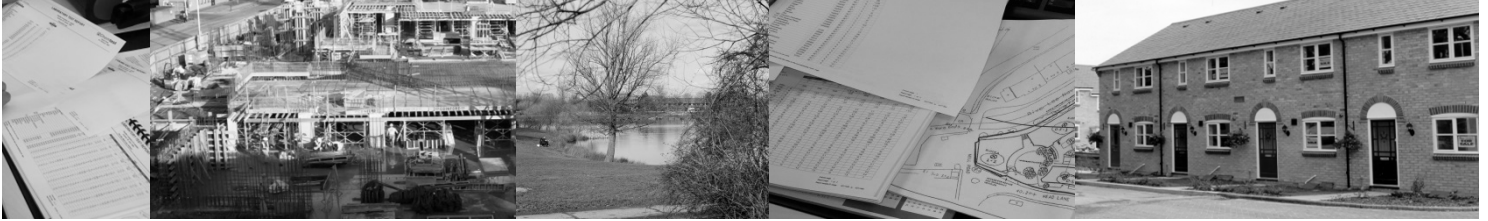


Anglia Square,
Norwich
Contamination Report
REV A

Dated July 2022

Weston
Homes





PHASE I DESK STUDY AND PRELIMINARY RISK ASSESSMENT Anglia Square, Norwich, NR3 1DT

Project Reference:

CON01-NORW-045

Weston Homes Reference:

WH179

Site Address:

Anglia Square
Norwich
NR3 1DT

Report Date:

4 July 2022

Version Number:

Version 4.0

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DOCUMENT CONTROL

Publication Title Phase I Desk Study and Preliminary Risk Assessment
Anglia Square, Norwich, NR3 1DT

Volume Number Volume 1 of 1

Version 4.0

Date 4 July 2022

Project Reference CON01-NORW-045

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Issue Status Version 4.0

Date 4 July 2022

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EXECUTIVE SUMMARY

Stansted Environmental Services Ltd has been commissioned by Weston Homes PLC, to undertake a Phase I Preliminary Risk Assessment (PRA) of a study site located at Anglia Square, Norwich, NR3 1DT. The site may be located by National Grid Reference TG 230093.

The proposed development comprises the redevelopment of the site to provide up to 1,100 new residential dwellings and flexible retail, commercial and other non-residential floorspace including food & drink premises, offices, community hub and local community uses together with services yards, cycle and refuse stores, plant rooms, car parking and other ancillary space. Hard and soft landscaping of public open spaces will be provided comprising streets and squares/courtyards for pedestrians and cyclists, other landscape works within existing streets surrounding the site, service infrastructure and other associated work.

Anglia Square is situated within the northern part of Norwich City Centre, and is surrounded by a range of different uses including residential dwellings, commercial properties and community facilities. The built form of the surrounding area varies widely in terms of its age, scale and architectural style but reflects medieval and later street patterns. The site measures approximately 4.68 hectares and currently comprises previously developed land broadly defined by St Crispins Road to the south, Pitt Street and New Botolph Street to the west, Edward Street to the north, Magdalen Street to the east and the remainder of Anglia Square Shopping Centre to the southeast. An additional parcel of vacant land on the northwestern side of New Botolph Street which is currently used for surface level car parking is also included within the proposed development site, as well as an area of land immediately to the north of Edward Street and west of Beckham Place, also currently used for surface level car parking. The site includes a number of existing buildings and structures in addition to those above including a vacant former office building Sovereign House, a vacant and condemned multistorey car park fronting Edward Street, Gildengate House, the current Hollywood Cinema at first floor level, two vacant nightclubs at first floor level under part of the cinema, and Surrey Chapel Free Church, with additional commercial uses along Pitt Street and surface level car parking on the northwestern part of the site.

The site has been put to a residential and commercial use since at least the Middle Ages. More specifically, since 1880 the site was used as a mixed use development that included industrial buildings that manufactured crape fabrics and materials for clothing, shoe & bootmakers, a clothing manufacturers (including oilskins), printers, timber merchants, fruit and vegetable wholesale warehouse and residential housing. The site was bombed during World War II. The land was redeveloped in the mid-1960s and the Anglia Square shopping centre and commercial buildings were constructed. The site layout has not changed significantly since 1968 to the present day.

The site is underlain by the superficial deposits of Alluvium and River Terrace Gravels overlying the White Chalk Subgroup. The superficial deposits have been identified as a Secondary A Aquifer while the underlying White Chalk Subgroup has been classified as a Principal Aquifer by the Environment Agency.

The closest surface water feature is the River Wensum approximately 300m to the southeast which is tidal at this locality.

The research has identified evidence of potential geohazards associated with the underlying ground conditions, either natural or man-made, and, therefore, it is recommended that further work be carried out to confirm the presence, nature or extent of those hazards anticipated to impact on the site.

The research has identified the following potential sources of contamination which may form a pollutant linkage:

- Contamination associated with possible Made Ground from demolition of the previous structures and construction of the current development.
- Possible ground gases associated with the Made Ground.

- Fuel oils within the car parking area from spillages from vehicles.
- Historical contamination from previous contaminative uses on the site.

The research has identified evidence of potential sources of contamination on or which may impact on the site, with plausible pathways to the likely receptors, and therefore potential pollution linkages have been suggested. As such, further intrusive works will be required as detailed in Appendix L.

1. INTRODUCTION

1.1 General

Stansted Environmental Services Limited (SES) has been commissioned by Weston Homes plc, the client, to undertake a Phase I Desk Study and Preliminary Risk Assessment (PRA) of a study site known as Anglia Square, Norwich, NR3 1DT.

The purpose of the study was to evaluate the contamination status at the site and to develop a risk assessment based on the past uses of the site and the proposed end use. It is understood that the existing area is to be converted to provide mixed residential and commercial accommodation.

Assessment of the risks that may be associated with potentially contaminated land are generally undertaken on a phased or tiered basis, in accordance with current UK policy and technical guidance given in the Land Contamination: Risk Management (LCRM) procedures published by the Environment Agency (2019) and British Standard BS10175 "Investigation of Potentially Contaminated Sites – Code of Practice" (2011 + A2:2017) as well as other relevant documents. The LCRM procedures have been produced after the withdrawal of the former CLR11 report and generally follow the procedures in CLR11.

There are three stages presented in the LCRM as follows:

- Stage 1: Risk Assessment
- Stage 2: Options Appraisal
- Stage 3: Remediation

The relevant phases of risk assessment are as follows:

- Development of a Conceptual Model that identifies potential source-pathway-receptor linkages (pollutant linkages) based initially on a consideration of desk-based and site reconnaissance information on the characteristics of the site and its environmental setting;
- Risk estimation and evaluation using generic assessment criteria. This allows refinement of the Conceptual Model on the basis of factual information on the condition of the land (site investigation data) and involves comparison between observed concentrations of contaminants in environmental media against relevant and applicable generic assessment (or screening) criteria; and
- Risk estimation and evaluation using site specific assessment criteria. This involves further refinement of the Conceptual Model on the basis of more detailed, site specific information on the condition of the land, and the use of relevant and applicable exposure models and site specific assumptions to estimate risks.

The Preliminary Risk Assessment is a qualitative judgement about the potential human health and environmental risks that may be associated with a site, and represents the first of the three phases outlined above.

This PRA report is based upon a defined programme of work and terms and conditions agreed with the Client. In preparing this report, all reasonable skill and care has been taken, accounting for project objectives, agreed scope of work and prevailing site conditions. SES accepts no liability to any parties whatsoever, following the issue of this report, for any matters arising outside the agreed scope of the work. It should be noted that this report is issued in confidence to the Client and that SES has no responsibility to any third parties to whom this report may be circulated, in part or in full, and any such parties cannot rely on the contents of the report. Unless specifically assigned or transferred within the terms of the agreement, SES asserts and retains all Copyright, and other Intellectual Property Rights, in and over the report and its contents.

1.2 Planning Status

A hybrid planning application (Ref. 22/00434/F) (the Application) was submitted by Weston Homes plc (the Applicant) to Norwich City Council (NCC) on 1st April 2022 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 presented in Appendix A. The Application comprised a full set of technical documents to assess the potential impacts of the proposals, including an EIA which covered a number of topics. In respect of Contaminated Land, this was described and explained in the Phase I Desk Study & Preliminary Risk Assessment Version 3.0 (dated 25th March 2022), and other associated drawings. Please refer to the original documents for further details.

Following submission of the Application, and completion of the statutory consultation exercise, the Applicant has worked with NCC to review the consultation responses received from the local community, statutory consultees and other key stakeholders, so as to identify an appropriate response where considered relevant. As a result of consideration of these comments, as well as ongoing discussions with NCC, a number of changes to the Application as originally submitted are now proposed, including the reduction in height by 1 storey of Blocks A and D; realignment of basement and ground level car park accesses to Block A; repositioning of houses and apartments forming Block B; amendments to the housing mix; raising of Block C ground level to above 100year (+climate change) flood levels; distance between Block C and 4-10 Beckham place increased; elevational changes and repositioning of Block L (Stump Cross building); roof ridge and eaves on east side of Block M reduced in height; introduction of 2 storey podium between Blocks E and EF to provide larger car park; proposed crossings on Edward Street (opposite Beckham Place) and Pitt Street (by Tooley Lane removed); and landscape amendments. These changes comprise the Amended Application submitted in July 2022. Overall, the Amended Application continues to seek consent for up to 1,100 dwellings and up to 8,000 Sqm (NIA) non-residential floorspace and associated development. However, since the amendments result in minor changes to the full development description, an updated version of the full Amended Application description is as follows:

- *Hybrid (part full/part outline) application on site of 4.65ha for demolition and clearance of all buildings and structures and the phased, comprehensive redevelopment of the site with 14 buildings ranging in height from 1 to 8 storeys, for a maximum of 1,100 residential dwellings, (houses, duplexes and flats) (Use Class C3); a maximum of 8,000 sqm flexible retail, commercial and other non-residential floorspace (retail, business, services, food and drink premises, offices, workshops, non-residential institutions, community hub, local community uses, and other floorspace (Use Classes E/F1/F2/Sui Generis (public conveniences, drinking establishments with expanded food provision, bookmakers and/or nail bars (up to 550sqm), and dry cleaner (up to 150sqm))); service yard, cycle and refuse stores, plant rooms, car parking and other ancillary space; with associated new and amended means of access on Edward Street and Pitt Street, closure of existing means of access on Edward Street, New Botolph Street, Pitt Street and St Crispins Road flyover, formation of cycle path between Edward Street and St Crispins Road, formation of wider footways, laybys and other associated highway works on all boundaries, formation of car club parking area off New Botolph Street, 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), hard and soft landscaping of public open spaces comprising streets and squares/courtyards for pedestrians and cyclists, other landscape works within existing streets surrounding the site, service infrastructure and other associated work; (All floor areas given as maximum Net Internal Area); comprising,*
 - *Full planning permission on 2.25ha of the site for demolition and clearance of all buildings and structures, erection of 8 buildings ranging in height from 1 to 7 storeys for 353 residential dwellings (Use Class C3) (142 dwellings in Block A, 25 dwellings in Block B, 21 dwellings in Block C, 28 dwellings in Block D, 8 dwellings in Block J3, 81 dwellings in Block*

K/L, and 48 dwellings in Block M) with associated cycle and refuse stores), and, for 5,411sqm flexible retail, commercial and other non-residential floorspace (retail, business, services, food and drink premises, offices, workshops, non-residential institutions, community hub, local community uses, and other floorspace (Use Classes E/F1/F2/Sui Generis (public conveniences, drinking establishments with expanded food provision, bookmakers and/or nail bars (up to 550sqm), and dry cleaner (up to 150sqm))), service yard, cycle and refuse stores, plant rooms, car parking and other ancillary space, with associated new and amended means of access on Edward Street, closure of existing means of access on Edward Street and New Botolph Street, formation of cycle path from Edward Street to St Crispins Road, formation of wider footways, laybys and other associated highway works on Edward Street, New Botolph Street, and Magdalen Street, formation of car club parking area off New Botolph Street, 137 car parking spaces (at least 95% spaces for class C3 use, and up to 5% for class E/F1/F2/Sui Generis uses) within Blocks A and B, hard and soft landscape works to public open spaces comprising streets and squares for pedestrians and cyclists, other landscape works, service infrastructure and other associated works; (All floor areas given as maximum Net Internal Areas); and,

- Outline planning permission on 2.4ha of the site, with landscaping and appearance as reserved matters, for demolition and clearance of all buildings and structures, erection of 6 buildings (Blocks E – H and J) ranging in height from 2 to 8 stories for up to 747 residential dwellings, (houses, duplexes, and flats) (Use Class C3), a maximum of 2,589 sqm flexible retail, commercial and other non-residential floorspace (retail, business, services, food and drink premises, offices, non-residential institutions, local community uses and other floorspace (Use Classes E/F1/F2/Sui Generis (drinking establishments with expanded food provision, bookmakers and/or nail bars (up to 550sqm), and dry cleaner (up to 150sqm))), cycle and refuse stores, plant rooms, car parking and other ancillary space; with associated new and altered means of access on Pitt Street and St Crispins Road, closure of means of access on Pitt Street and St Crispins Road flyover, formation of wider footways, laybys and other associated highway works on Pitt Street and St Crispins Road, a maximum of 313 car parking spaces (at least 95% spaces for class C3 use, and up to 5% for class E/F1/F2/Sui Generis uses), service infrastructure and other associated works (landscaping and appearance are reserved matters); (All floor areas given as maximum Net Internal Areas).

Comments have been received from the council’s contaminated land consultant and the changes in the Amended Application arising from Contaminated Land related comments are summarised in the table below.

TABLE 1: Comments from Contaminated Land Consultant

Comment Received	Response From Project Team
Envirocheck data in PRA out of date, need up to date version to pick up any additional sources contamination on or off site.	Updated Envirocheck information has been included in the report.
Last walk over in 2018. It is possible that additional sources of contamination, either on or off site may be identified by updating the walkover. The photos identify a stockpile of material in the west of the site. Is the applicant confident that this has not changed or been added to in the intervening four years since the walkover update of 2018.	Revised walkover information (undertaken on 23 rd June 2022) included in the report (Section 3.3).
Given the varied industrial uses and duration of industrial operation in site history, the characterisation of potential sources of contamination is considered lacking in detail	Addressed in the report (Section 9).
Furthermore, some contaminants may be associated with an industrial use more at one time than another. It may be beneficial in characterising the site, to identify when certain uses, such as dry cleaners, were in operation, in order to identify any likely contaminants. This may be useful in identifying specific contaminants of interest.	Addressed in the report (Appendix F).

Comment Received	Response From Project Team
<p>'Section 5.4 Hydrology' states that the closest pollution incident relating to controlled waters is recorded some 49 m to the southeast of the site dating from October 1996 and relating to 'fire water/foam'. Has PFAS PFOA been considered as a possible contaminant of interest or is there any evidence to rule out its use at that time?</p>	<p>Addressed in the report (Section 9.5).</p>
<p>'Section 8.4 Human Health' States that based on the findings of assessment the risk from contamination being present is judged to be high however in section '10 Conclusions' it is stated that the risk to human health from soil contamination is considered to be moderate. It should be clarified whether the risk is considered to be high or moderate.</p>	<p>Addressed in the report (Section 9.4). Although the risk to human health from soil contamination is considered to be low to moderate at present, the proposed development is likely to create more sensitive receptors on site (residential properties) which would increase the risk to high.</p>
<p>The scope of further intrusive investigation is set out in Appendix F. The Ground Investigation Methodology does not appear to be impartial in its aims stating that "Groundwater has also been identified as a receptor and suitable samples will be taken and analysed to confirm that there is no impact on controlled waters". Furthermore, sampling and analysis plan for groundwater. A sampling and analysis plan for groundwater maybe highly beneficial in the design of the investigation so as to maximise the likelihood of identifying any LNAPL or DNAPL contamination, reduce the risk of concentration averaging that may mask the presence of low concentrations of contaminants, and ensure high quality samples are collected.</p>	<p>Addressed in the report (Appendix L).</p>

1.3 Project Objectives

The objectives of this study were to:

- Establish the historical and current uses of the subject site and adjacent land, including any areas located within a 500m radius of the subject site that have been used for landfill disposal purposes;
- Determine the environmental setting of the land as characterised by:
 - i. Geology;
 - ii. Hydrogeology;
 - iii. Hydrology;
 - iv. Licensed waste management activities;
 - v. Pollution controls and authorisations;
 - vi. Historical pollution incidents;
 - vii. Radon hazards; and
 - viii. Ecosystem designations.
- Comment on the potential for contamination of the soil and water environment in contact with the subject site, arising from the use of the site or surrounding land for particular purposes or as the result of other factors; and
- Identify the potential human health and environmental risks that may be associated with the subject site, taking into account past, current and planned future uses of the land and its environmental setting.

2. SOURCES OF INFORMATION

In preparing this report, SES has relied upon the sources of information set out below:

TABLE 2: Sources of Information

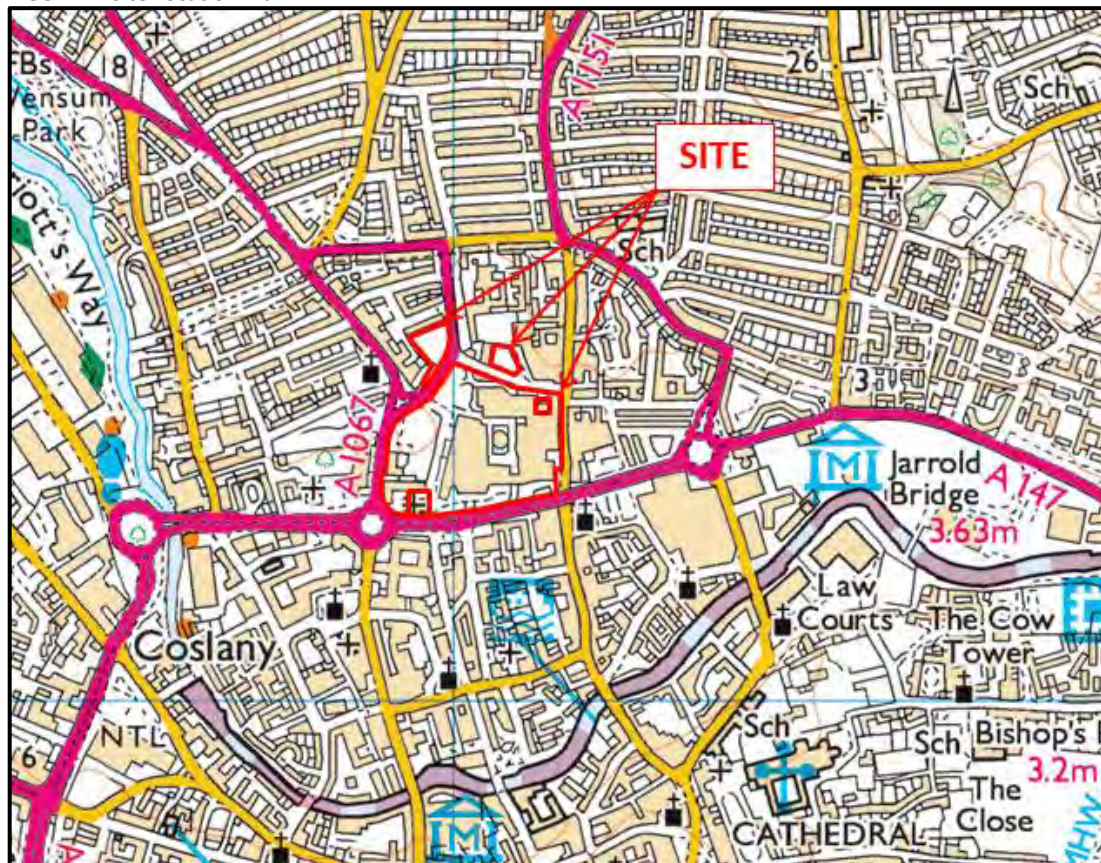
Report Ref	Document Ref	Prepared by
1	Envirocheck Report (Ref: 297057661_1_1) comprising: <ul style="list-style-type: none"> • Envirocheck Main Legend Maps • Ordnance Survey Historical Maps • Envirocheck Report • Envirocheck Flood Map • Envirocheck Groundwater Vulnerability Map • Envirocheck Sensitivity Land Uses Map 	Landmark Information Group
2	Geology of Britain Viewer	British Geological Survey
3	Aquifer designation data available via the website magic.defra.gov.uk	Environment Agency
4	Site reconnaissance carried out on 23/06/2022	Gavin Greenwood, SES

3. SITE DESCRIPTION AND SETTING

3.1 Site Location

The site is located at Anglia Square in Norwich, NR3 1DT and the centre of the site may be approximated by the National Grid reference TG 230093. The site location is shown in Figure 1.

FIGURE 1: Site Location Plan



3.2 Site Description

Anglia Square is situated about 800m north of the centre of Norwich centre in the northern part of the city (Norwich Over the Water), and is surrounded by a range of different uses including residential dwellings, commercial properties and community facilities. The built form of the surrounding area varies widely in terms of its age, scale and architectural style but reflects medieval and later street patterns.

The site measures approximately 4.68 hectares and currently comprises previously developed land broadly defined by St Crispins Road to the south, Pitt Street and New Botolph Street to the west, Edward Street to the north, Magdalen Street to the east and the remainder of Anglia Square Shopping Centre to the southeast. An additional parcel of vacant land on the northwestern side of New Botolph Street which is currently used for surface level car parking is also included within the proposed development site, as well as an area of land immediately to the north of Edward Street and west of Beckham Place, also currently used for surface level car parking. The majority of the site is covered in hardstanding (car parks, buildings, pathways) within minimal communal landscaping in the form of grass verges and tree pits.

3.3 Walkover Survey

The walkover survey was undertaken on 23rd June 2022 by Gavin Greenwood, Associate Director from SES.

The eastern half of the site includes the majority of the existing Anglia Square Shopping Centre, including the central open space element to the existing retail facility and Gildengate House.

The site is broadly defined by the following boundaries:

- St Crispins Road to the south;
- Pitt Street and New Botolph Street to the west;
- Edward Street to the north;
- Magdalen Street to the east;
- Anglia Square Shopping Centre to the east;
- Car parking to the west. A heavily vegetated soil bund is present to the west of the car park along Pitt Street
- Small commercial premises to the southwest bordering Pitt Street/St Crispin's Way (including Surrey Chapel).
- An additional parcel of vacant land on the northwestern side of New Botolph Street, bounded by the rear of the houses on Augustine Street to the northwest and Rose Yard to the southwest currently used for surface level car parking; and
- An area of land immediately to the north of Edward Street and west of Beckham Place, also currently used for surface level car parking.

The site includes a number of existing buildings and structures in addition to those above including a vacant former office building Sovereign House, a vacant and condemned multistorey car park fronting Edward Street, Gildengate House, the current Hollywood Cinema at first floor level, and two vacant nightclubs at first floor level under part of the cinema, with additional commercial uses along Pitt Street and surface level car parking on the northwestern part of the site.

The northwestern and northern car parks (Plates 1 to 3 and 22) are surfaced with concrete slabs which are in poor condition broken in places. No evidence of the former PFS was apparent on the northern car park. An electricity substation was present to the immediate south of the northwestern car park (Plate 3).

The western part of the main site is predominantly covered in car parking part of which is asphalted (Plate 21). However, the majority is surfaced by hardstanding and poorly maintained concrete slabs (Plates 11 and 17). A heavily vegetated earth bund (which was present in 2016 identified as a waste mound) was present along the western side of the car park (Plates 9 and 10). Botolph Street runs between the car park and Sovereign House (Plates 7, 8 and 12 to 14) with access to delivery bays (Plates 13, 15 and 16).

A number of commercial premises are present to the southwest of the site along Pitt Street including a car wash and woodworkers (Plates 17 and 59 to 63). The Surrey Chapel is also present to the southwest with an adjacent electricity substation (Plates 53 to 58).

Along Edward Street, to the north, is the access/egress to the derelict multistorey car park (Plate 19) with additional loading bays for Anglia Square further along Edward Street (Plates 23 to 25).

Access to the Anglia Square Shopping Centre is from Magdalen Street (Plates 26 and 37 to 40) or from the western car park (Plates 5 and 7). Magdalen Street runs to the east of Anglia Square and comprises a number of small retail premises including cafés and a post office (Plates 27, 40 and 41).

Anglia Square, itself, is dominated by a metal framed glass pergola (Plates 30 to 32) and is surrounded by a range of retail premises including a car dealership (Plates 29 and 32). At first floor level is an access to the multistorey car park (Plate 33), a former cinema (Plate 36) and access to Sovereign House (Plate 35).

To the south of Anglia Square are further loading bays (Plates 42 to 45) and area of landscaping adjacent to St Crispin's Way (Plates 47 to 49) including a pair of concrete slabs the origins of which are unknown (plate 46).

Site photographs are given in Appendix B.

4. HISTORICAL MAP SURVEY

4.1 Maps

An archaeology report has been prepared for the site by RPS which included an overview of the site history.

- RPS: Archaeological Impact Assessment, Anglia Square, Norwich (Version 2). Ref: JAC27722, dated 30th March 2022.

A review of relevant historical maps dated from about 1700 for the area surrounding the subject site has been undertaken and is summarised below. Reference should be made to the RPS report for the site history prior to this date. The historical maps are included in this report within Appendix C while extracts of Goad Insurance Plans are presented in Appendix D and Historical Aerial Photographs given in Appendix E.

TABLE 3: Historical Maps

Map, Date & Scale	Details
1300 Norton Parishes Reconstruction of Property Ownership	The site is shown to be within the Medieval Walls of the city with the layouts of the current Pitt Street (St Andrews), Edward Street (Botolph Street), Botolph Street (Gilden Gate) and Magdalen Street are all shown together with the historical locations of Cherry Alley and Calvert Street. Two churches are shown on the site; one to the west (later identified as St Olave) and a second in the northeast corner of the site (St Botolph).
1696 Cleer Map of Norwich	The Medieval street layout is still shown on the plan as is the location of St Olave's Church (although this was demolished in 1546). St Botolph's Church is not shown. Doughty's Hospital is shown to the immediate southeast of the site.
1727 Corbridge Map of Norwich	None of the previous churches are shown on this map although the street layout has not changed. Cherry Alley has been extended and now cuts across Botolph Street (Gilden Gate) to Snail Gate and becoming Cherry Lane/Green's Lane.
1746 Blomfield Map of Norwich	The plan again shows the late Medieval layout of the area around the site with Pitt Street, Magdalen Street and Botolph Street all present. A church is present at the location of the former St Olave's Church and also at St Botolph's Church.
1783 Smith Map of Norwich	No significant change to the layout of the site or surrounding area.
1789 Hochstetter Map of Norwich	No significant change to the layout of the site or surrounding area. The 1789 map shows building locations in more detail.
1830 Dallinger Map of Norwich	No significant change to the layout of the site or surrounding area. Middle Street has been renamed as St George's Street.
Norfolk Historical Town Plan 1884 – 1886 1:500 Norfolk 1886 1:2500 1885 – 1886 1:10560	The site still reflects the late Medieval street layout. Botolph Street bisects the site into a northern and southern portion with a Crape Manufactory occupying a significant portion of the northern portion. The northwestern car park is occupied by a series of what appear s to be terraced housing along Rose Yard. The main crape factory occupies most of the northern car park. A small orchard is present in the southern portion with a Methodist Chapel on the southern boundary. The remainder of the site appears to be occupied by a mix of residential dwellings and commercial buildings. Middle Street (formerly Gilden Gate) and Calvert Street (formerly Snail Gate) run south-north through the site. The location of the former St Botolph Church is identified on the east of the site and St Olave in the southwest corner of the site. A number of 'yards' are now present across the site including Cherry Tree Yard and Cat & Fiddle Yard. The surrounding area is similar in composition to the main site with a mix of residential and commercial buildings.

Map, Date & Scale	Details
Norfolk 1907 1:2500 1908 1:10560 Goad Insurance Plan 1908	No significant changes to the site or surrounding area.
Norfolk 1919 – 1920 1:10560	No significant changes to the site or surrounding area.
Norfolk 1928 1:2500 1929 1:10560	The Crape Manufactory is now a Boot & Shoe Manufactory and a number of other commercial premises are now named including a Silk Mill on the northwestern car park and a Clothing Manufactory in the centre of the site.
Norfolk 1938 1:2500 1938 1:10560	A Picture House (later an Odeon Cinema) is present on Botolph Street while the large Boot & Shoe Manufactory, on the northern car park, and a number of other buildings to the north of the site have now been demolished.
Norfolk 1950 – 1951 1:10560 Goad Insurance Plan 1949	The 1950 edition of the Ordnance Survey generally shows the pre-war layout of the site and surrounding area. However, a number of buildings appear to have been demolished in the intervening period including the houses along Rose Yard which is now an Engineering & Wrapping Works. The northern car park is now designated as a Playing Field. A number of smaller works/factories are now identified across the site including a shoe factory and printing works. The Goad Insurance Map shows an area along Rose Yard to be 'Area Cleared due to Enemy Action' as well as smaller area of the main site.
Ordnance Survey 1956 – 1957 1962 - 1973 1:2500 1957 – 1958 1:10560 Goad Insurance Plan 1959	Significant redevelopment has taken place across the site between 1938 and 1956. East of Calvert Street a number of small buildings have been demolished and two new buildings were constructed to the south of the 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 Cinema appears to have been extended southwards. A Printing Works and Engineering Works have been built fronting onto Pitt Street with a Dry Cleaning Works behind with a Shoe Factory further north on Pitt Street. A number of buildings have also been demolished along Pitt Street. Additional buildings have also been built in the eastern part of the site, south of the shoe factory.
Ordnance Survey 1971 – 1974 1976 1978 1:2500	Major redevelopment of the area has seen the restructuring of the road layout with the truncation and removal of Calvert Road and Botolph Road in part, and the construction of new access roads in the north (Edward Street) and south. Widespread demolition has taken place across the site, with the removal of all domestic buildings as well the cinema, the shoe factory, printing works and public house. A shopping centre focused on the new Anglia Square has been built (by 1971), along with a multi-storey carpark to the north, and Sovereign House occupying a large area in the south. A large areas in the northwest of the main site (at the location of the former cinema) has been established an open car park and remain in this form today. A Petrol Filling Station/Garage has been constructed on the former playing field to the north (northern car park) a while a large warehouse is at the location of the former Engineering & Wrapping Works in the northwestern car park. Although not part of the site, St Crispin's Hall has been constructed in the southeastern corner of the site at the location of some former terraced properties. An electricity substation is also present adjacent to St Crispin's Hall and a further one in the northwestern car park.

Map, Date & Scale	Details
Additional SIMS 1978 - 1983 1984 – 1992 1994 1:2500 1979 1987 - 1989 1:10560	No significant changes to the site or surrounding area.
Historical Aerial Photography 1999	The aerial photograph generally shows the present day layout of the Anglia Square development as it is today. The area to the west of Anglia Square is shown to be an open grassed area. The link road (New Botolph Street) between Pitt Street and Edward Street has yet to be constructed. Both large ware house and PFS, in the northwestern and northern car parks, are shown.
Ordnance Survey Raster Mapping 2000 & 2006 1:10000	No apparent changes to the site or surrounding area.
VectorMap Local 2021 1:10000	The map shows the site and surrounding area to be generally in agreement with its current setting although the warehouse and PFS are no longer present in the northwestern and northern car parks.

4.2 Anecdotal Evidence

The area where Anglia Square stands today was part of the Saxon settlement of Northwic which was defended by Anglo-Scandinavian defensive ditches running along Botolph Street and Anglia Square car park. Magdalen Street and St Augustine's Street, which extends beyond Botolph Street, are two of the oldest streets in Norwich and date back to those times and still major thoroughfares through the area. Botolph Street originally linked the two streets forming an ancient junction with Magdalen Street. The Stump Cross was situated at this junction (and gave it its name) was demolished in the late 15th Century. Until the 19th Century, most buildings fronted the key roads with open fields in between. During the 19th Century a Crape Manufactory was built where Anglia Square stands whilst in 1903 a cloth factory of some architectural distinction stood on Botolph Street. Both were demolished in the 1960s. The area was heavily bombed during the 'Baedeker Raids' in April 1942 and although many buildings remained standing, post-war reconstruction meant that most of these were subsequently demolished. Sovereign House was built for HMSO in the late 1960s and the Anglia Square shopping centre, cinema and car parks followed in the early 1970s. At a similar time, St Crispin's Road Flyover was built as part of the Inner Ring Road.

Norwich was subject to heavy bombing as part of the 'Baedeker Blitz' on 27th/28th April and 8th/9th May 1942 and then sporadically throughout 1942 and 1943. It is thought that the missing structures identified on the 1950 Ordnance Survey maybe as a result of the air raids.

The 1945 Norwich Plan envisioned an urban dual carriageway encircling the city centre, creating ambitiously titled "gates" (roundabouts) at every major intersection. Although it was unrealised in its entirety, the western and part of the northern sides of this ring road became the Inner Link Road (St Crispin's Road), constructed between 1968 and 1975.

Many historic buildings were cleared in the making of Anglia Square and the subsequent inner-ring road. One of the oldest was the Kings Arms public house on Botolph Street, which on its gable end in large iron characters were the letters "I" and "C" and the date "1646". Also demolished was the Regency bank at the junction of Magdalen Street and Botolph Street and some other Georgian and Victorian buildings along St George's Street.

The Anglia Square development was designed by Alan Cooke & Partners which included a new Odeon cinema (replacing the pre-war cinema on Botolph Street).

4.3 Summary of Site History

The site has been put to a mixed residential and commercial use since at least the Middle Ages. More specifically, since 1880 the site was used as a mixed use development that included industrial buildings that manufactured crape fabrics and materials for clothing, tannery, shoe & bootmakers, an oilskin manufacturing clothing company, printers, timber merchants, fruit and vegetable wholesale warehouse and residential housing. The site was bombed during World War II. The area was redeveloped from the mid-1960s onwards and the Anglia Square shopping centre and commercial buildings were constructed. The site layout has generally not changed since 1968 to the present day.

Little change can be seen at the site over most of the 18th century. By the end of the 18th century there was 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, remained as horticultural plots or yards.

Between 1830 and 1886 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, except for the construction of a large clothing factory on the eastern half of the site, where once were gardens.

Between 1928 and 1938 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.

Between 1938 and 1956, 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 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 northeastern 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 southeastern corner of the site, south of the shoe factory and west of Green Lane.

By the early 1970s 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. A large area in the northwest of the site was established as an open car park and remains in this form today. A garage and filling station have been built on the former playing field in the northeastern 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.

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 northwestern part of the site and the garage with filling station at the north-eastern end of the site have been demolished and replaced by further car parking.

A plan showing the historical uses across the site is given in Appendix F.

5. ENVIRONMENTAL SETTING

5.1 General

Data contained within the Envirocheck report has been used to assess the environmental setting of the site. The relevant data is presented in Appendix G.

5.2 Geology

Reference to the British Geological Survey website (www.bgs.ac.uk) indicates that the site is underlain by the Undifferentiated Lower Nodular Chalk, Seaford Chalk, Newhaven Chalk, Culver Chalk and Portsdown Chalk Formations collectively known as the White Chalk Subgroup.

Superficial deposits are represented by Alluvium associated with the nearby River Wensum.

TABLE 4: Anticipated Ground Conditions

Strata Encountered	Depth Encountered (m bgl)		Maximum Measured Strata Thickness m
	From	To	
Made Ground	Ground Level	1.90 – 3.20	3.20
Alluvium	1.90 – 3.20	3.00 – 8.60	5.40
River Terrace Deposits	5.20 – 8.60	8.90 – 12.30	5.10
White Chalk Subgroup	7.20 – >20.00	>15.30 - >23.80	>14.80

A number of borehole records have been deposited the BGS website associated with a proposed 'Crown Building'. The boreholes were sunk in the western part of the site and show a significant thickness of Made Ground (between 2m to 3m bgl) present overlying River Terrace Deposits before encountering the White Chalk Group Subgroup at depths between about 7m and 11m bgl. Further details are given in Appendix H.

5.3 Hydrogeology

The White Chalk Subgroup has been identified as a Principal Aquifer while the underlying Alluvium/River Terrace Deposits is a Secondary A Aquifer.

The site is shown to be within a Groundwater Source Protection Zone II (outer zone) associated with potable abstraction points in excess of 2km to the southeast of the site.

There is a single revoked groundwater abstraction point located on the site which was operated by Comdoran Properties Limited for miscellaneous industrial processing. There are a further twenty abstraction points located within 500m of the study; the closest active abstraction point is located 269m to the southwest for the Sunlight Service Group for industrial services.

There are no licensed discharges to land within 500m of the site.

5.4 Hydrology

The closest surface water feature is the River Wensum approximately 230m to the southeast of the site. The river is tidal at this point and flows from east to west.

There are nine licensed surface water abstractions within 500m of the study site; the closest is situated about 353m to the east for Jerrold & Sons Limited for use as cooling water. There are

nineteen discharge consents to surface waters within 500m. The closest is for storm water overflow, operated by Anglian Water Services Limited, situated about 95m to the east.

The closest pollution incident relating to controlled waters is recorded some 49m to the southeast of the site in October 1996. This incident relates to ‘fire water/foam’ and was classified as a ‘Category 3 – Minor Incident’. There are a further ninety-seven incidents within 500m of the site ranging from Category 2 (significant incidents) to Category 3.

5.5 Radon

The British Geological Survey, in conjunction with the Radiation Protection Division of the Health Protection Agency, indicates the site to lie within an area where there is a probability of <1% of present or future homes being above action the level of 200Bq/m³. As such, the site is not classified as a Radon Affected Area. Therefore, no radon protection measures are deemed necessary for the proposed development. This is confirmed by the Building Research Establishment Report BR211.

5.6 Soil Geochemistry

The British Geological Survey data indicates the following concentrations of naturally occurring metals to be representative of background levels in natural soil underlying the site. The levels are based on those present in rural soils and are not necessarily representative of levels within Made Ground which may be encountered on-site.

TABLE 5: Soil Geochemistry

Element	Concentration mg/kg
Arsenic	<15
Cadmium	<1.8
Chromium	20 – 40
Lead	200 – 300
Nickel	<15

6. ASSESSMENT OF GEOTECHNICAL RISK

6.1 Geological Constraints

The following are brief findings relating to factors identified during the research from the EnviroCheck data presented in Appendix G that may have a potential impact upon the engineering of the proposed design.

TABLE 6: Geohazards

Potential Hazard	Assessed Risk	Comment
BGS Recorded Mineral Sites	Low	A number of chalk mines are located within 500m of the site. However, historical mapping, dating back to c1300, has not indicated the presence of such mines onsite.
Man-Made or Natural Cavities	Moderate to High	The BGS website indicates that the site is within an area at moderate to significant risk from solution features. Solution features can be reactivated by the concentrated ingress of water from leaking drains or soakaways and subsequently cause surface collapse. There are a number of reports of cavities being activated within 500m of the site due to crown hole collapse.
Collapsible Ground	Low	Collapsible material may be present. Such material is prone to collapse when it is loaded (as by construction of a building) and then saturated by water (as by rising groundwater). Collapse may cause considerable damage to overlying property.
Compressible Ground	Moderate	The Alluvium maybe cohesive in nature and may exhibit shrinking/swelling characteristics. In addition, there may be a significant thickness of Made Ground which may settle under loading.
Ground Dissolution	High	The BGS website indicates that the site is within an area at moderate to significant risk from solution features. Solution features can be reactivated by the concentrated ingress of water from leaking drains or soakaways and subsequently cause surface collapse. There are a number of reports of cavities being activated within 500m of the site due to crown hole collapse.
Landslide	Very Low	The site is essentially level.
Running Sand	Very Low	Granular deposits could be present at shallow depth within the site area.
Shrinking or Swelling Clay	Low to Moderate	The Alluvium maybe cohesive in nature and may exhibit shrinking/swelling characteristics.
Unconsolidated Made Ground	Moderate	Made Ground may be present on site.
Bearing Pressure	Low to Moderate	Weak soils in the form of Made Ground are anticipated at shallow depth with potentially low bearing pressures.
Aggressive Conditions for Construction Materials	Low to Moderate	The Made Ground may contain sulphates and sulphides, and as such has been assigned a moderate risk. The remainder of the anticipated geological sequence is not thought to contain high levels of sulphates and sulphides, and therefore, has been assigned a very low risk.
Shallow or High Groundwater Table	Moderate	The site is within 300m of a river and a high water table maybe encountered.
Old Basements	Moderate to High	The site has been redeveloped on a number of occasions in the past and the presence of old foundations, including basements, cannot be ruled out.

6.2 Geotechnical Risk Assessment

An assessment of the main hazards associated with the site is detailed below. Unless stated otherwise, the presence of such hazards are based on information from the research or reconnaissance and have not been confirmed by an intrusive investigation.

- Soil Conditions

The presence of plastic cohesive soils represents a risk to structures. Volume changes brought about by shrinkage and swelling of the cohesive soil, exacerbated by the presence of trees, could result in structures supported on this stratum experiencing differential settlement. The associated risk is considered to be low to moderate, and may result in either deeper trench fill foundations or even piled foundations being employed.

The previous phases of development on the site are considered to represent a moderate risk due to the unknown nature of the material used to backfill potential excavations. Such material may be both highly compressible and variable, potentially leading to excessive total and differential settlements.

The presence of a significant thickness of granular Made Ground, particularly if they are water bearing, may cause instability in excavations for foundations or services trenches.

The location and anticipated geology of the site suggests there to be a moderate risk from high groundwater. Should this be the case, then pumping may be required from any excavations on site.

The chalk is well known to contain solution features and it is assessed that there is a moderate to high risk of such features being present.

- Topography

The EnviroCheck data provided indicates only a very low risk of landslip subsidence.

- Previous Use

Historical Mapping indicates previous development on the site including structural and infrastructure changes. Therefore, the presence of buried structures such as services, basements and old foundations is a potential risk.

6.3 Geological Constraints

The research has identified evidence of potential hazards associated with the underlying ground conditions, either natural or man-made. Therefore, it would be prudent to carry out further work to confirm the presence, nature or extent of those hazards anticipated to impact on the site.

7. ENVIRONMENTAL SEARCHES

7.1 Potential Sources of Contamination

Details of the relevant searches are given in Appendices I & J.

A search was made of records held by various regulatory authorities and other statutory bodies to determine the presence or otherwise of past and current activities on or within 500m of the site which may have the potential to give rise to the presence of contamination. Details of such records are given below:

TABLE 7: Environmental Searches

Activity	On Site	Off Site (distance/direction)	Details
Contaminated Land Register Entries	None	None within 500m	
Integrated & Local Authority Pollution Prevention & Controls	None	Six within 500m	The closest is for a revoked LAAPC for the burning of waste oil by PW Turner located 237m southwest. The closest active LAPPC is for the respraying of vehicles situated 479m to the west of the site.
Substantiated Pollution Incident Register	None	One within 500m	This is for a Category 2 – Significant Incident to water situated 391m southwest for pollution by mixed/waste oils.
Licensed Waste Management Facilities	None	One within 500m	This is located 343m west for End of Life Vehicles.
Registered Waste Treatment or Disposal Sites	None	One within 500m	This is for the Automotive Paint & Equipment Company located 219m north of the site and is authorised for cleaning solvents.

7.2 Landfills and Infilled Land

There are no historic landfills within 500m of the site. There is a possible area of potentially infilled land on the southern boundary of the site which was identified on mapping from 1893 to 1937.

7.3 Green Belt Areas

There are no designated areas of Adopted Green Belt land within 500m of the site.

Green Belt Areas are generally areas that are designated as being under special consideration for development. Local Authorities may restrict the type of development, place particular planning constraints on proposed developments, or potentially restrict any development within a designated Green Belt Area.

7.4 Nitrate Vulnerable Zones

The site is located within an area designated as a nitrate vulnerable zone for surface water (Virley Brook).

The nitrates directive defines a nitrate vulnerable zone as:

- Surface freshwater which contains or could contain, if preventative action is not taken, nitrate concentrations greater than 50mg/l; or
- Groundwater which contains or could contain, if preventative action is not taken, nitrate concentrations greater than 50mg/l; or

- Natural freshwater lakes or other freshwater bodies, estuaries, coastal waters or marine waters, which are not eutrophic or may become so in the near future if protective action is not taken.

7.5 Designated Sites

A review of the MAGIC (MultiAgency Geographic Information for the Countryside) website, ref www.magic.gov.uk, was undertaken to assess whether there were any Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR) or Local Nature Reserves (LNR) which may be impacted by the development.

The enquiries indicated there are no such areas within 500m of the site.

7.6 Contemporary Trade Entries

There are seven contemporary trade entries recorded on the site with an additional 122 within 500m of the site.

The entries for the site are as follows:

- Anglia Square Cars Limited (car dealers) - active;
- Revised Ministry (printers) - inactive;
- Cash makers (electrical goods sales) – active;
- Morris Printing Company Ltd (printers) – inactive;
- Protonation Graphic Arts (printers) – inactive;
- Total Paper Management Ltd (printers) – inactive; and
- The Box & Packaging Company Ltd (printers) – active.

The closest off-site entry is for 'Leonards Norwich Limited' (office furniture & equipment) which is an active entry located about 17m west of the site.

The remainder relate to a wide range of commercial and retail activities commonplace in an urban setting.

8. PRELIMINARY UNEXPLODED ORDNANCE ASSESSMENT

A preliminary UXO threat assessment has been carried out by Alpha Associates and a copy of their report is given in Appendix K.

As discussed above, Norwich was subject to heavy bombing as part of the 'Baedeker Blitz' on 27th/28th April and 8th/9th May 1942 and then sporadically throughout 1942 and 1943. Post-war mapping shows a number of missing structure in and around the site which maybe as a result of the bombing. The 1949 Goad Insurance Map also shows an area around Rose Yard which is 'Area Cleared due to Enemy Action' as well as smaller area of the main site.

The salient observations from the assessment are:

- During WWII, the Study Site was situated within Norwich County Borough, which recorded 18 High Explosive (HE) bomb strikes per 100 hectares; a "low" level of bombing.
- Luftwaffe aerial reconnaissance photography associated with the Study Site identified Nelson Barracks (595m east) as a primary bombing target.
- Air Raid Precaution (ARP) records identified three HE bomb strikes on-site. In addition, five HE bomb strikes were identified within 100m, the closest being within 30m east of the Study Site boundary.
- Official bomb damage mapping was not available. Nonetheless, an analysis of further historic records identified significant bomb damage to structures on Magdalen Street, Botolph Street and Pitt Street all of which are located on-site and/or in the immediate vicinity of the Study Site.

The report concluded that given that both bombing and bomb damage were recorded on-site; it would suggest that further action be warranted to address the potential for UXO encounter.

9. PRELIMINARY RISK ASSESSMENT

9.1 General

The typical technical approach to assessing potential human health and environmental risks associated with the condition of land relies on the consideration of the relationship between contaminants, pathways and receptors, as defined below.

TABLE 8: Definitions

Contaminant	A hazardous substance or agent that has the capacity to cause harm or other damage to a receptor.
Receptor	An entity (e.g. human being, water environment, flora and fauna etc.) that is vulnerable to the adverse effects of the contaminant.
Pathway	The means by or through which a contaminant comes into contact with, or otherwise affects, the receptor.

In the UK, this relationship is termed a “pollutant linkage”. The Conceptual Site Model (CSM) is a representation of the inter-relationship of all potential contaminants, pathways and receptors in a given land use scenario. The CSM is therefore a screening tool that should clearly and transparently identify relevant pollutant linkages that may warrant further assessment, as well as providing justification for those that are considered unlikely to exist. It is important to recognise that for a health or environmental risk to exist, all three elements of the relationship or linkage must be present. Thus:

- No contaminant » There can be no adverse effect on a receptor; and
- Nothing adversely affected by the contaminant » No harm or damage can arise.

It should be noted that even where both a contaminant and a receptor are identified, no harm or damage will occur if there is no pathway by or through which contact between the two can be established. It is also important to recognise that since contaminants, pathways and receptors can all change over time, the assessor must be precise about the time frame to which the risk assessment refers.

Consideration has been given to the potential for the subject site to be determined as “contaminated land” under Part 2A of the Environmental Protection Act 1990. Under Part 2A, Local Authorities have a duty to inspect sites from time to time to identify land that falls within a statutory definition of contaminated land, as assessed in the context of its current use and setting. Part 2A inspections are intended to focus primarily on land that may present unacceptable health and environmental risks but which cannot be regulated by planning controls or other enforceable mechanisms. It should be noted that it is not possible for land whose condition is assessed as being ‘fit-for-purpose’ under the planning regime to be identified as “contaminated land” under Part 2A.

The primary purpose of this report is to assess the potential for ground contamination derived at the subject site. Reference has also been made to off-site sources of contamination, such that if ground contamination is encountered during a subsequent site investigation a reasonable judgement as to its origin either on or off the site may be undertaken.

9.2 Potential Sources of Contamination

The research has identified potential sources of contamination which may form a pollutant linkage:

TABLE 9: Potential sources of contamination

Location	Source	Location	Contaminants of Concern
On site (current)	Car Sales	Anglia Square	Possible TPH
On site (current)	Spoil Mound	Along Pitt Street	Possible Heavy metals, PAH, TPH, asbestos
On site (current)	Car Parks	Western portion and to the north and northwest	TPH
On site (current)	Electrical Substation	Northwestern car park and Surrey Chapel	PCBs
On site (current)	General areas of Made Ground	Car park areas	Heavy metals, PAH, TPH, SVOC/VOCs asbestos Ground gases (CO ₂ , CH ₄)
On site (current)	Car Wash	On Pitt Street	Heavy metals. TPH, SVOC/VOCs
On site (current)	Woodworkers	On Pitt Street	Heavy metals. PAHs, TPH, SVOC/VOCs
On site (historical)	Silk Mill/Engineering Works/Warehouse 1928 – 1972 (1)	Northwestern car park	Heavy metals, PAH, TPH, SVOC/VOCs asbestos
On site (historical)	Shoe Factory 1956 (2)	Northwestern car park	Heavy metals, PAH, SVOC/VOCs, pathogens
On site (historical)	Bomb Damage/ Autowrapper Factory 1945 – 1956 (3)	Northwestern car park	Heavy metals. PAHs, TPH, SVOC/VOCs. UXO
On site (historical)	Boot & Shoe factory 1928 (4)	Northern car park	Heavy metals. PAHs, TPH, SVOC/VOCs
On site (historical)	Crepe Factory 1886 – 1907 (5)	Northern part of the site	Heavy metals. PAHs, TPH, SVOC/VOCs
On site (historical)	Former Garage/PFS 1974 - 2006 (6)	Northern car park	Heavy metals, TPHs, PAHs, SVOC/VOCs, asbestos
On site (historical)	Winding Mill 1908 (7)	Northwestern part of site	Heavy metals. PAHs, TPH, SVOC/VOCs
On site (historical)	Cinema 1938 – 1970 (8)	Northwestern part of site	Heavy metals, SVOC/VOCs, asbestos
On site (historical)	Boot & Shoe Factory 1938 – 1956 (9)	Northern part of site	Heavy metals. PAHs, SVOC/VOCs, pathogens
On site (historical)	Brush Factory 1908 (10)	Northeastern part of site	Heavy metals. PAHs, TPH, SVOC/VOCs
On site (historical)	Printing Works 1956 – 1970 (11)	Centre of site	Heavy metals. PAHs, TPH, SVOC/VOCs
On site (historical)	Clothing Factory 1908 – 1970 (12)	Centre of site	Heavy metals. PAHs, TPH, SVOC/VOCs
On site (historical)	Timber Yard 1908 (13)	Centre of site	Heavy metals. PAHs, TPH, SVOC/VOCs
On site (historical)	Shoe Factory 1956 – 1962 (14)	On Pitt Street	Heavy metals. PAHs, SVOC/VOCs, pathogens
On site (historical)	Printing Works 1956 – 1974 (15)	On Pitt Street	Heavy metals. PAHs, TPH, SVOC/VOCs
On site (historical)	Dry Cleaners 1956 – 1974 (16)	On Pitt Street	Heavy metals. PAHs, TPH, SVOC/VOCs

Location	Source	Location	Contaminants of Concern
On site (historical)	Engineering Works 1956 – 1964 Cabinet Works 1974 (17)	On Pitt Street	Heavy metals. PAHs, TPH, SVOC/VOCs
NOTES			
The numbers given in brackets relate to the locations provided on the Historical Uses Plan (Appendix F)			

Around the site there are a number of small commercial premises including cafés, printing/graphic works, picture framers etc which are not thought to significantly impact the site when compared to those sources on the site.

9.3 Potential Receptors and Exposure Pathways

The receptors normally considered in land contamination assessments are taken to include, but are not restricted to, those specified in the Statutory Guidance to Part 2A. In general, receptors may be grouped as follows:

- Humans (on-site and off-site);
- Controlled waters (surface and groundwater close to or beneath the site); and
- Buildings and materials of construction on or under the site, or in the vicinity.

The potential pathways for contaminants have been identified as;

- Inhalation of dust
- Ingestion of soils
- Plant uptake
- Direct contact with building materials.
- Soil leaching and lateral and vertical migration of contaminants to groundwater.
- Lateral and vertical migration of potential ground gases.

9.4 Human Health

It is considered that there is the potential for Made Ground of unknown origin to be present across the site. Such material may contain a range of heavy metals, PolyAromatic Hydrocarbons (PAHs), Total Petroleum Hydrocarbons & fuel oils (TPHs) and asbestos. In addition, there is a risk that Volatile Organic and Semi-Volatile Organic Compounds (VOCs & SVOCs) will also be present as a result of the various activities which have occurred across the site and also pathogens associated with the former shoe/boot factories onsite.

The electrical substations currently present onsite might contain remains of PCBs used in the past as an isolating fluid for electric components. PCBs are hard to degrade and are difficult to remove from the environment.

Based on the findings of this assessment the risk from contamination being present is currently judged to be low to moderate. However, as a result of the proposed development more sensitive receptors will be present on site (residential properties) which would increase the risk to high.

Construction workers are potentially at greater short term risk as they are more likely to be exposed to any contaminated soils via the identified exposure pathways. However, it is considered that such risks could be effectively ameliorated by the use of appropriate personal protective equipment (PPE) and health and hygiene practices.

Off-site human receptors include the occupiers of neighbouring sites and visitors, utility maintenance workers and the general public. Relevant exposure pathways could include:

- Ingestion of liquid discharges or soils, and soil-derived airborne dusts migrating from the subject site;
- Inhalation of soil-derived dusts and gases/vapours from the subject site; and
- Dermal contact with liquid discharges, soils, and soil-derived dusts from the subject site.

It is judged that the risks to off-site human receptors could include dust generation during construction works. However, as good practice, appropriate dust suppression measures should be implemented at the site regardless of contamination.

9.5 Controlled Waters

The site is underlain by the White Chalk Subgroup which is a Principal Aquifer while the superficial deposits are a Secondary A Aquifer. The superficial deposits are likely to be in hydraulic continuity with the underlying chalk.

The off-site fire incident which occurred in 1996 may have been a source of PFAS/PFOA which could have migrated to site. However, given the time elapsed since the incident and the dilution effects of both the Secondary and Principal Aquifers, the risks of PFAS/PFOAs being detectable is considered negligible and have been discounted.

Based on the nature of the conceptual source of contamination identified by this assessment there is judged to be a moderate risk of the underlying soils being significantly impacted with soluble and mobile contaminants that could migrate significant distances from the study site and impact sensitive receptors. When considering the nature of the identified conceptual source of contamination, coupled with the moderate sensitivity to the study site, the risks posed to controlled waters are judged to be significant.

9.6 Buildings and Services

The built environment is taken to include permanent and semi-permanent structures, such as houses, offices, commercial and industrial buildings etc. and associated services such as water supply pipes, drains, power and telecommunications cables. Buildings and service runs may also contain enclosed spaces where explosive, flammable or toxic gases and vapours may accumulate, presenting risks to both occupants and the buildings.

If significantly contaminated shallow soils are present beneath the study site aggressive chemical attack on building foundations and buried services is considered plausible. The composition of the Made Ground is not known at this stage and there could be the potential for ground gases to be developed.

9.7 Initial Conceptual Site Model

An initial Conceptual Site Model (CSM) has been developed on the basis of the desk study. The CSM is used to identify potential sources, pathways and receptors (i.e. potential pollutant linkages) on site and is summarised in the table below.

TABLE 10: Outline Initial Conceptual Site Model

Potential Source	Contaminants of Concern	Via	Potential Pathways	Linkage Potentially Active?	Receptors
On site – current and historical Bonfire remains	Heavy Metals PAHs TPH SVOC/VOCs PCBs Pathogens	Soil	Direct contact/ingestion	✓	Site users
			Inhalation of volatiles	✓	
			Airborne migration of soil or dust	✓	Off-site users
			Leaching of mobile contaminants	✓	N/A
		Groundwater	Direct contact/ingestion	✓	Site users Off-site users
			Inhalation of volatiles	✓	Site users Off-site users
			Vertical and lateral migration in permeable strata	✓	N/A
Off-site – current none Off-site – historical: none		Groundwater	Direct contact/ingestion	✓	Site users
			Inhalation of volatiles	✓	Site users
		Service conduits	Direct contact/ingestion	✓	Site users
			Inhalation of volatiles	✓	Site users
On and off-site Made Ground / natural strata or bio-degradation of contamination	Carbon dioxide and methane	Ground Gas	Inhalation of ground gas	✓ ✓	Site users Off-site users
			Explosive risks	✓ ✓	Site users Off-site users

The risk assessment is based upon the available information relating to the site. Should ground conditions inconsistent with those outlined in this report be encountered, SES should be contacted to enable further assessment. The findings of the CSM should be confirmed upon finalisation of the proposed redevelopment plans.

9.8 Conclusions of Environmental Risk Assessment

The Conceptual Site Model indicates that there is a potential risk of onsite pollutant linkages affecting the proposed residential/commercial development; the risk to development at present is considered to be low to moderate. However, as a result of the proposed development more sensitive receptors will be present on site (residential properties) which would increase the risk to high.

Soil contamination is likely to be present onsite from the previous land use as a clothing manufacturers, boot & shoe manufacturers, engineering workshops etc. Levels of contamination will need to be confirmed by soil sampling and chemical analysis.

Ground gas migration from the site is considered to be a moderate risk due to the type of industries previously noted as being onsite before Anglia Square was developed as commercial shopping centre.

The site sits directly on the White Chalk Subgroup which is designated as Principal Aquifer (the overlying Superficial Deposits are a Secondary A Aquifer) It is considered that groundwater could potentially be impacted by development at the site and as such further action is required. The risk to controlled waters is currently considered to be moderate.

The risk to construction workers is low as they will be wearing appropriate PPE during the construction phase.

Therefore, further intrusive investigations are recommended to quantify the risk the site currently poses.

9.9 Consultation

During development, consultation may be required for a number of reasons with a number of regulatory authorities. The following provides an indication as to the most likely authorities with which consultation may be required:

- **Local Authority:** There may be a planning condition regarding contamination and consultation will be required with a designated Contaminated Land Officer within the Environmental Health Department. The Local Authority is generally concerned with human health risks.
- **Environment Agency:** Where a site is within a groundwater source protection zone or has been designated as a special site the Environment Agency is likely to be involved to ensure that controlled waters are protected.

Based on the results of any consultation, there may be specific investigation and/or remediation requirements imposed by one or more of the Authorities.

9.10 Further Work

There is a risk of onsite pollutant linkages existing currently which need to be quantified.

The following scope of works is suggested in order to collect the require data:

- The sinking of boreholes for the recovery of samples for geotechnical and chemical contamination; and
- The installation and monitoring of gas and groundwater monitoring standpipes.

Due to the operational needs of the existing Anglia Square development, the investigation will be undertake in two phases; pre and post demolition.

Further details of the Phase II Ground Investigation are given in Appendix L.

10. CONCLUSIONS

This Phase I Desk Study and Preliminary Risk Assessment has considered a variety of sources of information regarding the past land uses of the site known as Anglia Square, Norwich, NR3 1DT.

The report has been prepared to assess contamination in relation to the proposed redevelopment of the site which will comprise the redevelopment of the site to provide up to 1,100 new residential dwellings and flexible retail, commercial and other non-residential floorspace including food & drink premises, offices, community hub and local community uses together with services yards, cycle and refuse stores, plant rooms, car parking and other ancillary space. Hard and soft landscaping of public open spaces will be provided comprising streets and squares/courtyards for pedestrians and cyclists, other landscape works within existing streets surrounding the site, service infrastructure and other associated work.

The site has been put to a residential and commercial use since at least the Middle Ages. More specifically, since 1880 the site was used as a mixed use development that included industrial buildings that manufactured crape fabrics and materials for clothing, tannery, shoe & bootmakers, an oilskin manufacturing clothing company, printers, timber merchants, fruit and vegetable wholesale warehouse and residential housing. The site was bombed during World War II. The land was redeveloped in the mid-1960s and the Anglia Square shopping centre and commercial buildings were constructed. The site layout has not changed since 1968 to the present day.

Although the risk to human health from soil contamination is considered to be low to moderate at present, the proposed development is likely to create more sensitive receptors on site (residential properties) which would increase the risk to high.

Ground gas migration from the site is considered to be a moderate risk due to the type of industries previously noted as being onsite before Anglia Square was developed as commercial shopping centre.

The site sits directly on the White Chalk Subgroup which is designated as Principal Aquifer (the overlying Superficial Deposits are a Secondary A Aquifer) It is considered that groundwater could potentially be impacted by development at the site and as such further action is required. The risk to controlled waters is currently considered to be moderate.

This Phase I study therefore concludes that the overall risk from potential contamination (soil) at the site is high on completion of the redevelopment, and as such further site investigation works are required as outlined in Appendix L.

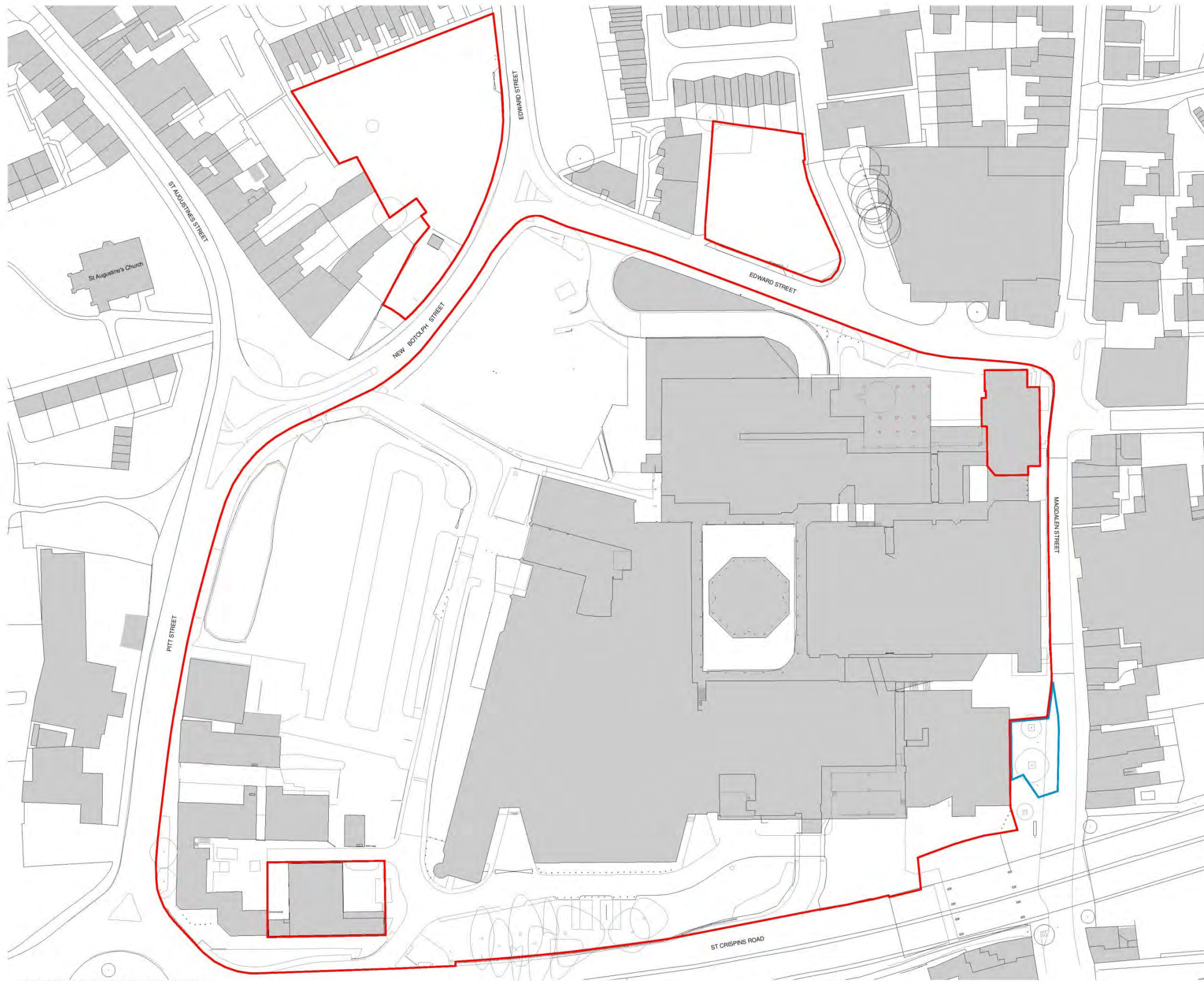
APPENDICES

- A. PLANS & FIGURES**
- B. PHOTOGRAPHIC LOG & SITE PHOTOGRAPHS**
- C. ENVIROCHECK DATA – HISTORICAL MAPS**
- D. ENVIROCHECK DATA – INSURANCE MAPS**
- E. HISTORICAL AERIAL PHOTOGRAPHS**
- F. HISTORICAL USES PLAN**
- G. ENVIROCHECK DATA – GEOLOGICAL & GROUND STABILITY DATA**
- H. HISTORICAL BOREHOLE RECORDS**
- I. ENVIROCHECK DATA – ENVIRONMENTAL SETTING**
- J. ENVIROCHECK DATA – ENVIRONMENTAL DATA**
- K. PRELIMINARY UXO ASSESSMENT**
- L. PROPOSED PHASE II INTRUSIVE INVESTIGATIONS**

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A. PLANS & FIGURES

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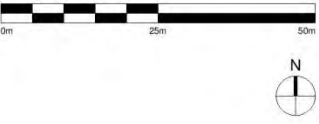
Contractors and consultants are not to scale dimensions from this drawing

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Drawings to be read in conjunction with the associated Design & Access Statement, associated consultant design team documents & reports and landscape information

Landscape shown is for illustrative purposes only. For detailed landscape information, please refer to the landscape information & documents.



General Notes

All figures and areas are approximate only and subject to statutory constraints, detail design & design development

Structural Design: Subject to structural input & coordination

Services Design: Subject to services input & coordination

Fire Strategy: Subject to fire input & coordination

- Application Boundary
- Land Owned by CT to be subject to separate application for part of the Mobility Hub

00-1	31.03.22	Issued For Planning
Revision	Date	Drawn By / Description

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E: Lon@BroadwayMalyan.com

www.BroadwayMalyan.com

Client
Weston Homes

Project
**Anglia Square
Norwich**

Description
**Hybrid Application Site Plan
Block Plan on Existing OS Base**

Status
For Planning

Scale	Drawn By	Date
	BM	31.03.22
Job Number	Drawing Number	Revision
35301	ZZ-00-DR-A-01-0200	D0-1

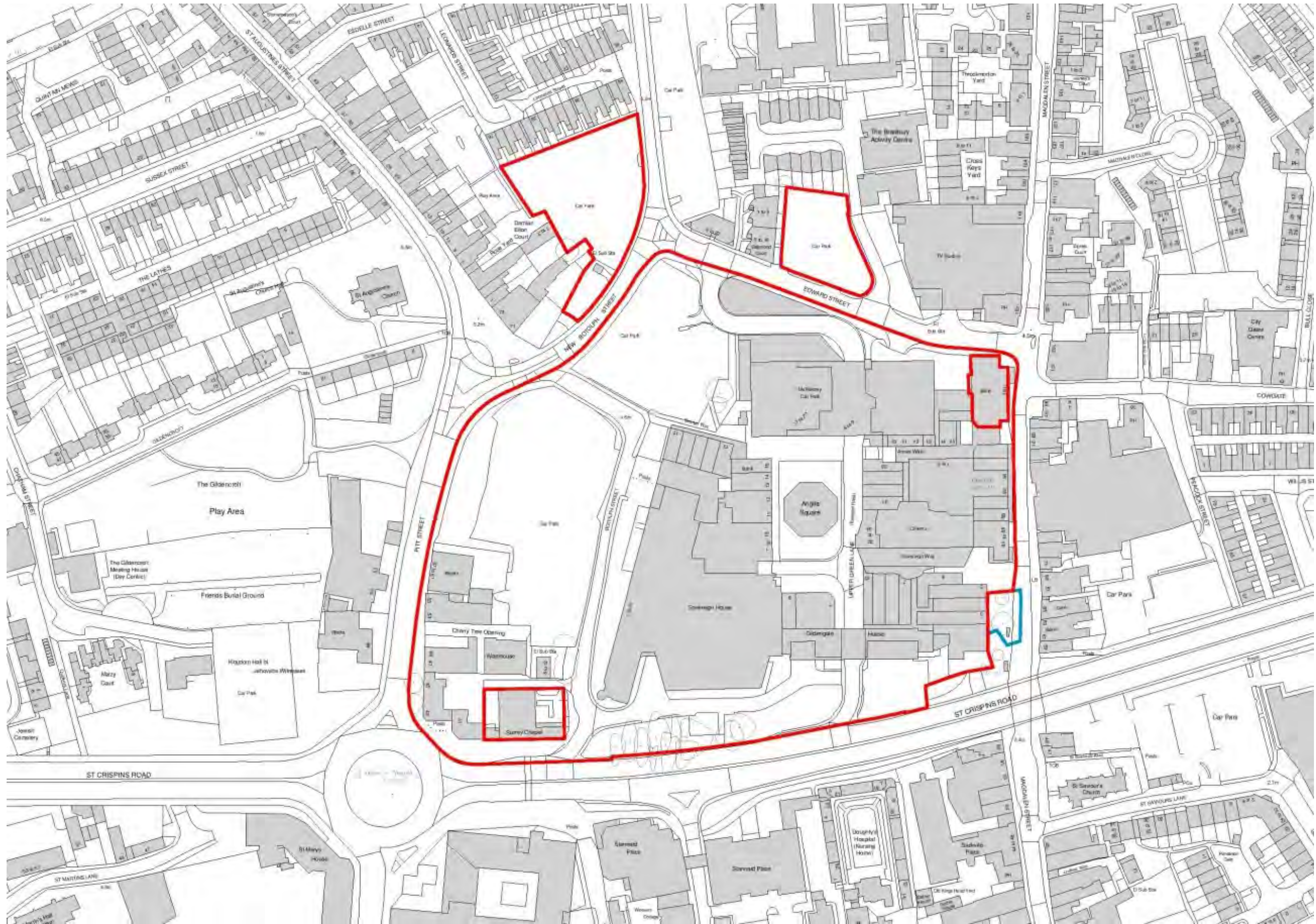
Original size 100mm @ A1 Copyright Broadway Malyan Limited

24/03/2022 16:44:28 Autodesk Docs://5301 Anglia Square BM5301-ZZ-RA22-A-C-Site.rvt

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		EXISTING SITE LAYOUT





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PHASE 1



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		PHASING PLAN

PHASE 2



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		PHASING PLAN

PHASE 3



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		PHASING PLAN

PHASE 4

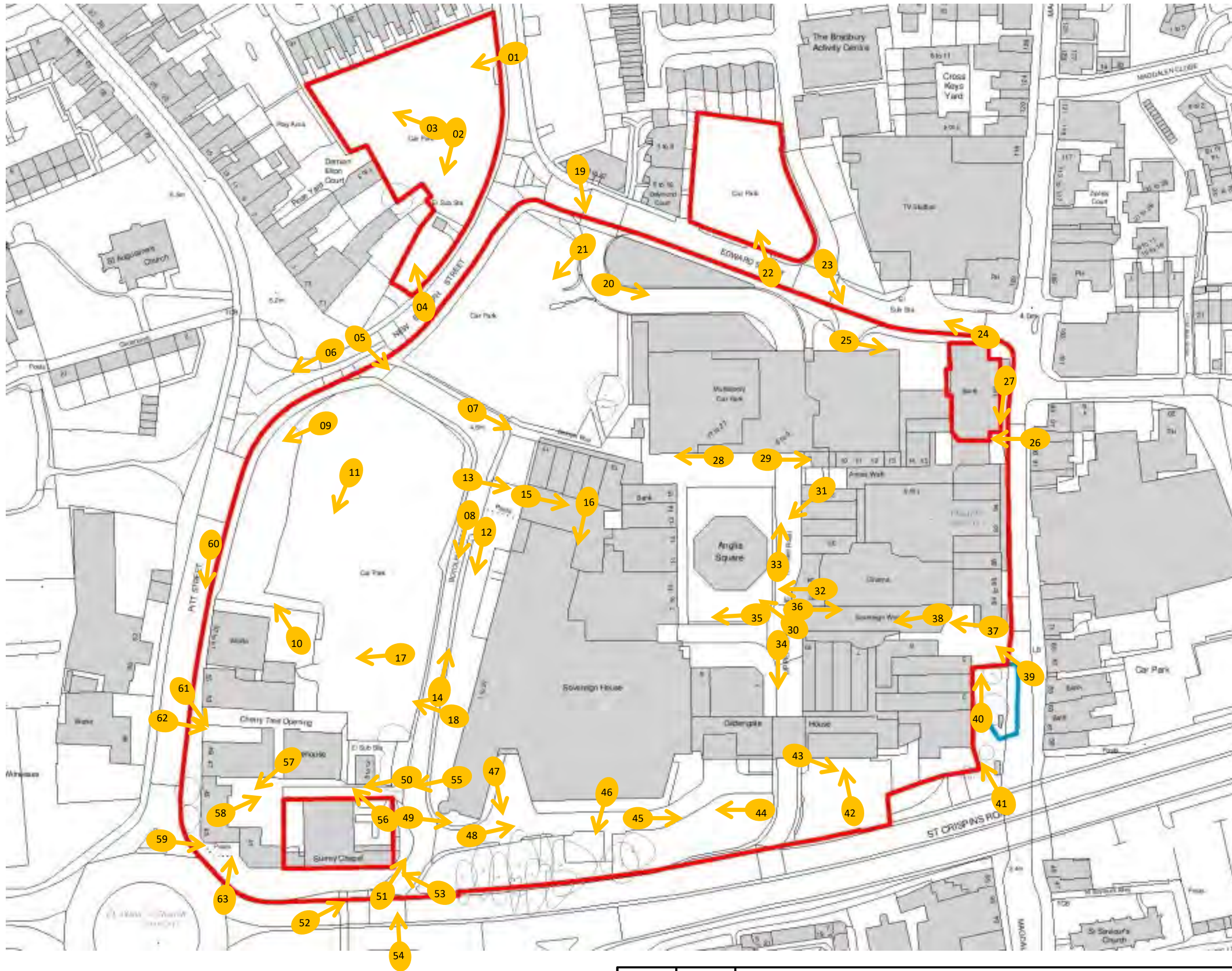


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		PHASING PLAN

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B. SITE PHOTOGRAPHS

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LEGEND

999 → Location & Direction of Photograph

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		PHOTOGRAPH LOCATION PLAN





Plate 1



Plate 2

ANGLIA SQUARE, NORWICH
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Plate 3



Plate 4

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Plate 5



Plate 6

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Plate 7



Plate 8

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Plate 9



Plate 10

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Plate 11



Plate 12

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Plate 13



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Plate 15

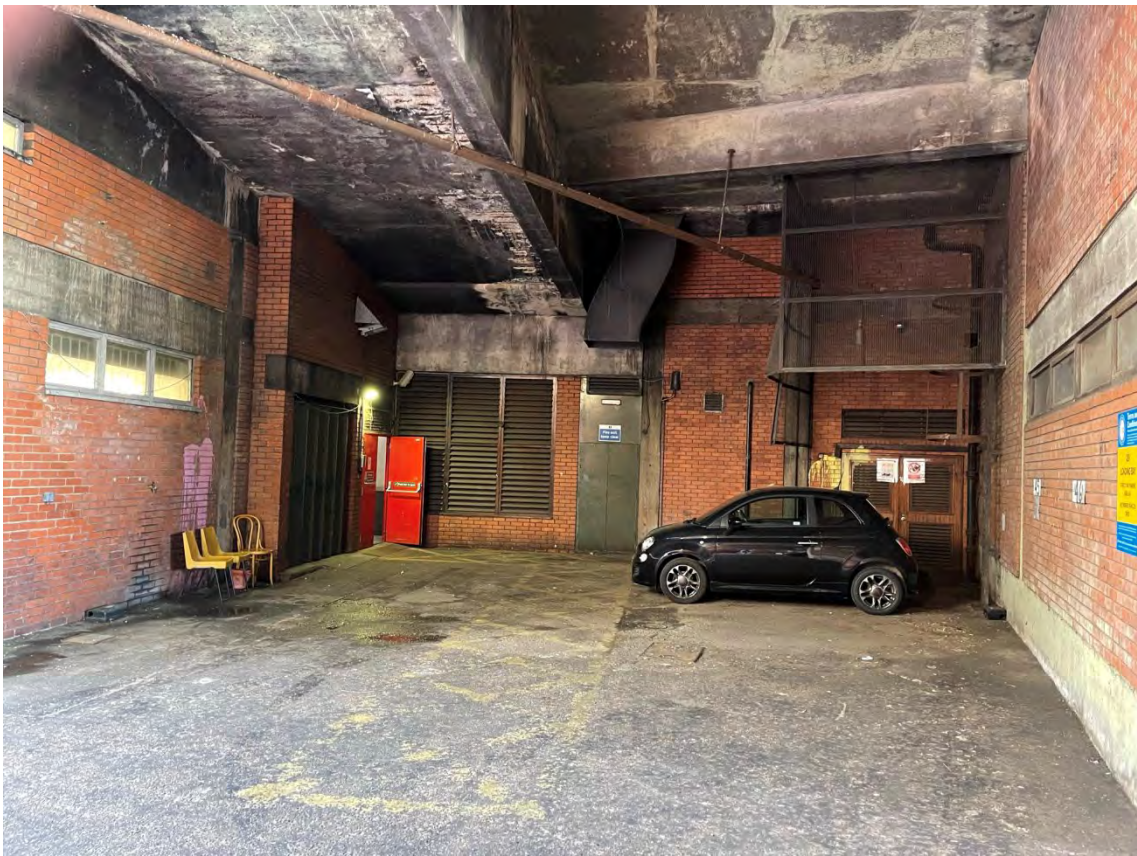


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Plate 17



Plate 18

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Plate 21



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Plate 27



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Plate 30

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Plate 37



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Plate 39



Plate 40

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Plate 41



Plate 42

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Plate 43



Plate 44

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Plate 45



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Plate 49



Plate 50

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Plate 51



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Plate 53



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Plate 55



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Plate 57



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Plate 59



Plate 60

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SITE PHOTOGRAPHS



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Plate 61



Plate 62

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C. ENVIROCHECK DATA – HISTORICAL MAPS

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 Site Boundary (approximate)

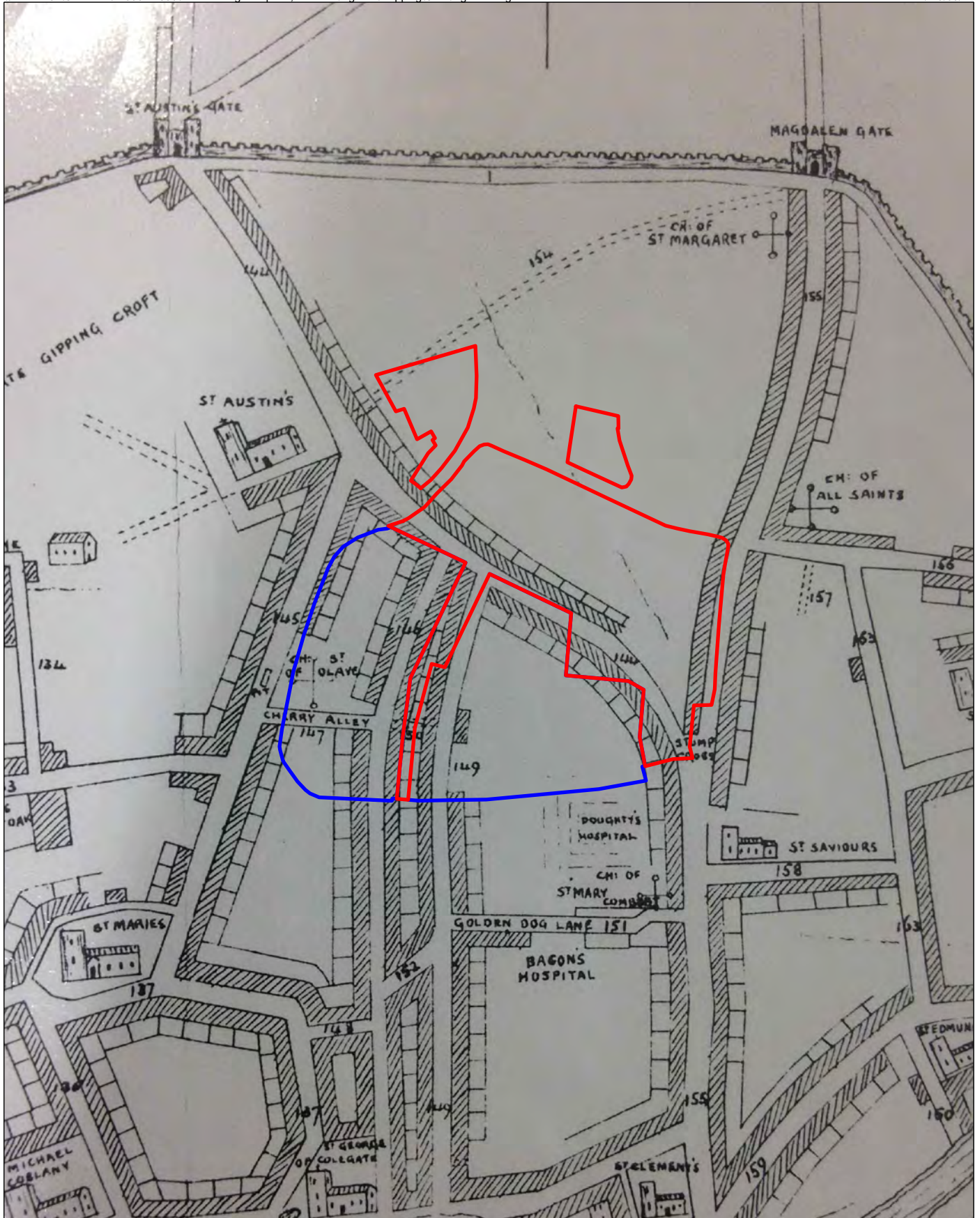
 Blueline (approximate)



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Illustrative Only



Figure 9
c.1300 Norwich Parishes
Reconstruction of Property
Ownership



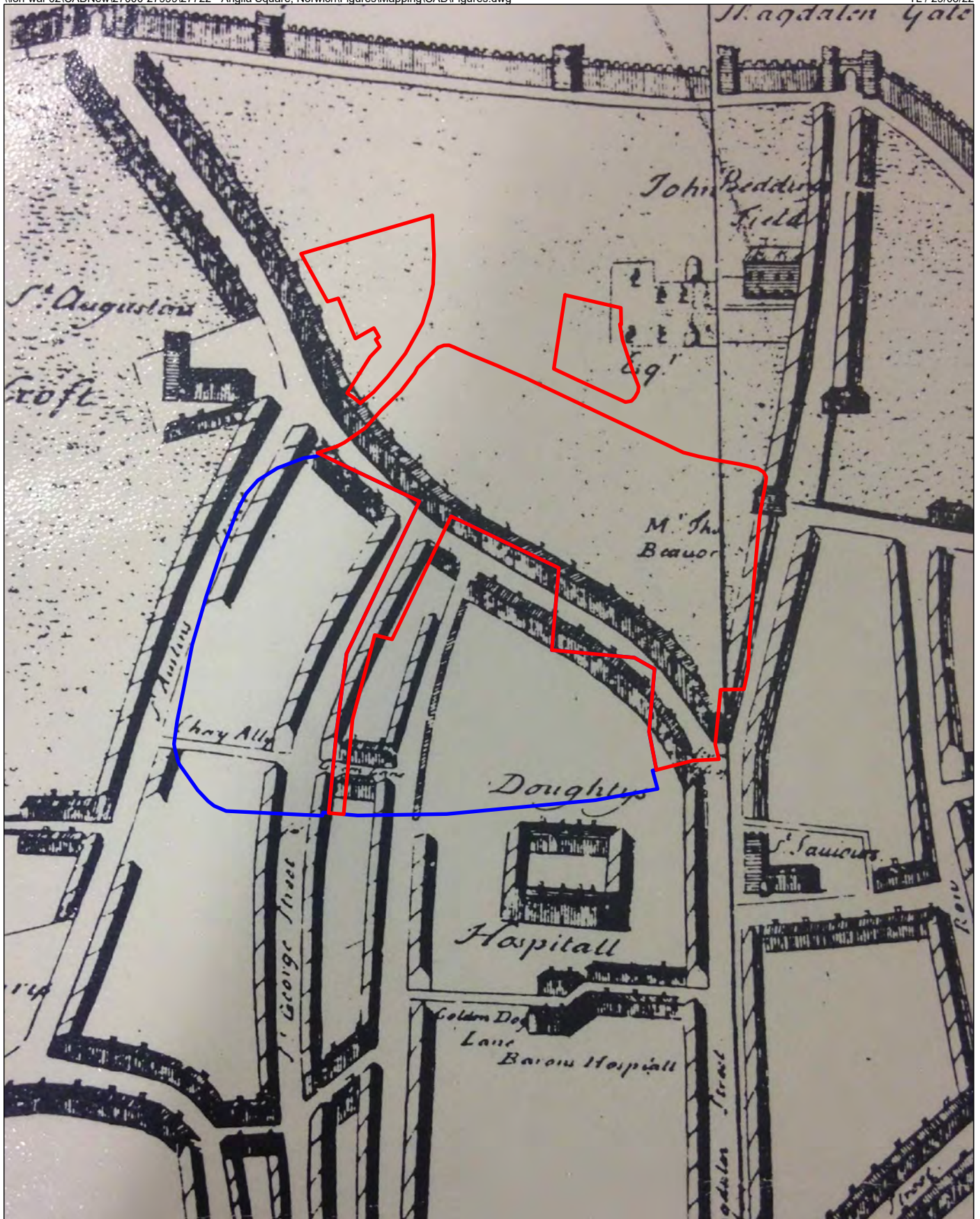
- Site Boundary (approximate)
- Blueline (approximate)




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Illustrative Only



Figure 10
1696 Cleer Map of Norwich



 Site Boundary (approximate)

 Blueline (approximate)

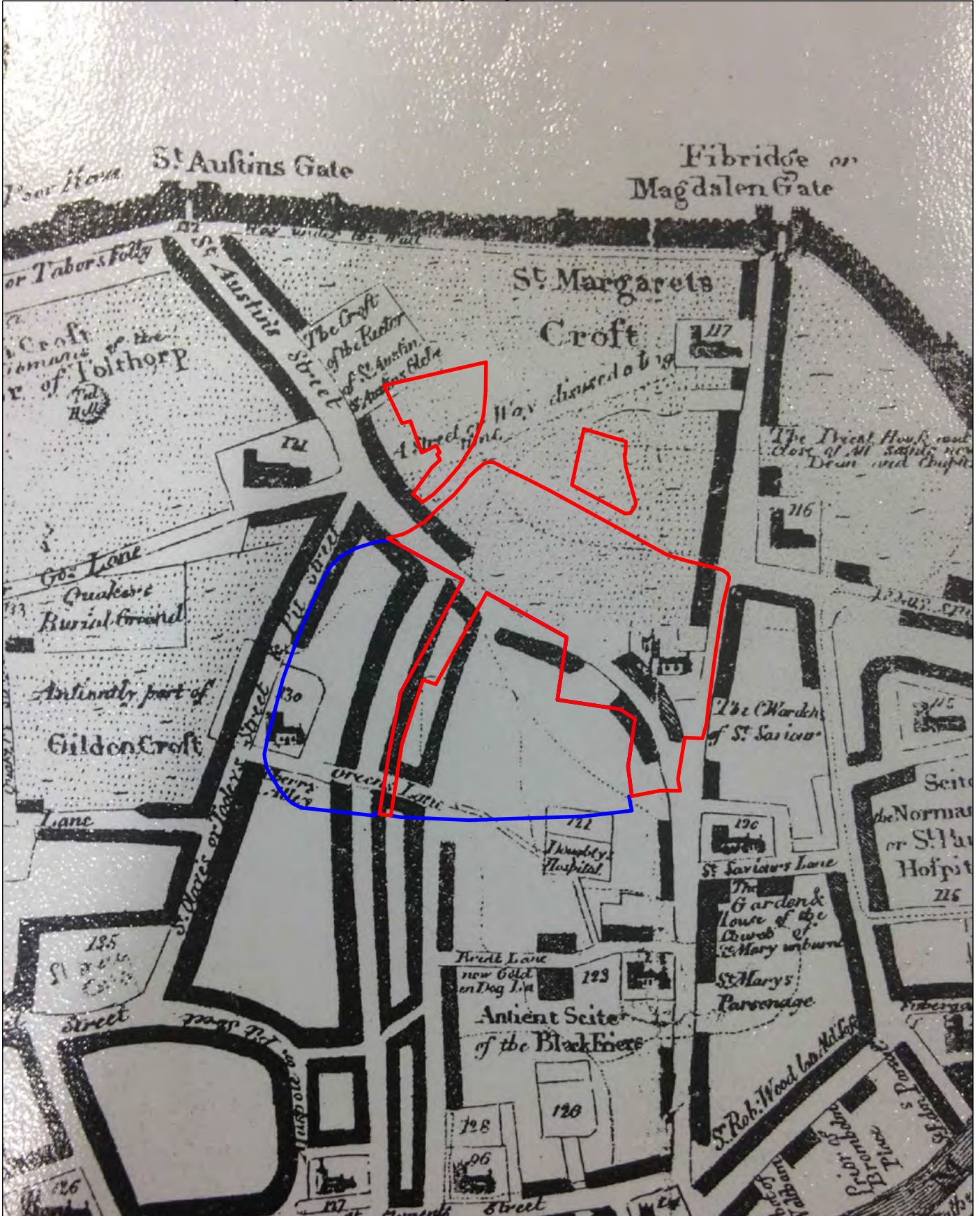


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Figure 11

1727 Corbridge Map of Norwich



Site Boundary (approximate)

Blueline (approximate)

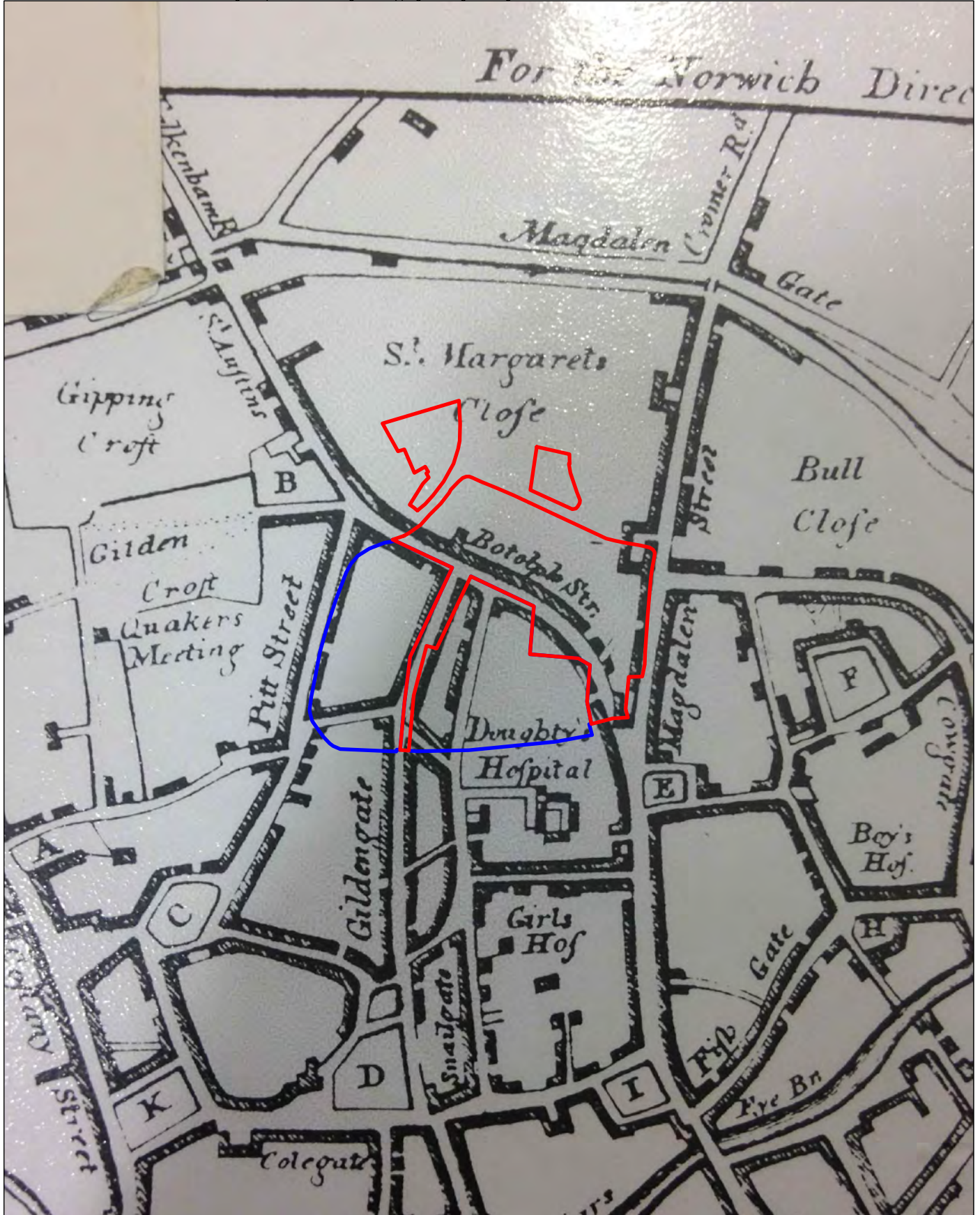


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Figure 12

1746 Blomefield Map of Norwich



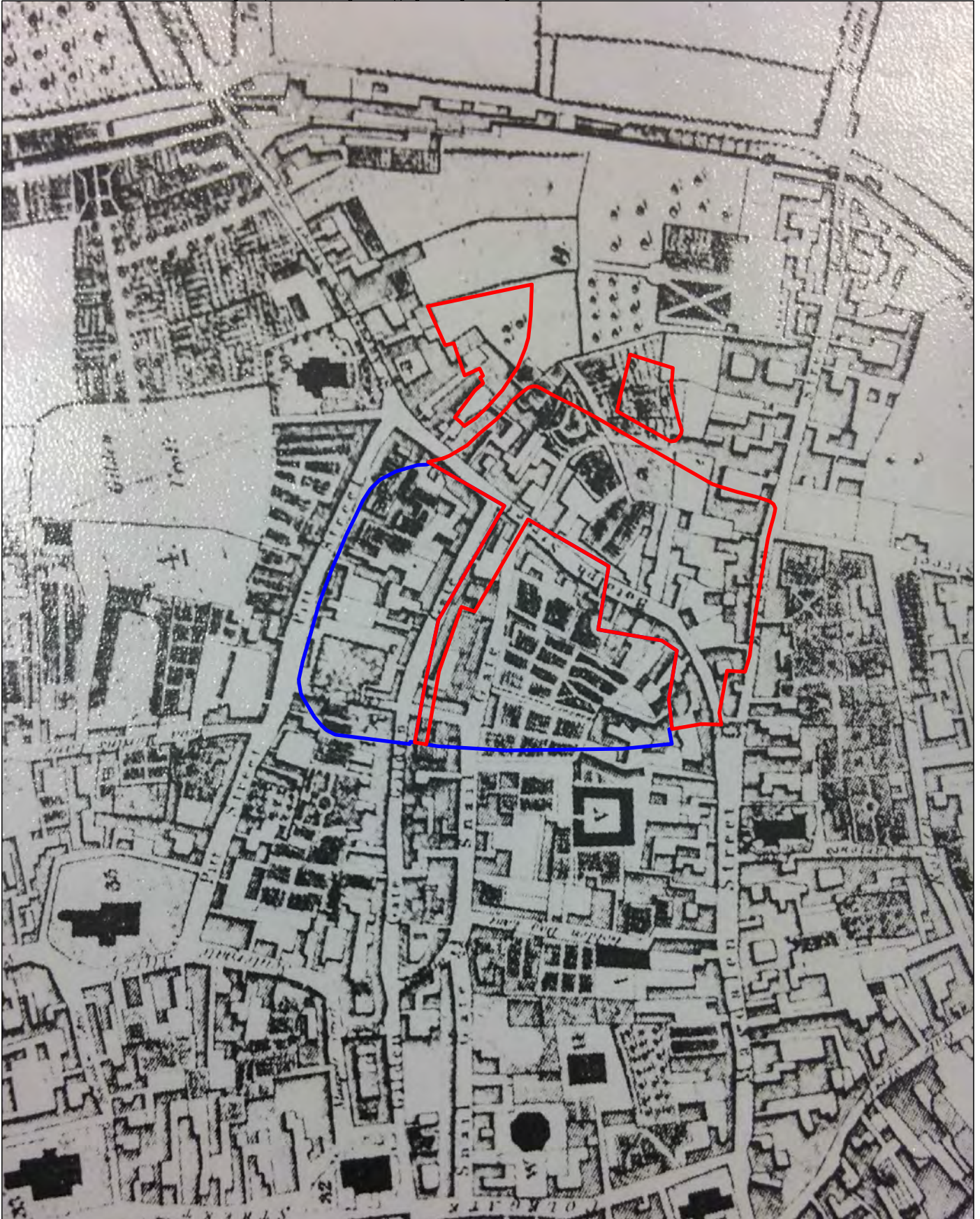
- Site Boundary (approximate)
- Blueline (approximate)





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Figure 13
1783 Smith Map of Norwich



-  Site Boundary (approximate)
-  Blueline (approximate)





Not to Scale:
Illustrative Only



Figure 14

1789 Hochstetter Map of Norwich



-  Site Boundary (approximate)
-  Blueline (approximate)



Not to Scale:
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Figure 15

1830 Dallinger Map of Norwich

Norfolk

Published 1884 - 1886

Source map scale - 1:500

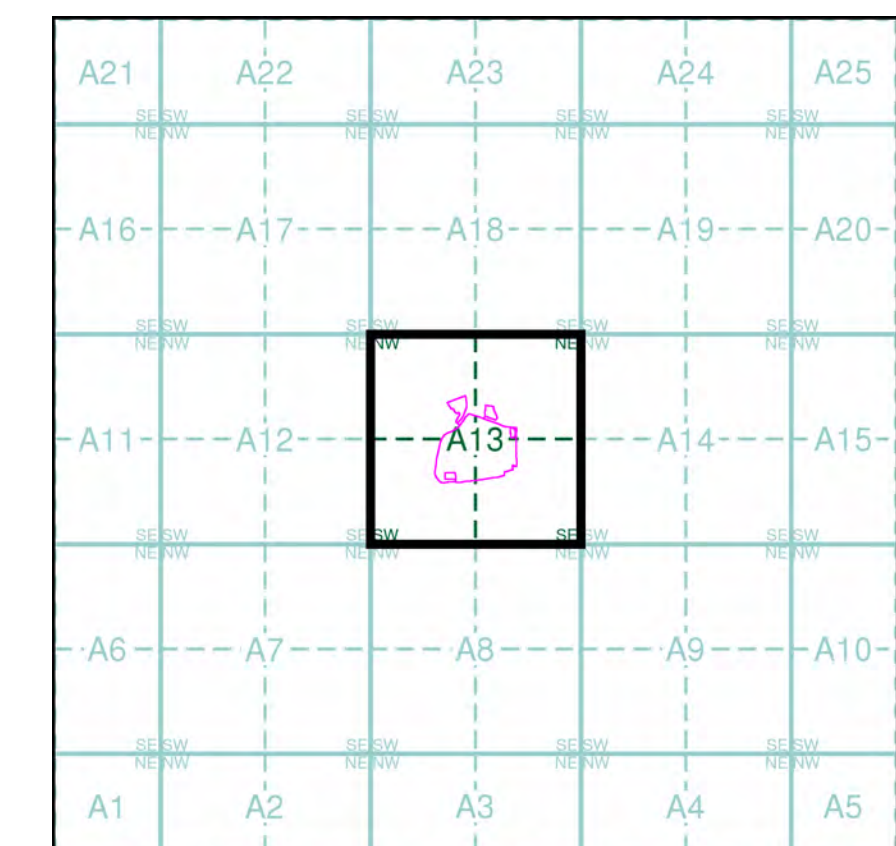
The 1:500 scale Ordnance Survey mapping was introduced in 1855 as a replacement for the 1:528 scale and to complement the 1:2500 scale that had been implemented in 1853. By 1895, the 1:500 scale covered most towns over a population of about 4000 at the time of survey, although very few towns were mapped more than once at this scale, and none have been since 1910. The 1:500 scale gives particular emphasis to such features as lamp posts, man holes, arched passages and minor building projections. Also often featured are divisions between tenements, interior ground floor layouts of public buildings, and on earlier plans, the functions of the various parts of larger industrial premises are also indicated. Content of the plans does vary however, from one town to the next in terms of, for example, the completeness of railway tracks and the coverage of public buildings.

Please note: Due to the partial coverage of Historical Town Plans, it is possible that not all segments within an order will contain mapping. Only the segments that have Town Plan coverage will be generated.

Map Name(s) and Date(s)

063_11_007	063_11_008	063_11_009
1884	1885	1885
1:500	1:500	1:500
063_11_012	063_11_013	063_11_014
1885	1885	1885
1:500	1:500	1:500
063_11_017	063_11_018	063_11_019
1885	1885	1885
1:500	1:500	1:500

Historical Town Plan - Segment A13

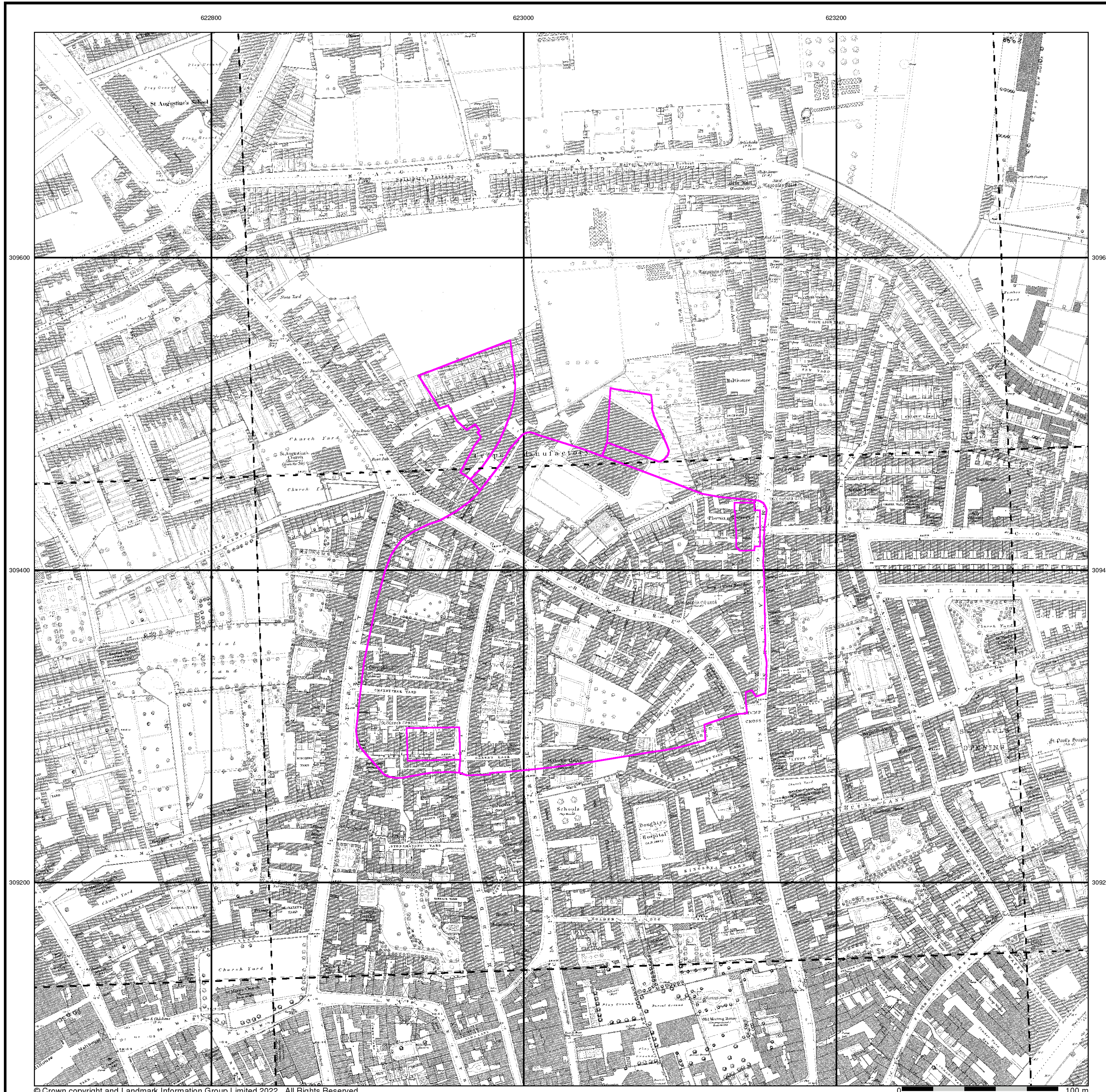


Order Details

Order Number: 297057661_1_1
 Customer Ref: CON01-NORW-045
 National Grid Reference: 623020, 309390
 Slice: A
 Site Area (Ha): 4.68
 Search Buffer (m): 0

Site Details

Anglia Square, NORWICH, NR3 1DZ



Historical Mapping Legends

Ordnance Survey County Series and Ordnance Survey Plan 1:2,500

Quarry **Gravel Pit** **Sand Pit**
Clay Pit **Shingle** **Refuse Heap**
Sloping Masonry **Flat Rock**
Marsh **Reeds** **Osiers**
Rough Pasture **Furze** **Wood**
Mixed Wood **Brushwood** **Orchard**
Fir **Ford** **Stepping Stones**
Ferry **Waterfall** **Lock**
Trig. Station **Altitude at Trig. Station**
B.M. 325.9 **Bench Mark** **Surface Level**
Arrow denotes flow of water **Antiquities (site of)**
Cutting **Embankment**
Railway crossing Road **Level Crossing** **Road crossing Railway**
Railway crossing River or Canal **Road over single stream** **Road over River or Canal**
County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
County Borough Boundary (England)
County Burgh Boundary (Scotland)
Co. Boro. Bdy.
Co. Burgh Bdy.
BP BS Boundary Post or Stone **P.C.B** Police Call Box
B.R. Bridle Road **P** Pump
E.P Electricity Pylon **S.P** Signal Post
F.B. Foot Bridge **SL** Sluice
F.P. Foot Path **Sp.** Spring
G.P Guide Post or Board **T.C.B** Telephone Call Box
M.S Mile Stone **Tr.** Trough
M.P M.R Mooring Post or Ring **W** Well

Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250

Inactive Quarry, Chalk Pit or Clay Pit **Active Quarry, Chalk Pit or Clay Pit**
Rock **Boulders**
Cliff **Slopes** **Top**
Roofed Building **Glazed Roof Building**
Sloping Masonry **Archway**
Non-Coniferous Tree (surveyed) **Coniferous Tree (surveyed)**
Non-Coniferous Trees (not surveyed) **Coniferous Trees (not surveyed)**
Orchard Tree **Scrub** **Bracken**
Coppice, Osier **Reeds** **Marsh, Saltings**
Rough Grassland **Heath** **Culvert**
Direction of water flow **Bench Mark** **Antiquity (site of)**
Cave Entrance **Triangulation Station** **Electricity Pylon**
Electricity Transmission Line
County Boundary (Geographical)
County & Civil Parish Boundary
Civil Parish Boundary
Admin. County or County Bor. Boundary
London Borough Boundary
Symbol marking point where boundary mereing changes
BH Beer House **P** Pillar, Pole or Post
BP, BS Boundary Post or Stone **PO** Post Office
Cn, C Capstan, Crane **PC** Public Convenience
Chy Chimney **PH** Public House
D Fn Drinking Fountain **Pp** Pump
EI P Electricity Pillar or Post **SB, S Br** Signal Box or Bridge
FAP Fire Alarm Pillar **SP, SL** Signal Post or Light
FB Foot Bridge **Spr** Spring
GP Guide Post **Tk** Tank or Track
H Hydrant or Hydraulic **TCB** Telephone Call Box
LC Level Crossing **TCP** Telephone Call Post
MH Manhole **Tr** Trough
MP Mile Post or Mooring Post **Wr Pt, Wr T** Water Point, Water Tap
MS Mile Stone **W** Well
NTL Normal Tidal Limit **Wd Pp** Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250

Cliff **Slopes** **Top**
Rock **Rock (scattered)**
Boulders **Boulders (scattered)**
Positioned Boulder **Scree**
Non-Coniferous Tree (surveyed) **Coniferous Tree (surveyed)**
Non-Coniferous Trees (not surveyed) **Coniferous Trees (not surveyed)**
Orchard Tree **Scrub** **Bracken**
Coppice, Osier **Reeds** **Marsh, Saltings**
Rough Grassland **Heath** **Culvert**
Direction of water flow **Triangulation Station** **Antiquity (site of)**
Electricity Transmission Line **Electricity Pylon**
B.M. 231.60m Bench Mark **Buildings with Building Seed**
Roofed Building **Glazed Roof Building**
Civil parish/community boundary
District boundary
County boundary
Boundary post/stone
Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)
Bks Barracks **P** Pillar, Pole or Post
Bty Battery **PO** Post Office
Cemy Cemetery **PC** Public Convenience
Chy Chimney **Pp** Pump
Cis Cistern **Ppg Sta** Pumping Station
Dismtd Rly Dismantled Railway **PW** Place of Worship
EI Gen Sta Electricity Generating Station **Sewage Ppg Sta** Sewage Pumping Station
EI P Electricity Pole, Pillar **SB, S Br** Signal Box or Bridge
EI Sub Sta Electricity Sub Station **SP, SL** Signal Post or Light
FB Filter Bed **Spr** Spring
Fn / D Fn Fountain / Drinking Ftn. **Tk** Tank or Track
Gas Gov Gas Valve Compound **Tr** Trough
GVC Gas Governor **Wd Pp** Wind Pump
GP Guide Post **Wr Pt, Wr T** Water Point, Water Tap
MH Manhole **Wks** Works (building or area)
MP, MS Mile Post or Mile Stone **W** Well

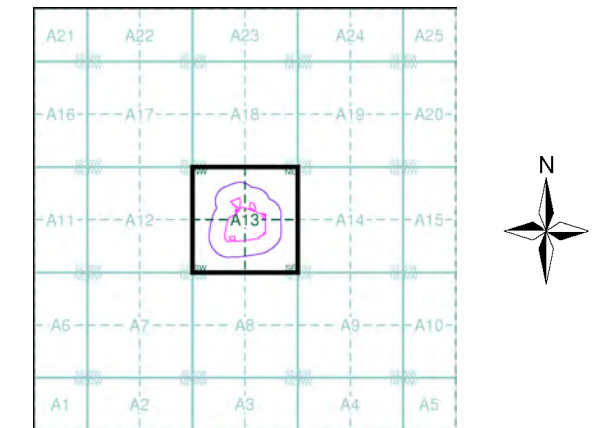
Envirocheck®

LANDMARK INFORMATION GROUP®

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Norfolk	1:2,500	1886	2
Norfolk	1:2,500	1907	3
Norfolk	1:2,500	1928	4
Norfolk	1:2,500	1938	5
Ordnance Survey Plan	1:1,250	1956	6
Ordnance Survey Plan	1:2,500	1956 - 1957	7
Ordnance Survey Plan	1:1,250	1962 - 1973	8
Ordnance Survey Plan	1:1,250	1971 - 1974	9
Ordnance Survey Plan	1:1,250	1974	10
Supply of Unpublished Survey Information	1:1,250	1976	11
Additional SIMs	1:1,250	1978 - 1983	12
Additional SIMs	1:1,250	1984 - 1992	13
Large-Scale National Grid Data	1:1,250	1994	14
Historical Aerial Photography	1:2,500	1999	15

Historical Map - Segment A13



Order Details

Order Number: 297057661_1_1
 Customer Ref: CON01-NORW-045
 National Grid Reference: 623020, 309390
 Slice: A
 Site Area (Ha): 4.68
 Search Buffer (m): 100

Site Details

Anglia Square, NORWICH, NR3 1DZ

Landmark
 INFORMATION GROUP

Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk

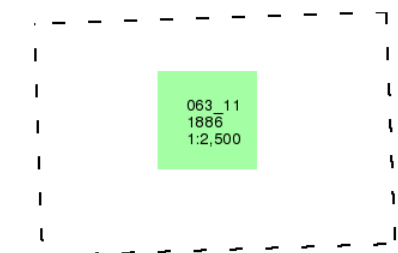
Norfolk

Published 1886

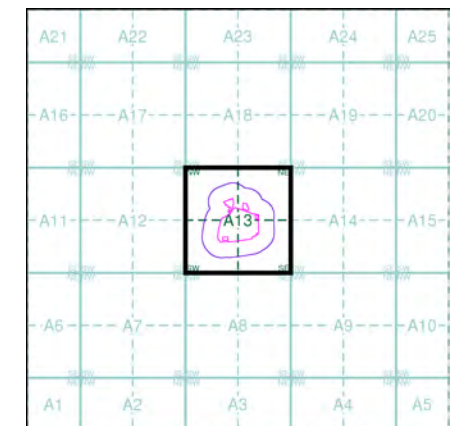
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 297057661_1_1
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National Grid Reference: 623020, 309390
Slice: A
Site Area (Ha): 4.68
Search Buffer (m): 100

Site Details

Anglia Square, NORWICH, NR3 1DZ



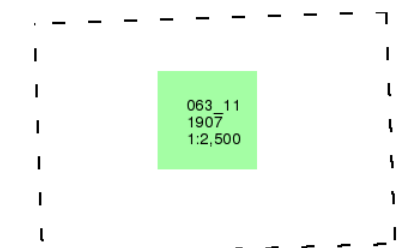
Norfolk

Published 1907

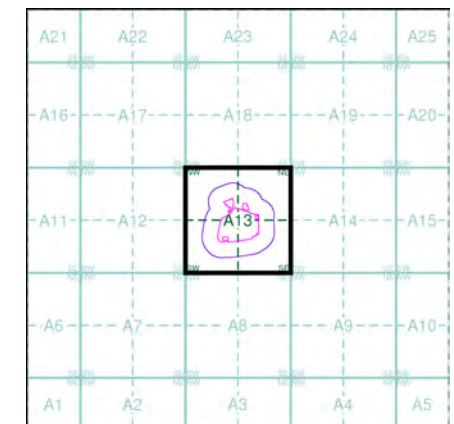
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13

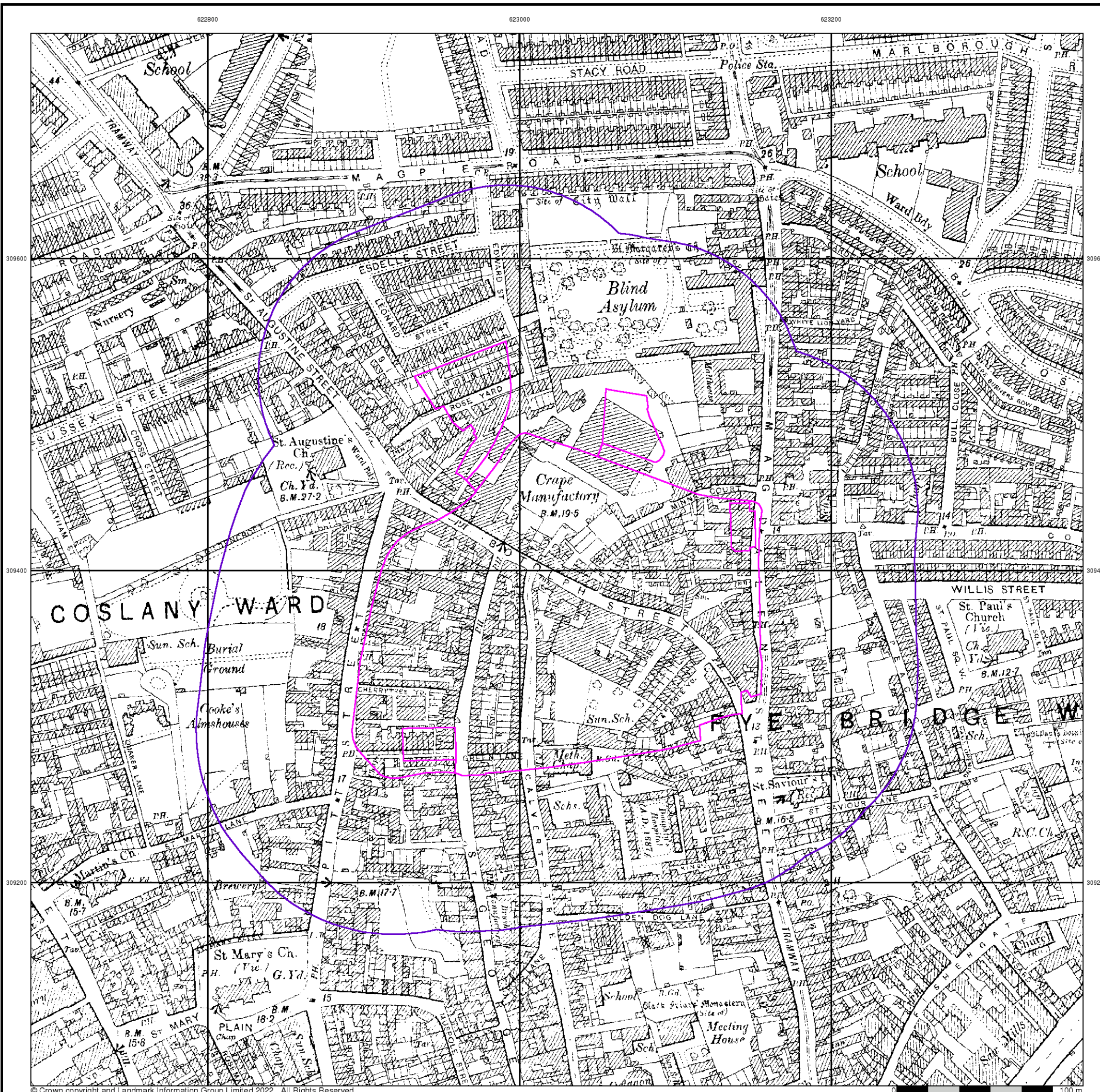


Order Details

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 National Grid Reference: 623020, 309390
 Slice: A
 Site Area (Ha): 4.68
 Search Buffer (m): 100

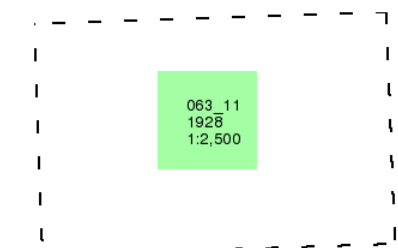
Site Details

Anglia Square, NORWICH, NR3 1DZ

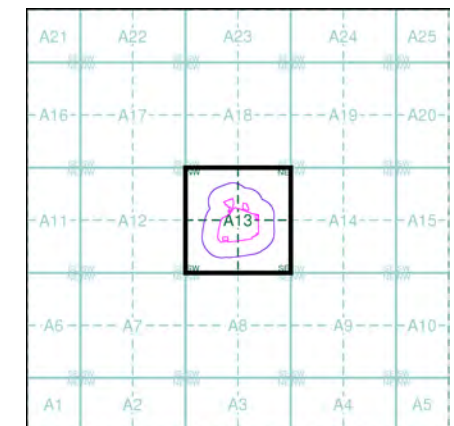


The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13

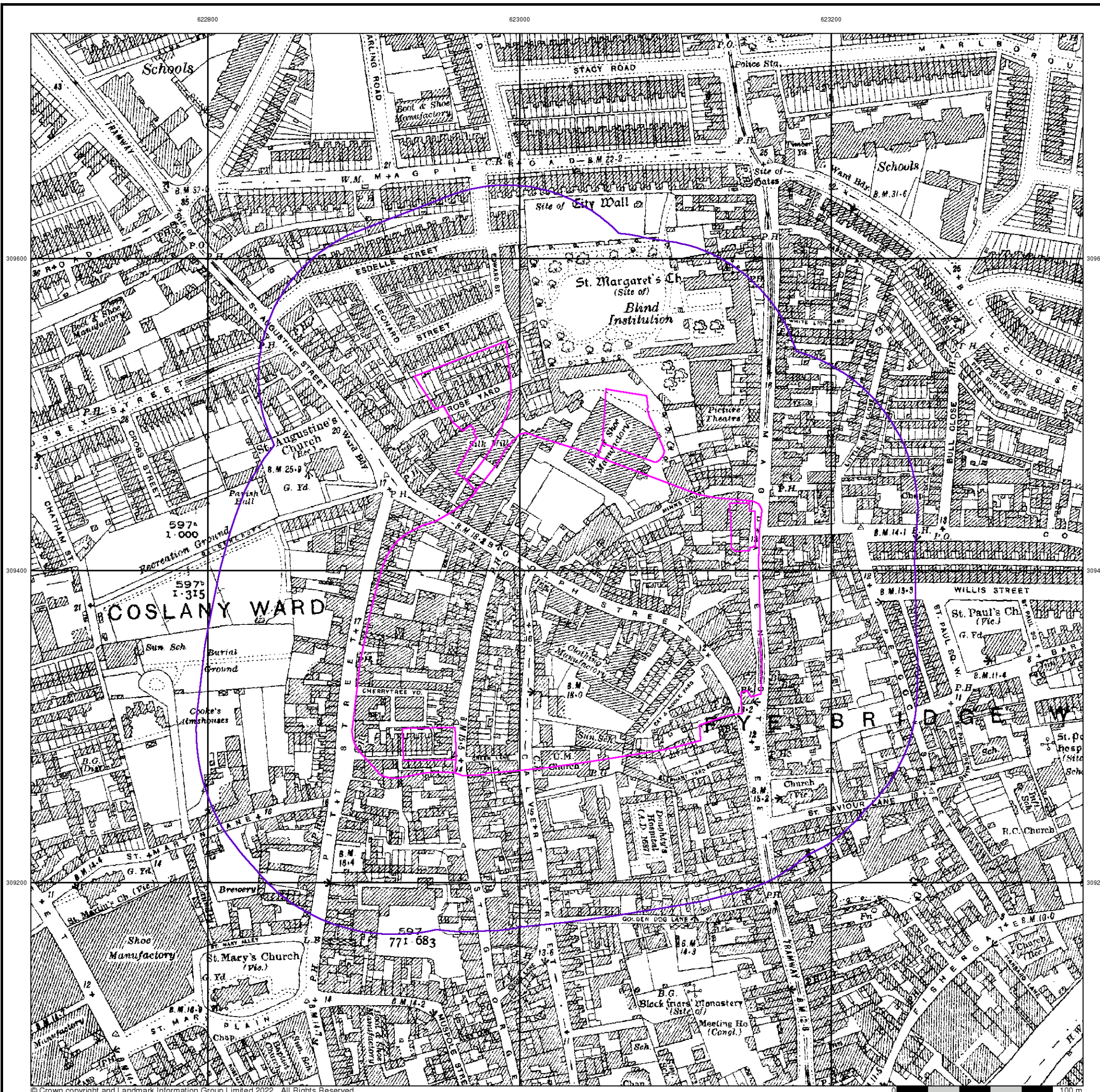


Order Details

Order Number: 297057661_1_1
 Customer Ref: CON01-NORW-045
 National Grid Reference: 623020, 309390
 Slice: A
 Site Area (Ha): 4.68
 Search Buffer (m): 100

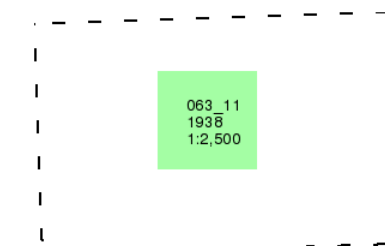
Site Details

Anglia Square, NORWICH, NR3 1DZ

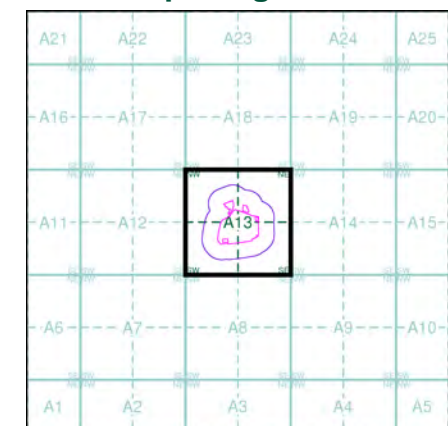


The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 297057661_1_1
 Customer Ref: CON01-NORW-045
 National Grid Reference: 623020, 309390
 Slice: A
 Site Area (Ha): 4.68
 Search Buffer (m): 100

Site Details

Anglia Square, NORWICH, NR3 1DZ



Ordnance Survey Plan

Published 1956

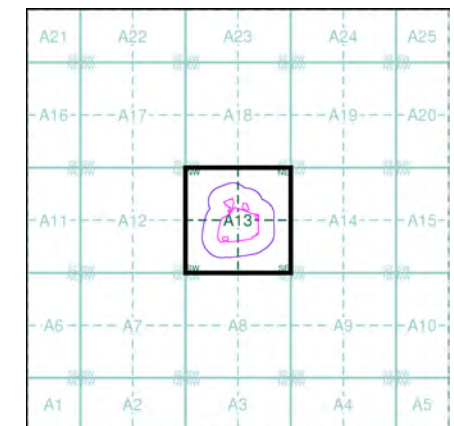
Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

TG2209NE 1956 1:1,250	TG2309NW 1956 1:1,250
TG2309SW 1956 1:1,250	

Historical Map - Segment A13



Order Details

Order Number: 297057661_1_1
 Customer Ref: CON01-NORW-045
 National Grid Reference: 623020, 309390
 Slice: A
 Site Area (Ha): 4.68
 Search Buffer (m): 100

Site Details

Anglia Square, NORWICH, NR3 1DZ



Ordnance Survey Plan

Published 1956 - 1957

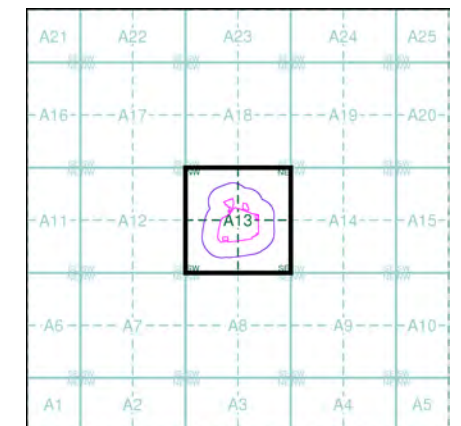
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

TG2209 1956 1:2,500	TG2309 1957 1:2,500
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Historical Map - Segment A13



Order Details

Order Number: 297057661_1_1
 Customer Ref: CON01-NORW-045
 National Grid Reference: 623020, 309390
 Slice: A
 Site Area (Ha): 4.68
 Search Buffer (m): 100

Site Details

Anglia Square, NORWICH, NR3 1DZ



Ordnance Survey Plan

Published 1962 - 1973

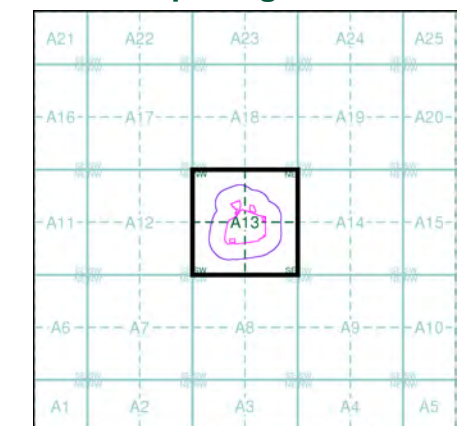
Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

TG2209NE 1972 1:1,250	TG2309NW 1973 1:1,250
TG2209SE 1964 1:1,250	TG2309SW 1962 1:1,250

Historical Map - Segment A13

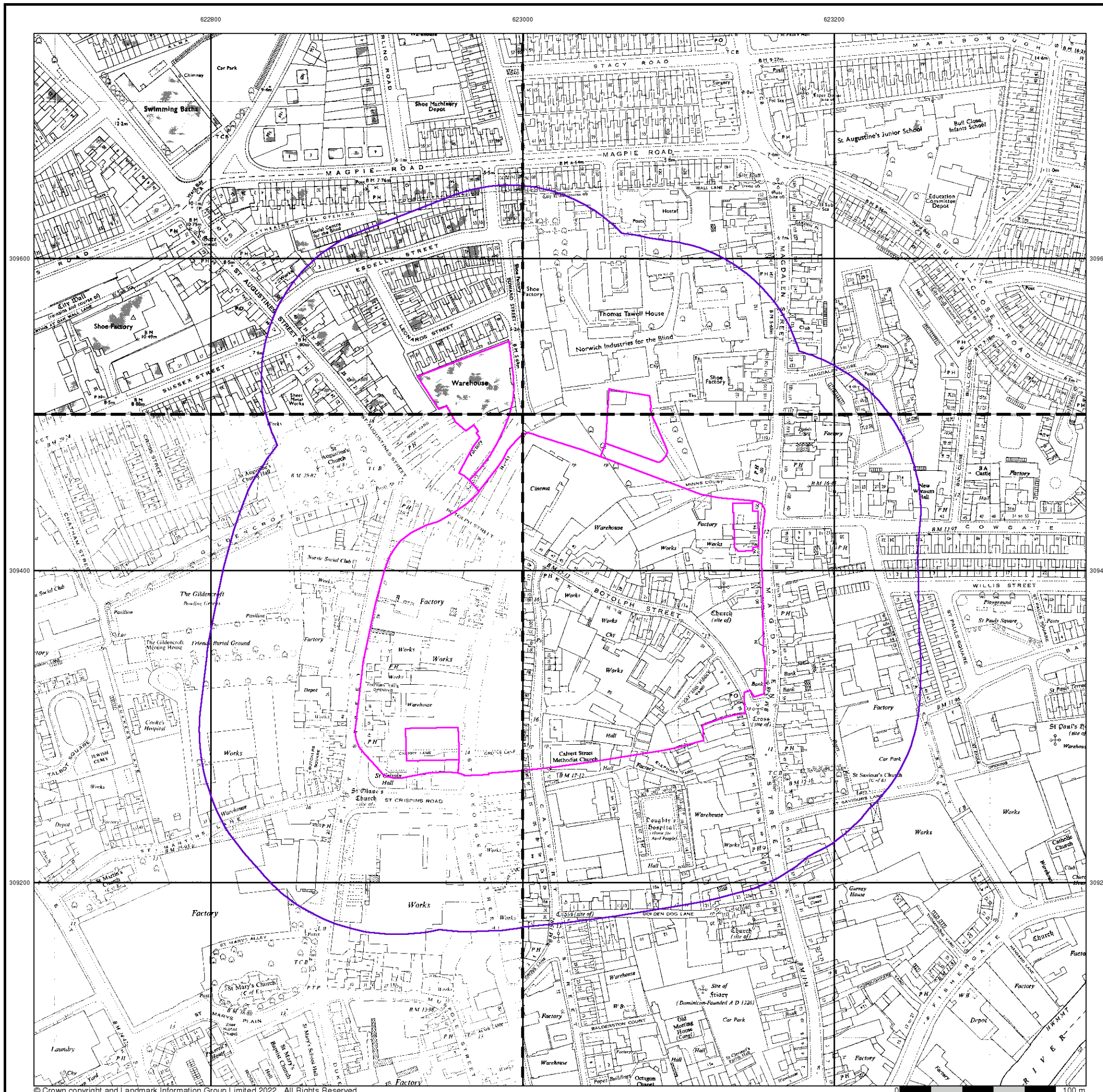


Order Details

Order Number: 297057661_1_1
 Customer Ref: CON01-NORW-045
 National Grid Reference: 623020, 309390
 Slice: A
 Site Area (Ha): 4.68
 Search Buffer (m): 100

Site Details

Anglia Square, NORWICH, NR3 1DZ



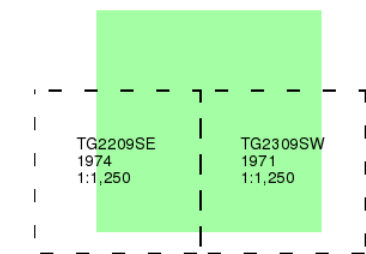
Ordnance Survey Plan

Published 1971 - 1974

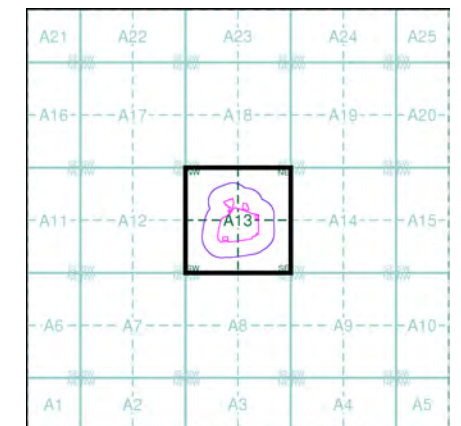
Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 297057661_1_1
 Customer Ref: CON01-NORW-045
 National Grid Reference: 623020, 309390
 Slice: A
 Site Area (Ha): 4.68
 Search Buffer (m): 100

Site Details

Anglia Square, NORWICH, NR3 1DZ



622800

623000

623200

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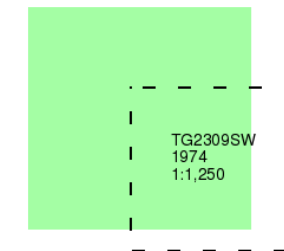
Ordnance Survey Plan

Published 1974

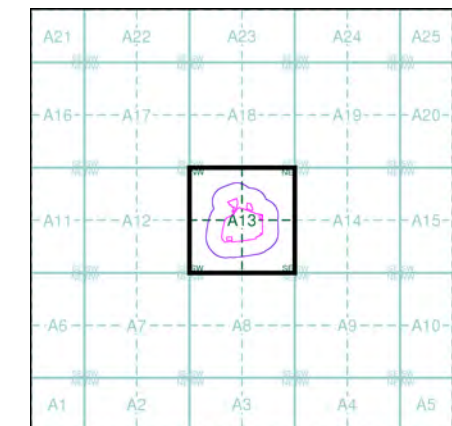
Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

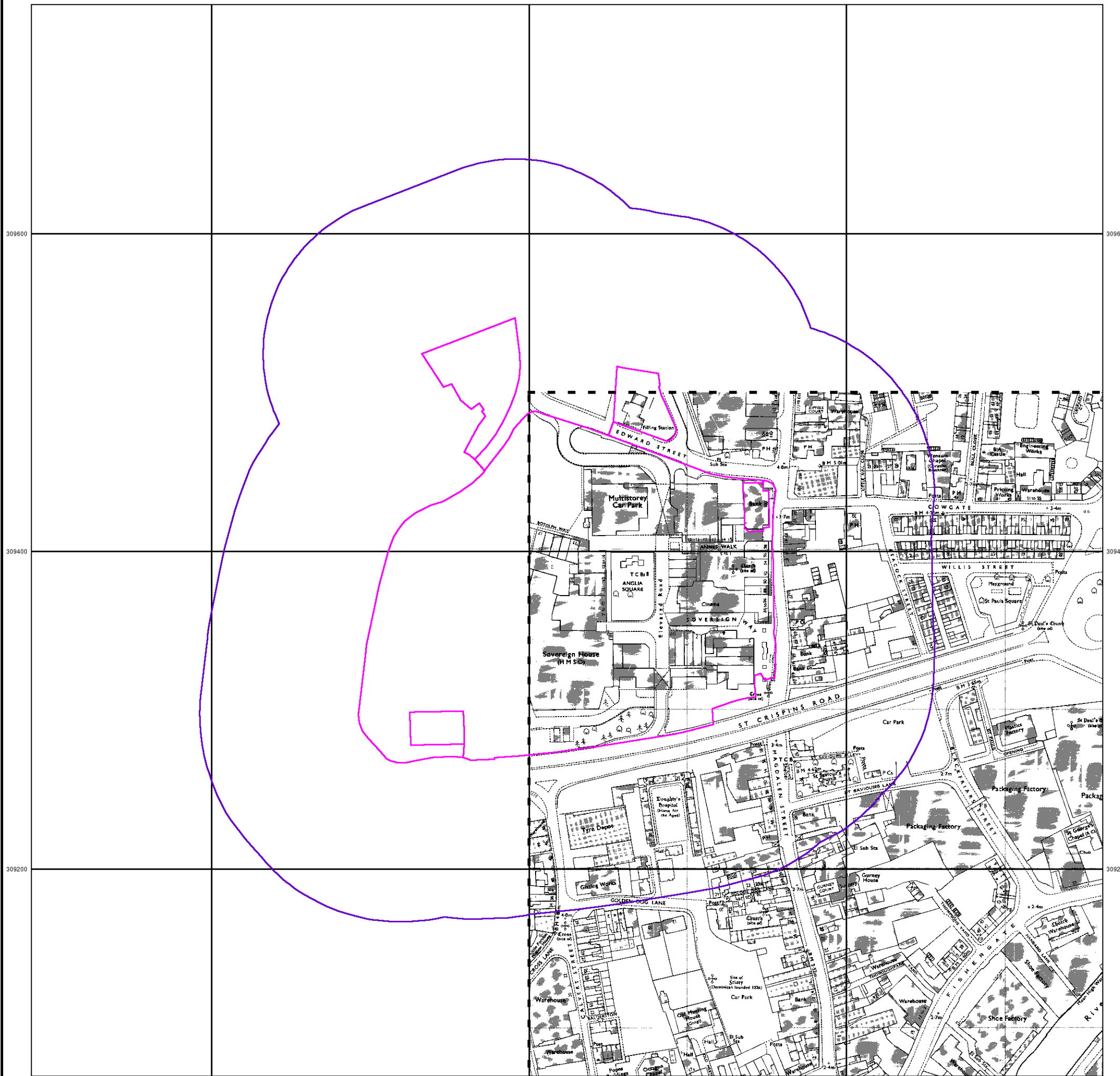
Order Number: 297057661_1_1
Customer Ref: CON01-NORW-045
National Grid Reference: 623020, 309390
Slice: A
Site Area (Ha): 4.68
Search Buffer (m): 100

Site Details

Anglia Square, NORWICH, NR3 1DZ

Landmark
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Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Supply of Unpublished Survey Information

Published 1976

Source map scale - 1:1,250

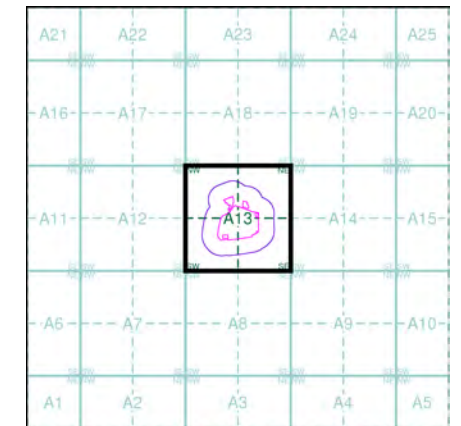
SUSI maps (Supply of Unpublished Survey Information) were produced between 1972 and 1977, mainly for internal use at Ordnance Survey. These were more of a 'work-in-progress' plan as they showed updates of individual areas on a map. These maps were unpublished, and they do not represent a single moment in time. They were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

TG2209NE
1976
1:1,250

TG2209SE
1976
1:1,250

Historical Map - Segment A13



Order Details

Order Number: 297057661_1_1
Customer Ref: CON01-NORW-045
National Grid Reference: 623020, 309390
Slice: A
Site Area (Ha): 4.68
Search Buffer (m): 100

Site Details

Anglia Square, NORWICH, NR3 1DZ



Additional SIMs

Published 1978 - 1983

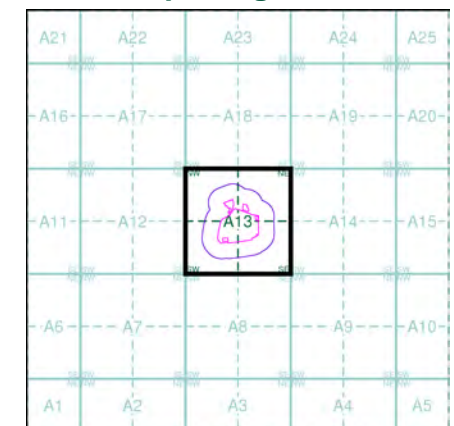
Source map scale - 1:1,250

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

TG2209NE 1983 1:1,250	TG2309NW 1983 1:1,250
TG2209SE 1978 1:1,250	TG2309SW 1979 1:1,250

Historical Map - Segment A13

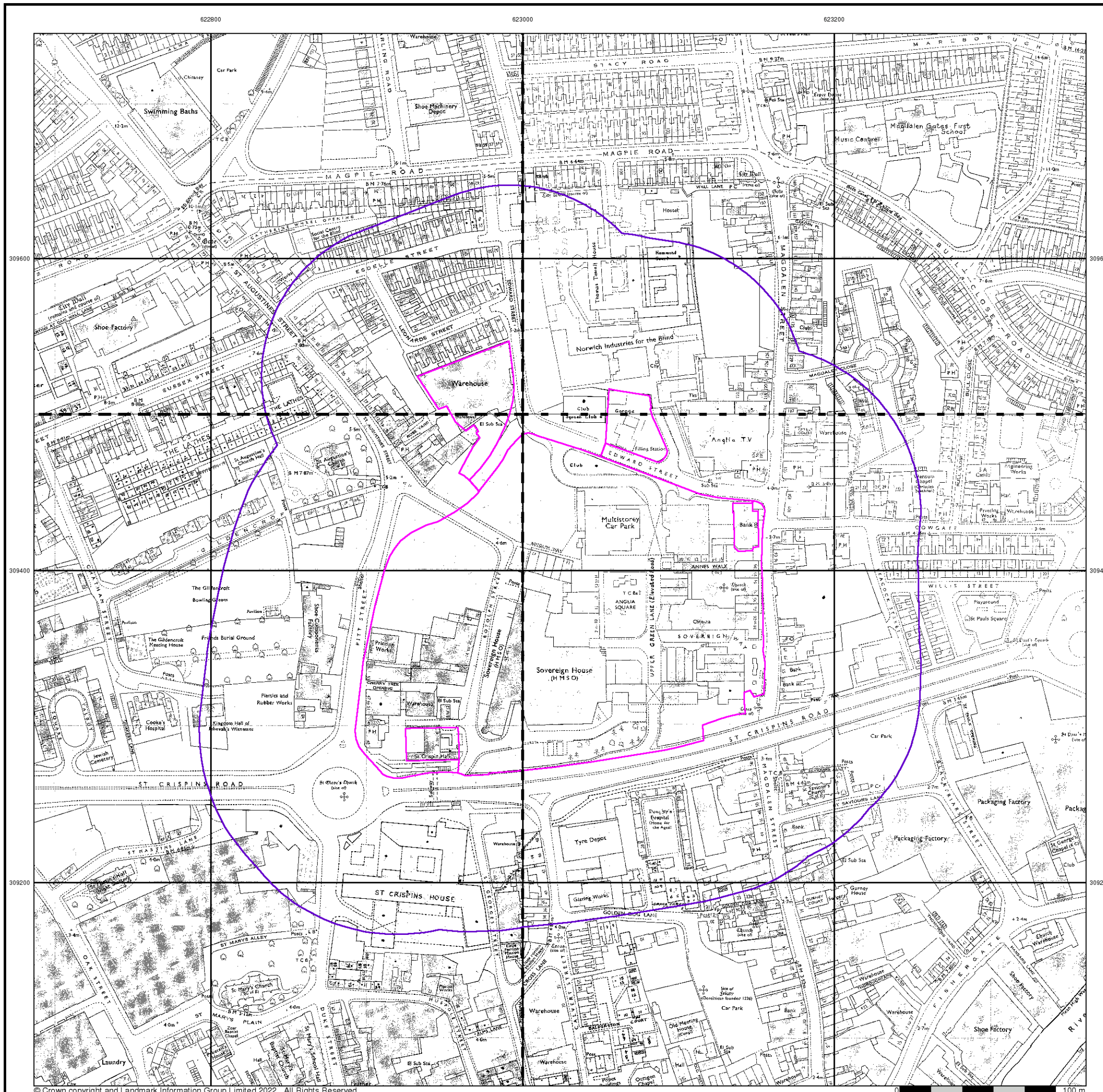


Order Details

Order Number: 297057661_1_1
 Customer Ref: CON01-NORW-045
 National Grid Reference: 623020, 309390
 Slice: A
 Site Area (Ha): 4.68
 Search Buffer (m): 100

Site Details

Anglia Square, NORWICH, NR3 1DZ



Additional SIMs

Published 1984 - 1992

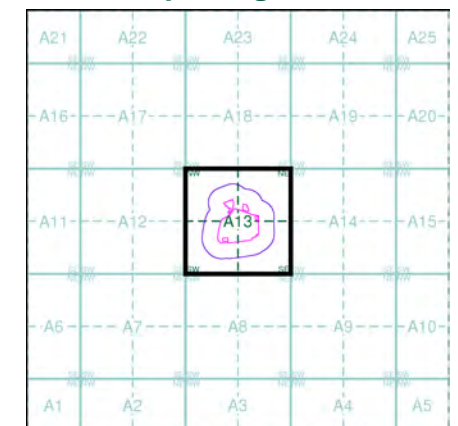
Source map scale - 1:1,250

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

TG2209SE	TG2309SW
1992	1984
1:1,250	1:1,250

Historical Map - Segment A13

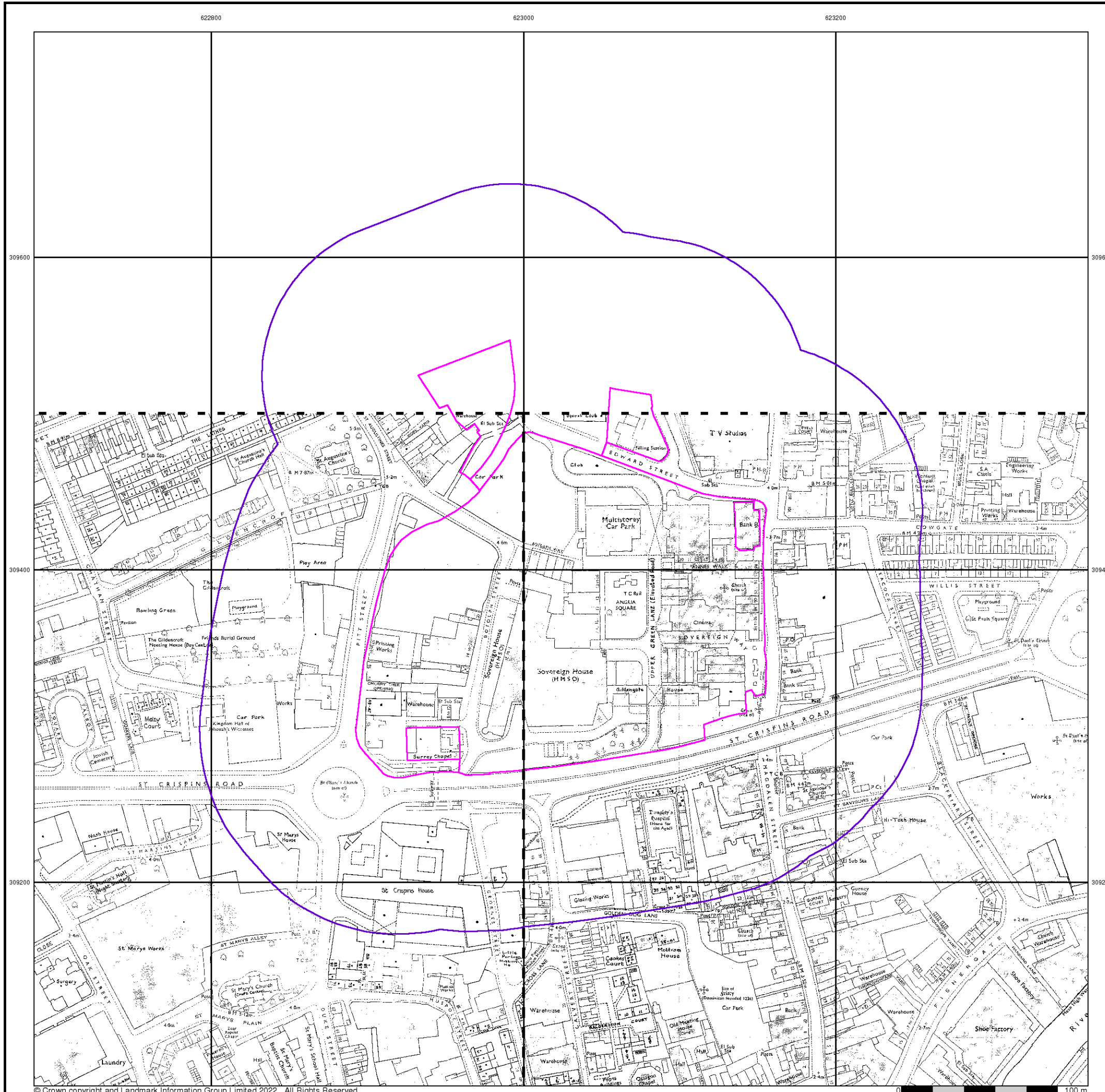


Order Details

Order Number: 297057661_1_1
 Customer Ref: CON01-NORW-045
 National Grid Reference: 623020, 309390
 Slice: A
 Site Area (Ha): 4.68
 Search Buffer (m): 100

Site Details

Anglia Square, NORWICH, NR3 1DZ



Large-Scale National Grid Data

Published 1994

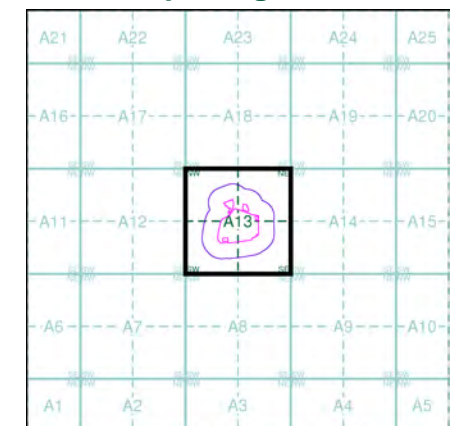
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

TG2209NE 1994 1:1,250	TG2309NW 1994 1:1,250
TG2209SE 1994 1:1,250	TG2309SW 1994 1:1,250

Historical Map - Segment A13



Order Details

Order Number: 297057661_1_1
 Customer Ref: CON01-NORW-045
 National Grid Reference: 623020, 309390
 Slice: A
 Site Area (Ha): 4.68
 Search Buffer (m): 100

Site Details

Anglia Square, NORWICH, NR3 1DZ



622800

623000

623200

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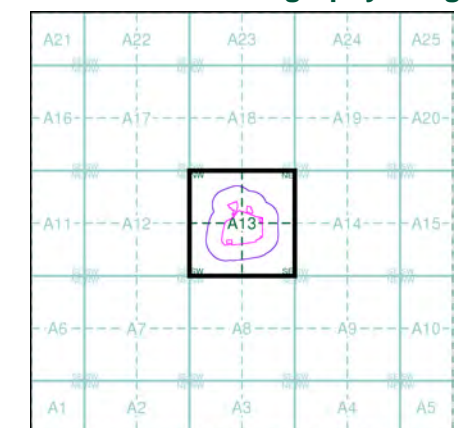
Historical Aerial Photography

Published 1999

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain



Historical Aerial Photography - Segment A13



Order Details

Order Number: 297057661_1_1
 Customer Ref: CON01-NORW-045
 National Grid Reference: 623020, 309390
 Slice: A
 Site Area (Ha): 4.68
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Site Details

Anglia Square, NORWICH, NR3 1DZ

Landmark
 INFORMATION GROUP

Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

	Gravel Pit		Sand Pit		Other Pits
	Quarry		Shingle		Orchard
	Osiers		Reeds		Marsh
	Mixed Wood		Deciduous		Brushwood
	Fir		Furze		Rough Pasture
	Arrow denotes flow of water		Trigonometrical Station		
	Site of Antiquities		Bench Mark		
	Pump, Guide Post, Signal Post		Well, Spring, Boundary Post		
	-285 Surface Level				
	Sketched Contour		Instrumental Contour		
	Main Roads		Minor Roads		
	Sunken Road		Raised Road		
	Road over Railway		Railway over River		
	Railway over Road		Level Crossing		
	Road over River or Canal		Road over Stream		
	Road over Stream				
	County Boundary (Geographical)				
	County & Civil Parish Boundary				
	Administrative County & Civil Parish Boundary				
	County Borough Boundary (England)				
	County Burgh Boundary (Scotland)				
	Rural District Boundary				
	Civil Parish Boundary				

Ordnance Survey Plan 1:10,000

	Chalk Pit, Clay Pit or Quarry		Gravel Pit
	Sand Pit		Disused Pit or Quarry
	Refuse or Slag Heap		Lake, Loch or Pond
	Dunes		Boulders
	Coniferous Trees		Non-Coniferous Trees
	Orchard		Scrub
	Coppice		Heath
	Rough Grassland		Marsh
	Reeds		Saltings
	Building		Glasshouse
	Sloping Masonry		Pylon
	Electricity Transmission Line		Pole
	Cutting		Embankment
	Standard Gauge Multiple Track		Standard Gauge Single Track
	Siding, Tramway or Mineral Line		Narrow Gauge
	Geographical County		
	Administrative County, County Borough or County of City		
	Municipal Borough, Urban or Rural District, Burgh or District Council		
	Borough, Burgh or County Constituency Shown only when not coincident with other boundaries		
	Civil Parish Shown alternately when coincidence of boundaries occurs		
	BP, BS Boundary Post or Stone		Pol Sta Police Station
	Ch Church		PO Post Office
	CH Club House		PC Public Convenience
	F E Sta Fire Engine Station		PH Public House
	FB Foot Bridge		SB Signal Box
	Fn Fountain		Spr Spring
	GP Guide Post		TCB Telephone Call Box
	MP Mile Post		TCP Telephone Call Post
	MS Mile Stone		W Well

1:10,000 Raster Mapping

	Gravel Pit		Refuse tip or slag heap
	Rock		Rock (scattered)
	Boulders		Boulders (scattered)
	Shingle		Mud
	Sand		Sand Pit
	Slopes		Top of cliff
	General detail		Underground detail
	Overhead detail		Narrow gauge railway
	Multi-track railway		Single track railway
	County boundary (England only)		Civil, parish or community boundary
	District, Unitary, Metropolitan, London Borough boundary		Constituency boundary
	Area of wooded vegetation		Non-coniferous trees
	Non-coniferous trees (scattered)		Coniferous trees
	Coniferous trees (scattered)		Positioned tree
	Orchard		Coppice or Osiers
	Rough Grassland		Heath
	Scrub		Marsh, Salt Marsh or Reeds
	Water feature		Flow arrows
	MHW(S) Mean high water (springs)		MLW(S) Mean low water (springs)
	Telephone line (where shown)		Electricity transmission line (with poles)
	Bench mark (where shown)		Triangulation station
	Point feature (e.g. Guide Post or Mile Stone)		Pylon, flare stack or lighting tower
	Site of (antiquity)		Glasshouse
	General Building		Important Building

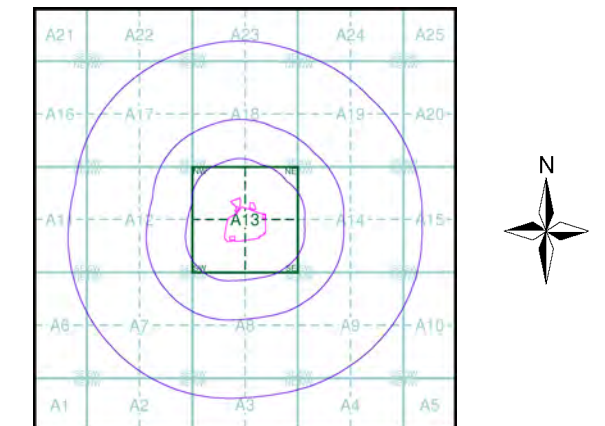
Envirocheck®

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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Norfolk	1:10,560	1885 - 1886	3
Norfolk	1:10,560	1908	4
Norfolk	1:10,560	1919 - 1920	5
Norfolk	1:10,560	1929	6
Norfolk	1:10,560	1938	7
Norfolk	1:10,560	1950 - 1951	8
Ordnance Survey Plan	1:10,000	1957 - 1958	9
Ordnance Survey Plan	1:10,000	1979	10
Norwich	1:10,000	1980	11
Ordnance Survey Plan	1:10,000	1987 - 1989	12
10K Raster Mapping	1:10,000	2000	13
10K Raster Mapping	1:10,000	2006	14
VectorMap Local	1:10,000	2021	15

Historical Map - Slice A



Order Details

Order Number: 297057661_1_1
 Customer Ref: CON01-NORW-045
 National Grid Reference: 623020, 309390
 Slice: A
 Site Area (Ha): 4.68
 Search Buffer (m): 1000

Site Details

Anglia Square, NORWICH, NR3 1DZ

Landmark
 INFORMATION GROUP

Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk

Russian Military Mapping Legends

1:5,000 and 1:10,000 mapping

a. Not drawn to scale b. Drawn to scale

	Government and Administrative Buildings		Military and Industrial Buildings
	Military and Communication Areas		Subway Entrance
	Fireproof Building		Prominent Fireproof Building
	Non-fireproof Building		Non-fireproof Building (non-dwelling)
	Factory, mill, and flour mill, with chimneys		Factory, mill, and flour mill, without chimneys
	Power Station, drawn to scale		Hydroelectric Power Station
	Radio Station, drawn to scale		Telephone Station, drawn to scale
	Abandoned Open-pit Mine or Quarry		Open-pit Salt Mine
	Pit		Oil Deposit or Well
	Oil Seepage		Natural Gas Tank
	Tailings Pile		Fuel Storage Tanks
	Bench Mark		Drill Hole
	Burial Mound		Triangulation Point on Burial Mound
	Single-track Railroad		Double-track Railroad
	Railroad and Station Building		Small Bridge
	Pipe (Culvert)		Tunnel
	Coniferous Forest		Deciduous Forest
	Mixed Forest		Lawns
	Citrus Orchard		Wet Ground
	Scattered Vegetation		

243,8 Values for prominent elevations
186.0 Numbers for spot elevations, depth soundings, contour lines, etc.
0,2 Velocity of the current, width of river bed, depth of river
180/12 Fractional terms: length and capacity of bridges; depth of fords and condition of the river bottom; height of forest and the diameter of trees

Russian Alphabet (For reference and phonetic interpretation of map text)

А а (A)	З з (Z)	П п (P)	Ч ч (CH)
Б б (B)	И и (I)	Р р (R)	Ш ш (SH)
В в (V)	Й й (Y)	С с (S)	Щ щ (SHCH)
Г г (G)	К к (K)	Т т (T)	Ъ (-)
Д д (D)	Л л (L)	У у (U)	Ы (Y)
Е е (E)	М м (M)	Ф ф (F)	Ь (')
Ё ё (YO)	Н н (N)	Х х (KH)	Э э (E)
Ж ж (ZH)	О о (O)	Ц ц (TS)	Ю ю (YU or IU)
			Я я (YA or IA)

1:25,000 mapping

a. Not drawn to scale b. Drawn to scale

	Government and Administrative Buildings		Military and Industrial Buildings
	Military and Communication Areas		Subway Entrance
	Partly Demolished Buildings		Demolished Buildings
	Built-Up Area with Fireproof Buildings Predominant		Built-Up Area with Non-Fireproof Buildings Predominant
	Individual Fireproof Building		Prominent Industrial Building
	Individual Dwelling, Fireproof		Ruins of an Individual Dwelling
	Factory or Mill Chimney		Factory or Mill with Chimney
	Factory or Mill without Chimney		Salt Mine
	Tailings Pile		Pit
	Stone Quarry		Gas Pump or Service Station
	Fuel Storage or Natural Gas Tank		Oil or Natural Gas Derrick
	Small Hydroelectric Power Station		Power Station
	Transformer Station		Cemetery
	Burial Mound (height in metres)		Triangulation Point on Burial Mound
	Triangulation Point		Bench Mark
	Bench Mark (monumented)		Telegraph Office
	Telephone Station		Radio Station
	Radio Tower		Airfield or Seaplane Base
	Landing Strip		Cut
	Fill		Km Post
	Plantings		Width of Road
	Steep Grade		Highway under Construction
	Improved Dirt Road (former truck road)		Small Bridge
	Pipe (Culvert)		Tunnel
	Dismantled Railroad		Double-track Railroad with First Class Station
	Railroad Under Construction		Shore Embankment
	River or Ditch with Embankment		Water Gauge
	Direction and velocity of current		Water Level Mark
	Well		Spring
	Water Reservoir or Rain Water Pit		Isobath with value
	Contour Line and Value		Half Contour Line
	Spot Elevation Value		Coniferous
	Deciduous		Mixed
	Scrub		

Key to Numbers on Mapping

TG20NW_Norwich

No.	Description
2	Bank(S)
3	Job Centre
4	Dockyard (Ship Building)
5	Factory (Gas)
8	Distillery (Liqueur And Vodka)
17	Military Barracks
20	Police Station/Headquarters
25	Post Office
28	Industrial Building (Use Unknown)
31	Council/Government Buildings/Courts
32	Warehouse (Use Unknown)
34	Warehouses (Use Unknown)
39	Railway Station (Freight)
43	Tv Station
47	Military Headquarters (Civil Defence)
49	Factory (Shoes)

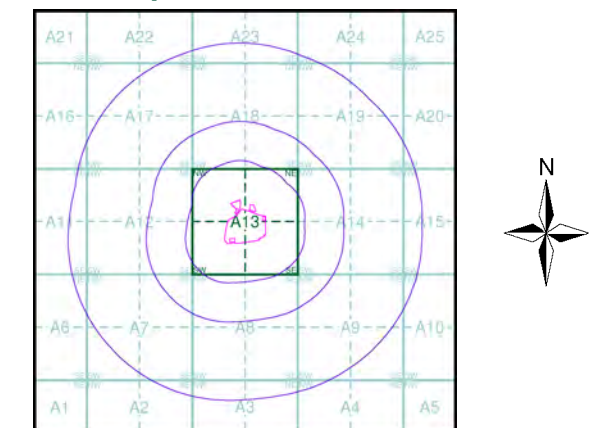
Envirocheck®

LANDMARK INFORMATION GROUP®

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Norfolk	1:10,560	1885 - 1886	3
Norfolk	1:10,560	1908	4
Norfolk	1:10,560	1919 - 1920	5
Norfolk	1:10,560	1929	6
Norfolk	1:10,560	1938	7
Norfolk	1:10,560	1950 - 1951	8
Ordnance Survey Plan	1:10,000	1957 - 1958	9
Ordnance Survey Plan	1:10,000	1979	10
Norwich	1:10,000	1980	11
Ordnance Survey Plan	1:10,000	1987 - 1989	12
10K Raster Mapping	1:10,000	2000	13
10K Raster Mapping	1:10,000	2006	14
VectorMap Local	1:10,000	2021	15

Russian Map - Slice A



Order Details

Order Number: 297057661_1_1
 Customer Ref: CON01-NORW-045
 National Grid Reference: 623020, 309390
 Slice: A
 Site Area (Ha): 4.68
 Search Buffer (m): 1000

Site Details

Anglia Square, NORWICH, NR3 1DZ

Landmark
 INFORMATION GROUP

Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk



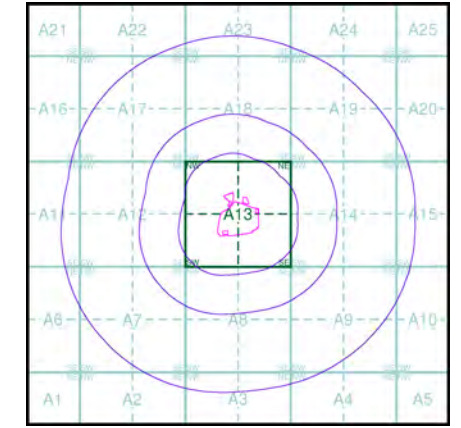
Norfolk
Published 1885 - 1886
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

063NW 1885 1:10,560	063NE 1885 1:10,560
063SW 1885 1:10,560	063SE 1886 1:10,560

Historical Map - Slice A



Order Details

Order Number: 297057661_1_1
 Customer Ref: CON01-NORW-045
 National Grid Reference: 623020, 309390
 Slice: A
 Site Area (Ha): 4.68
 Search Buffer (m): 1000

Site Details

Anglia Square, NORWICH, NR3 1DZ

Norfolk

Published 1908

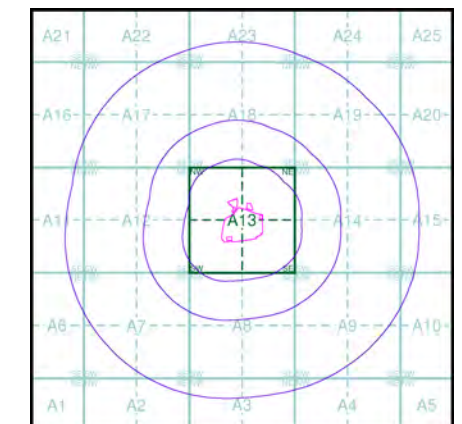
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

063NW 1908 1:10,560	063NE 1908 1:10,560
063SW 1908 1:10,560	063SE 1908 1:10,560

Historical Map - Slice A

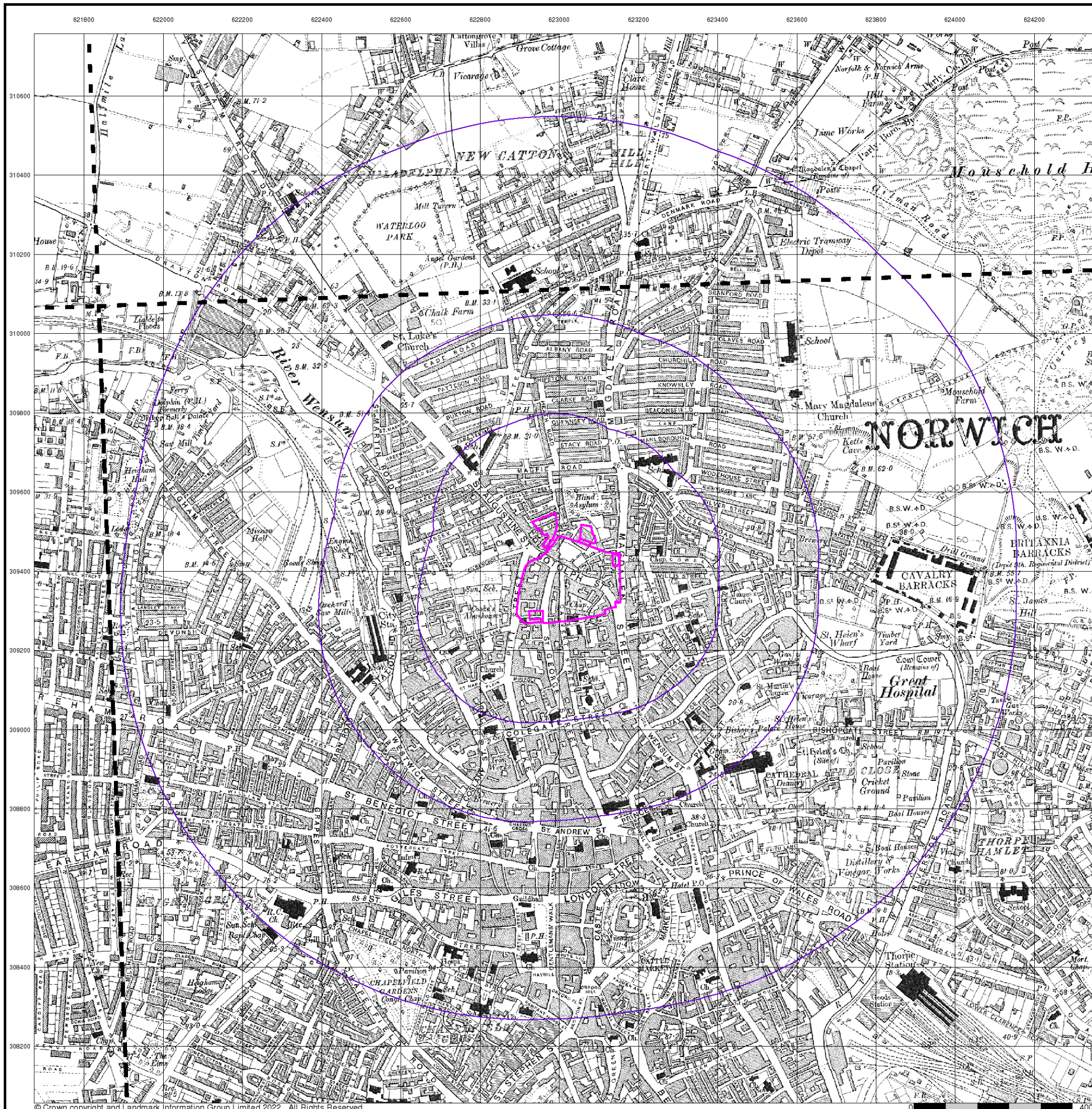


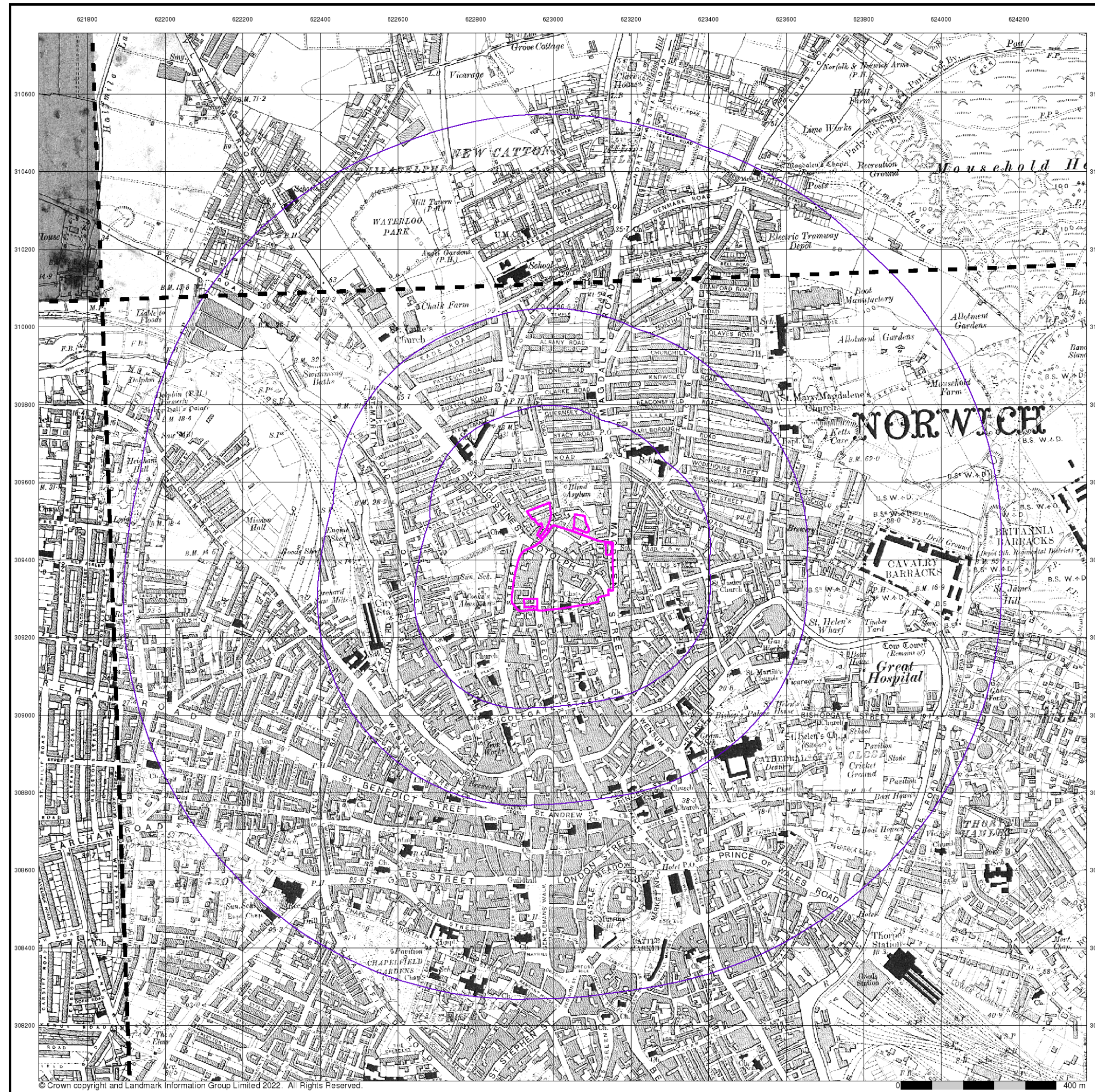
Order Details

Order Number: 297057661_1_1
 Customer Ref: CON01-NORW-045
 National Grid Reference: 623020, 309390
 Slice: A
 Site Area (Ha): 4.68
 Search Buffer (m): 1000

Site Details

Anglia Square, NORWICH, NR3 1DZ





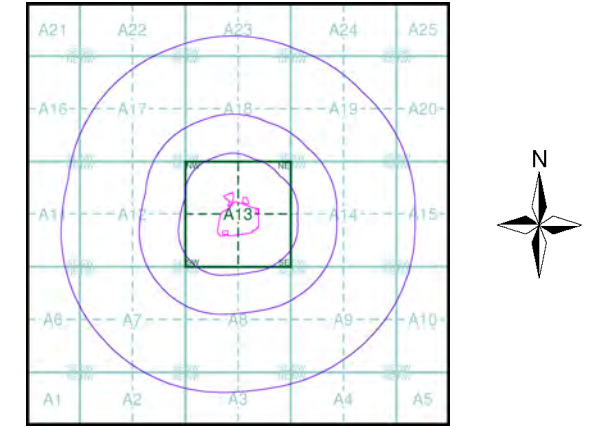
Norfolk
Published 1919 - 1920
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

063NW 1919 1:10,560	063NE 1919 1:10,560
063SW 1919 1:10,560	063SE 1920 1:10,560

Historical Map - Slice A



Order Details
 Order Number: 297057661_1_1
 Customer Ref: CON01-NORW-045
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 Anglia Square, NORWICH, NR3 1DZ