 281N Botolph Street excavations in the 1970s, the base of the ditch was recorded at levels of between 0.3m and 0.5m OD (Evans and Davison, 1985 fig. 27), while in Trench 6 of this evaluation it was recorded at 0.8m OD, and in Trench 7 at 1.4m OD. The nature of the ditch fills recorded to the south of the present investigations, at site 840N, Calvert Street (J. Bown, pers. comm.), and to the north at site 281N (Evans and Davison 1985,) are, however, remarkably consistent with those detected in Trenches 6 and 7.

Although the western side of a cut was picked up in Trench 6 and an eastern side in Trench 7, due to the relatively limited size of the trenches it was impossible to determine where within the sequence of ditch recuts recorded in 281N (see Evans and Davison 1985, fig.27) these fit.

Even taking into account this uncertainty, the presence of the ditch cuts recorded in Trenches 6 and 7 casts doubt upon the interpretation of a large feature recorded in the 1970s 284N excavations west of St. George's Street (Evans and Davison 1985, plate XV). This feature was considered to be the western side of the Late Saxon ditch. If this were the case, it would mean that the entire width of the ditch, including all its recuts, would have to be a minimum of 16m wide but, where complete profiles of the ditch have been recorded (at site 281N to the north and at Calvert Street (site 840N, see Hutcheson and Penn 2007) to the south), these

were 6m to 8m wide and 7.5m wide, respectively. One possible, but unlikely, explanation is that there is a marked kink or curve in the line of the ditch between Trenches 6 and 7. It is more likely, however, that the feature recorded in 284N was not the ditch but, rather, a large pit for the extraction of iron-rich sands and gravels for smelting.

Evans and Davison (1985, 116) state that "evidence shows that long after going out of use as a boundary, it [the ditch] survived as a recognisable landmark and was converted into a lane". Implicit in this statement is the idea that St. George's Street overlies or echoes the line of the ditch. The results from Trenches 6 and 7 thus arguably create more problems than they solve when considering the spatial and temporal relationships between the infilling of the Saxon ditch and the medieval and later street pattern. Botolph Street, for example, which crosses the line of the defensive ditch, is thought to date back to the 11th century (K. Penn, pers. comm.). Further investigation into these relationships is one possible focus for future research.

Future research might perhaps also focus on refining the dating sequence for the construction, recutting, and infilling of the ditch. Evans and Davison (1985, 116) concluded that the ditch was "in existence by the 10th century". This conclusion was based on pottery dates, as the results from their two carbon 14 samples were inconclusive, but even if their radiocarbon evidence had been more categorical, it would have provided a date for post-use phases of infilling rather than for the construction of the ditch. Evans and Davison concluded that infilling began shortly after the ditch was dug. This proposition has yet to be tested. Two relatively recent advances in scientific dating could be useful in this regard. The first is Optically Stimulated Luminescence or OSL dating, which could be used to date the initial excavation of the ditch. The development of Accelerator Mass Spectrometry (AMS) radiocarbon techniques also means that it is now possible to date very small carbon 14 samples and, if enough are taken, Bayesian statistical analysis of the results can refine chronological sequences dramatically.

The St. George's Street frontage

The evidence recovered from Trenches 6 and 7 probably gives a misleading impression of activity along the eastern frontage of St. George's Street post-dating the infilling of the Saxon ditch. In both trenches, the majority of features and deposits dating from about 1200 to 1700 A.D. had been removed by the construction of late post-medieval and Victorian cellars. The two Victorian cellars found in Trenches 6 and 7 both relate to public houses. Wall [04], seen in Trench 6, formed the southern wall of the Crown and Anchor, which existed from the early 19th century until 1937. The cellar formed by wall [04] probably dates from the second half of the 19th century, when the Crown and Anchor was owned by Morgan's brewery (information from www.norfolkpubs.co.uk). The cellar formed by wall [46], in Trench 7, relates to the Duke of Sussex public house, which traded from the 1840s until its compulsory purchase in 1961 (information from www.norfolkpubs.co.uk). A late 19th century date seems most likely for the construction of the cellar associated with wall [46]. The Ordnance Survey 1885 plan marks only two public houses on the eastern frontage of St. George's Street within Area 1 and both of these were sampled by trenches. The need for large amounts of cool storage space and investment by relatively wealthy breweries in the late 19th century accounts for the presence of the two cellars. It is unlikely that

many other buildings on the eastern frontage of St. George's Street had such large, deep cellars. Therefore it is likely that, on other (untested) parts of the eastern frontage of St. George's Street, the remains of medieval buildings and similar complex structures and deposits may survive.

Area 2

The Late Saxon defensive ditch

Unfortunately, the lack of definite results from Trench 13 cannot be taken as clear evidence of the absence of the Saxon ditch in Area 2. As mentioned above, it is theoretically possible that the very truncated remains of the ditch may still survive below the basal level of the fuel tanks on the eastern side of Area 2. An appraisal of recent archaeological work in the vicinity of Trench 2 indicates that this, however, is unlikely. The former Hunter's Squash Club site, immediately west of Area 2, has also been the subject of an archaeological evaluation by trial trenching. No evidence of the ditch was recorded there (Birks 2007, 23). Two other recent investigations lay approximately 100m east of Trench 13, east of the Magdalen Street frontage at Zipfel's Court (Watkins 2007), and to the rear of the Cat and Fiddle public house (Emery 2006). Both failed to locate the ditch. This means that it probably runs south of the Cat and Fiddle public house, passing underneath 101 to 103 Magdalen Street and/or the western end of Cowgate.

The former filling station

The depth and nature of the concrete structures encountered on the western side of Area 2 was surprising. As mentioned above, the concrete structures undoubtedly encased steel fuel tanks which contained diesel, heating oil or similar. The scale and form of these fuel tanks was possibly larger and more elaborate than those required for a regular filling station. Furthermore, an environmental review report on the site states that "The filling station was decommissioned in c. 1993 at which time the underground fuel tanks were slurry-filled" (Gilby 2005, 6). This indicates that the underground fuel storage tanks for the filling station were not removed at the time of its decommissioning. The buildings and superstructures of the filling station remained until their demolition approximately ten years ago. It is unlikely that any underground fuel storage tanks were removed during this demolition. It is possible they remain intact below the concrete surface in the central and southern parts of Area 2.

Below an inspection cover close to the south-east boundary fence of Area 2, a gauge or meter attached to a steel pipe can be seen. This pipe appears to run southwards under Edward Street. It is possible, therefore, that the now removed fuel tanks encountered in Trench 13 either supplied diesel to a pump in the loading bay area south of Edward Street, or fuel oil for heating systems within the main body of the shopping centre.

It was reported by a passerby that the filling station had been operated by Dolphin Autos Ltd of Norwich.

Area 3

St. Margaret's Croft

Evidence from Trench 12 and Window samples 1 to 9 confirms that Area 3 remained as open ground and was probably used for grazing and horticultural purposes until the second half of the 19th century. The sand and gravel quarrying activity detected was probably sporadic and post-medieval in date.

Late Victorian terraced houses and industrial buildings

The evidence from Trench 12 suggests that construction of Victorian or Edwardian terraced houses on the north side of Rose Yard removed all traces of the 19th century cottages which had stood there. To the south of Trench 12, remains of the dense complex of what were largely industrial buildings of Victorian date probably survive beneath the concrete slab which forms the current ground surface.

Area 4

The St. George's Street Frontage

Although located less than 7m west of the St George's Street frontage, Trench 1 failed to produce any evidence of buildings. This is all the more surprising because the Ordnance Survey 1:500 plan of 1885 indicates that the rear of what was probably a row of late Victorian terraced houses, extended into the eastern side of Trench 1. This and the horticultural nature of the remains recorded in Trench 1 leads to the conclusion that there has probably been considerable truncation of the western frontage of St. George's Street in the environs of Trench 1. This truncation may be quite localised. A ruinous commercial or industrial building of 20th century date stood on or close to Trench 1 until the 1990s. The construction and demolition of this structure may have removed the remains of earlier buildings of probable 19th century date.

The small, south-eastern salient of Area 4, in which trench 1 was located, lies immediately west of an area called Cherry Tree Yard on the Ordnance Survey 1:500 plan of 1885. Hutcheson and Penn (2007, 9) concluded that this area, formerly known as Cherry Ground, which would have encompassed Trench 1, was open ground until the late 18th century. The reason that they give for this is that the Cherry Ground was formerly the churchyard of St. Olave's, an 11th century church probably located on the site of the present Surrey Chapel and demolished by 1546. As no burials were detected in Trench 1, it is clear that either not all of the relatively large churchyard of St. Olave's had been used for burials prior to its destruction, or not all of the Cherry Ground was once the churchyard of St. Olave's. Further investigation is required to locate any burials and the remains of the church, and to delineate the extent of the churchyard.

Further north on the western frontage of St. George's Street, Trench 4 yielded much more concrete evidence of occupation and buildings dating back to the medieval period. In many ways, the features and deposits in Trench 4 are similar in date and character to those found further north on the St. George's Street and Botolph Street frontages by the Norwich Survey excavations of the 1970s (Evans and Davison 1985). The complexity and multi-period nature of the remains found in Trench 4 are probably much more representative of the western frontage of St.

George's Street as a whole than the relatively simple and sparse remains recorded in Trench 1.

Adjacent to the Pitt Street Frontage

The Pitt Street frontage itself was not sampled due to the presence of a large bund comprised, at least in part, of concrete rubble. Evidence of a well dated to the 13th century in Trench 5 indicates that there was almost certainly significant occupation of the Pitt Street frontage throughout the medieval period.

The Central Area

Trench 3 produced little evidence of activity occurring prior to the 15th or 16th centuries. Although much of the central part of Area 4 probably remained as open ground, used as yards and gardens into the post-medieval period and beyond, the date of the pits found in Trench 3 may be significant.

In Trenches 2, 3 and 5, most of the pit-digging activity dated to the 16th and 17th centuries. This was almost certainly linked to the influx of migrants from the Low Countries into Norwich from the late 16th century. The Dutch 'strangers' had a distinctive material culture. Dutch-type pottery was recovered from all of the Trenches in Area 4. Similar evidence for a Dutch presence was found at site 170N in the north part of Area 4 (Evans and Davison 1985, 108). Further investigations are arguably needed to investigate the extent and nature of the 'Stranger' material culture and the, often poorly documented, presence of immigrants.

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Appendix 1: Context Summary

Area 1 50581N

Context	Trench	Category	Cut	Description	Period
1	6	Layer		Part rubble backfill of C18 cellar	Modern
2	6	Layer		Rubbly deposit over floor surface [03]	Modern
3	6	Floor	42	Brick and tile cellar floor	Modern
4	6	Wall	36	Brick wall of Victorian cellar	Modern
5	6	Wall	43	C18(?) flint wall	Post-medieval
6	6	Layer	42	Bright yellow sand bedding layer for floor [03]	Modern
7	6	Ditch fill	92	Sand and gravel fill of Saxon ditch	Post-medieval
8	6	Ditch fill	92	Dark brown silty sand fill of Saxon ditch	Post-medieval
9	6	Ditch fill	92	Sand and gravel fill of Saxon ditch. Under [08].	Post-medieval
10	6	Ditch fill	92	Dark brown silty sand fill of Saxon ditch.	Post-medieval
11	6	Layer		Brick and mortar demolition rubble filling cellar.	Modern
12	6	Layer		Light grey-brown sand levelling layer.	Modern
13	6	Layer		Backfill of cellar, levelling layer.	Modern
14	6	Layer		Backfill of C18(?) cellar.	Modern
15	6	Layer		Sand and gravel levelling layer.	Modern
16	6	Surface		Modern tarmac surface and sand bedding layer.	Modern
17	6	Layer		Demolition rubble used to fill poss C18 cellar.	Modern
18	6	Layer		Dark brown clay with rubble inclusions.	Modern
19	6	Ditch fill	92	Upper fill of Late Saxon ditch?	Medieval
20	6	Ditch fill	92	Fill of Late Saxon ditch?	Medieval
21	6	Layer		Thin layer of silt over last demolition phase.	Modern
22	6	Ditch fill	92	Poss. gravel surface and/or fill of Saxon ditch.	Medieval
23	6	Ditch fill	92	Dark, possibly burnt dump of material within ditch	Medieval
24	6	Ditch fill	92	Dump of silt within Saxon ditch.	Medieval
25	6	Ditch fill	92	Mid-grey-brown clay silt.	Medieval
26	6	Ditch fill	77	Fill of small ditch/gully within old Saxon ditch.	Medieval
27	6	Ditch fill	92	Same as 38. Fill of Saxon ditch.	Medieval
28	6	Layer		Backfill/levelling layer filling poss. C18 cellar.	Modern
29	6	Layer		Backfill/levelling layer filling poss. C18 cellar.	Modern
30	6	Layer		Backfill/levelling layer filling poss. C18 cellar.	Modern
31	6	Layer		Backfill/levelling layer filling poss. C18 cellar.	Modern
32	7	Layer		Mortar layer. Possible floor surface.	Post-medieval
33	7	Ditch fill	94	One of upper fills of Saxon ditch?	Post-medieval
34	6	Ditch fill	92	Fill of Saxon ditch cut by C18 cellar and floor.	Medieval
35	6	Layer		Coal dust over floor [03].	Modern
36	6	Construction cut		Cut for wall [04]	Modern
37	6	Construction cut fill	36	Backfill after construction of wall [04].	Modern
38	6	Ditch fill	92	Same as 27. Fill of Saxon ditch.	Medieval
39	6	Ditch fill	92	Same as 34.	Medieval
40	6	Ditch fill	92	Same as 07. Fill of Saxon ditch.	Medieval
41	6	Layer		Similar to 15. Levelling layer under tarmac.	Modern

Context	Trench	Category	Cut	Description	Period
42	6	Construction cut		Cut for floor [03].	Modern
43	6	Construction cut		Cut for wall [05]. C18.	Post-medieval
44	6	Ditch fill	92	Fill of Saxon ditch.	Medieval
45	6	Ditch fill	92	Fill of Saxon ditch.	Late Saxon?
46	7	Wall		Concrete and flint wall.	Post-medieval
47	7	Ditch fill	94	One of upper fills of Saxon ditch?	Medieval
48	7	Ditch fill	94	Mortar dust from Masons' yard? Within [94]?	Medieval
49	7	Ditch fill	94	Coal cinders thrown into ditch.	Medieval
50	7	Ditch fill	94	One of upper fills of Saxon ditch? Same as 66.	Medieval
51	7	Ditch fill	94	Substantial fill within ditch [94].	Medieval
52	7	Ditch fill	94	Lens of mortar within [51].	Medieval
53	7	Ditch fill	94	Early fill of Saxon ditch?	Late Saxon?
54	7	Layer		Garden soil?	Modern?
55	7	Pipe trench(?) fill	56	Bright orange coarse sand with gravel. Fill of 56.	Modern?
56	7	Pipe trench(?) cut		Modern, angled linear cut. Filled by [55].	Modern?
57	7	Layer		Dark orange-brown silty sand; high iron content.	Post-medieval
58	7	Layer		Iron pan/manganese layer.	Post-medieval
59	7	Layer		Compact, almost black, silty sand under iron pan.	Post-medieval
60	7	Ditch fill	94	Same as 47.	Medieval
61	7	Ditch fill	94	Thin deposit between layers of mortar dust.	Medieval
62	7	Ditch fill	94	Thin layer of mortar dust - from masons' yard?	Medieval
63	7	Layer		Same as 54. Garden soil?	Modern?
64	7	Ditch fill	94	Thin layer of silty sand.	Medieval
65	7	Ditch fill	94	Thin layer of silt between layers of mortar dust.	Medieval
66	7	Ditch fill	94	Same as 50. Mortar/Stone dust layer.	Medieval
67	6	Natural		Orange gravel cut by Saxon ditch.	
68	6	Ditch fill	92	Secondary (clay) fill of Saxon ditch.	Late Saxon?
69	6	Ditch fill	92	Mid to dark brown silty sand fill of Saxon ditch	Medieval
70	6	Ditch fill	92	Orangish-brown, coarse sand fill of Saxon ditch	Medieval
71	6	Ditch fill	92	Mid grey-brown silty sand fill of Saxon ditch	Medieval
72	6	Ditch fill	92	Mid to light brown silty sand fill of Saxon ditch	Medieval
73	6	Ditch fill	92	Mid orangey-brown silty sand fill of Saxon ditch	Medieval
74	6	Ditch fill	92	Mid orange sand with gravel, fill of Saxon ditch	Medieval
75	6	Ditch fill	77	Mid grey brown sandy silt, fill of small Med ditch	Medieval
76	6	Ditch fill	92	Pale orange medium sand, fill of Saxon ditch	Medieval
77	6	Ditch		Small N-S ditch cut into [92]. Filled by 26 and 75	Medieval
78	VOID				
79	7	Surface		Asphalt surface. 1970s car park.	Modern
80	7	Layer		Make-up layer below asphalt.	Modern
81	7	Dump		Demolition rubble within earlier building.	Modern
82	7	Wall		Brick, possible rebuild on top of wall [46].	Modern
83	7	Ditch fill		Late C20, imported sandy topsoil.	Modern
84	7	Pipe trench fill	85	Mid brown sandy loam modern rubble	Modern

Context	Trench	Category	Cut	Description	Period
85	7	Pipe trench cut		Cut of Modern services	Modern
86	7	Layer		Mid to dark brown sandy loam surface	Post-medieval
87	7	Dump		Mid to light brown loam topsoil dump	Post-medieval
88	7	Dump		Mid brown sand dump or topsoil build up	Post-medieval
89	7	Layer		Crushed mortar and flint demolition material	Post-medieval
90	7	Surface		Yellowish brown gravel, temporary car park surface	Modern
91	7	Surface		Asphalt car park surface	Modern
92	6	Ditch		Cut of Saxon ditch. Same as 94.	Saxon
93	6	Ditch fill	92	Primary fill of Saxon ditch.	Late Saxon?
94	7	Ditch		Cut of Saxon ditch. Same as 92.	Saxon
95	7	Ditch fill	94	dark brown silty sand silting event	Saxon
96	7	Ditch fill	94	Pale yellow brown sand redeposited natural	Saxon
97	7	Ditch fill	94	Dark brown sandy silt, formed in standing water	Saxon
98	7	Ditch fill	94	Mid brown silty sand silting event	Saxon
99	7	Ditch fill	94	dark brown sandy silt formed via gradual silting	Saxon
100	7	Ditch fill	94	Dark brown silt, primary fill	Saxon
101	7	Ditch fill	94	Orange brown sand initial edge erosion	Saxon
102	7	Ditch fill	94	Pale yellow coarse sand, redeposited natural	Saxon
103	7	Ditch fill	94	Pale yellow fine sand, redeposited natural	Saxon
104	7	Ditch fill	94	Mid olive green brown silting event	Saxon
105	7	Ditch fill	94	Pale yellow redeposited fine sand	Saxon
106	7	Ditch fill	94	Dark brown sandy silt, silting event	Saxon
107	7	Ditch fill	94	Orange coarse sand layer of redeposited natural	Saxon
108	7	Ditch fill	94	Pale yellow fine sand redeposited natural	Saxon
109	7	Pipe trench cut		E-W aligned pipe trench	Modern
110	7	Pipe trench fill	109		Modern
111	7	Pipe trench cut		NE- SW aligned Service trench	Modern
112	7	Pipe trench fill	111	Dark brown silty sand, backfill	Modern

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Context	Trench	Category	Cut	Description	Period
1	13	Layer		Asphalt	Modern
2	13	Layer		Yellow hoggin make-up	Modern
3	13	Layer		Sandy deposit with much concrete rubble	Modern
4	13	Layer		Sandy deposit with much concrete rubble	Modern
5	13	Wall		Concrete structure	Modern

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Context	Trench	Category	Cut	Description	Period
1	WS 1	Layer		Dark brown loam garden soil	Post-medieval
2	WS 5	Layer		Dark grey brown silty sand garden soil	Post-medieval

Context	Trench	Category	Cut	Description	Period
3	12	Floor		Concrete surface	Modern
4	12	Layer		Brick rubble hard core	Modern
5	12	Layer		Brick rubble demolition material	Modern
6	12	Dump		Demolition material	Modern
7	12	Dump		Crushed brick and mortar demolition material	Modern
8	12	Floor		External cement surface	Modern
9	12	Layer		Thin sand make up deposit for floor surface	Modern
10	12	Floor		External yard surface	Modern
11	12	Layer		Mid grey brown sandy silt garden soil	Modern
12	12	Wall		Brick construction of terraced housing	Modern
13	12	Floor		External yard surface	Modern
14	12	Dump		Redeposited topsoil and construction debris	Modern
15	12	Layer		Sandy make up layer	Modern
16	12	Pipe trench fill	17	Brick rubble and garden soil	Modern
17	12	Pipe trench cut		Linear, N-S aligned	Modern
18	12	Dump		Greyish white concrete rubble	Modern
19	12	Dump		Redeposited topsoil and crushed mortar	Modern
20	12	Wall		Linear, brick construction	Modern
21	12	Wall		Linear, brick construction	Modern
22	12	Layer		Orange sand floor bedding deposit	Modern
23	12	Layer		Mid brown loam, redeposited topsoil	Modern
24	12	Layer		Creamy white mortar, construction debris	Modern
25	12	Layer		Dark yellow coarse sand levelling deposit	Modern
26	12	Dump		Mid brown loam, associated with demolition	Modern
27	12	Wall	28	Linear, brick construction	Modern
28	12	Construction cut		Linear, with vertical sides	Modern
29	12	Dump		Mid grey white loam and mortar demolition material	Modern
30	12	Dump		Crushed brick and mortar demolition material	Modern
31	12	Dump		Orange brown sand associated with demolition event	Modern
32	12	Dump		Greyish brown loam, imported garden soil	Modern
33	12	Dump		Sandy gravel make up deposit	Modern
34	12	Dump		Crushed brick and mortar demolition material	Modern
35	12	Dump		Crushed brick and soot, associated with demolition	Modern
36	12	Wall		Linear, brick and cement construction	Modern
37	12	Pit		Small, steep sides with a concave base	Post-medieval
38	12	Pit fill	37	Mid orange brown gravelly deposit	Post-medieval
39	12	Pit fill	51	Mid grey brown sand back fill	Post-medieval
40	12	Pit fill	51	Redeposited natural topsoil back fill	Post-medieval
41	12	Pit fill	51	Natural derived sandy backfill	Post-medieval
42	12	Pit fill	51	Sandy silt topsoil/ natural backfill	Post-medieval
43	12	Pit fill	51	Sandy silt topsoil/ natural backfill	Post-medieval
44	12	Pit fill	51	Light- mid grey brown silty sand backfill	Post-medieval
45	12	Pit fill	51	Yellow brown silty sand with gravels, backfill	Post-medieval
46	12	Pit fill	51	Mid grey brown silty sand, backfill event	Post-medieval

Context	Trench	Category	Cut	Description	Period
47	12	Pit fill	51	Mid yellow brown silty sand, backfill event	Post-medieval
48	12	Pit fill	51	Mid yellow brown silty sand, backfill event	Post-medieval
49	12	Pit fill	51	Mid grey brown silty sand, back fill	Post-medieval
50	12	Pit fill	51	Mid grey brown silty sand, back fill	Post-medieval
51	12	Pit		Large gravel extraction pit	Post-medieval
52	12	Pit fill	51	Redeposited natural gravel and sand	Post-medieval
53	12	Pit fill	51	Mid reddish brown fine sand, backfill event	Post-medieval
54	12	Pit fill	51	Natural derived sandy backfill	Post-medieval

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Context	Trench	Category	Cut	Description	Period
1	1	Surface		Compacted gravel car park surface	Modern
2	1	Layer		Brick rubble demolition and rubbish	Modern
3	1	Pit fill	4	Creamy mortar with brown silt	Post-medieval
4	1	Pit		Cut of large pit	Post-medieval
5	1	Layer		Dark brown sandy silt garden soil	Post-medieval
6	1	Layer		Creamy mortar and brown silt building debris	Post-medieval
7	1	Layer		Mid brown fine sand naturally formed deposit	Post-medieval
8	1	Natural		Mid sandy orange fine sand with gravels	Undated
9	4	Wall		Flint and brick well lining	Post-medieval
10	4	Wall		E-W aligned flint and mortar wall	Medieval
11	4	Wall		E-W aligned flint and mortar wall	Medieval
12	4	Layer		Mid grey brown silty sand	Post-medieval
13	4	Construction cut		Linear, E-W aligned with vertical sides	Medieval
14	4	Construction cut fill		Mid orangey brown caly silt	Medieval
15	4	Layer		Dark brown silt with lenses of chalk	Medieval
16	4	In fill		Soot charcoal and sand backfill	Modern
17	4	Surface		Mortar and flint pad	Medieval
18	1	Posthole fill	19	Mid to dark brown sand	Post-medieval
19	1	Posthole		Small sub circular post hole	Post-medieval
20	1	Posthole fill	21	Mid brown sand	Post-medieval
21	1	Posthole		Small irregular post hole	Post-medieval
22	1	Horticultural cut		Irregular stepped terracing	Post-medieval
23	4	Layer		pale brown sand demolition layer	Modern
24	4	Wall		Brick and mortar wall fragment	Modern
25	4	Layer		Mid brown sandy topsoil	Modern
26	4	Layer		Black asphalt	Modern
27	4	Surface		Concrete surface	Modern
28	4	Wall		Brick and concrete wall fragment	Modern
29	4	Pit		Small shallow concave pit	Post-medieval
30	4	Pit fill	29	Dark brown silty sand backfill	Post-medieval
31	4	Layer		Dark brown sand redeposited demolition material	Post-medieval
32	4	Layer		Mid brown sandy silt	Post-medieval

Context	Trench	Category	Cut	Description	Period
33	4	Layer		Orangey yellow sandy silt	Post-medieval
34	4	Pit fill	47	Dump of burnt material	Post-medieval
35	4	Pit fill	46	Pale brown silty sand	Post-medieval
36	4	Layer		Mid brown silty sand demolition layer	Modern
37	4	Layer		Redeposited builders waste	Modern
38	4	Layer		Mid brown silty sand redeposited demolition rubble	Modern
39	4	Layer		Creamy mortar material	Post-medieval
40	4	Layer		Dark brown silt	Post-medieval
41	4	Dump		Modern dump of builders waste	Modern
42	4	Dump		Creamy pink very fine sand	Modern
43	4	Dump		Dump of burnt material	Modern
44	4	Wall		Mortar bonded concrete blocks	Modern
45	4	Layer		Dark brown silty sand redeposited topsoil	Modern
46	4	Pit		Steep sided pit	Post-medieval
47	4	Pit		U shaped concave pit	Post-medieval
48	4	Layer		Mid brown sand demolition material	Modern
49	4	Pit		Small sub rectangular pit	Medieval
50	4	Pit fill	49	Mid grey brown silty clay	Medieval
51	4	Pit fill	49	Light grey brown silty sand	Medieval
52	4	Pit		Shallow pit with moderately sloping sides	Saxon
53	4	Pit		Partially truncated, steep sided pit	Medieval
54	4	Ditch		Very steep sided V shaped ditch	Medieval
55	4	Pit		Steep concave sided pit	Saxon
56	4	Pit fill	52	Pale brown silty sand	Saxon
57	4	Pit fill	53	Dark brown silty sand	Medieval
58	4	Pit fill	53	Yellow and brown clay silt	Medieval
59	4	Pit fill	53	Dark brown sandy silt primary fill	Medieval
60	4	Ditch fill	54	Mid brown silty sand	Medieval
61	4	Pit fill	55	Dark brown sandy silt	Medieval
62	4	Layer		Brownish yellow fine sand natural	Undated
63	4	Layer		Dark brown silty sand topsoil	Medieval
64	4	Layer		Dark brown silty sand	Medieval
65	4	Pit fill	53	Creamy mortar upper fill of pit	Medieval
66	4	Surface		Mortar and flint pad	Medieval
67	4	Layer		Natural yellow sands	Undated
68	4	Pit fill	53	Dark brown silty sand upper fill of pit	Medieval
69	4	Pit		Irregular shaped quarry pit	Medieval
70	4	Pit fill	69	Mid grey brown silty sand backfill of quarry pit	Medieval
71	4	Ditch		NE-SW aligned ditch	Post-medieval
72	4	Ditch fill	71	Redeposited natural backfill event	Post-medieval
73	4	Ditch fill	71	Dark grey brown sandy silt backfill	Post-medieval
74	4	Pit fill	76	Mid brown orange silty clay pit capping material	Medieval
75	4	Pit fill	76	Dark grey brown silty sand backfill event	Medieval
76	4	Pit		Regular shaped steep sided pit	Medieval
77	4	Dump		Mid grey brown sandy silt	Medieval
78	4	Layer		Mid brownish yellow clay silt wall bedding layer	Medieval

Context	Trench	Category	Cut	Description	Period
79	4	Construction cut		N-S aligned wall foundation cut	Post-medieval
80	4	Back fill	79	Mid grey brown clay silt	Post-medieval
81	4	Pit		Steep sided pit with a flat base	Medieval
82	4	Pit fill	81	Dark brown sandy silt primary fill	Medieval
83	4	Pit fill	81	Mid brown sandy silt	Medieval
84	4	Wall		A small fragment of flint and ceramic wall	Post-medieval
85	4	Pit fill	81	Mid brown sandy silt upper fill of pit	Medieval
86	4	Pit		Oval shaped pit, largely truncated	Medieval
87	4	Pit fill	86	Pale brown silty sand primary silting event	Medieval
88	4	Pit fill	86	Dark brown and black silty sand	Medieval
89	4	Pit fill	86	Mid brown silty sand upper fill of pit	Medieval
90	4	Pit		Steep sided pit	Post-medieval
91	4	Pit fill	90	Grey brown sandy silt	Post-medieval
92	4	Layer		Mid brown silty sand	Post-medieval
93	4	Layer		Yellow and white clay lense	Post-medieval
94	4	Layer		Dark brown sandy silt	Post-medieval
95	4	Layer		Mid brown sandy silt topsoil	Post-medieval
96	3	Layer		Mid brown sand surface	Modern
97	3	Layer		Dark brown silty sand subsoil	Modern
98	3	Layer		Creamy grey decayed powdery mortar	Modern
99	3	Layer		Mid brown sandy silt	Post-medieval
100	3	Dump		pinkish brown sand	Post-medieval
101	3	Dump		Pale grey mortar	Post-medieval
102	3	Layer		Humic mid brown sand	Post-medieval
103	3	Dump		Pale creamy grey mortar	Post-medieval
104	3	Layer		Pale orange silty sand natural	Undated
105	3	Layer		Mid brown silty sand gradual build up	Post-medieval
106	3	Layer		Dark brown sandy silt	Post-medieval
107	3	Dump		Dark brown sandy silt topsoil	Modern
108	3	Pit fill	127	Mid brown sand upper pit fill	Modern
109	3	Pit fill	127	Dark brown sandy silt lower pit fill	Modern
110	3	Layer		Dark yellow brown silty sand	Post-medieval
111	3	Layer		Mid brown sandy silt	Post-medieval
112	3	Layer		Mid yellow brown sand	Post-medieval
113	3	Layer		Creamy grey crushed mortar	Post-medieval
114	3	Layer		Dark brown silty sand subsoil	Modern
115	3	Surface		Mid brown sand carpark surface	Modern
116	3	Wall		Brick and mortar	Modern
117	3	Layer		Dark brown silty sand	Post-medieval
118	3	Layer		Mid grey brown silty sand garden soil	Post-medieval
119	3	Dump		Mid grey sandy silt	Post-medieval
120	3	Layer		Mid brown sandy silt subsoil	Post-medieval
121	3	Layer		Dark brown silty sand topsoil	Post-medieval
122	3	Dump		Dark brown silty sand builders rubble	Post-medieval
123	3	Layer		Yellow brown silty sand	Post-medieval
124	3	Layer		Mid brown and orange redeposited laminated sand	Post-medieval

Context	Trench	Category	Cut	Description	Period
125	3	Layer		Dark brown sand	Post-medieval
126	3	Layer		Yellow clay and sand	Post-medieval
127	3	Pit		Steep sided pit with a flat base	Modern
128	3	Layer		Creamy grey crushed mortar	Modern
129	5	Layer		Gritty dark grey sandy silt levelling layer	Modern
130	5	Wall		Brick and mortar wall	Modern
131	5	Layer		Light brown gritty silty sand levelling layer	Modern
132	5	Gully		Linear associated with previous factory	Modern
133	5	Gully fill	132	Gritty white sandy mortar backfill	Modern
134	5	Gully		Linear, N-S aligned	Modern
135	5	Gully fill	134	Gritty white sandy mortar backfill	Modern
136	5	Gully		Linear, N-S aligned	Modern
137	5	Gully fill	136	Gritty white sandy mortar backfill	Modern
138	5	Gully		Linear, N-S aligned	Modern
139	5	Gully fill	138	Gritty white sandy mortar backfill	Modern
140	5	Pit fill	142	Dark grey sandy silt backfill	Modern
141	5	Pit fill	142	Gritty dark grey sandy silt backfill	Modern
142	5	Pit		rectangular pit of unknown function	Modern
143	5	Dump		Mid brown grey make up layer	Post-medieval
144	5	Dump		Mid brown grey make up layer	Post-medieval
145	5	Dump		Light brown sandy silt make up layer	Post-medieval
146	5	Wall		Limestone flint and brick wall fragment	Medieval
147	5	Pipe trench cut		Linear, N-S aligned	Modern
148	5	Pipe trench fill	147	Dark brown gritty sandy silt	Modern
149	5	Gully		Linear, N-S aligned	Modern
150	5	Gully fill	149	gritty white sandy mortar backfill	Modern
151	5	Layer		Dark grey brown sandy silt make up layer	Modern
152	5	Layer		Mid brown clay silt levelling deposit	Post-medieval
153	5	Pit		Sub rectangular pit	Post-medieval
154	5	Layer		Mid grey brown clay silt levelling deposit	Post-medieval
155	5	Surface		Crushed mortar surface	Medieval
156	5	Layer		Dark brown gritty sandy silt levelling deposit	Modern
157	5	Layer		Dark grey clay silt	Post-medieval
158	5	Layer		Mid brown silt and sandy mortar	Post-medieval
159	5	Wall		Round structure of a well	Medieval
160	5	Pit fill	142	Light tan clay silt backfill	Modern
161	5	Pit fill	142	Mid brown grey clay silt dump material	Modern
162	5	Pit		Small irregular pit	Modern
163	5	Pit fill	162	Dump of frequent brick fragments	Modern
164	5	Pit fill	163	Dark grey brown clay silt	Post-medieval
165	5	Layer		Mid grey clay silt levelling material	Post-medieval
166	5	Layer		Mid brown clay silt levelling layer	Post-medieval
167	5	Wall		Flint and mortar structure	Medieval
168	5	Layer		Mid orangey brown clay silt levelling deposit	Post-medieval
169	5	Layer		Mid brown clay silt levelling deposit	Post-medieval
170	5	Layer		Mid brown clay silt levelling deposit	Post-medieval

Context	Trench	Category	Cut	Description	Period
171	5	Layer		Yellow and orange clay levelling material	Modern
172	5	Pit fill	270	Mid grey clay silt	Medieval
173	5	Layer		Tan gritty sandy silt levelling deposit	Medieval
174	5	Layer		Light brown yellow gritty sandy silt	Post-medieval
175	4	Surface		Asphalt car park surface	Modern
176	4	Surface		Mid brown gravel and silt former car park	Modern
177	4	Layer		Burnt material from a wood fire, dump event	Modern
178	4	Pit fill	47	Dark brown and yellow mortar and silt	Post-medieval
179	4	Wall	180	Concrete and brick structure	Modern
180	4	Construction cut		Square/ rectangular cut of modern wall	Modern
181	4	Construction cut fill	180	Mid brown clay silt backfill	Modern
182	4	Layer		Mid brown silt clay levelling material	Modern
183	-	-	-	-	-
184	-	-	-	-	-
185	4	Pit fill	47	Light to mid brown silt	Post-medieval
186	-	-	-	-	-
187	-	-	-	-	-
188	4	Pit fill	46	Mid brown sticky clay	Post-medieval
189	4	Layer		Dark brown silt	Medieval
190	-	-	-	-	-
191	-	-	-	-	-
192	4	Construction cut		For clay floor	Medieval
193	4	Surface		Dark brown sand portion of floor surface	Medieval
194	4	Surface		Blackened burnt clay floor surface	Medieval
195	4	Surface		Orange and red fired clay floor	Medieval
196	4	Layer		Dark brown sand bedding layer	Medieval
197	4	Surface		Orange clay floor	Medieval
198	4	Surface		Red and black with orange clay, burnt floor	Medieval
199	4	Layer		Bright yellowy orange clay and sand bedding layer	Medieval
200	4	Construction cut		For clay floor	Medieval
201	4	Layer		Very dark brown to orange naturally deposited sand	Saxon
202	4	Layer		Light brown sand and silt	Saxon
203	4	Layer		Light orange and brown sand	Saxon
204	3	Pit		Used as a pit or sand quarry	Post-medieval
205	3	Pit fill	204	Mid brown silty sand gradual silting	Post-medieval
206	3	Pit fill	204	Dark brown silty sand primary silting event	Post-medieval
207	3	Pit		Steep sided pit	Post-medieval
208	3	Layer		Mid brown silty sand subsoil	Post-medieval
209	3	Pit fill	207	Mid brown silty sand	Post-medieval
210	3	Pit fill	207	Pale brown sand	Post-medieval
211	3	Pit fill	207	Mid brown slightly silty sand, upper pit fill	Post-medieval
212	3	Pit		Steep sided with a flat base, poss quarry activity	Post-medieval

Context	Trench	Category	Cut	Description	Period
213	3	Pit fill	212	Dark brown sandy silt, silting event	Post-medieval
214	3	Pit fill	212	Dark brown silt, primary silting event	Post-medieval
215	5	Construction cut		Circular in shape, for well	Post-medieval
216	5	In fill	159	Dark brown clay silt, backfilling event	Post-medieval
217	4	Pit fill	52	Dark brown sand, lower pit fill	Saxon
218	3	Pit		Well sloping concave sides	Post-medieval
219	3	Pit fill	218	Creamy buff crushed mortar waste material	Post-medieval
220	3	Pit		Steep to well sloping sides with a concave base	Modern
221	3	Pit fill	220	Creamy buff crushed mortar demolition waste	Modern
222	3	Layer		Very dark brown sand and silt topsoil	Modern
223	3	Layer		Mid brown slightly sandy silt topsoil	Post-medieval
224	3	Layer		Off white crushed mortar waste material	Post-medieval
225	3	Layer		Mid brown silty sand subsoil	Post-medieval
226	3	Wall		Bricks and mortar	Modern
227	3	Layer		Mid brown sandy silt soil	Post-medieval
228	2	Layer		Mid grey brown clay silt garden soil	Post-medieval
229	2	Dump		Dark blackish brown sandy silt, localised dump	Post-medieval
230	2	Layer		Mid to dark grey brown sandy silt garden soil	Post-medieval
231	2	Dump		Mid brownish orange silt clay, localised dump	Post-medieval
232	2	Layer		Dark grey brown clay silt garden soil	Post-medieval
233	2	Layer		Dark brownish grey clay silt dump	Post-medieval
234	2	Layer		Mid to dark grey brown clay silt dump material	Post-medieval
235	2	Wall		Flint brick and mortar wall, blocking and opening	Post-medieval
236	2	Construction cut		N-S aligned linear cut of modern wall	Modern
237	2	Wall		Brick and mortar foundation courses of wall	Modern
238	2	Surface		Imported gravels for modern car park	Modern
239	2	Construction cut fill		Orangey red crushed building materials	Modern
240	2	Pit fill	242	Yellowish white mortar building waste	Modern
241	2	Layer		Dark grey brown clay silt gravelly surface	Post-medieval
242	2	Pit		Steep sided pit with possible industrial use	Modern
243	2	Pit fill	242	Dark blackish brown sandy silt material	Modern
244	2	Pit fill	242	Mid yellowish brown degraded mortar dump	Modern
245	2	Pit fill	242	Dark blackish brown sandy silt bedding layer	Modern
246	2	Pit fill	242	Dark grey brown clay silt demolition rubble	Modern
247	2	Layer		Dark grey brown clay silt demolition rubble infill	Modern
248	2	Wall		The surviving portions of a brick and mortar arch	Post-medieval
249	2	Layer		Yellow and white crushed mortar dump	Post-medieval
250	2	Construction cut		Linear, E-W aligned cut for wall	Post-medieval
251	2	Wall	250	E-W aligned, of brick and flint construction	Post-medieval
252	2	Wall	268	E-W aligned, of brick and flint construction	Post-medieval
253	2	Wall	256	E-W aligned of brick and mortar construction	Modern
254	2	Dump		Ceramic building rubble, demolition deposit	Modern
255	2	Dump		Dark grey brown silty clay, demolition deposit	Modern

Context	Trench	Category	Cut	Description	Period
256	2	Construction cut		Linear, E-W aligned	Modern
257	2	Pit		Small rectangular flat bottomed	Post-medieval
258	2	Pit		Shallow, U shaped base	Post-medieval
259	3	Layer		Unstratified finds recovered from the spoil heap	Undated
260	2	Pit fill	257	Dark grey brown silt, backfill	Post-medieval
261	2	Pit fill	257	Light grey brown clay silt	Post-medieval
262	2	Pit fill	257	Dark brownish black gritty mineral deposit	Post-medieval
263	2	Pit fill	257	Bright brownish orange sandy clay, primary fill	Post-medieval
264	-	-	-	-	-
265	2	Pit fill	258	Dark brownish grey silt	Post-medieval
266	2	Pit fill	267	Mid to light grey brown sandy silt backfill	Post-medieval
267	2	Pit		Sand extraction pit, extents not obtained	Post-medieval
268	2	Construction cut		Linear, N-S aligned, turning through 90 degrees	Post-medieval
269	2	Construction cut fill	268	Mid grey brown silty sand	Post-medieval
270	5	Pit		Sub rectangular with steeply sloping sides	Post-medieval
271	2	Layer		Organic matter accumulated upon cellar floor	Post-medieval
272	2	Floor		Brick floor laid upon a mortar bedding	Modern
273	2	Layer		Mid whitish yellow mortar bedding for brick floor	Modern
274	2	Pit		Rectangular steep sided	Post-medieval
275	2	Pit fill	274	Mid grey brown sandy silt backfill	Post-medieval
276	2	Pit		Linear, E-W aligned with a flat base	Post-medieval
277	2	Pit fill	276	Mid grey brown silty sand backfill	Post-medieval
278	2	Pit fill	283	Dark grey brown sandy silt	Post-medieval
279	2	Pit fill	283	Mid to dark grey brown sandy silt back fill	Post-medieval
280	2	Construction cut		Roughly circular, for construction of well	Medieval
281	5	Layer		Orange sand and brown silt levelling deposit	Medieval
282	5	Construction cut fill	280	Mid to dark brown sandy silt backfill	Medieval
283	2	Pit		Fairly steep sided, for sand extraction	Post-medieval
284	2	Pit fill	274	Dark grey brown silt base fill	Post-medieval
285	5	Pit fill	286	Mid to dark brown sandy clay	Post-medieval
286	5	Pit		Ovoid/ sub rectangular with a flat base	Post-medieval
287	5	Surface		Highly compacted gravel surface	Post-medieval
288	5	Posthole fill	289	Brown silt and orange sand	Medieval
289	5	Posthole		Roughly circular, sloping to a point	Medieval
290	5	Posthole fill	291	Brown silt with orange mottling	Medieval
291	5	Posthole		Roughly circular with a V shaped base	Medieval
292	5	Posthole fill	293	Brown clay silt	Medieval
293	5	Posthole		Oval/ sub rectangular with a V shaped base	Medieval
294	5	Layer		Mid to dark brown sandy clay garden soil	Medieval
295	5	Horticultural fill	296	Orange sand and dark brown silt	Medieval
296	5	Horticultural cut		Roughly circular with a flat base	Medieval
297	5	Layer		Very fine light brownish orange sand natural	Undated

Context	Trench	Category	Cut	Description	Period
298	2	Layer		Unstratified finds metal detected from spoil heap	Undated
299	3	Layer		Unstratified finds metal detected from spoil heap	Undated
300	5	Layer		Unstratified finds metal detected from spoil heap	Undated
301	5	Pit fill	153	Dark grey sandy clay, primary fill	Medieval
302	2	Surface		Of flint and brick construction	Post-medieval
303	2	Pit fill	242	Mid yellowish brown degraded mortar dump	Modern
304	5	Layer		Mid grey brown soil and rubble dump	Modern
305	2	Layer		Mid grey brown clay silt rubble	Modern
306	5	Pit fill	153	Light to mid slightly yellowy brown heavy clay silt	Medieval
307	5	Layer		Mid to light brown heavy clay silt	Medieval
308					
309	5	Surface		Imported gravels for modern car park	Modern
310	3	Layer		Mid brown sand levelling layer	Post-medieval
311	3	Construction cut		E-W aligned with vertical sides, for factory wall	Modern
312	3	Construction cut		E-W aligned with vertical sides, for factory wall	Modern
313	3	Pit		Large steep sided pit	Modern
314	3	Pit		Deep steep sided, with a rounded base	Modern
315	3	Pit		Small, with convex sides and a rounded pointy base	Modern
316	3	Truncation		Evidenced by the removal of deposits	Modern

Appendix 1b: OASIS feature summary table

Period	Feature type	Quantity
Late Saxon (851 to 1065AD)	TOWN DEFENCES	1
Medieval (1066 to 1539AD)	PIT	6
Medieval (1066 to 1539AD)	WALL	2
Medieval (1066 to 1539AD)	WELL	1
Post-medieval (1540 to 1900AD)	PIT	6
Post-medieval (1540 to 1900AD)	WALL	10
Modern (1900 to 2050 AD)	SRUCTURE	1

Appendix 2a: Finds by Context

50581N

Context	Material	Quantity	Weight (g)	Period
01	Pottery	6	551	Post Medieval
01	Glass - Bottle	1	-	Post Medieval
02	Pottery	30	1995	Post Medieval
02	Ceramic Building Material	1	23	Post Medieval
07	Animal bone	-	71	-
08	Pottery	39	364	Medieval
08	Animal bone	-	274	-
09	Pottery	6	39	Medieval
09	Animal bone	-	61	-
10	Pottery	27	151	Medieval
10	Animal bone	-	177	-
44	Pottery	5	40	Medieval
44	Animal bone	-	370	-
45	Pottery	57	452	Saxon/ Medieval
45	Fired clay	1	27	-
45	Metal Working Debris	1	259	-
45	Animal bone	-	1154	-
51	Iron Nail	1	-	-
51	Animal bone	-	40	-

50583N

Context	Material	Quantity	Weight (g)	Period
01	Ceramic Building Material	1	38	Post Medieval
02	Pottery	1	1	Post Medieval
44	Pottery	1	4	Medieval
44	Ceramic Building Material	1	4	Medieval
44	Mortar	1	20	Undiagnostic
44	Metal Working Debris	1	299	Undiagnostic
44	Animal bone	-	78	Undiagnostic

50584N

Context	Material	Quantity	Weight (g)	Period
02	Clay Pipe	3	12	Post Medieval
02	Animal bone	-	12	-
03	Pottery	3	186	Post Medieval

Context	Material	Quantity	Weight (g)	Period
03	Ceramic Building Material	1	60	Post Medieval
05	Pottery	9	214	Medieval/ Post Medieval
05	Ceramic Building Material	2	455	Medieval
05	Clay Pipe	4	27	Post Medieval
05	Animal bone	-	303	-
12	Pottery	9	81	Medieval/ Post Medieval
12	Ceramic Building Material	1	30	Medieval
12	Plaster	1	8	Post Medieval
12	Metal Working Debris	1	39	-
12	Animal bone	-	31	-
15	Pottery	1	3	Post Medieval
15	Metal Working Debris	3	31	-
15	Animal bone	-	95	-
30	Pottery	1	207	Post Medieval
32	Pottery	1	79	Medieval
34	Clay Pipe	1	20	Post Medieval
50	Pottery	1	3	Medieval
50	Ceramic Building Material	4	861	Medieval
50	Animal bone	-	66	-
73	Pottery	6	89	Medieval/ Post Medieval
73	Metal Working Debris	1	7	-
82	Pottery	3	45	Medieval/ Post Medieval
83	Pottery	3	22	Medieval
85	Pottery	2	15	Medieval
88	Pottery	4	10	Medieval
112	Glass - Bottle	1	-	Post Medieval
114	Glass - Bottle	1	-	Post Medieval
119	Pottery	1	13	Post Medieval
141	Clay Pipe	1	11	pmed
155	Pottery	40	516	Post Medieval
164	Pottery	1	14	Post Medieval
172	Pottery	37	937	Post Medieval
172	Ceramic Building Material	13	1404	Medieval/ Post Medieval
172	Iron Nail	4	-	-
172	Flint - worked	1	-	Prehistoric
172	Stone	1	243	-
172	Animal bone	-	1418	-
173	Pottery	3	38	Post Medieval

Context	Material	Quantity	Weight (g)	Period
173	Animal bone	-	11	-
174	Ceramic Building Material	1	930	Medieval
182	Pottery	3	233	Post Medieval
205	Ceramic Building Material	2	40	Medieval
205	Iron Nail	1	-	-
205	Animal bone	-	44	-
209	Pottery	76	2221	Post Medieval
209	Ceramic Building Material	13	979	Medieval/ Post Medieval
209	Iron Nail	1	-	-
209	Animal bone	-	3239	-
210	Pottery	8	216	Post Medieval
210	Ceramic Building Material	8	588	Medieval/ Post Medieval
210	Metal Working Debris	2	144	-
210	Animal bone	-	796	-
210	Shell - oyster	-	32	-
214	Pottery	2	40	Post Medieval
216	Pottery	7	82	Post Medieval
216	Ceramic Building Material	2	1041	Post Medieval
216	Clay Pipe	3	30	Post Medieval
216	Animal bone	-	107	-
227	Pottery	1	66	Post Medieval
254	Pottery	2	344	Post Medieval
259	Pottery	2	39	Post Medieval
260	Pottery	3	232	Post Medieval
260	Ceramic Building Material	1	44	Post Medieval
260	Animal bone	-	74	-
264	Pottery	3	37	Medieval
264	Metal Working Debris	1	126	-
264	Animal bone	-	11	-
265	Pottery	9	413	Post Medieval
265	Ceramic Building Material	3	879	Post Medieval
265	Animal bone	-	1875	-
266	Pottery	1	19	Medieval
277	Iron Nail	1	-	-
277	Animal bone	-	758	-
279	Pottery	6	132	Post Medieval
279	Ceramic Building Material	4	385	Medieval
279	Iron Nail	1	-	-
279	Animal bone	-	1199	-
281	Pottery	4	38	Medieval

Context	Material	Quantity	Weight (g)	Period
282	Pottery	12	154	Medieval/ Post Medieval
282	Ceramic Building Material	2	100	Medieval/ Post Medieval
282	Mortar	1	127	-
282	Animal bone	-	148	-
285	Pottery	19	527	Post Medieval
285	Ceramic Building Material	4	263	Medieval
285	Animal bone	-	108	-
285	Shell - oyster	-	3	-
294	Pottery	10	88	Medieval
294	Ceramic Building Material	1	344	Medieval
294	Animal bone	-	30	-
301	Pottery	8	223	Post Medieval
301	Ceramic Building Material	3	67	Medieval/ Post Medieval

Appendix 3: Pottery spot-dates

Area 1 50581N

Trench	Feature	Context	Category	Fabrics	Spot date
6	01	01	Layer	ESW, GRE, LSRW, REFW	20th c.
6	02	02	Layer	ESW, REFW	L.19/E.20
6	92	08	Ditch fill	EMW, EMSW, PING, STAM, THET, THETG, YAR	11th-12th c.
6	92	09	Ditch fill	EMW, EMWG, THET, YAR	11th-12th c.
6	92	10	Ditch fill	EMW, EMSW, THET, YAR	11th-12th c.
6	92	44	Ditch fill	EMSW, THETG, YAR	11th-12th c.
6	92	45	Ditch fill	EMW, EMSW, EMWS, EMWSS, PING, STAM, THET, YAR	11th-12th c.

Area 3 50583N

Trench	Feature	Context	Category	Fabrics	Spot date
WS 5	02	02	Layer	REFW	19th c.
12	11	11	Layer	LMT, IGBW, REFW	19th c.
12	51	44	Pit fill	LMU	11 th -14th c.

Area 4 50584N

Trench	Feature	Context	Category	Fabrics	Spot date
1	4	03	Pit fill	LMT	15th-16th c.
1	5	05	Layer	DUTR, EMSW, GRE, GRIM, LMT, LMU, THET, YAR	16th c.
4	12	12	Layer	GSW3, LMU, LMT, UNID	15th-16th c.
4	15	15	Layer	GSW4	16th-17th c.
4	29	30	Pit fill	GRE	16th-18th c.
4	32	32	Layer	LMT	15th-16th c.
4	49	50	Pit fill	LMU	11th-14th c.
4	71	73	Ditch fill	EMW, GRIM, LMT, LMU	15th-16th c.
4	81	82	Pit fill	THET, EMW, HFW1	M.12th-M.13th c.
4	81	83	Pit fill	LMU	12th-13th c.
4	81	85	Pit fill	STAMB, LMU	M.11th-M.13th c.
4	86	88	Pit fill	EMW, LMU	11th-13th c.
3	119	119	Dump	LMT	15th-16th c.
5	155	155	Surface	LMT	15th-16th c.
5	153	164	Pit fill	DUTR	15th-16th c.
5	270	172	Pit fill	LMT, DUTR, GSW4	16th c.
5	173	173	Layer	LMT	15th-16th c.
4	182	182	Layer	LMT	15th-16th c.
3	207	209	Pit fill	BEAS, BORD, DUTR, DUTU, DUTW, GRIM GSW4, LMT, TGE, UIMP	L.16th/E.17th c.
3	207	210	Pit fill	DUTR, LMT	16th c.
3	212	214	Pit fill	LMT	15th-16th c.
5	159	216	Well fill	LMT, DUTR	15th-16th c.
3	227	227	Layer	LMT	15th-16th c.
2	254	254	Dump	ESW, REFW	19th-E.20th c.

Trench	Feature	Context	Category	Fabrics	Spot date
3	259	259	Layer	DUTU, LMT,	15th-16th c.
2	257	260	Pit fill	GSW4, GRE, LBW	18th c.
2	258	265	Pit fill	DUTR, THET,	15th-17th c.
2	267	266	Pit fill	THET	10th-11th c.
2	283	279	Pit fill	DUTR, GRE, GSW2, LMT	16th c.
5	281	281	Layer	THETG, YAR, LMU, GRIM	13th-14th c.
5	280	282	Fill of construction cut	THET, EMW, GRIM, HFW1, UPG, YARG	13th c.?
5	286	285	Pit fill	EMW, GRIM, LMT, GSW3	L.14th-E.16th c.
5	294	294	Layer	THET	10th-11th c.
5	153	301	Pit fill	LMT	15th-16th c.

Key to Pottery Fabric Codes

BEAS	Beauvais Stoneware	M.14th-15th c.
BORD	Border Wares	16th-18th c.
DUTR	Dutch-type Redwares	15th-17th c.
DUTU	Dutch redwares unglazed	15th-17th c.
DUTW	Dutch-type Whitewares	15th-17th c.
ELYG	Ely Glazed Ware	Med-LMed
EMSW	Early Medieval Sandwich Wares (Norfolk type)	11th-12th c.
EMW	Early Medieval Ware (general)	11th-12th c.
EMWG	Early Medieval Ware Gritty	11th-12th c.
EMWS	Early Medieval Ware Shelly	11th-12th c.
EMWSS	Early Medieval Ware Sparse Shelly	11th-12th c.
ESW	English Stoneware	17th-19th c.
GRE	Glazed Red Earthenware	16th-18th c.
GRIM	Grimston-type Ware	L.12th-14th c.
GSW2	Langerwehe Stoneware	L.14th-15th c.
HFW1	Heddingham Fine Ware	M.12th-M.13th c.
IGBW	Iron Glazed Black Wares	16th-18th c.
LBW	Late blackwares	18th-E.20th c.
LMT	Late Medieval and Transitional	15th-L.16th c.
LMU	Local Medieval Unglazed (Norwich type)	11th-14th c.
LSRW	Late Slipped Redware	18th-19th c.
MCW	Medieval Coarse Wares (general)	L.12th-14th c.
PING	Pingsdorf Ware	10th-13th c.
REFW	Refined White Earthenwares	L.18th-20th c.
STAM	Stamford Ware	850-1150
STAMB	Stamford Ware Fabric B	M.11th-M.13th c.
TGE	Tin Glazed Earthenwares	16th-18th c.
THET	Thetford Ware (general category)	10th-11th c.
THETG	Thetford Ware (Grimston)	10th-11th c.
UIMP	Unidentified ?import	undated
UNID	Unidentified	undated
YAR	Yarmouth type EMWS	11th-12th c.

Appendix 3

**Oxford Archaeology East
Anglia Square
Norwich
Archaeological Evaluation 2010
Phase 2**

Anglia Square, Norwich Phase 2 Archaeological Evaluation



Archaeological Evaluation Report

DRAFT



September 2010

**Client: BTW Shiells on behalf of
Anglia LLP**

OA East Report No: 1202
OASIS No: oxfordar3-78101
NGR: TG 22908 09282

Knights Care, Not Rich

Phase 2 Archaeological Evaluation

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Report Date: September 2010

DRAFT

Report Number: 1202
Site Name: Anglia Square, Norwich Phase 2 Evaluation
HER Event No: ENF124825
Date of Works: 5th-30th July 2010
Client Name: BTWShiells on behalf of Anglia LLP
Client Ref: N/A
Planning Ref: Norfolk County Council 08/00974/F
Grid Ref: TG 22908 09282 (SW corner of development area)
Site Code: ENF124825
Finance Code: XNFANS10
Receiving Body: Norfolk Museums and Archaeology Service
Accession No: ENF124825
Prepared by: Heather Wallis
Position: Project Officer
Date: 3rd September 2010
Checked by: Dr Paul Spoerry
Position: Regional Manager, OA East
Date: 3rd September 2010
Signed: 

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Summary

Eight evaluation trenches (ere excavated at Anglia Square, Norwich. The earliest significant finds from the site (ere a few sherds of Middle Saxon pottery the first of this date to have been found in this locality) these contribute to the growing body evidence indicating Middle Saxon settlement on the north bank of the Wensum.

The line of the Late Saxon defensive ditch was successfully traced. Excavation showed the depth, profile and fills of the ditch (ere similar to segments which had previously been excavated further south. The lower deposits were (aterlogged and reservation of environmental indicators was good.

During the Medieval period a number of large quarry pits occupied the northern part of the site. These were probably dug for the extraction of iron ore from the natural gravels. Later in the Medieval period this area formed open ground or backyards behind the occupation along the street frontages.

The southern part of the development area was thought to have been the site of St Olave's church. Although the church itself was not located, three of the trenches contained burials, indicating this area lay (ithin the graveyard of St Olave's. The church fell out of use by the Dissolution and later from it was identified, reused in one of the post-medieval buildings presently standing on the site.

For much of the post-medieval period the whole site appears to have been open ground or yards behind street frontage development on Pitt Street, Botolph Street and St George's Street. It is not until the late 18th century that the southern part of the site became closely built up the demolished remains of these buildings lying just below the present ground surface. The northern part of the site would have the same infill behind the frontages, though 19th-century development has made an impact truncating some of the archaeological horizons.

1.1.1 - RO; <8-, O'

1.1 Location and scope of EA 4

- 1.1.1 The archaeological evaluation was conducted in the 5 square North. The evaluation targeted two distinct areas; development area 6 and area 4 both of which lie to the west of the present Nglia Square Shopping Centre (Figs 1 and 2).
- 1.1.2 This work was undertaken in accordance with the Brief issued by Ken ? " lton of Norfolk Landscape Archaeology Planning Application No. 15/00004)@/20supplemented by a Specification prepared by OA East.
- 1.1.3 The work was designed to assist in defining the character and extent of any archaeological remains within the proposed redevelopment area in accordance with the guidelines set out in the *Planning Policy Statement : Planning for the Historic Environment* (Department for Communities and Local Government 2010). The results will enable decisions to be made by Norfolk Landscape Archaeology on behalf of the Local Planning Authority with regard to the treatment of any archaeological remains found.
- 1.1.4 The site archive is currently held by OA East and will be deposited with the appropriate county stores in due course.

1.2 5r, 6gy rV topography

- 1.2.1 The underlying geology of the areas is one of river valley sands and gravel, with the upper 7m (7m) sh Geological Survey 2ly'ng less than 3% to the west and south. The course of the Dalymond, former tributary of the River, is also thought to run close to the northern boundary of the development area. The area is likely to be more varied and undulating than the largely flat landscape we see today (Hutcheson and Penn 2007, 3).
- 1.2.2 Located in the north-west part of the development area is a surface car park which forms Area 6. Overall this area is relatively flat, though it lies elevated some 1.5m above the road surface to the south. Trenches 8 and 9 were located here.
- 1.2.3 Area 4 lies in the south-west corner of proposed development with St 8 rispins Road to the south and Pitt Street to the west. A number of both occupied and unoccupied premises lie within this area particularly on the street frontage of Pitt Street. Five trenches (trenches 14-20) were located in the car park, or redundant open spaces between these standing buildings. The modern topography is of a largely level area.

1.3 Archaeological rV historical background

- 1.3.1 The evaluation areas lie just outside the circuit of Late Saxon to medieval ditch, but in an area that lies within the medieval to post-medieval wall and which became increasingly developed during the medieval and post-medieval periods.
- 1.3.2 No pieces of research have recently been completed relating to the archaeology of this part of Norwich. In March 2004 a detailed desk-based survey of the area was undertaken (Hutcheson and Penn 2004) and nine evaluation trenches along with a program of test-pitting were undertaken later the same year. Percival and

: establish ~42 The details from these reports will not be repeated here other than to note the two important aspects which this phase of evaluation is intended to target; the Late Saxon defensive ditch and the location of St Olave's church

1. () Previous evaluation and excavation of this area have identified the line of the Late Saxon ditch and recorded several phases of activity and development across the site. Previous excavations have recorded the ditch as being ~ to ~ deep and having been recut on two occasions. It is thought that it was originally dug during the 10th-century
1. () The former church of St Olave stood somewhere to the south-west of the site, but its precise location is uncertain. It has been suggested that it lay within Area 40 possibly in the area occupied by the warehouse to the rear of 41 Pitt Street. The dedication to St Olave probably originated in the late 11th-century; documentary records indicate that this parish was amalgamated with that of St George in the 16th century prior to the Dissolution.

1.4 Acknowledgements

1.) Thanks are expressed to:- who commissioned this evaluation. The friendly, helpful, 'can do' approach of Roy Uggles and his team at Angles Square was very much appreciated, their contribution enabling the archaeological works to progress smoothly and to time.
1.) This project would not have been successfully completed if had not been for help, support and teamwork exhibited by colleagues at OA East, in particular Paul Sperry and Rachel Clarke. The author was assisted on site by Gareth Jones (Supervisor), Mick Boyle and Simon Underdo - machine excavation and enabling works were carried out by Fry: Williams Engineering Ltd. Illustrations were completed by Severine Bezie and specialist finds and environmental work undertaken by Sue Anderson, in Crummy Chris Faine, Carole Fletcher, Rachel Fosberry, Simon Underdo

2.1.5 METHODOLOGY

2.1 Kims

- ~ 1.1 - The evaluation sought to establish the character, date, state of preservation and extent of any archaeological remains within the previously inaccessible areas of the proposed development. In particular this evaluation was intended to further define the course of the Late Saxon/Anglo-Scandinavian defensive *burgh* ditch and to determine the presence (or absence) of St Olave's church and associated cemetery
- ~ 1.2 - The main aims were
 - a) - to establish the presence or absence of archaeological remains within the proposed development areas.
 - b) - to determine the extent, condition, nature, reliability and date of any archaeological remains occurring within the areas and to establish, as far as possible, the nature of the activities which occurred at the site during the various periods or phases of its occupation.
 - c) - to ensure that any archaeological features discovered during trial trenching were appropriately identified, sampled and recorded.
 - d) - to establish the palaeoenvironmental potential of subsurface deposits by ensuring that any deposits within the potential to yield palaeoenvironmental data were sampled and these samples submitted for assessment to the appropriate specialists.
 - e) - to assess the impact of previous land use.
 - f) - to assess the possible impacts of the proposed development on any identified archaeological remains and areas of archaeological potential.
 - g) - to disseminate the archaeological data recovered by the evaluation in a format suitable to provide information for decisions regarding further archaeological intervention and mitigation proposals to be made.

2.2 Methodology

- ~ ~ 1 - The brief required seven trenches to be excavated, five trenches (14-18) within Area 4 of the development and two trenches (19 and 20) within Area 6; during the evaluation works the excavation of further two trenches was commissioned (trenches 1* and 2*). The expressed purpose of these was to establish the presence or absence of human skeletal remains.
- ~ ~ ~ - Machine excavation was carried out under constant archaeological supervision with the tracked excavator using a toothless ditching bucket. Due to the depths of the deposits in trenches 19 and 20, these were shored using closed sheets and hydraulic shoring. In both these trenches sondages were excavated from the lowest safe shored horizon in order to investigate the deeper deposits. Sondages were also excavated at the centres of trenches 16, 17, 18, 1* and 2*: here the natural subsoil was not reached the deposits were augered.
- ~ ~ (- 500g soil, exposed surfaces and features were scanned with a metal detector. All metal-detected and hand-collected finds were retained for inspection, other than those which were obviously modern.

- ~ ~) All archaeological features and deposits were recorded using Oxford East's *pro-fo* sheets. Trench locations, plans and sections were recorded at appropriate scales and colour and monochrome photographs were taken of all relevant features and deposits.
- ~ ~ 3 : Where human remains were revealed these were excavated and recorded but not lifted. Once completion of the recording, burials were covered with geotextile and backfilled by hand with 'soft' soils. Once backfilling of the graves by hand had been completed the remainder of the trench was backfilled by machine, but not compacted directly over the burials.
- ~ ~ 6 : Samples for environmental indicators were taken from ditch and pit fills in trenches 8 and 9.
- ~ ~ 4 : Conditions for excavation were generally good, although the first few days were extremely hot and dry. While heavy rain towards the end of the project caused some difficulty in excavating the lowest deposits of trench 8.

3 ESU! - 5

3.1 Intro uction

(1.1 - he results of the evaluation are presented by area and then by trench number

3.2 K rř 6 Tr nch 8 (Figs 3 řV 4, 3Qtes 1-38

(~ 1 4x& trench \$as located \$'th the 'ntention of tracing the line of the Late Saxon defensive ditch. ; ue to the depth of deposits this trench \$as shored ,nitial excavation \$ s °y ,achine to depth of c 1.~ t this level the revealed rchaeological deposits \$ere recorded and shoring 'nserted. - he trench \$ s further excavated by machine until good archaeological horizon \$as 'ndentified. Excavatio# \$ s carried out °y hand "# t\$ o sondages one to each side of the central \$hal'ng. t this point # additional \$h l'ng w s inserted and the trench further machined to a good archaeological horizon. Excavation continued by hand in t\$ o sondages.

(~ ~ - he earl'est feature revealed "# this trench \$ s large d'tch .6362Bthe Late 5 xo# defensive ditch of the to\$# - his \$ s identif'ed cut 'nto the # tural from level of c ~ 15m O; and 'ts base \$ s located at c ~ ~ O;0 "#dicating that the ditch \$ s almost ~ deep. - he \$est or outer edge of the ditch \$ s seen within the excavated area. / or the upper ~ &3, the slope of the ditch \$ s comparat"6ely gentle before dropping more steeply to its base.

(~ (- he lo\$est fill .647) \$as sandy silt, probably the result of \$eathering. bove this and filling the majority of the deeper part of the ditch \$as s'tly deposit \$h'ch contained much organic matter .646). - h's probably resulted fro , combination of the dumping of organic refuse and the natural accumulation of organic matter bove this and against the side of the ditch patch of slumped sands and gravels .648) \$ s noted. - \$o silty fills .645 and 643) s t above this the lo\$est of \$h'ch contained several rounded flint cobbles. / 'lling the upper part of the ditch \$as # homogenous sandy silt deposit .602) "" to ~ 4, deep sealed °y # extremely gravelly deposit .6112\$ h'ch \$as "" to 1, dee^ ,t 's though that this represents the levelling of the gravel °%# \$h'ch \$o"ld have originally l y on the 'nside .to the east) of the ditch. A further silty gravel deposit l y above this .603). Eighteen sherds of ^ottery \$ere recovered fro , this context the , ajority of \$h'ch "#dicate probable 12th- to 14th-century date although t\$ o residual - hetford-ty^e \$ re sherds and t\$ o later 'ntrusive sherds \$ere also recorded.

(~) t this point the nature of the archaeology dramatically changed s a ten ~"ts (J1) , J1! , J19 , 610, 649, 651, 660, 653, 658 and 65620some intercutting, \$ere recorded cross the area. + #y of the fills of these pits contained notable , ount of gravel reflecting the presence of redeposited °%# , terial across the site - he pottery recovered from some of these pits 'ndicates date of late12th to 14th centuries. g "# the occasional intrusive sherd \$ s present long \$ith # ount of residual - hetford-ty^e \$ re and one Romano-British sherd.

(~ 3 Sealing the pits \$as ~ & deep sandy silt \$'th occasional ceramic °"lding material, charcoal and chalk flecks .34&2 This appears to 'ndicate period of abandonment or time "# \$hich this area \$ s used for cultivation or pasture as this deposit had the composition and consistency of an old topsoil.

(~ 6 ctivity resumed "# this area with the construction of °"lding as "#dicated °y the presence of t\$ o square brick and flint foundations .612 and 6132 Each of the footings \$ s 1m square and ~) , thick. sandy l'me , ortar had been used "# their

construction. robber trench .5812\$ as recorded i# the south-east corner of the trench. - his r # on north-east to south-west alignment and \$ as filled \$'th fixed deposit of orange sand, degraded mortar small fragments of ceramic building material of both rounded and angular flints.

- (~ 4 above this the most significant feature noted \$ as \$ II .556) which crossed the trench on south-west to northeast alignment. This \$ s set on foundation c ~ 4, \$'de and ~ (3, deep, made of compacted sand and small flints - he \$ II itself \$ as ilt of randomly coursed brick and flint set # generous quantity of sandy lime mortar This \$ II formed boundary and from this point the deposits to either side accumulated differently
- (~ & -o the north of the \$ II deposit of soil \$ as allowed to accumulate .560) following \$'h'ch a more sandy and gritty deposit .33*2 appeared to be dumped. - hrough this ^'t .)!!) was cut and backfilled \$'th demolition debris (589) made up of clay and degraded lime mortar \$'th brick and tile fragments .38*2 and gravelly sandy silt .3*2 This \$ s sealed by distinctive dump of material .33420 yellow \$'sh bro\$ # # colour and made of uncompacted sand with frequent rounded and angular flints and occasional inclusions of chalk, mortar brick and tile. ;uring this period single deposit of dark bro\$ # gritty silt .3332 ilt to the south of \$ II (556). - he accumulation of this material continued until it spread out over the top of the \$ II and the deposits on the north side. - h's is thought to represent # old garden soil. Sealing this \$ as dump of brick, gravel and mortar # s'ity sand matrix .33)2 - h's \$ s the first of number of levelling deposits - he remainder of the deposits \$'th# the trench \$ ere all levelling or make-up layers of modern origin.
- (~ * One further feature .568G586G11) of note, of modern origin, \$ s seen along the south edge of the trench. - his extended to the full depth of excavation. - he size and depth of this feature is unusual. One explanation is that it represents cut for the demolition of 20th-century building. If this is the case then the archaeological deposit immediately to the north of this trench may be severely truncated.

3.3 K r 6 Trench 9 (Figs 5 r 68

- ((1 Located # the north and west of Area 6 this 4mx) trench \$ s #tially excavated by machine to depth of 1.5, revealing 20th-century deposits of rubble and demolition debris. Problems were encountered # attempting to insert shoring and further machine excavation revealed concrete slab at depth of 1) extending across the entire trench. It proved impossible to remove the concrete from the entire trench and insert shoring so central sondage \$ s excavated. - h's measured ~ 3, x ~ (, and \$ as machine excavated further ~ 6m. Excavation continued by hand \$'thi# 1.5 x 1m sondage for 1, from \$'h'ch point the remaining deposits were augered for another 1m. At this level (c ~ 67mOD) compact deposit of gravel \$ s encountered. - his was probably the natural subsoil.
- ((~ - he lowest hand excavated deposit \$ s yellow sandy silt .667) containing pottery of # 11th- to 13th-century date. This \$ s separated from the overlying deposit (666) by lens of sand. ;eposit 666 \$ s grey # sandy silt \$'th occasional chalk and charcoal fleck Eight sherds of pottery including Late Saxon, early medieval and medieval \$ res were present indicating 11th- to 14th-century date for the backfilling of this feature further deposit of sandy silt .665) lay above this. - hese deposits are thought to be fills of a large pit, although the uppermost deposit may be an old topsoil.
- (((Sealing these \$ s levelling deposit made of loose brick rubble and grey silt .; < 2 It is on this that the ~ thick concrete slab had been laid. All deposits above this re

20th century "origin contain"ng demolition debris \$ith further levell"ng l yers of sand and aggregate and surfaces of concrete and tarmac.

3.4 K rē 9 Tr nch 14 (Figs 5 rē 6, 3 Gates 4 rē) 8

- () 1 Located to\$ards the east end of 8herry -ree Opening this trench \$ s orig"# lly planned to be centrally ^laced measuring 3x(0 ho\$ever ground\$ ter drainage ^ipe \$ s thought to run do\$# the centre of this rea. The trench \$ s therefore placed to the south of this and easured ~ (x) ~ + achining of this trenched reduced the level °y 1.1m until good archaeological soil horizon \$ s reached \$he# excavatio# continued °y hand.
- () ~ - he natural subso"l \$as seen "# the base of cut features and consisted of highly compact sand, \$h"ch \$as patchy "# colour .orange, red and yello\$2 Above this l y slightly silty sand, eixed "# colour bet\$een id yello\$ and °ro\$# .3)42 lthough root disturbance penetrated into this deposit "t \$as other\$ "se sterile. - his represents the blurred horizon bet\$een the # tural and features above and l y at bet\$een () and (5mOD. - hree graves and one other feature cut this deposit. fourth possible grave \$ s present "# the north-east corner of the trench but remained unexc 6 ated as it partially l y under the ccess step into the trench. Of the three graves only one .)"9) lay com^letely \$ "thin the limits of the e6 luation trench. - his grave was long and narro\$ measuring 1.96 °y ~)) , t \$ s ~ ~& deep and with"# it \$as s"ngle supine skeleton. Preservatio# \$ s reasonably good \$ "th both the s, aller as well as the larger bones ^resent. - h"rteen sherds of pottery \$ere found "# this grave dating to both the Middle and Late Saxon periods. + "ddle Saxon fabrics comprised both ' ritty and 5andy lps\$ich \$ re s \$ell s Badorf : re - he distinctive Late Saxon fabric ^resent \$ s Thetford-ty^e : re - he other t\$ o graves .519 and)") lay in the so" thle st cor#er of the trench and both extended °eyond the edges of excavation. These "tercut \$ "th 519 being the earl'est. This grave \$ s ~ 3, \$ "de, ~ 42mdeep and single supine skeleton \$ s revealed. Preservatio# \$ s fair although parts of the spine had not survived and the fe\$ ribs that were ^resent \$ere extremely fragile. : "thin the upper part of the backfill of this grave fragments of further skull belonging to Avenile and four sherds of pottery \$ere found. Of the pot three sherds \$ere + "ddle 5 xo# Badorf : are \$hile the fourth \$as of Late Saxon date. - his \$ s cut °y grave)" \$h"ch \$as shallo\$er being only ~ (3, deep. - his again contained single supine skeleton. Preservation \$ s aga"# fair although neither the ribs nor spine were present.
- () (shallo\$0 "regular c"t .)"% G') 2 ran along the northern edge of the site extending beyo#d the northern edge of excavation. This e y have formed lhear feature or \$as poss'bly the edge of larger ^it; but "nterpretation is some\$hat difficult as so little of this feature lay \$ "thin the trench. Pottery sherds dating to the late 12th to 14th century and 16th to 18th century \$ere recovered from "ts fill though "t "s thought the latter e y be "ntrusive. 7oth this feature and all of he graves \$ere sealed °y deposit of mid bro\$# grey sandy silt (546) wh"ch represents an old topsoil.
- ()) - \$ o lhear features c"t "nto this buried soil0both extending beyond the south edge of excavatio# ' ulley 514 \$ s ~ (, \$ "de but only ~ ~& deep and l y only ~ 10m to the e st of slot 512 - his slot \$ s ~ 36m \$ "de and ~ (, deep \$ "th straight sided <1 shaped profile. 7oth Late Saxon and 17th-century pottery \$ere present "# its fill. Interpretation "s aga"# difficult but "t possible that these features represent beam slot and ad\$acent drip gulley
- () 3 Posthole 510 cut one of these lhear features. - h"s posthole \$ s one of four .)"%9,)" %1 and 541 °e"#g the others) recorded in th"s tre#ch, all of \$h"ch were c"t from the s e

level and are probably related. Pottery and ceramic building material from these features date as of 18th- to 19th-century date. A lead nail or rivet was also found (5/104) in one of the postholes.

- () 6 Sealing all of these features were a number of post-medieval and modern deposits - the lowest of these probably formed a surface with compacted crushed chalk being present in the north and east part of the trench while compacted rubble was present across the rest of the trench. Above this is a 6cm of deposits largely made up of brick rubble and silty soils. Much of this probably represents demolition debris. The upper 15m of the trench was made up of more recently deposited material including hoggin and gravel.

3.5 K 7 Trench 15 (Site 6)

- (3.1 - This trench (3mx3m) was located towards Pitt Street and to the south of Cherry - Tree Opening, immediately under the hardcore surface. A deposit of olding debris was present. This was remarkable in the fact that it was entirely made of flint with no brick or tile being noted. Below this was a deposit of yellow/orange D'Almeida sand. At a depth of 4cm this changed to darker orange coarser sand also of modern origin. The hole trench was machined to a depth of 1.1m, following a central slot (one machine bucket wide) was excavated to greater depth. At 3cm deep the occasional lump of red brick was noted. It was also at this depth that the side of the trench started to slump. A further attempt was made to deepen the excavation and at a depth of 4cm, 1mOD further bricks were noted and the remains of a possible wall were seen in the north-west corner of the trench. Health and safety considerations prevented further excavation of this trench. It can be concluded that this trench in this area which had been cellared and that, judging by the level of the natural sub-soil in the other trenches, all deposits of archaeological interest, except for the possible base of the cellar walls, have been removed.

3.6 K 7 Trench 16 (Figs 7 & 8, Site 7)

- (6.1 Initial machine excavation of this 3x3m trench revealed a lead sewer pipe crossing the southern part of the trench and a foul waste pipe crossing diagonally from the south-west to the north-east corners. A brick wall crossed the trench and formed the west edge of excavation. Due to the presence of the services further excavation in this area was not possible so the trench was backfilled and further area opened directly to the west, again measuring (x). The wall revealed in the first trench then formed the eastern edge of the new trench. Foul waste pipe was also present in this trench, crossing the western part, and two other post-medieval walls were revealed in the southern and eastern parts of the trench. As the excavation continued to a depth of 1.7m, the limits of the walls and foul waste pipe. From this point onwards excavation continued by hand in the central sonage 1.3m x 1.3m to a depth of 0.5mOD. Natural was not reached and this trench was not augered due to the presence of human remains.
- (6.2 - The lowest recorded deposit was a grey silty loam (517) which formed a old topsoil containing pottery of both 11th- to 14th century and 15th- to 16th century date. In this were some articulated human remains (Sk518). No grave cut could be identified. Only the skull and upper vertebrae were recorded as the remainder of the skeleton lay beyond the edge of excavation. Above this was a 6m deep homogenous dark grey silty loam (516) with inclusions of chalk, ceramic olding material and charcoal fleck. This had probably formed a post-graveyard garden soil. It included sixteen sherds of pottery indicating a probable late 18th-century date and a single residual Roman coin dating to the late 3rd or 4th century.

- (6.) immediately above this horizon \$ s a make-up or levelling layer \$h"ch included portland cement and flint cobbles. It \$ s through this that the sewer trench .)%'2\$ s cut. Above this pipe trench lay a number of \$ lls from the 18th- and 19th-century o"ldings \$h"ch once occupied this site. One of these \$ s cut by a possible robber pit ()%%2 Remaining deposits were rubble underlying the present-day surface.

3.7 K r 7 Trench 17 (Figs 7 r 8, 30 te 8)

- (4 1 - his trench located to the \$est of Surrey Chapel , easured (x(, t \$ s machine excavated to depth of 1.1m \$he# clear archaeological horizon \$ s "identified. Excavation from this po"nt \$ s o"y hand, \$ "th identified features being sectioned and central sondage , easuring 1.3x1 (, excavated. - he natural silty sand \$ s reached at c (15mOD above which was a 0.1-0.2m deep deposit (591) representing disturbed upper horizon to the natural/buried soil.
- (4 ~ But into this \$as series of graves. ,# total five graves \$ere "identified "h this small sondage some of \$h"ch \$ere intercutting .632 c"t o"y 635 and)1' 2 indicating prolonged use of the area for burial. - \$o different l"gnments \$ere also noted \$ "th graves)9) and)9" being orientated south-west to north-east and graves 623,)1' and 635 l"gned east to \$est. / our of the graves contained adult skeletons \$h"le)9" contained child \$e , "ns and one sherd of late 12th- to 14th-century Grimston-type \$ re pottery , t \$ s not possible to record further "nformation# o# the skeletons s all \$ere o"ly partially revealed "h the excavated area, ho\$ever ^ reservation \$ s generally very good. Sealing all of the graves \$ s # old topso"l depos"t .550) contain# "g frequent chalk and portland flecks and occasional brick fragments as \$ell as pottery "ndicating # 18th-century date.
- (4 (- he next phase of activity "h this area \$as represented o"y ^ "t 551 - he part of this pit seen with# the limits of the trench ind"ated poss"ble trapezoidal shape "h plan, ~ (3, deep \$ "th flat base. - his had single fill \$h"ch \$ s , ade " of demolition debris .tile, brick, flint and stone) "h sandy lime mortar. An unusual element to the fill \$ s the inclusion of architectural mould"ngs and pieces of marble. - he origin of these is unclear but the co , o"nation of elements suggests some kind of monument or grand o"lding , y have bee# the source. - he style of the , ould"ngs "ndicate that they \$ere sculptured later than the 16th century 8er , ic building , ter"al fro , this ^ it also "ndicated a post-medieval, possible 19th century date.
- (4) All other deposits \$ "h"h this trench were clearly of post-medieval date and "nclude poss"ble robber trench .5612 #d t\$ o p"ts .)! and 5622 all filled \$ "th o"rck rubble. Above these \$ere the re , "ns of 18th- and 19th-century \$ lls and further deposits of demolition debris lay below the present ground surface.

3.8 K r 7 Trench 18 (Figs 9 r 10)

- (& 1 - small trench measuring 3x1m \$ s excavated against the southern \$ ll of a \$ rehouse-type o"lding "h order to establish the nature and date of the footings of this structure. - his building is of flint construction, notably different from all other buildings "h area, and "t had been suggested that "t , y have reused the plan of 5t Olave's church for "ts foundations. ,nitial excavation to depth of c ~ * , \$as o"y machine; further excavation \$ s carried out o"y hand "h central sondage ~ 4, wide and ~), deep.
- (& ~ - he lowest deposit reached at c (42mOD \$ s compact gravel thought to be natural subsoil. 5itting above this \$ s ~ 1m depth of silty sand \$ "th frequent gravel .3~2 - he corner of a poss"le pit or posthole .)%%2\$ s seen cutting this. - his feature \$ s

only ~ 15m deep and contained dark grey slightly sandy silt (3)2 sealing this and extending cross the whole of the trench as dark grey sandy silt with occasional gravel and ceramic building material fragments (501). Finds included pottery which indicating 18th century date - this has been interpreted as garden soil. compact deposit of ceramic building material, gravel and sandy silt (3)2 1 y above the level from which the standing building was constructed

- (& (- the footing for the building as made of bricks, limestone and flint with sandy lime mortar - this was unfaced and extended ~ 15m further than the wall it supported. - the wall itself was made of similar materials although the proportion of mortar to other building materials was less and it was roughly faced. Of particular note was the use of dressed limestone pieces which had been salvaged and re-used from earlier building. - the limestone appeared to be from Caen and it can be surmised that it once formed part of St Olave's church. It is highly likely that much of the flint was also re-used and had also originated from St Olave's church.

- (&) All of the other deposits recorded in this trench had accumulated against the wall of this building. ; deposit 3-4 was a dump of demolition debris made up primarily of mortar with ceramic building material from which thousands of sherds of 19th to 20th-century pottery were recovered. Above this was a ~ 3m deep deposit of clean clayey silt (3)2 - this was sealed by deposit of red brick and lime mortar rubble with matrix of gritty sandy silt (508) above which was a layer of hoggin on which the present tarmac surface was laid.

3.9 K 7 Trench 19

- (* 1 Located to the north of Surrey Chapel (8x1.5m trench was excavated with the intention of establishing the presence or absence of human remains in this area. - the trench was machined to depth of 1m following which central sondage was excavated for a further 0.7m to c. 1.7m OD. - the deposits were then augered for a further 1m - the lowest two excavated fills (670 and 671) showed the augered deposits were probably fills of large cut. - the lower of these (671) was silty sand with notable gravel content and occasional ceramic building material. Finds included five sherds of 16th- to 17th-century pottery, ceramic tobacco pipe and bone, both animal and human. Above this was a darker silty sand, with less gravel and ceramic building material (670). Finds were similar to the underlying deposit although the three sherds of pottery recovered indicated slightly later date (17th century) - these were sealed by silty sand with ceramic building material, gravel and charcoal inclusions (669). 7th pottery and bone were retrieved the twelve sherds of pottery again indicating 17th century date.

- (* ~ Above this was a layer of possible demolition debris made up of brick and mortar mixed with grey silt which may have served as surface. On this was thin layer of silt and charcoal crossing the trench on north-to-south alignment was the remains of red brick (19th century) wall. - the upper fill of the trench consisted of demolition debris sealed by mortar and gravel deposit on which the present tarmac surface had been laid.

- (* (In conclusion, no evidence for *in situ* burials were found although handful of disarticulated human skeletal remains were retrieved from the fills large pit - the scale, date and nature of the pit is unknown though the upper fills were deposited in the 17th century

3.10 K r r 7 Tr nch "\$

- (10.1 Located " order to try and establish the extent of the burial ground this trench \$ s "tially , ached to depth of c 1.10m \$ here the tops of ^ its \$ ere identified. central sondage , easuring 1.3 x 1m \$ s hand exc 6 ated and the remaining deposits augered.
- (10.~ - he lo\$ est "nvestigated deposits \$ ere the fill of large pit .6732 - hese \$ ere augered to depth of 1) , O; \$ here gravel deposit, presumably the natural subsoil, prevented further "nvestigatio# - he ex ct size of this pit \$ as not confirmed as "t extended ° eyo#d the edges of excavatio# " # ll directions. ,t appears to have been dug fro level of c) (, , aking it ~ * , deep. - he ^ rimary fill (672) \$ s gravely sand and \$ as ^ robably redeposited natural, poss'bly even slumping from the pit sides. large proport'on of the pit0part"cularly on "ts south side \$ as backfilled \$ "th , id ° ro\$ # sandy silt with inclusions of s , ll flints0chalk fragments, charcoal flecks and lenses of orange sand .668). ove this l y pale bro\$ # clayey silt \$ "th frequent le#ses of orange clay and occasional chalk and charcoal flecks .684) and , id bro\$ # sandy silt with similar lenses and "nclusions .637). ; eposit 668 contained eleve# pottery sherds "ndicating poss'ble 11th- to 14th-century date \$ hile the upper deposit 637 contained fifteen sherds0the , ajority of \$ h"ch had 12th to 14th-century date, though one 15th- to 16th-century sherd \$ s also recorded from this deposit as \$ s # "ron L-shaped fitting used to hinge gates, \$ "do\$ s or door (SF 109).
- (10.(- hese fills \$ ere cut ° y ^ it **642** \$ h"ch, although "ts full dimensions \$ ere not established, appeared to be ° road .over 1 ~ , " # diameter) but relatively shallo\$. ~ 65m dee~2 feature - he fills of this pit .661 and 662) \$ ere generally pale bro\$ # " # colour - hey comprised clayey silts \$ "th charcoal, chalk and ceramic building , terial flecks. - he upper fill had greenish tinge to its colour and also included patches of mortar ° o finds \$ ere recovered from this feature. ove this l y 6 other ^ its .**638, 640, 674, 678, 687** and **690**) t\$ o of wh"ch were intercutting.
- (10.) Pit **640** \$ s circular \$ "th diameter of c ~ & , ,t \$ as 1.) , deep \$ ith steep sl"ghtly tapering sides and concave base. - hree fills \$ ere recorded the lo\$ est of \$ h"ch \$ s slightly clayey silt \$ "th charcoal and chalk flecks .641). - his \$ as sealed ° y pale grey ashy silt .686). - he backfilling of the pit \$ as completed ° y the deposition of greenish grey sl"ghtly clayey silt with chalk and charcoal fleck and lenses of orange clay / inds fro the lo\$ er fill "ncluded t\$enty pottery sherds \$ h"ch "ndicate ^ robable 14th- to 15-century date. small copper-alloy buckle of late medieval or early post medieval d te (SF105,) t\$ o iron straps .5/ 110 and 1112 and frag , ent fro l 6 stone quern .5/ 106) \$ ere also recovered This \$ s cut ° y pit **638** \$ h"ch occupied the south-west part of the trench. Th's pit extended ° eyo#d the area of excavation and was " # excess of 1. * , long, 1. ~ , \$ "de and 1.1m deep. - he lo\$ est recorded fill .676) \$ as # ashy s"t (s" , l r to f"l 6&6 see# in p't ! \$ 2 cont "ning frequent chalk lumps and some charcoal. ove this lay a sandy silt w"th mortar and flint inclusions.
- (10.3 - he re , "ning pits .**674, 678, 687** and **690**) all l y outside the area sondaged and extended beyond the edges of excavat'on. , # gener l their recorded fills \$ ere unremarkable.
- (10.6 - he "" er fills of all these features ^^ eared to have been truncated ° y levelling horizo# above \$ hich ~ 3 , depth of , odern make-up had been deposited. service trench \$ s noted cutting this the south-west corner of the trench. - he ^ resent gravel car park surface lay above this.

3.11 Finds Summary

- (11.1) - The other 11 finds assemblage, although the site is typical of that for a small medieval site in Northamptonshire and the site is not notably different in nature from that recovered from the Phase 1 evaluation. The evidence did not indicate the concentrated disposal of domestic refuse, nor were any items related to particular trades, crafts or industries noted other than small assemblage of metalworking debris (Appendix B.6).
- (11.2) Of the site, all (12 items) small finds assemblage only three items were datable; a possible farthing token of Charles I (c 1636-99), a Roman coin, late (mid or early 4th century AD) and a D-shaped buckle of late medieval or early post-medieval type. (See Appendix B.1)
- (11.3) - The assemblage of 199 sherds of pottery weighing 2293g was collected from 13 contexts. - The most remarkable element of this assemblage was the presence of fine sherds of Middle Saxon pottery including both Gritty and Sandy Ipswich ware and elements of the late 10th to 11th century. - These are the first sherds of Middle Saxon pottery to be found in this area, the highest concentrations being at the site and in the area of the church. - The remaining sherds are represented Late Saxon, early medieval, medieval and post-medieval vessels. (Details in Appendix B.2)
- (11.4) - The finds from Pit 33 (Trench 17) were also rather unusual in that they consisted of a mixture of stone types; limestone, sandstone and various types of rhyolite as well as brick. A number of the pieces have moulded decoration and some relief carvings. One had been inscribed. It is likely that this assemblage should have originated from a building or monument of some status. For further discussion see Appendix B.3
- (11.5) - The few remains from the site like the other assemblages, are typical of that from small sites in Northamptonshire. - Here was no evidence suggesting breeding or butchering on site. (Appendix B.4)
- (11.6) Small assemblages of brick and tile (Appendix 7) (20 clay pipe (Appendix 7) and glass (Appendix B.6) and slate (Appendix B.6) were also recovered.

3.12 Environmental Summary

- (12.1) Environmental samples were taken from two pits and from the Late Saxon ditch. Preservation within the waterlogged ditch fills were good. Indications are that the area may have been pasture as the ditch began to fill. A hammer scale was recovered from three of the samples indicating metalworking was likely to have been taking place nearby (For details see Appendix C.1).

4 ; ,58<55,ON ; CON8! <5,O'5

4.1 Roman

- 1.1 - he earliest evidence recovered from the excavations is a Roman coin dating to the late 1st/early 2nd centuries and a single sherd of Romano-British greyware pottery - the scarcity of evidence of this date is unsurprising as the early Roman settlement of the region lies some 1.5 km to the south of the Caistor St Edmund. It has long been thought that the cross-roads for north-south and east-west communication routes lay in the vicinity of Norwich Cathedral to the south-east of the present site. Prior to this evaluation only other find of this date located within the development area was a single Roman coin (NHER 22).

4.2 Middle Saxon

- 1 - no features of this date were found on site but the sherds of Middle Saxon pottery were recovered from grave fills in Trench 14. Although this is only a handful of sherds it is the first evidence of this date to be discovered in the part of the city and hints at the presence of Middle Saxon activity in the south-western part of the development area (Area 42 - the Middle Saxon origins of the Caistor St Edmund have long been sought and to date the evidence is still somewhat patchy and is largely formed by occasional finds of Middle Saxon artefacts during excavations. The main distribution of Middle Saxon material is focused to the east of the present site and straddles the River: Fen, being present on both the north and south banks. Recent excavations at Fishergate have contributed greatly to this with the recovery of five late 4th- to early 8th-century coins (sceattas) (Adams 1996) which enhances the argument for Middle Saxon settlement on the north bank of the river. Jones 1994, 42 - the discoveries from this evaluation add to the story (but steadily growing evidence relating to Middle Saxon Norwich).

4.3 Late Saxon

- 1 It is during this period that the nucleated settlement rose to prominence and earthwork defences consisting of ditch and bank were constructed on both sides of the river - the line of the defences on the south bank of the river are still somewhat uncertain, although features at Stepping Lane, 8 Astle Hill and 8 inema City have all been interpreted as possibly being part of this defensive circuit (see Shepherd Popescu 2010 for detailed discussion). On the North bank of the river the line of these defences is more certain having been revealed in several places by excavation - the present evaluation sought to locate and excavate a section through the Late Saxon defences of the burgh of the Caistor. This was successful as the eastern edge of the ditch was located in the base of Trench 8 and fills of the ditch excavated to its base.
- 2 - the evidence from this evaluation which recorded the ditch to be c.1.3m deep, cut from c.15m OD with its base at c.13.7m OD; accords reasonably well with that from other excavations. At Botolph Street the base of the ditch was recorded between c.13.7m and c.13.3m OD; (Evans 1985, 114-6) while the two trenches excavated in the Phase 1 Evaluation it was seen to be slightly higher at c.13.8m OD and 13.9m OD (Percival and Westall 1994, 40) - further to the south the eastern edge of the ditch was also seen in the Lims Lane Excavations. Here the ditch was cut from c.13.8m OD but the base was not reached (Atkin 1985, fig 12). - the profile of the eastern side of the ditch is also similar to that seen at Botolph Street. Evans 1985, fig. 42 being wide, gentle slope.

-) ((- \$o ^ revious excavations have recorded the full profile of the ditch .Botolph Street Evans \$ith Davis# 1985 and 8 alvert 5treet 7o\$# 1992, &1*2 These have both sho\$ n the ditch to be bet\$een & and * , and that "t has been recut on t\$ o occas"ons, \$ "th the latest recut being on the \$ estern edge of the ^ revio"s ditches. ,t "s therefore likely that the profile and fills of the ditch revealed "h this evaluatio# \$ s th t of the second recut of the defensive burgh d"tch

4.4 #r ir - r Ö

St Olaves Church

-)) 1 - he trenches \$ "thi# Area 4 sought to investigate the possible location of 5t Olaves Church Little is %no\$ about this church although the dedication to 5t Olave must post-date the canonisatio# of Olave, >"#g of ' or\$ y0"# 1035. ; ocumentary evidence tells us that the church fell into decline fter the Black Death (1348) and that "t \$ as no longer "h use °y 1546 \$hen "t \$ s consolidated \$ith St ' eorge, 8olegate (Blomefield 1806). - he exact locatio# of the church is not kno\$# Campbell (1975, M ^ 7) suggests that "t , y °e loc ted under the ^ resent 5urrey Chapel, \$h"st the Ordnance Survey marks its locatio# s being beneath the Pitt 5treet roundabout. ?", # bone has been found in both these locations (NHER 97 and NHE~)3~2
-)) ~ - hree of the evaluation trenches .- renches 14, 16 and 17) revealed evidence for the churchy rd "h the form of burials. - hree rticulated burials \$ere found "h - rench 14, one "h - rench 16 and five "# Trench 17. Pottery from - rench 14 graves \$as of +iddle and Late 5xon date and "s probably residual. - he burial "# - rench 16 \$ s ssociated with deposit contain"hg pottery of 15th- to 16th1century date \$h"le one grave "h - rench 17 contained a single sherd of 13th- to 14th-century date.
-)) (,t had Iso bee# suggested that \$arehouse ty^ e structure0"" It largely of reused flint , y have reused the footprint of the church. Excavation to reveal "ts footings .- rench 18) ho\$ever confirmed that this structure \$ s of post-medieval date and did not sit upon the foundations of # earlier °"" lding. Pieces of re-used ashlar l'mestone \$ere revealed in the lo\$er parts of the w lls of the building and this along w"th the quantity of flint \$ "th"# its °"ild re ^robably re-used from 5t Olaves church. Iso of possible relevance to this was a layer flint seen sealing and levelling the ground above the cellar "h - rench 15. It is possible that this also originated from 5t Olaves church
-))) lthough the church \$ent out of use and \$ s demolished "h the , id-16th century the church yard remained fairly distinct on 18th-century maps \$ "th development cress the site only ^arent "h the later 18th century (eg. ?ochstetters , ^ of 1789). - he excavatio# of - renches 1* and ~ \$ s intended to try and confirm the extent of the burial ground. " either of these trenches revealed burials, the evidence fro, Trench 19 "h"icated that large post-medieval ^it \$ s ^resent. - his \$ould have removed #y evidence for earlier graves. - he dating evidence fro, - rench ~0 although also devoid of graves, suggests that t the time that the church \$as ctive number of pits \$ere dug and backfilled "h this area, "ndicating that this \$ s not \$ "th"# the graveyard. Taking into ccount the evidence fro, Phase 1 Evaluatio# - re#ch 1 \$here again no graves \$ere found the northern extent of the graveyard can be postulated. - his is probably reflected "h the , odern property boundaries running along the north edge of Cherry -ree Opening and then follo\$"#g the southern boundary of the present gravelled car park.

Beyond the graveyard

-)) 3 ; during the medieval period the area to the north of St Olaves appeared to be largely open ground with a series of large quarry pits. At this time there were largely limited to the street frontages. Previous archaeological evidence indicates metalworking took place in this area with the discovery of several ore-roasting hearths and large scale quarry pits (Evans with Davison 1983). A similar large quarry pit was revealed in trench 9 with pottery from its backfill indicating a 11th- to 13th-century date.
-)) 6 At this time, it is likely that the Late 5th-century ditch would still have been a feature of the landscape. Evidence from the fills included hammer scale, further indication of metalworking in the area. The upper fill of the ditch was made up of material which had probably once formed the inner edge of the defences. The homogenous nature of this fill suggests that this may be result of deliberate slighting of the defences and backfilling of the ditch.
-)) 4 Pitting continued to be a feature of the area in the 13th and 14th centuries. A series of medium sized pits were dug into the top of the backfilled gravels with the area of the Late 5th-century ditch. Although only a few sherds of pottery were recovered from these 13th- to 14th-century date was indicated. A similar date is suggested for the backfilling of the large pit revealed across the base of trench 20. The Enrolled Deeds (1285-1340) and other documents indicate the types of activity which were being carried out at this time in the area of Gt. St. George's Street and St. George's Street. These records show smithing taking place although this changes with the area later being occupied by leather-workers, skinner-dyers, bakers and cloth merchants. In 1832 - his trend of pitting continued throughout the medieval period.

4.5 Post-medieval

-) 3 1 Across much of the site, both Area 6 to the north and Area 4 to the south, the early post-medieval period appears to be a time of abandonment. The areas have returned to open land which could have been used for horticulture or pasture. A deposit of soil was seen building up in the bottom of the trenches. This deposit sealed the graveyard deposits to the south and the inner trenches 18 and 19. A similar deposit was noted sealing the pits on trenches 8 and 9. This agrees with the evidence for this period which shows that, with the exception of the street frontages, most of the area remained as open space or back yards (Cleere 1696, Kirkpatrick 1723, Lomefield 1806, King 1766). The first map evidence for the filling of this area with buildings is on Hochstetter's map of 1789.
-) 3 ~ Evidence for post-medieval buildings is present in all trenches with the exception of trenches 8 and 18 but more severe 19th-century levelling had taken place in these areas probably removing the later post-medieval evidence. Area 4 to the south appeared to be rather densely occupied with buildings across most of the area. This is also reflected in the 1st edition Ordnance Survey plan. To the north in Area 6 development remained largely confined to the street frontage with the later post-medieval evidence representing property boundaries.
-) 3 (7th areas have undergone significant change in the 20th-century including the construction and demolition of The Odeon cinema on Area 6. A deep, modern cut along the south side of trench 8 may be evidence of substantial modern demolition. The construction of the inner ring-road and Anglia Square in the late 1960s/early 1970s chopped across the medieval street pattern which had survived until that date. It is the present plans for the redevelopment of Anglia Square which has provided the opportunity for the history and archaeology of this area to be fully investigated.

4.6 Significance

-) 6.1 - his work has proved valuable in providing further insight into the archaeology and history of this part of the borough. - the retrieval of Middle Saxon pottery in this part of the city is a first. Its presence suggests that Middle Saxon features may be present in area.
-) 6.2 - to the north of the development near the line of the late Saxon ditch is confirmed. Its profile and fills according with previous excavations to the north of the river and suggesting that this feature is fairly uniform in shape and size throughout its length. - his excavation has shown that within the lower ditch fills a preservation of environmental indicators is good. - the waterlogged nature of these also provides good conditions for the preservation of other organic material.
-) 6.3 - the graveyard belonging to St Olave's church has been identified. Its northern boundary is likely to be reflected in modern property boundaries following the north of Cherry - tree opening and the south of the gravel surface car park. Many other burials undoubtedly remain under the present pavements and car parks although modern cellars along Pitt Street and large post-medieval pits along St George's Street will have removed many burials. - the precise location of the church remains unknown.
-) 6.4 - medieval evidence across the remainder of the site appears to consist largely of pitting. - the street frontages were mainly excavated in the 1970s but more intensive excavation of the pits could provide further indications of the occupations of the inhabitants of this area.
-) 6.5 - the record of the late post-medieval and modern development of this area is also key to understanding and predicting the survival of archaeological deposits. It is apparent that in localised areas across the site the archaeology has been removed by large scale construction or demolition.

4.7 Recommendations

-) 4.1 Recommendations for any future work based upon this report will be made by the County Archaeology Office.

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Sutermeister, H. and -illy rd0M.O	1985	- he ? "storical 7ackground to the Botolph and 5t George\$ 5treet sites "# Atkin, + 0 Carter0 and Evans, ; 0 <i>Excavations in Norwich -->-6-->8 Part ^ East Anglian Archaeology 26, 88-92</i>

PPEN;K A - RE' 8? DESC~, P-, O' 5 ~; CONTEK- INVE' - O' F

Trench !						
5 r v f r l description				Orientation		
<p>5hored tre#ch Earl'est feature 's the L te Saxon defens"6e ditch. Profile of the western edge to the base recorded Lo\$ est fillss \$ terlogged Most fills very silty with the exception of the up^ er fill \$ "th "s probably redeposited bank _ ter" l 8 ut i#to th"s was a ser'es of medie6al pits. - hese were sealed ° y a post-medieval soil hor'Eon. - \$o footi#gs and a boundary wall of post-med'eval date were recorded Sealed by l ter deposits. modern cut along the north edge of the trench extended the full de^ th of the exca6 tion a#d may ° e the result of gr" ° ° "bg o" t a modern foot"#g</p>				# ax. epth (m)		
				Wi th 6m))	
				Length (m)	&	
Contexts						
context v,	ty+r	Wi th (m)	(r pth (m)	comment	finds	ate
33)	layer			r" bble		
333	layer			soil	yes	
336	asonr y			w ll		
334	layer			redeposited		
33&	layer			soil	yes	
33*	layer			r" bble		
360	layer			soil	yes	
364	layer			d" _ ^		
365	layer			r" bble		
366	layer			d" _ ^		
367	layer			r" bble@asphalt		
368	cut			serv"ce trench		
56*	fill			service tre#ch		
376	layer			soil		
344	layer			soil		
34&	fill			soil		
34*	asonr y			foot"#g		
3&~	cut			fo"#dation trench		
381	cut			ro"° er trench		
3&~	f'll			ro"° er trench		
3&(	f'll			ro"° er trench		
3&)	cut			^"t		
3&3	fill			^"t		
386	cut			^"t		

3&4	layer			d" ^		
3&&	cut			^"t		
3&*	fill			^"t		
3*~	fill			^"t		
3*3	c"t					
3*6	c"t					
3*4	c"t					
3*&	c"t					
3**	fill					
60~	fill				yes	
601	fill					
6~~	layer				yes	
6~(	layer				yes	
60)	fill				yes	
603	fill				yes	
606	fill				yes	
604	fill				yes	
60&	c"t					
60*	fill				yes	
61~	c"t					
611	layer					
61~	asonr y					
61(	asonr y					
61)	c"t					
613	c"t					
6(6	cut			ditch		
6)(	layer/fill					
6))	layer/fill					
643	fill					
646	fill					
644	fill					
6)&	layer			gr 6el		
6)*	cut			^"t		
65~	fill			^"t		
651	cut			^"t		
65~	fill			^"t		

63(	cut			^"t		
65)	fill			^"t		
653	fill			^"t		
656	cut			^"t		
654	fill			^"t		
63&	cut			^"t		
65*	fill			^"t		
660	cut			^"t		

Trench 1							
5 r v f r l description					Orientation		
+ modern concrete slab at a depth of 1.3. So#d ge 1x1 1, excavated through th's #d then augered. Lowest deposits probably fill of large medie6 l (=~ rry2pit Sealed °y pro° °le post1 ed'e6 l so'l hor"don					K- g. depth (m)		
					Width 6m))
					Length (m))
Contexts							
context v,	ty+r	Width (m)	(r pth (m)	comment	finds	date	
664	layer			r"bble		post-medieval	
663	L^"t fill			so'l		, edie6al	
666	L^"t fill			so'l	yes	, edie6al	
664	L^"t fill			so'l	yes	, edie6al	

Trench 1'						
5 f v f r l description					Orientation	
Three gr 6es exc 6 ate, t\$ o "nter-cutting Fi#ds of + "ddle S xon d te recovered from two of the gr 6es wh"ch is thought to be residual Gr 6e y rd se led by a post-medieval soil Ev'dence of post- edie6al structures present in the form of post-holes a#d g"llys					# ax. epth (m)	1.3
					Wi th 6m)	~ (
					Length (m)) (
Contexts						
context v,	ty+r	Wi th (m)	(f pth (m)	comment	finds	ate
31~	cut			^ost hole		^ost-, edie6al
311	f'll			^ost hole		^ost-, edie6al
312	cut			l"#ear		^ost-, edie6al
313	f'll			l"#ear	yes	^ost-, edie6al
314	cut			l"#ear		^ost-, edie6al
315	f'll			l"#ear	yes	^ost-, edie6al
51*	c"t			gra6e		, edie6 l
3~~	? 5~			skeleto#		medieval
3~ 1	f'll			gr 6e	yes	medieval

3~	c"t			gra6e		edie6 l
3~(	? 5~			skeleto#		medieval
3~)	fill			gra6e		edie6 l
3~ 3	f"ll			gr 6e	yes	medieval
326	? 5~			skeleto#		medieval
3~ 4	c"t			gra6e		edie6 l
3(6	f"ll			^ ost hole	yes	^ ost- edie6al
3(4	cut			^ ost hole		^ ost- edie6al
3(&	f"ll			^ ost hole	yes	^ ost- edie6al
3(*	cut			^ ost hole		^ ost- edie6al
3) ~	f"ll			^ ost hole	yes	^ ost- edie6al
3) 1	cut			^ ost hole		^ ost- edie6al
3) ~	f"ll			^"t	yes	medieval
3)(	cut			^"t		edieval
3))	fill			^"t		edie6 l
3)3	cut			^"t		edieval
346	layer			soil		^ ost- edie6al
3) 4	l yer			#atural interface		! te Saxon/early medieval

Trench 1)		
5 r V f r l description	Orientation	1
- re#ch thro" gh modern ° c%ill of cellar Base of cellar #ot re ched No context n" bers "ss" ed	# ax. epth (m)	~ (
	Wi th 6m)	(
	Length (m)	(

Trench 16						
5 r V f r l description				Orientation		
- trench 3x(w"th sondage 1, x1 ~ "atural #ot reached. Lo\$ est de^osit cont "ne articul ted skeleton. sealed by an 18th ce#tury soil bove th"s \$ as the re_ "s of 19th century b" "d"#gs \$ hich had subseq"ently been de_ ol"shed.				# ax. epth (m)		1.4_
				Wi th 6m)		(
				Length (m)		(
Contexts						
context v,	ty+r	Wi th (m)	(r pth (m)	comment	finds	ate
316	layer			garden soil	yes	post-medieval
317	layer			gr 6eyard soil	yes	_ edie6al
31&	? 5~			skeleto#		_ edie6al
3~ &	layer			_ %1"		_ oder#

3~*	layer			1.3m		1.3m
3(	asymmetry			well		
331	fill			footing		post-medieval
3(	layer			1.3m		post-medieval
3(	cut			footing trench		1.3m
3()	cut			sewer trench		post-medieval
3(3	fill			sewer trench		post-medieval

Trench 19							
5.1.1 description					Orientation		
- trench 3x3m with central sondage 13x1 (1.3m). Fine burials, four adult one child, some intercutting - these sealed by a postmedieval soil. Series of post-medieval pits including one of the architectural stone elements with its fill. Below this is a series of wells, probably 19th century. Sealed by 20th century deposit on the level of deposits.					# axis depth (m)		1.3m
					Width (m)		()
					Length (m)		()
Contexts							
context v,	type	Width (m)	Depth (m)	comment	finds	date	
3)&	cut			1.3m		post-medieval	
3)*	fill			1.3m	yes	post-medieval	
33~	layer			garden soil	yes	post-medieval	
351	cut			1.3m		post-medieval	
33~	fill			1.3m	yes	post-medieval	
33(	asymmetry			1.3m		post-medieval
361	cut			footing trench		post-medieval	
362	cut			1.3m		post-medieval	
363	fill			1.3m		post-medieval	
34~	? 5~			skeleton		medieval	
371	fill			grave	yes	medieval	
34~	cut			grave		medieval	
34(	? 5~			skeleton		medieval
34)	fill			grave		medieval	
343	cut			grave		medieval	
3*1	layer			soil	yes	late 5th century medieval	
3*~	? 5~			grave		medieval	
3*(	fill			grave		medieval
3*)	cut			grave		medieval	
616	asymmetry			floor		post-medieval	

	y					
614	asonry			w ll		post-medieval
61&	asonry			w ll		post-medieval
61*	asonry			foot#g		post-medieval
62~	layers			le6elling		oder#
621	layers			co#structio#@6elling		oder#
6~~	layer			so'l		moder#
6~(	layer			r"bble		oder#
6~)	layer			soil@bble		post-medieval
6~3	layer			soil@bble		oder#
6~6	layer			d", ^		moder#
624	layer			le6elling		oder#
6~&	layer			r"bble		post-medieval
6~*	layer			garden soil	yes	post-medieval
6(~	? 5~			skeleto#		edieval
631	f'll			gr 6e		edieval
6(~	cut			gr 6e		edieval
6( (	? 5~			skeleto#		edieval
6()	f'll			gr 6e		edieval
6(3	? 5~			skeleto#		edieval

Trench 1!

5.1.1 description

- trench located adjacent to building to west of the footings. Building of post-medieval date although the corner of the trench is medieval. The trench is located adjacent to the footings. All adjacent soils post-medieval < 1000 AD.

Orientation

# axis	depth (m)	1.3
Width (m)		1
Length (m)		(

Contexts

context	type	Width (m)	Depth (m)	comment	finds	date
3~	layer			surface. ext. # 12	yes	post-medieval
301	layer			garden soil	yes	post-medieval
3~~	layer			1000-1500 AD	yes	post-medieval
3~(	cut	~	~ 13	1000-1500 AD		post-medieval
3~)	f'll			1000-1500 AD	yes	post-medieval
3~3	asonry			\$ all footing	yes	post-medieval
306	asonry			\$ all		post-medieval
3~4	layer			demolition @ 1000 AD	yes	oder#

3~ &	layer			1.4		order#
3~*	layer				yes	order#

Trench 11							
5 r 5 f 5 l description - re#ch re6e led series of de^osits which re pro^ o ly fill of large pit. /" #ds i#dicate 14th-18th century date ugered for a further 1,					Orientation		
					# ax. epth (m)	1.4	
					Wi th 6m)	1	
					Length (m)	(
Contexts							
context v,	ty+r	Wi th (m)	(r pth (m)	comment	finds	ate	
669	layer			soil	yes	post-medieval	
64~	f'll			^"t	yes	post-medieval	
671	f'll			^"t	yes	post-medieval	

Trench "5							
5 r 5 f 5 l description					Orientation		
- trench 3x(w'th centr l so#dage 1 7x1.~ Exc 6 ated to 2.(and " gered for a further 1m Lo\$er de°osits fills of large med'e6 l (13th1 13th ce#tury2""ts, pro° bly =uarry ^"ts. Cut by l ter nedie6al (13th1 16th century pits. Up^er parts of these truncated °y moder# le6elling.					# ax. epth (m)	~ (
					Wi th 6m)	(
					Length (m)	(
Contexts							
context v,	ty+r	Wi th (m)	(r pth (m)	comment	finds	ate	
6(4	f'll			^"t	yes	edie6al	
6(&	cut	Ml.*	Ml.1	^"t		late medieval	
63*	fill			^"t	yes	late medie6 l	
64~	c"t	M~ 43	>1 ~	^"t		late edie6 l	
641	fill			^"t	yes	late medie6 l	
6)~	cut	Ml.~	M 63	^"t		edie6al	
661	f'll			^"t	yes	edie6al	
662	f'll			^"t	yes	edie6al	
663	f'll			^"t		edie6al	
668	f'll			^"t	yes	edie6al	
64~	f'll			^"t		edie6al	
64(	cut	Ml.3	Ml.3	^"t		edie6al
67)	c"t	~ 65	M~ (	^"t		late edie6 l
643	f'll			^"t		late medieval	
676	f'll			^"t		late medieval	
644	f'll			^"t		late medieval	

67&	c"t	M~ 33	M~)	^"t		late , edie6 l
64*	f"l			^"t		late medieval
6&~	f"l			^"t		late medieval
6&1	layer		~ 3	^"t		moder#
6&~	cut	M 3	~ 6	, %e-u^		moder#
6&(	f"l			serv"ce trench		, oder#
6&)	f"l			serv"ce trench		, oder#
6&3	f"l			^"t		late medieval
686	f"l			^"t		late medieval
6&4	cut			^"t		late medieval
6&&	f"l			^"t		late medieval
6&*	cut			^"t		late medieval
6*~	f"l			^"t		late medieval
691	finds " # it			" # strat ^ ot		

PPE";, K B. F, ;5 REPO~ - 5

B1 The Smr"ll Finds

By Nina Crummy

- the assemblage "s s, all and provides little " # the \$ y of dating evidence or "nformation regarding domestic activity or local crafts

- \$o items are reasonably \$ell dated °~t re not " # primary contexts, Roman coi# of the late (rd or 4th century that came fro, post-medieval garden soil .5/ 100) and # unstratified Charles I Rose farthing token, dated c. 1636-44 (SF 101).

- the only dress ccessory " # the assemblage "s small copper-alloy buckle of late medieval or early post-medieval date .5/ 105). part fro, late post-medieval lead # "l or rivet .5/ 104), the remaini#g objects re of types that changed little over t, e and cannot °e closely dated. number of iron # "ls and other f"ttings probably derived from °""ldings or other structures " # the vicini"ty0 such as possible pintle fragment, # !-shaped f"tting that \$ s used to h"nge gates0 doors, shutters and \$ "ndo\$s .5/ 109; Egan 1998, 43-6), and t\$o "ron straps, one large and probably part of door furniture(SF 11120the other , uch s, ller and , ore likely to come fro, cupboard or chest (SF 110).

Of t\$o fragments of lav quernstones "mported from the ~ hineland, one "s from late medieval to early post-medieval ^ it and the other fro, later post-medieval pit fill. 7oth ~"eces , y be residual as the trade " # lava querns to Nor\$ich \$ s prolonged, running from the + "ddle 5 xon period through to the early post-medieval period (Buckley ~~~40 145). - the fragment from the earlier pit retains traces of dressing on the grinding surface .5/ 106). - the piece from the later feature has been reused as building material, probably as decorative veneer as it \$ s found " # associatio# \$ "th fragments of , rble and has # unusually even grinding surface, flatter and better preserved than \$o"ld °e expected on quern \$ here the dressing has bee# \$or# \$ y °y ~sage .5/ 102). ~euse of l6 quer# and , illsto#e fragments as °""ldi#g , ter" l or for

hearths have been noted elsewhere at Dorchester but reuse as decorative stone is unusual (Margeson 1993, 239; Buckley 2005; 2007, 146).

Catalogue

SF 100. - trench 16, (516), garden soil.

Illegible Roman issue of the late 3rd or 4th century Diameter 18 mm.

SF 101. (9999*2 Unstratified.

Iron rose farthing token of Charles I, Peck-type 10 dated c. 1636-44, with sceptres through single-arched cross on the obverse and single-arched cross over rose on the reverse. Peck 1970 4)130 & 2 - the legend is poorly preserved and the initials illegible. Diameter 16 mm.

SF 105. - trench 20, (641), fill of pit 640.

Small copper-alloy; L-shaped buckle, corroded onto oyster shell. Length 15 mm, width 19 mm.

SF 104. - trench 14, (540), fill of posthole 541.

Lead nail or rivet with small round pointed head; the end of the round shank is missing. Length 40 mm.

SF 109. - trench 20, (637), upper fill of large pit.

Corner from iron L-shaped fitting, possibly pintle. Both arms are broken close to the corner. Surviving length of arms 64 and 45 mm.

SF 110. - trench 20, (641), fill of pit 640.

Longue-shaped iron strap, probably from harness. Length 4 mm, maximum width 16 mm.

SF 111 - trench 20, (641), fill of pit 640.

Three joining fragments of a large iron strap. Length 161 mm, maximum width 28 mm.

SF 108. - trench 9, (667), lower fill of large pit.

Iron nail shank fragment. Length 88 mm,

SF 103. - trench 18, (504), fill of feature 503.

Iron nail with clenched shank, broken just below the bend. Length 3 mm.

SF 107. - trench 20, (637), upper fill of large pit.

Iron nail with clenched shank. Length (bent) 60 mm.

SF 106. - trench 20, (641), fill of pit 640.

Fragment from the lower stone of a large quern. - traces of dressing remain on the grinding surface while the edge is smooth but chipped. - the underside is roughly dressed. Maximum dimensions 68 by 36 mm, 36 mm thick.

SF 102. - trench 17, (552), fill of pit 551.

Fragment from the lower stone of a large quern. The grinding surface is completely flat. - the underside is roughly dressed and retains traces of mortar which are also present on the sides. Maximum dimensions 105 by 76 mm, 31 mm thick.

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Pottery

By Sue Anderson

Introduction

A total of 199 sherds of pottery weighing 2293g was collected from 35 contexts. The eve (estimated vessel equivalent) for the whole assemblage, based on measurable rims from 20 vessels, was 2.44. Table 1 shows the quantification by fabric; a full catalogue by context is included at the end of the report.

Description	Fabric	Code	No	Wt (g)	Eve	MNV
Roman greyware?	RBGW	1.10	1	9	0.06	1
<i>Total Roman?</i>			1	9	0.06	1
Gritty Ipswich Ware	GIPS	2.31	2	29		2
Sandy Ipswich Ware	SIPS	2.32	2	27		1
Badorf Ware	BAD	7.60	5	29		2
<i>Total Middle Saxon</i>			9	85	0	5
Thetford-type ware	THET	2.50	18	102	0.14	17
Thetford Ware (Grimston)	THETG	2.57	2	67		2
Early medieval 'sandwich' wares	EMSW	2.58	1	9		1
Saxo-Norman Wares (general)	SXNO	2.80	2	8	0.10	2
<i>Total Late Saxon</i>			23	186	0.24	22
Early medieval ware	EMW	3.10	11	57	0.07	11
Early medieval sparse shelly ware	EMWSS	3.19	1	5		1
Pingsdorf Ware	PING	7.24	1	13	0.06	1
<i>Total early medieval</i>			13	75	0.13	13

Description	Fabric	Code	No	Wt (g)	Eve	MNV
Local medieval unglazed	LMU	3.23	31	250	0.22	23
Unprovenanced glazed	UPG	4.00	4	52		3
Grimston-type ware	GRIM	4.10	24	312		17
Yarmouth-type glazed wares	YARG	4.11	2	17	0.12	1
Yorkshire glazed wares	YORK	4.43	1	9		1
<i>Total medieval</i>			62	640	0.34	45
Late medieval and transitional	LMT	5.10	16	338	0.08	12
Cistercian type Ware	CTW	5.20	1	7		1
Langerwehe Stoneware	GSW2	7.12	1	20		1
Raeran/Aachen Stoneware	GSW3	7.13	2	23	0.11	2
Dutch-type redwares	DUTR	7.21	7	84		4
Martincamp Ware Type II	MART2	7.362	1	2		1
<i>Total late medieval</i>			28	474	0.19	21
Iron-glazed blackwares	IGBW	6.11	2	27		2
Glazed red earthenware	GRE	6.12	24	376	0.14	19
West Norfolk Bichrome	WNBC	6.14	1	38		1
Speckle-glazed Ware	SPEC	6.15	4	114		3
Tin glazed earthenwares	TGE	6.30	2	10		2
Staffordshire-type Slipware	STAF	6.41	4	33	0.12	2
Cologne/Frechen Stoneware	GSW4	7.14	6	111		6
Martincamp Ware Type III	MART3	7.363	1	3		1
Westerwald Stoneware	GSW5	7.15	5	42	0.19	5
<i>Total post-medieval</i>			49	754	0.45	41
Late post-medieval unglazed earthenwares	LPME	8.01	2	21		2
Refined white earthenwares	REFW	8.03	5	22	1.00	4
Creamwares	CRW	8.10	3	8		2
Pearlware	PEW	8.11	1	4		1
English Stoneware Nottingham-type	ESWN	8.22	1	10	0.03	1
English Stoneware Staffordshire-type	ESWS	8.23	1	3		1
Staffordshire white salt-glazed stonewares	SWSW	8.41	1	2		1
<i>Total modern</i>			14	70	1.03	12
Total			199	2293	2.44	160

Table 1. Pottery quantification by fabric.

Methodology

Quantification was carried out using sherd count, weight and estimated vessel equivalent (eve). The minimum number of vessels (MNV) within each context was also recorded, but cross-fitting was not attempted unless particularly distinctive vessels were observed in more than one context. A full quantification by fabric, context and feature is available in archive. All fabric codes were assigned from the author's post-Roman fabric series, which includes East Anglian and Midlands fabrics, as well as imported wares. Thetford-type ware fabrics are based on Dallas (1984), and forms on Anderson (2004). Form terminology for medieval pottery is based on MPRG (1998). Rim types for medieval coarsewares are those used for Dragon Hall, Norwich (Anderson 2005), a modified typology based on the original jar form divisions for LMU and comparable rim types from Norwich (Jennings 1981). Recording uses a system of letters for fabric codes together with number codes for ease of sorting in database format. The results were input directly onto an Access database.

Pottery by period

Roman

A single, abraded sherd from a greyware bowl was found in pit [610]. The form, a flaring-sided bowl with small beaded rim, is more typical of Roman bowls than Thetford-type wares and the fabric is soft. It could, however, be an imported ware of Middle or Late Saxon date.

Middle Saxon

Pottery of this date was recovered from two graves in Trench 14, [519] and [527]. It included small fragments of three Ipswich Ware vessels, and body sherds of at least two roulette-decorated Badorf pitchers.

Late Saxon

Fragments identified as 'Saxo-Norman' were in similar fabrics to the possible Roman bowl. A jar rim was recovered from grave [519] and a body sherd from grave [527]. It is possible that these were either very early Thetford-type wares or 'Merovingian' imports of Middle Saxon date. More typical Late Saxon pottery was also recovered from grave [527], representing six Thetford-type ware vessels.

Late Saxon pottery was also recovered from features in Trenches 8, 9, 18 and 20. The majority was typical Norwich Thetford-type ware, although there were also some 11th-century variant fabrics (THETG and EMSW). Only two rims were present, both early jar types (types 3 and 5), and both from Trench 8.

Early medieval

Small quantities of early medieval wares, generally in fine sandy fabrics (EMW) but also calcareous (EMWSS), were found in Trenches 8, 9 and 20. Only one rim was present, a simple everted jar type, probably wheel-finished, from dump [668].

A whiteware jar rim was found in layer [667]. This has been recorded as Pingsdorf Ware, but the form is similar to Roman jar types and it is possible that the sherd represents an earlier Rhenish import. However it showed no signs of abrasion and was found in association with medieval pottery.

Medieval

The largest single period group in this assemblage was of high medieval date. It was dominated by LMU and Grimston-type wares, with glazed wares making up a very high proportion of the group (43% by sherd count, 42% of MNV).

Four rimsherds (three jars, one bowl) were present in LMU, of which one was an early form (SEV1) and the remainder were developed types (THEV). Body sherds included thin-walled examples which may be of early date, as well as thicker types, confirming that the assemblage represents the entire high medieval period.

Glazed wares were dominated by Grimston products, although no rims were present in this fabric. The unprovenanced glazed wares included a jug rim/handle in a fine buff-coloured fabric with decayed glaze. Also present were two sherds of a dish, or possibly a pedestal base, in Yarmouth-type glazed ware. One whiteware body sherd was probably a Yorkshire product and three sherds were unprovenanced.

Late medieval

Pottery of this period included a number of vessels in LMT, the fabrics of which were varied and probably represented both local and regional production sites. With the exception of a body sherd with the stub of a handle, which probably came from a small jug, and a pancheon rim, vessel types were not identifiable. Also in this group was a body sherd of Cistercian-type ware, body and base fragments of Dutch-type redware skillets or cauldrons, Langerwehe and Raeren stonewares (including a mug rim), and a fragment of Type II Martincamp flask.

Post-medieval

Pottery of 16th-18th-century date was dominated by local redwares, usually with orange or brown glaze (GRE, IGBW, SPEC, WNBC). Again, there were few identifiable forms, but at least one dish, one jar and one handled bowl were present. Two sherds of tin-glazed earthenware could also be of local manufacture, and included a fragment with blue painted lines and a purple manganese-spattered handle. Staffordshire-type slipwares were represented by a body sherd from a mug and three fragments of a plate.

Imported wares comprised several handles, body sherds and bases from Frechen stoneware bottles, fragments of Westerwald stoneware decorated jugs and a chamber pot, and a fragment of a Type III Martincamp flask.

Modern

The earliest modern pottery included a base fragment of Staffordshire white salt-glazed stoneware

and some fragments of creamware of 18th-century date. A Staffordshire stoneware tankard handle and a Nottingham-type stoneware rim from a chamber pot or bowl were probably also relatively early. A pearlware saucer base and sherds of refined whitewares, including a hand-painted saucer rim, were probably no later than the first half of the 19th century. Two fragments of unglazed redwares, probably both plantpots, were also recovered.

Pottery by trench

A summary of the pottery by trench is provided in Table 2. The largest groups of pottery were recovered from Trench 8 in Area 6 and Trenches 14 and 20 in Area 7. Pottery of Middle Saxon date occurred only in Trench 14, and this trench, together with both trenches in Area 6 (8 and 9) and Trench 20, produced the largest concentrations dating to the Late Saxon period. Early medieval wares were largely concentrated in Area 6, but also occurred in Trench 20. Medieval wares were distributed across several trenches, but again were more common in Area 6 and Trench 20. Trenches in Area 7 produced the most late medieval pottery, and post-medieval and modern wares occurred in all trenches apart from 9 and 20. Spotdates for individual contexts are included in Appendix 2.

Period	8	9	14	16b	17	18	19	20
Rom?	1							
MSax			9					
LSax	6	3	9			1		5
EMed	6	2						5
Med	18	5	4	1	1			33
LMed	5		5	2			6	10
PMed	6		8	5	10	2	14	
Mod	3		1	11	1	1		
Totals	45	10	36	19	12	4	20	53

Table 2. Pottery distribution by trench.

Discussion

With the exception of the possible Roman bowl, the earliest pottery from the site comprised Middle Saxon regional and imported wares. Although these were redeposited in later graves, they are important in providing some of the first evidence for activity of this date in this part of the city. Most Middle Saxon pottery has previously been recovered from areas close to the waterfront at Fishergate, around the Cathedral and along King Street (Jennings 1981; Ayers 1994; Anderson 2007).

Late Saxon and early medieval wares were relatively common in the previously excavated assemblages at Anglia Square (Anderson 2008), with early medieval wares in particular being recovered in large numbers from Trench 6 (located within the Late Saxon defensive ditch). In this group they were most frequent in Area 6, but also occurred in two or three trenches in Area 7. The range of forms amongst the Thetford-type wares was typical of early groups, but the evidence was limited and there were later fabrics in the group as well. This would appear to indicate continuous occupation throughout these periods.

High medieval wares were notably more frequent in these trenches than in the previous evaluation,

which produced only a single sherd of LMU from Trench 12 (Area 3) and 29 sherds from five trenches in Area 4. The range of wares was similar, although glazed wares were more frequent in the current assemblage. The majority of these were found in Trench 20. The late medieval period is also well represented, with local wares being supplemented by material from the east Midlands, the Low Countries and the Rhineland.

The post-medieval assemblage is dominated by local redwares with the addition of some tin-glazed wares and slipwares and two types of German stonewares. Deposition of pottery appears to have ended by the mid 19th century, with the majority of modern wares belonging to the early period of factory production.

Although each of the individual period groups is relatively small, there is very high potential for large assemblages of Middle Saxon to modern date on this site, if large-scale area excavations are carried out in the future. The importance of the Middle Saxon pottery presence has been noted above, and previous work suggested a high concentration of early medieval wares within the Late Saxon defensive ditch backfills, which could again form an important addition to the knowledge of pottery of this period in the city.

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Pottery catalogue

Trench	Context	Fabric	Form	Rim	No	Wt/g	Spot date
8	555	LPME	plantpot	BD	1	10	18th-20th c.
8	555	ESWS			1	3	L.17th-M.18th c.
8	555	STAF	press-moulded flatware	PL	3	26	L.17th-18th c.
8	558	MART2			1	2	16th c.
8	558	LMT			1	31	15th-16th c.
8	558	LMT			1	2	15th-16th c.
8	558	LMT			1	8	15th-16th c.
8	560	IGBW			1	13	16th-18th c.
8	600	THET	medium 'AB' jar	5	1	7	10th-11th c.

Trench	Context	Fabric	Form	Rim	No	Wt/g	Spot date
8	600	EMW			6	23	11th-12th c.
8	600	GRIM			1	5	L.12th-14th c.
8	600	LPME			1	11	18th-20th c.
8	603	THET			1	8	10th-11th c.
8	603	THET			1	19	10th-11th c.
8	603	LMU			12	86	11th-14th c.
8	603	LMU	jar	THEV	1	8	13th-14th c.
8	603	GRIM			1	10	L.12th-14th c.
8	603	LMT	jug		1	22	15th-16th c.
8	603	GRE	jar	EV	1	21	16th-18th c.
8	604	GRIM			1	4	L.12th-14th c.
8	606	THET			1	2	10th-11th c.
8	606	UPG			1	2	L.12th-14th c.
8	606	THET	large 'AC' jar	3	1	6	10th-11th c.
8	607	LMU			1	3	11th-14th c.
8	607	GRE			1	3	16th-18th c.
8	609	THET			1	3	10th-11th c.
8	609	RBGW	bowl	BD	1	9	RB
9	666	THET			3	22	10th-11th c.
9	666	GRIM			1	6	L.12th-14th c.
9	666	LMU	jar	THEV	1	3	13th-14th c.
9	666	LMU	jar	SEV1	1	7	11th-13th c.
9	666	EMW			1	3	11th-12th c.
9	666	LMU			1	5	11th-14th c.
9	667	LMU			1	4	11th-14th c.
9	667	PING	jar	SEV	1	13	10th-13th c.
18	513	EMSW			1	9	11th-12th c.
18	513	MART3			1	3	17th c.
14	521	BAD			2	14	MSax
14	521	BAD			1	6	MSax
14	521	SXNO	jar	EV	1	5	850-1150
14	525	GIPS			1	25	650-850
14	525	THET			1	2	10th-11th c.
14	525	THET			5	22	10th-11th c.
14	525	SXNO			1	3	850-1150
14	525	BAD			2	9	MSax
14	525	GIPS			1	4	650-850
14	525	SIPS			2	27	650-850
14	536	GSW4			1	5	16th-17th c.
14	536	CRW	plate?	FTEV?	1	4	1730-1760
14	542	UPG			2	16	L.12th-14th c.
14	542	GRE	dish	EV	6	103	16th-18th c.
14	u/s	GSW3	mug	UPPL	1	6	L.15th-16th c.
14	u/s	LMU			1	20	11th-14th c.
14	u/s	GRIM			1	20	L.12th-14th c.
14	u/s	DUTR			4	9	15th-17th c.
16b	516	CRW			2	4	1730-1760
16b	516	ESWN	chamber pot/bowl	FTEV	1	10	L.17th-L.18th c.

Trench	Context	Fabric	Form	Rim	No	Wt/g	Spot date
16b	516	REFW	saucer	PL	1	8	L.18th-20th c.
16b	516	PEW	saucer		1	4	L.18th-M.19th c.
16b	516	SPEC			1	3	L.17th-18th c.
16b	516	REFW			2	2	L.18th-20th c.
16b	516	GRE			1	6	16th-18th c.
16b	516	TGE			1	5	16th-18th c.
16b	516	GSW5			2	6	E.17th-19th c.
16b	516	GSW5	jug	UPPL	1	12	E.17th-19th c.
16b	516	SWSW			1	2	18th c.
16b	516	STAF	mug		1	7	L.17th-18th c.
16b	516	GRE			1	4	16th-18th c.
16b	517	LMT			1	16	15th-16th c.
16b	517	LMU			1	22	11th-14th c.
16b	517	LMT			1	10	15th-16th c.
17	549	GRE			1	34	16th-18th c.
17	550	GSW5	chamber pot	FTEV	1	22	E.17th-19th c.
17	550	IGBW			1	14	16th-18th c.
17	550	SPEC			3	111	L.17th-18th c.
17	550	GRE			1	5	16th-18th c.
17	550	GRE			2	33	16th-18th c.
17	550	GSW4			1	21	16th-17th c.
17	571	GRIM			1	5	L.12th-14th c.
17	629	GSW4			1	20	16th-17th c.
18	501	GSW5			1	2	E.17th-19th c.
18	501	GRE			1	11	16th-18th c.
18	507	REFW			2	12	L.18th-20th c.
19	669	LMT			2	32	15th-16th c.
19	669	LMT			1	58	15th-16th c.
19	669	GRE			2	33	16th-18th c.
19	669	GRE			3	29	16th-18th c.
19	669	GSW4			1	6	16th-17th c.
19	669	TGE			1	5	16th-18th c.
19	669	LMT			2	31	15th-16th c.
19	670	GSW4			1	12	16th-17th c.
19	670	GRE			1	46	16th-18th c.
19	670	GRE			1	6	16th-18th c.
19	671	CTW			1	7	16th c.
19	671	GSW4			1	47	16th-17th c.
19	671	GRE	handled bowl	BD	1	22	16th-18th c.
19	671	WNBC			1	38	17th c.
19	671	GRE			1	20	16th-18th c.
20	637	LMT			1	23	15th-16th c.
20	637	THETG			1	27	10th-11th c.
20	637	UPG	jug	UPTH	1	34	L.12th-14th c.
20	637	GRIM			1	36	L.12th-14th c.
20	637	GRIM			6	38	L.12th-14th c.
20	637	GRIM			1	5	L.12th-14th c.
20	637	LMU			2	9	11th-14th c.

Trench	Context	Fabric	Form	Rim	No	Wt/g	Spot date
20	637	EMW			2	13	11th-12th c.
20	639	GRIM			1	13	L.12th-14th c.
20	641	GRIM			2	29	L.12th-14th c.
20	641	GRIM			1	82	L.12th-14th c.
20	641	LMU			2	10	11th-14th c.
20	641	GRIM			2	36	L.12th-14th c.
20	641	GRIM			1	5	L.12th-14th c.
20	641	YORK			1	9	Medieval
20	641	THETG			1	40	10th-11th c.
20	641	YARG	dish	INT	2	17	13th-15th c.
20	641	GRIM			1	5	L.12th-14th c.
20	641	LMT	pancheon	THEV	3	64	15th-16th c.
20	641	GSW2			1	20	L.14th-15th c.
20	641	DUTR			1	9	15th-17th c.
20	641	DUTR			1	34	15th-17th c.
20	641	DUTR			1	32	15th-17th c.
20	661	GRIM			1	5	L.12th-14th c.
20	661	GSW3			1	17	L.15th-16th c.
20	661	THET			1	1	10th-11th c.
20	661	GRIM			1	8	L.12th-14th c.
20	662	LMU			1	12	11th-14th c.
20	668	EMW	jar	SEV	1	10	11th-12th c.
20	668	EMW			1	8	11th-12th c.
20	668	THET			2	10	10th-11th c.
20	668	LMU			4	37	11th-14th c.
20	668	EMWSS			1	5	11th-13th c.
20	668	LMU	bowl	THEV	1	16	11th-14th c.
20	668	LMU			1	8	11th-14th c.
20	99999	LMT			1	41	15th-16th c.

Notes:

Rim: BD – bead; EV – everted; FTEV – flat-topped everted; INT – inturned; PL – plain; SEV – simple everted; SEV1 – simple everted 1; THEV – thickened everted; UPPL – upright plain; UPTH – upright thickened; 1-7 – Thetford ware types.

Spotdates

Trench	Context	Feature Type	Rom?	MSax	LSax	EMed	Med	LMed	PMed	Mod	pot spotdate	CBM date
8	555	soil							3	2	19th c.	pmed
8	558	soil						4			16th c.	pmed
8	560	soil							1		16th-18th c.	
8	600	pit			1	6	1			1	19th-20th c.	pmed
8	603	soil			2		14	1	1		16th-18th c.	
8	604	pit					1				13th-14th c.	
8	605	pit										pmed

Trench	Context	Feature Type	Rom?	MSax	LSax	EMed	Med	LMed	PMed	Mod	pot spotdate	CBM date
8	606	pit			2		1				12th-14th c.	
8	607	post hole					1		1		16th-18th c.	pmed
8	609	pit	1		1						10th-11th c.	
9	666	soil			3	1	4				13th-14th c.	13-15
9	667	soil				1	1				11th-13th c.	
18	513	linear			1				1		17th c.	
14	521	grave		3	1						9th/10th c.?	
14	525	grave		6	7						9th/10th c.?	
14	536	post hole							1	1	18th-19th c.	
14	540	post hole										18th c.?
14	542	pit					2		6		16th-18th c.	
14	u/s	natural interface					2	5			L.15th-16th c.	
16b	516	garden soil							5	11	L.18th c.	
16b	517	graveyard soil					1	2			15th-16th c.	
17	549	pit							1		16th-18th c.	
17	550	garden soil							8	1	18th c.	
17	552	pit										19th c.?
17	571	grave					1				13th-14th c.	
17	629	garden soil							1		16th-17th c.	
18	501	garden soil							1	1	18th c.	
18	507	demolition/rubble								2	19th/20th c.	
18	509	layer										19th/20th c.
19	669	soil						5	7		17th c.	
19	670	pit							3		16th-17th c.	
19	671	pit						1	4		18th c.	pmed
20	637	buried soil			1	2	11	1			L.14th-15th c.	13-15
20	639	pit					1				13th-14th c.	
20	641	pit			1		12	7			15th-16th c.	14-15
20	661				1		2	1			L.15th-16th c.	
20	662						1				11th-14th c.	
20	668	dump/fill			2	3	6				13th-14th c.	
20	99999	u/s?						1			15th-16th c.	

* % Ceramic Building Material

By Sue Anderson.

Introduction

Twenty-nine fragments of CBM (4139g) were collected from twelve contexts. Table 1 presents the count and weight quantification by form. A full catalogue by context is included at the end of this report.

Type	Form	Code	No	Wt(g)
Roofing	Plain roof tile	RT	8	182

	Pantile	PAN	3	244
	Chimney pot	CP	1	152
Walling	Early brick	EB	9	688
	Late brick	LB	6	983
Miscellaneous	Moulded brick	MB	1	1884
	Wall tile	WT	1	6

Table 1. CBM quantities by form.

Methodology

The assemblage was quantified (count and weight) by fabric and for fabrics we are quantified on the basis of macroscopic appearance and main inclusions. The width, length and thickness of bricks and floor tiles were measured, but roof tile thicknesses were only measured when another dimension was available. Forms were identified from work in Norwich (primary reference based on measurements. Other terminology follows Brunski's glossary (1990).

The assemblage

Table 2 shows the quantification by fabric and form.

Fabric group	Code	RT	PAN	CP	EB	LB	MB	WT
estuarine clays	est				9			
fine sandy	fs	1						
fs with calcareous inclusions	fsc			1				
fs with ferrous inclusions	fsfe		3					
fs with abundant mica	fsm	1				1		
medium sandy	ms	4						
ms with coarse quartz	mscq	1				1		
ms with flint	msf					1		
ms with ferrous inclusions	msfe					1		
ms with flint and Fe	msffe					1		
ms with grog and mica	msgm	1						
tin-glazed earthenware	tge							1
white-firing fine	wfs					1		
white-firing coarse grog	wsg						1	

Table 2. CBM quantities (fragment count) by fabric and form.

Roofing

Eleven roof tile fragments (426g) were collected. These comprised eight plain peg tile fragments, and three pantile fragments. Table 2 shows the quantities of roof tile by fabric.

All plain tiles were in red-firing fabrics of varying coarseness. These fabrics were commonly used in East Anglia during the 16th-20th centuries, although examples with partial reduction may be earlier. Two examples from [605] may be of medieval date but the remainder are more likely to be post-medieval. There were no examples of nib tiles, and only one fragment had a peg hole (circular type).

The pantile fragments were all recovered from [552]. One fragment appeared to be machine pressed and therefore of 19th-century or later date. One fragment was fully reduced to a mid-grey.

A fragment of a chimney pot, in a pale pink fine sandy fabric with very fine calcareous inclusions, was recovered from [509]. It was rilled towards the top and had a triangular beaded rim. Its diameter was estimated at c.280mm. There were traces of sooting on the inner surface.

Bricks

Nine fragments of 'early bricks' in estuarine fabrics, as described by Drury (1993), were recovered. Most showed signs of abrasion and some were recovered from post-medieval contexts. Only two brick thicknesses could be measured, a fragment from [552] (52mm) and a piece from [641] (43mm). Both bricks had strawed bases and belong to Drury's Group B, generally dated to the 14th-15th centuries.

Fragments of 'late bricks' in both red and white-firing fabrics were recovered from five contexts. Only one fragment from [671] could be measured and was 50mm thick; this brick was partially vitrified and may be late medieval (15th-16th c.).

Miscellaneous

A fragment of tin-glazed earthenware wall tile was collected from [540]. Little of the glaze survived but it appeared to be an undecorated type.

A moulded plinth-type brick with a convex surface was found in [552]. The fabric was white-firing externally, although the core comprised poorly mixed white and red clays with coarse grog. This fabric was often used to produce quarry floor tiles and it is likely that the brick is of similar date (18th-19th c.).

CBM by trench

Table 3 shows the distribution of forms by trench, based on fragment count.

Trench	RT	PAN	CP	EB	LB	MB	WT
8	8			1	3		
9				1			
14							1
17		3		1	1	1	
18			1				
19					2		
20				6			

Table 3. Forms by trench.

Area 6: Trenches 8 and 9

Thirteen fragments of CBM were recovered in these two trenches, the majority from pits and post-holes in Trench 8. The latter were spotdated to the post-medieval period based on the pottery, and the CBM is in agreement with these dates. A few residual pieces of medieval brick and tile were also recovered.

Area 7: Trenches 14 and 17–20

Sixteen pieces of CBM were recovered from the trenches in Area 7. Most were found in single features in each of the trenches, although two contexts (buried soil and a pit) in Trench 20 produced CBM. Most of the material was post-medieval, but a fragment of residual early brick was found in association with post-medieval material in Trench 17 pit fill [552]. Only Trench 20 produced exclusively medieval material, although pottery from the same contexts suggests a late medieval date.

Discussion

This is a small assemblage which was widely dispersed across the site and its interpretation is therefore limited. Most of this assemblage was collected from pit or pot-hole fills, with a few fragments from layers. It is therefore not in situ and likely to be either deliberately or accidentally discarded into pits as hardcore to aid stabilisation following disuse.

Although medieval material was present, several fragments were abraded and most was probably residual in the contexts in which it was found. However, fragments of brick from Trench 20 may represent demolition waste of the 14th/15th centuries.

The post-medieval material is comparable with many other assemblages from the city, although the moulded brick in a white fabric is a relatively unusual find. Although it is most likely to be of late (18th/19th-century) date, there is a possibility that it could be Tudor terracotta. However, this material is rare and is usually associated with very high status structures of the period.

Previous evaluation work at Anglia Square has produced a similar, although slightly larger, assemblage (Anderson 2008). That group contained a fragment of Flemish floor tile and a larger group of early brick, but post-medieval roof tile was more common than medieval. Overall, these assemblages suggest low-level discard of CBM from the later medieval period onwards. The material is likely to have originated from construction or demolition activity in the vicinity, but does not represent large-scale deposition of waste.

References

- Anderson, S., 2008, *Anglia Square, Norwich B.*; 8-6<"C : ceramic building material archive report for N U Archaeology
- Brunskill, R.: , 1990, *Brick Building in Britain* Victor Gollancz Ltd, London.
- DruryOP, 1993, 'Ceramic o" ild"#g materials', in Margeson, S., *Norwich Households0E. ngl" # Archaeol. 58, Nor\$ "ch Survey0pp.163-8.*

Catalogue CBM 'y context

context	fabric	form	no	wt/g	abr	length	width	height	peg	mortar	glaze	comments	date
509	fsc	CP	1	152	+							soot int, diam c.280mm, triangular bead rim, pale pink, rilled ext upper part	pmed
540	tge	WT	1	6							W		pmed

552	fsm	LB	1	265							occ flint/large quartz	pmed
552	fsfe	PAN	3	244							1 reduced	pmed
552	wsg	MB	1	1884		251	>99	75			coarse fabric, cream surfaces, poorly mixed white/red in core with chunky grog, concave face	pmed
552	est	EB	1	202				52			strawed base	14-15
555	fs	RT	1	21	+							pmed
558	ms	RT	2	26					1 x R			pmed
600	est	EB	1	84	++							13-15
600	msfe	LB	1	26								pmed
605	ms	RT	1	37							reduced surface	med?
605	msf	LB	1	14								pmed
605	msgm	RT	1	18	+							med?
607	fsm	RT	1	29								pmed
607	ms	RT	1	33						thin on base		pmed
607	mscq	RT	1	18								pmed
607	mscq	LB	1	10	+							lmed
637	est	EB	4	145								13-15
641	est	EB	1	46	+							13-15
641	est	EB	1	178				43			strawed base	14-15
666	est	EB	1	33								13-15
671	wfs	LB?	1	19							poss RT	pmed
671	msffe	LB	1	649				50			slightly reduced/vit surfaces	pmed

*' CÖÿ pi+r

By Caro e Fletcher

roduction

From the excavation a total of 66 fragments of clay smoking pipe were recovered. - he majority of the diagnostic fragments date from the mid to late 17th century

Methodology

- erminology used in this assessment w s taken from Os\$ Id's work clay pipes for the archaeolo1 gist (1975). - he pipe bo\$ls, considered the most diagnostic part of the assemblage, were identi1 fied and dated using the standard typology for English pipe bo\$ls.

Quantification and Fabrics

full quantification table for the clay pipes, including separate counts for complete bo\$ls, bo\$l fragments and stems, and noting the presence or absence of marked fragments, can be found at the end of this report. - he clay pipes are all made from white ball clay

Marks, Decorations and Provenance

All but the most fragmentary bowls are decorated with simple rouletting round the around the mouth of the bowl - here are no highly decorated pipes and no maker's marks were identified. Without any identifying marks the presumption is that the pipes represent local production.

Context	Weight kg	No. of complete or near complete pipe bowls	No. of bowl/heel Fragments	No. of pipe stem fragments	Decoration	Form	Comment	Earliest Date	Latest Date
J9	0.014			1					
516	0.013			12					
J9	0.014						Bowl and heel fragments are too small to date		
J1	0.014		1				Heel fragment too small to date closely	c1610	c1710
J9	0.013			1					
J9	0.006								
669	0.006	1			Slight rouletting below rim of bowl	Open bowl type 5		c1640	c1660
	0.012	1			Slight rouletting below rim of bowl	Open bowl type 5		c1640	c1660
	0.012	1			Fine rouletting below rim of bowl	Open bowl type 6	Not well finished with a very obvious molding seam across base of heel and surviving part of stem	c1660	c1680
	0.015	1			Rouletted below rim of bowl	Open bowl type 6		c1660	c1680
	0.015	1			Poorly rouletted below rim of bowl	Open bowl type 17	Poorly made with a fault in the bowl that forms a hole through to the back of the bowl	c1640	c1670
	0.001			1			Mouthpiece		
	0.104			31					
670	0.010	1			Slight traces of rouletting below rim of bowl	Open bowl type 5		c1640	c1660
	0.014								
671	0.014	1			Rouletted	Open bowl	Foot truncated to	c1640	c1660

Context	Weight (kg)	No. of complete or near complete pipe bowls	No. of bowl/heel Fragments	No. of pipe stem fragments	Decoration	Form	Comment	Earliest Date	Latest Date
					below rim of bowl	type 5	be continuous with the stem.		

Research Potential and Further Work/Statement

The clay pipe assemblage offers the opportunity to more closely date certain contexts however the understanding of the material culture of the area and the early development of the local clay pipe industry is limited by the lack of identifying marks. No further work is required on this assemblage.

Bibliography

Osborne, J., 1975. *Clay Pipes for the Archaeologist* British Archaeological Reports No. 14, British Archaeological Reports, Oxford

*) Architectural stone pieces

By Simon Underdown

Summary and Quantification

A total of 31 fragments of architectural worked stone of varying materials were retained as shown in the following table.

Ctx	Quantity	Material	Weight
552	10	Limestone (6) Sandstone (4)	6.528kg
552	12	Dark coloured marble	3.034kg
552	2	Dark coloured marble (inscribed)	0.932kg
552	7	Pale coloured marble	2.408kg
Total	31		12.902kg

Methodology

The stone was briefly scanned and categorised. The more significant pieces were looked at and described in greater detail (see table below).

Introduction

The whole assemblage of architectural stone was recovered from a single context (552), which was the fill of a shallow post-medieval pit in trench 17 immediately behind Surrey Chapel. This trench revealed burials from the graveyard of St Olaves Church at lower levels and 18th/19th century wall footings at higher levels. The church is documented as being ruinous by 1546.

The context, which was only excavated within a sondage and continued beyond the trench sections, also produced a piece of worked lava interpreted as part of a quern and discussed elsewhere, some pieces of slate or similar material also discussed elsewhere and a piece of moulded architectural brick.

The assemblage consists of a variety of pieces, many are simply faced or moulded fragments, two (adjoining) are inscribed and one is a fragment of relief carving. There is considerable variety in the materials as outlined in the quantification table above.

Catalogue of more significant pieces of stone

Ctx	Description	Lithology
552	Fragment of relief carving of foliage within border. Small carved fragment from panel with smooth dressed rear and side faces. Carved face has shallow curving convex border and what appear to be two overlapping pieces of foliage. The carved face has traces of white limewash. Possibly medieval, and perhaps from an ecclesiastical context (limewash may suggest this).	Fine grained oolitic limestone
552	A single ovolo or quarter-round moulding with smooth dressed rear and side face. On one side of the round moulding is a squared fillet and on the other is a small concave moulding with a broken outer edge. The angles of the round moulding and face of the concave section have traces of a light wash overlain with a dark wash or paint. This might be part of a border of a panel or monumental or other inscription. Standard ovolo mouldings were first introduced in about 1560, this is a variation with the concave section.	Fine grained oolitic limestone
552	Moulding. Fascia type moulding of large square section with narrow convex edge to upper face and a concave lower section. Smooth dressed rear and side face.	Fine grained oolitic limestone

Ctx	Description	Lithology
552	<p>Inscribed stone. Two connecting fragments of an inscription. The inscription had a smooth dressed upper face and one smooth dressed edge, and one roughly dressed edge at an angle to the straight edge, and a very rough rear face. Width from rough to smooth edge is 14cm.</p> <p>The lettering is v-section incised and consists of part of a straight stem with serifs, an o, and a small part of another stem and serif. The lettering is at a slight angle to the straight edge but seems to be oriented to the roughly finished edge. Possibly a small inscribed panel from a larger monument.</p>	Grey Black Marble
552	Corner piece/moulding. Large marble fragment with two dressed faces at right angles and broken stub of a further offset 60mm from one edge.	Grey Black marble with white veining
552	Slabs. Various pieces of marble slab with opposing dressed smooth faces in various thicknesses; 16, 26, 28 and 35mm.	Grey Black marble (some with white veins/fossil inclusions)
552	Slabs. Various fragments of slab with opposing dressed smooth faces in various thicknesses; 20, 24, 26, 34mm. One piece has one polished face and a one polished edge.	Light coloured marble

Discussion

This assemblage consists of a variety of architectural stone fragments from a single densely packed fill of one shallow cut which was not fully excavated. The fragments include pieces of carving, inscription, mouldings and relatively thin marble slabs. The latter may be fragments of floors, facings or various fixtures of a high status building rather than the principal fabric of a structure. The inscribed pieces and mouldings may come from a monumental inscription, it therefore seems more likely that the assemblage was from an ecclesiastical building, a public building or a great house than from any other type of building. The presence of the ovolo moulding indicates a date of origin for that piece and thus for deposition after about 1560.

That moulding is therefore very unlikely to come from the church of St Olave (Olaf), which was in the vicinity, if it was ruinous by 1546 even if some of the other pieces did. The Duke of Norfolk's Palace built in 1561-3, rebuilt in 1672 and demolished in 1711 was nearby on Duke Street. This was supposedly built in the Italianate style which might imply the use of decorative marble.

It will probably be impossible to ascertain the origin of the fragments and the variety of the whole assemblage from the context which also included a piece of lava and a hollow chamfered brick. The lettering of the inscription although there is not much surviving also seems to be of post-medi-

eval type. If further excavation takes place on the site then it is possible that more similar fragments will be unearthed and that the remains of the church may be located and any potential relationship between the church and the fragments may become clearer.

Although a detailed study of the architectural stone could be informative about the buildings in which they originated, their redeposition here means they have limited potential to inform about this site. It is unlikely that the stone could be provenanced to individual buildings but it should be possible to determine whether there were multiple sources for the stone and thus something about the methods for acquiring and using resources at that time.

B6 Other finds

By Caro e Fletcher

Introduction

The excavation produced a small assemblage of miscellaneous finds including slag, glass, small number slate fragments and oyster shell.

Methodology

All material has been counted, classified and weighed and recorded on an Access 2000 database. The finds and archive are curated by OA East until formal depositio

Assemblage

The material was recovered from a variety of features of various dates across the excavated area.

Metalworking waste

Identified by Peter Boardman

Two contexts produced metalworking waste.

Context	Find type	Count	Weight (kg)	Date/Description
300	Slag	1	1.0	Post medieval
301	Glassy slag	1	0.014	Post medieval
302	Bloomery slag	1	0.044	Medieval

The bloomery slag in context 302 may relate to known medieval metalworking in the area of the excavation. The remainder of the assemblage appears to be post medieval and requires no further work.

Glass

The excavation produced six fragments, 0.044kg of vessel glass, eight sherds, 0.014kg of window glass and a single fragment of glass slag. None of which is closely datable.

Context	'lass - y ^e	Co ^o # t	: eight .%g)	Description
3~1	: "#do\$ glass	(	~ ~ ~	~ . . thick p le greenish clear gl ss \$'th fl %ng s ^r face
3~*	: "#do\$ glass	1	~ ~ 3	1 4. m th"ck cle r colourless glass
316	Hessel glass	1	~ ~ 4	Ol'6e green bottle glass
	Hessel glass	1	O~ ~ 1	1 6. . th"ck cle r glass w"th bluish cast
3)~	: "#do\$ glass	1	~ ~ 1	1 3. m th"ck m. thick p le gree#"sh cle r glass \$'th fl %g surface
3)*	Hessel glass	1	~ ~ *	Ol'6e green bottle glass w"th o ^e =ue fl %ng surface
33~	: "#do\$ glass	1	~ ~ 1	1 3. m th"ck m. thick p le gree#"sh cle r glass \$'th fl %g surface
333	: "#do\$ glass	~	~ ~ 3	~ . . thick clear gl ss \$'th a greenish cast
333	Hessel glass	~	~ ~)	- hin p le green glass fro. a bottle or dr"#/%g 6essel
333	Hessel glass	1	~ ~)	' ree# gl ss from a beer or w"he bottle possibly early 20th century
333	Gl ss sl g	1	~ ~ ~	Op =ue ?# tural bl ck glass wh"ch has the ap ^e r nce of tap slag s. ll rea of #o# gl ssy slag is also ^e resent.

Slate

From context 552 were recovered fragments of degraded grey/black slate (0 (44%g), one frag¹ ment is 19mm thick. - his context also produced a large number of architectural stone fragments of marble which appear to be from monuments. - his thick yet degraded slate may have had a similar purpose. Co#text 555 produced a single fragment of purple-grey roofing slate of indetermin¹ #ate date

Shell

total of 0.257kg of shells of marine moll¹scs were collected. - hese were quantified and ex¹ amined in to assess the quantity of these ecofacts. - he shells were collected by hand from a vari¹ ety of features of various dates cross the excavated area. - he majority of the shells are well pre¹ served and do not appear to have been deliberately broken or crushed.

8ontext	5 ^e ecies	8o. . o# n. e	? om t t	: e'ght .Kg)
60(	<i>Ostrea edulis</i>	Oyster	estuar"he # d shallo\$ coastal \$ ter	~ ~ ~
60*	<i>Ostrea edulis</i>	Oyster	estuar"he # d shallo\$ coastal \$ ter	~ ~ 4

634	<i>Ostrea edulis</i>	Oyster	estuarine # d shallo\$ coastal \$ ter	~ ~ ~
641	<i>Ostrea edulis</i>	Oyster	estuarine # d shallo\$ coastal \$ ter	~ 124
66~	<i>Ostrea edulis</i>	Oyster	estuarine # d shallo\$ coastal \$ ter	~ 01~
66*	<i>Ostrea edulis</i>	Oyster	estuarine # d shallo\$ coastal \$ ter	~ ~ ~
671	<i>Ostrea edulis</i>	Oyster	estuarine # d shallo\$ coastal \$ ter	~ ~ *

*9 Faunal remains

by Chris Faine

Introduction

~ 63 kilograms of faunal material was recovered from the excavations at Angli Square, consisting of 133 fragments (59 of these being identifiable to species). All material was collected by hand apart from those recovered from environmental samples; hence a proportion of smaller fragments is to be expected. Faunal material was largely excavated from the fills and layers dating from the Medieval to Post-medieval periods, the identifiable fragments being recovered from 8 trenches.

Methodology

Bones were recorded using a version of the criteria described by D6's (1992) and Albarell & D6's (1992). All elements were assessed in terms of identification, completeness, tooth wear stages (also where applicable) and epiphyseal fusion. Completeness was assessed in terms of percentage of zones present after; obney & Bailey, 1992. Initially the whole identifiable assemblage was identified in terms of number of individual fragments (SP) and material. The number of individuals of the assemblage was largely achieved by examining the wear stages of cheek teeth of cattle, sheep/goat and pig. After Grant, 1992, wear stages were recorded for lower molars of cattle, sheep/goat and pig, both isolated and in mandibles.

The Assemblage

Table 1 shows the species distribution for the assemblage in terms of identifiable fragments (5P) and number of individuals (MN), with table 2 showing the weight of faunal material by context. As one would expect the assemblage is dominated by domestic species, with sheep/goat being the most prevalent taxon, along with slightly fewer numbers of cattle and pig remains. Faunal material from trench 1 consisted of a single sheep/goat 1st phalanx from pit fill 60 and butchered adult sheep and cattle remains from layers 60 and 60. Trench 1 contained a single fragment of butchered cattle metacarpal from pit fill 669. A single sheep/goat metacarpal was recovered from layer 9 in trench 14. Trench 16b contained a portion of distal cat tibia recovered from grey soil layer 519. Trench 17 contained portions of cattle metacarpal from layer 11, along with a small pig mandible from pit fill 5. Sheep/goat ribs and cattle tibia fragments were recovered from layer 1 in trench 18. Trench 18 contained adult sheep/goat lower limb bones and a number of vertebrae from layer 661 and pit fill 671 along with cattle and pig lower limb elements and a left rib. Trench 18

By far the largest amount (~ 6Kg) of identifiable faunal material was recovered from the Medieval pit fill 641 in trench 18. This consisted largely of cattle and sheep/goat remains along with smaller numbers of bird bones. The cattle assemblage was mostly composed of lower limb elements such as tibiae, metapodials and phalanges, with two juvenile elements being recovered. Significant body part distribution is seen in the sheep/goat assemblage. A complete sheep mandible was recovered from trench 18, as are a number of (14 years old at death) single complete radius was also recovered from trench 18, with a withers height of

around 3(8c. No j" 6e#"le shee" /goat elements were recovered. Pig re" "ns co#sisted of ad"lt 1st phal #ges # d b"tchered scapula fragments. B"rd re" "s consisted l rgely of do_estic goose long bo#es, with single fragments of fowl and duck. n ° ductor cla\$ from a# edible crab (#*ancer pagurus*2was also reco6ered

Conclusion

The proportio#s of the domestic m_ "ls is si" l r to those seen at other si_ "l rly sized assembl ges such as M" sic Ho" se ! #e .: allis, 2~ 42and St Bened"ct's 5treet (Clarke, 20~ 62 - he body ^ rt d"strib" 1 tio# ("e. non- e t bear" #g elements) and types of co#texts i# which the m_ ter"al was fo" # d suggests general occup_ tio# waste rather than food rem_ "ns, w"th the age range of the domest" c f" # possibly "ndic tes a m'xed husbandry str tegy - here "s no evidence for o# "s"te breeding Do_estic b"rds are co_ only seen " # Med"e6 l ur° n asse_ ° l ges, with geese bei#g espec_ lly po^ " l r due to the w'de range of secondary products they can prov'de (such as eggs, fe_thers #d fat)

&r fer_ ces

Alb rella, U & ; 6is, S J. M. 1**) *The Saxon & Medieval anima bones excavated 1=8: 6 =89 ° o\$ West #otton, " ortha\$ tonshi e + ! ~ ep. 5er 14@99)*

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; r"esch, von de# 1*46 *A guide to the measurement of anima "ones from archaeological sites, ? arvard: Pe ° ody Museum of Archaeology and Ethnology Bulletin 1.*

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Ed"°le 8r ° . #ancer agurus 2	1	1 6	1)
T, t# 0) 1	100	")	100

- ble 1: Species distr"ution for the assembl ge

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- ble 2: We"ght of total ssembl ge °y context.

PPE";, K C. E`H ,~ ONME` - ! REPO` - 5

C1 En- ironmr ntaŒř m+Œs

By Rachel Fosberry

Intr, uction řv Metho s

Four bulk samples \$ere taken form a variety of features within the confines of the evalu ted area "#order to assess the quality of preservation of plant re, "ns, bones and artefacts and their po1tenti l to provide useful data as part of further archaeological 'hvestigations.

- en l'tres of each sample were processed by tank flotation for the recovery of charred plant re1 mains, dating evidence and any other artefactual evidence that might be present. - he flot was collected in a 0.(mm nylo# mesh and the residue w s \$ shed through a 0.5mm sieve. Both flot and residue were allo\$ed to air dry - he dried residue w s passed through 5mm and 2mm sieves and a magnet was dragged through each resulting fraction prior to sorting for artefacts. #y arte1

facts present were noted and reintegrated with the hand-excavated finds. The flotation was examined under a binocular microscope at x16 magnification and the presence of any plant remains or other artefacts are noted on Table 1.

Features sampled include two deposits from within a ditch, a pit and a layer/pit fill all dating from the medieval period.

Results

The results are recorded on Table 1.

Sample No	Context No	Cut No	Context type	Sample size (litres)	Related sample numbers	Excavators notes	Flot contents	Residue contents
50	602	636	Ditch fill	30	51	No excavated finds. Charcoal observed during excavation	Moderate charcoal, single charred grains of wheat and oat, uncharred seeds of rushes and pondweed, cladoceran eppiphia. Single magnetic spheroid and occasional flakes of hammer-scale	Magnetic residues, slag
51	646	636	Ditch fill	40	50	Basal fill of ditch.	waterlogged sample containing organic plant material, seeds of knotgrass, bramble, buttercup, elderberry, poppy, thistle and numerous seeds of nettle, numerous cladoceran eppiphia, vivianite and insect fragments	no finds
52	601	598	Pit fill	30		Primary fill of ?medieval pit	Charcoal rich, occasional charred grains of rye and wheat, charred pea, spores, cladoceran eppiphia. Occasional flakes of hammer-scale and magnetic spheroids x 5	Animal bone fragments, fish bone, magnetic residues, slag
53	667	x	Layer, probably pit fill	30		Lowest deposit excavated in sondage. Possibly fill of ?medieval pit	moderate charcoal, single charred grains of wheat and rye, mollusc shells, magnetic spheroids x15	Pottery, fish bone, slag, magnetic residues

Preservation is good by both charring and waterlogging and is generally poor to moderate.

Charred plant remains are rare and occur only as charcoal fragments, with occasional cereal grains of wheat (*Triticum* sp.) and rye (*Secale cereale*) and a single pea (*Pisum sativum* sp.).

Untransformed seeds that are most likely to have been preserved by waterlogging, occur in ditch 636 and include numerous nettle (*Urtica urens*) seeds along with occasional seeds of elderberry (*Sambucus* sp.), Poppy (*Papaver* sp.), Bramble (*Rubus* sp.), buttercup (*Ranunculus* sp.), thistle (*Carduus/Cirsium* sp.), knotweed (*Polygonum aviculare*), black nightshade (*Solanum nigrum*) and wetland plant species including rushes (*Juncus* sp.) and pondweed (*Potamogeton* sp.).

Discussion

The samples examined from this evaluation produced a low abundance of charred material in the form of charcoal fragments with some cereal grains and a few weed seeds. This suggests that most of the samples represent general scatters of burnt debris rather than discrete purposeful deposits.

The most informative samples are those from ditch 636 which both contain plant material preserved by waterlogging. Nettles and black nightshade are both plants that grow on nitrogen rich soils and their presence along with the weeds of disturbed ground such as poppies, thistles and pasture weeds such as buttercups suggest that cattle may have been grazing the vicinity of the ditch.

The presence of cladoceran epiphybia including water flea eggs indicates that ditch 636 and pit 3* both at sometime contained water.

Hammerscale was recovered from three of the samples. Both spheroids and flakes of hammer scale were noted indicating that blacksmithing activity, specifically welding, was taking place in the vicinity.

Sample 52, basal ditch fill 646 also contained vivianite, a blue mineral indicative of decomposing vegetation within an anaerobic environment and is often associated with cess.

Further Work and Methods Statement

The samples show only a low abundance of charred material that is not considered worthy of further analysis. If further work is planned in this area, it is recommended that environmental sampling is included as this assemblage shows that there is potential for the recovery of plant remains. In addition, specific sampling strategy for the recovery of hammerscale should be included in the project design.

* Bibliography

Stace, C., 1997 *New Flora of the British Isles* Second edition. Cambridge University Press

PPE, K D. OASIS REPO - FORM

All fields are required unless they are not applicable.

Project Details

OASIS Number	oxfordar(178101)		
Project Name	Evaluation at Angl" Square, Nor\$"ch (phase 2)		
Project Dates (fieldwork Start)	31/41/	/" #sh	(1/41/
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Monument Types/Significant Finds O Their Periods

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Project %ocation

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District	Norwich		
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Project Originators

Organisation	OA EAST
Project Brief Originator	Oxford Landscape Archaeology
Project Design Originator	Tom Clarke & Peter Sperry
Project Manager	P. Sperry
Supervisor	Tom Clarke

Project Archives





































Physical Archive	Digital Archive	Project Archive
Oxford Museum	Oxford Museum	Oxford Museum
EN/ 124825	EN/ 124825	EN/ 124825

Archive Contents

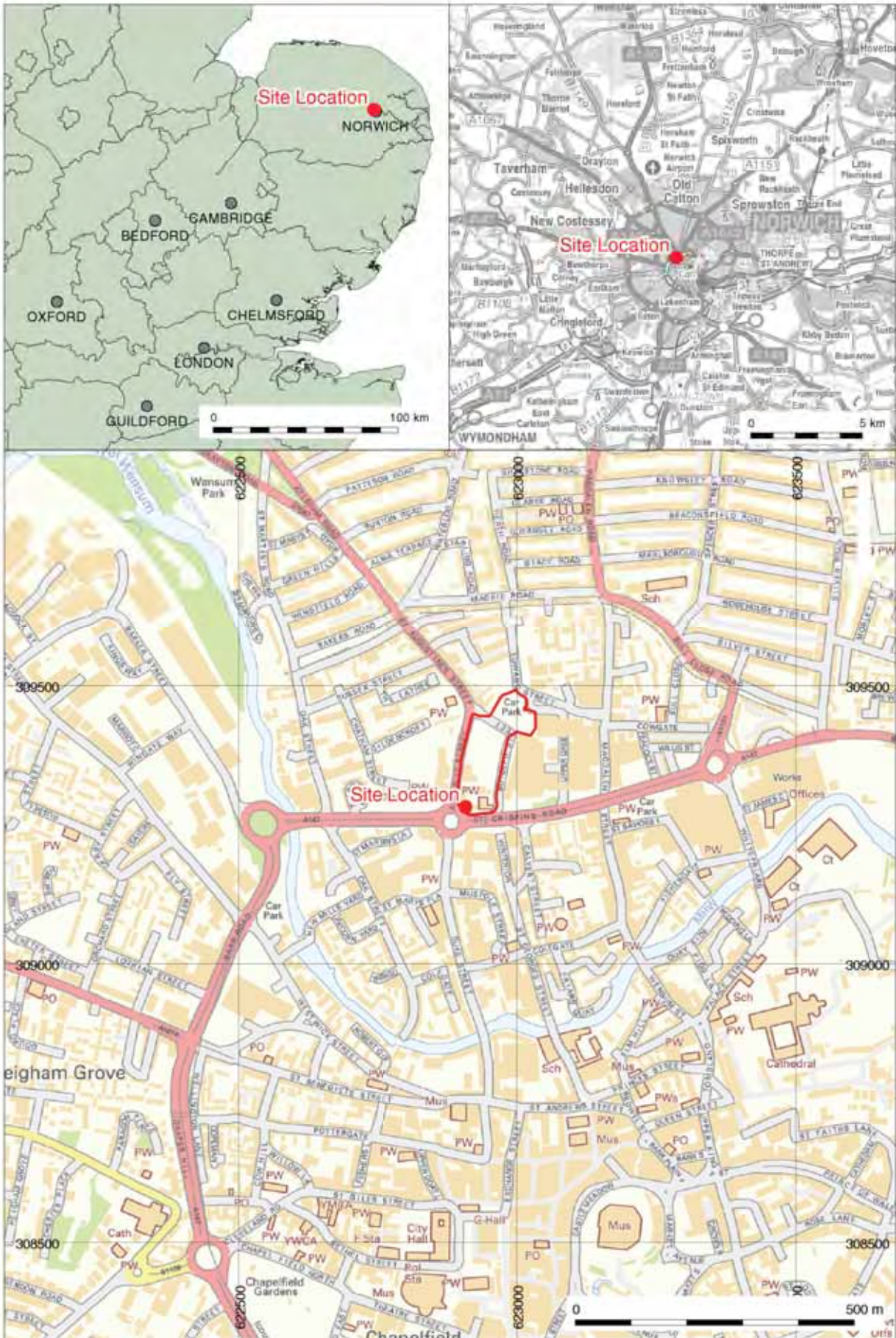
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	<input checked="" type="checkbox"/> Sections
	<input checked="" type="checkbox"/> Survey

Notes:

Plans		Sections	
Limit of Excavation	_____	Limit of Excavation	-----
Deposit - Conjectured	-----	Cut	_____
Natural Features	_____	Cut Conjectured	-----
Sondages/Machine Strip	-----	Deposit Horizon	_____
Intrusion/Truncation	-----	Deposit Horizon Conjectured	-----
Illustrated Section	<u>S.14</u>	Natural Deposit	-----
Archaeological Feature		Sondages/Machine Strip	-----
Archaeological Deposit		Intrusion/Truncation	-----
Excavated Slot		Top Surface/Top of Natural	_____
Wall		Break in Section/ Limit of Section Drawing	-----
Concrete		Stone	
Mortar		Sandy Stone	
Gravel		Lime Stone	
Grave		Worked Stone	
Brick		Peeble	
Brick Rubble		Gravel	
Paving Slab		Flint	
Tile		Chalk	
Flint		Sand	
Bone		Silt	
Wood		Tarmac	
Sewer		Concrete	
Lead Pipe		Cement Render	
Auger Hole		Mortar	
Cut Number	118	Pipe	
Deposit Number	117	Brick	
Structure Number	556	Tile	
Sample Number	51	Bone	
Ordnance Datum	18.45m OD		

Convention Key



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Figure 1: Site location (area of investigation outlined red)

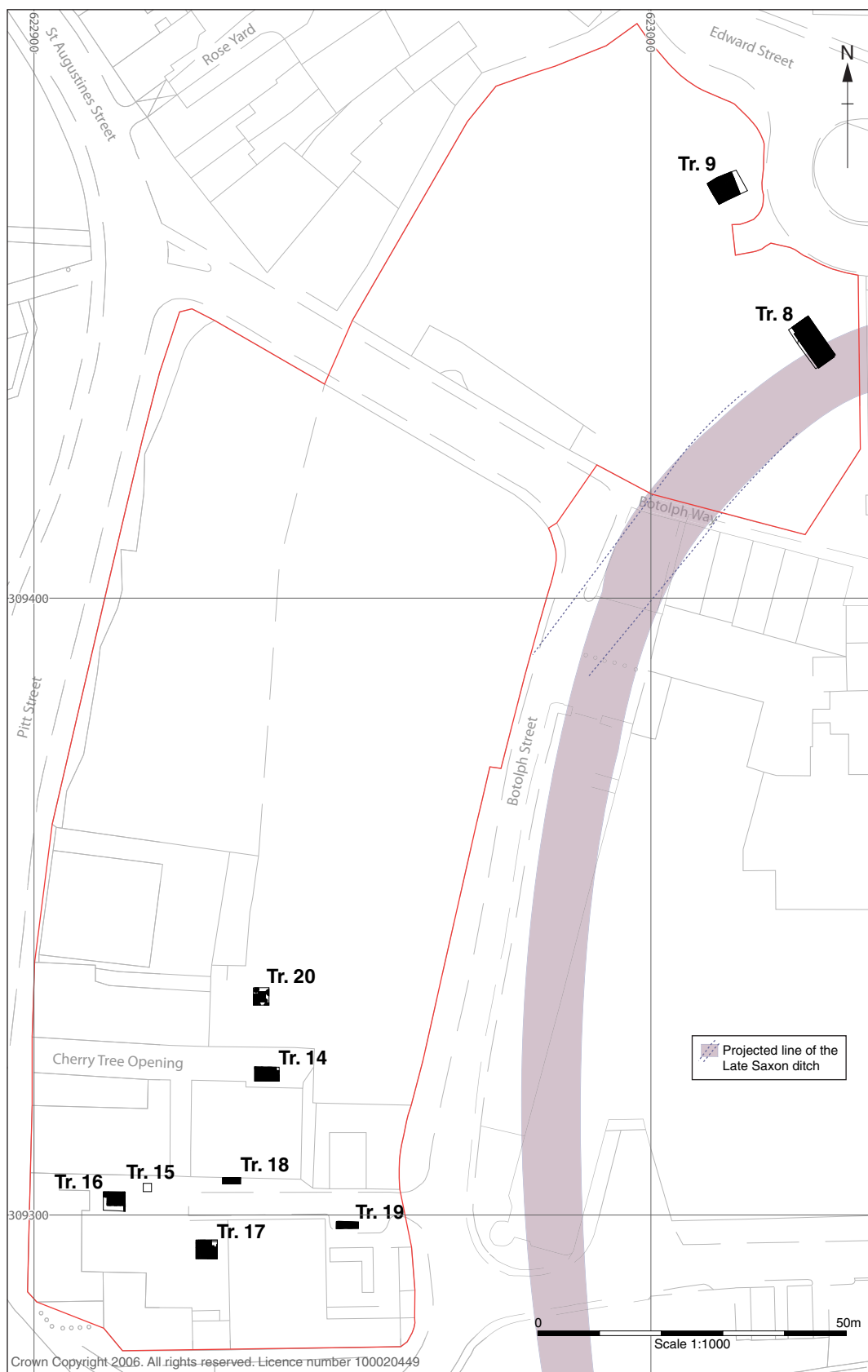


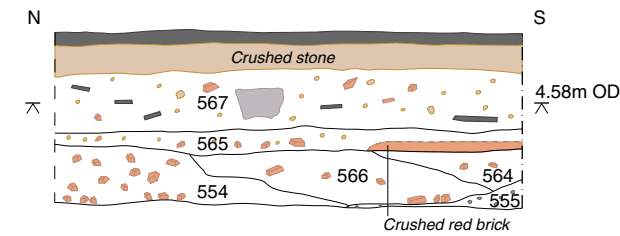
Figure 2: Trench location plan



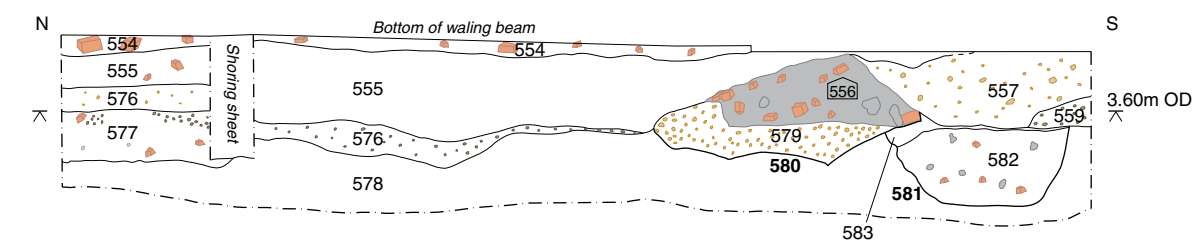
Figure 3: Trench 8: plan

Trench 8 (West facing)

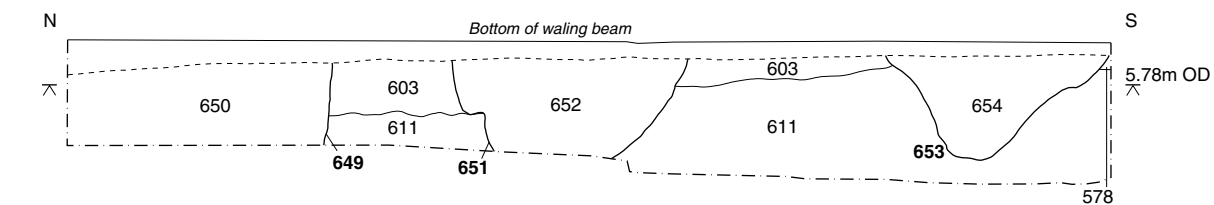
Section 111



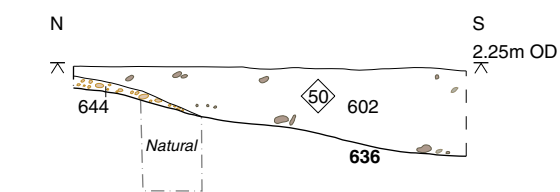
Section 114



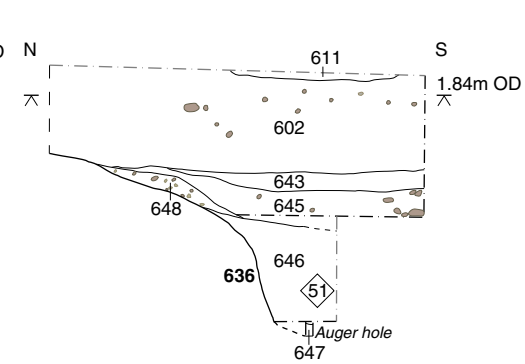
Section 128



Section 125

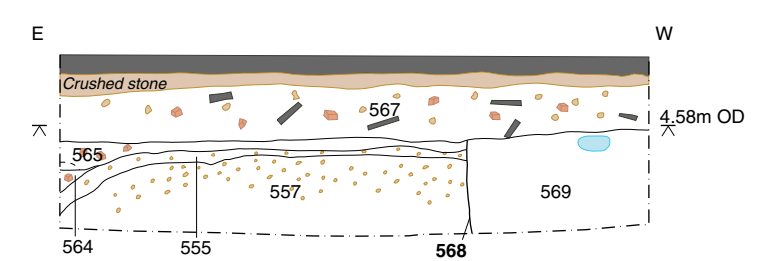


Section 126

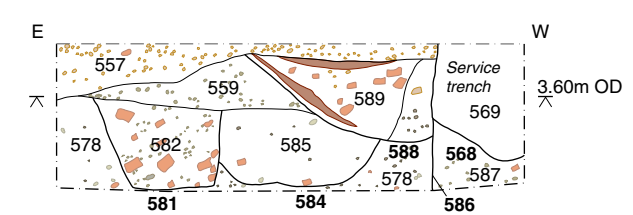


Trench 8 (North facing)

Section 112



Section 115



Section 124

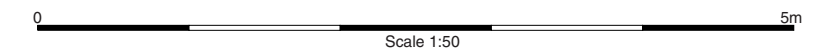
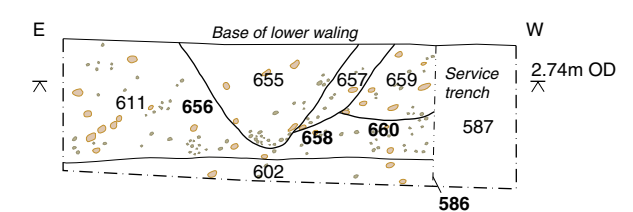


Figure 4: Trench 8: Sections

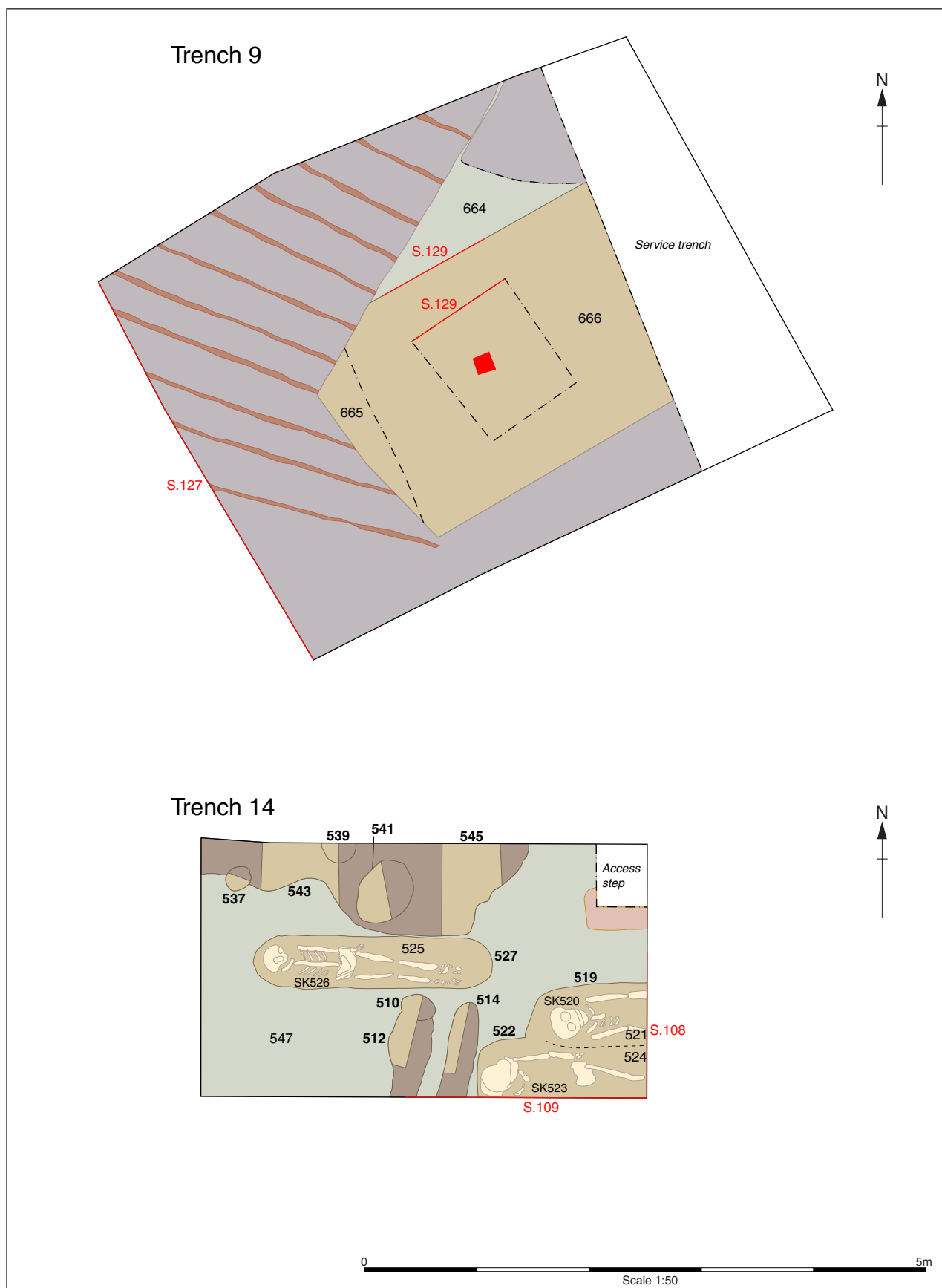
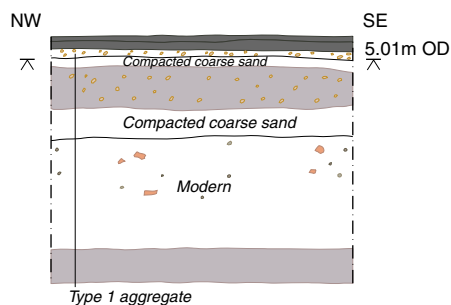


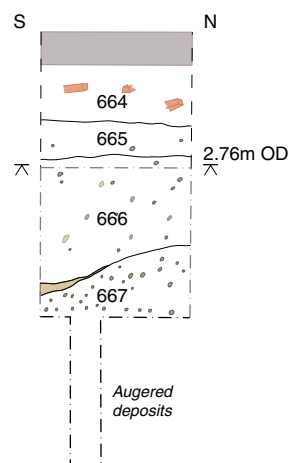
Figure 5: Trenches 9 and 14: Plan

Trench 9

Section 127



Section 129



Trench 14

Sections 108/109

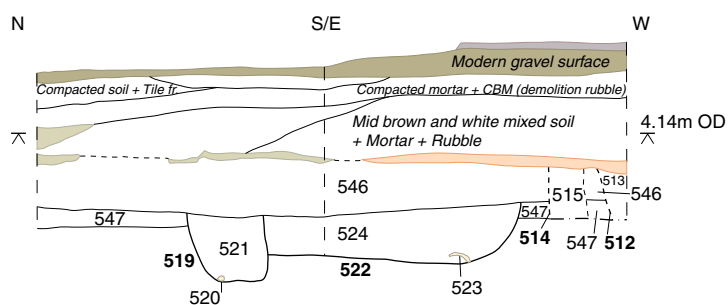


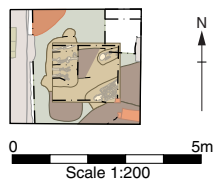
Figure 6: Trenches 9 and 14: Sections

Trench 16

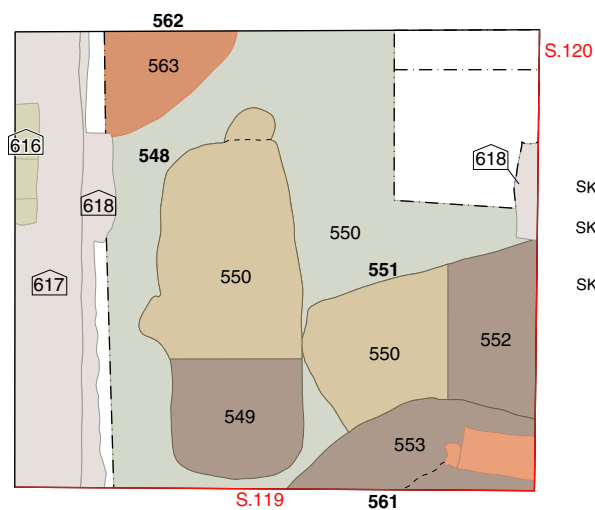


Trench 17

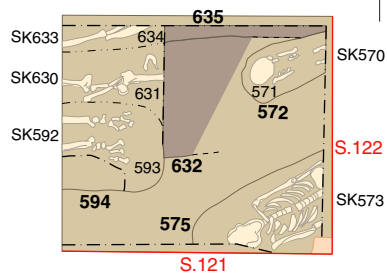
All phases of excavation



Overlay



Underlay

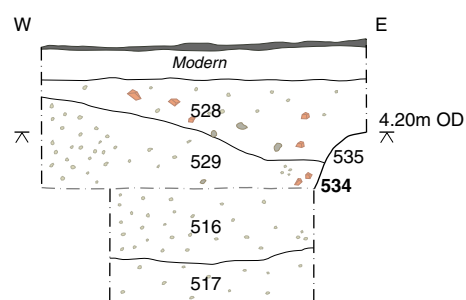


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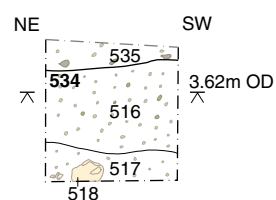
Figure 7: Plans of Trenches 16 and 17

Trench 16

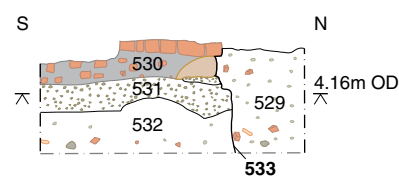
Section 105



Section 106

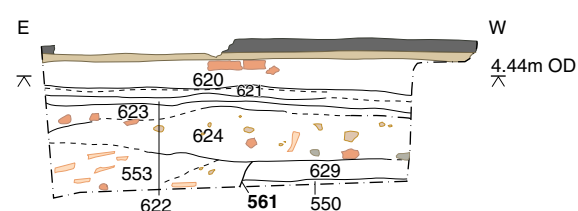


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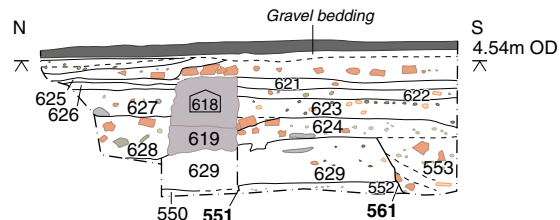


Trench 17

Section 119



Section 120



Sections 122/121

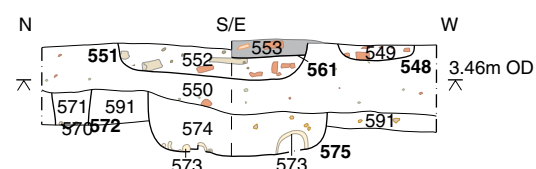


Figure 8: Trenches 16 and 17: Sections

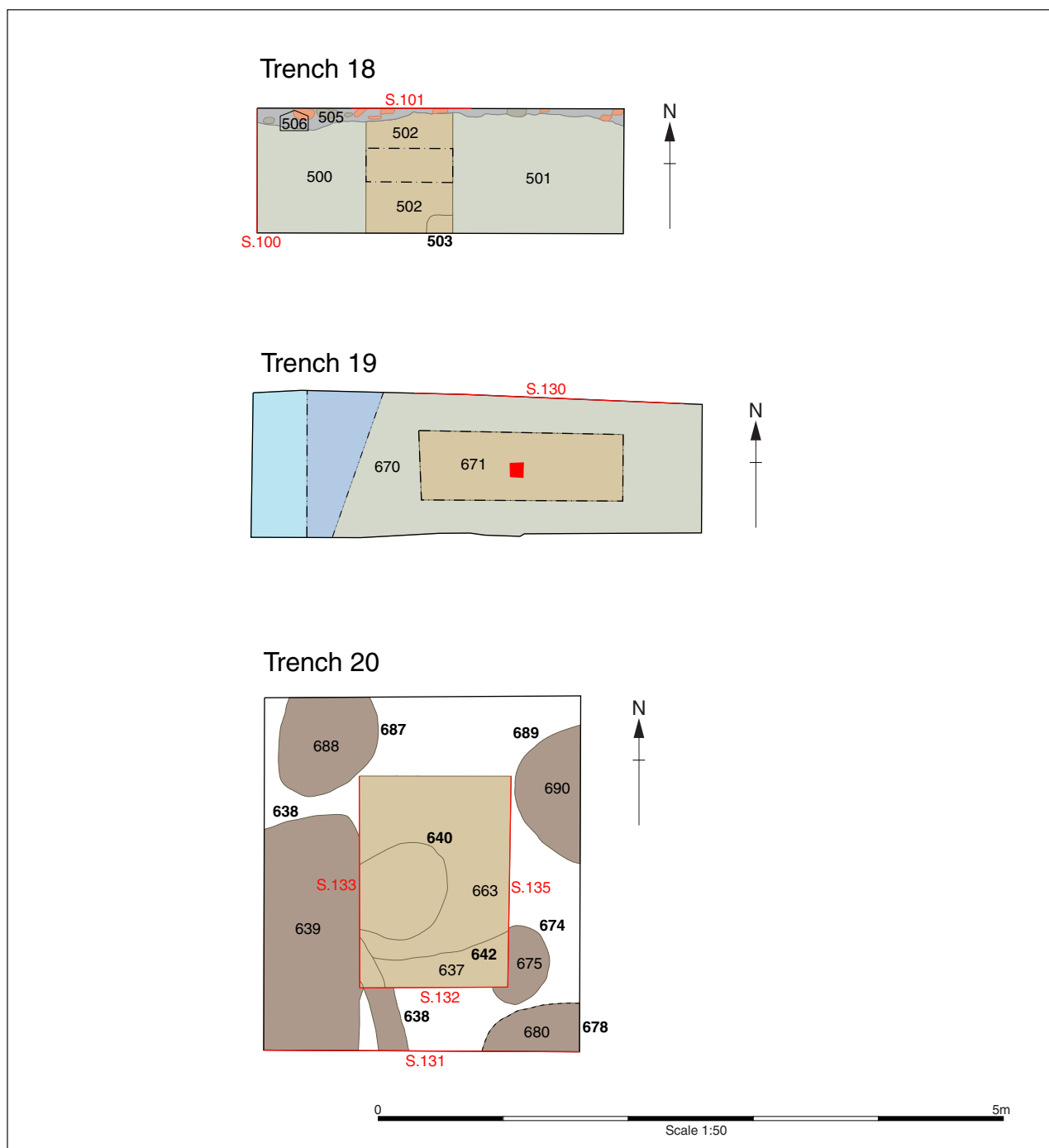
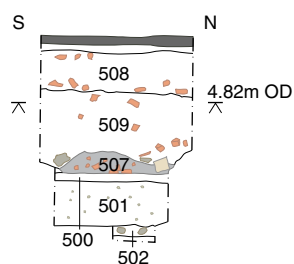


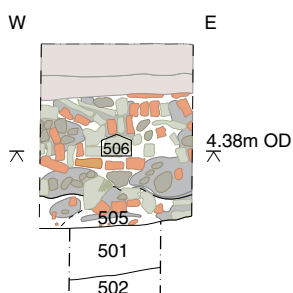
Figure 9: Plans of Trenches 18, 19 and 20

Trench 18

Section 100

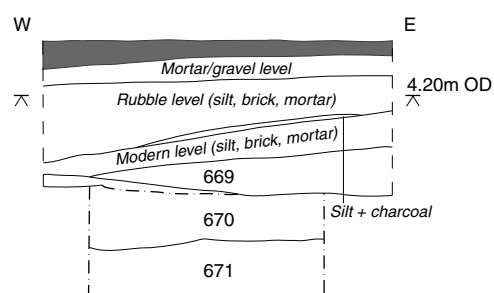


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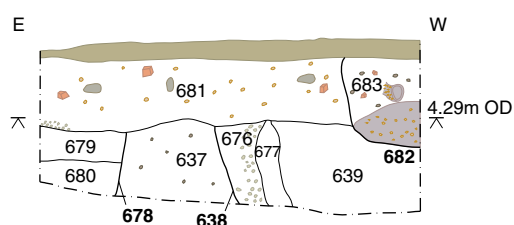
Trench 19

Section 130

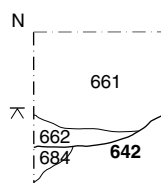


Trench 20

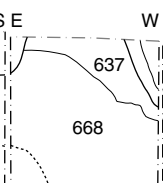
Section 131



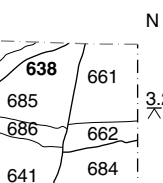
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Section 132



Section 133



Auger hole

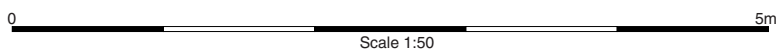


Figure 10: Trenches 18, 19 and 20: Sections



Plate 1: Trench 8 view from above



Plate 2: Trench 8 section of Late Saxon ditch 636



Plate 3: Trench 8 Wall 556



Plate 4: Trench 14 Graves
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Plate 5: Trench 14
Grave 527



Plate 6: Trench 15 Backfilled cellar



Plate 7: Trench 16
looking north



Plate 8: Trench 17 Grave 572



Plate 9: Trench 20 Intercutting pits, looking south



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Appendix 4

**Oxford Archaeology East
Anglia Square
Norwich
Geotechnical pits
Archaeological Monitoring Report
2018**



Anglia Square, Norwich

Geotechnical Pits

Archaeological Monitoring Report

September 2018

Client: CgMs

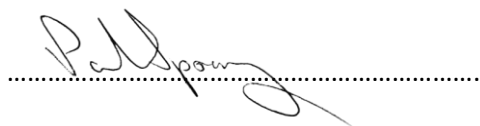
Issue No: 1.1
OAE Report No: 2236
NGR: TG 2312 0930



Client Name: CgMs
Document Title: Anglia Square, Norwich Geotechnical Pits
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Issue No: 1.1
Date: 4/9/18
Prepared by: Heather Wallis (Freelance Archaeologist)
Checked by: Paul Spoerry (Regional Manager)
Edited by: Rachel Clarke (Post-excavation Editor)
Approved for Issue by: Paul Spoerry (Regional Manager)
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Anglia Square, Norwich Geotechnical Pits

Archaeological Monitoring Report

Written by Heather Wallis

With illustrations by Dave Brown

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Summary

Archaeological monitoring of five geotechnical pits located to the south of Anglia Square, Norwich was undertaken. In all the geotechnical pits post-medieval archaeological deposits were reached at a depth of 0.20m to 0.35m from the present ground surface. These deposits included walls of both brick and flint construction. The alignment of one wall, at an angle to the present street pattern, may reflect the line of Botolph Street, a medieval road which was destroyed in the late 1960s. Below the post-medieval deposits a soil horizon, representing an undeveloped area of medieval or early post-medieval date, was recorded in all the test pits.

Acknowledgements

Oxford Archaeology would like to thank CgMs for commissioning this project.

The project was managed for Oxford Archaeology by Paul Spoerry. The fieldwork was undertaken by Heather Wallis (Freelance Archaeologist). Figures were prepared by Dave Brown and the report edited by Rachel Clarke. Pottery was identified by Richenda Goffin.

1 INTRODUCTION

1.1 Scope of work

- 1.1.1 Oxford Archaeology (OA) was commissioned by CgMs Heritage to monitor the excavation of five trial pits, excavated by contractors for geotechnical works between 2nd and 3rd July 2018. This work was undertaken as a preparatory measure ahead of the possible siting of temporary shopping facilities to facilitate the re-development of Anglia Square, Norwich.

1.2 Location, topography and geology

- 1.2.1 The site lies close to the centre of the city of Norwich, but to the north of the River Wensum, within both the defended Saxon burgh and medieval walls of the city. The test pits were located to the south of the Anglia Square shopping centre and under the flyover which forms part of the Norwich inner ring road. Magdalen Street, one of the main north-south arterial routes from the city forms the eastern boundary of the site (Fig. 1).
- 1.2.2 This area had been redeveloped in the late 1960s and the early 1970s when the medieval street pattern was obliterated, the area levelled, and Anglia Square and the flyover constructed. Since then the area under the flyover has remained as waste ground.
- 1.2.3 The bedrock geology is chalk overlain by alluvial deposits of sand and gravel, silt and clay (<http://mapapps.bgs.ac.uk/geologyofbritain/home.html>).

1.3 Summary archaeological and historical background

- 1.3.1 The historic significance of the site lies with its location within both the Saxon defended burgh and the medieval city walls. Magdalen Street, which runs along the eastern boundary of the site, was one of the main medieval routes exiting the city to the north. A fork in this road branched off to the north-west, known as Botolph Street this route was one of the main thoroughfares during the medieval and post-medieval periods. Botolph Street was demolished during the late 1960s when the present Anglia Square was constructed. The flyover was constructed in 1971.
- 1.3.2 Historic maps of the city indicate that the northern part of Magdalen Street and the street frontage of Botolph Street were well developed by the late 17th century (Cleer's map 1696) within infilling behind the street frontages being complete by the late 18th century (Hochstetter's map 1789).
- 1.3.3 Significant buildings in the area included Doughty's Hospital. This is located to the south of the site and was originally built in 1687 as a home for poor men and women. The present buildings are Victorian in style, the accommodation having been rebuilt in 1869. On the east side of Magdalen Street is St Saviour's Church. The architecture is 14th and 15th century in date although like many churches it was refurbished in the 19th century. Along Magdalen Street itself several buildings of 16th and 17th-century date are recorded, including one (17th-century) building immediately to the south of the site.

2 EVALUATION AIMS AND METHODOLOGY

2.1 Aims

- 2.1.1 The project aim was to record any archaeological deposits disturbed or revealed by the excavation of five geotechnical test pits.

2.2 Methodology

- 2.2.1 The test pits were located to the requirements of the geotechnical team and were all hand excavated by the contractors over a period of two days. Intermittent monitoring of the hand excavations was undertaken and the revealed deposits recorded on trench sheets. Five trenches were excavated (Fig. 2), one of which (Test Pit 1) measured 1m x1m and was 1.1m deep. The dimensions and depths of the other trenches, although no bigger than this, varied and are described in detail below. Measured sections of Test Pit 1 were drawn while the remaining trenches were recorded from the top of the trench due to unstable deposits in or around the trench edges. Context numbers were issued for all of the recorded deposits.

3 RESULTS

3.1 Introduction and presentation of results

- 3.1.1 The results of the monitoring are presented below and include a stratigraphic description of the test pits. Plans and sections are shown in Fig. 3 and contexts are listed in Appendix A. Selected views are shown in Plates 1-5.
- 3.1.2 Test pit locations were determined by the geotechnical engineer in the approximate locations indicated on the 'proposed works' plan. The actual locations of Trenches 1, 2, 4 and 5 were measured in from fixed points by tape. Trench 3 could not be accurately located as there were few fixed points nearby and the trench was surrounded by construction debris.
- 3.1.3 At the time of the works the weather conditions were extremely hot and dry. Most of the trenches were in direct bright sunlight.

3.2 Test Pit 1

- 3.2.1 This trench was 1x1m in size and excavated to a depth of 1.1m. It was located in a grassed area between the flyover and Anglia Square. The earliest deposits were soil layers (09, 08 and 07). These were loamy in nature with few inclusions although flecks of fired clay, charcoal and chalk were observed. A single sherd of Tudor Green ware (1350-1500) was recovered from the lowest of these deposits (09). Above this was evidence of urban development the earliest element of which was a flint and mortar constructed wall (06) which ran east-west along the south edge of the trench. Later evidence included crushed and compacted redbrick demolition debris (05) and a north-south red brick wall (04). Deposits above this included concreted rubble, gravel and upper turf layer which date from the 1960s or later.

Top of post-medieval building evidence (04) 0.2-0.3m below present ground level.

Top of post-medieval soil deposit (07) 0.6m below present ground level.

3.3 Test Pit 2

- 3.3.1 This measured 1x1m and was located in a 'garden' area adjacent to the Magdalen Street pavement. The majority of the trench was excavated to depth of 0.9m but the north-east corner was excavated to 1.4m and augered for a further 1.5m when an obstruction was encountered. The lowest deposits were layers of soils (21, 20). A red brick wall (11) crossed the trench on a north-south alignment and a further wall (12) ran east-west along the south edge of the trench. The area inside these walls had a pavement floor (13) over which was a soily rubble (18). To the east of the north-south wall a bed of creamy mortar (19) lay over the soil deposits, above this was a soily rubble (18). Cut into this was a modern post-hole (17) which once held an item of street furniture. This was sealed by a layer of concrete (15) and a stony topsoil (14).

3.4 Test Pit 3

- 3.4.1 Test Pit 3 measured 1x1m, the eastern half was excavated to depth of 0.5m, south-west corner to 0.9m and north-west corner to 1.2m where it was further augered to

2.3m. This test pit was located under the flyover in an area being used by as a compound for road maintenance works being undertaken to the west of the site.

- 3.4.2 At the base of the auger hole a very moist silty clay (29) was revealed over which were soil deposits (28, 27, 26). Above this a layer of crushed lime mortar (24) was noted. This may have been a surface or a deposit of demolition debris. This was sealed by more modern topsoil (23). Cut through this in the north corner was possible footing or deposit of demolition debris (25). The trench was sealed by modern make-up and gravel surfaces (22).

Bottom of modern deposits 0.35m below present ground level.

Top of post-medieval soil deposits 0.8m below present ground level.

3.5 Test Pit 4

- 3.5.1 This trench was sited adjacent to the Anglia Square buildings, it measured 1.2m x 0.5m, and the east part was excavated to depth of 1.4m. The lowest revealed deposits were sandy clays (35, 34) with occasional chalk flecks. A wall (30) crossed the trench on a north-west to south-east alignment. The lower courses were of flint and mortar construction with red brick forming the upper part of the wall. All these deposits were cut by the construction trench for the Anglia Square buildings and sealed by modern make-up and surface.

Bottom of modern deposits 0.35m below present ground level.

Base of modern footings 1.4m below present ground level.

Top of post-medieval soil deposits 0.65m below present ground level.

3.6 Test Pit 5

- 3.6.1 This trench was also sited up against the Anglia Square buildings. It measured 1.2m x 0.5m, the east part was excavated to depth of 1.15m, west part to 0.5m. The lowest deposits were sandy clays (35, 34) with occasional chalk flecks. Above these was a silty loam (33) with chalk, ceramic building material and flint inclusions. Deposits were cut by the construction trench for the Anglia Square buildings, the base of which were chased in a small sondage, and all were sealed by modern concrete (32) and paved surface (31).

Bottom of modern deposits 0.35m below present ground level.

Base of modern footings 1.4m below present ground level.

Top of post-medieval soil deposits 0.65m below present ground level.

4 DISCUSSION

4.1 Interpretation

- 4.1.1 Soils with few inclusions were located in all the trenches. These probably represent the medieval and post-medieval soils of the area prior to the mid 17th-century street frontage development. These were identified at depths between 0.6 and 0.8m below present ground level. A single sherd of Tudor Green ware was recovered from these deposits in Test Pit 1.
- 4.1.2 The remains of buildings were identified in three of the five trenches. The date of the buildings was not established but two of the walls were originally of flint and mortar construction with red brick only being present in higher levels of the surviving masonry. The alignment of the wall in Test Pit 4 probably reflects the alignment of Botolph Street, a medieval street demolished in the late 1960s. Buildings of 16th and 17th century date have previously been recorded along Magdalen Street. The top of the structural elements recorded were generally at c.0.35m below present ground level.
- 4.1.3 Modern deposits are between 0.2 and 0.35m deep, with the footings for the Anglia Square buildings extending to a depth of 1.4m.

4.2 Significance

- 4.2.1 The monitoring of these small test pits has provided a glimpse of the surviving archaeology to the south of Anglia Square and under the Magdalen Street flyover. No archaeological work was undertaken during the construction of Anglia Square and the flyover in the late 1960s and early 1970s, and none had been undertaken in this location since then. The level of survival of archaeological deposits through the 20th-century redevelopment was therefore previously unknown. The archaeological monitoring of these pits has clearly shown that there is good survival of archaeological deposits just 0.2m to 0.35m below the present ground level. Evidence of walls in several test pits suggests that the post-medieval building pattern survives, including elements of the now lost Botolph Street. Below the remains of these buildings a buried soil was present which has been interpreted as an early post-medieval soil horizon. Survival of the post-medieval deposits across the site therefore indicates that earlier archaeological deposits will have been sealed and preserved at a greater depth.

APPENDIX A TRENCH DESCRIPTIONS AND CONTEXT INVENTORY

Test Pit 1						
General description					Orientation	-
Trench containing post-medieval soils and walls of post-medieval to modern buildings.					Length (m)	1
					Width (m)	1
					Avg. depth (m)	1.1
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
01	Layer	-	0.14	Topsoil	-	Modern
02	Layer	-	0.02	Surface	-	Modern
03	Layer	-	0.15	Makeup	-	Modern
04	Wall	-	0.25	East-west aligned	-	Post-medieval/modern
05	Layer		0.35	Demolition debris		Post-medieval/modern
06	Wall		0.25	East-west aligned		Post-medieval
07	Layer		0.10	Buried soil		Post-medieval
08	Layer		0.4	Buried Soil		Post-medieval
09	Layer		0.1+	Buried soil		Post-medieval

Test Pit 2						
General description					Orientation	-
Trench containing post-medieval soils and walls of post-medieval to modern buildings.					Length (m)	1
					Width (m)	1
					Max. depth (m)	1.4
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
10	Wall			East-west aligned		Post-medieval/modern
11	Wall			North-south aligned		Post-medieval/modern
12	Wall			East-west aligned		Post-medieval/modern
13	Surface			Pamment floor		Post-medieval/modern
14	Layer		0.2	Topsoil		Modern
15	Layer		0.1	Concrete		Modern
16	Fill		0.3	Concrete fill of 17		Modern
17	Cut		0.3	Feature		Modern
18	Layer		0.4	Demolition debris		Post-medieval/modern
19	Layer		0.2	Demolition debris		Post-medieval
20	Layer		0.2	Buried soil		Post-medieval
21	Layer		1.5	Buried Soil		Post-medieval

Test Pit 3						
General description					Orientation	-
Trench with post-medieval soils and post-medieval and modern make-up deposits					Length (m)	1
					Width (m)	1
					Max. depth (m)	1.10
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
22	Layer		0.20	Gravel surface		Modern
23	Layer		0.10	Make-up		Modern
24	Layer		0.05	Make-up		Modern
25	Layer		0.50	Demolition debris (or wall)		Post-medieval/modern
26	Layer		0.03	Build up		Post-medieval/modern
27	Layer		0.10	Levelling		Post-medieval/modern
28	Layer		1.40	Buried soil		Post-medieval
29	Layer		0.10+	Buried soil		Post-medieval

Test Pit 4						
General description					Orientation	E-W
Trench with post-medieval soils and wall of post-medieval buildings. Upper deposits all modern.					Length (m)	30
					Width (m)	2
					Avg. depth (m)	0.30
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
30	Wall			North-west to south-east aligned		Post-medieval/modern
31	Layer		0.30	Concrete slab		Modern
32	Layer		0.10	Concrete levelling		Modern
33	Layer		0.25	Make-up		Modern
34	Layer		0.35	Buried soil		Post-medieval
35	Layer		0.15+	Buried soil		Post-medieval

Test Pit 5						
General description					Orientation	E-W
Trench with post-medieval soils and modern deposits. (Same sequence and contexts as Trench 4)					Length (m)	30
					Width (m)	2
					Avg. depth (m)	0.30
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
31	Layer		0.30	Concrete slab		Modern
32	Layer		0.10	Concrete levelling		Modern
33	Layer		0.25	Make-up		Modern
34	Layer		0.35	Buried soil		Post-medieval
35	Layer		0.15+	Buried soil		Post-medieval

APPENDIX B FINDS REPORTS

B.1 Pottery

By Heather Wallis with pottery identified by Richenda Goffin

- B.1.1 A single sherd (weighing less than 1g) of 'Tudor Green' ware was recovered from Trench 1 context 09. This fine fabric generally dates from 1350 to 1500 and was imported to the region from the Surrey area.

APPENDIX C

OASIS REPORT FORM

Project Details

OASIS Number	oxfordar3-345412
Project Name	Anglia Square test Pits 2018

Start of Fieldwork	2nd July 2018	End of Fieldwork	3rd July 2018
Previous Work		Future Work	Unknown

Project Reference Codes

Site Code	XNFASN18	Planning App. No.	
HER Number	ENF145944	Related Numbers	
Prompt			
Development Type	Urban		
Place in Planning Process	Pre-application		

Techniques used (tick all that apply)

- | | | |
|--|---|---|
| <input type="checkbox"/> Aerial Photography – interpretation | <input type="checkbox"/> Grab-sampling | <input type="checkbox"/> Remote Operated Vehicle Survey |
| <input type="checkbox"/> Aerial Photography - new | <input type="checkbox"/> Gravity-core | <input type="checkbox"/> Sample Trenches |
| <input type="checkbox"/> Annotated Sketch | <input type="checkbox"/> Laser Scanning | <input type="checkbox"/> Survey/Recording of Fabric/Structure |
| <input type="checkbox"/> Augering | <input type="checkbox"/> Measured Survey | <input type="checkbox"/> Targeted Trenches |
| <input type="checkbox"/> Dendrochronological Survey | <input type="checkbox"/> Metal Detectors | <input checked="" type="checkbox"/> Test Pits |
| <input type="checkbox"/> Documentary Search | <input type="checkbox"/> Phosphate Survey | <input type="checkbox"/> Topographic Survey |
| <input type="checkbox"/> Environmental Sampling | <input type="checkbox"/> Photogrammetric Survey | <input type="checkbox"/> Vibro-core |
| <input type="checkbox"/> Fieldwalking | <input type="checkbox"/> Photographic Survey | <input type="checkbox"/> Visual Inspection (Initial Site Visit) |
| <input type="checkbox"/> Geophysical Survey | <input type="checkbox"/> Rectified Photography | |

Monument	Period	Object	Period
Buried Soil	Post Medieval (1540 to 1901)	Pottery	Medieval (1066 to 1540)
Building	Post Medieval (1540 to 1901)		Choose an item.
Post-hole	Modern (1901 to present)		Choose an item.

Project Location

County	Norfolk	Address (including Postcode)
District	Norwich	Land to south of Anglia Square
Parish	Norwich	Magdalen Street
HER office	Norfolk	Norwich
Size of Study Area	4msq	
National Grid Ref	TG 23141 09303 (c)	

Project Originators

Organisation	OA
Project Brief Originator	x
Project Design Originator	x
Project Manager	Paul Spoerry, OA East
Project Supervisor	Heather Wallis

Project Archives

	Location	ID
Physical Archive (Finds)	Norwich Castle Museum	
Digital Archive	Norwich Castle Museum/OA East	
Paper Archive	Norwich Castle Museum	

Physical Contents	Present?	Digital files associated with Finds	Paperwork associated with Finds
Animal Bones	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ceramics	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Glass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Human Remains	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Industrial	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Metal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stratigraphic		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Survey		<input type="checkbox"/>	<input type="checkbox"/>
Textiles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worked Bone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worked Stone/Lithic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

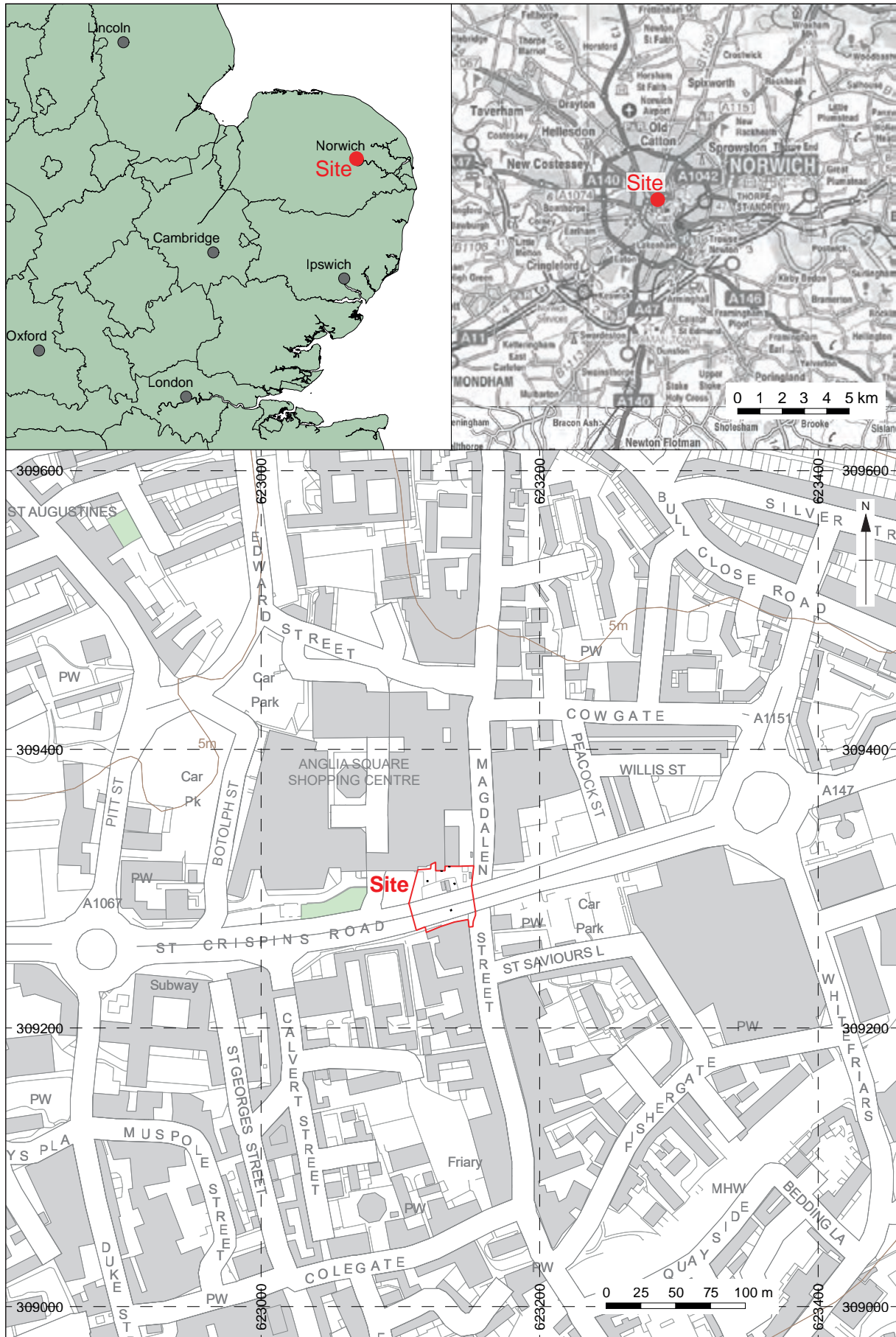
Digital Media

Database	<input type="checkbox"/>
GIS	<input type="checkbox"/>
Geophysics	<input type="checkbox"/>
Images (Digital photos)	<input checked="" type="checkbox"/>
Illustrations (Figures/Plates)	<input type="checkbox"/>
Moving Image	<input type="checkbox"/>
Spreadsheets	<input type="checkbox"/>
Survey	<input type="checkbox"/>
Text	<input type="checkbox"/>
Virtual Reality	<input type="checkbox"/>

Paper Media

Aerial Photos	<input type="checkbox"/>
Context Sheets	<input type="checkbox"/>
Correspondence	<input type="checkbox"/>
Diary	<input type="checkbox"/>
Drawing	<input type="checkbox"/>
Manuscript	<input type="checkbox"/>
Map	<input type="checkbox"/>
Matrices	<input type="checkbox"/>
Microfiche	<input type="checkbox"/>
Miscellaneous	<input type="checkbox"/>
Research/Notes	<input checked="" type="checkbox"/>
Photos (negatives/prints/slides)	<input type="checkbox"/>
Plans	<input checked="" type="checkbox"/>
Report	<input checked="" type="checkbox"/>
Sections	<input checked="" type="checkbox"/>
Survey	<input type="checkbox"/>

Further Comments



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Figure 1: Site location showing archaeological test pits (black) in development area (red)

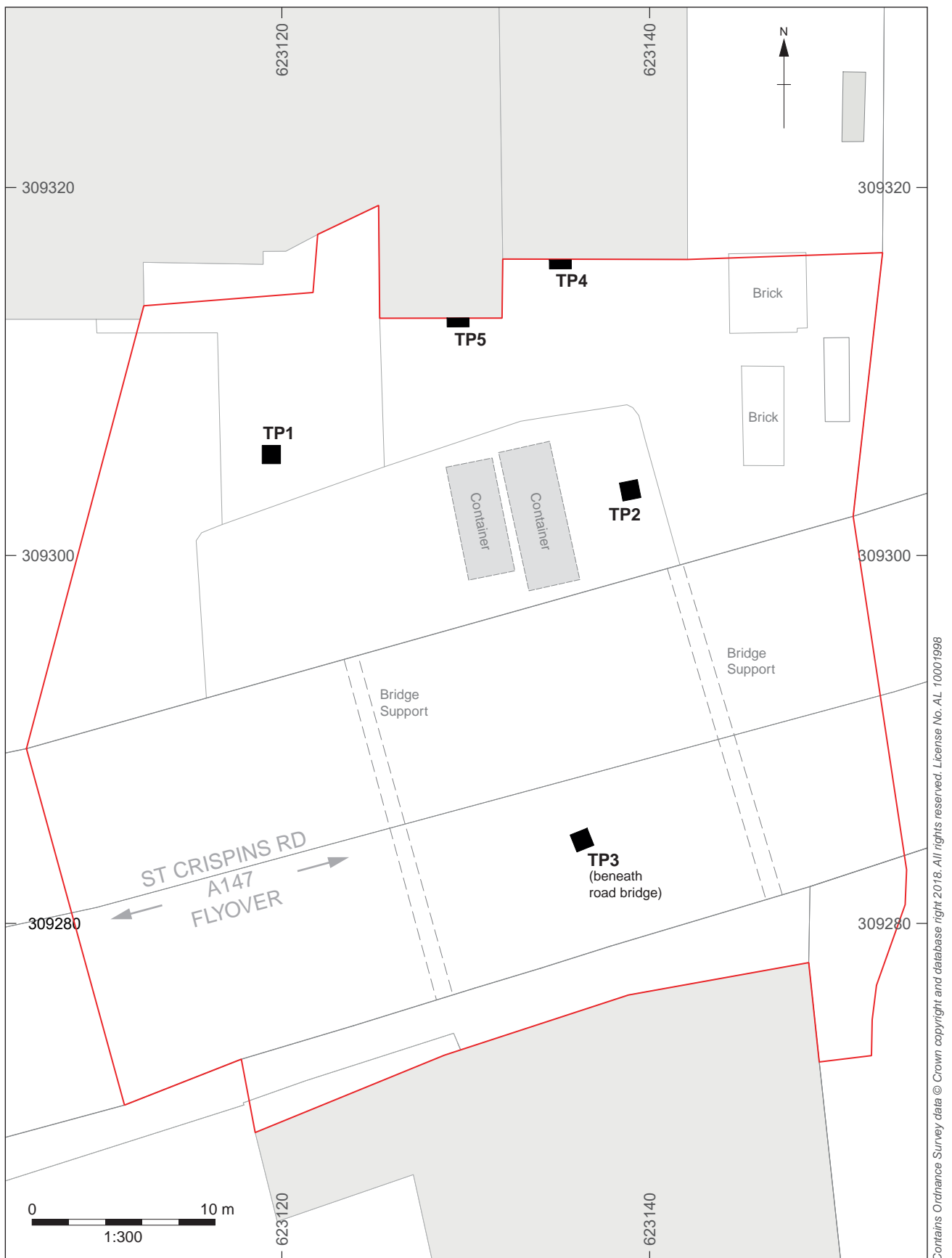
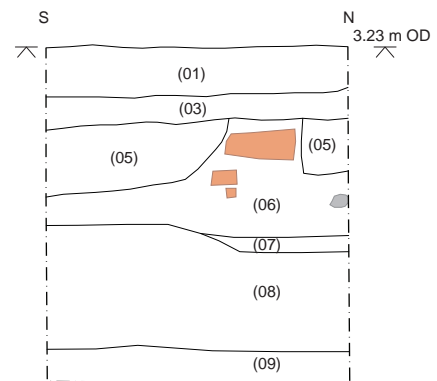
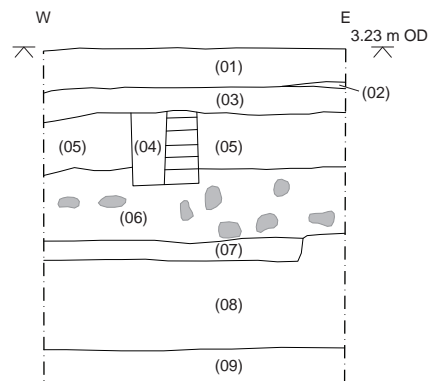


Figure 2: Test pit location

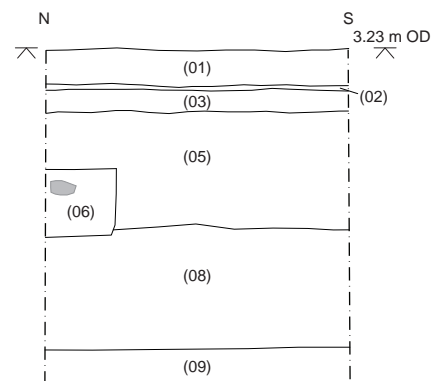
**Test Pit 1
Measured Sketch Section
West Facing**



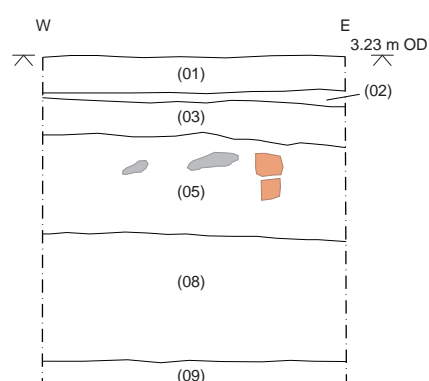
**Test Pit 1
Measured Sketch Section
North Facing**



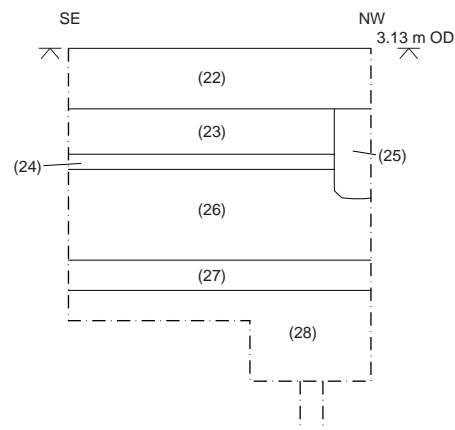
**Test Pit 1
Measured Sketch Section
East Facing**



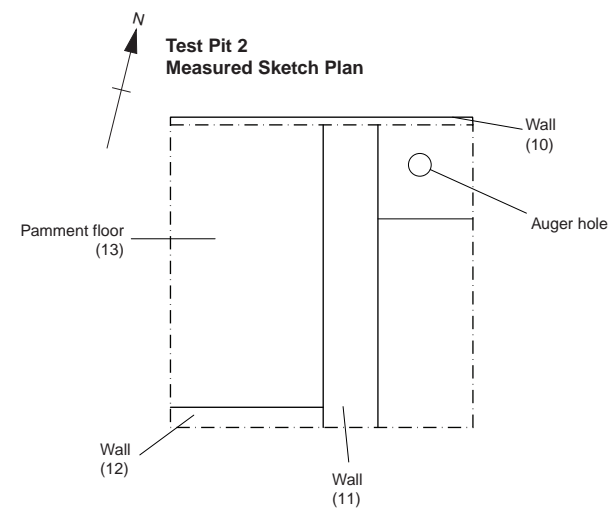
**Test Pit 1
Measured Sketch Section
South Facing**



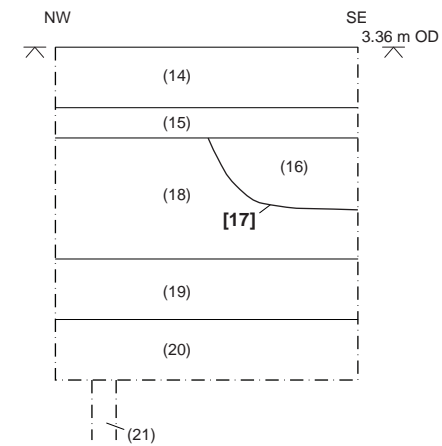
**Test Pit 3
Measured Sketch Section
North-East Facing**



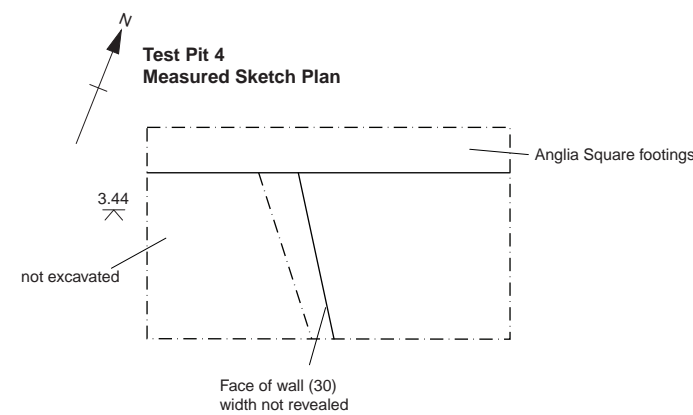
**Test Pit 2
Measured Sketch Plan**



**Test Pit 2
Measured Sketch Section
West Facing**



**Test Pit 4
Measured Sketch Plan**



**Test Pit 5
Measured Sketch Section
South-West Facing**

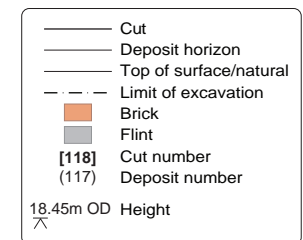
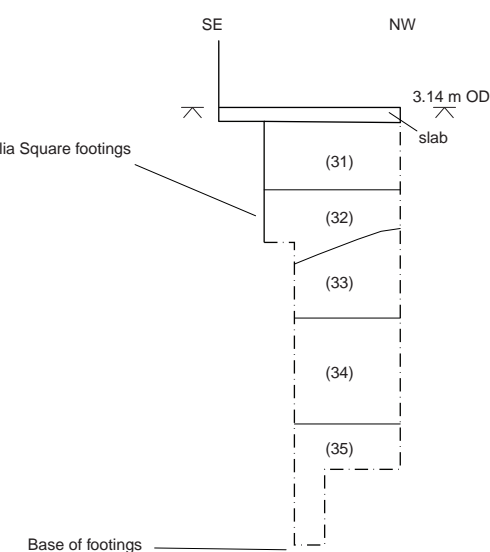


Figure 3: Test pit plans and sections



Plate 2: Test Pit 5, looking east



Plate 1: Test Pit 1, north-facing section



Plate 3: Location of Test Pit 3, looking west



Plate 4: Test Pit 3, north-facing section



Plate 5: Test Pit 2, west-facing and north-facing sections (from above)



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Appendix 5

**Norwich Record Office
Anglia Square summary
of modern impacts**

Norwich Record Office- Anglia Square documents detailing Modern impacts.

Records consulted: ACC2009/390, ACC2015/23, N/EN12/1/32503 (catalogue ref N/EN12/1/23801-41700)

NB- Copying was not allowed under the copyright of the plans, no commercial use until 70 years after author's death.

Anglia Square- general

Man Holes along Botolph Street Reroute- Drawing no. 1873/5/3

- Description of manholes across the re-routing of Botolph Street
- Smallest depth mentioned below ground- 2'10"
- Greatest depth mentioned below ground- 20'0"

Boreholes taken at multi-storey car park- Drawing no. 1873/C/5

- Sketch of plan of borehole locations (fig 1)
- Depths 1- 50'0"; 2- 35'0"; 3- 41'0"; 4- 31'0"; 5- 30'0"; 6- 90'0"

Multi-storey car park

Plan of Foundations- Drawing no. 1873/C/30

- Only below ground measurements are structural relating to foundation size (e.g. 60" x 12" concrete bases)
- Note that lift pits to be excavated to 12' with 45 degree edges
- plan sketch fig 2

Sections of various foundations- Drawing no. 1873/C/32

- Ground floor level- 13'
- Lowest level mentioned- 5'
- Variety of shapes and sizes of foundations in terms of column/base dimensions but lowest below ground depth 8'0" down.
- example of section fig 3

Base of foundation slabs- Drawing no. 1873/C/12

- Description of foundations of length of carpark
- Ground level- 14'
- Base of concrete slabs- 3.25'

Office Block (HMSO)

Longitudinal section of office block- Drawing no.1873/A/120

- Descriptive only; no levels or scale

- Ground level varies between 11.15' to 13'
- Section of foundations shown but only depth of piping given (fig 4)

New Odeon Cinema

- Pedestrian/store level ranges- 10.75' to 12.917'
- Elevated road level- 26.5'

Section of foundation and sewer- Drawing no. 1873/E/12

- Lowest described level with sewer- 2.5'
- without sewer- 5'
- section sketch fig 5

Elevated Roads

Section of structural beams- Drawing 1873/E/41

- Ground floor level- 12'
- lowest level- 5'
- fig 6

Plan of foundations for elevated roads- Drawing no. 1873/E/18

- Ground floor level- 12'
- lowest level- 5'
- 3" kicker and total depth of foundation 7'
- fig 7

Piles

Plan of piles layout- Drawing no. 1873/A/407

- Note at side stated minimum level of weight bearing pile to be 11.6' from ground level
- Describes ranges of pile depths at odeon cinema- 8.5' to 12.42'

Section drawing of HMSO- Drawing no. 1873/A/416

- Showing pile but no depths
- fig 8



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Legislation and Policy Context

National Planning Policy

National Planning Policy Framework (2021)ⁱ

- 6.1 Guidance on national policy for biodiversity is provided by the National Planning Policy Framework (NPPF), published in March 2012, revised on 24 July 2018, 19 February 2019 and again on 20 July 2021. It is noted that the NPPF continues to refer to further guidance in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system provided by Circular 06/05 (DEFRA / ODPM, 2005) accompanying the now-defunct Planning Policy Statement 9 (PPS9).
- 6.2 The key element of the NPPF is that there should be “a presumption in favour of sustainable development” (paragraphs 10 to 11). It is important to note that this presumption “does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site” (paragraph 182). ‘Habitats site’ has the same meaning as the term ‘European site’ as used in the Habitats Regulations 2017.
- 6.3 Hence, the direction of Government policy is clear. That is, the presumption in favour of sustainable development is to apply in circumstances where there is potential for an effect on a European site, if it has been shown that there will be no adverse effect on that designated site as a result of the development in prospect.
- 6.4 A number of policies in the NPPF are comparable to those in PPS9, including reference to minimisation of impacts to biodiversity and provision of net gains to biodiversity where possible (paragraph 174).
- 6.5 The NPPF also considers the strategic approach that Local Authorities should adopt with regard to the protection, maintenance and enhancement of green infrastructure, priority habitats and ecological networks, and the recovery of priority species.
- 6.6 Paragraphs 179 to 181 of the NPPF comprise a number of principles that Local Authorities should apply, including encouraging opportunities to incorporate biodiversity in and around developments; provision for refusal of planning applications if significant harm cannot be avoided, mitigated or compensated for; applying the protection given to European sites to potential Special Protected Areas (SPA), possible Special Areas of Conservation (SAC), listed or proposed Ramsar sites and sites identified (or required) as compensatory measures for adverse effects on European sites; and the provision for the refusal for developments resulting in the loss or deterioration of ‘irreplaceable’ habitats – unless there are ‘wholly exceptional reasons’ (for instance, infrastructure projects where the public benefit would clearly outweigh the loss or deterioration of habitat) and a suitable compensation strategy exists.

- 6.7 National policy therefore implicitly recognises the importance of biodiversity and that with sensitive planning and design, development and conservation of the natural heritage can co-exist and benefits can, in certain circumstances, be obtained.

Regional Planning Policy

Joint Core Strategy for Broadland, Norwich and South Norfolk (Adopted March 2011, amendments adopted January 2014)

- 6.8 The Joint Core Strategy for Broadland, Norwich and South Norfolk (JCS) was adopted in March 2011, with amendments adopted in January 2014.
- 6.9 *Policy 1: Addressing climate change and protecting environmental assets* is a comprehensive policy considering the natural and heritage environment. Regarding biodiversity and designated sites, it refers to expanding and linking valuable open space and areas of biodiversity importance to create green networks, and to providing for sufficient and appropriate local green infrastructure to minimise visitor pressures on designated sites.

Local Planning Policy

Norwich Local Plan Development Management Policies Plan (Adopted December 2014)

- 6.10 *Policy DM3 Delivering high quality design* considers the fundamentals of development. It refers to green infrastructure, landscaping and biodiversity at section (j).
- 6.11 *Policy DM6 Protecting and enhancing the natural environment* is concerned with effects on national and regional / local designated sites, as well as wildlife in general. Specific reference is made to green infrastructure.
- 6.12 The relevant section of *Policy DM8 Planning effectively for open space and recreation* is concerned with the provision of new open space, either on-site or via CIL contribution. Non-allocated sites must provide informal publicly accessible recreational open space on-site.

Greater Norwich Local Plan Regulation 19 Publication (July 2021)

- 6.13 The Greater Norwich Local Plan was submitted to the Secretary of State for independent examination on 30 July 2021. The GNLP will supersede the current Joint Core Strategy for Greater Norwich and the Site Allocation Plans in each of the three districts.
- 6.14 *Policy 1 The Sustainable Growth Strategy* states that the strategy will be supported by improvements to the transport system, green infrastructure and services.
- 6.15 *Policy 2 Sustainable Communities* states inter alia that development proposals will contribute to multi-functional green infrastructure links, including through landscaping, to make best use of site

characteristics and integrate into the surroundings, having regard to relevant green infrastructure strategies and delivery plans.

- 6.16 *Policy 3 Environmental Protection and Enhancement* states that development proposals will be required to conserve and enhance the natural environment, including priority habitats, networks and species, through retaining and adding to natural assets and avoiding harm to designated and non-designated assets of the natural environment unless there are overriding benefits from the development and the harm has been minimised. Proposals will deliver net biodiversity gain through the provision of on-site or off-site natural features, creating new or enhancing existing green infrastructure networks that have regard to and help to achieve the local green infrastructure strategies. Residential developments will be required to address potential visitor pressure on designated sites subject to the Habitats Regulations through the payment of a contribution towards the cost of mitigation measures at the protected sites (as determined under the *Norfolk Green Infrastructure and Recreational Impact Avoidance and Mitigation Strategy*) and the provision or enhancement of adequate green infrastructure, either on the development site or nearby, to provide for the informal recreational needs of the residents as an alternative to visiting the protected sites.

Legislation

- 6.17 The following legislation is relevant to the Proposed Development:
- Wildlife and Countryside Act 1981 (as amended), which provides legal protection with respect to certain plants, animals and habitats; including SSSIs;
 - Natural Environment and Rural Communities (NERC) Act 2006, which includes the “duty to conserve” priority habitats and species;
 - The Conservation of Habitats and Species Regulations 2017 (“the Habitats Regulations”) (as amended). This provides the framework for the legal protection of European designations and species. It historically transposed into UK law the European Union Directives 92/43/EEC and 2009/147/EC; and
 - The Environment Act 2021. The new legislative framework which, amongst other things, sets out the requirements for and approach to Biodiversity Net Gain.

ⁱ Ministry of Housing, Communities & Local Government (Updated 2021). *National Planning Policy Framework*. Available at <https://www.gov.uk/government/publications/national-planning-policy-framework--2> Last accessed July 2021.

ANGLIA SQUARE, NORWICH, NORFOLK, NR3 1DZ

Phase 1 Habitats Survey (extended)



Anglia Square from the south (wide angle)

By
Dr John Feltwell FRSB of Wildlife Matters

Chartered Biologist
Chartered Ecologist
Chartered Environmentalist



on behalf of:



Martin Pearce, BA (Hons), Di Arch., ARB
Design Manager,
Weston Homes Plc.,
The Weston Homes Group Business Centre,
Parsonage Road,
Takeley,
Essex,
CM22 6PU

18 March 2018

1.0 Executive Summary

- The site is part of a tightly-knit urban environment and has very limited natural history interest.
- The site is mostly occupied by buildings; the remainder is hard-standing, leaving little opportunity for wildlife.
- The site is thus brownfield or previously developed land.
- There are no protected habitats on site; in fact there are no significant 'green' habitats on site.
- No protected species were found on site.
- There are no Biodiversity Action Plan (BAP) habitats on or adjacent to the site.
- The site is of low nature conservation importance (the same conclusion as a survey carried out by Hillier in 2010).
- The River Wensum that flows through the city is a Special Area of Conservation (SAC) and a Natura 2000 site, and is 277m away.
- The nearest Sites of Special Scientific Interest (SSSI) is 0.58m away.
- No Schedule 1 Birds were recorded on site. (these might have included Barn Owl, Merlin and Hobby).
- Initial surveys indicated no evidence of Schedule 5 protected animal species was found on site (this includes common lizards, adders, newts, toad, GCN, bats).
- The trees on site do not have TPOs, and do not have roosts for bats.
- Enhancement recommendations are made.

2.0 Instructions

2.1 Wildlife Matters was initially instructed by Weston Homes Plc in December 2016 to carry out a Phase 1 Habitats Survey (extended) for the site. Further instructions to continue surveying were received in late 2017 and continue into 2018.

2.2 The proposal is for demolition of the large buildings and the comprehensive mixed-use redevelopment of the site.

3.0 Site Visits

3.1 The first site visit was made on 19-20 February 2016 when the weather was 10-16°C, 0/8 oktas of cloud cover with a 2 knot wind (Beaufort scale) from the west, i.e. within limits to investigate habitats, flora and fauna. The second site visit was made on 8 December 2017 when the weather was 8°C and 1/8 oktas of cloud and a 3 knot wind speed from the west.

4.0 Location of site

4.1 The site is located within the old city walls of Norwich, Norfolk at Ordnance Survey (OS) location TG230093, at Post Code NR3 1DZ. It is situated north of the cathedral and the castle and is 3m above sea level (as shown on OS maps).

5.0 Description of site

5.1 The site represents a large section of the built environment in the north of the centre of the city of Norwich. As it is part of the urban environment, it is, therefore of limited wildlife value.

5.2 The site is mostly within four roads, namely Edward Street (north), Magdalen Street (east), St Crispins Road (south) and A1402 Pitt Street to the west, giving rise to its name 'Anglia Square'. To this square are added two small plots of land, one to the north of Edward Street and the other to the west of Edward Street in the north.

5.3 There are two streets that pass through the site, these being Botolph Street and Upper Green which is a cul de sac.

5.4 There are three sections of the site, each separated by roads.

1. The main (larger) section within the 'square' comprising St Crispins Road, Magdalen Street, Pitt Street and Edward Street.

2. A car park north of Edward Street.
3. A car park west of Edward Street and west of New Botolph Street (which is an extension of Pitt Street and Botolph Street). This car park is named the 'Graffiti Car Park' after the large amount of graffiti



Car Park off Edward and New Botolph Street

5.5 Within the main site there is a main square to which the general public have access to the various shops.

5.6 The site has various buildings:

- Sovereign House
- Gildengate House
- Assorted Buildings
- Warehouse

5.7 To the east of the main square, and the Anglia Square shopping centre, there is a cinema block which is part of the proposed development site.

5.8 Within the site there are

- No ponds on site
- No streams on site
- No rivers on site
- No countryside hedgerows on site

5.9 The ecological significance of a site without ponds is that it rules out the possibility of breeding amphibians (newts, frogs, toads).

Earlier ecological work

5.10 An ecological scoping survey was carried out in 2010 by Hillier Ecological Associates¹ with the following conclusion:

¹ Hillier Ecological Associates, 2010. Ecological Scoping Survey at Anglia Square, St Crispins Road, Norwich, Norfolk. 16pp.

1.5 Overall the site is of low ecological value.

5.11 To summarise the results of the scoping survey in 2010 they found the following habitats:

3.3 The site and its surrounds are made up of the following habitats:

- Mature trees
- Amenity grassland
- Assorted Buildings
- Dwellings
- Mature gardens

5.12 In terms of habitats the site still has mature trees and amenity grassland (now as a closely-cut amenity lawn), but there are no mature gardens.

5.13. In 2010 Ecological Associates found

'No evidence of bats, birds, badgers, or reptiles was found during the survey.'

5.14 CB Richard Ellis established that the biodiversity of the site is very poor following discussions with the Norfolk Wildlife Trust: ²

BIODIVERSITY

15.9 The biodiversity of the site is presently poor. This has previously been confirmed through discussions with Norwich Wildlife Trust, who have no confirmed knowledge of biodiversity within the Anglia Square area and within its immediate vicinity.

15.10 As part of the revised proposals, a survey has been undertaken by Hillier Ecological Associates to ascertain scoping covering bats, birds, badgers and reptiles.

15.11 Although it was acknowledged that there was some limitation with the survey as a consequence of a number of the buildings being either occupied or inaccessible no evidence of bats, birds, badgers or reptiles were found during the survey.

15.12 The report makes recommendations to minimise the impact on nesting birds on the removal of trees and buildings, however overall the report concludes that the site is of low ecological value.

5.15 So, the results of previous surveys have i) not found any evidence of protected species, and have ii) declared the site is of low wildlife interest, and iii) is poor in diversity.

5.16 This report has the same conclusions and the rest of this report explains how this conclusion has been reached.

The site is within:

- The Large District Centre designation

² CB Richard Ellis, Anglia Square, Norwich. 15.0 Landscape and Biodiversity.

- Anglia Square Policy Guidance Note

Legal and permitted rights of access

5.17 At the present time the general public have free access to nearly all of the open areas of the site by way of public car parks, a shopping mall, vehicular and pedestrian access via two public highways and marginal roads on all sides. There are no Public Footpaths or Bridleways shown on the 1:25,000 Ordnance Survey map. The large office buildings on site are not open to the public. The Multi-Storey Car Park (MSCP) is now condemned and is closed to the general public.

5.18 Enjoyment of the countryside by people is one of the aims of Natural England, so it is important to embrace and incorporate the use that people have of the countryside, as well as comfortably fitting in their usage of the countryside that will not detract from their enjoyment. With enhancements (see later) the enjoyment of the countryside will be much improved for people continuing to access the site.

6.0 Methodology

6.1 The following lists the various methodologies employed to check for flora and fauna on site at this level of Phase 1 Habitats Survey.

6.2 The following main UK and EU protected species have been evaluated as being potential ecological constraints:

Table WM01 UK and EU protected species:

Species	UK protected	EU protected
Badger	yes	
Bats (all species)	yes	EU protected
Brown Hare	yes	
Common Toad	yes	
European Hedgehog	yes	
Hazel Dormouse	yes	EU protected
Nesting birds (general)	yes	
Slow Worm	yes	
Viviparous Lizard	yes	
Grass snake	yes	
Great-crested Newt (GCN)	yes	EU protected
Palmate and Common newt	yes	
Native Freshwater Crayfish	yes	
Otter	yes	EU protected
Water vole	yes	

NB. Six species (highlighted in light blue) are dependent upon aquatic habitats

Flora

6.3 Angiosperms were surveyed by sector over the site. Their specific names are according to Dony et al., 1986 with verification to

species level with Rose, 1981. Abundance was scored according to the DAFOR scale, where D =dominant, A= Abundant, F = Frequent, O = Occasional and R = rare. Grasses and Ferns were verified in, and are according to Fitter & Fitter, 1984. Grasses were also verified in Hubbard, 1976, Thomas & Davies, 1965

Fauna

6.4 Birds were assessed visually and with binoculars. Characteristic signs of birds were checked for, such as song thrush anvils, predatory remains, owl pellets (both inside buildings and outside). Characteristic bird song was listened for. Nests and feathers were also sought. Bird names are according to Fitter et al.,1972.

6.5 Reptile methodology was to check for suitable habitats on site. This involved looking for good basking spots on logs, on ant hills, on wooden palings, in fact anywhere that warms up fast in the sun and provides suitable sites for Common Lizards (*Zootoca vivipara*). Checks were made for long grass, grass tussocks, compost heaps and adjacent light woodland in which slow worms (*Anguis fragilis*) could be found. So far as the grass snakes (*Natrix natrix*) and adders (*Vipera berus*) were concerned suitable hot grassy sites were sought. All reptile species are protected by UK and EU law (Technical Appendix WM01).

6.6 Amphibian methodology for newts, frogs, toads was to look out for their aquatic breeding places (ponds, water-filled ditches with no water movement including all ephemeral water bodies, lakes) as well as their terrestrial habitats such as light woodland and hedges.

6.7 Bats were checked for by looking for likely places for roosting and entry points. Their characteristic droppings were sought on the ground where they might be roosting or feeding, such as in large trees or buildings if present. All bats in the UK are protected (Technical Appendix WM02).

6.8 Badgers were checked for by looking for 1) typical spoil heaps (old ones grassed-over) or new ones recently excavated, 2) large holes (as opposed to the smaller ones created by rabbits), 3) the characteristic smell of badgers emanating from within if badgers present, 4) the typical, well-worn runs (uni-directional) through vegetation or over ground, 5) their claw marks on mud, excavated rocks or on tree bark, 6) their black and white hairs caught on wire and / or bramble thorns, 7) their typical latrine areas, whilst being wary of the less uniform tracks of foxes, their untidy setts, their abandonment of old food items, and rusty-coloured hairs on wire and brambles. Further information on badgers is at Technical Appendix WM03).

6.9 Hazel Dormouse methodology was checked according to criteria in *The Dormouse Conservation Handbook* (Technical Appendix WM04).

6.10 Water Vole methodology was to survey for any of the following six characteristics: Burrows (4-8cm wide burrows), 'Lawns' (of well-grazed vegetation around burrow entrances), Droppings (8-12mm

long by 4-5mm wide), Characteristic footprints in mud, Feeding stations by the water's edge (looking for neat piles of nibbled vegetation) and Latrines (in regular spots on boundaries and close to burrows).

6.11 Mammal names are according to Van Den Brink, 1967.

6.12 Species found on site were checked against those listed in the Red Data Books (Batten et al., 1990, Bratton, 199, Collar & Andrew, 1988, Lucas et al 1978, Perring & Farrell, 1983, Shirt, 1987, Wells et al. 1983, World Conservation Monitoring Centre, 1990).

6.13 Invertebrates were identified from various sources including Feltwell, 1984.

6.14 Freshwater crayfish, *Austropotamobius pallipes*, which is the UK's only native crayfish which is UK protected, were checked by looking for the individuals in moving freshwater (if present) and for discarded pieces of carapaces, legs and claws discarded by avian predators.

6.15 Bumblebees were identified from Feltwell, 2006.

6.16 The National Biodiversity Network (NBN) (<http://data.nbn.org.uk/>) is the clearing house for most of the biological data in the UK. It now holds 70 million records of flora and fauna species in the UK which is all in the public domain. However, none of it can be used for commercial purposes, so for copyright reasons this consultant is not permitted to refer to any of the data in this unique database.

6.17 A data search for 2km around the site was commissioned from the Norfolk Biodiversity Information Service (NBIC) and the results are interspersed throughout the text of this report.

7.0 Results and discussion

7.1 This report now details the potential presence or absence of habitats and species, and where appropriate further details of surveys or mitigation may be required.

7.2 There are no natural or semi-natural habitats on site, only a man-made habitat.

7.3 There are no water bodies on site; all of which have implications for wildlife – that many groups of organisms would not be present as they rely on structures and water for breeding and feeding.

7.4 The lack of still waterbodies on site (e.g. ponds) rules out the potential for GCN breeding on site.

7.5 A Phase 1 Habitats Map is shown in Technical Appendix WM05.

7.6 The range of habitats on site are shown in the following Table WM02 listing the different Habitat Type Classifications according to the Joint Nature Conservation Council's (JNCC).³

Table WM02 Habitat Classification according to JNCC (1990):

Habitat Description	Classification under JNCC
Buildings	J 3.6
Hard-standing of concrete	J 3.6
Improved grassland	B4
Spoil	I 2.2
Walls	J 3.6

8.0 Results: Wildlife

8.1 Over 50 taxa of wildlife were found on site (Technical Appendix WM06).

Wildflowers and Trees

8.2 Over 45 species of angiosperms (flowering plants) were recorded on site.

8.3 None of the species recorded are protected species, and most of them are typical and widespread species that might be expected in such a habitat as this site.

8.4 The relatively high number of plants found on site is explained by the fact that most of these are adventives (weeds) that occur typically in waste places such as car parks and roadsides of which there are plenty on site.

8.5 The 'green' amenity lawn parallel to St Crispins Road supports a row of large trees, all well managed and these comprise three species including Silver Birch which is being killed by a fungus. The neatly mown lawn supports common grasses with primrose, crocus and cow parsley in low numbers.

8.6 There is a large bank of ivy against a wall near the 'car wash' building. During the site visit a male brimstone butterfly was seen flying around this area: they are noted for hibernating in ivy. Ivy banks like this can also support bats. Photograph of this area is shown in Technical Appendix WM05.

Hedges on site?

³ 'Handbook for Phase 1 habitat survey, A technique for environmental audit.' NCC, 1990.

8.7 There are no countryside hedges on site but there is a small section of closely-trimmed privet hedge and a small section of hedgerow made of mahonia in the northwest corner of the main section. Both are of an ornamental nature and of low wildlife interest.

Invasive Species?

8.8 There was evidence of the introduced and invasive *Buddleia davidii*. *Buddleia* is often regarded as good for encouraging insects to gardens, especially butterflies (thus its other name of 'Butterfly Bush') but it is an introduced (neophyte) species (from China) and it does tend to oust other native species where it grows, thus it has an overall negative effect on biodiversity than a positive one.

8.9 There was no evidence of the introduced and invasive Japanese Knotweed *Reynoutria japonica* recorded. There is an earth bund parallel to Pitt Street and this was scrutinised for any Japanese knotweed (for it dies back underground during the winter) but no old stems from 2016 were evident. From the plant growth it appears that the bund has been on site for at least one year.

8.10 There was no evidence of the introduced and invasive Giant Hogweed *Heracleum mantegazzianum* recorded.

Trees

8.11 Thirty trees are present on site. Most of these are along the frontage with St Crispins Road where they comprise mostly London Plane (a hybrid), Lime and a Silver Birch.

8.12 There are other trees around the site, namely three along Magdalen Street (as part of the street trees), three to the east of the northern car park, and a collection of smaller trees at the south of Botolph Street. There is an olive tree and a bay tree outside the Chapel off Botolph Street.

8.13 The trees on site are listed in the following Table WM03.

Table WM03 Trees on site:

#	Name & Tree Tag #	Notes
1	Sycamore	
2	Sycamore	
3	Elder	
4	Sycamore	
5	Sycamore	
6	Elder	
7	Sycamore	
8	Lime	
9a	Olive	In chapel garden
9b	Bay	In church garden
9c	Conifer	In church garden
10	Silver birch - dead	Frontage / St Crispins
11	Lime, multi-stemmed 01572	Frontage / St Crispins
12	Lime 01571	Frontage / St Crispins

13	London Plane (a 'master' tree) no tag		Frontage / St Crispins
14	London Plane	01568	Frontage / St Crispins
15	London Plane	01567	Frontage / St Crispins
16	London Plane	01566	Frontage / St Crispins
17	London Plane	01565	Frontage / St Crispins
18	London Plane	01563	Frontage / St Crispins
19	London Plane	01562	Frontage / St Crispins
20	London Plane	01561	Frontage / St Crispins
21	Sorbus sp.	01594	Adjacent to Pitt Street
22	Sorbus sp.	01953	Adjacent Pitt Street
23	Sycamore		
24	Lime		
25	Lime		
26	Lime		
27	Lime		
28	Horse Chestnut		
29	Acer TBC		
30	Acer TBC		

8.14 None of the trees have Tree Preservation Orders (TPOs) according to CN Richard Ellis (para 15.18).

8.15 A pre-development tree report (written to the BS5837 2005 standard) had discussed the removal of a number of trees.

8.16 Most of the trees listed above have been managed properly such that there are no dead limbs and lower limbs have been cut back to avoid any contact with people or vehicles. Initial checks were made on the trees to see if there were any cavities, cracks and crevices which might provide potential for roosting bats. None was found. This appears to be due to the vigorous management that the trees have had, especially those along St Crispins Road.

8.17 Discussion for the removal of any trees should following these advices:

- i) discussion with the Council Tree Officer at an early stage.
- ii) discussion with the Council since the area is within the Anglia Square Conservation Area.
- iii) to check any local Bye-Laws.
- iv) timing should be during the winter period after leaf fall, and after the bird-nesting period (November-December is best), however,
- v) a check to see if pigeons are nesting in the trees as this is an urban site (and they do nest through the winter)
- vi) a final check for hibernating bats.
- vii) once felling is permitted, the Tree Officer needs to be advised the day before tree-felling works so that he / she is alert to telephone calls from local residents.

8.18 It is customary to have target notes for a Phase I Habitats Survey, so the following refer to numbered target notes shown in the Phase I Habitats Map shown in Technical Appendix WM05, and the Latin names of plants are shown in Technical Appendix WM06.

Target 1. This is in the northwest area of the large car park between Botolph Street and Pitt Street. The area is a large expanse of concrete and tarmac with no vegetation. There is a single apple tree at the bend in Botolph Street. The bund has mugwort and Oxford ragwort present. By the car wash the ivy wall also has stinging nettle, mallow and chickweed growing.

Target 2. This is in 'graffiti car park'. The site is mostly devoid of vegetation as it is an expanse of concrete and tarmac. There is a sycamore tree that grows just outside the curtilage in the southwest but it is large and overhangs the site.

Target 3. This is a car park on the north side of Edward Street. Like the graffiti car park it is devoid of any vegetation.

9.0 Fauna

Mammals

9.1 There was plenty of evidence to demonstrate the presence of fox on site, from scent, faeces and footprints in the soil. Evidence of brown rat was also seen.

9.2 Domestic cat (*Felix domestica*) was seen on site. These are known significant predators of birds and reptiles, and it was no surprise to see a cat on site considering the urban environment in which the site lies.

Mammals: Badger *Meles meles*

9.3 A thorough check of the site for the signs of badgers, viz. badger holes, excavated materials (of greater or lesser extent), trails, hairs on barbed wire, latrines, foraging areas, pieces of hair following tussles proved negative. Norfolk Biodiversity Information Service (NBIC) had no records for 2km around the site.

Mammals: Bats

9.4 The whole site was checked for bats on two fronts: the possibility of the bats being in the buildings present, and second, the possibility of bats being present in the trees present.

9.5 All the trees can be ruled out for harbouring bats as each tree was assessed for possible roost potential and none was found. All the trees are mostly well managed with a distinct lack of any damage, rot hole etc and no really large and possibly dangerous tree has been left.

9.6 All of the buildings were checked externally for the potential to harbour bats and none was found. Entry into some of the buildings was possible, though some areas were off-limits to survey as asbestos surveys had indicated closed areas to avoid. The office buildings were of a construction that is less optimal for bats to make roosts (such as glass walls and flat roofs with no attics or voids). No external evidence was seen to suggest possible roosting. Thus no evidence of bats was found on site.

9.7 The data survey from Norfolk Biodiversity Information Service (NBIC) indicated the following four species of bats from 2km around the site, as shown in Table WM04.

Table WM04 Bat species recorded from data search:

Latin name	Common Name	Location and last seen date
<i>Myotis nattereri</i>	Natterer's bat	TG2309 Nov 2010
<i>Pipistrellus</i> sp.	Pipistrelle bat	TG2309 Feb 2000
<i>Pipistrellus pipistrellus</i>	Pipistrelle bat	TG2508 July 2000
<i>Plecotus auritus</i>	Long-eared bat	TG2410 Jan 2015

9.8 The data show that bats have been recorded from the same one-kilometre square as the site (TQ2309), but not the precise location. The TQ2309 includes the River Yare to the west of the site, which would provide a useful commuting and foraging route for bats as they would follow the linear waterway in search of food. The Anglia Square site would not provide optimal habitat or flying insects that would attract bats to the site.

9.9 The four species of bat recorded for the area as a whole since 2000 does seem quite low as some sites over such a large area would account for 6-8 species of bat. The reason is probably because the site is well within an urban environment that does not have the foraging areas of fields, hedgerows and woodland areas that are preferred by bats.

9.10 The Bat Conservation Trust (BCT) has been consulted by this consultant and acknowledge there are three areas of concern about bats and any development regarding i) potential loss of feeding habitats, ii) loss of flight lines, and iii) loss of connectivity with the natural landscape. Addressing these three points:

1. Loss of feeding habitats: The site does not have any foraging area, so there would be no loss of feeding areas.
2. Loss of flight lines: bats commute and forage along streams and hedgerows, not usually across open urban sites such as at Anglia Square. Therefore there would be no loss of flight lines.
3. Loss of connectivity: the development will not break any existing green corridor. The commuting and foraging are likely to be up and down the river to the west of the site, not over the site itself.

9.11 These studies of the possibility of bats on site have come to the same conclusion as the Hillier Associated report, in that it was unlikely that bats would be present.

Bats (Buildings)

6.1 The survey of the buildings showed no evidence of bats having used or currently using the building.

6.2 The buildings came out as low probability of bat interest applying the scoring system.

6.3 The buildings had no visible access points and were regarded as unsuitable for roosting bats.

Bats (Trees)

6.4 There were no trees within the site boundary that were identified as having bat potential; the trees came out as low probability of bat interest.

9.12 An up to date survey of bats on and around the site is scheduled for spring 2018 onwards, and the results will inform any mitigation going forward.

9.13 Regarding other mammals, there was no evidence of the following other protected mammals on site as their particular habitat was not present on site, or on adjacent sites: hedgehog, otter, red squirrel, brown hare, water vole and hazel dormouse.

- Mammals: Hedgehog *Erinaceus europaeus* BAP
- Mammals: Otter *Lutra lutra* BAP
- Mammals: Red Squirrel *Sciurus vulgaris* BAP
- Mammals: Brown Hare *Lepus europaeus* BAP
- Mammals: Hazel Dormouse *Muscardinus avellanarius*
- Mammals: Water Vole *Arvicola terrestris*

9.14 'Bats are known at the St Mary's site to the southwest (LPA Ref. 16/01950 – now approved). Increased lighting levels on the Anglia Square site will potentially affect bat commuting routes. In order to reduce the impact of lighting on bats consideration should be given to limited proposed external lighting.

Herptiles (Reptiles and Amphibians)

Reptiles

9.15 The site did not have suitable habitat for reptiles (grass snakes, slow worms, common lizards, adders) and no evidence of reptiles was seen. The lack of long grass and light woodland or scrub were the main elements missing from site that precluded the presence of reptiles. The amenity grass along the frontage with St Crispins Road is maintained as short turf which is sub-optimal habitat for reptiles. There is also a distinct lack of any cover for reptiles. There is also no continuity with any other grassy habitat which would otherwise give a

reptile population potential to survive. For these reasons it is very unlikely that reptiles are present.

Amphibians

9.16 There are no suitable water bodies on site in which amphibians might breed, i.e. there are no permanent ponds, ephemeral ponds, ditches or backwaters that might support amphibians.

9.17 There are no suitable terrestrial habitats (scrub and light woodland) on site that might be locations for newts when they are not breeding.

Amphibians: Great crested newts (GCN)

9.18 The site itself has no suitable terrestrial or breeding habitats for GCNs. There are no hedgerows, woodlands or water bodies that would fulfil their habitat requirements.

9.19 The OS Map of 1:25,000 scale shows no pond within a 250m radius around the site, and none within 500m radius of the site. Therefore it is highly unlikely that GCN will be found on site or be influenced by any that are in adjacent habitats up to 500m from the site. The reason is likely to be because it is a built-up city centre. Norfolk Biodiversity Information Service (NBIC) had no records for GCNs in a 2km radius around the site, but they had one record of a palmate newt, and four records of smooth newts.

9.20 It is concluded that GCNs are unlikely to be in the area.

Birds

9.21 Six species of bird were recorded on site (Technical Appendix WM06).

9.22 Blackbird, Robin and Dunnock were likely to be breeding on the site in the western area, especially in and around the ivy bank and the small buildings in that area.

9.23 Feral pigeons were nesting in the buildings on site. With broken windows in the buildings there is an issue with entry of feral pigeons.

9.24 Swifts (*Apus apus*) are a feature of this part of Norwich, and the Norfolk record office can attest to that with scores of observations from all over the city. The high density of buildings including the cathedral provides optimal habitat for swifts and they are likely to be in high numbers in the area. The open nature of some of the buildings on site, and the buildings with high levels of glass are likely to be less of interest to swifts. No evidence of nests of swifts was found. A re-survey for avifauna is scheduled for 2018.

9.25 NBIC had 168 records of swift for 2km around the site and only one of these was for Marlborough Road in Norwich.

9.26 No evidence of owls or kestrels was seen on site; Barn Owl, *Tyto alba* is a 'Schedule 1 Bird Species.'

9.27 Starling, a Biodiversity Action Plan (BAP) species and also 'Red-listed' by RSPB, was not seen on or around the site.

Invertebrates

9.28 A small range of invertebrates were found on site.

9.29 A male Brimstone butterfly was seen flying across the car park in the west of the site. This is likely to have hibernated in the ivy back close to the car wash facilities. It is not protected by UK law. Other insects found were a selection of true-flies.

9.30 As the site is not optimal for invertebrates there is little chance that rare or protected invertebrates would be found. Only common and widespread species would be present, such a small and large white butterflies, *Pieris rapae* and *P. brassicae* respectively, and a few true-flies and hoverflies, and a few dragonflies and damselflies. Most of these would be overflying the site on local movements and would not be dependent upon any particular habitats or plant species on site.

9.31 There are opportunities to enhance bees, following initiatives presented by the National Pollinator Strategy (NPS) introduced in 2014 by Defra. The aim of the NPS is to provide feeding areas for bees, solitary bees and bumblebees to address the declining fortunes of these bees that are important in the £100bn health of the food industry that is dependent upon pollinators. There are at least 1,500 species of insect pollinators in the UK. Many are declining. Of the 26 species of bumblebee, two have disappeared and six are declining nationwide in the last decade or so. Nectar sources for these are vital. The relevance to the Anglia Square project is that this guidance links in with NPPF Paragraphs 7, 109, 117, 118 on nature conservation. By choosing appropriate nectar foodplants for pollinators the landscape measures can boost biodiversity.

10.0 Adjacency to sensitive ecological sites

10.1 Adjacency to important international sites (SPAs, SACs, Ramsars, WHSs) is an important planning matter, and Natural England will sometimes regard being up to 15-20km from such an international site as being grounds for further assessment of potential risk.

10.2 The various reasons for this concern is the potential effect of the impact of people on these protected areas (i.e. visits in cars, and by dogs to these protected area), and the potential effect of the increased use of water by the new residents of the proposed housing that might have on groundwaters of these international sites. Some Ramsar sites are wetland that are regulated by, and

dependent upon the aquifer. 15km to 20km can be regarded as 'nearby' by Natural England.

10.3 Natural England introduced 'Impact Risk Zones' (IRZ) in October 2014 as a way for local planning authorities to assess the proximity to Sites of Special Scientific Interest (SSSI). These IRZs are now shown on www.magic.gov.uk. This is shown on the website maps as a series of concentric circles emanating out from the SSSI at regular intervals. The further away from an SSSI theoretically the less environmental impact is likely. A screen shot for this site is at Technical Appendix WM05.

10.4 The following table (Table WM05) lists the proximity of the various UK and EU protected sites, of which there are several.

Table WM05 showing statutory sites and proximity to site:

STATUTORY DESIGNATIONS*	DISTANCE FROM SITE (approx.. km)	DIRECTION
EU LAW		
SAC		
The Broads (SAC)- the river through Norwich	277m (to river)	south
River Wensum (SAC)	3.2	northwest
The Broads (SAC) – main broads	7.5	east
SPA		
Broadland (SPA)	7.5	east
RAMSAR		
Broadland (Ramsar)	7.5	east
UK LAW		
SSSI		
St James Pit (SSSI)	0.9	east
Catton Grove Chalk Pit (SSSI)	1.2	north
Sweetbriar Road Meadows Norwich (SSSI)	2	northwest
Caistor St Edmund Chalk Pit (SSSI)	7	south
Yare Broads and Marshes (SSSI)	8	east
LOCAL NATURE RESERVE (LNR)		
Mousehold Heath (LNR)	1	northeast
Wensum Valley (Mile Cross Marsh and Sycamore Crescent) (LNR)	1.3	northwest
Lion Wood (LNR)	1.6	southeast
Whitlingham (LNR)	2.3	southeast
Danby Wood (LNR)	3.3	southwest
Marston Marshes (LNR)	3.5	southwest
NATIONAL PARK		
The Broads (National Park)	277metres	south

*source is www.magic.gov.uk (accessed 2018)

10.5 In terms of proximity to EU sites, the nearest is the river of The Broads (SAC) – a Special Area of Conservation - which runs through the city of Norwich 277m at its nearest point to the development. Within 400m of a EU site is often regarded as an area where potential impact

may arise. A SAC is collectively called a Natura 2000 site alongside other areas such as Special Protection Areas (SPA) for birds in particular.

10.6 As the SAC is a river, it is important that redevelopment of the Anglia Centre does not affect the water quality of the nearby SAC. The works on site are within the areas that NE state on Magic.gov.uk as being applicable for addressing the proximity of this SAC, namely:

All planning applications outside or extending outside existing settlements/urban areas affecting greenspace, farmland, semi natural habitats or landscape features such as trees, hedges, streams, rural buildings/structures.

Any discharge of water or liquid waste that is more than 20m³/day. The water needs to either be discharged to ground (i.e. to seep away) or to surface water, such as a beck or stream. Discharges to mains sewer are excluded.

10.7 With regard to the Greater Norwich Green Infrastructure Delivery Plan⁴ Anglia Square is not mentioned specifically, but it has this advice for any works near EU sites:

1.25 Furthermore the internationally designated habits including RAMSAR, SAC and SPA sites within the Broads necessitate the consideration of Appropriate Assessments (AA) to be undertaken for any projects or works that may have a significant effect on these sites. This may include not only direct but indirect impacts e.g. arising from changes in water level or quality and increased pressure arising from recreation. Consultation with Natural England should establish when significant impacts from infrastructure projects including GI projects are anticipated and suitable mitigation agreed and undertaken.

10.8 With regard to UK law, the nearest SSSI is less than one kilometre away from site. There are other SSSIs up to 8km away.

11.0 Addressing Natural England's (NE) four 'purposes' including 'Sustainability'

11.1 NE often state that in their letters:

*'Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is **conserved, enhanced, and managed** for the benefit of present and future generations, thereby contributing to **sustainable development.**' (our bold).*

11.2 **Conserved?** The area will be conserved. No hedgerows will be lost. The site does not have any semi-natural habitats that might be lost.

⁴ The Landscape Partnership, 2009. *Greater Norwich Green Infrastructure Delivery Plan*. Issue August 2009. 58pp.

The proposed construction site is not located in 'the natural environment'.

11.3 Enhanced? There are a range of enhancements proposed to enhance the site. Over the short and long term foraging areas will be provided for honeybees, solitary bees and bumblebees.

11.4 Managed? The site will be managed in an appropriate manner to conserve and enhance the natural history of the area.

11.5 Sustainable development?

The site will be managed in a sustainable way with good outcomes for habitats, flora and fauna, and biodiversity considerations.

11.6 So, to address the 'purposes' of NE, has the applicant fulfilled its purpose to the satisfaction of NE; the answers and reasons are set out in Table WM06.

Table WM06 How NE's purposes have been fulfilled.

Purpose	How it has been achieved	Has it been achieved?
Conserved?	Green corridors respected	Yes
Enhanced?	Several enhancements proposed	Yes
Managed?	Management Plan	Yes
Sustainable development?	Fully sustainable	Yes

12.0 Summary of wildlife importance following site surveys

12.1 On the basis of the above field observations it is concluded that the site is of low nature conservation importance.

12.2 This was also the conclusion from the Hillier Associates study.

13.0 Integration of the new development into the green fabric of the surrounding urban landscape

13.1 A major feature of the new development is a softer connection to surrounding habitats by way of creating 'green routes' through the site roughly from north to south and east to west. The new routes will connect physically in the design of roads and buildings and through vegetation (trees and shrubs) in order to create a green corridor to all adjacent areas. The adjacent areas are particularly rich in greener areas to the north, west and southwest, not least the space around churches which are numerous within Norwich city. This connectivity will benefit wildlife.

13.2 The latest design proposal have allowed for eight 'green routes' through the development which have been highlighted in Technical Appendix WM07.

13.3 The eight 'green' routes through the development are mostly new; they follow some fixed routes, but others are new or enhanced

existing routes. Currently there are few trees on site. The only existing tree-lined route is the row of mature London Plane trees set back from St Crispins Road. After some tree removal, the row will be augmented at both ends (east and west) with new stock. The trees along this axis make a large contribution to the green fabric and landscape of the site as seen from St Crispins Road. As the trees are London Planes (which are hybrids) they make little in the way of any contribution to biodiversity (only for roosting city pigeons) but London Planes are noted as being tolerant of urban pollution (thus their popularity) so they do serve a useful function in this part of Norwich and of course, as trees they provide a green lung for the area exchanging gases.

13.4 The following Table WM07 lists the different 'green' routes. Only one, number 8 is partially existing. All the routes will be set out as new and the combined and cumulative effect of the trees will be of benefit to the Anglia Square area.

Table WM07 Proposed green routes through the site

#	Location	Existing or not ?	Connecting to which adjacent roads or sites ?
1	W of Edward Street	Currently a bare car park with no trees	Edward Street to the East
2	Along Edward Street	Currently no trees along this axis	Magdalen Street to the east; Edward Street (north) to the west
3	Mostly Botolph Street	Part new route: the northern part will run through a bare car park and access road; a few existing trees are in the southern sector, but these will be replaced.	There is a row of mature Horse Chestnut running north south and pointing southwards towards the site. This new 3 access will connect a green corridor through the site, and exit onto St Crispins Road to the south, making an important link through the site.
4	A new route to be provided	None existing at present, but west entrance is Botolph Street.	This route will connect with the new plantings along Pitt Street and St Augustines Street to the west; it will exist into Magdalen Street in the east which is currently very poorly provided with street trees. Within the existing building of Anglia Square there is an upper level road called "Upper Green" that will not exist after demolition. This new route number 4 could appropriately reflect this old road.
5	Pitt Street (east side)	A few street trees present	The connections to the north will be with St Augustines Street and to the south, via the roundabout, with Duke Street which already has a relatively large group of sycamores facing the site and a three mature lime trees. All this will provide connectivity to the south. The new tree line along the east of Pitts Street will make a connection across the road to two existing green areas, to the WNW to (the large recreational areas, and thus to the Play group area) and west to the very large Quakers Burial Ground. This is a very important connection to the west that will be a significant contribution to connectivity to the west of the development site.
6	Frontage (north side) with St Crispins Road	No trees	No trees currently exist along this axis with St Crispins Road and its underpass, so the new tree landscape will connect with the existing trees set back further east along the carriageway, and with the vegetation on the north side of the carriageway further to the west and beyond the roundabout.
7	Set back from St Crispins Road	A row of trees, to be extended	These will mostly be retained but will be planted up with new trees in the east and west.
8	Magdalen Street	A few street trees present	This busy street is will be provided with a row of new trees that will be an enhancement over the existing poor pavement trees, and offer some

			continuity along Magdalen Street that generally is devoid of any green vegetation.
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Overview

13.5 There are many more green areas to the west of the site than to the east and south. The new green routes through the site can realistically be connected to the green areas shown in the plan below. Challenges exist linking up with St Augustines Street (no street trees) and Magdalen Street (mostly no street trees). Viable links to existing green areas around the site can be seen in Technical Appendix WM07.

14.0 Recommendations

14.1 As the site is of low nature conservation importance there are opportunities to increase the biodiversity of the site. The ecological enhancements fall into three sections:

- Trees to enhance biodiversity and create corridors
- Bird boxes to encourage birds on site
- Bat boxes to encourage bats to visit the site

Trees

14.2 With regard to the tree species to plant on the Anglia Square site, they should be based on

- what has traditionally been grown within Norfolk city
- what thrives well and
- what is good for biodiversity.

14.3 This is in addition to those proscribed by the architect, landscape and townscape experts on this project who will also be minded to include trees which are mostly native and of a local provenance (so that they will grow well, and provide food resources for wildlife). The definitive word on trees on the site is in the '*Arboricultural Survey, Impact Assessment and Protection Plan*' dated March 2018, by Barton Hyett, Arboricultural Consultants.

Traditional trees of Norwich

14.4 There has been a tradition of silk weaving in Norwich since the 16th century. Silk is produced by silkworms that only feed on the leaves of mulberry trees. There are two species, white and black mulberry. White is a tall tree (suitable for an avenue), black is a spreading tree (suitable for the centre of a garden or square).⁵

14.5 There are mulberry trees close to the site, one in the churchyard at St Augustines Church (adjacent to some silk weavers' houses), two in the recreational area to the west of Pitts Street and one in a quadrangle at East Garth, the University of Norwich to the east of the

⁵ Feltwell, J. 1990. *The Story of Silk*. Sutton Publishing.


site. Cathedrals and other religious places always had a close association with silk not only for generating income, but supplying silk for vestments.

14.6 The photographs shown in Technical Appendix WM07 are the mulberry trees growing close to the existing site.

14.7 The mulberry species to plant on the Anglia Square development are White Mulberry *Morus alba* and Black Mulberry *Morus nigra*.

14.8 Other trees to be considered to be grown on site are shown in the following Table WM08. All stock to be from a local provenance.

Table WM08 Other tree species that could be planted:

Common name	Latin Name	Reason
Field maple	<i>Acer campestre</i>	Native, good for biodiversity
Small-leaved lime	<i>Tilia cordata</i>	<p>Native, uncommon as a species, of conservation value and good for insects and biodiversity.</p> <p>Note. Lime trees are a major feature in most of the churchyards and cemeteries within half a mile of the site. As they are 'forest trees' and attain forest height when mature, they can be a problem in the future. Therefore any smaller variety could be useful instead of the normal species <i>Tilia x europea</i>.</p> <p>Probably the best way to grow lime trees on site is to keep them pollarded. There is pollarded lime on the south side of the St Crispins Roundabout.</p> 
English Oak	<i>Quercus robur</i>	Native, excellent for invertebrates There is an 'Oak Street' to the west of the site.
Willow	<i>Salix</i> sp.	Grow and pollard ever five years.

Tree Removal

14.9 A small number of trees will have to be removed, as indicated in the design specifications, and mentioned in this report in the Appendices.

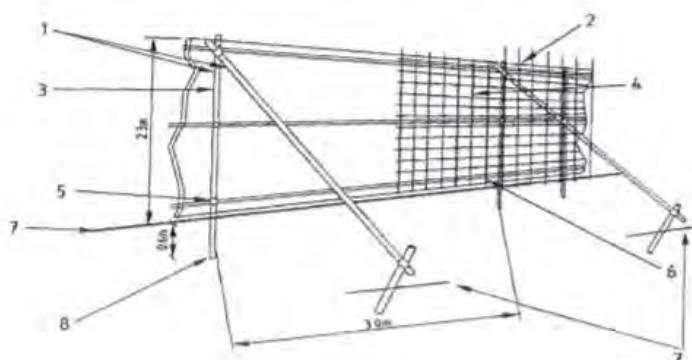
14.10 So far as protection of wildlife regarding nesting birds and roosting bats prior to felling the following advices are offered.

14.11 For birds, so long as the trees are felled between September and January inclusive there is no need to have a bird survey as it is outside the bird nesting period. Outside these periods then a birds' survey could be applicable in order to determine that no birds are nesting. If any are nesting then there is a requirement for a delay until the birds have fledged, or nest abandoned. See Technical Appendix WM08 for further advices.

14.12 For bats, a survey has already been carried out on the trees and they are devoid of cavities that might support roosts, so, so long as any birds' issue has been addressed, then the trees can be felled.

14.13 For existing trees that will remain throughout the construction period these can be protected from physical damage and compaction of soils around the trunk, by applying Root Protection Zones (RPZ).

14.14 An RPZ should be put on all trees where construction will impinge within the crown spread of the canopy. Once erected no storage of any materials inside the area, or any access by site workers permitted within the protected area. The RPZ can be constructed according to BS guidance:



- | | |
|---|---|
| 1. Standard scaffold poles | 5. Standard clamps |
| 2. Uprights to be driven into the ground | 6. Wire twisted and secured on inside face of fencing to avoid easy dismantling |
| 3. Panels secured to uprights with wire ties and where necessary standard scaffold clamps | 7. Ground level |
| 4. Weldmesh wired to the uprights and horizontals | 8. Approx 0.6m driven into the ground |

Bird Boxes

14.15 A range of bird boxes are proposed for the site; these are shown in Technical Appendix WM09. They include boxes for swift.

14.16 Typical locations for the swift boxes are shown in Technical Appendix WM09.

Bat Boxes

14.17 Most of the site is not optimal for bats, so the following recommendations are to encourage bats to utilise the site after the construction period and new plantings have been included.

14.18 The results of the spring 2018 bats survey may inform other mitigation for bats which can be added to these recommendations.

14.19 The architects and designers have included lighting for residential units that is downward-facing in order not to disrupt the movements of bats,

15.0 Outcomes and Action Plans

15.1 Inspection of the proposed site layout plans demonstrates that many landscape features have been proposed to enhance the biodiversity of the site.

15.2 A range of enhancements are proposed, as explained above, will improve biodiversity across the site and benefit the community by linking up green corridors.

15.3 The enhancements will, collectively, feed into the aspirations of the 'B-Lines' initiative, promoted by Buglife-The Invertebrate Conservation Trust and the gardens of the resultant houses will also assist local biodiversity the (Technical Appendix WM10). The *Greater Norwich Green Infrastructure Delivery Plan* (2009) also seeks to make connections between developments such as this at Anglia Square and the Green Grid.

15.4 These measures will feed into the 'Biodiversity Action Plan for the City of Norwich' ⁶ where they recommend that on industrial sites such as Anglia Square should '*encourage developers to maintain wildlife value of sites, pre, post and during development*'. This survey has shown that there is very little in the way of wildlife to conserve and protect on site, except for the trees. The benefit to the City of Norwich will be the wide variety of wildlife that will be encouraged on site as a result of the landscape measures and ecological enhancements proposed which will also serve to link up with adjacent parts of the city via green corridors. The particular Action Plan for industrial sites such as Anglia Square is:

⁶ Norwich City Council, July 2002. *Biodiversity Action Plan for the City of Norwich, aiming to make Norwich a Fine City for People and Wildlife*. 22pp.

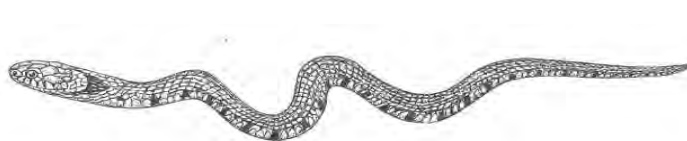
Derelict land / brown field sites/ industrial sites	<ul style="list-style-type: none">• Promote wildlife friendly management of sites where appropriate• Encourage developers to maintain wildlife value of sites pre, post and during development
---	---

15.5 Green linkages can be made to the rich areas in and around the City of Norfolk, as per.

The City of Norwich has many natural assets that make it a particularly good wildlife resource. There are the rivers, the river valleys and the wooded ridges. The City has eight Local Nature Reserves (LNR) and 33 county wildlife sites (CWS). These include marshes, woodland and grassland areas. The vast variety of urban and suburban gardens, allotments, churchyards and parks are also invaluable wildlife habitats for everything from frogs and hedgehogs, to birds and insects. Street trees also play an important role in the life of our city.

Technical Appendix WM01 Reptiles and the law

Common Lizards – Grass snake – Adders - Slow worms



These reptiles are all now Biodiversity Action Plan (BAP) species

The Law

Common lizards, grass snakes, adders and slow worms are protected under the **Wildlife and Countryside Act 1981 (as amended)** as Schedule 5 species, 'in respect of section 9 (5) only', where it is unlawful to sell 'any live or dead animal, or any part of, or anything derived from, such an animal.' or 'publishes or causes to be published any advertisement likely to be understood as conveying that he buys or sells, or intends to buy or sell, any of those things' shall be guilty of an offence. They are also protected under part of Schedule 5 Section 9(1) against 'intentionally' killing or injuring any wild animal on the list⁷; These animals are also protected via the **Countryside and Rights of Way Act 2000** (CRoW, 2000) against any 'reckless' behaviour that might endanger the life of these reptiles.

"Q: Do I need a licence to survey for common lizards, adders, grass snakes and slow worms?"

A. A licence is not required to disturb, handle or move them" .. though it is strongly recommended that you seek advice from Natural England's Regional Team if you propose to translocated (move) them.⁸ "For adder, grass snake, slow-worm and common lizard you do not need a licence to capture or disturb them or to damage their habitats."⁹

Survey work – only if present.

Although reptiles '*should not normally removed from a development site before a planning application is made*' the developer should ensure that every reasonable effort to safeguard these animals is put in place. A site survey should be carried out to establish to size and status of the population and to put it into a local and regional context. Natural England 'expects high standards to be maintained in all mitigation.'

Mitigation

Mitigation methods are determined by the results of the survey work and how large the population is. It will also have as its aim to enhance the habitat for reptiles, whilst moving the animals temporarily out of the way to a safe area whilst ensuring that the impacts of the development will be minimal. It is prudent to prepare a *Method Statement* (that can also be part of a planning application) so that the above matters are explained. A suitable-sized area for reptiles to be re-located to, on site, will have to be identified, such as a Public Open Space (POS). It should also have suitable feeding areas for reptiles, and suitable underground hibernation sites (hibernacula). It should not also be full of reptiles such that any new reptiles introduced would exceed the 'carrying capacity' of the release area and be out-competed for food. If reptiles are not present in the proposed receptor area the reason should be sought, and the habitat made suitable if not.

Work to be carried out:

1. Erect plastic fence (dug into the ground) around area to hold the reptiles (the Receptor site) .
2. Erect plastic fence around area to be cleared of reptiles (the Donor site). A large field can be divided into separate areas; when one area is declared free of reptile construction can start. Where reptiles are around the periphery of a site (often the case, next to compost heaps of houses), the central area can be destructively searched (allow one month).
3. Put out a variety of devices to 'catch' reptile (tin trays, carpets etc). Allow 3 months to clear each area. Five negative results from all traps on suitable days declares the area free.

Timing:

Allow 4 months for all work to be completed, from March (the earliest for starting when the reptiles come out of hibernation). NB. October cannot always be relied upon to find reptiles, as the onset of cold weather puts the animals into hibernation. Similarly March can be cold.

J	F	M	A	M	J	J	A	S	O	N	D
Scrub clearance	Scrub clearance	mitigation	mitigation	mitigation	mitigation	mitigation	mitigation	mitigation	mitigation	Scrub clearance	Scrub clearance
Reptiles in hibernation	Reptiles in hibernation	Too cold??			Last period to start	Last period to start			Too cold??	Reptiles in hibernation	Reptiles in hibernation
No surveys	No surveys	Surveying	Surveying	Surveying	Surveying	Surveying ? too hot	Surveying ? too hot	Surveying	Surveying		

⁷ Gent, T. & Gibson, S. 1998. Herpetofauna Workers Manual, 1998. JNCC.

⁸ Natural England, [Species Licensing](#), on-line, accessed 4 Sept 2007

⁹ English Nature, [Reptiles: guidelines for developers](#). English Nature 2004 – downloaded from their website accessed 24.8.07).

Technical Appendix WM02

Bat legislation in UK and EU



UK and EU law protects all 17 species of bats in England and Wales. Applicable legislation includes the:

1. Wildlife and Countryside Act 1981 (as amended)
 2. The Countryside and Rights of Way Act 2000 (CROW)
 3. The Conservation (Natural Habitats, &c.) Regulations 1994 (known as the Habitats Directive)
- The Habitats Directive implements the EU Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora.

All bats are European Protected Species (EPS) to which both EU and UK law is applicable.

Under these regulations it is an offence

- to intentionally kill, injure or take a bat.
- to intentionally or recklessly damage, destroy or obstruct access to any place that a bat uses for shelter or protection. This includes a bat roost, whether it is currently occupied or not.
- to intentionally or recklessly to disturb a bat while it is occupying a structure or place that it uses for shelter or protection.
- to offer or expose for sale, or possess or transport for the purposes of sale, any live or dead bat, any part of a bat, or anything derived from a bat. It is also an offence to publish or offer for sale or buy bats or anything derived from bats.

In summary all bats and where they live (= roost) (even if bats are not physically there) are protected. i.e. a house with bat droppings, or evidence of bats, but no bats actually present, is protected. It would be unlawful to demolish a house with such a bat roost. It would then be necessary to get a professional opinion as to whether the droppings were historic or recent.

It is not an offence:

- to look after a disabled or injured bat so long as it was not disabled unlawfully by that person.
- to humanely kill a seriously disabled bat, so long as that person did not disable it unlawfully.

Surveying for bats and variable factors

Bats hibernate so they can only be properly surveyed by observation between early Easter and late autumn. Winter months surveys of buildings (external and internal) can be carried out to determine likely potential for bats, or presence of bats. Method Statement can also be prepared. Even if bats are not present evidence such as bat droppings and smudge marks on tiles can be found during winter months. Bats swap between summer roosts (often in buildings, culverts...) and winter hibernation roosts (often in trees, or caves etc). A building (derelict or occupied) can readily become a temporary summer roost for bats (a 'maternity roost') between spring and autumn. Emergence surveys for bats can be done at dusk and dawn. For a building with a higher potential then three surveys would be necessary. For a building known to have bats then the size of the bat population will have to be determined before a Licence is applied for, and up to six surveys will be necessary depending on weather. Bat population numbers in some summer roosts can vary on a daily / weekly basis. This will have an effect on survey results. Bats can move into buildings that have previously been found to have no evidence of bats.

If bats are found on a development site (buildings or trees)

A Licence would have to be sought from Natural England / DEFRA (Department of Environment, Food and Rural Affairs) for any disturbance to the roost. Alternatives to closure should be sought to keep the roost on site. Licences are only granted after Planning Permission is granted, and only after any Section 106 agreement has been signed off. Licences are never granted before these two documents have been obtained.

Enhancements to development sites, e.g.:

Bat boxes can be erected on buildings or the large trees.
Cellars can be sealed off except for grilles for bats to enter.
Native trees and shrubs in Public Open Space as food source.

Surveying without a licence

The Bat Workers' Manual (2004) states in Para 1.4 that much work can be carried out by without a licence; a licence is only required if deliberate disturbance of bats is likely, i.e. if bats are known to be present before surveying

Bibliography

Bat Workers' Manual. 2004. 3rd edition. Joint Nature Conservation Committee.

Technical Appendix WM03

Technical Appendix WM03

Badger legislation in England



Badgers are protected by the **Badgers Act 1973**, **Badger Act 1991** and **Protection of Badger Act 1992 (as amended)**, Schedule 7 of the **Wildlife & Countryside Act 1981** and the **Wildlife & Countryside (Amendment) Act 1985**.

Earlier Advices: English Nature (now Natural England), the government body which oversees UK and European Community law where applicable, issued **Guidelines for developers** (English Nature, 1996, 1997), and are responsible for issuing licences under section 10 (1) (d) of the Protection of Badgers Act 1992 to permit interference with a badger sett, in the course of development (which includes building and construction work). Any work that disturbs badgers is illegal without a licence. Under these earlier advices the use of: *'very heavy machinery within 30 metres of any entrance to an active sett, and lighter machinery (particularly used for any digging operation) within 20 metres, or light work such as hand digging operation) within 20 metres, or light work such as hand digging or scrub clearance within 10 metres, all require a licence'* (English Nature 1996).

Recent Advices: Natural England have produced further guidance that assist in defining 'disturbance' that has now moved back from their 10, 20, 30m distance advices (**'Interpretation of 'Disturbance' in relation to badgers occupying a sett'**). They have also produced **'Badgers and Development, A guide to Best Practice and Licensing.'** (Version 12/11) and **'Standing Advice Species Sheet: Badgers'**; all of which are available on line.

Although a lot of badger law was originally drafted as a direct response to badger-baiting (especially **The Badgers Act and Badgers (Further Protection) Act 1991**), it is clear that the law as it stands is directly applicable to anyone who interferes with badgers or their setts, in whatever manner. **The Badgers Act 1973** and its amendments to the 1981 and 1985 Acts refers to the animals themselves regarding taking, injuring or killing of badgers.

The Badgers Act 1991 gives the badger sett protection, and adds to the 1973 Act the following; if any person shall interfere with a badger sett by doing any of the following things, they shall be guilty of an offence, that is to say:

- a) *damaging a badger sett or any part thereof*
- b) *destroying a badger sett ;*
- c) *obstructing access to or any entrance of a badger sett*
- d) *causing a dog to enter a badger sett: or*
- e) *disturbing a badger when it is occupying a badger sett:*

According to the Badgers Act 1973 with its amendments of 1981 and 1985, licences can be issued to interfere with badgers and their setts for the following purposes: *the purpose of any development as defined in section 55(1) of the **Town and Country Planning Act 1990**, for any agricultural or forestry operation, iii) for the purposes of any operation (whether by virtue of the **Land Drainage Act 1976** or otherwise), iv) for preservation or archaeological investigation under section 1 of the **Ancient Monuments and Archaeological Areas Act 1979**, or v) for the purposes of controlling foxes.*

Field surveys should determine the status of any badger setts on or adjacent to a site and this field information should be used to inform a mitigation strategy to avoid any 'knowingly or recklessly' causing any disturbance or injury to badgers whilst works are in progress.

Technical Appendix WM04

The Hazel Dormouse - Conservation of an EPS species (*Muscardinus avellanarius*)



EU Law

Bern Convention, Appendix 3. & The Conservation (Natural Habitats &c) Regulations ('The Habitats Regulation') 1992 - Dormice as European Protected Species (EPS)

UK Legislation

Wildlife and Countryside Act 1981, Schedule 5, and as amended in 1988.

Conservation (Natural Habitats &c) Regulations 1994.

Hedgerow Regulations 1997.

Biodiversity protection

The Convention on Biological Diversity (The Rio Convention).

Countryside and Rights of Way Act 2000 (Section 74) - having regard to conserving biodiversity

Occurrence

Dormice used to be widespread over most of England and Wales but have now retracted to the south-east and south-west England, East Anglia (but not Norfolk), central England, Wales, but are entirely absent from Scotland. It has become extinct in about half of its former range.

Habitats used by Hazel Dormice

Good habitat for dormice is often provided by what may be considered young growth stands: areas of scrub, early coppice re growth, or young coppice re growth, or young naturally regenerated broadleaved stands. Such early successional woodland is often species-rich (Conservation Handbook p. 31).

1. Linked canopies (p. 15 in Conservation Handbook). The following are good habitats :
2. Newly-cut coppice woodlands
3. Ivy left on trees
4. Coppice stools and brushwood (as hibernation locations)
5. Woods down to 2ha in size

'Dormice need a diverse woodland with a good variety of fruiting trees and shrubs and an abundance of aerial pathways. Hazel is particularly important food resource during the autumn when the dormice are fattening for hibernation and the species has long been associated with hazel.' (Species Conservation Handbook).

Checks and Tests for Hazel Dormouse

'The Dormouse Conservation Handbook' has four checks and tests for hazel dormice:

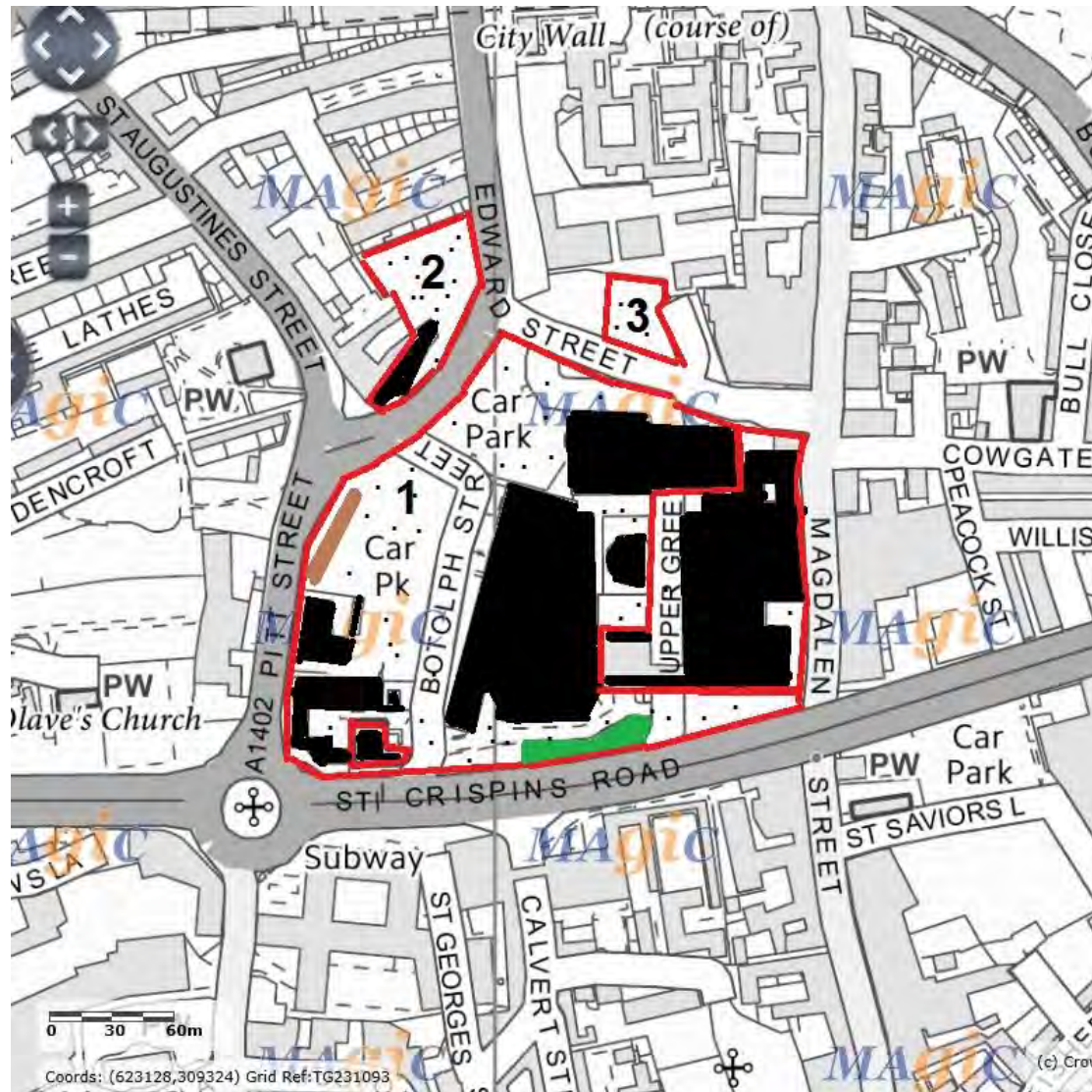
1. Check whether the site falls within or close to the known range of dormice.
2. Check for the existence of dormouse records with the local biological records centre or on the National Biodiversity Network (NBN).
3. Check with the site owner to see if they know whether dormice are present.
4. Hazel nut examination ('the best way to establish dormice presence..' p.23)
Examine 10 x 10m square around heavily fruiting hazel; 80% chance of finding dormice present if x 3 such areas are checked for typical gnawed hazel nuts. Collect 100 hazel nuts and examine them ('an alternative way of achieving an adequate sampling intensity (p23).
5. How many of the 20 plant species useful to dormice present on site?



References

- Bright, P., Morris, P., & Mitchell-Jones, T., 2006. *The dormouse conservation handbook*. English Nature. Peterborough.
- Mitchell-Jones, 1994. Dormice and Commercial Coppice Restoration. In: *Species Conservation Handbook*. English Nature, Peterborough.
- Natural England, 2007. *Dormouse: European Protected Species*. Natural England Species Information Note SIN005.
- Natural England, 2007. *Dormouse: European Protected Species*. Natural England Species Information Note SIN005.

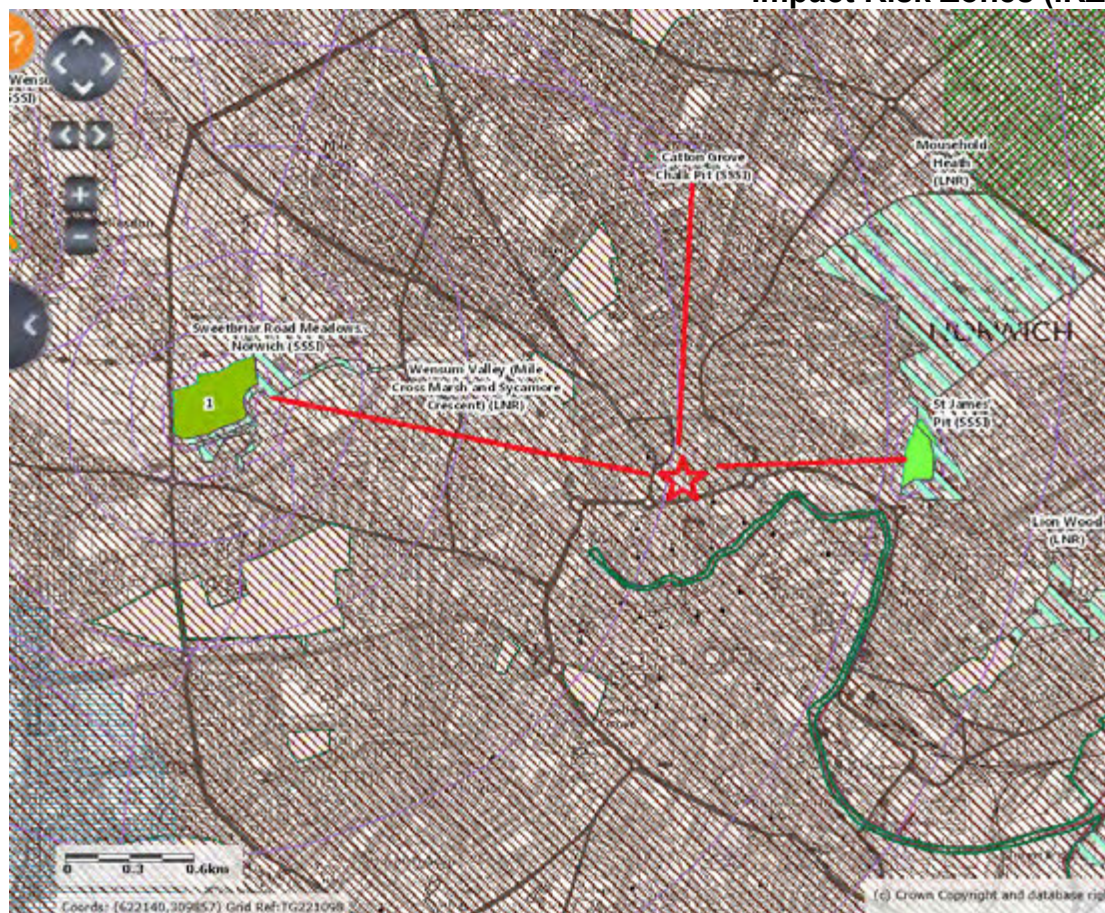
Technical Appendix WM05



Phase 1 Habitat Survey, as approved by the Nature Conservancy Council (then became English Nature, now Natural England). From 'Handbook for Phase 1 habitat survey, A technique for environmental audit.' NCC, 1990. p.78.



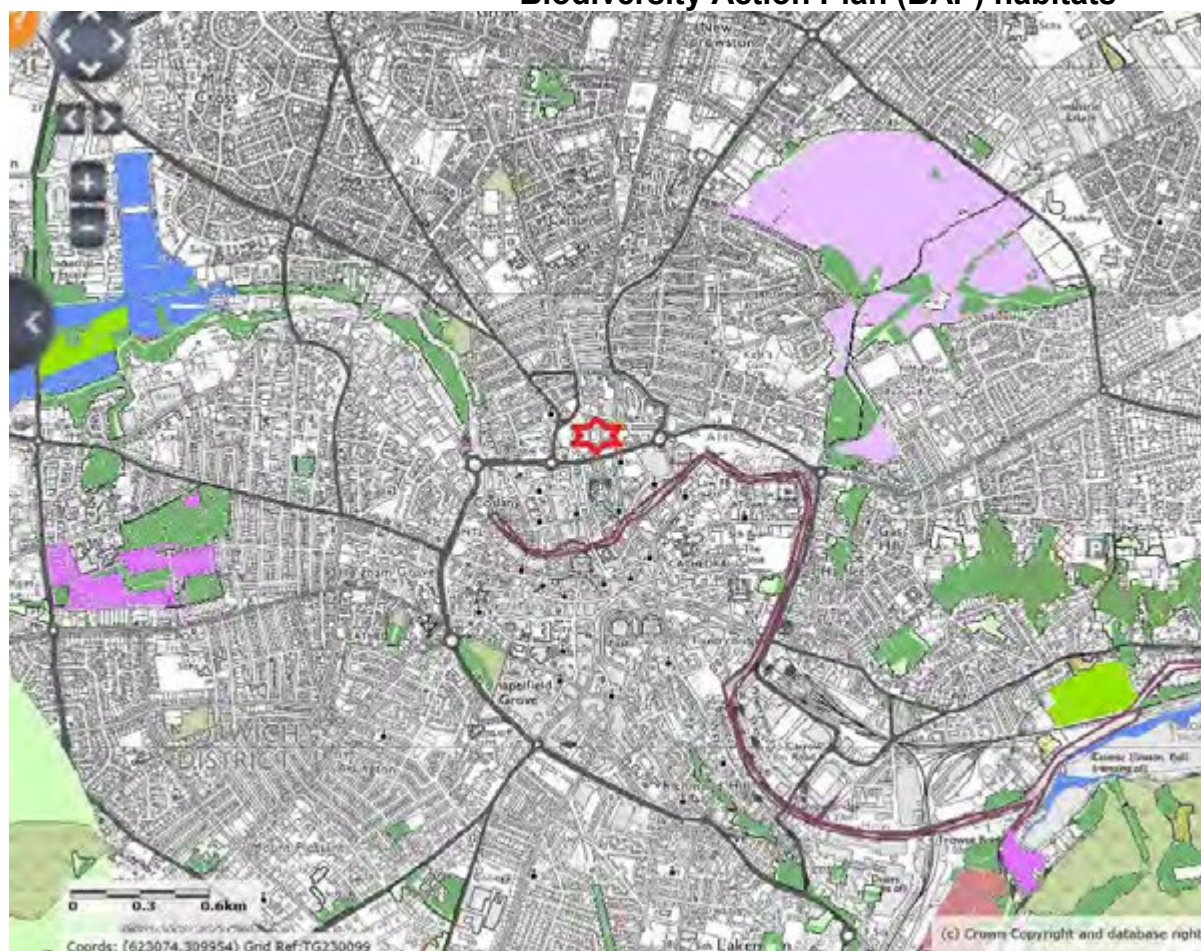
Wildlife Matters Consultancy Unit, 	 N
Reference	Red Line Proposed Development Area
Scale	As shown
Copyright	Ordnance Survey © Crown Copyright (2005). All rights reserved. Wildlife Matters Licence Number 100002077. Screen shot taken from www.magic.gov.uk by with permission from MAGIC support 6.4.13 Alexandra Hajok
File name	Phase 1 Habitats Map
Key	Red line = Curtilage of development area Green = Lawn Brown = Bund Dots = hardstanding Black = Buildings Large Numbers = the three areas



Technical Appendix WM05, continued... Impact Risk Zones (IRZ)



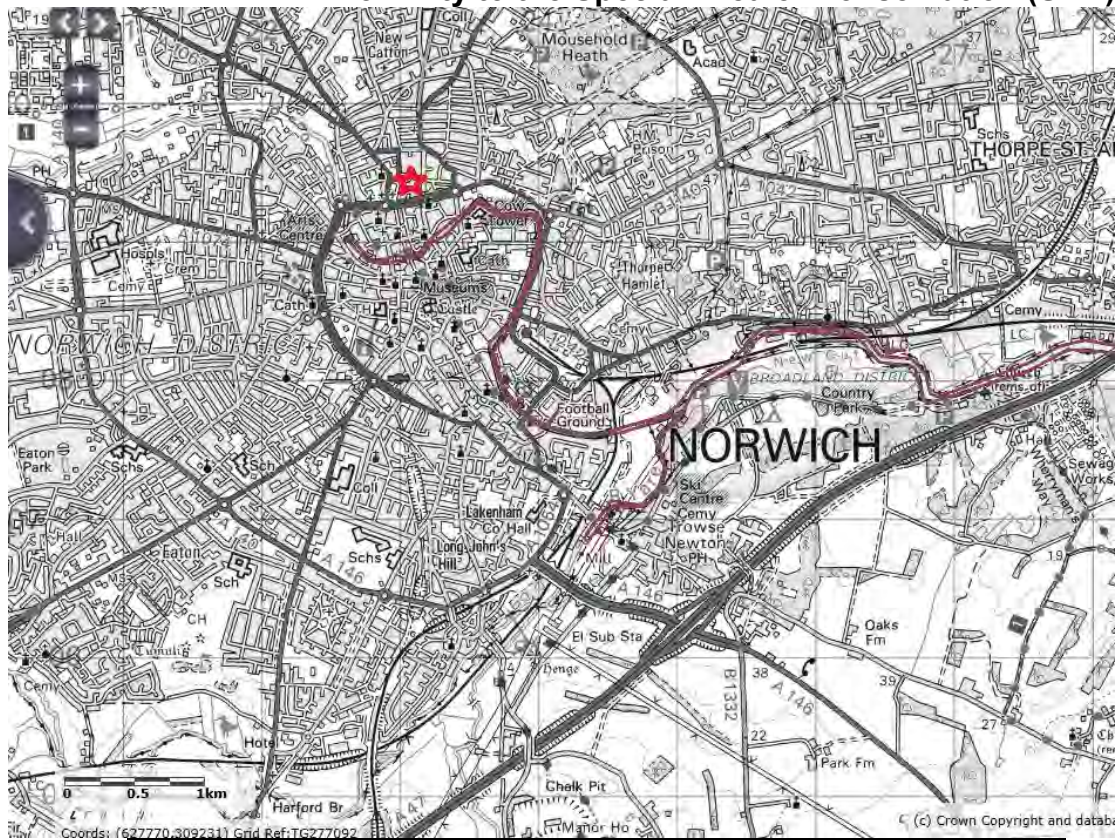
Wildlife Matters Consultancy Unit, 	
Reference	Impact Risk Zones (IRZ)
Scale	As shown
Copyright	Ordnance Survey © Crown Copyright (2005). All rights reserved. Wildlife Matters Licence Number 100002077. Screen shot taken from www.magic.gov.uk by permission from MAGIC support 6.4.13 Alexandra Hajok
File name	Phase 1 Habitats Map
Key	Red star: proposed site Red lines: distances to SSSIs Concentric purple rings: distances from SSSIs



Technical Appendix WM05, continued... Biodiversity Action Plan (BAP) habitats



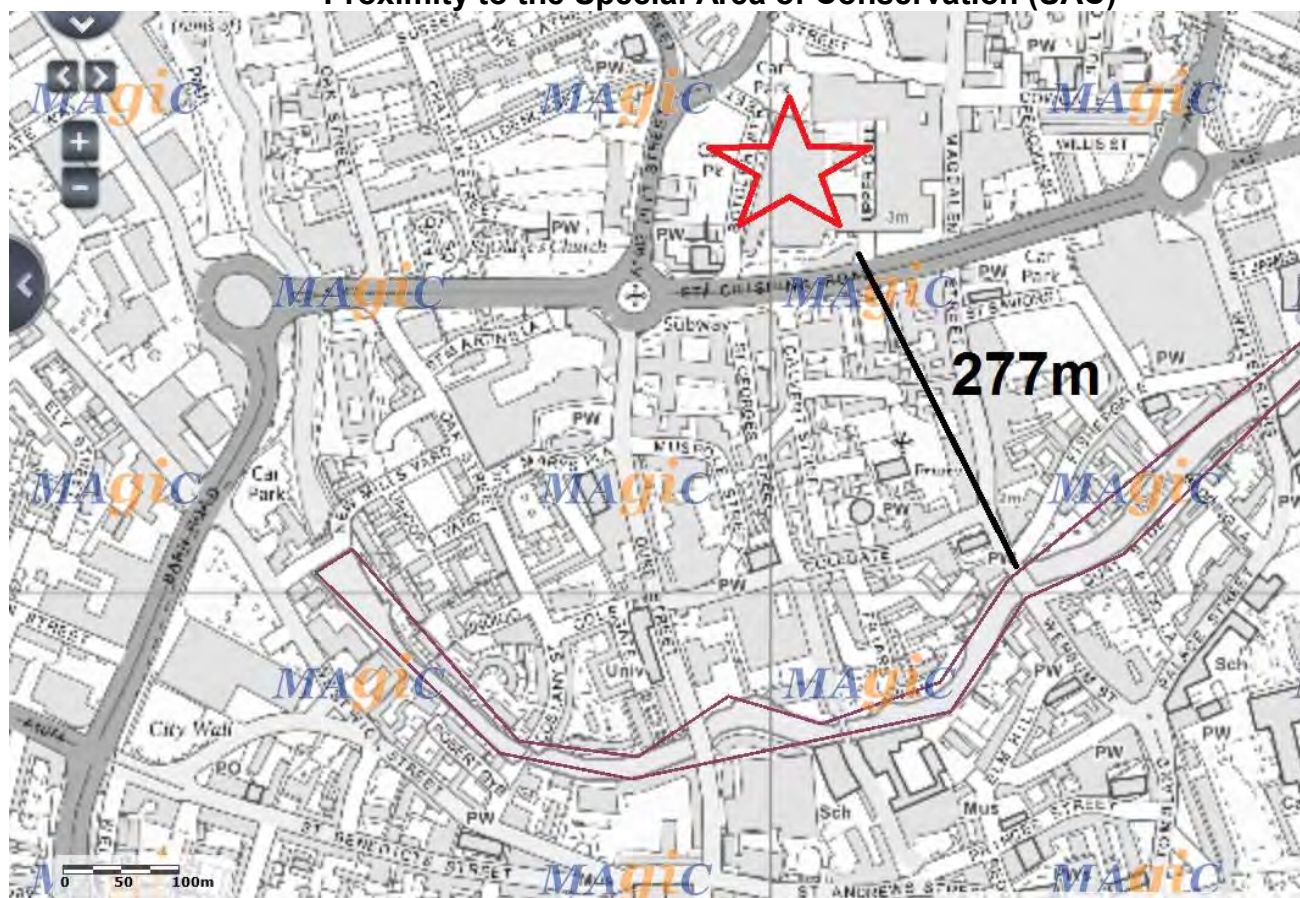
Wildlife Matters Consultancy Unit, 	 N
Reference	Biodiversity Action Plan (BAP) habitats
Scale	As shown
Copyright	Ordnance Survey © Crown Copyright (2005). All rights reserved. Wildlife Matters Licence Number 100002077. Screen shot taken from www.magic.gov.uk by with permission from MAGIC support 6.4.13 Alexandra Hajok
File name	Phase 1 Habitats Map
Key	Red star: proposed site Coloured areas: difference types of BAP habitats – NONE on or adjacent t site



Technical Appendix WM05, continued... Proximity to the Special Area of Conservation (SAC)



Wildlife Matters Consultancy Unit, 	
Reference	Proximity to the Special Area of Conservation (SAC)
Scale	As shown
Copyright	Ordnance Survey © Crown Copyright (2005). All rights reserved. Wildlife Matters Licence Number 100002077. Screen shot taken from www.magic.gov.uk by with permission from MAGIC support 6.4.13 Alexandra Hajok
File name	SAC location
Key	Red star: proposed site Purple : course of river SAC to the south of the site

Technical Appendix WM05, continued...
Proximity to the Special Area of Conservation (SAC)



Wildlife Matters Consultancy Unit, 	 N
Reference	Proximity to the Special Area of Conservation (SAC)
Scale	As shown
Copyright	Ordnance Survey © Crown Copyright (2005). All rights reserved. Wildlife Matters Licence Number 100002077. Screen shot taken from www.magic.gov.uk by with permission from MAGIC support 6.4.13 Alexandra Hajok
File name	SAC location
Key	Red star: proposed site Purple : course of river SAC to the south of the site

**Photographs taken around the site
show the various urban habitats:**

Technical Appendix WM05, continued...
Photographs of habitats on and around the site



The grassy area beneath the trees along the curtilage with St Crispins Road. It is mown with short turf which is not optimal for reptiles, and there is no cover for reptiles either.



A small patch of mown grass outside the Anglia Square is too small for reptiles.

Technical Appendix WM05, continued...
Photographs of habitats on and around the site



The main office building (above and below)



Technical Appendix WM05, continued...
Photographs of habitats on and around the site



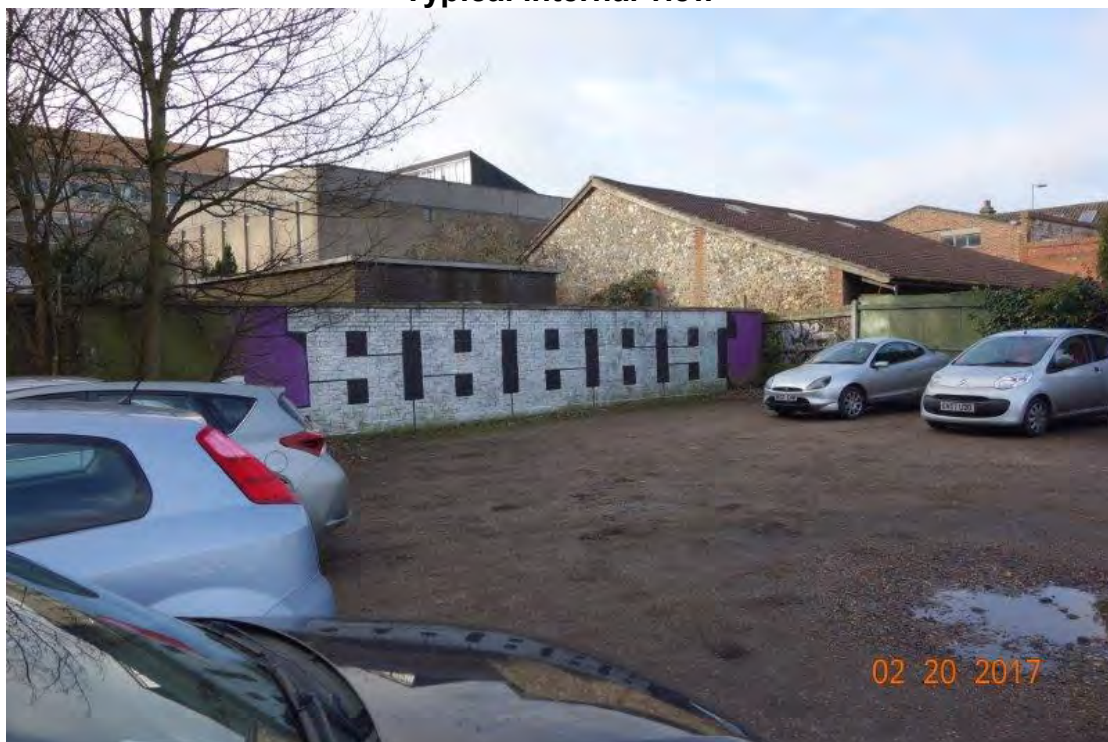
The disused HMSO Building



Technical Appendix WM05, continued...
Photographs of habitats on and around the site



Typical internal view



Technical Appendix WM05, continued...
Photographs of habitats on and around the site



Typical internal view



Technical Appendix WM05, continued...
Photographs of habitats on and around the site



The multi-storey car park building



Technical Appendix WM05, continued...
Photographs of habitats on and around the site



View of site from the south side of the roundabout at St Crispins Road



The car park in the main square

Technical Appendix WM05, continued...
Photographs of habitats on and around the site



The site to the west of Pitt Street (enclosed by red line)



The Car Wash area, car park, and bund along Pitt Street

Technical Appendix WM05, continued...
Photographs of habitats on and around the site



Main square with Car Wash and bund along Pitt Street.



Car Wash area and 'Ivy Wall'

The (few) trees on site

Technical Appendix WM05, continued...
Tree around the site – indicating the tree tags that they support



Tag 01572



Tag 01571

Technical Appendix WM05, continued...
Tree around the site



A London Plane with no tag



Tag 01568

Technical Appendix WM05, continued...
Tree around the site



Tag 01567



Tag 01566

Technical Appendix WM05, continued...
Tree around the site



Tag 01563



Tag 01562 (right)

Technical Appendix WM05, continued...
Tree around the site



Tag 01561



Bracket fungus growing on silver birch

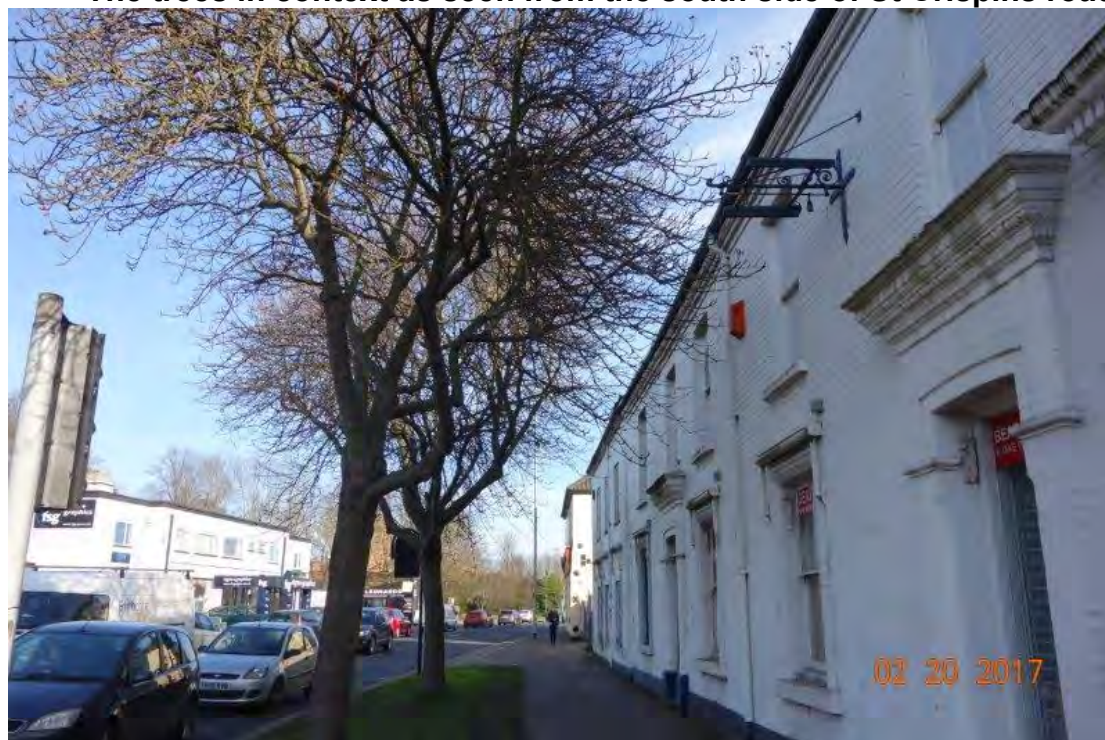


Most of the tagged trees adjacent to St Crispins at night

Technical Appendix WM05, continued... Tree around the site



The trees in context as seen from the south side of St Crispins road



Two trees at the roundabout with Pitts Street (the site is on the right above)

Technical Appendix WM05, continued...
Tree around the site

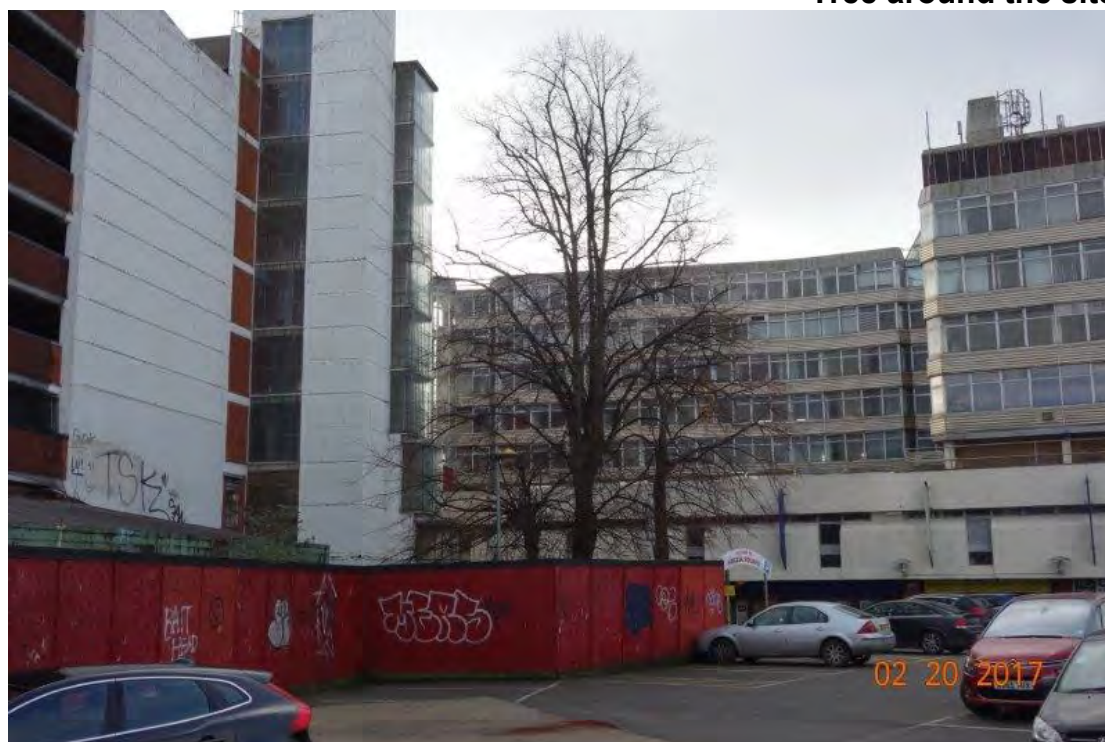


Trees in the pavement along Magdalen Street

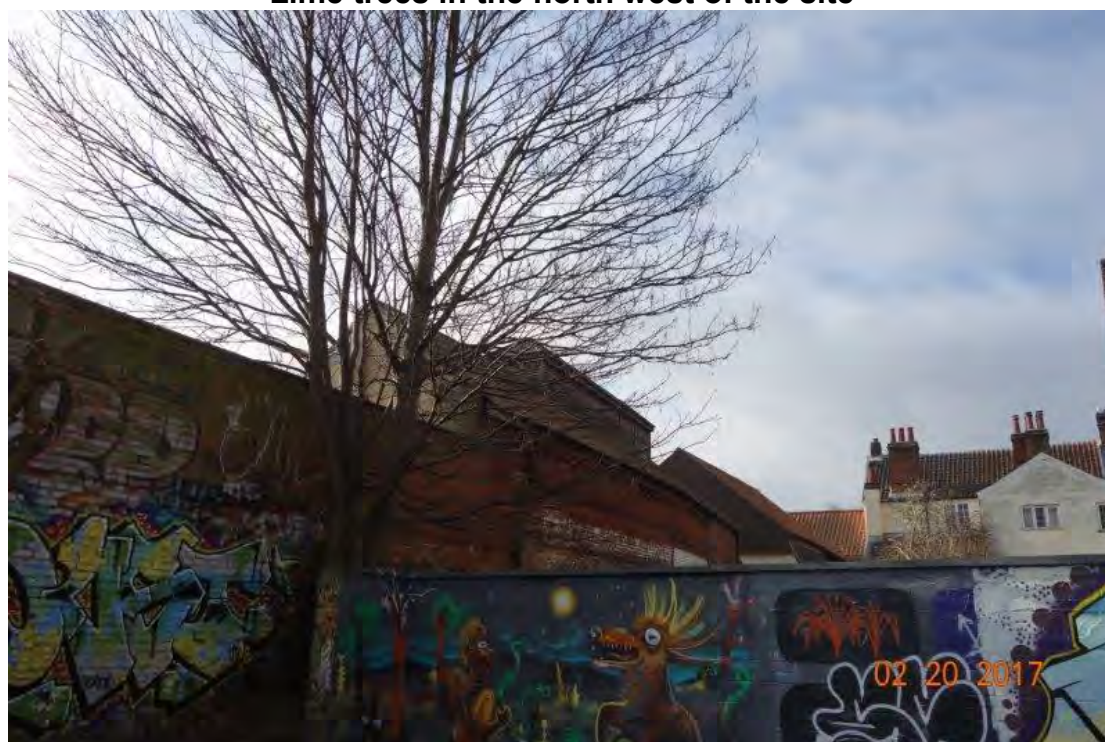


Tree in the pavement along Magdalen Street

Technical Appendix WM05, continued...
Tree around the site



Lime trees in the north west of the site



A sycamore in the corner of the Graffiti car park

Technical Appendix WM05, continued...
The only two hedgerows on site, both ornamental



Privet hedgerow



Mahonia hedgerow

Technical Appendix WM06

Flora and Fauna recorded on site

Table 1 Angiosperms (Flowering Plants) recorded from site

DAFOR is a way of indicating abundance, for instance D is for Dominant, A Abundant, F Frequent, O Occasional and R is for Rare. Rare does not mean the species is rare, i.e. endangered; it just means it is rare on site (for instance there might only be a single dandelion on site, therefore it is noted as Rare).

SPECIFIC NAME	COMMON NAME	Tree	DAFOR RATING	NOTES Ornamental and introduced plants (that contribute little for biodiversity are shown in green)
<i>Acer pseudoplatanus</i>	Sycamore	T	O	Introduced
<i>Aesculus hippocastanum</i>	Horse chestnut	T	R	Introduced species
<i>Anchusa officinalis</i>	Alkanet		R	
<i>Anthriscus sylvestris</i>	Parsley, Cow		O	
<i>Arabis</i> sp.	Arabis		R	Ornamental
<i>Artemisia vulgaris</i>	Mugwort		O	Graffiti Car Park
<i>Betula pendula</i>	Silver birch	T	O	
<i>Brassica nigra</i>	Mustard, Hedge		R	
<i>Buddleia davidii</i>	Buddleia		O	An Invasive Species (London's Invasive Species Initiative) Introduced
<i>Capsella bursa-pastoris</i>	Shepherd's Purse		R	
<i>Chelidonium majus</i>	Greater Celandine		R	Graffiti Car Park
<i>Cirsium vulgare</i>	Thistle, Spear		O	
<i>Conyza canadensis</i>	Canadian horseweed		O	Introduced species
<i>Crocus vernus</i>	Crocus		R	
<i>Cymbalaria muralis</i>	Ivy-leaved toadflax		O	
<i>Cynosurus cristatus</i>	Grass, Crested Dog's tail		O	
<i>Cytisus scoparius</i>	Broom		R	
<i>Epilobium arvense</i>	Willowherb		R	Graffiti Car Park
<i>Erigeron canadensis</i>	Fleabane, Canadian		O	
<i>Euphorbia peplus</i>	Spurge, Petty		R	Graffiti Car Park
<i>Fraxinus excelsior</i>	Ash	T	R	
<i>Gallium aparine</i>	Cleavers		O	Graffiti Car Park
<i>Geranium robertianum</i>	Herb Robert		R	Graffiti Car Park
<i>Hedera helix</i>	Ivy		O	Graffiti Car Park
<i>Lamium purpureum</i>	Deadnettle, Red		R	Graffiti Car Park
<i>Ligustrum</i> sp.	Privet		R	
<i>Lolium perenne</i>	Grass, Rye		O	
<i>Mahonia</i> sp.	Mahonia sp.		O	Ornamental, Introduced
<i>Malva sylvestris</i>	Mallow, Common		R	Graffiti Car Park
<i>Mercurialis annua</i>	Mercury, Annual		R	Introduced
<i>Malus domestica</i>	Apple		R	One only
<i>Plantago lanceolata</i>	Plantain, Ribwort		O	Graffiti Car Park
<i>Platanus x hybrida</i>	Plane, London	T	O	Ornamental
<i>Poa annua</i>	Grass, Meadow		O	
<i>Primula vulgaris</i>	Primrose		R	
<i>Rumex</i> sp.	Dock		R	Graffiti Car Park
<i>Sedum acre</i>	Wall pepper		R	One patch
<i>Senecio jacobaea</i>	Ragwort		O	Graffiti Car Park
<i>Senecio squalidus</i>	Ragwort, Oxford		R	
<i>Smyrniololus atrum</i>	Alexanders		R	
<i>Sorbus</i> sp.	Sorbus		R	
<i>Stellaria media</i>	Chickweed, Common		R	
<i>Taraxacum</i> , microspecies	Dandelion (microspecies)		O	
<i>Tilia x vulgaris</i>	Common Lime	T	O	
<i>Urtica dioica</i>	Nettle		O	Graffiti Car Park
<i>Veronica chamaedrys</i>	Speedwell, Germander		O	
<i>Viola</i> sp.	Violet		R	

Technical Appendix WM06, continued... Flora and Fauna recorded on site

Table 2 FUNGI recorded from site

SPECIFIC NAME	COMMON NAME
<i>Polyporus sp.</i>	Razorstrop on Silver Birch

Table 3 Birds recorded from site

KEY

Royal Society for the Protection of Birds (RSPB)'s Lists:

Red List	Species that are Globally Threatened, for which there is high conservation concern. The designation is according to the criteria of the IUCN (International Union for the Conservation of Nature). Represents a population decline in the UK during 1800-1995 with 50% decline over last 25 years.
Amber List	Species showing a moderate decline in the UK over the last 25 years. (from: Royal Society for the Protection of Birds, 1996. <i>Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man</i> . Royal Society for the Protection of Birds, leaflet.). Often a rare breeder with 1-300 pairs in the UK, or rare non-breeder with less than 900 pairs.
Green List	Species that occur regularly in the UK but do not qualify under any of the above criteria.

WCA 1981

Wildlife & Countryside Act 1981 (as amended)

Scientific Name	Common Name	W&CA, 1981	Importance	RSPB	Notes
<i>Columba livia</i>	Dove, rock, feral pigeon			Green	
<i>Corvus corone</i>	Crow, Carrion			Green	
<i>Erithacus rubecula</i>	Robin			Green	
<i>Larus ridibundus</i>	Gull, Black-headed			Amber	
<i>Prunella modularis</i>	Dunnock			Amber	
<i>Turdus merula</i>	Blackbird			Green	

Table 4 Mammals recorded from site

CLASS MAMMALIA (Mammals)

Latin / Specific Name	Common English Name	Biodiversity Action Plan (BAP) species	Observations
<i>Felis domestica</i>	Cat		
<i>Rattus norvegicus</i>	Rat, Brown		

Table 5 Invertebrates recorded from site

CLASS INSECTA

ORDER LEPIDOPTERA (BUTTERFLIES and MOTHS)

Latin / Specific Name	Common English Name	Observations
<i>Gonepteryx rhamni</i>	Brimstone	Flying out of hibernation

CLASS INSECTA



ORDER DIPTERA (TRUE FLIES)

Latin / Specific Name	Common English Name	Observations
<i>Calliphora vomitoria</i>	Bluebottle	
<i>Lucilia caesar</i>	Greenbottle	
<i>Musca domestica</i>	Housefly	
<i>Sarcophaga carnaria</i>	Fly, Flesh	

Technical Appendix WM07

The latest design plans for the site

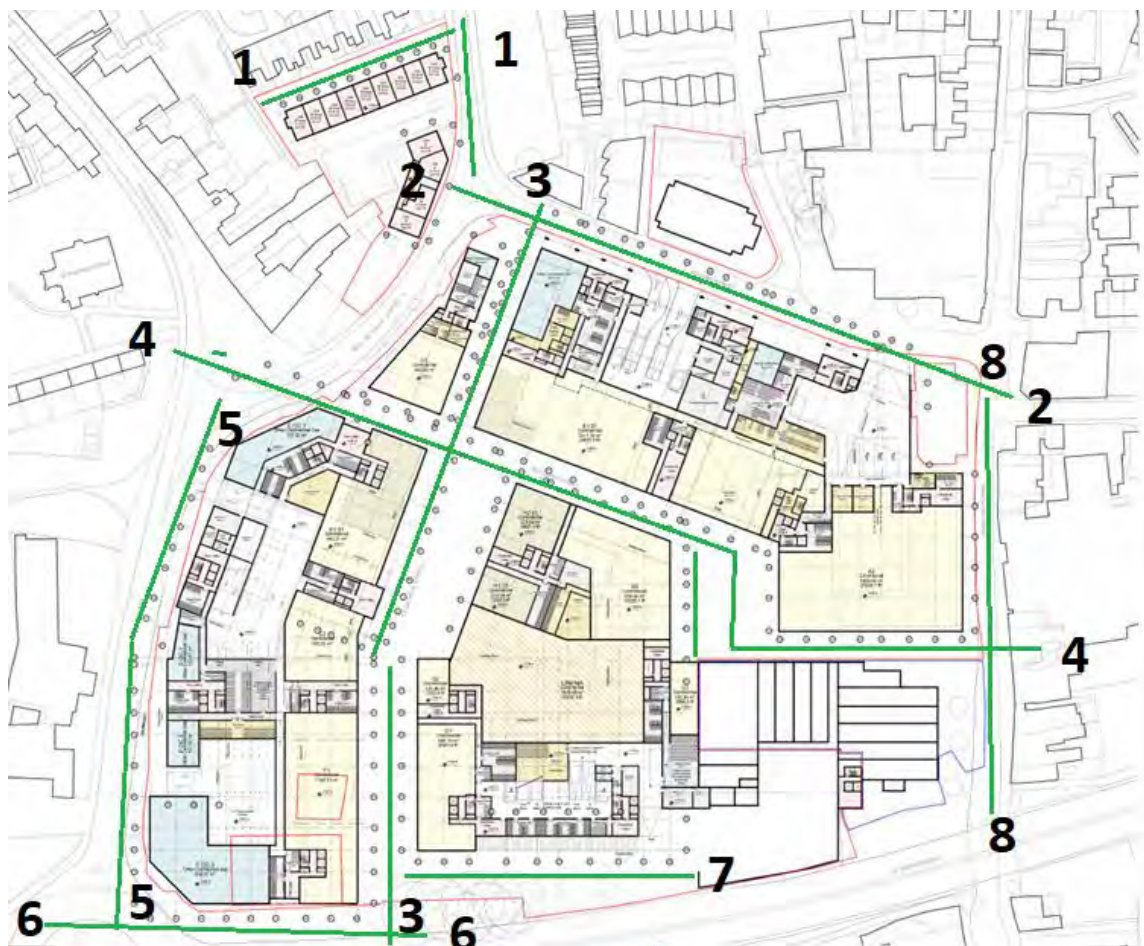




Wildlife Matters Consultancy Unit, 	
Reference	Design plan for the site
Scale	As shown
Copyright	<p>Ordnance Survey © Crown Copyright (2005). All rights reserved. Wildlife Matters Licence Number 100002077.</p> <p>Copyright BroadwayMalyan, Dated 31.01.17. Scale 1:500 @ A1, Drawing number AD3-P2-052</p>

Green Open Spaces in Adjacent areas

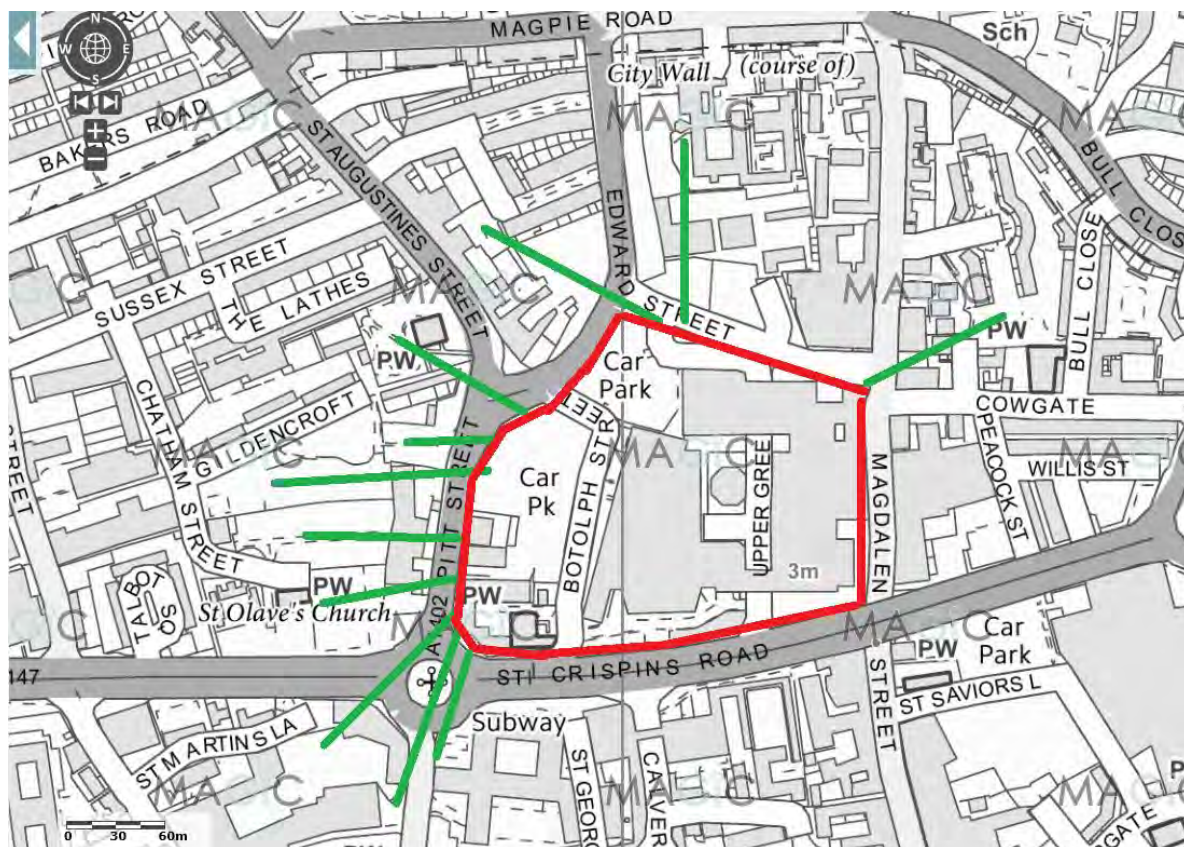
and routes through the site



Technical Appendix WM07, continued....
Proposed green routes through and surrounding the Site
(A number of these routes will be dependent on separate 278
applications and further conversations with the Local Authority)



Wildlife Matters Consultancy Unit, 	 N
Reference	Design plan for the site
Scale	As shown
Copyright	Ordnance Survey © Crown Copyright (2005). All rights reserved. Wildlife Matters Licence Number 100002077. Copyright BroadwayMalyan, Dated 31.01.17. Scale 1:500 @ A1, Drawing number AD3-P2-052 As annotated from above.
Key	Numbers: Green corridors to be created on site Red: curtilage of site

Technical Appendix WM07, continued.... 'Green' connectivity



Wildlife Matters Consultancy Unit, 	
Reference	Design plan for the site
Scale	As shown
Copyright	Ordnance Survey © Crown Copyright (2005). All rights reserved. Wildlife Matters Licence Number 100002077. Copyright BroadwayMalyan, Dated 31.01.17. Scale 1:500 @ A1, Drawing number AD3-P2-052 As annotated from above.
Key	Green: potential green connections into adjacent areas. Red: curtilage of main site

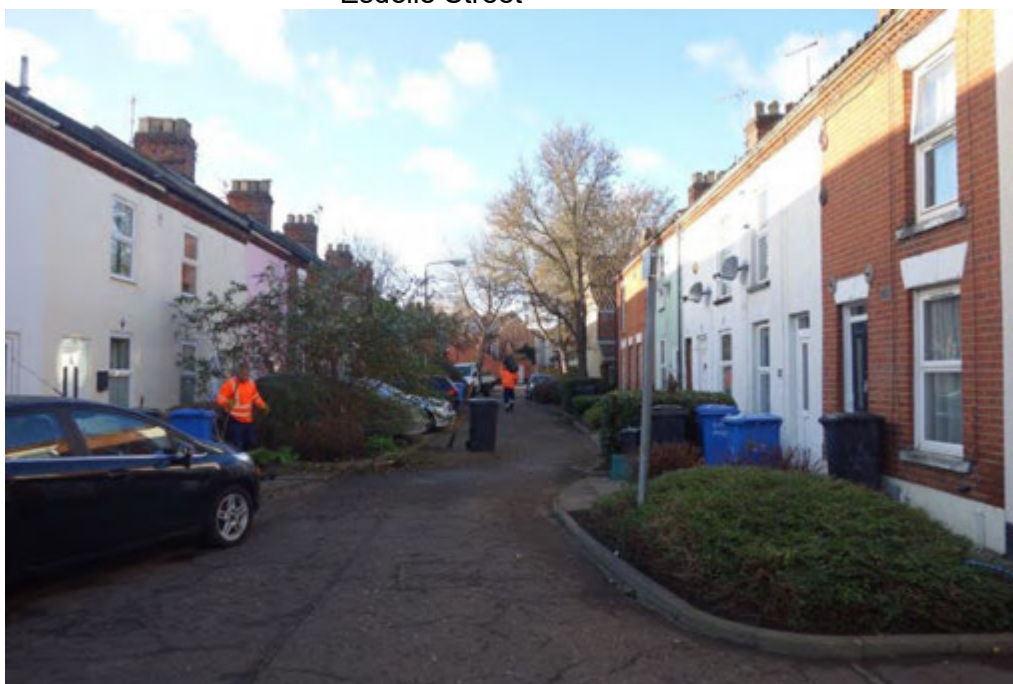
Technical Appendix WM07, continued....
Connectivity with adjacent green areas

Green Route 1 & 2

Both these routes link in with the existing street trees along **Esdelle Street** and **Leonards Street** (the latter has more trees than the former). Leonards Street also links in with a large quadrangle with about 10 large trees and a childrens' play area called '**The Back End Rose Garden**'.



Esdelle Street



Leonard Street

**Technical Appendix WM07, continued....
Connectivity with adjacent green areas**

Green Route 1 & 3 Along Edward Street (north and east)



This part of Edward Street is completely devoid of any vegetation and will thus benefit with enhancements. This is looking west from the east end of Edward Street



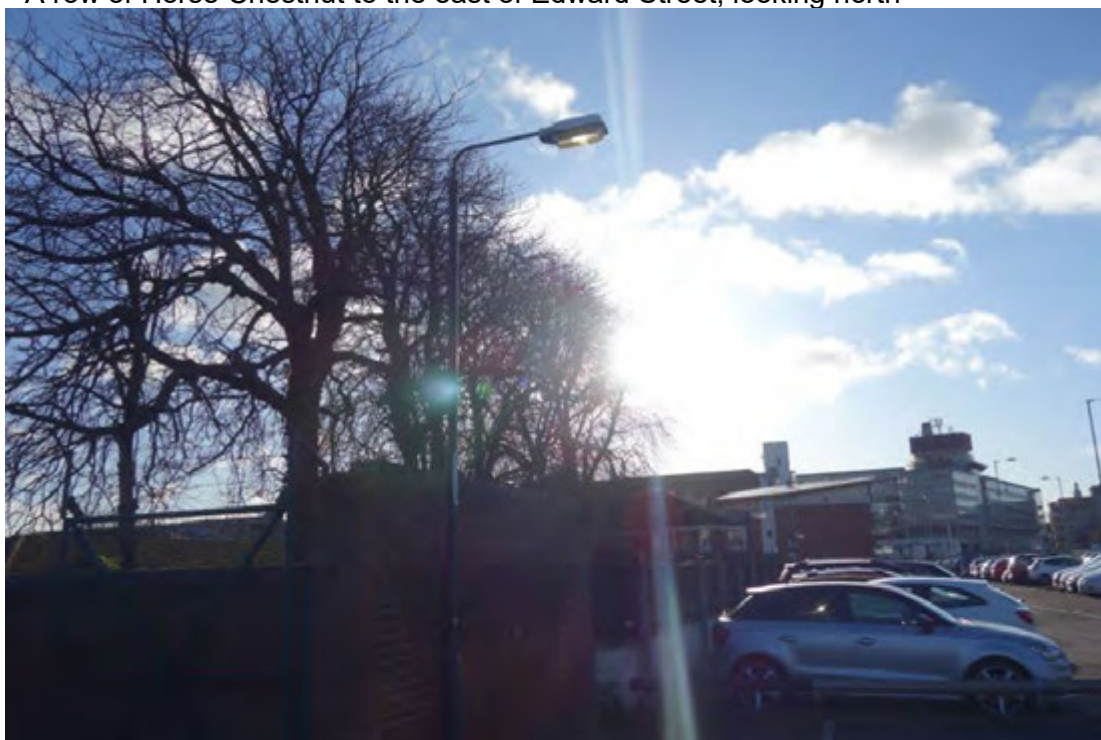
The west end of Edward Street is completely devoid of any vegetation

Technical Appendix WM07, continued.... Connectivity with adjacent green areas

Green Route 3 – connecting northwards into :



A row of Horse Chestnut to the east of Edward Street, looking north



A row of Horse Chestnut to the east of Edward Street, looking south into the sun, showing a tower on site

**Technical Appendix WM07, continued....
Connectivity with adjacent green areas**

Green Route 4 & 5 – connecting westwards into:



The Quaker Burial Ground (above and below) containing a mature arboretum – of mostly lime trees



Technical Appendix WM07, continued.... Connectivity with adjacent green areas

Green Route 4 – connecting westwards into:



St Augustines Church, replete with large trees (above and below)



View northwards up St Augustines Street, with the church on left hand side.

Technical Appendix WM07, continued....
Connectivity with adjacent green areas

Green Route 4 – connecting westwards into:



St Augustine Street – a little more challenging to link into as it has no street trees



Recreational ground heavily treed, within sight of the site, looking east to site

**Technical Appendix WM07, continued....
Connectivity with adjacent green areas**

Green Route 6

– linking west, and south across the roundabout



Looking westwards from the roundabout with relatively unmanaged vegetation that the site will connect with.



The sycamores to be linked across the St Crispins roundabout - looking north to the site.

Technical Appendix WM07, continued.... Connectivity with adjacent green areas

Green Route 8 – linking into Magdalen Street



This will be challenging as there are no street trees – looking south



Looking north – with sign of any vegetation

Technical Appendix WM07, continued....
Connectivity with adjacent green areas
Mulberry trees



White Mulberry in St Augustines Churchyard



Black Mulberry in the University of Norwich



Two mulberry trees in the recreation area to the west of Pitts Street:
St Augustines church is visible.

Trees to be removed

Technical Appendix WM08 Trees to be removed



These lime trees have been checked for birds and bats and are suitable for removal now.



A pavement lime, an olive tree and a bay tree have been checked for birds and bats and area suitable for removal now. Location: Site of St Olaf's church.

Technical Appendix WM08, continued... Trees to be removed



Location: north of site of St Olaf's church



Trees at either end of the row of London Planes are to be removed. Details of these trees have appeared in a separate Tree Report, and another tree report within this document.

Technical Appendix WM08, continued... Trees to be removed Birds – re. Scrub Clearance – being mindful of the law



Development sites often contain lots of scrub trees and bushes, as well as impenetrable bramble thickets. These provide habitat for breeding birds. There is plenty of UK law that seeks to protect birds, particularly the Wildlife & Countryside Act 1981 (as amended).

When to clear vegetation?

The official bird nesting period is 1 February to 1 August (RSPB, 2006).
RSPB's latest advice is avoid clearance 'between March and August' (RSPB, 2007)
Therefore, strictly, clearance can be done from 1 September to 31 January.
However, RSPB prefer October to November, to be safe.
But see below.

Global Warming – earlier and later breeding, and more generations

Birds are now breeding earlier in the year (i.e. starting in December / January) and later in the year (some species having a third generation into August). Robins bred in early January 2007.

The implications for developers are that birds may now be found breeding on site all year round (and this includes pest species such as pigeons and some gulls with respect to buildings).

Therefore, in summary, the best advice is:

- If time is not an issue, carry out clearance work October to November.
- If time is an issue, carry out clearance work 1 September to 31 January.
- If any nesting birds are found during this period, then clearance should stop immediately – it would be prudent to have an ecologist on hand in areas of thick scrub.
- If some scrub or trees have to be removed during the nesting period (Feb to August inclusive) then a survey of the vegetation must be undertaken by an ecologist to determine that it is free of birds; this can result in significant delays and increased cost factors.

References

RSPB, 2006, www.rspb.org.uk

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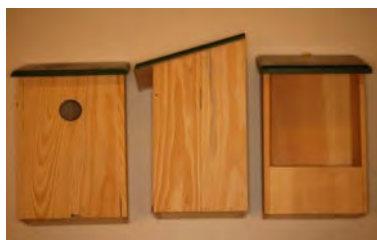
Check List for clearance and compliance:

Not in a Conservation Area?	
Any Tree Preservation Orders (TPOs)	
Not in Ancient Woodland?	
Not a local nature reserve?	
Not part of linear nature reserve?	
Not over badger setts?	
Do you have landowners' permission?	
Outside bird nesting period?	
Not contrary to Local Bye-Laws?	
Has the Tree Officer been advised?	

Enhancements

Technical Appendix WM09 Enhancements – Wildlife Boxes and homes

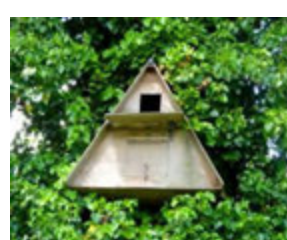
Bird Boxes



Songbird boxes



House Sparrow



Owl Box

BOXES	How many	Where *	Installation
Songbird	5	On trees	After construction
House Sparrow	2	On buildings	After construction
Owl	2	On rooftop	After construction

*The locations of these boxes to be in areas that will not cause a slip hazard below - in areas where pedestrians will need to walk, e.g. in front of entrances or shop fronts. Preferred locations will be on roofs which will not be anywhere near pedestrians.

Kestrel box *Falco tinnunculus*

City centres are often their preferred habitat, so Anglia Square would be suitable.



Available from hawkandowl.org £69.95 inc VAT (Jan 2018)

Or, DIY with plan: <https://www.rspb.org.uk/birds-and-wildlife/advice/how-you-can-help-birds/nestboxes/nestboxes-for-owls-and-kestrels/kestrel-nestboxes> (Jan 2018)

KESTREL BOXES	How many	Where	Installation
Kestrel boxes	2	On rooftop towers	After construction

Insect Homes – assisting the UK Pollination Strategy



Insect boxes

How many	Source	Where	Installation
5	As above	In landscaped gardens	After construction

Technical Appendix WM09, continued.... Enhancements – Wildlife Boxes and homes

Bat Boxes



Wooden bat boxes



1FF Schwegler Bat Box

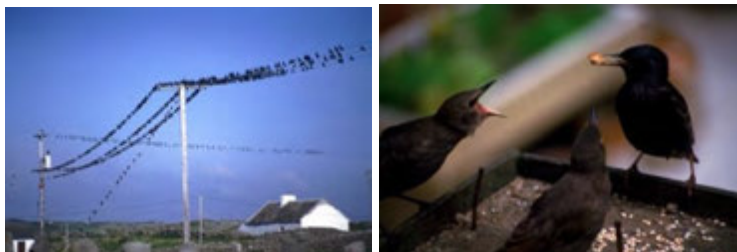
SWIFT BOXES	How many	Where	Installation
Bat boxes	10	Affixed to buildings	After construction
Schwegler Bat Boxes	10	Affixed to buildings	After construction

SUPPLIERS FOR WILDLIFE BOXES:

Alana Ecology	alanaecology.com	01588 630173
Jacoby Jayne	jacobijayne.co.uk	0800 072 0130
NHBS	nhbs.com	01803 865913
Hawk and Owl	Hawkandowl.org	01328 856788
The Nest Box Company		

Technical Appendix WM09, continued.... Enhancements – Wildlife Boxes and homes

Starling *Sturnus vulgaris* – BAP Biodiversity Action Plan (BAP) Species



The UK population is augmented by migrants but the population is still declining.

Population Declining: that is why it is RED-LISTED status by the RSPB.

Legal UK Status Protected under the Wildlife & Countryside Act 1981 which makes it illegal to intentionally kill, injure or take a starling, or to take, damage or destroy an active nest or its contents.

Biodiversity Status The Starling is on the UK Priority Species listing by the JNCC (Joint Nature Conservation Committee). Last updated 15/12/2010. (www.jncc.defra.gov.uk), as it has declined 87% over 25 years. Latest UK population is 764,000 birds.

Actions recommended by JNCC Advice is given to house-owners, local planning authorities and developers to consider the needs of starlings in house design, and in management of gardens, green spaces and landscaping projects, i.e. put in bird boxes, and maintain good stands of trees as roosting sites.

Erect a Starling Box i) BUY Starling Nesting Box: e.g. wigglywiggers.co.uk (£35.75 + VAT January 2018 price; Product Code P0995-Bc1)

ii) MAKE YOUR OWN 15mm timber (non-treated), 510 x 155 x 180; with hinged and overhanging lid on sloping top; drill drainage holes in base; mounted on a post about 1.5-1.8m off ground. Entrance hole 45mm. Location: not in direct sun, but north or east, with uninterrupted flight path for birds.



How many	Source	Where	Installation
5	As above	On rooftops	After construction

Technical Appendix WM09, continued.... Enhancements – Wildlife Boxes and homes

Western European Hedgehog *Erinaceus europaeus* Biodiversity Action Plan (BAP) Species



Legal UK Status Protected under the Wildlife & Countryside Act 1981 (Schedule 6) which makes it illegal to intentionally kill, injure the animals.

Hedgehogs need to be encouraged on site (they were not found there).

There are many types of hedgehog homes available on-line.

This one from Wigglywiggles:



Also The NestBox Company

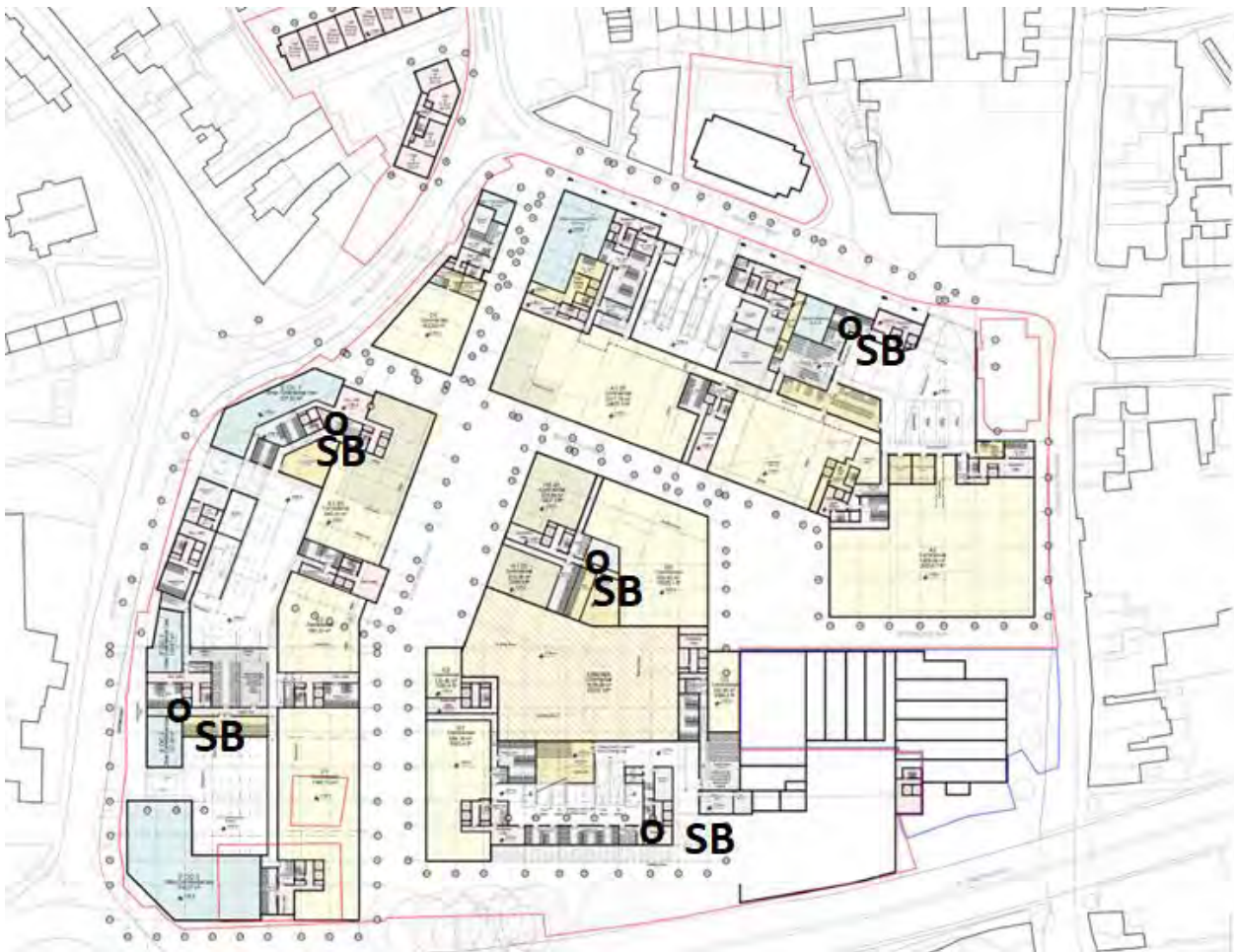
<https://www.nestbox.co.uk/search?type=product&q=hedgehog>



(accessed 15 Jan 2018) 'Hedgehog Nest Box' £45.60 inc VAT

How many	Source	Where	Installation
5	As above	In landscaped gardens	After construction

Technical Appendix WM09, continued....
Enhancements – Wildlife Boxes and homes

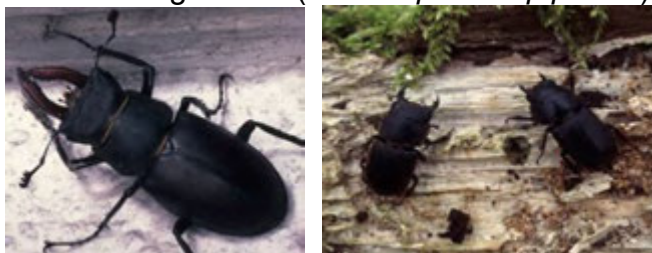
Possible locations for swift boxes



Wildlife Matters Consultancy Unit, 	
Reference	Locations for Swift boxes or bricks
Scale	As shown
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Technical Appendix WM09, continued.... Enhancements – Wildlife Boxes and homes

Lesser Stag Beetle (*Dorcus parallelipedes*)



Stag beetles (above left) are up to 70mm long – the UK's largest terrestrial beetle
Lesser Stag Beetle (*Dorcus parallelipedes*) Above right

Protection: Now a Biodiversity Action Plan (BAP) species.

Stag beetles are typically found in areas where there are large trees and decaying timber. The numbers of stag beetles have been declining in recent years through loss of habitat. Adult may be seen between May and August, but their larvae burrow in decaying old timbers for up to five years.

The Law

Stag beetles are afforded some protection in the UK via the Countryside and Rights of Way Act 2000 (CRoW, 2000). There are moves to get them on the WCA 1981 – the Wildlife & Countryside Act 1981. They are also on Annex II of the EC Habitats Directive. (Three SACs – Special Areas of Conservation – have been designated around them). Biodiversity is also addressed as one of Natural England's 'general purposes' under the Natural Environment and Rural Communities Act 2006 (NERC, 2006). BAPs are also increasingly protected through local policies. So they have both local and national UK, and EU protection.

Applicability of the law

In the UK the CRoW 2000 Act states that 'a listing authority' take 'due regard' of living organisms (para 74 (1) and (2), i.e. of any BAP species. Under EU law BAP species are more strongly protected via the Habitats Directive which is increasingly being more applied to sites. Under 2 (1) of NERC, 2006 one of Natural England's purposes is to '(a) promoting nature conservation and protecting biodiversity.'

Enhancements recommended

Bury a Bucket of Wood chippings Three steps: i) make holes in the bottom and side of an ordinary bucket, ii) fill the bucket with one quarter soil and the rest woodchips or broken pieces of wood and bark, and iii) dig hole and place bucket with rim flush with surface.



Technical Appendix WM010

B-Lines

'Putting rivers of bees, flowers and wildlife back into the countryside'
(Buglife – The Invertebrate Conservation Trust)

What are B-Lines?

Strips of wildlife habitat which link existing wildlife areas together to create a network of wildflower-rich lines across the countryside. This is an initiative from *Buglife -The Invertebrate Conservation Trust*, which is pioneering work in Yorkshire, but is being rolled out nationwide.

It is promoted to support pollinating insects (bees, bumblebees, butterflies, true flies etc) that are rapidly declining in Britain at the present time. One in three mouthfuls of food depends on pollinators. The benefits of insect pollinators to the British Economy are valued at £400 million annually.



How B-Lines might look in the UK (From Buglife 2011 leaflet)

How Developers can help?

Developers already assist in regeneration of sites by planting native tree and shrub species. This helps to augment the biodiversity potential of any site, particularly if sites are adjacent to existing green corridors, such as streams, rivers, canals, railways verges, or road verges. In many cases 'soft' buffers are required by bodies such as the Environment Agency (to allow for flood control) so these areas can be planted up with wildflower seed mixes.

The National Planning Policy Framework (NPPF) of March 2012 (in England) seeks to *promote.... ecological networks... wildlife corridors and stepping stones that connect them....*

How Local Planning Authorities (LPAs) can help?

LPAs can recognise the existing green corridors in their area and avoid being developed and plan to add to them via the planning process. Town and country sites can help to connect the gaps between existing broken corridors with strips of wildflower planting.

Typical Planting mix

Common Knapweed, *Centaurea nigra*, Corn Marigold, *Chrysanthemum segetum*, Cow Parsley, *Anthriscus sylvestris*, Meadow Sweet, *Filipendula ulmaria*, Ragged Robin, *Lychnis flos-cuculi*, Sanicle, *Sanicula europaea*,

References

Buglife - The Invertebrate Conservation Trust - two sided flier on B-Lines, 2011 (www.buglife.org.uk)

Technical Appendix WM10

Garden Biodiversity



@John Feltwell

There are 3.8 million garden plots in London, covering 37,900 ha. Of this 22,000 ha is covered with vegetation (Smith, 2011). Thousands of species are found in towns and cities.

The London Wildlife Trust believes that gardens represent an important biodiversity element in the urban environment. In *'Making London Wild'* – their strategic vision for the capital (LWT, 2005), they show an aerial photograph of at least 150 urban gardens with the implication that gardens strongly contribute to biodiversity.

GIGL (Greenspace Information for Greater London) – steered by the Environment Agency and seven other conservation groups including the London Wildlife Trust - promote wildlife in garden.

Gardens as part of Buffers - key work in Leicester is typical nationwide

Leicester is a leading city with conservation initiatives, especially with regard to the usefulness of gardens as buffers.

"Gardens comprise around a third of all the green space within Leicester. Although artificial, the extraordinary variety of structure and planting provides many opportunities for wildlife....Gardens designed specifically to attract wildlife, and particularly those managed without pesticides, are therefore crucial in maintaining and enhancing biodiversity in Leicester"....and in relation to their Biodiversity Enhancement Sites' (BES). "can add value to existing ecological sites by creating a buffer zone around them to take pressure off vulnerable areas and by linking sites together (wildlife corridors)." (our underlining)

The UK is signatory to the Rio Convention and via UK law via Circular 01/2005, all with commitments to biodiversity enhancement.

Facts:

- Residential zones can account for more than 60% of urban land (BUGS, 2006).
- 2200 species of flora and fauna recorded in a Leicester garden, managed sympathetically for wildlife (BUGS, 2006). A study 35 yrs ago in a 741 sq m garden
- One third of Leicester's green space is gardens (Leicester Council, 2006).
- 15 million gardens in the UK, covering 270,000 ha (greater than all the NNRs in the UK). Kerry Law, RHS (2006). Also Press Release from English Nature May 2003, and also in Leaflet *'Gardens and Biodiversity'* (English Nature, 2006).

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Acronyms

BAP	Biodiversity Action Plan
CCMGWA	Convention on Conservation of Migratory Species of Wild Animals (Bonn, 1980)
CNHR	Conservation (Natural Habitats &c) Regulations, 1994
CRoW	Countryside and Rights of Way Act, 2000
EN	English Nature (formerly Nature Conservancy Council)
EU	European Union
EUROBATS	Agreement on the Conservation of Bats in Europe
GCN	Great Crested Newt
HAP	Habitat Action Plan
JNCC	Joint Nature Conservation Committee.
LNR	Local Nature Reserve
MAGIC	Multi-Agency Geographic Information for the Countryside
NBN	National Biodiversity Network
NNR	National Nature Reserve
Ramsar	An international wetland site; a place in Iran where the wetland conference was held
RDB	Red Data Book
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SNCI	Site of Nature Conservation Importance
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
WCA	Wildlife and Countryside Act 1981
WHS	World Heritage Site

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Ends



WESTON HOMES

ANGLIA SQUARE,
NORWICH

**Ecology Phase 2
Bat Survey Report**

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1. INTRODUCTION

1.1. Background

- 1.1.1. Ecology Solutions was instructed by Weston Homes in June 2018 to complete bat surveys in relation to proposed redevelopment works at Anglia Square, Norwich (see Plan ECO1).
- 1.1.2. Weston Homes and Columbia Threadneedle currently have a hybrid planning application lodged on 2 March 2018 with Norwich City Council (NCC), for a comprehensive mixed-use redevelopment of Anglia Square and two parcels of land to the north / west of Edward Street (ref: 18/00330/F). The proposals include the redevelopment and replanning of the existing shopping centre / office / cinema / car park complex to comprise replacement retail / commercial accommodation, cinema, chapel and multi-storey car park. Together with a new hotel and up to 1250 flats / houses, with associated hard and soft landscaping to form two streets and two squares, podium communal amenity spaces for residents and green / brown roofs.
- 1.1.3. An initial extended Phase 1 assessment was undertaken by Wildlife Matters in February 2016 and December 2017. This Phase 1 report, which was submitted to NCC to support the above hybrid planning application, addresses bats on site; paragraph 9.12 of the report states *"an up to date survey on bats on and around the site is scheduled for spring 2018 onwards, and the results will inform any mitigation going forward."* Hence Ecology Solutions was instructed to undertake this work. Further reference to this report is included in this assessment where considered necessary.

1.2. Site Characteristics

- 1.2.1. Anglia Square is located in Norwich city centre. It has a mix of shops; empty and occupied offices; a disused multi-storey car park; cinema; open car parks and a group of two storey Victorian / 20th century buildings, some in use and some unoccupied. The location of these buildings is shown on Plan ECO2.

1.3. Purpose of this Report

- 1.3.1. This report sets out the results of the bat survey work undertaken by Ecology Solutions in 2018. An enhancement strategy is set out to allow for the favourable conservation status of locally present bat species.

2. LEGISLATION AND ECOLOGY

2.1. Legislation and Licensing

2.1.1. All bats are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and included on Schedule 2 of the Conservation of Habitats and Species Regulations 2017 ("the Habitats Regulations"). These include provisions making it an offence:

- Deliberately to kill, injure or take (capture) bats;
- Deliberately to disturb bats in such a way as to:-
 - (i) be likely to impair their ability to survive, to breed or rear or nurture their young; or to hibernate or migrate; or
 - (ii) affect significantly the local distribution or abundance of the species to which they belong;
- Damage or destroy any breeding or resting place used by bats;
- Intentionally or recklessly obstruct access to any place used by bats for shelter or protection (even if bats are not in residence).

2.1.2. The words deliberately and intentionally include actions where a court can infer that the defendant knew that the action taken would almost inevitably result in an offence, even if that was not the primary purpose of the act.

2.1.3. The offence of damaging (making it worse for the bat) or destroying a breeding site or resting place is an absolute offence. Such actions do not have to be deliberate for an offence to be committed.

2.1.4. In accordance with the Habitats Regulations, the licensing authority (Natural England) must apply the three derogation tests as part of the process of considering a licence application. These tests are that:

1. the activity to be licensed must be for imperative reasons of overriding public interest or for public health and safety;
2. there must be no satisfactory alternative; and
3. the favourable conservation status of the species concerned must be maintained.

2.1.5. Licences can usually only be granted if the development is in receipt of full planning permission.

2.2. Ecology

2.2.1. There are seventeen breeding bat species in Britain. Many of them are considered threatened due to a variety of factors including habitat loss and disturbance / damage to roosts. Of these seventeen species, a number regularly use buildings as roost sites.

- 2.2.2. Bats are highly mobile flying mammals, which, in Britain, feed entirely on insects. They are able to fly and feed in the dark by using a system of echolocation that gives them a 'sound picture' of their surroundings.
- 2.2.3. In winter when prey is scarce, British bats hibernate in humid parts of buildings, caves or hollow trees where temperatures are typically stable. They may wake occasionally but only become fully active again in the spring.
- 2.2.4. Female bats gather together in maternity roosts in summer to give birth and rear their single offspring. Like other mammals bats have fur and give birth to live young. Infant bats suckle on their mother's milk for several weeks until they can fly and hunt insects for themselves. Bats are long-lived mammals and some British species are known to live to over twenty-five years of age.

3. SURVEY METHODOLOGY

3.1. Field Survey

- 3.1.1. Field surveys were undertaken with regard to best practice guidelines issued by Natural England (2004¹), the Joint Nature Conservation Committee (2004²) and the Bat Conservation Trust (2016³).
- 3.1.2. Internal surveys of the buildings and any loft voids present were undertaken in July 2018.
- 3.1.3. The survey work was undertaken using (where necessary) a ladder, torch, endoscope, mirrors and binoculars. Internally, evidence of the presence of bats was also sought. Where appropriate, detailed search was made for bat droppings on the floors of the buildings or the loft voids (droppings can indicate present or past use by bats and extent of use). Other signs sought included dead animals, staining on beams or around crevices, and areas that were conspicuously cobweb-free.
- 3.1.4. Exterior checks of the buildings were also undertaken in order to search for signs of any use by bats. Binoculars were used to inspect any inaccessible areas more closely.
- 3.1.5. In addition to the internal and external surveys, a single emergence and activity survey was undertaken on 12 July 2018. The emergence survey was undertaken of the Ivy *Hedera helix* covered wall in the southwest of the site. The activity survey was focused around the buildings present on site. The transect route is shown on Plan ECO3. EM3+ bat detectors were used to record the data which was subsequently analysed using Kaleidoscope Viewer software.
- 3.1.6. The survey methods undertaken aimed to identify any roosting bats leaving in the evening and using the site for foraging. The dusk survey was undertaken from approximately 15 minutes before sunset until approximately one and a half hours after sunset, the activity surveys were undertaken from sunset until approximately two hours after sunset.
- 3.1.7. Surveys were conducted when the night-time temperature was above 10°C. The insectivorous diet of bats means there is little or no food available when temperature falls below this level and consequently levels of activity are low and may not accurately reflect the value of the application site for bats. The weather conditions for the surveys were recorded and any limitations noted.
- 3.1.8. Three SM4BAT bat detectors were deployed on site for a total of eight nights.

¹ Mitchell-Jones, A. J. (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.

² Mitchell-Jones, A.J. & McLeish, A.P. (Eds.) (2004). *Bat Workers' Manual*. 3rd edition. Joint Nature Conservation Committee, Peterborough.

³ Collins, J. (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines*. 3rd Edition. The Bat Conservation Trust, London.

3.1.9. Placement of the static bat detectors is shown on Plan ECO3.

4. SITE DESCRIPTION

4.1. The Site

- 4.1.1. The site consists of a series of buildings of mixed use and design in the centre of Norwich, which, with the exception of Building B1 (which is to be converted from office to residential use), are to be demolished and redeveloped for an urban regeneration mixed use scheme.

Building B1

- 4.1.2. Building B1 is a purpose-built office block known as Gildengate House (see Photograph 1). It is a six-storey building in a reasonable state of repair. It is of concrete, brick and glass construction. The building is currently used on a temporary basis as an artists' studio. Cracks and gaps are present on the stair column where concrete lintels are beginning to crack. Gaps are also present under the steel cladding on the edge of the roof.

Building B1a

- 4.1.3. Building B1a is a small single storey extension to building B1 (see Photograph 2). It has a flat felt roof with slate sides. The building is currently disused but was previously used as retail units.

Building B2

- 4.1.4. This building is a two-storey steel and concrete retail unit with a flat steel roof. It is in a reasonable state of repair (see Photograph 3).

Building B3

- 4.1.5. This building is a seven-storey former office block (currently disused) known as Sovereign House (see Photograph 4). It is of steel, glass and concrete construction. Numerous gaps are present along the steel cladding. This building has a flat roof.

Building B4

- 4.1.6. This building is a multi-storey car park which has been closed for five years to the public due to standard safety concerns. The building is a seven-storey brick-built construction with a flat roof (see Photograph 5). Cracks in the brick wall are visible.

Building B5

- 4.1.7. This building is a four-storey cinema complex of concrete and glass construction, with a pitched corrugated metal roof (see Photograph 6). It is in a poor state of repair however, there are no apparent gaps or cracks.

Building B6

- 4.1.8. This building lies outside the hybrid planning application boundary but has been surveyed for completeness. It is a two-storey brick building with a flat roof and slopping sides of artificial slate tiles, with metal cladding. The building is in a reasonable state of repair and used for retail purposes. The upper storey is disused.

Building B7

- 4.1.9. Building B7 is known as Surrey Chapel and is a two-storey brick building with concrete panels and a flat roof (see Photograph 7).

Building B8

- 4.1.10. This building is a two-storey complex of mostly disused units, but some are in use. It is brick built with a pitched roof of concrete pantiles (see Photograph 8). Chimneys with lead flashing are also present. The roofing felt on the gable end is lifting, and some gaps are present. The wooden soffit boxes are in good condition. A loft space is present in the south of the building. The plastic lining and wooden beams of the loft are in good condition. There are no obvious gaps in the lining or staining on the beams (see Photograph 9).

Building B9

- 4.1.11. This building is an older building than the others (see Photograph 10). It is currently unused but was previously used as a warehouse. It is a single storey building of brick, flint and metal construction, with wooden barge boards and a pitched concrete pantile roof. The roof appears to have been replaced relatively recently as it is in a good condition. There are gaps present along the wooden barge boards, wooden lintel as well as between the doors. Internally the building contains a large number of cobwebs. The lining of the loft is in good condition with very few gaps present, plastic skylights mean the loft is very bright. A large number of cobwebs are present along the gaps by the doors (see Photograph 11).

Building B10

- 4.1.12. Building B10 is a single-storey electrical substation of brick construction with a flat felt roof. This building is in good condition.

Building B11

- 4.1.13. Building B11 is a two-storey brick building with a pitched / hipped concrete tile roof, with wooden soffit boxes (see Photograph 12). There are no obvious gaps present. The building is currently occupied by a printing business. There is no loft space present. A separate single storey storage unit with steel sliding doors is present to the rear of building B11, currently used as a storage facility by Scope. This warehouse has metal roofing panels with plastic

skylights. There is a large Ivy-covered wall to the rear of the building (see Photograph 13).

Building B12

- 4.1.14. This building is a two-storey brick-built building adjoining building B11. It has a felt corrugated steel roof. This building is currently a car wash facility (see Photograph 12).

Building B13

- 4.1.15. This building is not included within the hybrid application site boundary. It is a two-storey brick-built building with a flat roof with artificial slates around the edge (see Photograph 14). The building is in good condition with no obvious gaps.

Building B14

- 4.1.16. Building B14 is a two-storey brick-built building with a flat roof and artificial slate panelling, with timber cladding. It is currently used as a retail unit and office. The building is in a reasonable state of repair.

5. SURVEY RESULTS

5.1. Background Records

- 5.1.1. The desk study undertaken by Wildlife Matters states that records were returned for four species of bats. Natterer's Bat *Myotis nattereri* was recorded in 2010 within the same 1km grid square as the application site; Pipistrelle *Pipistrellus* sp. was recorded in 2000 in the same 1km grid square as the site; Common Pipistrelle *Pipistrellus pipistrellus* was recorded in 2000 within a 1km grid square approximately 1.8km southeast of the site; and Brown Long-eared Bat *Plecotus auritus* was recorded in 2015 within a 1km grid square approximately 1km northeast of the site.

5.2. Internal / External Inspections

Building B1

- 5.2.1. No evidence of bats was recorded internally. The gaps and cracks caused by the cracking concrete lintels along the stair column, as well as the gaps under the lifting steel cladding on the edge of the roof could provide some limited roosting opportunities for locally present bat species.

Building B1a and B2

- 5.2.2. No obvious access points were observed on the external features of these buildings. No evidence of roosting bats was recorded.

Building B3

- 5.2.3. The numerous gaps under the steel cladding present some roosting opportunities for locally present bat species. The flat roof does not provide any opportunities for roosting bats but may provide opportunities for nesting Gull species. No evidence of roosting bats was recorded.

Building B4

- 5.2.4. The flat roof of this building does not provide any roosting opportunities for bats. However, the cracks in the brick wall facing the main square do provide some limited opportunities. No evidence of roosting bats was recorded.

Building B5, B6 and B7

- 5.2.5. The metal clad pitched roof of building B5 and the flat roof of building B6 and B7 do not provide any roosting opportunities for bats. There are no obvious gaps or crevices on these buildings which could be utilised by roosting bats. No evidence of their presence was recorded.

Building B8

- 5.2.6. There are several gaps under the wooden barge boards as well as under the roofing felt on the gable end and the wooden soffit boxes that could provide suitable roosting opportunities for bats. The loft space of this building is in good condition with no staining of the wooden beams and no gaps in the plastic lining, no evidence of roosting bats was recorded.

Building B9

- 5.2.7. The former warehouse building provides more roosting opportunities than the surrounding more modern buildings. There are a number of gaps between the wooden door and lintel. There are gaps present between the door frames and wall, though these have a large number of cobwebs present indicating that bats are not accessing the building internally. The loft and roof of this building appear to have been repaired / replaced recently, since concrete pantiles are in good condition with minimal gaps. The plastic lining in the loft is also in good condition with no gaps. Plastic skylights are present which results in a very bright loft space. No evidence of bats was recorded.

Building B10

- 5.2.8. The design of the electrical substation with its flat roof offers no opportunities for roosting bats.

Building B11

- 5.2.9. There are no obvious gaps in the wooden soffit boxes or under the concrete tiled roof for roosting bats. There are no loft voids present in the main building or the adjoining warehouse / storage facility. The Ivy-covered wall running adjacent to the site offers more potential for roosting bats. No evidence of bats was recorded.

Buildings B12, B13 and B14

- 5.2.10. The construction and condition of buildings B12, B13 and B14 means that no roosting opportunities are presented by these buildings.

5.3. Emergence Surveys

- 5.3.1. The Ivy-covered wall adjacent to building B11 was subject to an emergence survey on 12 July 2018.
- 5.3.2. No bats were recorded during the course of this survey.
- 5.3.3. The position of the surveyors are shown on Plan ECO3. The weather conditions and timings of the survey are summarised in table 5.1 below.

Date	12.07.18
Sunset	21:14
Survey Start	21:13
Survey End	22:45
Cloud Cover (%)	90%
Temperature (°C)	14
Weather & Wind	No rain and a gentle breeze

Table 5.1. Bat emergence survey conditions and timings.

5.4. Activity Survey

- 5.4.1. An activity transect survey was undertaken across the site in conjunction with the emergence survey on 12 July 2018.
- 5.4.2. A very low level of activity was recorded during the activity survey. A single Common Pipistrelle and Soprano Pipistrelle were recorded.
- 5.4.3. The two bats were recorded approximately 35 minutes after sunset by buildings B7, B8 and B9. Neither of the bats were observed by the surveyors.
- 5.4.4. The transect route and location of bats recorded are shown on Plan ECO3.

5.5. Static Detector Surveys

- 5.5.1. Three SM4BAT bat detectors were placed on the roof of building B1 between 12 July and 20 July 2018.
- 5.5.2. The results of the static detector survey undertaken for five eight nights between 12 July and 20 July are summarised below and in Table 5.2 below.

Detector	Night	C.Pip	Pip Sp.	Noctule	Big Bat	Total
Position 1	12.07.18	0	0	6	0	6
Position 2		0	0	1	0	1
Position 3		0	0	6	0	6
Total		0	0	13	0	13
Position 1	13.07.18	0	0	1	0	1
Position 2		0	0	1	0	1
Position 3		2	0	1	0	3
Total		2	0	3	0	5
Position 1	14.07.18	0	0	2	0	2
Position 2		0	0	3	0	3
Position 3		0	0	3	0	3
Total		0	0	8	0	8
Position 1	15.07.18	0	0	0	0	0
Position 2		0	0	0	0	0
Position 3		0	0	0	0	0
Total		0	0	0	0	0
Position 1	16.07.18	2	0	3	0	5
Position 2		0	0	5	0	5
Position 3		0	0	5	1	6
Total		2	0	13	1	16

Detector	Night	C.Pip	Pip Sp.	Noctule	Big Bat	Total
Position 1	17.07.18	0	0	6	1	7
Position 2		0	0	6	0	6
Position 3		0	0	5	0	5
Total		0	0	17	1	18
Position 1	18.07.18	0	1	0	0	1
Position 2		0	0	0	0	0
Position 3		0	1	1	0	2
Total		0	2	1	0	3
Position 1	19.07.18	4	0	2	0	6
Position 2		0	0	4	0	4
Position 3		0	0	4	0	4
Total		4	0	10	0	14
Position 1 total		6	1	20	1	28
Position 2 total		0	0	20	0	20
Position 3 total		2	1	25	1	29
Grand total		8	2	65	2	77

Table 5.2 Static bat detector results July 2018

- 5.5.3. A total of 77 registrations were recorded over the course of the survey period. The majority of registrations recorded were attributed to Noctule *Nyctalus noctula* (65 registrations). Other species recorded less frequently include Common Pipistrelle, Pipistrelle sp., and an unidentified big bat species.
- 5.5.4. The timings of the registrations recorded suggest that bats are not roosting within the site and are occasionally commuting over the site to forage elsewhere.

6. DISCUSSION AND RECOMMENDATIONS

6.1. Use of Buildings and Site by Bats

- 6.1.1. No evidence of roosting bats was recorded during the internal and external inspection of the buildings on site.
- 6.1.2. The trees on site do not offer any opportunities for roosting bats.
- 6.1.3. No bats were recorded emerging from the Ivy-covered wall or nearby buildings during the emergence survey. A very low level of activity was recorded during the activity survey as well as by the static SM4BAT detectors. The results of the survey work indicate that the site is of little to no importance to roosting, foraging and commuting bats.

6.2. Proposals and Effect

- 6.2.1. There is no evidence to suggest that the demolition and redevelopment of buildings on site will have any effect on locally present bat species.

6.3. Mitigation and Enhancement

Conservation Significance

- 6.3.1. No roosts were recorded during the survey work undertaken at the site, and very low levels of activity were recorded during the activity transect. The site is therefore considered to be of negligible conservation value to bats.

Creating Opportunities for Bats

- 6.3.2. In line with the original ecological assessment completed in March 2018 it is recommended that twenty bat boxes of varying design such as Schwegler 1FF, Schwegler 1FQ, Schwegler 2FE and Schwegler 2FR bat boxes are incorporated into the development. It is considered that this will provide a net benefit in roosting opportunity once the proposals have been completed.
- 6.3.3. It is also recommended that the lighting strategy be designed with due regard to foraging and commuting bats. There should be no direct lighting on or near any installed bat box.
- 6.3.4. It is recommended that the new landscape strategy largely comprise a variety of native species of local provenance and / or wildlife friendly species. This will increase foraging opportunities for locally present bat species.

7. SUMMARY AND CONCLUSIONS

- 7.1. Ecology Solutions was instructed by Weston Homes in June 2018 to complete bat surveys in relation to proposed redevelopment works at Anglia Square, Norwich.
- 7.2. Weston Homes and Columbia Threadneedle currently have a hybrid planning application lodged with Norwich City Council for a comprehensive mixed-use redevelopment of Anglia Square and two parcels of land to the north / west of Edward Street. The proposals include the redevelopment and replanning of the already existing complex to comprise of replacement retail / commercial accommodation, cinema, chapel and multi-storey car park, together with a new hotel and up to 1250 flats / houses with associated infrastructure.
- 7.3. This assessment includes the appraisal of buildings within Anglia Square for their suitability for roosting bats.
- 7.4. Surveys were undertaken by Ecology Solutions in July 2018.
- 7.5. The results of the internal and external survey work undertaken highlighted no evidence of past or present roosting bats.
- 7.6. No bats were recorded during the emergence survey. A single Common Pipistrelle and Soprano Pipistrelle were recorded approximately 35 minutes after sunset during the activity survey by buildings B7, B8 and B9. No further bats were recorded during the course of the surveys.
- 7.7. The static SM4BAT detector surveys recorded a low level of bat activity the majority of registrations were attributed to Noctule. The timings of the registrations suggest that the bats are not roosting on site and are passing through the site to forage elsewhere.
- 7.8. As it currently stands the site is of low or little importance to locally present bat species.
- 7.9. The provision of bat boxes as well as a landscape scheme based around native species and / or species of known wildlife value will increase foraging and roosting opportunities not currently provided by the site. The lighting scheme should also be designed in a sensitive manner to the potential presence of roosting and foraging bats.
- 7.10. The use of breathable roof membrane should be avoided as these have been found to present a high risk of entangling bats and eventually causing death to the bat. Only bituminous roofing felt that does not contain polypropylene filaments will be used.
- 7.11. In conclusion, the bat survey work undertaken at the site has recorded very low level of bat activity across the site and no roosting bats were recorded during the internal and external surveys as well as the emergence survey. The site as it currently stands is of negligible conservation value to bats. The incorporation of bat boxes, native landscape planting and a sensitive lighting scheme will provide enhancements for local bat species that are not currently present on site.

The proposed development therefore has the potential to provide a net gain in biodiversity.

PLANS

PLAN ECO1

Site Location



KEY:



SITE LOCATION



7948: ANGLIA SQUARE, NORWICH

PLAN ECO1: SITE LOCATION

PLAN ECO2

Ecological Features



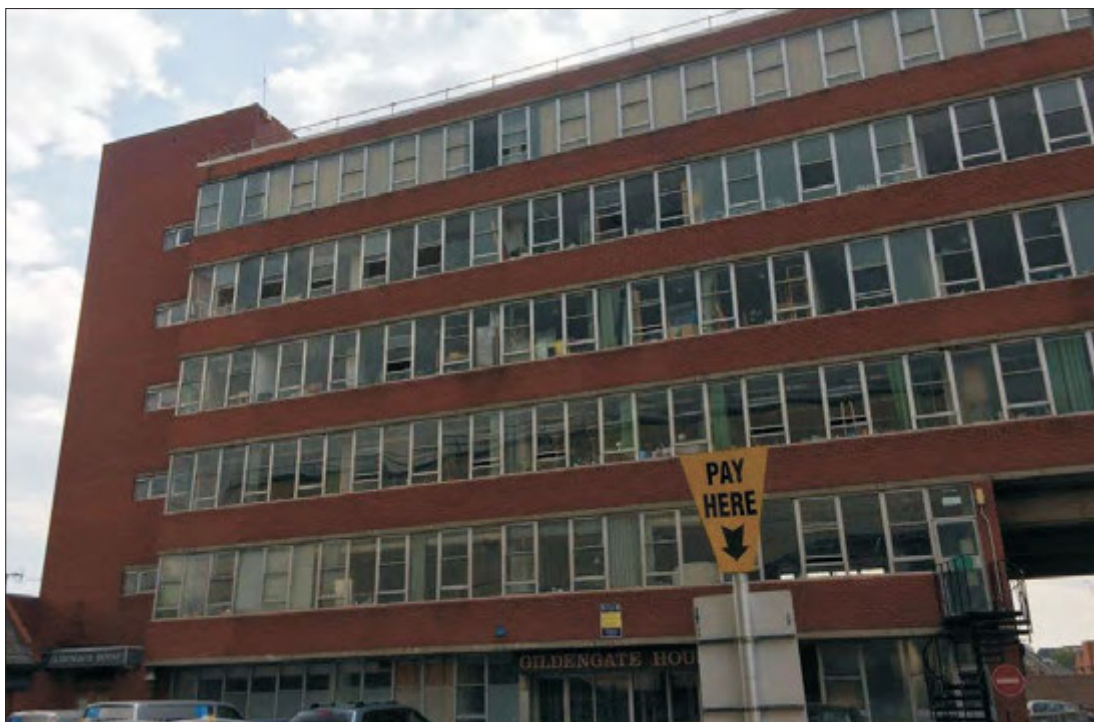
PLAN ECO3

Bat Survey Results



PHOTOGRAPHS

PHOTOGRAPH 1: Building B1



PHOTOGRAPH 2: Building B1a



PHOTOGRAPH 3: Building B2



PHOTOGRAPH 4: Building B3



PHOTOGRAPH 5: Building B4 in background



PHOTOGRAPH 6: Building B5



PHOTOGRAPH 7: Building B7



PHOTOGRAPH 8: Building B8



PHOTOGRAPH 9: Loft space of Building B8



PHOTOGRAPH 10: Building B9



PHOTOGRAPH 11: Cobwebs around door frame Building B9



PHOTOGRAPH 12: Building B11 and Building B12



PHOTOGRAPH 13: Ivy covered wall



PHOTOGRAPH 14: Building B13





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ANGLIA SQUARE,
NORWICH

Ecological Assessment

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PLANS

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PHOTOGRAPH 14	Building B13

APPENDICES

APPENDIX 1	Information downloaded from Multi-Agency Geographic Information for the Countryside (MAGIC)
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1. INTRODUCTION

- 1.1. This Ecological Assessment has been prepared by Ecology Solutions on behalf of Weston Homes Plc (the Applicant) in support of a hybrid (part full / part outline) planning application (the Application), submitted to Norwich City Council (NCC) for the comprehensive redevelopment of Anglia Square and various parcels of mostly open surrounding land (the Site), as shown within a red line on drawing 'ZZ-00-DR-A-01-0200'.
- 1.2. The Site is located in a highly accessible position within the northern part of Norwich City Centre and comprises a significant element of the Anglia Square / Magdalen Street / St Augustines Large District Centre, (the LDC). It is thus of strategic importance to the City, and accordingly has been identified for redevelopment for many years within various local planning policy documents, including the Northern City Centre Area Action Plan 2010 (NCCAAP) (now expired), the Joint Core Strategy for Broadland, Norwich and South Norfolk 2014 (JCS), and NCC's Anglia Square and Surrounding Area Policy Guidance Note 2017 (PGN). The Site forms the principal part of an allocation (GNLP 0506) in the emerging Greater Norwich Local Plan (GNLP).
- 1.3. This application follows a previous application on a somewhat smaller development parcel, (NCC Ref. 18/00330/F) made jointly by Weston Homes Plc as development partner and Columbia Threadneedle Investments (CTI), the Site's owner, for a residential-led mixed use scheme consisting of up to 1,250 dwellings with decked parking, and 11,000 sqm GEA flexible ground floor retail / commercial / non-residential institution floorspace, hotel, cinema, multi-storey public car park, place of worship, and associated public realm and highway works. This was subject to a Call-in by the Secretary of State (PINS Ref. APP/G2625/V/19/3225505) who refused planning permission on 12th November 2020 (the 'Call in Scheme').
- 1.4. In April 2021, following new negotiations with Site owner CTI, Weston Homes decided to explore the potential for securing planning permission for an alternative scheme via an extensive programme of public and stakeholder engagement, from the earliest concepts to a fully worked up application. The negotiations with CTI have secured a "Subject to Planning" contract to purchase the Site, (enlarged to include the southeastern part of Anglia Square fronting Magdalen Street and St Crispins Road), which has enabled a completely fresh approach to establishing a redevelopment scheme for Anglia Square. This has resulted in a different development brief for the scheme, being to create a replacement part of the larger LDC suited to the flexible needs of a wide range of retail, service, business and community uses, reflective of trends in town centre character, integrated with the introduction of homes across the Site, within a highly permeable layout, well connected to its surroundings.
- 1.5. The new development proposal seeks to comprehensively redevelop the Site to provide up to 1,100 dwellings and up to 8,000sqm (NIA) flexible retail, commercial and other non-residential floorspace including Community Hub, up to 450 car parking spaces (at least 95% spaces for class C3 use, and up to 5% for class E / F1 / F2 / Sui Generis uses), car club spaces and associated works to the highway and public realm areas (the Proposed Development). These figures are maxima in view of the hybrid nature of the application. This proposes part of the scheme designed in full, to accommodate 367 dwellings, 5,808 sqm non-residential floorspace, and 146 car parking spaces (at least 95% spaces for residential use, and up to 5% for non-residential use), with the remaining large

part of the Site for later detailed design as a Reserved Matters application, up to those maxima figures.

- 1.6. This Ecological Assessment provides Norwich City Council with information regarding the ecological interest of the Site. The importance of the habitats within the Site are evaluated with due consideration given to the guidance published by the Chartered Institute of Ecology and Environmental Management (CIEEM)¹.
- 1.7. Where necessary, mitigation measures are recommended so as to safeguard any significant existing ecological interest within the Site and, where appropriate, potential enhancement measures are put forward and reference made to both Priority Species and Priority Habitats (formerly National and Local Biodiversity Habitat Plans).

¹CIEEM (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. Version 1.1 – Updated September 2019. Chartered Institute of Ecology and Environmental Management, Winchester.

2. SURVEY METHODOLOGY

- 2.1. The methodology utilised for the survey work can be split into three areas, namely desk study, habitat survey and faunal survey. These are discussed in more detail below.

2.2. Desk Study

- 2.2.1. In order to compile background information on the Site and the surrounding area, Ecology Solutions contacted Norfolk Biodiversity Information Service (NBIS).
- 2.2.2. Further information on designated sites from a wider search area was obtained from the online Multi-Agency Geographic Information for the Countryside (MAGIC)² database, which uses information held by Natural England and other organisations. This information is reproduced in Appendix 1 and where appropriate on Plan ECO1.

2.3. Habitat Survey

- 2.3.1. Initial habitat surveys were carried out by Wildlife Matters in February 2016 and December 2017. Ecology Solutions conducted updated walkover surveys in July 2018 and January 2022, in order to ascertain the general ecological value of the land contained within the boundaries of the Site and to identify the main habitats and associated plant species.
- 2.3.2. The site was surveyed based around Extended Phase 1 Habitat Survey methodology³, as recommended by Natural England, whereby the habitat types present are identified and mapped, together with an assessment of the species composition of each habitat. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. Any such areas identified can then be examined in more detail.

2.4. Faunal Survey

- 2.4.1. Obvious faunal activity, such as birds or mammals observed visually or by call during the course of the surveys, was recorded. Specific attention was paid to any potential use of the Site by protected species, Priority Species (formerly Biodiversity Action Plan (BAP) species), or other notable species.

² <http://www.magic.gov.uk>

³ Joint Nature Conservation Committee (2010). *Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit*. England Field Unit, Nature Conservancy Council, reprinted JNCC, Peterborough.

3. ECOLOGICAL FEATURES

3.1. The following main habitat / vegetation types were identified within the Site during the survey undertaken:

- Buildings;
- Amenity Grassland;
- Trees; and
- Hardstanding.

3.2. The locations of these habitats are shown on Plan ECO2.

3.3. Buildings

- 3.3.1. Building B1 is a purpose-built office block known as Gildengate House (see Photograph 1). It is a six-storey building in a reasonable state of repair. It is of concrete, brick and glass construction. The building is currently used on a temporary basis as an artists' studio. Cracks and gaps are present on the stair column where concrete lintels are beginning to crack. Gaps are also present under the steel cladding on the edge of the roof.
- 3.3.2. Building B1a is a small single storey extension to building B1 (see Photograph 2). It has a flat felt roof with slate sides. The building is currently used as a temporary gym, but was previously used as retail units.
- 3.3.3. Building B2 is a disused two-storey steel and concrete retail unit with a flat steel roof. It is in a reasonable state of repair (see Photograph 3).
- 3.3.4. Building B3 is a seven-storey former office block (currently disused) known as Sovereign House (see Photograph 4). It is of steel, glass and concrete construction. Numerous gaps are present along the steel cladding. This building has a flat roof.
- 3.3.5. Building B4 is a multi-storey car park which has been closed to the public due to standard safety concerns. The building is a seven-storey brick-built construction with a flat roof (see Photograph 5). Cracks in the brick wall are visible.
- 3.3.6. Building B5 is a four-storey cinema complex of concrete and glass construction, with a pitched corrugated metal roof (see Photograph 6). It is in a poor state of repair, although there are no apparent gaps or cracks.
- 3.3.7. Building B6 is a two-storey brick building with a flat roof and slopping sides of artificial slate tiles, with metal cladding. The building is in a reasonable state of repair and used for retail purposes. The upper storey is disused.
- 3.3.8. Building B7 is known as Surrey Chapel and is a two-storey brick building with concrete panels and a flat roof (see Photograph 7). This building is outside of the application submission and is an enclave within the Site.
- 3.3.9. Building B8 is a two-storey complex of disused units. It is brick built with a pitched roof of concrete pantiles (see Photograph 8). Chimneys with lead flashing are also present. The roofing felt on the gable end is lifting, and

some gaps are present. The wooden soffit boxes are in good condition. A loft space is present in the south of the building. The plastic lining and wooden beams of the loft are in good condition. There are no obvious gaps in the lining or staining on the beams (see Photograph 9).

- 3.3.10. Building B9 is an older building than the others (see Photograph 10). It is currently unused but was previously used as a warehouse. It is a single storey building of brick, flint and metal construction, with wooden barge boards and a pitched concrete pantile roof. The roof appears to have been replaced relatively recently as it is in a good condition. There are gaps present along the wooden barge boards and wooden lintel, as well as between the doors. Internally the building contains a large number of cobwebs. The lining of the loft is in good condition with very few gaps present, plastic skylights mean the loft is very bright. A large number of cobwebs are present along the gaps by the doors (see Photograph 11).
- 3.3.11. Building B10 is a single-storey electrical substation of brick construction with a flat felt roof. This building is in good condition.
- 3.3.12. Building B11 is a two-storey brick building with a pitched / hipped concrete tile roof, with wooden soffit boxes (see Photograph 12). There are no obvious gaps present. The building is currently occupied by a printing business. There is no loft space present. A separate single storey storage unit with steel sliding doors is present to the rear of building B11, currently used as a storage facility by Scope. This warehouse has metal roofing panels with plastic skylights. There is a large Ivy-covered wall to the rear of the building (see Photograph 13).
- 3.3.13. Building B12 is a two-storey brick-built building adjoining building B11. It has a felt corrugated steel roof (see Photograph 12).
- 3.3.14. Building B13 is not included within the hybrid application site boundary, but is an enclave within the Site. It is a two-storey brick-built building with a flat roof with artificial slates around the edge (see Photograph 14). The building is in good condition with no obvious gaps.
- 3.3.15. Building B14 is a two-storey brick-built building with a flat roof and artificial slate panelling, with timber cladding. It is currently used as a retail unit and office. The building is in a reasonable state of repair.

3.4. **Amenity Grassland**

- 3.4.1. To the south of Buildings B1 and B2 is an area of amenity grassland characterised by a short sward length.

3.5. **Trees**

- 3.5.1. Several trees are present within or adjacent to the Site. Nine London Planes *Platanus x hispanica* are present on the southern boundary with St Crispins Road, which along with the Common Limes *Tilia platyphyllos x cordata* also present are the most significant area of vegetation within the Site. A Silver Birch *Betula pendula* is also present on the boundary. Elsewhere within and adjacent to the Site are specimens of Silver Maple *Acer saccharinum*, Common Lime, Large-leaved Lime *Tilia platyphyllos*, Sycamore *Acer pseudoplatanus*, Red Oak *Quercus rubra* and Whitebeam

Sorbus aria. A group of Sycamore, Laburnum *Laburnum anagyroides* and Elder *Sambucus nigra* is present to the east of Building B10.

3.6. Hardstanding

- 3.6.1. Hardstanding constitutes the largest portion of habitats on site and comprises roads and car parking. Towards the centre of the Site is Anglia Square, a concrete plaza with a steel and glass cover, surrounded by undercroft retail units. The site comprises early colonising and opportunistic plant species of no ecological value.

3.7. Invasive Non-Native Species

- 3.7.1. Buddleia *Buddleja davidii* was identified within the Site.

3.8. Background Records

- 3.8.1. Eight plant records were returned in the last ten years from the data search.
- 3.8.2. The data search returned seven records of plants listed on Schedule 9 Part II of the Wildlife & Countryside Act 1981, comprising Giant Hogweed *Heracleum mantegazzianum* and Japanese Knotweed *Fallopia japonica*. The closest record is of Japanese Knotweed, located approximately 0.7km northwest of the Site on Barker Street, dating from 2016. The most recent record is also of Japanese Knotweed, situated approximately 1.2km northwest of the Site, dating from 2017.
- 3.8.3. A single record of non-native Indian Balsam *Impatiens glandulifera* was also returned by the data search.

4. WILDLIFE USE OF THE SITE

- 4.1. General observations were made during the surveys of any faunal use of the Site, with specific attention paid to the potential presence of protected species.

4.2. Bats

- 4.2.1. The results of the bat surveys conducted in July 2018 are presented within the Bat Survey Report issued in August 2018. The situation regarding bats on site remains unchanged since the earlier report, with the buildings being in the same condition. No further work was completed in 2021 and the earlier results remain valid. In summary, no bats were recorded during emergence surveys undertaken, with a very low level of activity recorded during the activity survey and static detector deployment. It is noted that the cinema (Building B5) has been disused for more than a year, but this does not alter the conclusions drawn.
- 4.2.2. The data search returned a total of 270 records of bat species from the past ten years recorded within the search area. These records relate to several species including Common Pipistrelle *Pipistrellus pipistrellus*, Soprano Pipistrelle *Pipistrellus pygmaeus*, Nathusius' Pipistrelle *Pipistrellus nathusii*, Brown Long-eared Bat *Plecotus auritus*, Daubenton's Bat *Myotis daubentonii*, Natterer's Bat *Myotis nattereri*, Noctule *Nyctalus noctula*, Serotine *Eptesicus serotinus*, Barbastelle *Barbastella barbastellus*, and Whiskered / Brandt's Bat *Myotis mystacinus* / *Myotis brandtii*.
- 4.2.3. The closest of these records are located within a 1km grid square which encompasses the western half of the Site, between approximately 0 and 1.1km away. Five records are situated here, two of which are attributed to a Pipistrelle species, one dating from 2012 and the other 2016. One record each of Soprano Pipistrelle, Noctule, Daubenton's Bat were also recorded within this grid square, all dating from 2016. A further record of Soprano Pipistrelle was located within a 1km grid square encompassing the eastern half of the Site, between approximately 0 and 1km away. This record was dated 2012.
- 4.2.4. The most recent records relate to an area approximately 0.9km northwest of the Site and pertain to Common Pipistrelle and Soprano Pipistrelle. These records are dated 2019.
- 4.2.5. The remaining bat records are located to the north, east, south, and west of the Site. Many of these records are situated within or near to vegetated areas within Norwich, including Train Wood County Wildlife Site and alongside the River Wensum. Records are also located within residential areas.

4.3. Badgers

- 4.3.1. No evidence of Badger *Meles meles* was recorded on site or immediately adjacent to the Site. The site and surrounding area are wholly unsuitable for the species.
- 4.3.2. No records of Badger were returned from the data search.

4.4. Other Mammals

- 4.4.1. Given that the Site is highly urbanised, it is unlikely that mammals will be utilising the area to a great extent. The surrounding area, however, does comprise interconnected vegetated areas which may provide opportunities for foraging and dispersing Hedgehog *Erinaceus europaeus*, although no evidence of this species was recorded on site.
- 4.4.2. Wildlife Matters recorded evidence of mammal presence. Evidence of Fox *Vulpes vulpes* was discovered on site, through the identification of footprints and faeces. Evidence of Brown Rat *Rattus norvegicus* was also recorded. A Cat *Felis catus* was also observed on site.
- 4.4.3. The data search returned a total of 37 records of mammal species, excluding bats. These species included Chinese Muntjac *Muntiacus reevesi*, Hedgehog, and Otter *Lutra lutra*.
- 4.4.4. The closest of these records are situated within a 1km grid square which encompasses the Site. Three records of Hedgehog are located here, dating from 2015. The most recent record of Hedgehog was from 2018, located approximately 1km northeast of the Site.
- 4.4.5. The most recent record pertained to Otter, approximately 1km northwest of the Site in the River Wensum. This record referred to three individuals dating from 2018. The closest record of Otter was approximately 0.2km southwest of the Site, also in the River Wensum.

4.5. Birds

- 4.5.1. The mature trees within the Site present suitable nesting opportunities for breeding birds, as do the trees located immediately off site and further afield in the residential areas.
- 4.5.2. Six species of bird were observed within the Site. These included Blackbird *Turdus merula*, Black-headed Gull *Chroicocephalus ridibundus*, Carrion Crow *Corvus corone*, Dunnock *Prunella modularis*, Feral Pigeon *Columba livia*, and Robin *Erithacus rubecula*.
- 4.5.3. At the time of the surveys conducted by Wildlife Matters, Blackbird, Dunnock and Robin were thought to be breeding in the western portion of the Site. Feral Pigeons were also found to be nesting in the buildings on site during the time of these surveys.
- 4.5.4. The data search returned 190 records of bird species. These species included Black Redstart *Phoenicurus ochruros*, Blue Tit *Cyanistes caeruleus*, Coal Tit *Periparus ater*, Common Crossbill *Loxia curvirostra*, Common Sandpiper *Actitis hypoleucos*, Egyptian Goose *Alopochen aegyptiacus*, Fieldfare *Turdus pilaris*, Firecrest *Regulus ignicapillus*, Goldcrest *Regulus regulus*, Grey Wagtail *Motacilla cinerea*, House Martin *Delichon urbicum*, House Sparrow *Passer domesticus*, Kestrel *Falco tinnunculus*, Little Egret *Egretta garzetta*, Little Gull *Hydrocoloeus minutus*, Merlin *Falco columbarius*, Nightjar *Caprimulgus europaeus*, Oystercatcher *Haematopus ostralegus*, Peregrine *Falco peregrinus*, Pied Flycatcher *Ficedula hypoleuca*, Pied Wagtail *Motacilla alba*, Pink-footed Goose *Anser brachyrhynchus*, Pochard *Aythya ferina*, Redwing *Turdus iliacus*, Ring

Ouzel *Turdus torquatus*, Robin *Erithacus rubecula*, Sand Martin *Riparia riparia*, Shag *Phalacrocorax aristotelis*, Siskin *Carduelis spinus*, Song Thrush *Turdus philomelos*, Swift *Apus apus*, Tawny Owl *Strix aluco*, Waxwing *Bombycilla garrulus*, Whimbrel *Numenius phaeopus*, Whooper Swan *Cygnus cygnus*, Willow Warbler *Phylloscopus trochilus*, Woodcock *Scolopax rusticola*, Wren *Troglodytes troglodytes*, and Wryneck *Jynx torquilla*.

4.5.5. The closest of these records were located within two separate 1km grid squares, encompassing both the western and eastern portions of the Site. Fourteen records were located between approximately 0 and 1.1km to the northwest. Twelve of these records refer to Waxwing, nine of which date from 2012, two from 2014, and one from 2013. A single record of Grey Wagtail dating from 2013 and one record of Siskin dating from 2013 were also found within this area. Nine additional records were located to the northeast between approximately 0 and 1km away from the Site. Four of these records pertain to Waxwing, three of which date from 2012 and one from 2013. A single record each of Fieldfare, Grey Wagtail, Woodcock, Common Sandpiper, and Shag, all dating from 2013 were also recorded within this area.

4.5.6. The most recent record related to a 1km grid square between approximately 0.9 and 2.3km southwest of the Site. The record referred to Waxwing and was dated 2016.

4.6. Reptiles

4.6.1. No reptiles were observed on site or immediately adjacent to the Site. The habitats present are wholly unsuitable for reptile species.

4.6.2. No records of reptiles were returned by the data search within the past ten years.

4.7. Amphibians (Great Crested Newts)

4.7.1. There is no suitable aquatic breeding habitat within the Site. The habitats on site are unsuitable for amphibians in their terrestrial phase and their presence on site is considered to be highly unlikely.

4.7.2. No amphibians were returned by the data search within the past ten years.

4.8. Invertebrates

4.8.1. Given the habitats present, it is likely a common assemblage of invertebrate species would be present within the Site. There is no evidence to suggest any notable species would be present.

4.8.2. A male Brimstone Butterfly *Gonepteryx rhamni* was identified within the Site during the initial surveys conducted by Wildlife Matters, near to Building B12. Additional species sightings included Bluebottle Fly *Calliphora vomitoria*, Greenbottle Fly *Lucilia caesar*, Housefly *Musca domestica*, and Flesh Fly *Sarcophaga carnaria*.

4.8.3. A total of 30 records detailing invertebrate species were returned by the data search. These records included 14 species, all of which are

considered as priority by the UK Biodiversity Action Plan (BAP) and listed under Section 41 of the NERC Act 2006. These species included August Thorn Moth *Ennomos quercinaria*, Brown-spot Pinion Moth *Agrochola litura*, Buff Ermine Moth *Spilosoma lutea*, Centre-barred Sallow Moth *Atethmia centrargo*, Cinnabar Moth *Tyria jacobaeae*, Crescent Moth *Helotropha leucostigma*, Dark Spinach Moth *Pelurga comitata*, Dot Moth *Melanchra persicariae*, Large Garden Bumblebee *Bombus ruderalis*, Mouse Moth *Amphipyra tragopoginis*, Rosy Rustic Moth *Hydraecia micacea*, Rustic Moth *Hoplodrina blanda*, Small Emerald Moth *Hemistola chrysoprasaria*, and White-line Dart Moth *Euxoa tritici*.

- 4.8.4. The closest of these records are located within two separate 1km grid squares, between approximately 0.5 and 1.8km northwest and northeast of the Site. A single record of August Thorn Moth is located to the northwest and dates from 2016. Fourteen records are situated to the northeast and constitute two records of August Thorn Moth dating from 2013 and 2015, one record each of Buff Ermine Moth dating from 2013, Cinnabar Moth dating from 2012, Rustic Moth dating from 2013, Brown-spot Pinion Moth dating from 2014, and Centre-barred Sallow Moth dating from 2015. A further six records can be attributed to Dot Moth, dating from 2013, 2014, and 2015, in addition to one record of White-line Dart Moth dating from 2015.
- 4.8.5. The closest record refers to August Thorn Moth, situated in the aforementioned northwestern grid square and dates from 2016.

5. ECOLOGICAL EVALUATION

5.1. The Principles of Ecological Evaluation

- 5.1.1. The guidelines for ecological evaluation produced by CIEEM propose an approach that involves professional judgement, but makes use of available guidance and information, such as the distribution and status of the species or features within the locality of the project.
- 5.1.2. The methods and standards for site evaluation within the British Isles have remained those defined by Ratcliffe⁴. These are broadly used across the United Kingdom to rank sites so priorities for nature conservation can be attained. For example, current Sites of Special Scientific Interest (SSSI) designation maintains a system of data analysis that is roughly tested against Ratcliffe's criteria.
- 5.1.3. In general terms, these criteria are size, diversity, naturalness, rarity and fragility, while additional secondary criteria of typicalness, potential value, intrinsic appeal, recorded history and the position within the ecological / geographical units are also incorporated into the ranking procedure.
- 5.1.4. Any assessment should not judge sites in isolation from others, since several habitats may combine to make it worthy of importance to nature conservation.
- 5.1.5. Further, relying on the national criteria would undoubtedly distort the local variation in assessment and therefore additional factors need to be taken into account, e.g. a woodland type with a comparatively poor species diversity, common in the south of England, may be of importance at its northern limits, say in the border country.
- 5.1.6. In addition, habitats of local importance are often highlighted within a local Biodiversity Action Plan (BAP). The Norfolk Biodiversity Action Plan has been considered as part of this assessment and is referenced where relevant.
- 5.1.7. Levels of importance can be determined within a defined geographical context from the immediate site or locality through to the international level.
- 5.1.8. The legislative and planning policy context are also important considerations and have been given due regard throughout this assessment.

5.2. Habitat Evaluation

Designated Sites

- 5.2.1. **Statutory Sites.** There are no statutory sites within or directly adjacent to the Site.
- 5.2.2. The closest statutory sites are St James' Pit SSSI and Mousehold Heath Local Nature Reserve (LNR), each located approximately 0.9km east of

⁴ Ratcliffe, D A (1977). *A Nature Conservation Review: The Selection of Biological Sites of National Importance to Nature Conservation in Britain*. Two Volumes. Cambridge University Press, Cambridge.

the Site. St James' Pit SSSI is designated solely for its geological rather than ecological interest.

- 5.2.3. Given the size of the development and the intervening habitats between the Site and nearby statutory designations, the development of the Site is not likely to have any direct, indirect or in-combination adverse effect upon designated sites, be it during construction or operational phase.
- 5.2.4. The Norfolk Green Infrastructure and Recreational Impact Avoidance and Mitigation Strategy (GIRAMS), published in March 2021, defines Zones of Influence for various Norfolk Habitats Sites (aka European Designated Sites) with regard to recreational impacts, as set out in the table below. This position was endorsed by Natural England in its letter of 12 August 2019 (included as Appendix 1 to the GIRAMS).

Area	European Designated Sites	Zoi (km)
Breckland sites	Breckland SPA Breckland SAC	26
Broads sites	The Broads SAC Broadland SPA	25
East Coast sites	Breydon Water SPA Winterton-Horsey Dunes SAC Great Yarmouth and North Denes SPA	30
North Coast sites	North Norfolk Coast SAC North Norfolk Coast SPA The Wash and North Norfolk Coast SAC	42
Roydon and Dersingham	Roydon Common and Dersingham Bog SAC Roydon Common Ramsar Dersingham Bog Ramsar	12
Norfolk Valley Fens	Norfolk Valley Fens SAC	15
The Wash	The Wash SPA The Wash Ramsar The Wash and North Norfolk Coast SAC	61

Table 5.1. Zone of Influence for Norfolk Habitats Sites for recreational impacts.

- 5.2.5. The Site is within the Zone of Influence for the following:
- Broads Sites;
 - East Coast Sites;
 - North Coast Sites; and
 - Norfolk Valley Fens.
- 5.2.6. Natural England's advice in their August 2019 letter was that if new residential development were proposed within the Zone of Influence of these designations, Likely Significant Effect on integrity through recreation effects should be assumed. Proposals would in such circumstances need to demonstrate that adverse effects would be avoided, when considered alone and in combination with other plans or projects. Sites of 50 units or more should include provision of well-designed open space / green infrastructure, proportionate to its scale, as well as make a financial contribution per unit according to the tariff set out in the GIRAMS.
- 5.2.7. The Impact Risk Zone for River Wensum SSSI (which underpins River Wensum SAC) is defined on the MAGIC website as 4km, which covers the

Site. A Zone of Influence has not been defined in the same way as the other designations noted above. The River Wensum is subject to a long term strategy, published in 2018, aimed at enabling change and regeneration through improving public access.

- 5.2.8. On 16 March 2022, Natural England issued a letter setting out advice for development proposals with the potential to affect water quality resulting in adverse nutrient impacts on habitats sites i.e. SPAs, SACs and Ramsar sites. Natural England's advice to affected Local Planning Authorities in their role as competent authority under the Habitats Regulations, which includes Norwich City Council, is to:

...carefully consider the nutrients impacts of any new plans and projects (including new development proposals) on habitats sites and whether those impacts may have an adverse effect on the integrity of a habitats site that requires mitigation, including through nutrient neutrality.

- 5.2.9. Natural England notes that it has:

Undertaken an internal evidence review to identify an initial list of water dependent habitats sites (which includes their underpinning Sites of Special Scientific Interest) that are in unfavourable condition due to elevated nutrient levels (phosphorus or nitrogen or both). These sites are listed in Annex C. Development which will add nutrients to these sites may not meet the site integrity test without mitigation. This will need to be explored as part of the HRA. Nutrient neutrality is an approach which could be used as suitable mitigation for water quality impacts for development within the catchments of these sites...

- 5.2.10. The advice continues:

A plan or project will be relevant and have the potential to affect the water quality of the designated site where:

- It creates a source of water pollution (e.g. discharge, surface run off, leaching to groundwater etc) of either a continuous or intermittent nature or has an impact on water quality (e.g. reduces dilution).**

AND

- There is hydrological connectivity with the designated site i.e. it is within the relevant surface and / or groundwater catchment.**

AND

- The designated sites interest features are sensitive to the water quality pollutant / impact from the plan / project.**

...

Natural England advises you, as the Competent Authority under the Habitats Regulations, to fully consider the nutrients implications on the sites identified in Annex C Table 2 when determining relevant plans or projects and to secure appropriate mitigation measures.

When considering a plan or project that may give rise to additional nutrients within the affected catchments, you should undertake a HRA. An Appropriate Assessment will be needed where a likely significant effect (alone or in-combination) cannot be ruled out, even where the proposal contains mitigation provisions. The need for an Appropriate Assessment of proposals that includes mitigation measures intended to avoid or reduce the harmful effects of a plan or project is well established in case law⁵. The Competent Authority should only grant permission if they have made

certain at the time of Appropriate Assessment that the plan or project will not adversely affect the integrity of a habitats site i.e. where no reasonable scientific doubt remains as to the absence of effects.

...

Your authority may wish to consider a nutrient neutrality approach as a potential solution to enable developments to proceed in the catchment(s) where an adverse effect on site integrity cannot be ruled out. For such an approach to be appropriate, the measures used to mitigate nutrients impacts should not compromise the ability to restore the designated site to favourable condition and achieve the conservation objectives...

- 5.2.11. Table 2 in Annex C is entitled *Additional habitats sites in unfavourable condition due to excessive nutrients which require a Habitats Regulations Assessment (HRA) and where nutrient neutrality is a potential solution to enable development to proceed.*
- 5.2.12. The table includes the following designated sites relevant to the Site where Norwich City Council is the competent authority under the Habitats Regulations:
- River Wensum SAC, with phosphorus named as an excessive nutrient;
 - The Broads SAC / Ramsar, limited to Bure Broads and Marshes SSSI, Trinity Broads SSSI, Yare Broads and Marshes SSSI, Ant Broads and Marshes SSSI and Upper Thurne Broads and Marshes SSSI, with nitrogen and phosphorus named as excessive nutrients.
- 5.2.13. The potential for effects on these designations is considered in the separate Shadow Habitats Regulations Assessment, with input from the project drainage consultant, EAS. In summary it is considered that any potential for adverse effects will be avoided, both alone and in combination with other plans and projects.
- 5.2.14. **Non-statutory Sites.** There are no non-statutory sites within or directly adjacent to the Site.
- 5.2.15. The closest such site is Train Wood County Wildlife Site (CWS), located approximately 0.3km west of the Site, adjacent to the River Wensum. This area comprises wet woodland and contains the locally rare Opposite Leaved Golden Saxifrage *Chrysosplenium oppositifolium* and nationally scarce Hoary Mullein *Verbascum pulverulentum*.
- 5.2.16. No significant effects are likely to occur to non-statutory sites given the nature of the development project and intervening land use between the Site and nearby non-statutory designations.

Habitats

- 5.2.17. The habitats within the Site are largely of negligible ecological interest. Their removal to facilitate the proposed development is of negligible significance. The exception to this are the trees, particularly those on the St Crispins Road frontage. They are of significant ecological interest in the context of the Site and the immediate locality, given the lack of similar

features in this area. It is understood that some of these will need to be removed to facilitate a new access point from St Crispins Road.

5.2.18. An extensive range of new habitats and planting is included with the landscape and drainage strategies. This includes:

- Groundcover shrubs (including planting with infiltration kerbs) ;
- Grassland in new garden areas;
- Mixed native hedging;
- Trees;
- Biodiverse roofs;
- Podium roof terraces; and
- Swales.

5.2.19. These new habitats will offer opportunities for wildlife within the development, including birds and invertebrates and potentially bats and small terrestrial mammals. The Site is currently largely devoid of vegetation, with the trees on the southern boundary being the only significant area. Opportunities for wildlife are therefore very limited currently, and these gains are a significant benefit of the scheme. As well as providing new habitats within the Site, the design of the scheme is such that connectivity for wildlife through the built form will be encouraged.

Biodiversity Net Gain

5.2.20. As noted above, the Site is currently of negligible overall interest, principally comprising buildings and hardstanding with very limited vegetation. The planting and habitats to be delivered as part of the proposed development will deliver a measurable Biodiversity Net Gain. This is considered in a separate report.

Invasive Species

5.2.21. Buddleia was identified within the Site. While not listed on the Wildlife & Countryside Act, Buddleia is a non-native species. Although its control is not a legal requirement, reasonable measures should be taken to prevent the spread of this plant species. Where vegetation is to be removed, the material should be disposed of at an approved facility.

5.3. Faunal Evaluation

Bats

5.3.1. **Legislation.** All bats are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and included on Schedule 2 of the Conservation of Habitats and Species Regulations 2017 ("the Habitats Regulations"). These include provisions making it an offence:

- Deliberately to kill, injure or take (capture) bats;
- Deliberately to disturb bats in such a way as to significantly affect:-
 - (i) be likely to impair their ability to survive, to breed or rear or nurture their young; or to hibernate or migrate; or
 - (ii) to affect significantly the local distribution or abundance of the species to which they belong;

- To damage or destroy any breeding or resting place used by bats;
 - Intentionally or recklessly to obstruct access to any place used by bats for shelter or protection (even if bats are not in residence).
- 5.3.2. The words deliberately and intentionally include actions where a court can infer that the defendant knew that the action taken would almost inevitably result in an offence, even if that was not the primary purpose of the act.
- 5.3.3. The offence of damaging (making it worse for the bat) or destroying a breeding site or resting place is an absolute offence. Such actions do not have to be deliberate for an offence to be committed.
- 5.3.4. In accordance with the Habitats Regulations the licensing authority (Natural England) must apply the three derogation tests as part of the process of considering a licence application. These tests are that:
1. The activity to be licensed must be for imperative reasons of overriding public interest or for public health and safety;
 2. There must be no satisfactory alternative; and
 3. The favourable conservation status of the species concerned must be maintained.
- 5.3.5. Licences can usually only be granted if the development is in receipt of full planning permission.
- 5.3.6. **Site Usage.** No evidence of roosting bats was recorded during the internal and external surveys of the buildings on site in July 2018. The trees are also devoid of features suitable for roosting bats. A low level of bat activity was recorded during the activity survey and by the static SM4BAT detectors.
- 5.3.7. Given the low levels of activity and the negative results of the internal and external inspection work, the Site is considered to be of negligible interest to local bat populations.
- 5.3.8. **Mitigation and Enhancements.** The buildings on site exhibit no evidence of roosting bats and their removal is not considered to be detrimental to any local bat population. Given the results of the activity survey and the negative results of the building inspections, there is no evidence that a roost is present, and work may proceed without a Natural England licence.
- 5.3.9. As an enhancement, it is recommended that bat boxes of varying designs be incorporated into the development. This would increase available roosting opportunities.
- 5.3.10. Any external lighting on the proposed structures should also be minimal and designed to limit light spillage, to avoid disturbance to local bat populations. There should be no direct lighting on or near to any installed bat box.
- 5.3.11. The landscape strategy will provide significantly increased opportunities for foraging bats through encouragement of invertebrates, relative to the existing situation.

Hedgehogs

- 5.3.12. **Legislation.** Hedgehog is a species of principal importance for the conservation of biodiversity under Section 41 (England) of the NERC Act 2006.
- 5.3.13. The NERC Act 2006 requires the Secretary of State to:
- ... take such steps as appear... to be reasonably practicable to further the conservation of the living organisms and types of habitat included in any list published under this section, or... promote the taking by others of such steps.**
- 5.3.14. **Site Usage.** No evidence of Hedgehogs was recorded on site, and opportunities are currently negligible.
- 5.3.15. **Mitigation and Enhancements.** All boundary treatments will be suitably permeable to facilitate Hedgehog Gateways. This will encourage dispersal within the Site should the species colonise.

Birds

- 5.3.16. **Legislation.** Section 1 of the Wildlife and Countryside Act 1981 (as amended) is concerned with the protection of wild birds, while Schedule 1 lists species that are protected by special penalties. All species of birds receive general protection while nesting.
- 5.3.17. **Site Usage.** The habitats on-site offer limited foraging opportunities for birds with these opportunities concentrated on the amenity grassland area and among the mature trees. The trees within the Site do offer suitable nesting opportunities for local bird species. Among the six bird species identified on site, Feral Pigeon were also found to be nesting in the buildings within the Site during this time.
- 5.3.18. **Mitigation and Enhancements.** The proposals will involve the demolition of all buildings. It is recommended that a nesting bird survey of each building is undertaken prior to its demolition to ensure no nesting birds are present. Feral Pigeon were recorded within buildings on site and this species will often nest year-round; therefore, the demolition of the buildings may need to be undertaken using the Natural England General Licence (GL41). This licence allows the killing of specific bird species, and allows the damage, removal or destruction of their nests and eggs. It is noted that this licence can only be used to preserve public health and public safety with the terms and conditions of the licence be always adhered to.
- 5.3.19. Removal of any suitable nesting habitat should be undertaken outside of the bird nesting season (March to July inclusive) to avoid any potential offence. Should these timing constraints conflict with any timetabled works, works should commence only after a suitably qualified ecologist has undertaken checks to ensure no nesting birds are present, and any confirmed nests left in situ until the young have fledged.
- 5.3.20. The development would present opportunities to enhance the Site for birds through native species planting and installation of additional bird boxes.

The planting of berry / fruit-bearing species would provide enhanced foraging opportunities. New tree planting and mixed native hedging has been incorporated into the landscape strategy and will provide further nesting and foraging opportunities to birds. It is recommended that new tree planting comprise native species or species of known value to birds.

Invertebrates

- 5.3.21. **Legislation.** Section 1 of the Wildlife and Countryside Act 1981 (as amended) is concerned with the protection of wild birds, while Schedule 1 lists species that are protected by special penalties. All species of birds receive general protection while nesting.
- 5.3.22. **Site Usage.** The habitats on site provide limited opportunities for invertebrates.
- 5.3.23. **Mitigation and Enhancements.** The landscape strategy will offer a variety of new opportunities for invertebrates, presenting a significant enhancement on the existing situation.

6. PLANNING POLICY CONTEXT

- 6.1. The planning policy framework that relates to nature conservation at the Site is issued at two main administrative levels: nationally through the National Planning Policy Framework (NPPF) and at the local level through the policies of Norwich City Council.
- 6.2. Any proposed development will be judged in relation to the policies contained within the following documents.

6.3. National Policy

National Planning Policy Framework (July 2021)

- 6.3.1. Guidance on national policy for biodiversity is provided by the NPPF, published on 20 July 2021. The document replaces the NPPF published in February 2019. It is noted that the NPPF continues to refer to further guidance in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system provided by Circular 06/05 (DEFRA / ODPM, 2005) accompanying the now-defunct Planning Policy Statement 9 (PPS9).
- 6.3.2. The key element of the NPPF is that there should be “*a presumption in favour of sustainable development*” (paragraph 11). It is important to note that this presumption “*does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site*” (paragraph 182). ‘Habitats site’ has the same meaning as the term ‘European site’ as used in the Habitats Regulations 2017.
- 6.3.3. Hence the direction of Government policy is clear; that is, the presumption in favour of sustainable development is to apply in circumstances where there is potential for an effect on a European site, if it has been shown that there will be no adverse effect on that designated site as a result of the development in prospect.
- 6.3.4. A number of policies in the NPPF are comparable to those in PPS9, including reference to minimisation of impacts to biodiversity and provision of net gains to biodiversity where possible (paragraph 174).
- 6.3.5. The NPPF also considers the strategic approach that Local Authorities should adopt with regard to the protection, maintenance and enhancement of green infrastructure, priority habitats and ecological networks, and the recovery of priority species.
- 6.3.6. Paragraphs 180 and 181 of the NPPF comprise a number of principles that Local Authorities should apply, including integrating opportunities to incorporate biodiversity in and around developments; provision for refusal of planning applications if significant harm cannot be avoided, mitigated or compensated for; applying the protection given to European sites to potential SPAs, possible SACs, listed or proposed Ramsar sites and sites identified (or required) as compensatory measures for adverse effects on European sites; and the provision for the refusal for developments resulting in the loss or deterioration of ‘irreplaceable’ habitats – unless there are

‘wholly exceptional reasons’ (for instance, infrastructure projects where the public benefit would clearly outweigh the loss or deterioration of habitat) and a suitable compensation strategy exists.

- 6.3.7. National policy therefore implicitly recognises the importance of biodiversity and that with sensitive planning and design, development and conservation of the natural heritage can co-exist and benefits can, in certain circumstances, be obtained.

6.4. Local Policy

- 6.4.1. The emerging development plan, the Greater Norwich Local Plan (GNLP), being prepared by Broadland DC, South Norfolk Council, NCC and Norfolk County Council (the Partnership), will supersede the Joint Core Strategy for Broadland, Norwich and South Norfolk (2014) (JCS) and Norwich Site Allocations and Site Specific Policies Local Plan (2014) (NSASSP) once adopted. The GNLP Reg 19 version was submitted to the Secretary of State for examination on 30th July 2021.
- 6.4.2. The examination process is underway, for which hearing sessions took place during February and March 2022. As a result of the hearings, many policies, including the emerging allocation for the Site were subject to debate, addressing their soundness and the consequential need for amendment, alongside requests for additional information by the Inspectors. It is therefore considered likely the Council will prepare and consult upon Modifications or at least minor changes to both policy text and supporting text, relevant to this application. This process, and the publication of the Inspectors’ report may extend beyond the determination of this application, and so final GNLP policy wording may not be available at that stage.
- 6.4.3. Paragraph 48 of the National Planning Policy Framework 2021 (NPPF) requires decision makers to give weight to relevant policies of emerging Local Plans according to the stage of preparation, the extent of unresolved objections, and the degree of consistency between emerging policies and the NPPF. In this instance, there are currently unresolved objections, in respect of some of which the Inspectors have requested additional information, and accordingly there are likely to be Modifications to some policies relevant to this application before they can be considered sound. On this basis, it is considered that in respect of those policies, the emerging development plan currently holds limited weight in decision making. In this context, those policies are not considered in detail.

Norwich Local Plan (adopted November 2014)

- 6.4.4. The Norwich Local Plan will guide development in the area until it is superseded by the Greater Norwich Local Plan.
- 6.4.5. The Norwich Local Plan comprises three main documents, the Joint Core Strategy (JCS), the Site Allocations and Site Specific Policies Local Plan and Development Management Policies Local Plan.

Joint Core Strategy for Broadland, Norwich and South Norfolk (adopted March 2011)

- 6.4.6. **Policy 1: Addressing climate change and protecting environmental assets** – This policy is concerned with the promotion of sustainability and states that developments will be designed to mitigate and adapt to climate change. The policy also concerns the protection, restoration, and enhancement of the environment and encourages developments to connect existing areas of biodiversity importance, to create green networks. Developments will also need to ensure that they will have no detrimental effect on European and Ramsar designated sites and European protected species. Any development likely to adversely affect protected sites and species will be assessed in accordance with national policy and legislation. In areas that are not granted national or international designations, developments will minimise habitat fragmentation, mitigate unavoidable loss of biodiversity, facilitate the connection of wildlife resources, and maintain this green infrastructure in the long-term.
- 6.4.7. **Policy 2: Promoting good design** – This policy is largely concerned with the design of developments, to ensure the highest possible standards. Included within this policy is the need for developments to avoid adverse impacts to areas of environmental value including SACs, SPAs and Ramsar sites.
- 6.4.8. **Policy 3: Energy and water** – This policy is concerned with the use of renewable energy sources and the requirement of appropriate water infrastructure for developments. Developments must ensure that they do not adversely affect environmentally important water bodies in the surrounding area.

*Norwich Development Management Policies Local Plan
(adopted December 2014)*

- 6.4.9. **Policy DM1** – This policy mentions the protection and enhancement of the environmental assets of Norwich.
- 6.4.10. **Policy DM3** – This policy is largely concerned with the design of new developments and includes a specific reference to green infrastructure, landscaping and biodiversity. Developments will be expected to protect existing and create new green infrastructure as a key part of their design. Developments are encouraged to incorporate new and enhanced green infrastructure which assist in the protection and enhancement of wildlife habitats and which utilise native plant species. In addition, newly created habitats should be integrated into the wider ecological network.
- 6.4.11. **Policy DM6** – This policy is concerned with the protection and enhancement of local biodiversity. Developments are encouraged to create and integrate green infrastructure and wildlife friendly features into their design. Developments likely to negatively impact priority habitats and species will not be supported unless harm can be compensated for via biodiversity offsetting. The policy also states that when developments have an adverse impact on nationally designated sites, they will only be approved if the benefits of the development outweigh the impacts to the designated site. A similar approach is taken for regional and local sites of importance. Developments will only be approved if there is no significant

and discernible adverse impact to the area in question. When a development is likely to cause detrimental damage to an area of importance, methods of mitigation must be provided.

- 6.4.12. **Policy DM7** – This policy is concerned with the retention and removal of trees and hedgerows as part of a development. Existing vegetation should be incorporated as part of the development design and retained features protected throughout the course of the development via the use of suitable mitigation measures. The policy states that the removal of trees and hedgerows will not be permitted unless the removal of these features will enhance the survival of other protected trees or hedgerows, or when their removal will improve the design of the development such that the benefits of the development outweigh the loss of any tree or hedgerow. Replacement planting will also be required in the event of tree removal. The policy also states that developments comprising a frontage onto a highway will only be permitted when they provide for the planting and maintenance of street trees.
- 6.4.13. **Policy DM8** – This policy is concerned with the protection and provision of existing open space. Developments resulting in the loss of open space will not be allowed unless the biodiversity value of the space is free from significant adverse impacts. The creation and enhancement of green spaces will also be encouraged when they are of benefit to biodiversity.
- 6.4.14. **Policy DM11** – This policy is concerned with environmental hazards. When developments are situated within a designated groundwater source protection zone or affecting an important aquifer, mitigation measures must be incorporated into the development's design to reduce the likelihood of pollution. Mitigative measures must also be taken when the development is adjacent to a watercourse.

*Landscape and Trees Supplementary Planning Document
(adopted June 2016)*

- 6.4.15. This document contains information relating to trees and aims to promote awareness of the importance of these features in developments, and to encourage the early consideration of trees as part of the design process, to provide environments of higher quality post-development.

6.5. Discussion

- 6.5.1. The development proposals would be judged against the policies summarised above. It is considered that the Site is of intrinsically low ecological interest. Mitigation and enhancement measures have been proposed and overall there is expected to be significant ecological benefit, through provision of new areas of planting and habitat, offering new opportunities and connectivity for wildlife currently absent from the Site. Further specific measures are the inclusion of bat and bird boxes. Taking these recommendations on board it is considered that the relevant policy requirements will be met.

7. SUMMARY AND CONCLUSIONS

- 7.1. Ecology Solutions was commissioned in September 2021 by Weston Homes to review and update the ecological assessment of the Site at Anglia Square, Norwich.
- 7.2. The site consists of a series of buildings with mixed use and design, to the north of the centre of Norwich. All structures are to be demolished and redeveloped for an urban regeneration mixed use scheme, with the exception of two buildings encompassed by but not within the Site. A small area of amenity grassland, several trees and extensive hardstanding are also present within the Site.
- 7.3. **Statutory Sites.** There are no statutory designations of nature conservation value within or immediately adjacent to the Site. The closest such sites are St James' Pit SSSI (designated for geological reasons) and Mousehold Heath Local Nature Reserve (LNR), located approximately 0.9km east of the Site. Owing to the distance and intervening habitat between the Site and this statutory designation, as well as the nature of the development, it is considered unlikely that the development of the Site will have any direct, indirect or in-combination adverse effect upon this designated site, be it during the construction or operational phase.
- 7.4. A series of European designations are in the wider area; these are considered further in the accompanying Shadow Habitats Regulations Assessment, but in summary it is considered that potential adverse effects arising from the proposed development will be avoided, both alone and in combination with other plans or projects.
- 7.5. **Non-statutory Sites.** There are no non-statutory sites within or immediately adjacent to the Site. The closest non-statutory site is Train Wood County Wildlife Site (CWS), located approximately 0.3km west of the Site, adjacent to the River Wensum. It is not considered that any significant effect will occur to non-statutory sites given the nature of the development project and intervening land use between the Site and nearby non-statutory designations.
- 7.6. **Habitats.** The habitats within the Site are in themselves of low intrinsic ecological interest. Their removal to facilitate the proposed development is of negligible significance. The exception to this are the trees, particularly those on the St Crispins Road frontage. They are of significant ecological interest in the context of the Site and the immediate locality, given the lack of similar features in this area. It is understood that some of these will need to be removed to facilitate a new access point from St Crispins Road.
- 7.7. An extensive range of new habitats and planting is included with the landscape and drainage strategies. This includes groundcover shrubs, grassland, mixed native hedging, trees, biodiverse roofs, podium roof terraces and swales. These new habitats will offer opportunities for wildlife within the development, including birds and invertebrates and potentially bats and small terrestrial mammals. The Site is currently largely devoid of vegetation, with the trees on the southern boundary being the only significant area. Opportunities for wildlife are therefore very limited currently, and these gains are a significant benefit of the scheme. As well as providing new habitats within the Site, the design of the scheme is such that connectivity for wildlife through the built form will be encouraged.

- 7.8. **Biodiversity Net Gain.** The site is currently of negligible overall interest, principally comprising buildings and hardstanding with very limited vegetation. The planting and habitats to be delivered as part of the proposed development will deliver a measurable Biodiversity Net Gain. This is considered in a separate report.
- 7.9. **Invasive Species.** No invasive species were observed on site, but Buddleia was identified within the Site. While not listed on the Wildlife & Countryside Act, Buddleia is a non-native species. Although its control is not a legal requirement, reasonable measures should be taken to prevent the spread of this plant species. Where vegetation is to be removed, the material should be disposed of at an approved facility.
- 7.10. **Bats.** The buildings on site exhibit no evidence of roosting bats and their removal will have no effect on bats. Given the results of the activity survey and the negative results of the building inspections, there is no evidence that a roost is present, and work may proceed without a Natural England licence.
- 7.11. As an enhancement, it is recommended that bat boxes of varying designs be incorporated into the development. This would increase available roosting opportunities. Any external lighting on the proposed structures should also be minimal and designed to limit light spillage, to avoid disturbance to local bat populations. There should be no direct lighting on or near to any installed bat box. The landscape strategy will provide significantly increased opportunities for foraging bats through encouragement of invertebrates, relative to the existing situation.
- 7.12. **Badgers.** No evidence of Badgers was recorded on site or immediately adjacent to the Site. The Site and surrounding area are wholly unsuitable for the species.
- 7.13. **Hedgehogs.** No evidence of Hedgehogs was recorded on site, and opportunities are currently negligible. Where fences are to be provided for new private gardens and public open spaces, they should be provided with Hedgehog Gateways to encourage colonisation and dispersal.
- 7.14. **Birds.** The habitats on-site offer limited foraging opportunities for birds with these opportunities concentrated on the amenity grassland area and among the mature trees. The trees within the Site do offer suitable nesting opportunities for local bird species. Among the six bird species identified on site, Feral Pigeon were also found to be nesting in the buildings within the Site during this time.
- 7.15. The proposals will involve the demolition of all buildings. It is recommended that a nesting bird survey of each building is undertaken prior to its demolition to ensure no nesting birds are present. Feral Pigeon were recorded within buildings on site and this species will often nest year-round; therefore, the demolition of the buildings may need to be undertaken using the Natural England General Licence (GL41). This licence allows the killing of specific bird species, and allows the damage, removal or destruction of their nests and eggs. It is noted that this licence can only be used to preserve public health and public safety with the terms and conditions of the licence be always adhered to.
- 7.16. Removal of any suitable nesting habitat should be undertaken outside of the bird nesting season (March to July inclusive) to avoid any potential offence. Should these timing constraints conflict with any timetabled works, works should commence only after a suitably qualified ecologist has undertaken checks to

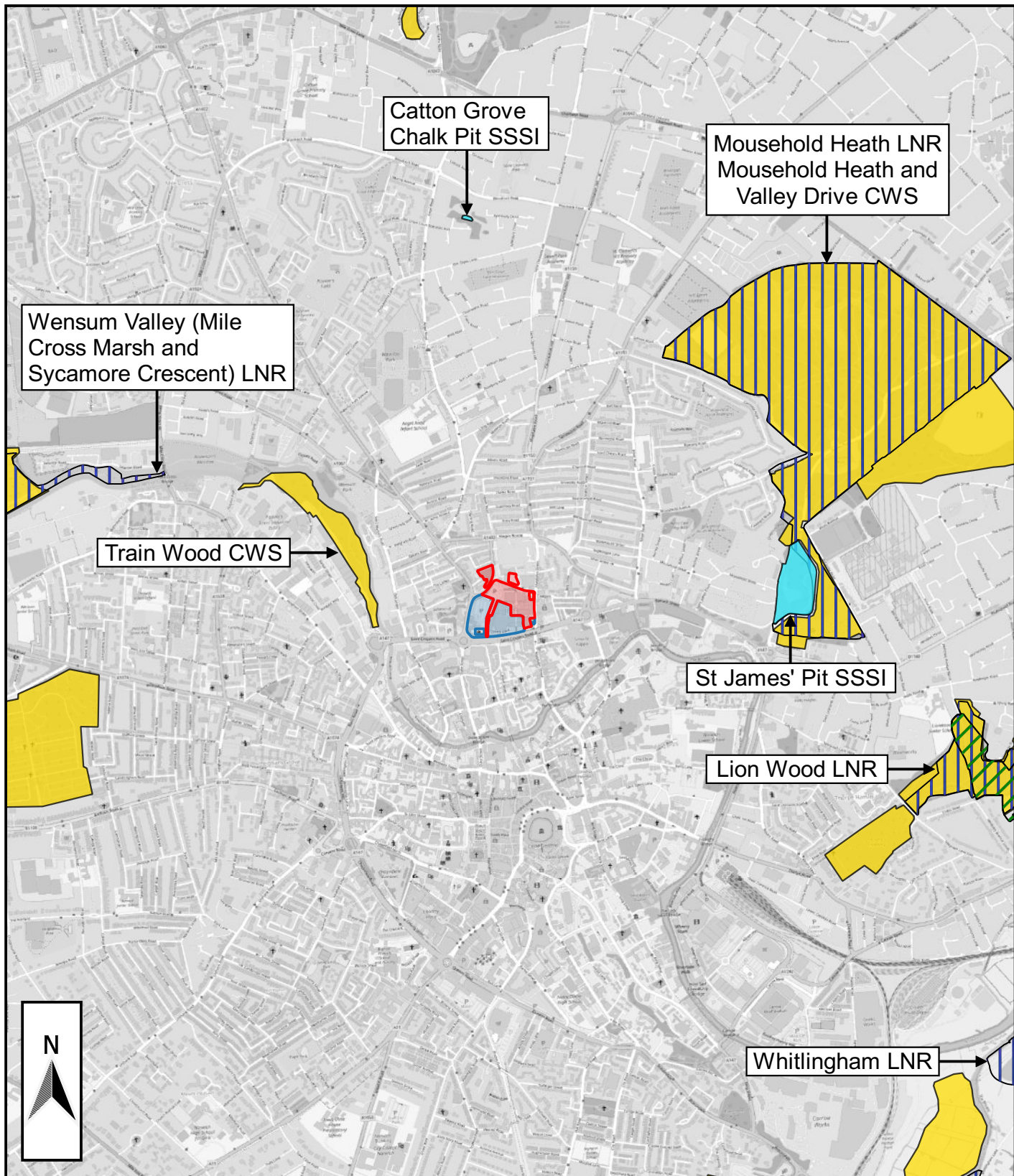
ensure no nesting birds are present, and any confirmed nests left in situ until the young have fledged.

- 7.17. The development would present opportunities to enhance the Site for birds through native species planting and installation of additional bird boxes. The planting of berry / fruit-bearing species would provide enhanced foraging opportunities. New tree planting and mixed native hedging has been incorporated into the landscape strategy and will provide further nesting and foraging opportunities to birds. It is recommended that new tree planting comprise native species or species of known value to birds.
- 7.18. **Reptiles.** No reptiles were observed on site or immediately adjacent to the Site. The habitats present are wholly unsuitable for reptile species.
- 7.19. **Amphibians (Great Crested Newts).** There is no suitable aquatic breeding habitat within the Site. The habitats on site are unsuitable for amphibians in their terrestrial phase and their presence on site is considered to be highly unlikely.
- 7.20. **Invertebrates.** The landscape strategy will offer a variety of new opportunities for invertebrates, presenting a significant enhancement on the existing situation.
- 7.21. In conclusion, it is considered that there is no overriding ecological constraint to the redevelopment of the Site. The proposed development will provide significant new opportunities for wildlife through a range of new habitats and planting, along with further specific enhancements, and will deliver a measurable net gain for biodiversity. The proposals would accord with all relevant legislation and planning policy.

PLANS

PLAN ECO1

Site Location and Ecological Designations



KEY:

- DETAILED APPLICATION BOUNDARY
- OUTLINE APPLICATION BOUNDARY
- SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI)
- LOCAL NATURE RESERVE (LNR)
- COUNTY WILDLIFE SITE (CWS)
- ANCIENT WOODLAND



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PLAN ECO1: SITE LOCATION AND
ECOLOGICAL DESIGNATIONS

Rev: C
Mar 2022

PLAN ECO2

Ecological Features



- KEY:**
- DETAILED APPLICATION BOUNDARY
 - OUTLINE APPLICATION BOUNDARY
 - BUILDING
 - HARDSTANDING
 - AMENITY GRASSLAND
 - IVY
 - TREE



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7948: ANGLIA SQUARE,
NORWICH

PLAN ECO2:
ECOLOGICAL FEATURES

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PHOTOGRAPHS

PHOTOGRAPH 1: Building B1



PHOTOGRAPH 2: Building B1a



PHOTOGRAPH 3: Building B2



PHOTOGRAPH 4: Building B3



PHOTOGRAPH 5: Building B4 in background



PHOTOGRAPH 6: Building B5



PHOTOGRAPH 7: Building B7



PHOTOGRAPH 8: Building B8



PHOTOGRAPH 9: Loft space of Building B8



PHOTOGRAPH 10: Building B9



PHOTOGRAPH 11: Cobwebs around door frame Building B9



PHOTOGRAPH 12: Building B11 and Building B12



PHOTOGRAPH 13: Ivy covered wall



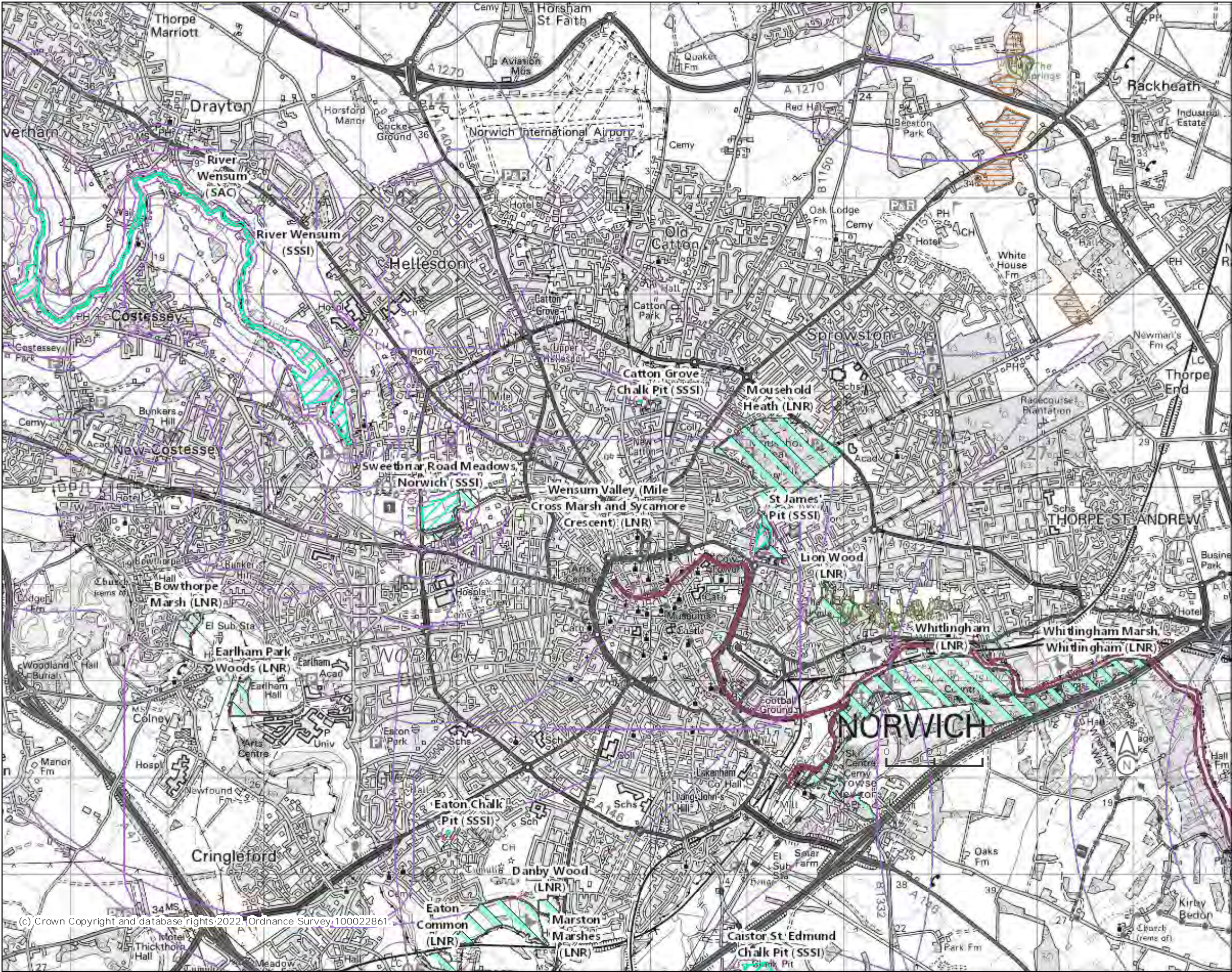
PHOTOGRAPH 14: Building B13



APPENDICES

APPENDIX 1

Information downloaded from Multi-Agency
Geographic Information for the Countryside (MAGIC)



Legend

- Local Nature Reserves (England)
- National Nature Reserves (England)
- Ramsar Sites (England)
- Sites of Special Scientific Interest (England)
- SSSI Impact Risk Zones - to assess planning applications for likely impacts on SSSIs/SACs/SPAs & Ramsar sites (England)
- Special Areas of Conservation (England)
- Special Protection Areas (England)
- Ancient Woodland (England)
 - Ancient and Semi-Natural Woodland
 - Ancient Replanted Woodland

Projection = OSGB36
xmin = 614500
ymin = 306000
xmax = 630800
ymax = 314000

Map produced by MAGIC on 8 March, 2022.
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