



JULY 2022

Transport Assessment Addendum

Anglia Square, Norwich

Iceni Projects Limited on behalf of Weston Homes Plc

July 2022

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BEHALF OF WESTON HOMES
PLC

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Transport Assessment Addendum
ANGLIA SQUARE, NORWICH

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1. INTRODUCTION

- 1.1 A hybrid planning application (Ref. 22/00434/F) (the Application) was submitted by Weston Homes (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'. The Application, which is still to be determined, comprises a full set of technical documents to assess the potential impacts of the proposals, including an Environmental Statement which covers a number of topics. In respect of the Highways, Traffic and Transport impacts, this is described and explained in the Transport Assessment, and other associated drawings. Please refer to the original documents for further details.
- 1.2 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 100 year (+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 contained in **Appendix A1**.
- 1.3 This Transport Assessment Addendum (TAA) sets out where necessary a response to the Highways, Traffic and Transport related comments received on the Application as originally submitted, then describes how the design has been developed and adapted as a result of these and other comments, and finally considers the implications of the changes to the scheme now proposed. It should therefore be read in conjunction with the Transport Assessment.
- 1.4 The changes in the Amended Application arising from the Highways, Traffic and Transport related comments, provided by Norfolk County Council (NCoC) Highways are summarised in **Table 1.1**.

Table 1.1 Application Comments and Project Response

Comment Received	Response from Project Team
<p>The Transport Assessment provides no traffic generation data. Pg. 47 suggests that in depth discussions took place regarding the provision of trip generation data at the pre application stage and was agreed that no wider junction modelling other than Pitt Street / St Crispins roundabout was required. This is accepted but the applicant still needs to provide traffic data which evidences the assumptions made within the TA.</p>	<p>Whilst it is agreed that no junction modelling is required, the need for traffic data is noted and therefore this is provided within this report at Paragraphs 2.41 to 2.45.</p>
<p>The proposed parallel crossing on Edward Street near the junction of New Botolph Street should be repositioned slightly west towards the junction. This will improve the visibility for pedestrians crossing from north to south as the current design will make it difficult to see oncoming vehicles travelling south along New Botolph Street which could lead to pedestrians stepping out into the path of a vehicle. Additionally, repositioning the crossing west, joining a wider section of footway will reduce risk of collision between pedestrians and cyclists.</p>	<p>This crossing has been repositioned following discussions with NCC / NCoC officers. Full details are provided within Paragraphs 2.16 to 2.17.</p>
<p>The use of a raised table for the proposed signalised crossing was discussed at Development Team and it was widely agreed to be suitable, given the proximity of the Norfolk and Norwich association for the blind.</p>	<p>This crossing has been removed following discussions with NCC / NCoC officers.</p>
<p>With regard to the proposed improvements on Magdalen Street, the Highway Authority considers that the bus stop/layby improvements are required as part of this application as the application will significantly increase the number of potential users of public transport. This will be conditioned. It is proposed that the additional improvements in the area (which will form a Mobility Hub) are delivered under a separate planning application. The highway authority is content with this approach. In order to enhance the walking/cycling facilities for the development and the connectivity for potential residents, the Highway Authority also considers that the parallel crossing proposed should also be delivered by this application. The crossing should transverse over Magdalen Street square as opposed to diagonally. This will slow cyclists down on the crossing and improve visibility for both pedestrians and vehicles approaching the crossing.</p>	<p>This has been agreed in principle by the Applicant and they are happy for detailed design of the required works to be secured via the S106. Details are provided within Paragraphs 2.23 to 2.25.</p>
<p>The Highway Authority considers that the location of the proposed Pitt Street signalised crossing provides little benefit to both the residents of the development and pedestrians passing through from other areas and is therefore not required. The Highway Authority recommends that works to upgrade the current shared pedestrian/cycle crossing on the northern arm of the St Crispins roundabout to a signalised crossing which ties in with the cycle and pedestrian routes already in the area should be delivered instead. Coupled with retaining the exiting signalised crossing arrangement at junctions New Botolph Street/St Augustines, this would mitigate the need for an additional crossing.</p>	<p>The crossings on Pitt Street have been reconsidered in consultation with NCC / NCoC officers and removed. It was agreed also that on reflection no upgrade to the crossing on the northern arm of the St Crispins roundabout was required. Details on the revised provision at the New Botolph Street/St Augustines junction are provided in Paragraphs 2.18 to 2.20.</p>
<p>As mentioned in point 5, the current signalised crossing arrangement at junction New Botolph Street/St Augustines should be retained and not changed to a zebra crossing as proposed.</p>	<p>As per the above.</p>
<p>The dimensions for the visibility splay for block E will need to be 2.4m x 43m to increase visibility around the bend and kept free from planted trees and any other landscaping.</p>	<p>Noted and this has been provided – full details in Paragraph 2.11.</p>

<p>Consideration should be given regarding the proximity of the two accesses serving Block A from Edward Street. The location of the accesses breaks up the footway leaving a small section between them. Could this be reconsidered?</p>	<p>Edward Street accesses have been reconsidered to remove the second access and only have one access servicing Block A. Full details are provided in Paragraphs 2.8 to 2.9.</p>
<p>Provision of dry and secure cycle parking for staff of the retail and commercial units needs to be provided within the blocks/units to encourage the use of cycling. Staff should not be expected to park their bicycles outside and exposed to the elements. Additionally, this will free up cycle parking space for visitors to the area.</p>	<p>Noted – cycle parking is to be provided in accordance with standards. Details on this are provided at Paragraphs 2.34 to 2.40.</p>
<p>At least 6% of the allocated residential parking spaces (per block) will need to be accessible to accommodate disabled residents of the development. Additional parking separate to the allocated residential parking should also be provided within each block for the use of visitors and others such as tradesmen etc.</p>	<p>The proposed parking provision was agreed at the pre-application stage with NCC / NCoC officers. Details on this agreement, and the proposed provision, is included at Paragraph 2.30.</p>

- 1.5 A detailed response to these comments, and analysis of the proposed changes, are set out in the following chapter.
- 1.6 At this point it should also be noted that the Norwich Cycling Campaign provided consultee comments on the submitted application. These comments have also been reviewed and discussed as appropriate with officers at NCC / NCoC. Where required, the comments made have been picked up in the revised designs set out in this report.

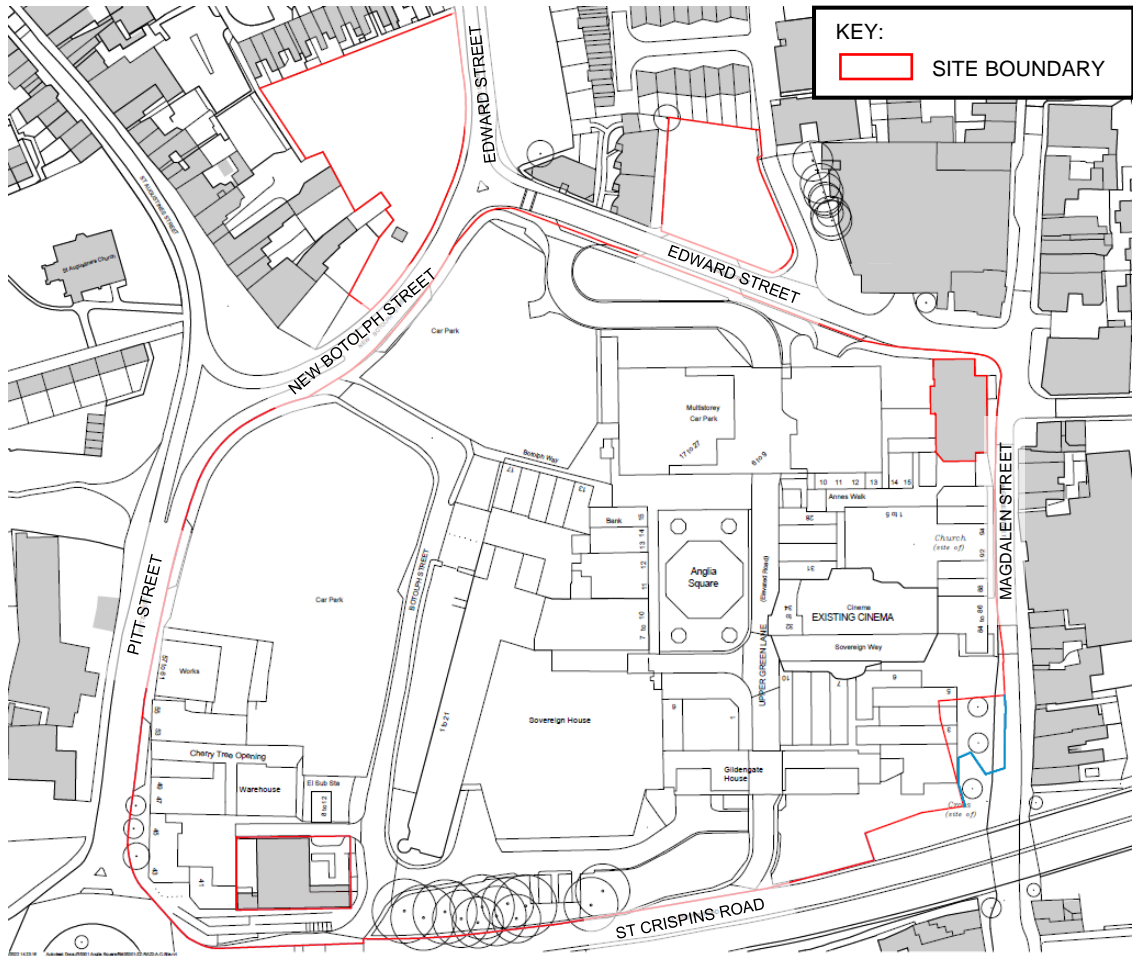
2. AMENDMENTS TO THE PROPOSED DEVELOPMENT

- 2.1 The changes to the application predominantly relate to the design of the buildings and therefore, for the majority, do not impact on the previous findings of the Transport Assessment (TA), especially given the quantum of development is remaining consistent. The proposals remain for a residential development of up to 1,100 dwellings, albeit the quantum of these units included within the detailed part of the application has reduced slightly to 353 (previously 367), and thus the number within the outline is 747 (previously 733). Likewise, the commercial space include within the application remains up to 8,000m² flexible retail, commercial and other non-residential floorspace.
- 2.2 However, as set out in the following paragraphs, there are some changes to the parking provision / access which are detailed and assessed as necessary. Furthermore, this revised application also provides an opportunity to review and respond to comments received from consultees on the submitted application (as set out in **Table 1.1**), which can therefore also be found in this section.
- 2.3 This TAA does not include any significant details on the site surroundings or planning policy context because this was set out in detail in the submitted TA and it is considered the position remains unchanged since then. Notwithstanding, to provide context the following paragraph provides a brief overview of the Site and immediate surroundings.

Site Description

- 2.4 The main site area (Anglia Square) is bounded by New Botolph Street and Pitt Street to the west, Edward Street to the north, Magdalen Street to the east and St Crispin's Road to the south. The Site comprises the entirety of the land within this area, except for a vacant two storey retail unit (the former Barclays Bank) site within the north-eastern corner of the site and the two storey Surrey Chapel site within the south-west frontage of the site (which are both in separate ownerships). In addition, the Site comprises a parcel of land to the northwest of New Botolph Street/west of Edward Street, and an area of land to the north of Edward Street and west of Beckham Place, both currently used for unsurfaced and surface level car parking.
- 2.5 **Figure 2.1** shows the Site in the context of its surrounding area.

Figure 2.1 – Site Location and Surrounding Area



2.6 The revised Architects Masterplan is shown in **Figure 2.2**, as well as being included at **Appendix A2**.

Figure 2.2 – Revised Masterplan Layout



Proposed Changes and Response to Comments

Proposed Site Changes

- 2.7 The two key internal changes in this revised submission are the realignment of the basement and ground level car park accesses to Block A and the introduction of a 2-storey podium between Blocks E and EF to provide a larger car park. In addition, there are several external changes being made to the proposed highway works.
- 2.8 For Block A, which is adjacent to Edward Street, the revisions include consolidating the previous two car park accesses (ground floor parking and basement parking) into one access which will serve both parking areas.
- 2.9 The revised access is 5.5m wide with 4m radii. An updated visibility splay assessment and swept path analysis (SPA) has been undertaken for this revised access which is provided at **Appendix A3**. This demonstrates it works from a technical perspective and it has been designed in accordance with standards.

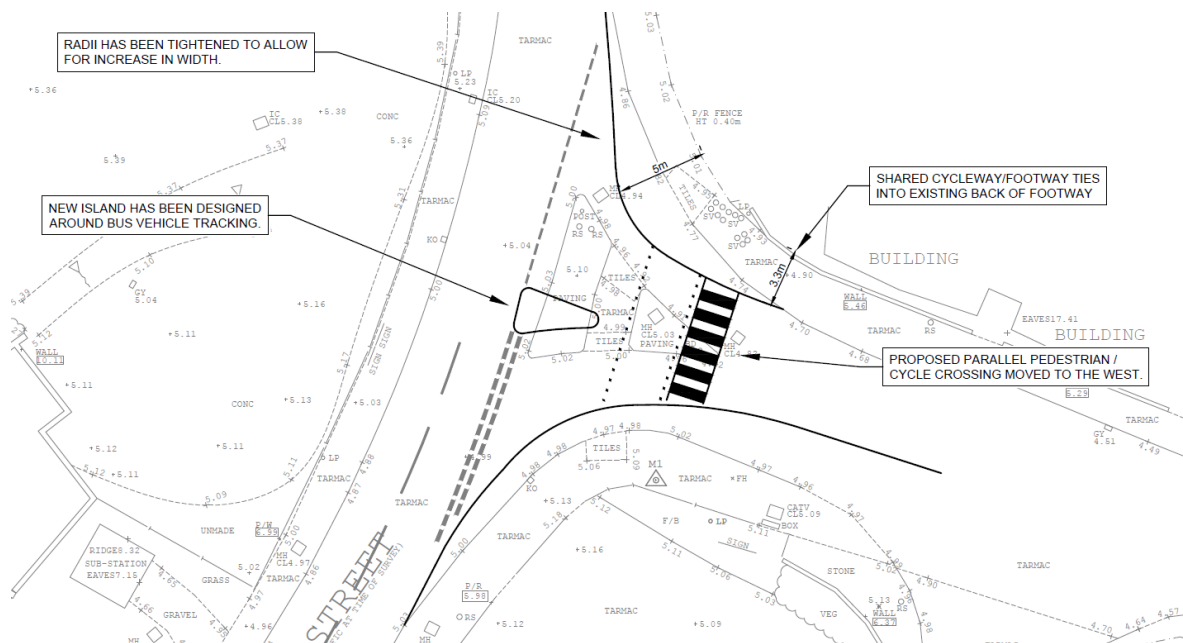
- 2.10 The revisions made to Blocks E / EF to provide a larger car parking area have not altered the proposed access from New Botolph Street. These blocks also fall within the Outline section of the application, so a full assessment of the parking layout will be provided when the Reserved Matters Application (RMA) for this block comes forward.
- 2.11 The consultee comments did also include reference to the visibility splay available from this Block E access. As can be seen from the drawing submitted with the original application, a 2.4m x 43m visibility splay can be achieved. This has been shown in both directions, although in reality it is considered that vehicle visibility is only required to the north-eastern direction given the one-way traffic route / presence of the central refuge island preventing right turns on exit. Whilst there are trees located within the inter-visibility zone, these do obstruct the observation of approaching vehicles within the visibility splay line and do not act as a barrier – it is considered this represents a fairly normal scenario.
- 2.12 Another minor change within the Proposed Development that should be noted is to the internal north / south cycle route that runs from St Crispins Road to Edward Street. Following discussions with officers, and noting comments made by the Norwich Cycling Campaign group, this internal cycle route is continuous with separate delineation at the St Crispin end and also the St Botolph Street junction within the site to encourage cyclist to slow and consider more closely the presence of pedestrians and crossing movements. As such the surface would not appear as a cycle track in these areas and appears broken, whereas in reality it will be a continuous route with different demarcations.

Proposed External Highway Works

- 2.13 In addition to the above, a meeting was held between the Applicant team and officers from both NCC and NCoC post-submission to discuss the proposed highway works. This meeting involved discussions around the previously proposed external works to agree what was required to support the Anglia Square development coming forward, and also what was possible from a road safety / capacity perspective. As a result, several changes have been made to the previously proposed highway works.
- 2.14 Given the changes, an updated 'Overall Proposed Highway Works' plan has been produced and is attached at **Appendix A4**. The new / changed elements are detailed in the following paragraphs.
- 2.15 Firstly, on Edward Street (along the main northern site frontage) it has been agreed that crossings are only required at either end of the road i.e. at the junction with Magdalen Street (existing signalised crossing) and at the junction with New Botolph Street (existing crossing which is being upgraded by the proposals). It was advised that the crossing adjacent to Beckham Place was not required and has therefore been removed.

- 2.16 For the Edward Street / New Botolph Street junction crossing, it was agreed between all parties that this should be shifted in a western direction compared to what was previously proposed, albeit it has still been distanced from the junction to allow a car to sit whilst waiting to either exit the junction or head east on Edward Street without blocking the crossing. The updated design / location of this crossing is shown in **Figure 2.3** and in detailed at **Appendix A5**.

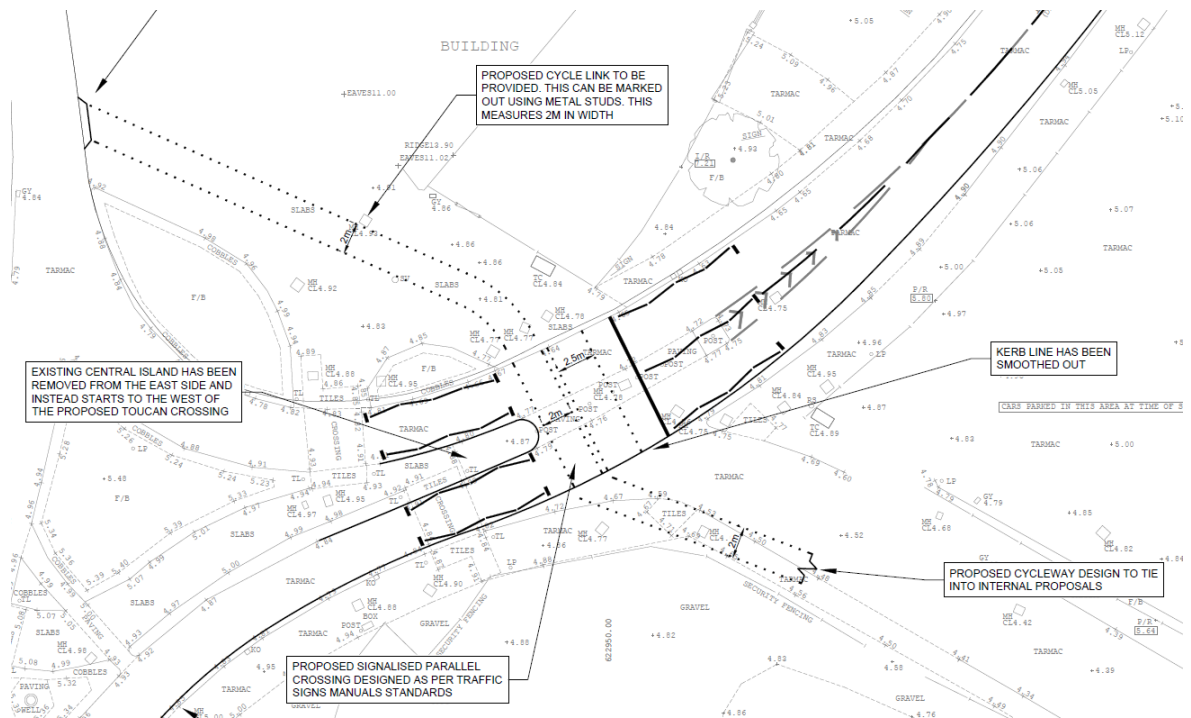
Figure 2.3 – Relocated Edward Street Crossing



- 2.17 The relocated position of this crossing has also allowed the proposed loading bay to shift westwards slightly, which in turn facilitates the single Block A access previously detailed. Despite its slightly different position, the loading bay would continue to operate as described in the TA and updated SPA has been undertaken based on its revised location.
- 2.18 On Pitt Street, the submitted application included the provision of a signalised pedestrian only crossing broadly in the position between blocks E/F and F. However, both NCC and NCoC outlined that this crossing should be removed from the proposals, and as such, this no longer forms part of the associated application works.
- 2.19 Notwithstanding, an improved crossing facility has instead been proposed, and agreed in principle, on New Botolph Street (just north of Pitt Street). There is currently a signalised crossing broadly in this location, however, it is staggered with a refuge island breaking up the crossing. At the request of NCC / NCoC, what is now proposed is a straight parallel crossing for pedestrians and cyclists with no breaks which will provide a more convenient crossing on what is considered to be an important desire line from the Site to St Augustine's Street. As well as the crossing, it is also proposed to mark out a cycle track across the footway to the west of the crossing, which will follow the desire line across to St Augustine's Church.

- 2.20 Given the proposed crossing will be undertaken in a single phase there is no need to retain the current central island, so this has been removed / relocated to start to the west of the proposed crossing. The design for this crossing is shown in **Figure 2.4** and provided at **Appendix A6**.

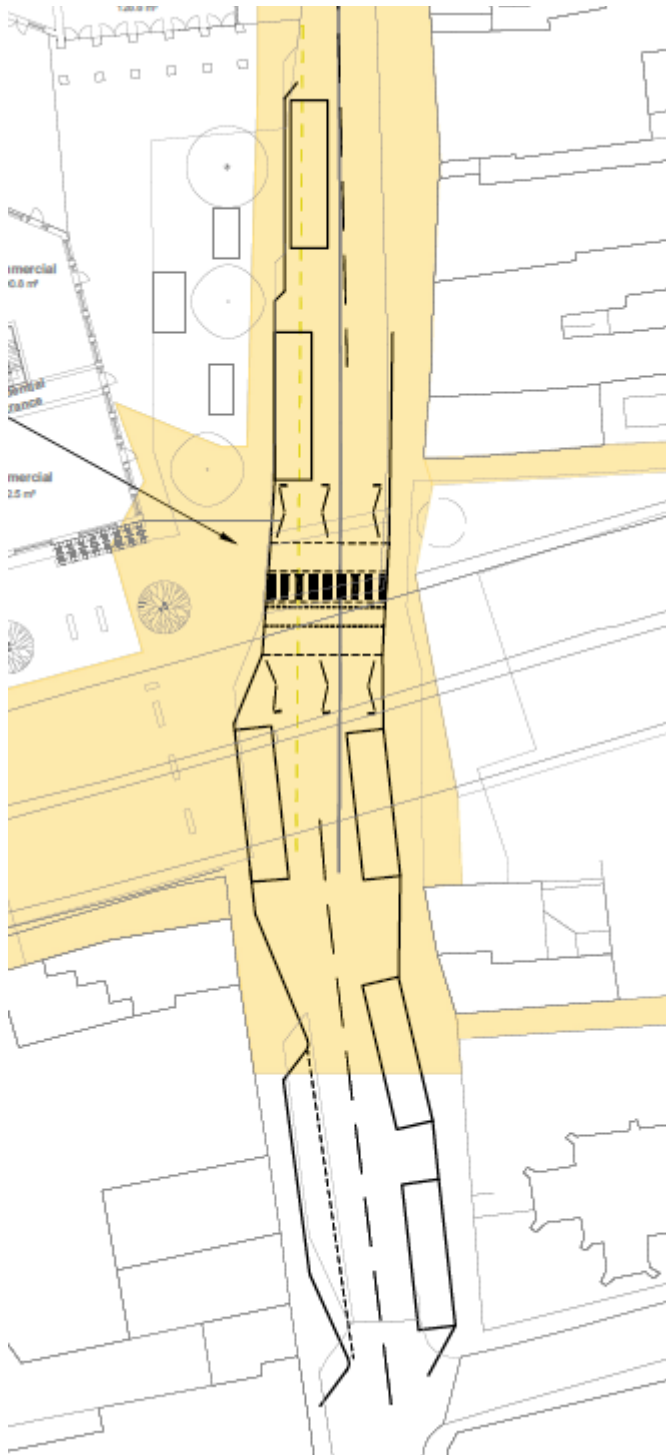
Figure 2.4 – Proposed New Botolph Street Crossing



- 2.21 Emergency vehicle access has been maintained in this location as shown by the SPA included at **Appendix A7**.
- 2.22 The previous application also referenced the possibility of amending Edward Street as it runs northwards towards Magpie Road in order to provide an increased width for the shared use pedestrian / cycleway present on its eastern side. This involved narrowing of the carriageway to 3.2m wide. However, following discussions with the NCoC Streetworks team, at the request of officers at both NCC and NCoC, this narrowing is no longer proposed due to disruptions to the wider Norwich City area, both during the construction period and also with ongoing maintenance.
- 2.23 On Magdalen Street, the submitted application made reference to a forthcoming 'Mobility Hub' in this location, however, this would be subject to a separate planning application. However, the NCoC comments highlighted some of these works as being necessary from the outset, and this has been agreed in principle with the Applicant. As such, the detailed design of the bus stop provision and revised kerbs lines, as well as a pedestrian / cycle crossing facility will be resolved via the S106 Legal Agreement.

- 2.24 The crossing previously proposed as part of the Mobility Hub work has been amended so that it crosses the carriageway perpendicular rather than diagonally, at the advice of the NCoC road safety team.
- 2.25 The proposed crossing location and bus stops can be seen on the overall highways plan at **Appendix A4**, but a screenshot is also provided in **Figure 2.5** for reference.

Figure 2.5 – Proposed Magdalen Street Bus Stops / Crossing



Road Safety Audit

- 2.26 In discussion with the NCoC road safety team, a Stage 1 Road Safety Audit (RSA) was commissioned during the consultation period of the submitted application. This RSA, undertaken by a qualified, independent audit team, was therefore based on the previous scope of highway works. As such, a revised audit is to be undertaken to account for the changes as set out in this report and this will be provided to NCC / NCoC as soon as it is available.
- 2.27 However, given the similarities (indeed many of the works remain consistent) it is considered that the original RSA is still useful in determining the acceptability of the proposals. As such, the RSA, and Icen Transport designers response, is included at **Appendix A8**.

Car and Cycle Parking

- 2.28 Again, the description of development subject to this revised planning application remains consistent in the number of car parking spaces proposed, allowing up to 450 spaces of which at least 95% will be allocated to the residential use and the remaining (up to) 5% for the non-residential uses.
- 2.29 With the submitted application, the detailed element had a parking ratio of 0.40 spaces per dwelling (146 spaces for the 367 dwellings). Given the proposed number of dwellings has reduced slightly, the number of parking spaces has also. For the 353 dwellings in the detailed element there will now be 134 car parking spaces, which is equivalent to a 0.38 ratio. Of the 134 spaces, Block A has 123 (of which 8 are disabled parking spaces), and the remaining 11 are in Block B.
- 2.30 The 8 spaces which are designed for disabled use have side and rear hatching. This equates to a 5.97% provision. Whilst the comment received in the consultation response refers to a 6% provision, it was agreed with officers at the pre-app stage that a provision of 5% of total spaces was acceptable in principle, and therefore it is considered 5.97% is acceptable.
- 2.31 As before, 100% of these spaces are to be provided with active electric charging facilities, which is in excess of policy standards.
- 2.32 SPA of the parking spaces was undertaken previously to ensure that they can be accessed / egressed appropriately.
- 2.33 The consultee comments also refer to parking for visitors, but it is considered that the local public car parks are available for any visitors or trades people who need to use a vehicle. Equipment / materials can be dropped off using the delivery bays or 20-minute restricted parking on Edward Street proposed as detailed within the TA.
- 2.34 On cycle parking, given the residential provision in the detailed element has been revised, the associated cycle parking has also. The 353 dwellings will have an associated 555 internal cycle

parking spaces, in addition to 39 visitor cycle parking spaces within the public realm. As before, the spaces will be split across the residential blocks, and the breakdown is provided in **Table 2.1**.

Table 2.1 Proposed Residential Cycle Parking Provision – Detailed Element

Block	Number of Residential Units	Residential Cycle Parking Spaces	Visitor Cycle Parking Spaces
A	142	233	15
B	25	44	3
C	21	21	3
D	28	48	3
M	48	76	5
K	81	121	9
J3	8	12	1
Total	353	555	39

- 2.35 As before, the cycle parking provision is in accordance with the NCC cycle parking standards, and the number of spaces within each block reflects the tenure split within that specific block.
- 2.36 The cycle stores for the residential spaces remain at the ground floor level, within the building of each block, and will therefore be accessible, covered and secure.
- 2.37 For the commercial element, as per the consultee comment, the long-stay cycle parking provision for employees has been explored in further detail. The revised proposals now include two dedicated staff cycle stores, one located in Block A, and one in Block J3, therefore providing convenient locations for all of the proposed commercial units.
- 2.38 The Block A store will provide 32 spaces and 24 spaces will be available in J3, therefore a total of 56 spaces. This is above the number of spaces required to accord with the NCC standards, which equates to 48 spaces based on the total area of the commercial units.
- 2.39 The strategy for the visitor cycle parking provision remains consistent with the approach set out within the TA.
- 2.40 The exact cycle parking provision for both the residential and commercial elements of the Outline will be determined at the RMA, but it will also be provided in accordance with the standards, and with the same approach as outlined above.

Trip Generation

- 2.41 It has previously been agreed that the Proposed Development will result in a reduction in associated vehicle trip generation when compared to its extant use, given the significant reduction in car parking spaces, and therefore that no junction modelling assessments were required. Whilst this has been further confirmed in the NCC consultee response, they have requested that the vehicle trip generation associated with the Proposed Development is provided.
- 2.42 In order to provide this, it is considered appropriate to utilise the vehicle trip rates that were accepted by NCoC Highway Authority as part of the previous 'Call in Scheme' at this Site. These trip rates have therefore been applied to the proposed number of residential units (with 1,100 a worst case given the application is for up to this number). The previous trip rates, and resultant trip generation for the AM and PM peak hours, is provided in **Table 2.2**.

Table 2.2 Vehicle Trip Rates / Generation – Proposed Development (1,100 Dwellings)

	Trip Rate			Trip Generation		
	Arrive	Depart	Two-Way	Arrive	Depart	Two-Way
AM Peak Hour	0.039	0.119	0.158	43	131	174
PM Peak Hour	0.119	0.058	0.177	131	64	195

- 2.43 As shown, in the AM peak hour there could be up to 174 two-way vehicular trips, and in the PM peak hour this could be up to 195.
- 2.44 It should, however, be noted that these trip rates (and therefore the resultant generation figures) do not account for the reduced parking provision that is proposed for this development. At the time of the 'Call in Scheme' application, the proposed parking ratio was significantly higher and therefore more weight was put towards using the private vehicle as a mode of travel. For this new scheme, the parking provision is limited, with the use of sustainable modes of transport instead being prioritised and promoted, which will continue to be the case via the Travel Plan. As such, the trip generation set out above is considered to be robust and an over-estimation on the level of vehicular traffic expected to be generated.
- 2.45 Clearly commercial trips will reduce on the site given the significant reduction in the quantum of space available.

3. SUMMARY AND CONCLUSIONS

- 3.1 Icen Projects Ltd has been appointed by Weston Homes Plc to provide support for the comprehensive redevelopment of Anglia Square and various parcels of mostly open surrounding land in Norwich.
- 3.2 A hybrid planning application was submitted earlier in 2022, and a number of revisions are now proposed as part of this new application. The quantum of development proposed, in terms of unit mix / floorspace, and parking provision, remains consistent with the submitted application.
- 3.3 Revisions have also been made to the proposed external works following discussions with officers.
- 3.4 In summary, it is considered that this revised application reaches the same conclusion as the previously submitted application, in that the Proposed Development at the Site is compatible with, and supports, local and regional transport policies. It has been shown throughout this report, and the previous TA, that the proposals will not give rise to any adverse transport impacts. It is therefore considered that there is no highway related reason why the development proposal should not be granted planning permission.

A1. REVISED DESCRIPTION OF DEVELOPMENT

Anglia Square: Hybrid Application Development Description

“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, 134 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 316 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)."

A2. REVISED SITE LAYOUT PLAN



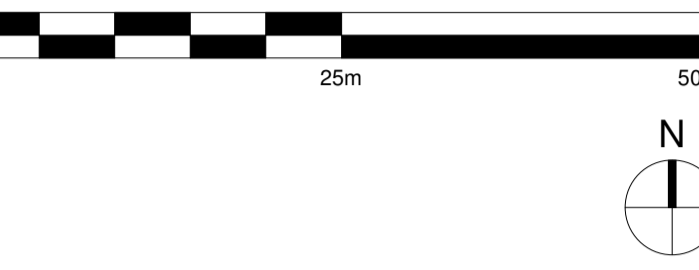
Contractors and consultants are not to scale dimensions from this drawing

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The survey information shown on this drawing is based on a topographical survey prepared by a third party and Broadway Malyan Limited accept no responsibility for the accuracy or completeness of the survey.

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

- Hybrid Application Boundary
 - Land Owned by CT
 - Detail Application Boundary
- Note: Indicative Outline Buildings: E, F, E/F, G, H & J shown faded

Revision	Date	Drawn By	Description
DO-2	15.07.22		Issued For Planning
DO-1	31.03.22		Issued For Planning

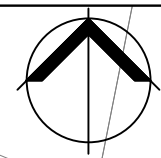
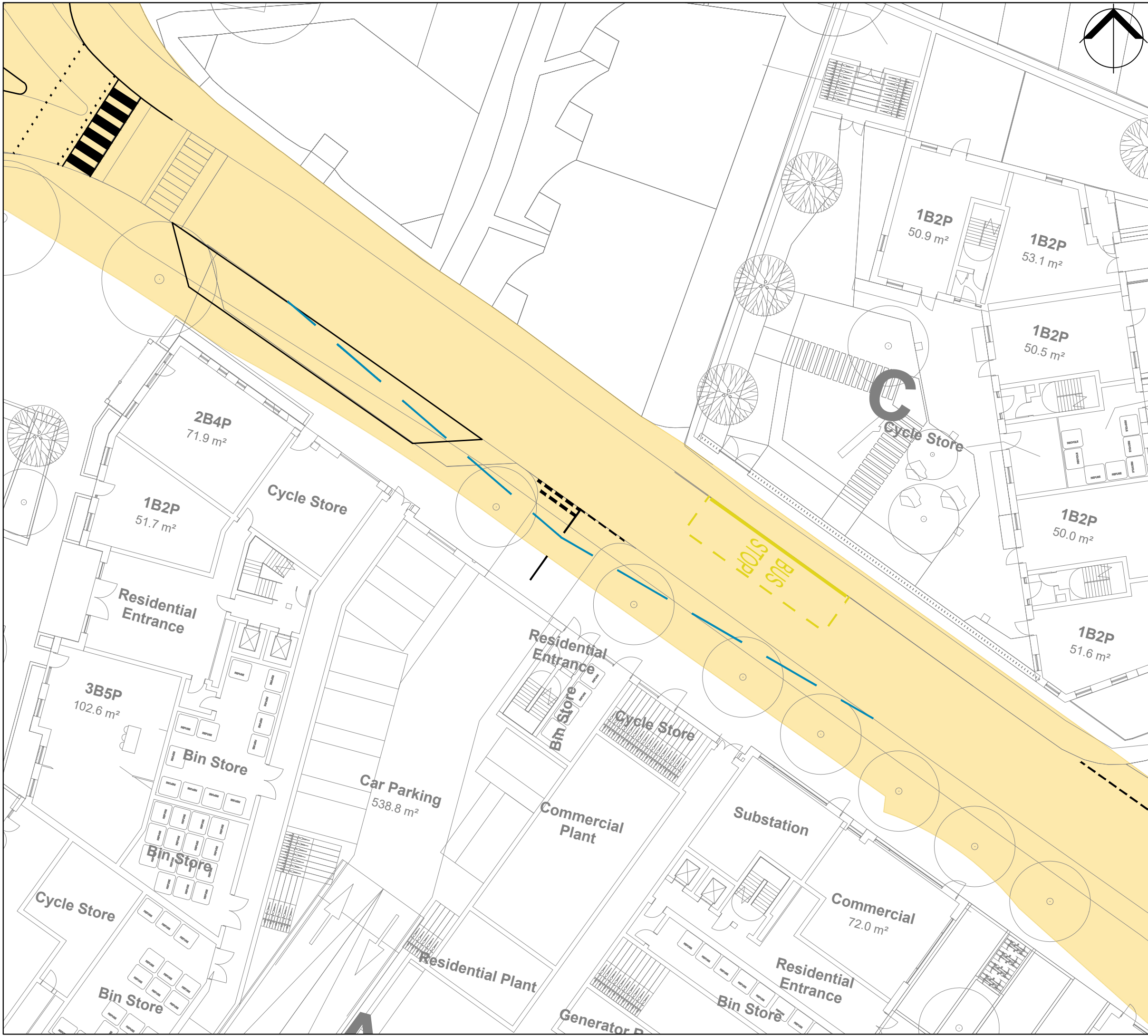
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

Client
Weston Homes
 Project
**Anglia Square
 Norwich**
 Description
**Masterplan
 Level 00**

Status
For Planning
 Scale 1:500@A1
 Drawn By BM
 Date 26.01.22
 Job Number 35301
 Drawing Number ZZ-00-DR-A-01-0100
 Revision D0-2

A3. PROPOSED BLOCK A ACCESS ARRANGEMENT



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KEY
 HIGHWAY BOUNDARY INFORMATION
 2.4M X 25M JUNCTION VISIBILITY SPRAW
 (BASED ON 20MPH AS PER MFS STANDARDS)

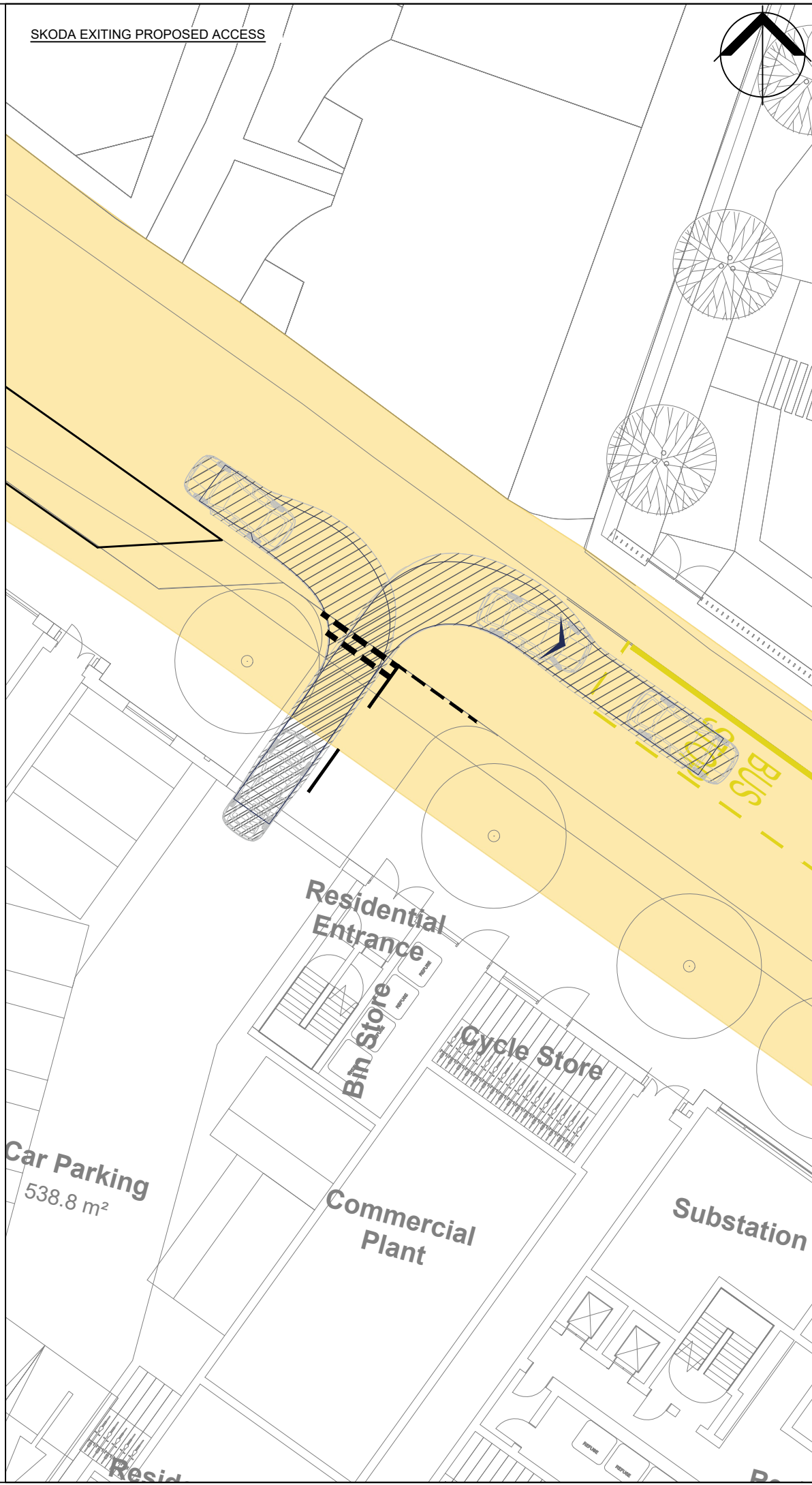
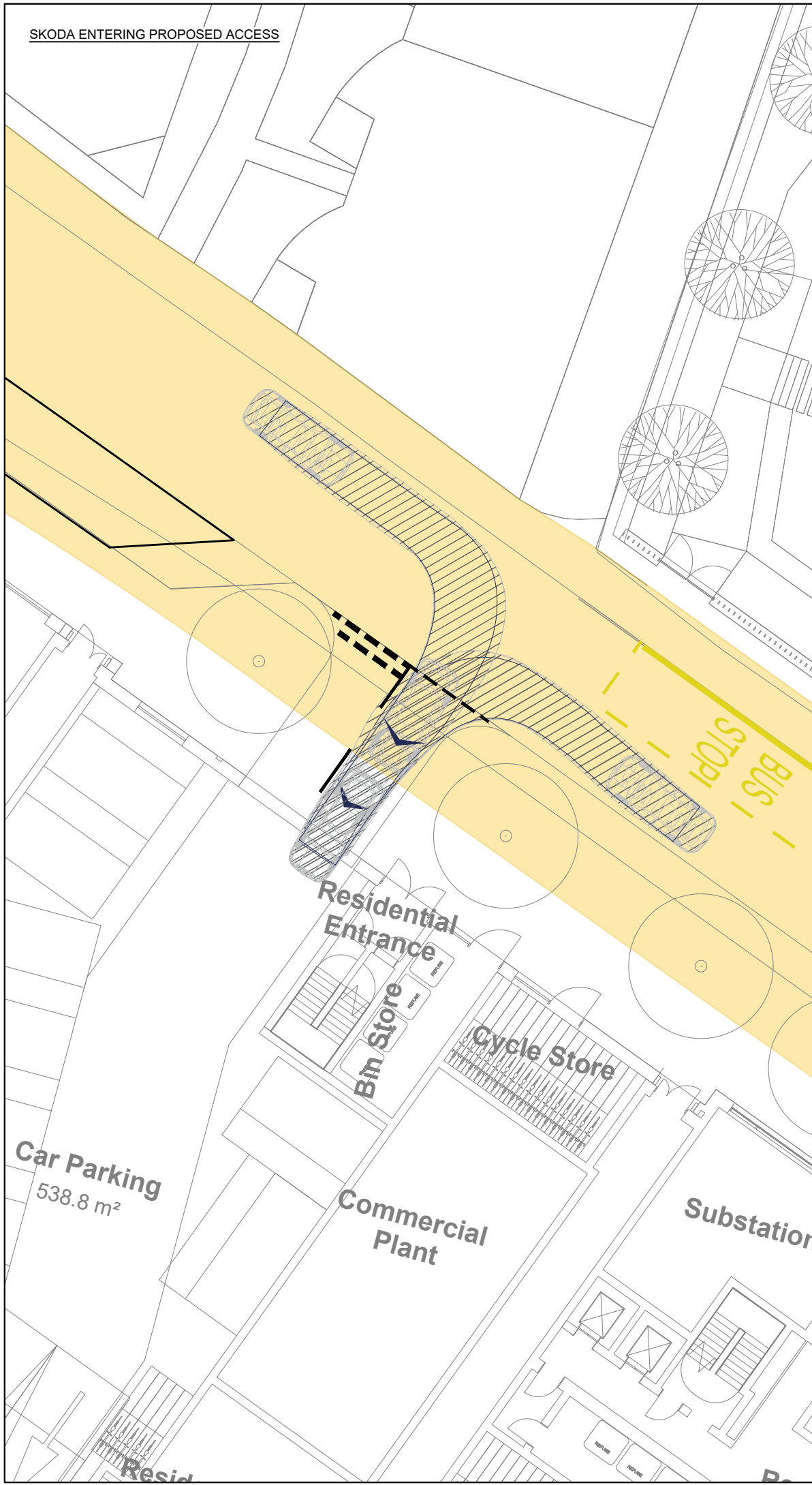
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CLIENT
 WESTON HOMES PLC
 PROJECT
 ANGLIA SQUARE
 TITLE
 JUNCTION VISIBILITY ASSESSMENT

DRAWN BY AP	CHECKED BY RJ	APPROVED BY CB
SCALE @ A3 1 : 250		DATE 14.07.2022
PROJECT NO. 21-T123	DRAWING NO. 39.1	REV. -

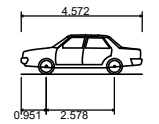
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VEHICLE PROFILE



Skoda Octavia	
Overall Length	4.572m
Overall Width	1.769m
Overall Body Height	1.488m
Min Body Ground Clearance	0.249m
Max Track Width	1.713m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	5.100m

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PROJECT _____

ANGLIA SQUARE

TITLE _____

SWEPT PATH ANALYSIS

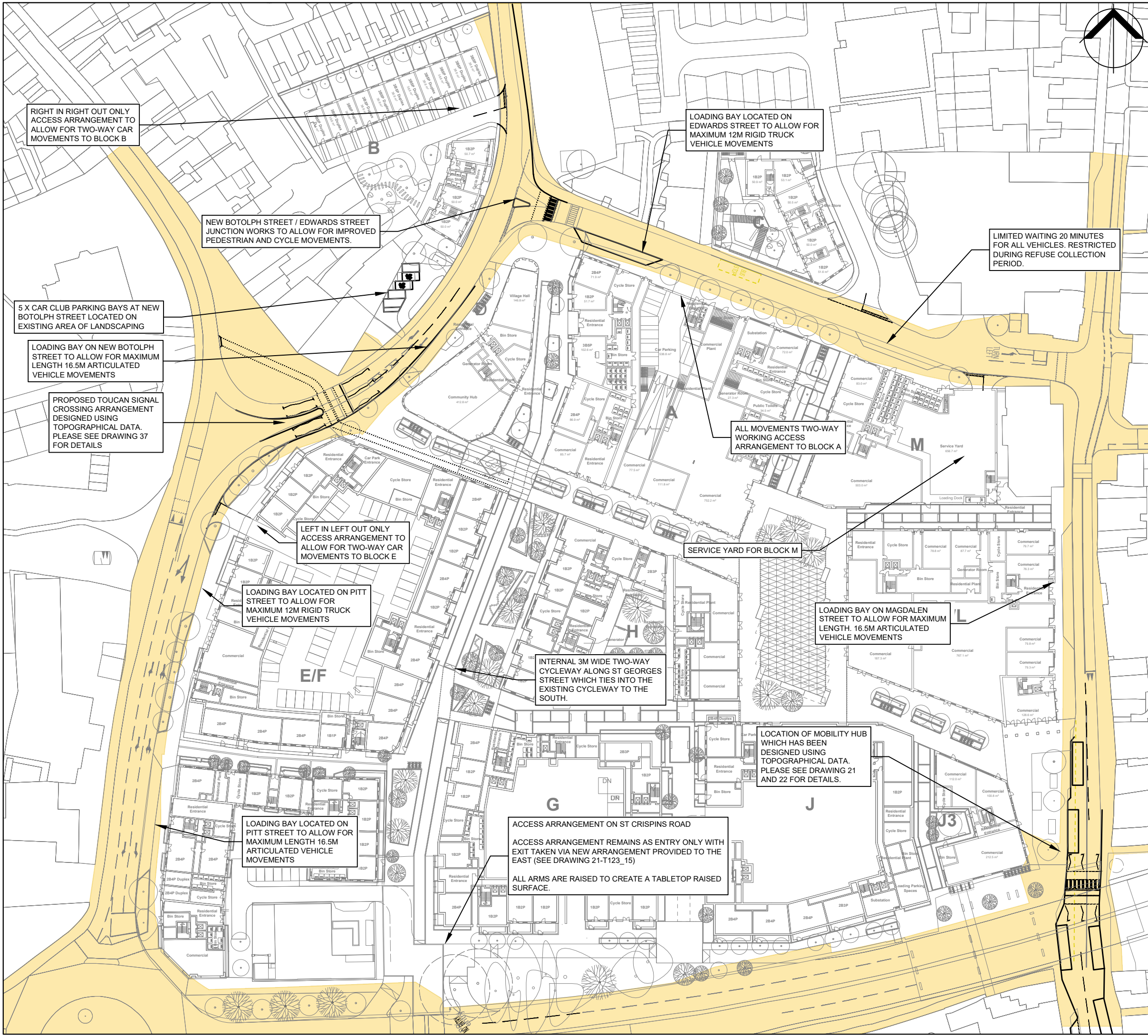
DRAWN BY AP	CHECKED BY RJ	APPROVED BY CB
	14.07.2022	14.07.2022

SCALE @ A3 1 : 250	DATE 14.07.2022
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PROJECT NO. 21-T123	DRAWING NO. 39.2	REV. -
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A4. OVERALL PROPOSED HIGHWAY WORKS PLAN



RIGHT IN RIGHT OUT ONLY ACCESS ARRANGEMENT TO ALLOW FOR TWO-WAY CAR MOVEMENTS TO BLOCK B

NEW BOTOLPH STREET / EDWARDS STREET JUNCTION WORKS TO ALLOW FOR IMPROVED PEDESTRIAN AND CYCLE MOVEMENTS.

5 X CAR CLUB PARKING BAYS AT NEW BOTOLPH STREET LOCATED ON EXISTING AREA OF LANDSCAPING

LOADING BAY ON NEW BOTOLPH STREET TO ALLOW FOR MAXIMUM LENGTH 16.5M ARTICULATED VEHICLE MOVEMENTS

PROPOSED TOUCAN SIGNAL CROSSING ARRANGEMENT DESIGNED USING TOPOGRAPHICAL DATA. PLEASE SEE DRAWING 37 FOR DETAILS

LEFT IN LEFT OUT ONLY ACCESS ARRANGEMENT TO ALLOW FOR TWO-WAY CAR MOVEMENTS TO BLOCK E

LOADING BAY LOCATED ON PITT STREET TO ALLOW FOR MAXIMUM 12M RIGID TRUCK VEHICLE MOVEMENTS

LOADING BAY LOCATED ON PITT STREET TO ALLOW FOR MAXIMUM LENGTH 16.5M ARTICULATED VEHICLE MOVEMENTS

LOADING BAY LOCATED ON EDWARDS STREET TO ALLOW FOR MAXIMUM 12M RIGID TRUCK VEHICLE MOVEMENTS

ALL MOVEMENTS TWO-WAY WORKING ACCESS ARRANGEMENT TO BLOCK A

SERVICE YARD FOR BLOCK M

LOADING BAY ON MAGDALEN STREET TO ALLOW FOR MAXIMUM LENGTH. 16.5M ARTICULATED VEHICLE MOVEMENTS

INTERNAL 3M WIDE TWO-WAY CYCLEWAY ALONG ST GEORGES STREET WHICH TIES INTO THE EXISTING CYCLEWAY TO THE SOUTH.

LOCATION OF MOBILITY HUB WHICH HAS BEEN DESIGNED USING TOPOGRAPHICAL DATA. PLEASE SEE DRAWING 21 AND 22 FOR DETAILS.

ACCESS ARRANGEMENT ON ST CRISPINS ROAD
ACCESS ARRANGEMENT REMAINS AS ENTRY ONLY WITH EXIT TAKEN VIA NEW ARRANGEMENT PROVIDED TO THE EAST (SEE DRAWING 21-T123_15)
ALL ARMS ARE RAISED TO CREATE A TABLETOP RAISED SURFACE.

LIMITED WAITING 20 MINUTES FOR ALL VEHICLES. RESTRICTED DURING REFUSE COLLECTION PERIOD.

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KEY

 HIGHWAY BOUNDARY INFORMATION

REV	DATE	AMENDMENTS	DRAWN	CHK	APP
G	14.07.2022	REVISED LAYOUT	AP	RJ	CB
F	28.06.2022	MINOR AMENDMENTS AS PER COUNCIL FEEDBACK	AP	CB	CB
E	10.06.2022	MINOR AMENDMENTS AS PER COUNCIL FEEDBACK	AP	CB	CB
D	29.03.2022	REVISED LAYOUT	AP	RJ	CB
C	24.03.2022	UPDATED SITE PLAN	AP	RJ	CB
B	17.02.2022	HIGHWAY BOUNDARY TRANSCRIBED ONTO PLAN	AP	CB	CB
A	18.01.2022	MINOR AMENDMENTS	AP	RJ	CB

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CLIENT
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PROJECT
 ANGLIA SQUARE

TITLE
 INITIAL HIGHWAYS WORKS

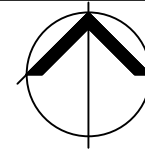
DRAWN BY AP CHECKED BY RJ APPROVED BY CB
 17.12.2021 17.12.2021

SCALE @ A3 1 : 1,000 DATE 17.12.2021

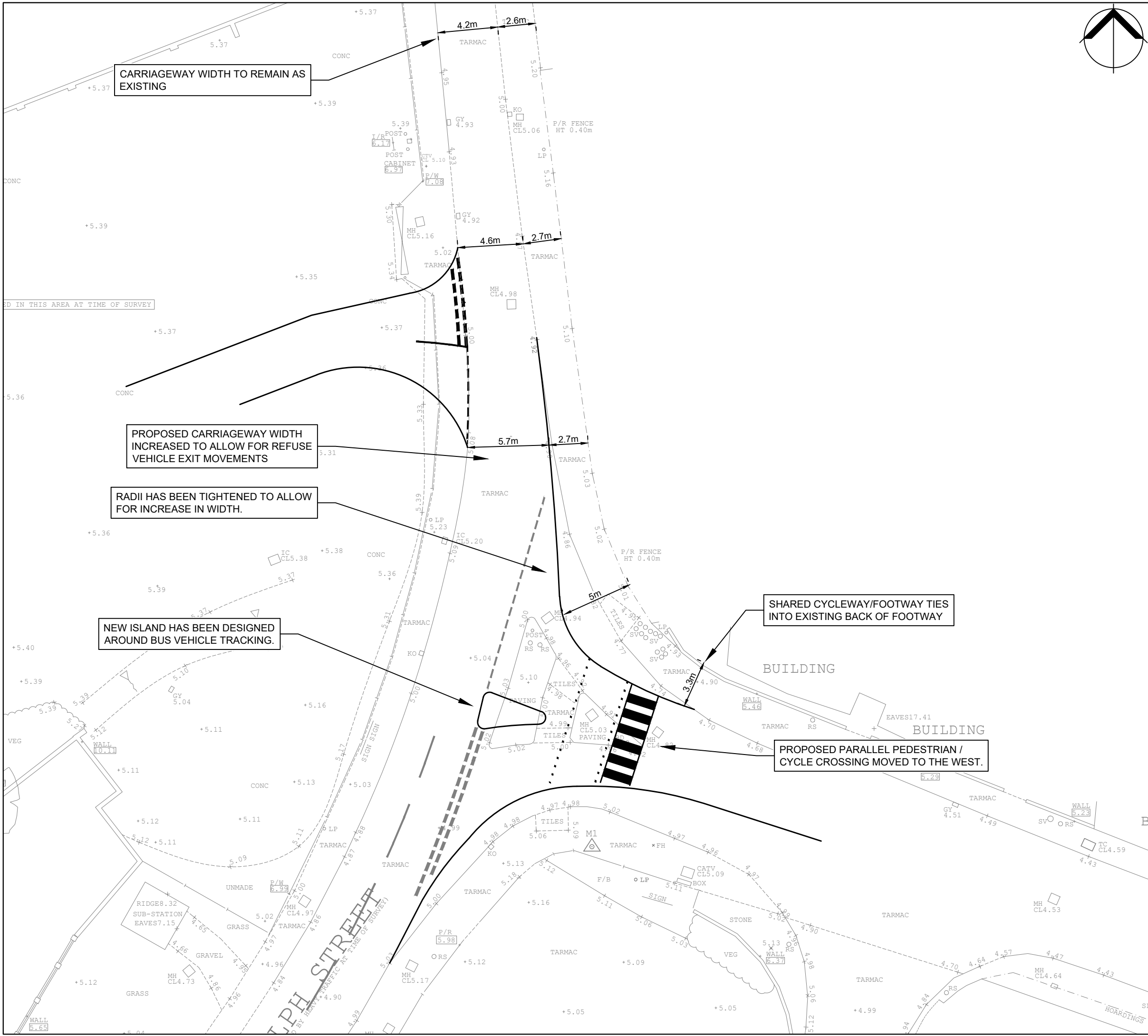
PROJECT NO. 21-T123 DRAWING NO. 14 (SHEET 1 OF 5) REV. G

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A5. PROPOSED EDWARD STREET CROSSING



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REV	DATE	AMENDMENTS	DRAWN	CHK	APP
C	14.07.2022	MINOR AMENDMENTS	AP	RJ	CB
B	29.03.2022	REVISED ACCESS ARRANGEMENT	AP	RJ	CB
A	16.03.2022	TOPO UNDERLAY ADDED AND OS MAPPING REMOVED	AP	RJ	CB

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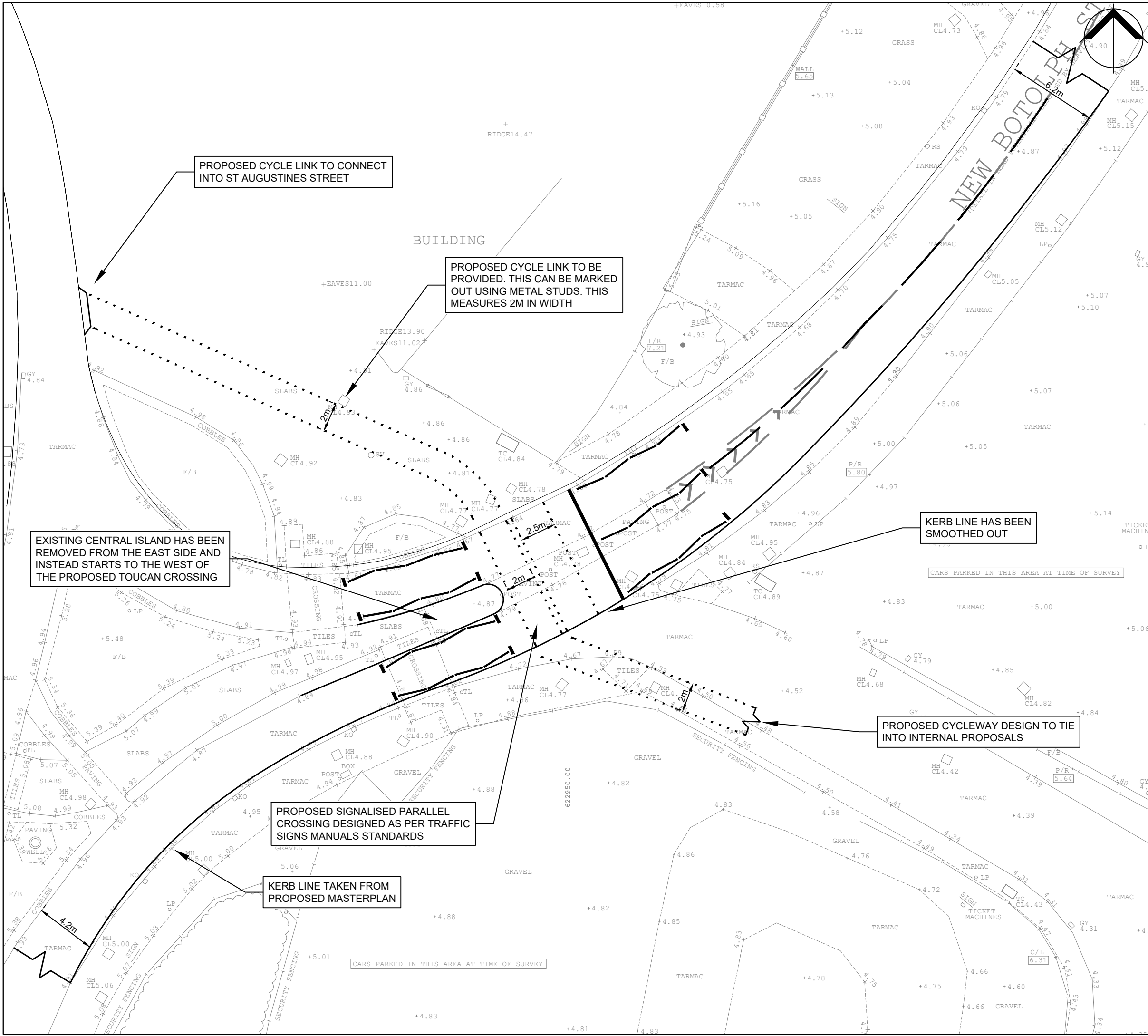


CLIENT _____
 WESTON HOMES PLC
 PROJECT _____
 ANGLIA SQUARE
 TITLE _____

EDWARDS STREET JUNCTION ARRANGEMENT WITH ROAD NARROWING		
DRAWN BY AP	CHECKED BY RJ 17.02.2022	APPROVED BY CB 17.02.2022
SCALE @ A3 1 : 250	DATE 17.02.2022	
PROJECT NO. 21-T123	DRAWING NO. 23	REV. C

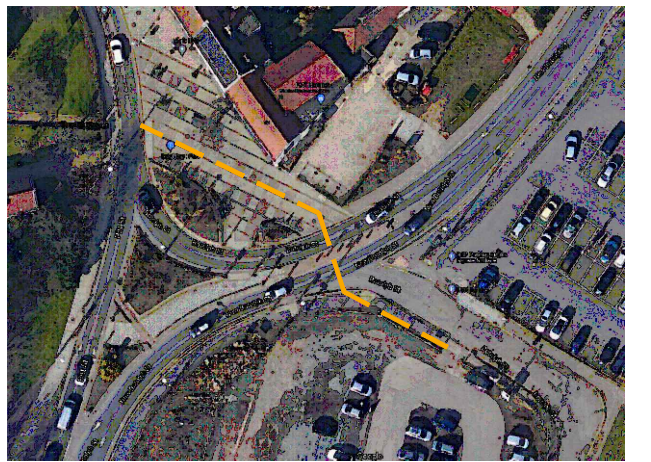
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A6. PROPOSED NEW BOTOLPH STREET CROSSING



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ROUTING OF POTENTIAL CYCLEWAY BASED ON GOOGLE MAPS



REV	DATE	AMENDMENTS	DRAWN	CHK	APP
B	12.07.2022	MINOR AMENDMENTS TO DESIGN	AP	RJ	CB
A	27.06.2022	MINOR AMENDMENTS AS PER COUNTY COMMENTS	AP	RJ	CB

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CLIENT: WESTON HOMES PLC
 PROJECT: ANGLIA SQUARE
 TITLE: NEW BOTOLPH STREET TOUCAN CROSSING

DRAWN BY AP	CHECKED BY RJ	APPROVED BY CB
SCALE @ A3 1 : 250		DATE 24.06.2022
PROJECT NO. 21-T123	DRAWING NO. 37	REV. B

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A7. SWEEP PATH ANALYSIS – EMERGENCY VEHICLE

A8. ROAD SAFETY AUDIT AND DESIGNERS RESPONSE

**ANGLIA SQUARE
NORWICH
NORFOLK**

**PROPOSED
REDEVELOPMENT AND
HIGHWAY WORKS FOR A
MIXED-USE
DEVELOPMENT**

**STAGE 1 ROAD SAFETY
AUDIT**

June 2022

**Client:
Iceni Projects Ltd**

ANGLIA SQUARE NORWICH NORFOLK

PROPOSED REDEVELOPMENT AND HIGHWAY WORKS FOR A MIXED-USE DEVELOPMENT

Stage 1 Road Safety Audit

June 2022

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2. Items Raised During This Stage 1 Road Safety Audit	5
3. Road Safety Audit Team Statement	19

Appendix A – Drawings and documents supplied by Icen Projects Ltd for This Stage 1 Road Safety Audit

Appendix B – Annotated Drawings showing the locations of the problems highlighted in This Stage 1 Road Safety Audit

Report Title:	Anglia Square, Norwich, Norfolk Proposed Redevelopment and Highway Works for a Mixed-Use Development Stage 1 RSA
Date:	5 th July 2022
Document reference and revision:	JB22/1003 Version 1
Prepared by:	Lisa Allen - JB Road Safety Consultancy Ltd
On behalf of:	Iceni Projects Ltd.

Record of Issue:

Issue	Status	Author	Date	Checked	Date	Authorised	Date
1	Final V1	LA	29.06.22	NC	30.06.22	JB	5.07.22

DISTRIBUTION RECORD

Issued to	Document Number	Issue Number
FINAL		
Master/File Copy – Author	1	1
Iceni Projects – Aiden Pearce	2	1
Iceni Projects – Richard Jay	3	1

1.0 Introduction

- 1.1 This report results from a Stage 1 Road Safety Audit (RSA) carried out on the proposed redevelopment and highway works for a mixed-use development of circa 1,100 residential dwellings and up to 8000m² of flexible retail, commercial and other non-residential floorspace, and up to 450 car parking spaces at Anglia Square, in Norwich, Norfolk.
- 1.2 The redevelopment of Anglia Square includes the provision of a stand-alone Mobility Hub concept design on Magdalen Street, and will be the subject of a separate Stage 1 Road Safety Audit. That site is located adjacent to the existing Anglia Square shopping centre area and falls within the Norfolk County Council and Norwich City Council ownership. However, as can be seen below, aspects of work on Magdalen Street do fall within this scheme, and as such both reports should be considered together.
- 1.3 The proposals considered as part of the Stage 1 Road Safety Audit are as follows:

St Crispins Road

- Amendments to the existing entry only access arrangement to Cherry Lane, where the on-slip is removed and a left turn exit only arrangement is proposed. The junction internal to the site will be raised.

Pitt Street

- Provision of a loading bay that allows for maximum sized 16.5m articulated vehicle servicing;
- Provision of a signal controlled pedestrian crossing facility;
- Provision of a loading bay that allows for maximum sized 12m rigid truck vehicle servicing;
- Provision of a left in/left out access arrangement for cars to access parking arrangement to block E;
- Provision of 2 no. crossing facilities to the central island between New Botolph Street and St Augustines Street.

New Botolph Street

- Provision of a car club hub area that consists of 2 no. electric vehicle charging bays, 2 no. standard parking bays and 1 no. disabled parking bay;
- Provision of a loading bay that allows for maximum sized 16.5m articulated vehicle servicing.

Edward Street (North - South Alignment)

- A reduction in carriageway width to 3.2m to provide an increased 3.6m width shared cycleway/footway arrangement;
- Provision of a right in/right out access arrangement for refuse vehicle and cars to access Block B.

Edward Street (East – West Alignment)

- A proposed narrowing and slight realignment of the junction with Edward Street (N) and New Botolph Street. Including the removal of the existing pedestrian crossing island which is to be replaced with a parallel crossing just to the east of the access;
- Provision of a loading bay that allows for maximum 12m rigid truck vehicle servicing;
- Provision of an all movements access arrangement for cars to access parking arrangement to Block A;
- Provision of an all movements access arrangement which services the commercial unit for Block A;
- Provision of a raised table arrangement with a signal crossing;
- Provision of a loading bay that allows for maximum 12m rigid truck vehicle servicing. This is restricted during refuse collection period and limited waiting to 20 minutes for all vehicles.
- Provision of an all movements access arrangement which services the commercial unit for Block M.

Magdalen Street (See Paragraph 1.2 above)

- Provision of a loading bay that allows for maximum sized 16.5m articulated vehicle servicing.

- 1.3 The Stage 1 RSA was carried out at the request of Norfolk County Council. The Design Organisation is Icen Projects Ltd, Da Vinci House, 44 Saffron Hill, London, EC1N 8FH. The Third Party Organisation is Clowes Development (UK) Ltd.
- 1.4 Kevin Allen on behalf of the Overseeing Organisation, Norfolk County Council, approved the Audit Brief and Audit Team by email to the Design Organisation on the 12th May 2022.
- 1.5 The audit took place at the Chelmsford office of JB Road Safety Consultancy during May, June and July 2022. The Road Safety Audit was undertaken in accordance with the Road Safety Audit Brief provided by the Design Organisation. The Audit consisted of a study of the drawings and documents provided by the Design Organisation, and given in *Appendix A* to this report.
- 1.6 The Audit Team undertook the site visit, together, on Monday 13th June 2022, between 11:00 and 13:15 hours. The weather was mild with intermittent sun and the road surface was dry. Vehicle traffic conditions at the time of the site visit were low to moderate around the proposed development site. Pedestrians flows were moderate and 5 pedal cyclists were observed during the site visit.

The Audit Team membership was as follows:

Lisa Allen	MSc BEng (Hons) MCIHT MSoRSA Certificate of Competency (IAN 152/11) Road Safety Consultant Audit Team Leader
------------	---

Nevil Calder BSc (Hons) CEng MICE MCIHT MSoRSA
 Certificate of Competency (IAN 152/11)
 Road Safety Consultant
 Audit Team Member

- 1.7 The report has been prepared in accordance with Norfolk County Council Highway Service Manual, Road Safety Audits Procedure SP03-07-P01 Revision 4 dated 6th January 2022 which follows the General Principles and Scheme Governance General Information, GG 119, Rev 2 Road Safety Audit, of the Design Manual for Roads and Bridges.
- 1.8 No details of any Departures from Standards have been provided to the Audit Team by the Design Organisation.
- 1.9 The recommendations in this report are aimed at addressing the road safety problems; however, there may be other alternative acceptable ways to overcome a specific problem, when other practical issues are considered. The recommendations contained herein do not absolve the Designer of his/her responsibilities.
- 1.10 All problems identified in this Road Safety Audit Report are indicated on location plans in *Appendix B* to this report.
- 1.11 Issues identified and observations made during the Stage 1 Road Safety Audit and site inspection, which the Terms of Reference exclude from this report, but which the Audit Team wishes to drawing to the attention of the Overseeing Organisation, Norfolk County Council, will be set out in a separate letter. These issues could include maintenance item and operational issues. In the regard, the Audit Team have reference to three issues identified and observations made as referred to in the Covering Letter to Icen Projects Ltd dated 5th July 2022. The Covering Letter should be provided to Norfolk County Council and be considered in conjunction with this Stage 1 Road Safety Audit report.

2 Items Raised During This Stage 1 Road Safety Audit

2.1 LOCAL ALIGNMENT

2.1.1 No Problems identified in this category at this Stage 1 Road Safety Audit.

2.2 GENERAL

2.2.1 PROBLEM

Locations: 1, 2, 3, 4 and 5 - Edward Street, New Botolph Street and Pitt Street, crossing facilities. (Drawing no. 21-T123-14(Sheet 1 of 5) Rev D).

Summary: Reducing the potential risk of skidding and enhancing braking capacity on the approaches to the proposed crossing facilities located on Edward Street, New Botolph Street and Pitt Street, in order to minimise potential vehicular and pedestrian/pedal cyclist collisions occurring, as well as vehicular collisions occurring, whereby pedestrians, pedal cyclists and vehicle occupants could sustain personal injury.

The scheme drawing indicates the provision of signal controlled, parallel and zebra crossing facilities within Edward Street, New Botolph Street and Pitt Street.

In operational terms, the introduction of a new signal controlled, parallel and zebra crossing facilities and the respective stop lines and give-way lines will result in the creation of new and potentially heavy braking areas on the approaches to the signal controlled, parallel and zebra crossing facilities that do not currently exist.

Whilst drivers should always be anticipating the unexpected, sudden or late braking may occur. This could result in a potential increased risk of stop line and give-way line overshoots and subsequent potential collisions occurring with pedestrians/pedal cyclists crossing on the proposed signal controlled, parallel and zebra crossing facilities, whereby pedestrians and pedal cyclists could sustain personal injury.

Additionally, concern arises that there could be a potential increased risk of nose to tail shunt type collisions occurring between a leading vehicle braking heavily and any following vehicular traffic on the immediate approaches to the proposed signal controlled stop lines, as well as the parallel and zebra crossing give-way lines, whereby vehicle occupants could sustain personal injury.

RECOMMENDATION

It is recommended that a high skid resistant surface course material (formerly referred to at the wearing course), should be provided on the approaches to the proposed signal controlled, parallel and zebra crossing facilities.

It is suggested that as a minimum, the length of the high skid resistant surface course (formerly referred to at the wearing course), should be based on vehicular approach speeds and recognised stopping distances in the Highway Code.

2.2.2 PROBLEM

Location: 6 - Magdalen Street, loading bay. (Drawing no. 21-T123-14(Sheet 1 of 5) Rev D).

Summary: Restricted forward visibility to the nearside primary traffic signal head could result in a potential increased risk of nose to tail shunt type collisions occurring, whereby vehicle occupants could sustain personal injury.

The scheme drawing indicates the provision of an inset loading bay on the western side of Magdalen Street, south of Edward Street.

The site visit has determined that there is a signalised junction incorporating Magdalen Street, Edward Street and Cowgate Street.

Concern arises that the forward visibility to the nearside primary traffic signal head could become restricted when a high sided vehicle occupies the inset loading bay. This situation could be exacerbated should a southbound bus obscure the offside primary traffic signal head as northbound vehicular traffic approach the signalised junction.

As a result, restricted forward visibility could lead to a potential increased risk of nose to tail shunt type collisions occurring between a leading vehicle braking heavily upon a change in the signals and any following vehicular traffic on approach to the stop line, whereby vehicle occupants could sustain personal injury.

RECOMMENDATION

It is recommended that the forward visibility to the nearside primary traffic signal head should be accurately measured and the scheme drawing updated accordingly. When occupied, should the inset loading bay impact upon the forward visibility at this location, it is further recommended that the inset loading bay should either be truncated southwards or relocated / removed, in order to mitigate the above described potential collision scenario.

2.2.3 PROBLEM

Location: 7, 8, 9, 10, 11 and 12 - Magdalen Street, Edward Street, New Botolph Street and Pitt Street - loading bays. (Drawing nos. 21-T123-14(Sheet 3 of 5) Rev D, 21-T123-14(Sheet 4 of 5) Rev D, 21-T123-14(Sheet 5 of 5) Rev D).

Summary: Swept path requirements of larger vehicles manoeuvring into and out of the inset loading bays could result in a potential increased risk of head on or side swipe type vehicular collisions occurring, whereby vehicle occupants could sustain personal injury.

The scheme drawings indicate the provision of inset loading bays on Magdalen Street, Edward Street, New Botolph Street and Pitt Street.

It is evident from the scheme drawings that larger vehicles encroach the centre lines when manoeuvring into and out of the inset loading bays on Magdalen Street and Edward Street. Swept path analysis was not provided for the loading bays on St Botolph Street and Pitt Street.

Concern arises that larger vehicles encroaching the centre lines of Magdalen Street, Edward Street, New Botolph Street and Pitt Street when manoeuvring into and out of the inset loading bays could lead to a potential increased risk of head on or side swipe type vehicle collisions occurring, whereby vehicle occupants could sustain personal injury.

RECOMMENDATION

It is recommended that either the layout of inset loading bay should be modified or relocated, in order to mitigate the above described potential collision scenario.

Additionally, it is recommended that swept path analysis exercises should be undertaken for the proposed loading bays on St Botolph Street and Pitt Street.

2.2.4 PROBLEM

Locations: 13 and 14 - New Botolph Street and Pitt Street, existing signal controlled crossing facilities. (Drawing no. 21-T123-14(Sheet 1 of 5) Rev D).

Summary: Lack of signage for motorists with regard to direction of travel and banned turns could result in a potential increased risk of vehicular collisions occurring within the junction area, whereby vehicle occupants could sustain personal injury.

The Audit Team have been advised that at the triangular type junction incorporating New Botolph Street, Pitt Street and St Augustines Street is not a signal controlled junction. The existing signals on New Botolph Street and Pitt Street are pedestrian only crossing facilities.

For vehicular traffic heading northbound on Pitt Street travelling towards St Augustines Street and right turning vehicles on New Botolph Street travelling toward St Augustines Street, the current arrangement is for vehicular traffic to merge prior to entering the one-way system on St Augustines Street as there is no priority system in place.

The scheme drawing indicates that the existing signal controlled crossing facilities are to be removed and replaced with zebra crossing facilities on New Botolph Street and Pitt Street.

The site visit has determined that directional and banned turn signage is located within the existing traffic signal heads of the signal controlled crossing facilities, which advise motorists of the direction of travel and banned turns.

Concern arises that without providing additional signage on the footways advising motorists of the direction of travel or banned turns that conflicts at this junction could occur. As a result, lack of such signage could lead to a potential increased risk of vehicle/vehicle collisions occurring within this junction area, whereby vehicle occupants could sustain personal injury.

RECOMMENDATION

It is recommended that the signage contained with the existing traffic signal heads should be replicated via a post and plate system on the adjacent footways, in order to mitigate the above described potential collision scenarios.

2.2.5 PROBLEM

Location: 15 - New Botolph Street / Pitt Street, proposed trees (Drawing nos. 21-T123-14(Sheet 1 of 5)).

Summary: Restricted forward visibility on the bend could result in a potential increased risk of nose to tail shunt type collisions occurring, whereby vehicle occupants could sustain personal injury.

The scheme drawing indicates trees are proposed to be planted on the bend of New Botolph Street / Pitt Street at the location indicated.

The site visit has determined that New Botolph Street is one-way leading into Pitt Street southbound and Pitt Street is two-way until it reaches the triangular junction with New Botolph Street and St Augustines Street, then becomes one-way leading into St Augustines Street.

Concern arises that the location of these trees could restrict the forward visibility around this bend for southbound vehicular traffic. As a result, restricted forward visibility could lead to a potential increased risk of nose to tail shunt type collision occurring between southbound New Botolph Street vehicular traffic and traffic queuing on the southbound traffic lane of Pitt Street due to a red signal at the proposed signal controlled crossing facility, whereby vehicle occupants could sustain personal injury.

Additionally, concern arises that restricted forward visibility could lead to a potential increased risk of nose to tail shunt type collisions occurring between vehicles exiting the loading bay to the south of the proposed trees and southbound vehicular traffic on New Botolph Street, whereby vehicle occupants could sustain personal injury.

RECOMMENDATION

It is recommended that the forward visibility at this location should be accurately measured and the scheme drawings updated accordingly. Any vegetation falling within the forward visibility should either be removed or relocated, in order to mitigate the above describe potential collision scenarios.

2.2.6 PROBLEM

Locations: 16 and 17 - Pitt Street, trees and loading bays. (Drawing nos. 21-T123-14(Sheet 1 of 5 and 21-T123-28 Rev A).

Summary: Restricted forward visibility on the nearside primary traffic signal heads could result in a potential increased risk of nose to tail shunt type collisions occurring, whereby vehicle occupants could sustain personal injury.

The scheme drawing indicates trees and loading bays are to be provided on the eastern side of Pitt Street.

Concern arises that the location of the proposed trees and, when occupied, the southern most loading bay could restrict the forward visibility to the nearside primary traffic signal heads at the locations indicated. High sided vehicles travelling northbound restricting visibility to the offside primary traffic signal head could exacerbate this situation.

As a result, restricted forward visibility could lead to a potential increased risk of nose to tail shunt type collisions occurring between a leading southbound vehicle braking heavily upon a change in the signals and any following southbound vehicular traffic on approach to the stop lines, whereby vehicle occupants could sustain personal injury.

RECOMMENDATION

It is recommended that the forward visibility at these locations should be accurately measured and the scheme drawings updated accordingly. Should the forward visibility be impacted by the proposed trees and loading bay, it is further recommended that the trees should be relocated and the loading bay should either be truncated or relocated, in order to mitigate the above describe potential collision scenarios.

2.3 JUNCTIONS

2.3.1 PROBLEM

Locations: 18, 19, 20, 21, 22 and 23 - Edward Street, New Botolph Street and Pitt Street, priority junctions and accesses (Drawing no. 21-T123-33).

Summary: Restricted visibility at the priority junctions and vehicular accesses could result in a potential increased risk of side impact type collisions occurring, whereby vehicle occupants could sustain personal injury.

The scheme drawing indicates a number of priority junctions and vehicular accesses within Edward Street and New Botolph Street. However, the visibility splays have not been indicated at the egress for the 5 no. parking bays on the western side of New Botolph Street.

The site visit has established that Edward Street and New Botolph Street form part of the 20mph zone in the area.

It is evident from the scheme drawing that the visibility splays are impacted by proposed trees and inset loading bays.

Concern arises that the restricted visibility at the priority junctions and vehicular accesses could lead to a potential increased risk of side impact collisions occurring, between vehicular traffic emerging from the priority junctions / vehicular accesses and vehicular traffic on Edward Street and New Botolph Street, whereby vehicle occupants could sustain personal injury.

Although the north-south section of Edward Street falls within the 20mph zone, this section of road is devoid of any traffic calming and is one-way southbound, which could encourage higher speeds on this section of Edward Street.

Concern arises that the proposed 25m visibility splay on the north-south section of Edward Street may be insufficient for the southbound approach speeds. The visibility splay also appears to encroach the boundary of the eastern most property in Block B. As a result, inappropriate vehicle speeds on the southbound approach, combined with the restricted visibility, could lead to a potential increased risk of side impact collisions occurring, between vehicles emerging from the vehicular access for Block B, along with the parking area housing 5 no. parking bays and southbound vehicular traffic on Edward Street.

RECOMMENDATION

It is recommended that the trees located within the visibility splays should be relocated or removed and the inset loading bays truncated or relocated in order to improve visibility and mitigate the above described potential collision scenario.

Additionally, it is recommended that the visibility splays for the junction and access on the western side of Edward Street should be commensurate with the actual vehicle speeds as opposed to the posted speed limit.

If for whatever reasons the above recommendations cannot be adopted, then it is recommended that approval for the proposed layout should be sought and agreed with the Overseeing Organisation, Norfolk County Council, via the Road Safety Audit Response Report and Table F4 Decision Log as contained within DMRB GG 119.

2.3.2 PROBLEM

Locations: **24, 25, 26** and **27** - Edward Street – junctions and vehicular access. (Drawing nos. 21-T123-14(Sheet 3 of 5) Rev D, 21-T123-14(Sheet 4 of 5) Rev D).

Summary: Swept path requirements of vehicles entering and exiting junctions and vehicular access could result in a potential increased risk of head on or side swipe type vehicular collisions occurring, whereby vehicle occupants could sustain personal injury.

The scheme drawings indicate the provision of priority junctions within Edward Street and New Botolph Street, as well as changes to the kerb line within Edward Street at the western end.

It is evident from the scheme drawings that vehicles accessing and egressing these junctions and vehicular access encroach the centre lines within the development site access roads as well as within Edward Street.

Concern arises that vehicles encroaching the centre lines within the development site access roads as well as within Edward Street could lead to a potential increased risk of head on or side swipe type vehicular collisions occurring, between opposing flows of vehicular traffic, whereby vehicle occupants could sustain personal injury.

RECOMMENDATION

It is recommended that the geometry of the junctions and vehicular access should be modified in order to mitigate the above described potential collision scenarios.

2.3.3 PROBLEM

Location: 28 – St Crispins Road, proposed left out egress junction. (Drawing no. 21-T123-01 Rev A).

Summary: Restricted visibility at the egress junction could result in a potential increased risk of side impact type collisions occurring, whereby vehicle occupants could sustain personal injury.

The scheme drawing indicates the existing diverge lane from St Crispins Road into the development site is to be removed and a left only egress provided on the eastern side of the signal controlled parallel crossing facility.

It is evident from the scheme drawing that the visibility splay would be impacted by pedestrians and pedal cyclists located on the northern side of the signal controlled parallel crossing facility when seeking to cross St Crispins Road. It would be reasonable to expect the development site would result in an increase in pedestrians and pedal cyclists using the signal controlled parallel crossing facility.

Additionally, the use of a 43m visibility splay on this busy A-class road may be insufficient for the egress junction to safely operate.

Concern arises that pedestrians and pedal cyclists waiting on the northern side of St Crispins Road for a green signal at the signal controlled parallel crossing facility, are likely to restrict visibility at the egress junction. As a result, restricted visibility could lead to a potential increased risk of side impact collisions occurring, between vehicular traffic emerging from the egress junction and eastbound vehicular traffic on St Crispins Road, whereby vehicle occupants could sustain personal injury. Additionally, the uphill gradient of St Crispins Road carriageway, to the east of the egress junction, could exacerbate the ability for a vehicle to gain momentum when egressing the junction when visibility is restricted.

RECOMMENDATION

It is recommended that the egress junction should be signalised in order to mitigate the above described potential collision scenario.

2.3.4 PROBLEM

Location: 29 – Off St Crispins Road, proposed development site. (Drawing no. 21-T123-01 Rev A)

Summary: Lack of priority within the proposed development site could result in a potential increased risk of vehicular collisions occurring, whereby vehicle occupants could sustain personal injury.

The scheme drawing indicates the existing diverge lane from St Crispins Road into the development site is to be removed and a left only egress provided on the eastern side of the signal controlled parallel crossing facility.

The site visit has established that at the end of the entry road into the development site, there is a give-way road marking, which has not been indicated on the scheme drawing.

Concern arises that a lack of priority at this location within the proposed development site could lead to a potential increased risk of side impact collisions occurring, whereby vehicle occupants could sustain personal injury.

Additionally, concern arises that a lack of priority at this location could lead to a potential increased risk of nose to tail shunt type collisions occurring, between a leading vehicle braking heavily to avoid a collision and any following vehicular traffic, whereby vehicle occupants could sustain personal injury

RECOMMENDATION

It is recommended that the existing give-way markings at this location should be retained.

2.3.5 PROBLEM

Location: 30 – St Crispins Road, access junction. (Drawing no. 21-T123-01 Rev A)

Summary: Vehicles stopped to allow pedestrians and pedal cyclists to cross the access road could result in a potential increased risk of nose to tail shunt type collisions occurring, whereby vehicle occupants could sustain personal injury.

The scheme drawing indicates the existing diverge lane from St Crispins Road into the development site is to be removed and a left only egress provided on the eastern side of the signal controlled parallel crossing facility.

The site visit has established that the shared use footway/cycleway to the west of the development site access crosses the access road via a raised table, changing into a segregated facility onto what will be the central island leading to the signal controlled parallel crossing facility. It would be reasonable to expect the development site would result in an increase in pedestrians and pedal cyclists using the signal controlled parallel crossing facility.

Concern arises that motorists giving way to pedestrians and pedal cyclists at this location may not have sufficient carriageway space to clear the eastbound traffic lane on St Crispins Road. As a result, this situation could lead to a potential increased risk of nose to tail shunt type collisions occurring, between a left turning vehicle unable to clear the eastbound carriageway and eastbound vehicular traffic, whereby vehicle occupants could sustain personal injury.

Additionally, concern arises that a vehicle unable to clear the eastbound traffic lane could cause eastbound motorists in Lane 1 to suddenly swerve to their offside into Lane 2, in order to avoid a potential nose to tail shunt type collision occurring. As a Lane 1 motorist suddenly swerves to their offside, there could be a resultant potential increased risk of side impact type collisions occurring, whereby vehicle occupants could sustain personal injury.

RECOMMENDATION

It is recommended that sufficient linear distance is provided between the St Crispins Road channel line and the uncontrolled crossing facility, for all expected type and sizes of vehicles using the development site access (i.e., refuse vehicles, supermarket delivery and long wheel-based panel vans) to clear the eastbound carriageway and not cause impediment to eastbound vehicular traffic.

2.4 WALKING, CYCLING AND HORSE RIDING

2.4.1 PROBLEM

Location: General throughout the scheme extents - Magdalen Street, Edward Street, New Botolph Street and Pitt Street, loading bays. (Drawing nos. 21-T123-14(Sheet 3 of 5) Rev D, 21-T123-14(Sheet 4 of 5) Rev D, 21-T123-14(Sheet 5 of 5) Rev D)

Summary: The potential layout of the inset loading bays could result in a potential increased risk of pedestrian trips and falls occurring, whereby pedestrians could sustain personal injury, especially those who are blind, visually or mobility impaired.

The scheme drawing indicates the provision of a number of inset loading bays located on Magdalen Street, Edward Street, New Botolph Street and Pitt Street. The width of the footways adjacent to the inset loading bay have not been indicated on the scheme drawings.

In the event that the inset loading bays will be flush with the adjacent carriageway level, concern arises that pedestrians walking along the adjacent footways behind the inset loading bays may not be able to easily identify the presence of the raised kerb around the inset loading bay.

As a result, this situation could lead to a potential increased risk of pedestrian trips and falls occurring, whereby pedestrians could sustain personal injury, especially those who are blind, visually or mobility impaired.

Alternatively, if it should be proposed that the inset loading bays be flush with the adjacent footway level, pedestrians may stray into the inset loading bay areas and be vulnerable to a potential collision scenario with vehicles entering (and possibly leaving) the inset loading bay. As a result, this situation could lead to a potential increased risk of vehicle and pedestrian collisions occurring, whereby pedestrians could sustain personal injury, especially those who are blind or visually impaired.

RECOMMENDATION

It is recommended that notwithstanding whether the inset loading bays are flush with the carriageway or flush with the footway, the presence of the loading bays should be made more conspicuous to all road users, particularly pedestrians, by providing a considerably significant contrasting surface material and / or colour.

2.4.2 PROBLEM

Location: 31 - Edward Street, signal controlled crossing facility. (Drawing no. 21-T123-14(Sheet 4 of 5) Rev D)

Summary: The provision of a signal controlled crossing on Edward Street could result in a potential increased risk of vehicular and pedestrian collisions occurring, whereby pedestrians could sustain personal injury.

The scheme drawing indicates the provision of a signal controlled crossing facility situated centrally within Edward Street on a raised table.

The site visit has determined that access to the east-west section of Edward Street is limited, as at the eastern end vehicular traffic is unable to turn left from Magdalen Street into Edward Street and vehicular traffic can only turn left from Edward Street onto Magdalen Street, whilst at the western end access/egress is via a left in / left out only junction arrangement.

Information relating to the likely usage of the signal controlled crossing facility has not been provided for assessment. Concern arises that a signal controlled crossing facility that is not used regularly and remains 'green to motorists' for prolonged periods of time could result in drivers not observing a change in the signals. As a result, this situation could lead to a potential increased risk of vehicular and pedestrian collisions occurring, whereby pedestrians could sustain personal injury.

RECOMMENDATION

Subject to the number of predicated users at this signal controlled crossing facility combined with the predicted traffic flows on this east-west section of Edward Street, it is recommended that the signal controlled crossing facility should be replaced with a zebra/parallel crossing facility.

2.4.3 PROBLEM

Location: 32 - Edward Street, eastbound bus stop and signal controlled crossing facility. (Drawing no. 21-T123-14(Sheet 4 of 5) Rev D)

Summary: Restricted inter-visibility between vehicular traffic heading eastbound on Edward Street and pedestrians/pedal cyclists seeking to cross Edward Street from north to south could result in a potential increased risk of vehicular and pedestrian/pedal cyclist collisions occurring and vehicle/vehicle collisions occurring, whereby pedestrians, pedal cyclists and vehicle occupants could sustain personal injury.

The scheme drawing indicates the provision of a signal controlled crossing facility situated centrally within Edward Street on a raised table. The scheme drawing also indicates a bus stop is to be located to the west of the proposed crossing facility.

Concern arises that when the bus stop is occupied, buses could impact upon the inter-visibility at this location. As a result, should pedestrians/pedal cyclists cross on a red signal, restricted inter-visibility could lead to a potential increased risk of vehicular and pedestrian/pedal cyclist collisions occurring, whereby pedestrians and pedal cyclists could sustain personal injury.

Additionally, concern arises that restricted inter-visibility combined with pedestrians and pedal cyclists crossing on a red signal could lead to a potential increased risk of nose to tail shunt type collisions occurring, between a leading vehicle braking heavily upon seeing a pedestrian or pedal cyclist and any following vehicular traffic on the approach to the signal controlled crossing facility, whereby vehicle occupants could sustain personal injury.

RECOMMENDATION

It is recommended that the inter-visibility should be accurately measured when the bus stop is occupied. If the inter-visibility is found to be sub-standard, it is further recommended that measures should be provided to mitigate the above described potential collision scenario.

Measures could include relocating the bus stop or relocating the signal controlled crossing facility.

2.4.4 PROBLEM

Location: 33 - Edward Street junction New Botolph Street, parallel crossing facility. (Drawing no. 21-T123-14(Sheet 3 of 5) Rev D)

Summary: Restricted inter-visibility between vehicular traffic heading south to east at the western end of Edward Street and pedestrians/pedal cyclists seeking to cross Edward Street could result in a potential increased risk of vehicular and pedestrian/pedal cyclist collisions occurring and vehicle/vehicle collisions occurring, whereby pedestrians, pedal cyclists and vehicle occupants could sustain personal injury.

The scheme drawing indicates the provision of a parallel crossing facility situated at the western end of Edward Street. The scheme drawing also indicates the provision of a tree to the immediate east of the parallel crossing facility.

The site visit has established that the proposed parallel crossing is located further east within Edward Street compared to the existing crossing facilities. The site visit has also determined that the building located on the north-eastern corner of the junction impacted upon the inter-visibility between vehicles turning left into Edward Street and pedestrians/pedal cyclists crossing Edward Street from north to south.

Concern arises that restricted inter-visibility at the parallel crossing facility could lead to a potential increased risk of vehicular and pedestrian/pedal cyclist collisions occurring, whereby pedestrians and pedal cyclists could sustain personal injury.

Additionally, concern arises that restricted inter-visibility could lead to a potential increased risk of nose to tail shunt type collisions occurring, between a leading vehicle braking heavily upon seeing a pedestrian or pedal cyclist crossing Edward Road and any following vehicular traffic on the approach to the give-way lines, whereby vehicle occupants could sustain personal injury.

RECOMMENDATION

It is recommended that that the inter-visibility should be accurately measured and the scheme drawing updated accordingly.

If the inter-visibility is found to be sub-standard, it is recommended that the parallel crossing should be relocated further west from its current location and any trees located outside the inter-visibility zone, in order to mitigate the above described potential collision scenarios.

2.4.5 PROBLEM

Locations: **34** and **35** - New Botolph Street and Pitt Street, zebra crossings. (Drawing no. 21-T123-14(Sheet 1 of 5) Rev D)

Summary: Lack of raised table at the proposed zebra crossing facilities could result in a potential increased risk of vehicular and pedestrian collisions occurring, whereby pedestrians could sustain personal injury.

The scheme drawing indicates that the existing signal controlled crossing facilities are to be removed and replaced with zebra crossing facilities on New Botolph Street and Pitt Street.

The site visit has established that the existing signal controlled crossing facilities are located on raised tables.

The raised tables at the existing signal controlled crossings act as a speed control measure and concern arises that a lack of raised table at the proposed zebra crossing facilities could lead to inappropriate speeds on approach to the zebra crossing facilities. As a result, this situation could lead to a potential increased risk of vehicular and pedestrian collisions occurring, whereby pedestrians could sustain personal injury.

RECOMMENDATION

It is recommended that raised tables should be incorporated into the proposed zebra crossing facilities, in order to provide consistency and speed control in this area.

2.4.6 PROBLEM

Location: **36** - New Botolph Street, zebra crossing. (Drawing no. 21-T123-14(Sheet 1 of 5) Rev D)

Summary: Confusion over whether the proposed zebra crossing facility is a two stage crossing or a single stage crossing could result in a potential increased risk of vehicular and pedestrian collisions occurring, whereby pedestrians could sustain personal injury.

The scheme drawing indicates the existing staggered signal controlled crossing facility on New Botolph Street is to be removed and replaced with a zebra crossing facility further east from its current location.

The scheme drawing also indicates that the zebra crossing is to be split by the existing narrow traffic separation island on New Botolph Street.

Concern arises that due to the narrow nature of the traffic separation island, confusion over whether pedestrians would utilise the traffic separation island to create a two stage crossing facility or whether pedestrians would seek to cross both traffic lanes on New Botolph Street in one stage may result in conflicts occurring with approaching vehicular traffic.

As a result, confusion over whether to cross in one stage or two stages could lead to a potential increased risk of vehicular and pedestrian collision occurring, whereby pedestrians could sustain personal injury.

Additionally, concern arises that the narrow traffic separation island may be insufficient to accommodate the expected number of users safely. As a result, pedestrians using the zebra as a two stage crossing via the narrow traffic separation island may spill out into the adjacent carriageway when seeking to judge when it is safe to cross the next traffic lane on New Botolph Street. This situation could lead to a potential increased risk of vehicular and pedestrian collisions occurring, whereby pedestrians could sustain personal injury.

RECOMMENDATION

It is recommended that the operation of the zebra should be clearly defined to all road users, including pedestrians. Measures could include truncating the traffic separation island further west to create a single stage crossing or widening the traffic separation island to create a clear two stage crossing, providing a raised table to reduce vehicle speeds on the approach to the zebra crossing and providing look left / look right markings to Diagram 1029.

2.4.7 PROBLEM

Location: 37 – Pitt Street, existing vehicular crossovers (Drawing no. 21-T123-14(Sheet 1 of 5) Rev D).

Summary: Parallel parking to the rear of the proposed signal controlled pedestrian crossing facility could result in a potential increased risk of vehicular and pedestrian collisions occurring, whereby pedestrians could sustain personal injury, especially those who are blind or visually impaired.

The scheme drawing indicates a signal controlled pedestrian crossing facility is proposed on Pitt Street.

The site visit has established the presence of two existing vehicular crossovers leading to three perpendicular marked out parking bays either side of an established building, within a privately delineated area behind the western footway. At the time of the site visit, within the privately delineated area there was a vehicle parked parallel to the carriageway, centrally in front of the building outside of a designated marked out parking bay.

The proposed location of the signal controlled pedestrian crossing facility and the tactile paving appears to be in line with the centre of the building, on the western side of Pitt Street, guiding pedestrians to where the vehicle was parallel parked.

In order to provide the dropped kerb facility for the tactile paving surface of the signal controlled crossing facility, the two existing vehicle crossovers leading to the parking bays either side of the building may need to be realigned in order to accommodate the stop line and tactile paving.

Concern arises that should vehicles continue to use the existing dropped kerb facilities to park parallel to the carriageway outside the front of the building, this situation could lead to a potential increased risk of vehicular and pedestrian collisions occurring, between vehicles manoeuvring to parallel park in front of the building and pedestrians using the signal controlled pedestrian crossing facility, whereby pedestrians could sustain personal injury, especially those who are blind or visually impaired.

RECOMMENDATION

It is recommended that the existing vehicular crossovers should be indicated on the scheme drawing in relation to the proposed signal controlled pedestrian crossing facility.

Additionally, it is recommended that the existing dropped kerb layout leading to the designated parking bays should be modified to incorporate the dropped kerb facility and controls for the proposed signal controlled pedestrian crossing facility, in order to mitigate the above described potential collision scenario.

2.4.8 PROBLEM

Location: General, throughout the scheme extents – Edward Street and New Botolph Street, junctions and accesses (Drawing no. 21-T123-14(Sheet 1 of 5) Rev D).

Summary: Lack of dropped kerbs and tactile paving could result in a potential increased risk of pedestrian trips and falls occurring on the full height kerb upstands, whereby pedestrians could sustain personal injury, especially those who are blind, visually or mobility impaired.

The scheme drawing indicates a number of proposed junctions and accesses on Edward Street and New Botolph Street.

Concern arises that a lack of dropped kerbs and tactile paving facilities across these junctions and accesses could lead to a potential increased risk of pedestrian trips and falls occurring on the full height kerb upstands, whereby pedestrians could sustain personal injury, especially those who are blind, visually or mobility impaired.

RECOMMENDATION

It is recommended that dropped kerbs and tactile paving should be provided at the junctions and accesses.

2.4.9 PROBLEM

Location: General throughout the scheme extents - Magdalen Street, Edward Street, New Botolph Street and Pitt Street, footway widths. (Drawing no. 21-T123-14(Sheet 1 of 5) Rev D)

Summary: Varied footway widths within Magdalen Street, Edward Street, New Botolph Street and Pitt Street could result in a potential increased risk of vehicular and pedestrian collisions occurring, whereby pedestrians could sustain personal injury, especially at the inset loading bays.

The scheme drawing indicates a proposed development site that is bounded by Magdalen Street, Edward Street New Botolph Street, Pitt Street and St Crispins Road, whereby the proposed footway widths within this area vary.

Concern arises that sections of footway/shared footway may be of insufficient width to accommodate the expected number of pedestrians/pedal cyclists in these areas, especially adjacent to the inset loading bays. As a result, pedestrians/pedal cyclists may enter the adjacent carriageway in order to pass one another, which could lead to a potential increased risk of vehicular and pedestrian/pedal cyclist collisions occurring, whereby pedestrians and pedal cyclists could sustain personal injury.

RECOMMENDATION

It is recommended that that the footways should be of sufficient width to accommodate the expected number of pedestrians and pedal cyclists in these areas, in order to mitigate the above described potential collision scenario.

2.4.10 PROBLEM

Location: General throughout the scheme extents, cycle route. (Drawing no. 21-T123-14(Sheet 1 of 5) Rev D)

Summary: Lack of signage and corduroy paving could result in a potential increased risk of pedal cyclist and pedestrian collisions occurring, whereby pedestrians could sustain personal injury, especially those who are blind or visually impaired.

The scheme drawing indicates the provision of a parallel crossing facility at the western end of Edward Street.

Concern arises that a lack of signage and corduroy paving advising pedestrians of the presence of pedal cyclists within Edward Street could lead to a potential increased risk of pedal cyclist and pedestrian collisions occurring, whereby pedestrians could sustain personal injury, especially those who are blind or visually impaired.

RECOMMENDATION

It is recommended that that at the detailed design stage of the project, suitable and appropriate signage for the cycle route and any shared/segregated footway/cycleway areas, including corduroy paving should be provided in order to mitigate the above described potential collision scenario.

2.5 ROAD SIGNS, CARRIAGEWAY MARKINGS, AND LIGHTING

2.5.1 No Problems identified in this category at this Stage 1 Road Safety Audit.

End of Problems Identified and Recommendations Offered in This Stage 1 Road Safety Audit

3 Road Safety Audit Team Statement

We certify that this audit has been undertaken in accordance with GG 119 Rev 2.

AUDIT TEAM LEADER:

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Certificate of Competency (IAN 152/11)

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Signed: 

Date: 5th July 2022

Date


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Signed: 

Date: 5th July 2022

Audit Team Leader's Contact Details:

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Appendix A

(Details of the Drawings and Documents Supplied by the Client for
This Stage 1 Road Safety Audit)

Scheme Drawings

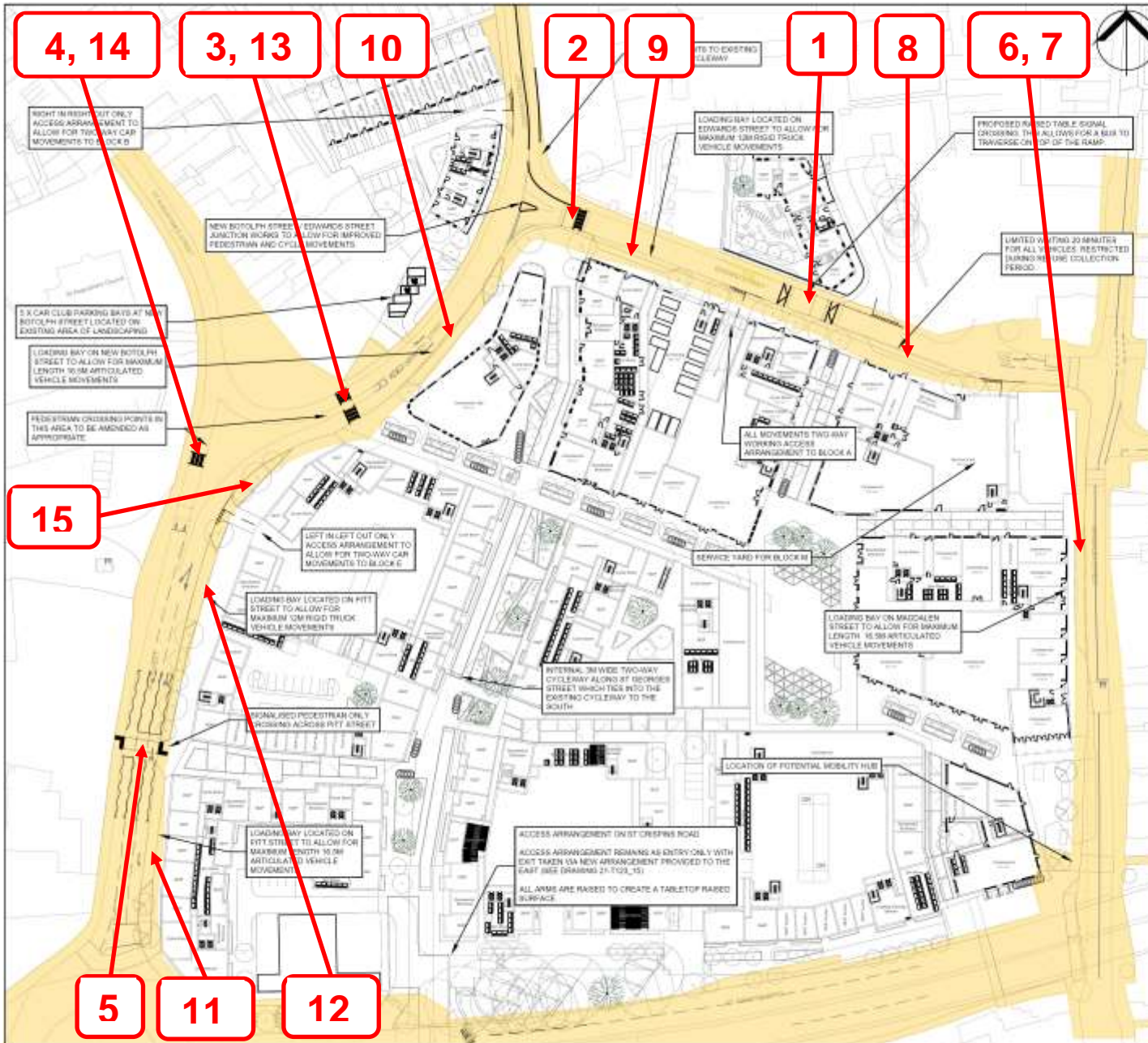
- ANG-PLA-XX-XX-DR-L-1001 – Landscape Masterplan
- 21-T123-01 Rev A – Potential A147 Left Out Access
- 21-T123-14 (SHEET 1 OF 5) Rev D - Initial Highway Works
- 21-T123-14 (SHEET 3 OF 5) Rev D - Initial Highway Works
- 21-T123-14 (SHEET 4 OF 5) Rev D - Initial Highway Works
- 21-T123-14 (SHEET 5 OF 5) Rev D - Initial Highway Works
- 21-T123-23 Rev B – Edward Street Junction Arrangement with Road Narrowing
- 21-T123-24 Rev B - Edward Street Junction Arrangement with Road Narrowing
- 21-T123-28A – Proposed Pedestrian Crossing(Pitt Street)
- 21-T123-31 Rev A – Proposed Car Club Bays
- 21-T123-32 Rev A – Site Layout Review – Landscaping (Fire Tender)
- 21-T123-33 – Site Layout Review (Visibility Assessment)
- 21-T123-34 – Site Layout Review (Block M Service Yard)
- 21-T123-35.1 – Site Layout Review (Car In)
- 21-T123-35.2 – Site Layout Review (Car Out)

Other Documents

- Road Safety Audit Brief – Icen Projects Ltd, 27th April 2022.
- Collision Data Norfolk County Council

Appendix B

(Annotated Drawings Showing Locations of Problems
Identified in This Stage 1 Road Safety Audit)



NOTES:

1. THIS DRAWING IS INDICATIVE AND SUBJECT TO DISCUSSIONS WITH LOCAL & NATIONAL HIGHWAY AUTHORITIES. THIS DESIGN IS ALSO SUBJECT TO CONFIRMATION OF LAND OWNERSHIP, TOPOGRAPHY, LOCATION OF STATUTORY SERVICES, DETAILED DESIGN AND TRAFFIC MODELLING.
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KEY

 HIGHWAY BOUNDARY INFORMATION

REV.	DATE	AMENDMENTS	DRAWN	CHK	APP
D	23.03.2022	REVISED LAYOUT	AP	RJ	CB
C	04.03.2022	UPDATED SITE PLAN	AP	RJ	CB
B	17.02.2022	HIGHWAY BOUNDARY TRANSCRIBED ONTO PLAN	AP	CB	CB
A	19.01.2022	MINOR AMENDMENTS	AP	RJ	CB

CLIENT
 WESTON HOMES PLC

PROJECT
 ANGLIA SQUARE

TITLE
 INITIAL HIGHWAYS WORKS

DRAWN BY
 AP

CHECKED BY
 RJ

APPROVED BY
 CB

DATE
 17.12.2021

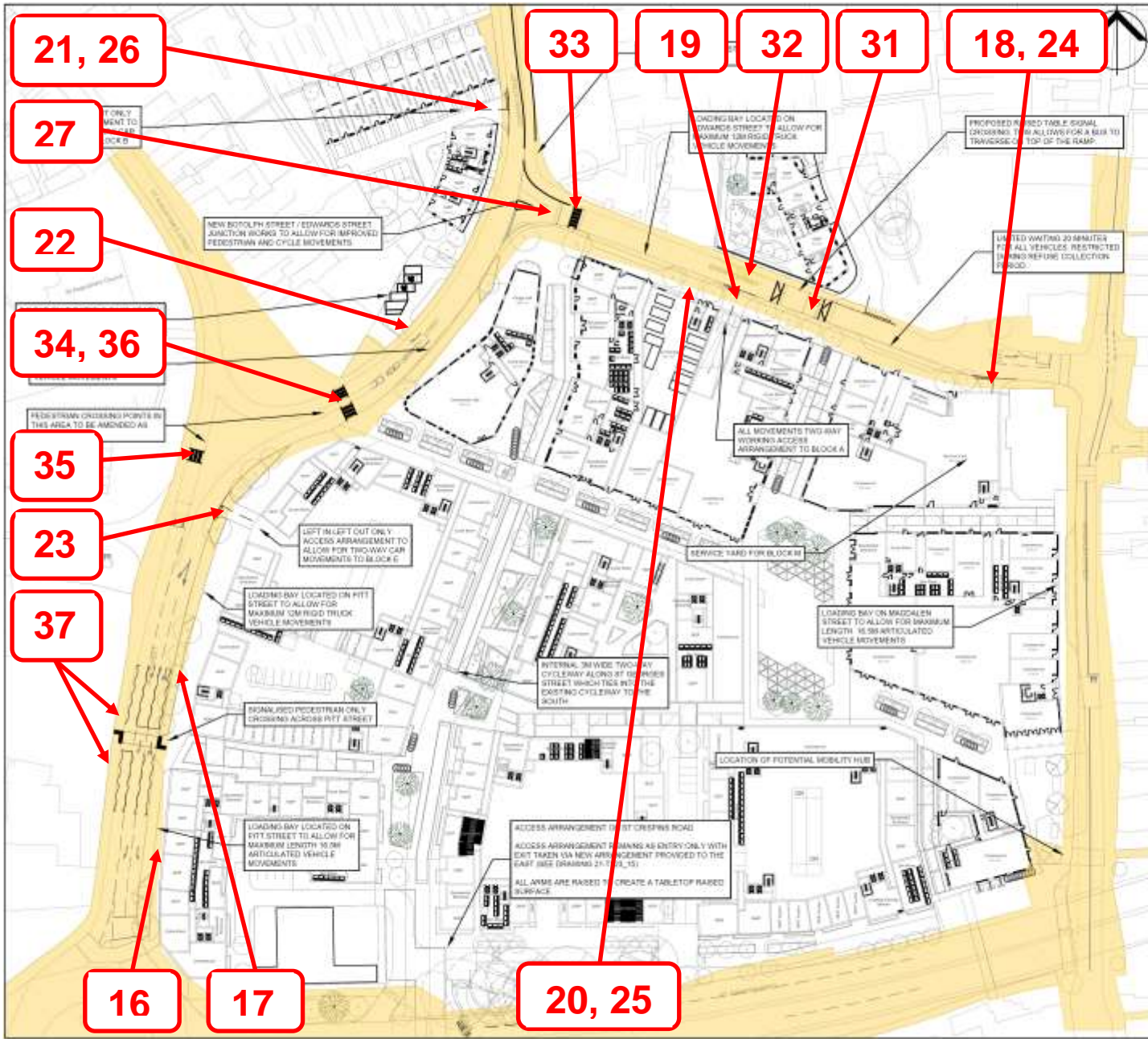
DATE
 17.12.2021

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PROJECT NO.
 21-T123

DRAWING NO.
 14 (SHEET 1 OF 5)

REV.
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NOTES:

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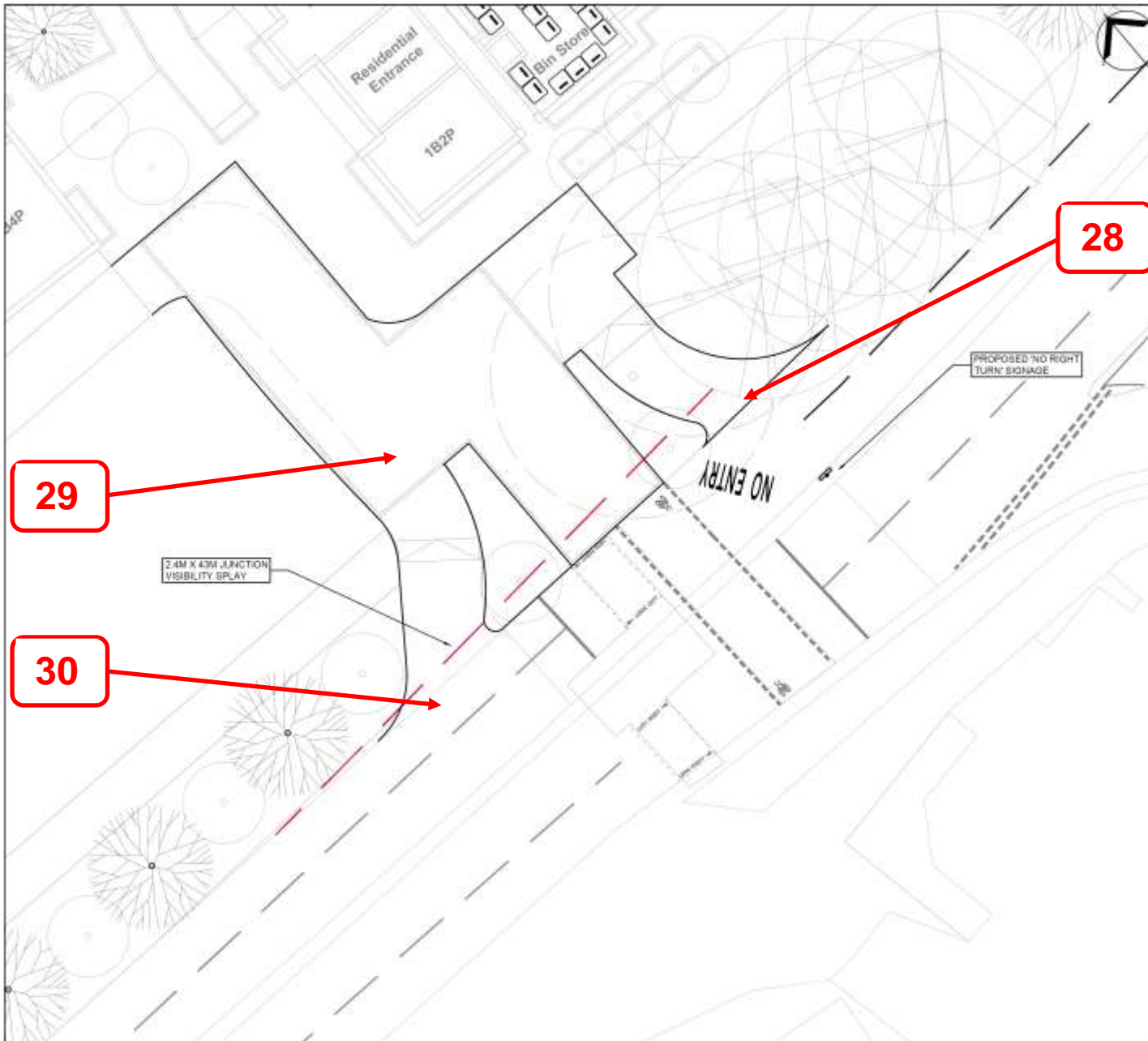
 HIGHWAY BOUNDARY INFORMATION

REV	DATE	AMENDMENTS	DRAWN	CHK	APP
D	28.03.2022	REVISED LAYOUT	AP	RJ	CB
C	04.03.2022	UPDATED SITE PLAN	AP	RJ	CB
B	17.02.2022	HIGHWAY BOUNDARY TRANSCRIBED ONTO PLAN	AP	CB	CB
A	19.01.2022	MINOR AMENDMENTS	AP	RJ	CB

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CLIENT			
WESTON HOMES PLC			
PROJECT			
ANGIA SQUARE			
TITLE			
INITIAL HIGHWAYS WORKS			
DRAWN BY	CHECKED BY	APPROVED BY	
AP	RJ	CB	
	17.12.2021	17.12.2021	
SCALE @ A1	DATE		
1 : 1,000	17.12.2021		
PROJECT NO:	DRAWING NO:	REV:	
21-T123	14 (SHEET 1 OF 5)	D	



NOTES:
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A	08/10/2021	REVISED LAYOUT	AF	RJ	CB
REV	DATE	AMENDMENTS	DRAWN	CHK	APP

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CLIENT
 WESTON HOMES

PROJECT
 ANGLIA SQUARE

TITLE
 POTENTIAL A147 LEFT OUT ACCESS

DRAWN BY MG	CHECKED BY RJ	APPROVED BY CB
SCALE @ A1 1:250	DATE 08/10/2021	DATE 08/10/2021
PROJECT NO. 25-T123	DRAWING NO. 01	REV. A

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Road Safety Audit Response

Project details

Report title:	Stage 1 Road Safety Audit Response
Date:	11/07/2022
Document reference and revision:	JB22/1003
Prepared by:	Aidan Pearce
On behalf of:	Weston Homes

Authorisation sheet

Project:	Anglia Square
Report title:	Road Safety Audit Response
Prepared by:	Iceni Projects Ltd
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Position:	Senior Transport Technician
Signed:	A Pearce
Organisation:	Iceni Projects Ltd
Date:	11/07/2022
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Position:	Director
Signed:	C Burbridge
Organisation:	Iceni Projects Ltd
Date:	11/07/2022

Introduction

This response has been produced following the results of the Stage 1 Road Safety Audit (RSA) for the proposed overall highways works located around Anglia Square. The RSA was undertaken by JB Road Safety Consultancy Ltd and provided in June 2022 for Iceni Projects review.

Key personnel

Overseeing Organisation:	Norwich City Council / Norfolk County Council
RSA team:	JB Road Safety Consultancy Ltd
Design organisation:	Iceni Projects Ltd

Road safety audit decision log

RSA problem	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
2.2.1) Edward Street, New Botolph Street and Pitt Street, crossing facilities. Reducing the potential risk of skidding and enhancing braking capacity on the approaches to the proposed crossing facilities located on Edward Street, New Botolph Street and Pitt Street, in order to minimise potential vehicular and pedestrian/pedal cyclist collisions occurring, as well as vehicular collisions occurring, whereby pedestrians, pedal cyclists and vehicle occupants could sustain personal injury.	<p>It is recommended that a high skid resistant surface course material (formerly referred to at the wearing course), should be provided on the approaches to the proposed signal controlled, parallel and zebra crossing facilities.</p> <p>It is suggested that as a minimum, the length of the high skid resistant surface course (formerly referred to at the wearing course), should be based on vehicular approach speeds and recognised stopping distances in the Highway Code.</p>	<p>Noted – correct surface treatment, in accordance with standards, to be provided on approach to all proposed crossings.</p> <p>Details to be provided at Stage 2.</p>		

RSA problem	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
2.2.2) Magdalen Street, loading bay. Restricted forward visibility to the nearside primary traffic signal head could result in a potential increased risk of nose to tail shunt type collisions occurring, whereby vehicle occupants could sustain personal injury.	<p>It is recommended that the forward visibility to the nearside primary traffic signal head should be accurately measured and the scheme drawing updated accordingly. When occupied, should the inset loading bay impact upon the forward visibility at this location, it is further recommended that the inset loading bay should either be truncated southwards</p>	<p>Not accepted. The loading bay has been recessed to allow for this. The road alignment on approach to signals fractionally bends in an eastward direction and the position of the driver would be more towards the middle / centre of the road when looking towards the signal heads.</p>		

	or relocated / removed, in order to mitigate the above described potential collision scenario.			
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RSA problem	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
<p>2.2.3) Magdalen Street, Edward Street, New Botolph Street and Pitt Street – loading bays. Swept path requirements of larger vehicles manoeuvring into and out of the inset loading bays could result in a potential increased risk of head on or side swipe type vehicular collisions occurring, whereby vehicle occupants could sustain personal injury.</p>	<p>It is recommended that either the layout of inset loading bay should be modified or relocated, in order to mitigate the above described potential collision scenario.</p> <p>Additionally, it is recommended that swept path analysis exercises should be undertaken for the proposed loading bays on St Botolph Street and Pitt Street.</p>	<p>Swept path analysis was undertaken on all proposed loading bays and included within the application submission. The New Botolph Street and Pitt Street loading bays do not result in any overhang into the opposite side of the carriageway as demonstrated by the tracking.</p> <p>The tracking was based on HGVs (12m Rigid and 16.5m Artic) and therefore considered to be worst case – in reality the majority of vehicles using them are likely to be smaller transit vans. Regardless, the slight overhang of these HGVs exiting the loading bays is considered to be typical of all loading bays and clearly the vehicle would not exit the bay unless there was sufficient gaps in traffic in either direction. Drivers have adequate visibility when making their manoeuvres.</p>		

RSA problem	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
2.2.4) New Botolph Street and Pitt Street – existing signal controlled crossing facilities. Lack of signage for motorists with regard to direction of travel and banned turns could result in a potential increased risk of vehicular collisions occurring within the junction area, whereby vehicle occupants could sustain personal injury.	It is recommended that the signage contained with the existing traffic signal heads should be replicated via a post and plate system on the adjacent footways, in order to mitigate the above described potential collision scenarios.	The proposals for this area have been updated following discussions with Norwich & Norfolk Council officers. The proposals now include a new signalised crossing facility on New Botolph Street. Proposed signal heads will include the required signage. Detail to be provided at Stage 2.		

RSA problem	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
2.2.5) New Botolph Street / Pitt Street – proposed trees. Restricted forward visibility on the bend could result in a potential increased risk of nose to tail shunt type collisions occurring, whereby vehicle occupants could sustain personal injury.	It is recommended that the forward visibility at this location should be accurately measured and the scheme drawings updated accordingly. Any vegetation falling within the forward visibility should either be removed or relocated, in order to mitigate the above describe potential collision scenarios.	Not accepted – the trees will fall within the inter-visibility and forward visibility splays and as such the canopy will be over 2m in height and the species chosen will be planted in such a way that the trunks do not make a continuous barrier to visibility. As such, this would be no different from a telegraph pole and lamp column.		

RSA problem	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
2.2.6) Pitt Street, trees and loading bays. Restricted forward visibility on the nearside primary traffic signal heads could result in a potential increased risk of nose to tail	It is recommended that the forward visibility at these locations should be accurately measured and the scheme drawings updated accordingly. Should the forward visibility be impacted by the	With regard to location 17, the proposed signal crossing on Pitt Street is being removed so this issue no longer remains. With regard to location 16, this is accepted in principle and planting		

shunt type collisions occurring, whereby vehicle occupants could sustain personal injury.	proposed trees and loading bay, it is further recommended that the trees should be relocated and the loading bay should either be truncated or relocated, in order to mitigate the above describe potential collision scenarios.	will be reviewed and amended as necessary. Details to be provided at Stage 2.		
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RSA problem	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
2.3.1) Edward Street, New Botolph Street and Pitt Street, priority junctions and accesses. Restricted visibility at the priority junctions and vehicular accesses could result in a potential increased risk of side impact type collisions occurring, whereby vehicle occupants could sustain personal injury.	It is recommended that the trees located within the visibility splays should be relocated or removed and the inset loading bays truncated or relocated in order to improve visibility and mitigate the above described potential collision scenario. Additionally, it is recommended that the visibility splays for the junction and access on the western side of Edward Street should be commensurate with the actual vehicle speeds as opposed to the posted speed limit. If for whatever reasons the above recommendations cannot be adopted, then it is recommended that approval for the proposed layout should be sought and agreed with the Overseeing Organisation, Norfolk County Council, via the Road Safety Audit Response Report and Table F4 Decision Log as contained	With regard to the 5 parking bays on the western side of New Botolph Street, this is adjacent to an existing egress with adequate frontage to allow drivers to see in both directions. Visibility splays will be shown prior to Stage 2. With regard to the visibility splays and proposed trees impacting on loading bays, this is not accepted given the trees will fall within the inter-visibility and forward visibility splays and as such the canopy will be over 2m in height and the species chosen will be planted in such a way that the trunks do not make a continuous barrier to visibility. As such, this would be no different from a telegraph pole and lamp column. With regard to side impacts, all the priority junctions / vehicular accesses have been tracked and work accordingly. As such, this is not accepted. With regard to the		

	within DMRB GG 119.	northbound visibility up Edward Street from the Block B access, additional visibility is achievable beyond the splay shown. This is therefore considered adequate, especially as drivers are likely to use the middle of the road when heading southbound.		
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RSA problem	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
2.3.2) Edward Street – junctions and vehicular access. Swept path requirements of vehicles entering and exiting junctions and vehicular access could result in a potential increased risk of head on or side swipe type vehicular collisions occurring, whereby vehicle occupants could sustain personal injury.	It is recommended that the geometry of the junctions and vehicular access should be modified in order to mitigate the above described potential collision scenarios.	Not accepted – this is an existing situation for existing accesses, some of which are being relocated and is common practice for larger vehicles to overswing the centre line but not considered a concern given the good visibility in either direction before making the manoeuvre.		

RSA problem	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
2.3.3.) St Crispins Road, proposed left out egress junction Restricted visibility at the egress junction could result in a potential increased risk of side impact type collisions occurring, whereby vehicle occupants could sustain personal injury.	It is recommended that the egress junction should be signalled in order to mitigate the above described potential collision scenario.	Not accepted – the visibility only marginally encroaches into the area where pedestrians / cyclists would wait. In practice, they do not stand adjacent to the kerb but fractionally back and therefore vehicles would be seen approaching. Further, should this visibility splay be instructed on rare occasions due to pedestrians waiting this would mean that the crossing would be		

		turning green (pedestrian phase) shortly after, stopping oncoming traffic and allowing the safe egress movement. So in essence for the visibility splay to be blocked, which is unlikely, the crossing would be in the process of halting oncoming traffic.		
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RSA problem	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
2.3.4) Off St Crispins Road, proposed development site. Lack of priority within the proposed development site could result in a potential increased risk of vehicular collisions occurring, whereby vehicle occupants could sustain personal injury.	It is recommended that the existing give-way markings at this location should be retained.	Understood, however, the whole of the priority in this area is being changed as part of the proposals including new surface treatment, reduction in vehicle flows and pedestrian / cycle priority. As such, details will be shown at Stage 2 as required.		

RSA problem	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
2.3.5) St Crispins Road, access junction. Vehicles stopped to allow pedestrians and pedal cyclists to cross the access road could result in a potential increased risk of nose to tail shunt type collisions occurring, whereby vehicle occupants could sustain personal injury.	It is recommended that sufficient linear distance is provided between the St Crispins Road channel line and the uncontrolled crossing facility, for all expected type and sizes of vehicles using the development site access (i.e., refuse vehicles, supermarket delivery and long wheel-based panel vans) to clear the eastbound carriageway and not cause impediment to eastbound vehicular	Understood, however, the whole of the priority in this area is being changed as part of the proposals including new surface treatment, reduction in vehicle flows and pedestrian / cycle priority. As such, details will be shown at Stage 2 as required.		

	traffic.			
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RSA problem	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
2.4.1) Magdalen Street, Edward Street, New Botolph Street and Pitt Street, loading bays. The potential layout of the inset loading bays could result in a potential increased risk of pedestrian trips and falls occurring, whereby pedestrians could sustain personal injury, especially those who are blind, visually or mobility impaired.	It is recommended that notwithstanding whether the inset loading bays are flush with the carriageway or flush with the footway, the presence of the loading bays should be made more conspicuous to all road users, particularly pedestrians, by providing a considerably significant contrasting surface material and / or colour.	Noted. Contrasting surface material / colour to be provided where loading bays are inset at road level, however most of the bays will form part of the pavement, and act as such when not in use. Nevertheless it will be delineated to allow drivers to clearly understand the location, but this may not be in a different material. Details will be provided at Stage 2.		

RSA problem	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
2.4.2) Edward Street, signal controlled crossing facility. The provision of a signal controlled crossing on Edward Street could result in a potential increased risk of vehicular and pedestrian collisions occurring, whereby pedestrians could sustain personal injury.	Subject to the number of predicated users at this signal controlled crossing facility combined with the predicted traffic flows on this east-west section of Edward Street, it is recommended that the signal controlled crossing facility should be replaced with a zebra/parallel crossing facility.	As a result of discussions held with Norwich / Norfolk Officers, this proposed crossing facility has been removed from the proposals at the request of officers and it is therefore considered this problem no longer exists.		

RSA problem	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
2.4.3) Edward Street, eastbound bus stop and signal controlled crossing facility. Restricted inter-visibility between vehicular traffic heading eastbound on Edward Street and pedestrians/pedal cyclists seeking to cross Edward Street from north to south could result in a potential increased risk of vehicular and pedestrian/pedal cyclist collisions occurring and vehicle/vehicle collisions occurring, whereby pedestrians, pedal cyclists and vehicle occupants could sustain personal injury.	<p>It is recommended that that the inter-visibility should be accurately measured when the bus stop is occupied. If the inter-visibility is found to be sub-standard, it is further recommended that measures should be provided to mitigate the above described potential collision scenario.</p> <p>Measures could include relocating the bus stop or relocating the signal controlled crossing facility.</p>	As a result of discussions held with Norwich / Norfolk Officers, this proposed crossing facility has been removed from the proposals at the request of officers and it is therefore considered this problem no longer exists.		

RSA problem	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
2.4.4) Edward Street junction with New Botolph Street, parallel crossing facility. Restricted inter-visibility between vehicular traffic heading south to east at the western end of Edward Street and pedestrians/pedal cyclists seeking to cross Edward Street could result in a potential increased risk of vehicular and pedestrian/pedal cyclist collisions	<p>It is recommended that that the inter-visibility should be accurately measured and the scheme drawing updated accordingly.</p> <p>If the inter-visibility is found to be sub-standard, it is recommended that the parallel crossing should be relocated further west from its current location and any trees located outside the inter-visibility zone, in</p>	As a result of discussions held with Norwich / Norfolk Officers, who also shared this opinion, the proposed crossing facility has been shifted west. It is considered this matches the RSA recommendation and therefore this problem no longer exists.		

occurring and vehicle/vehicle collisions occurring, whereby pedestrians, pedal cyclists and vehicle occupants could sustain personal injury.	order to mitigate the above described potential collision scenarios.			
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RSA problem	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
2.4.5) New Botolph Street and Pitt Street, zebra crossings. Lack of raised table at the proposed zebra crossing facilities could result in a potential increased risk of vehicular and pedestrian collisions occurring, whereby pedestrians could sustain personal injury.	It is recommended that raised tables should be incorporated into the proposed zebra crossing facilities, in order to provide consistency and speed control in this area.	As a result of discussions held with Norwich / Norfolk Officers, the proposed zebra crossings have been removed. Discussions will be held with officers with regard to the merits of including raised crossings as part of the new signal crossing arrangement.		

RSA problem	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
2.4.6) New Botolph Street, Zebra crossing. Confusion over whether the proposed zebra crossing facility is a two stage crossing or a single stage crossing could result in a potential increased risk of vehicular and pedestrian collisions occurring, whereby pedestrians could sustain personal injury.	It is recommended that the operation of the zebra should be clearly defined to all road users, including pedestrians. Measures could include truncating the traffic separation island further west to create a single stage crossing or widening the traffic separation island to create a clear two stage crossing, providing a raised table to reduce vehicle speeds on the approach to the zebra crossing and providing look left / look right markings to Diagram 1029.	As a result of discussions held with Norwich / Norfolk Officers, the proposed zebra crossing has been removed and has been replaced with a signal controlled crossing with appropriate changes to the central island in discussion with officers.		

RSA problem	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
2.4.7) Pitt Street, existing vehicular crossovers. Parallel parking to the rear of the proposed signal controlled pedestrian crossing facility could result in a potential increased risk of vehicular and pedestrian collisions occurring, whereby pedestrians could sustain personal injury, especially those who are blind or visually impaired.	<p>It is recommended that the existing vehicular crossovers should be indicated on the scheme drawing in relation to the proposed signal controlled pedestrian crossing facility.</p> <p>Additionally, it is recommended that the existing dropped kerb layout leading to the designated parking bays should be modified to incorporate the dropped kerb facility and controls for the proposed signal controlled pedestrian crossing facility, in order to mitigate the above described potential collision scenario.</p>	As a result of discussions held with Norwich / Norfolk Officers, the proposed signal controlled crossing on Pitt Street has been removed.		
RSA problem	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
2.4.8) Edward Street and New Botolph Street, junctions and accesses. Lack of dropped kerbs and tactile paving could result in a potential increased risk of pedestrian trips and falls occurring on the full height kerb upstands, whereby pedestrians could sustain personal injury, especially those who are blind, visually or mobility impaired.	It is recommended that dropped kerbs and tactile paving should be provided at the junctions and accesses.	<p>Noted – dropped kerbs / tactile paving will be provided.</p> <p>Full details will be provided at Stage 2.</p>		

RSA problem	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
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<p>2.4.9) Magdalen Street, Edward Street, New Botolph Street and Pitt Street, footway widths. Varied footway widths within Magdalen Street, Edward Street, New Botolph Street and Pitt Street could result in a potential increased risk of vehicular and pedestrian collisions occurring, whereby pedestrians could sustain personal injury, especially at the inset loading bays.</p>	<p>It is recommended that that the footways should be of sufficient width to accommodate the expected number of pedestrians and pedal cyclists in these areas, in order to mitigate the above described potential collision scenario.</p>	<p>Footway widths are considered to be of sufficient width, and the proposed development also benefits from new internal provision.</p> <p>Footway / cycle connectivity has been discussed and agreed with Norwich / Norfolk Council officers.</p> <p>Cycle facilities along Pitt Street have also been removed and replaced internally within the site.</p>		
RSA problem	RSA recommendation	Design organisation response	Overseeing Organisation response	Agreed RSA action
<p>2.4.10) Cycle Route. Lack of signage and corduroy paving could result in a potential increased risk of pedal cyclist and pedestrian collisions occurring, whereby pedestrians could sustain personal injury, especially those who are blind or visually impaired.</p>	<p>It is recommended that that at the detailed design stage of the project, suitable and appropriate signage for the cycle route and any shared/segregated footway/cycleway areas, including corduroy paving should be provided in order to mitigate the above described potential collision scenario.</p>	<p>Noted – signage to be provided as required.</p> <p>Detail to be provided at Stage 2.</p>		

Design organisation and Overseeing Organisation statements

<p>On behalf of the design organisation I certify that:</p> <p>1) The RSA actions identified in response to the road safety audit problems in this road safety audit have been discussed and agreed with the Overseeing Organisation.</p>	
Name:	
Signed:	
Position:	
Organisation:	

Date:	
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Overseeing Organisation statement

On behalf of the Overseeing Organisation I certify that:	
1) The RSA actions identified in response to the road safety audit problems in this road safety audit have been discussed and agreed with the design organisation; and	
2) The agreed RSA actions will be progressed.	
Name:	
Signed:	
Position:	
Organisation:	
Date:	