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MULTIDISCIPLINARY ENGINEERING CONSULTANTS

Report No:	Date:
WB02669 – R003	**February 2016**
Project: **PEDESTRIAN BRIDGE, PINGLE DRIVE, BICESTER VILLAGE** **FLOOD RISK ASSESSMENT**	
Client: **Value Retail Ltd.**	

Report prepared by: **GEMMA GOODMORE**

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Report status: **DRAFT**

Approved for issue: **SEYMOUR D'OYLEY**

Signature: [redacted]

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CONTENTS

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1. INTRODUCTION

1.1 Instruction

Clarkebond (UK) Ltd was commissioned by Value Retail in February 2016 to provide a Flood Risk Assessment (FRA) to support the planning application for the construction of a pedestrian footbridge across Pingle Stream in Bicester Village.

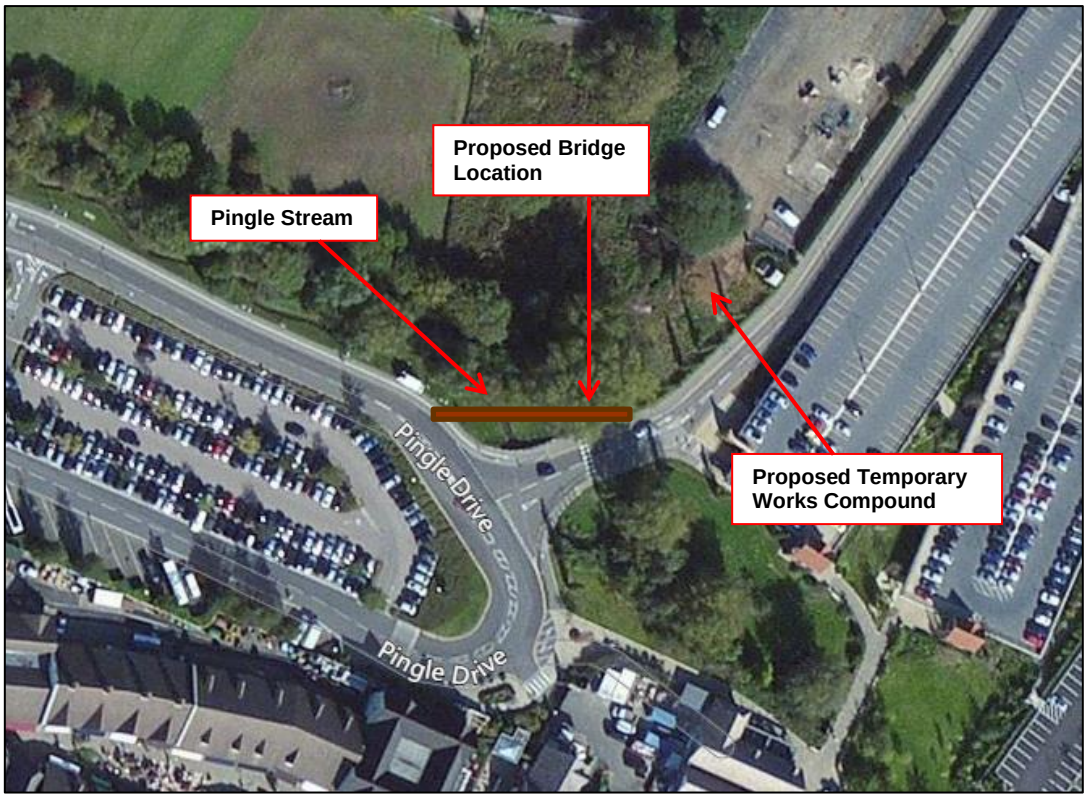
The report has been undertaken in accordance with policy contained within the National Planning Policy Framework (NPPF) and will be informed by the Strategic Flood Risk Assessment (SFRA) for the wider area, as well as the Environment Agency (EA) Flood Maps.

1.2 Location

Bicester Village is located on the southern outskirts of Bicester town in Oxfordshire. It is bound to the south by the A41 and the railway line to the east, with the main shopping area and car park located to the south of Pingle Stream, and additional two-storey parking to the north. The proposed bridge is located on Pingle Drive alongside the existing vehicular bridge to the northern car park. It can be located between the Grid Reference SP 58372 21841 at its western approach and SP 58403 21838 at its eastern approach or by the nearest address of 3 Pingle Drive, Bicester, Oxfordshire, OX26 6WD.

An aerial photograph of the site location is shown on **Figure 1** below.

Figure 1: Proposed Bridge Location in Bicester Village



1.3 Proposed Development

1.3.1 Bridge Structure

The proposal is for the re-routing of the existing footpath/cycle route over Pingle Stream by construction of a new pedestrian bridge with timber decking and handrails supported by 6 columns. The proposal follows on from plans to reconfigure the existing vehicular bridge to the northern car park to accommodate an additional lane for traffic, leading to the loss of the existing pedestrian/cycle route. A conceptual layout plan and various elevation drawings of the proposed bridge are included in **Appendix A**.

The columns are expected to present very minimal obstruction to flow when compared against the existing vehicular bridge.

The proposed minimum soffit level of the bridge is 67.57m AOD; a level which has been agreed with the EA (See correspondence in **Appendix B**). This is above the level of the existing vehicular bridge which is typically 67.3m AOD.

1.3.2 Proposed Works

Construction of the bridge will involve:

- establishing a temporary site compound;
- piling the bridge columns and foundation into the channel-bed;
- installing the bridge deck on the columns;
- installation of services;
- dismantling of temporary works;
- removal of temporary site compound and reinstating the area.

It is proposed that a contractor's temporary works compound will be established on the land to the north-east of the proposed bridge. The location is indicated in Figure 1 and in the topographic survey included as **Appendix C**). This land was previously a works compound before the Coach Park was developed but has now become overgrown. Due to the past nature of the landuse it is considered that the temporary works area will have little effect on surface runoff.

The exact dimensions and activities to be undertaken in the temporary works compound will be at the discretion of the contractor but will require approval from the Local Authority and the EA.

1.4 Objectives

The main objectives of this FRA are to demonstrate that the national policy test in the National Planning Policy Framework (NPPF) paragraphs 103 and 104 are met and thus:

- To identify the probability or otherwise of flooding at the proposed development site.
- To assess the need to develop at this site in relation to the Sequential Test.

- To assess the compatibility of the development with the flood zone.
- To assess the overall impacts of the development on flood risk elsewhere.
- To identify any necessary flood mitigation measures and drainage requirements.

1.5 Limitations

The information, views and conclusions drawn concerning the site are based, in part, on information supplied to Clarkebond by other parties. Clarkebond has proceeded in good faith on the assumption that this information is accurate. Clarkebond accepts no liability for any inaccurate conclusions, assumptions or actions taken resulting from any inaccurate information supplied to Clarkebond from others.

2. BACKGROUND INFORMATION

2.1 National Planning Policy Framework (NPPF)

National policy on flood risk is set out in paragraphs 100 to 104 of the National Planning Policy Framework (NPPF) which is also supplemented by Planning Practice Guidance (PPG) for flood risk and coastal change. The overarching aim of the PPG is to ensure inappropriate development in areas at risk of flooding is avoided through application of the Sequential and Exception Test. The Sequential Test aims to highlight the areas at lowest probability of flooding and steer new development to these areas. If the location of the low risk area is not suitable due to wider sustainability objectives then progressively higher risk areas may be considered. In such cases the development proposal must be informed by a site-specific flood risk assessment demonstrating that the site will be flood free, have safe access and egress and will not increase flood risk elsewhere.

Certain development uses are not considered appropriate in the higher risk flood zones, but may be allocated through application of the Exception Test. For the Exception Test to be passed:

1. it must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by a Strategic Flood Risk Assessment where one has been prepared; and
2. a site-specific flood risk assessment must demonstrate that the development will be safe for its lifetime taking account of the vulnerability category of the land use. It must also demonstrate that the development does not increase flood risk elsewhere, or where possible actually reduce flood risk.

Both elements of the exception test will have to be passed for development to be allocated or permitted.

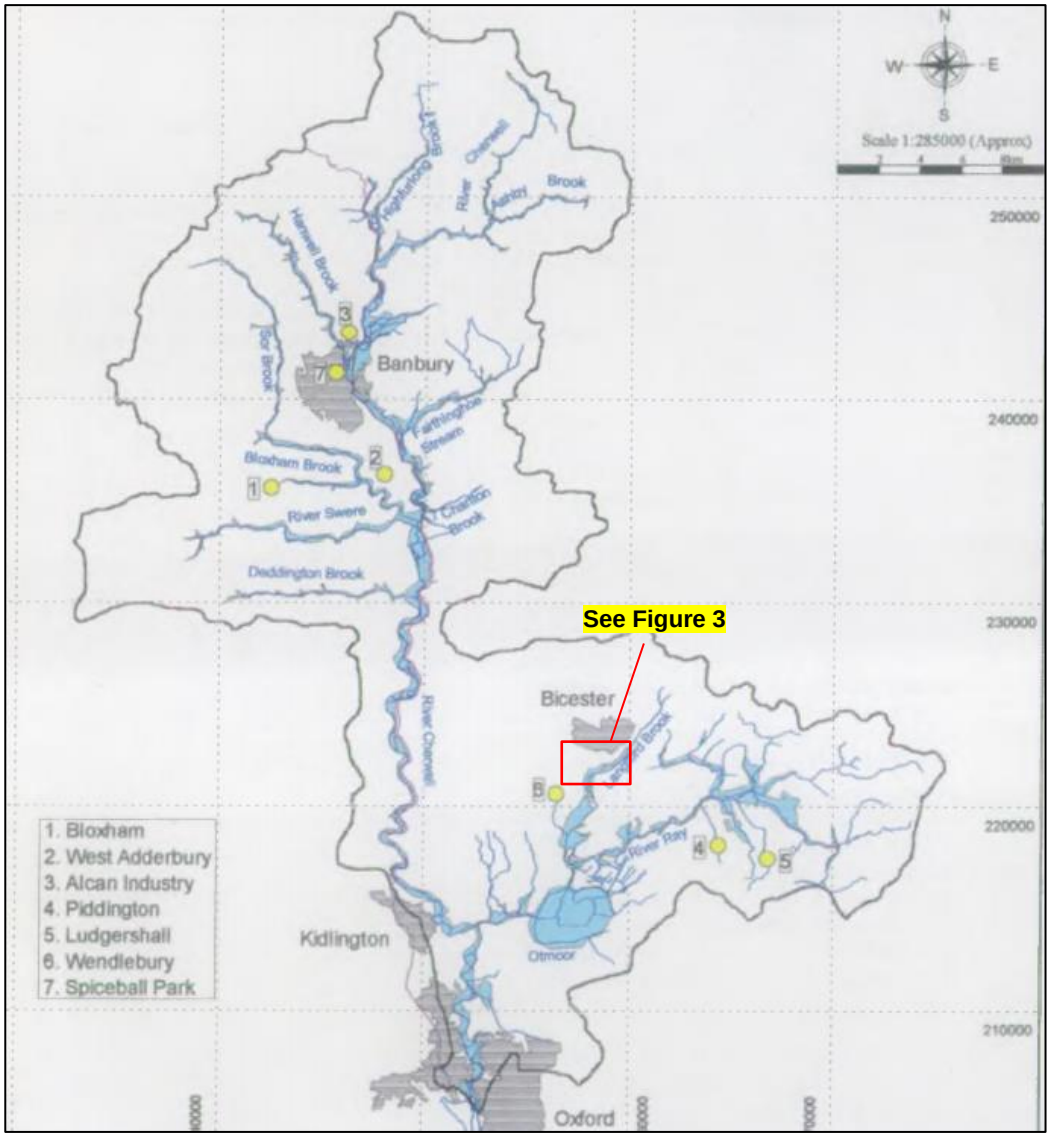
2.2 Existing Site Levels

North Bicester Village was surveyed by Tower Surveys Ltd in February 2012; a copy of this survey is included as **Appendix C** (Drawing reference R-N5911/201). The bank level of the stream below the proposed bridge is approximately 66.14-66.28m AOD, and levels gradually increase away from the banks to between 66.89 and 67.08m AOD at the approaches of the proposed bridge. The proposed temporary works area is relatively flat land above the 67m AOD contour.

2.3 Hydrology

The Pingle Stream is part of the wider River Cherwell catchment which covers approximately 80% of the district of Cherwell (See **Figure 2).**

Figure 2: The Cherwell Catchment



2.3.1 River Cherwell Catchment

The River Cherwell rises in Charwelton in Northamptonshire and flows south through Oxfordshire before forming a confluence with the River Thames at New Hinksey in Oxford. The catchment is not considered to be densely populated and a large part of the catchment is made up of agricultural land.

The average annual rainfall in the Cherwell Catchment is 682 mm. This varies from 750 mm in the eastern Cotswolds to 650 mm in the flatter areas around Oxford, including Ambrosden. A substantial amount of rainfall is lost in evaporation and transpiration. The average annual effective rainfall, after allowing for such losses, is about 210 mm; most of this water becomes run-off into the rivers.

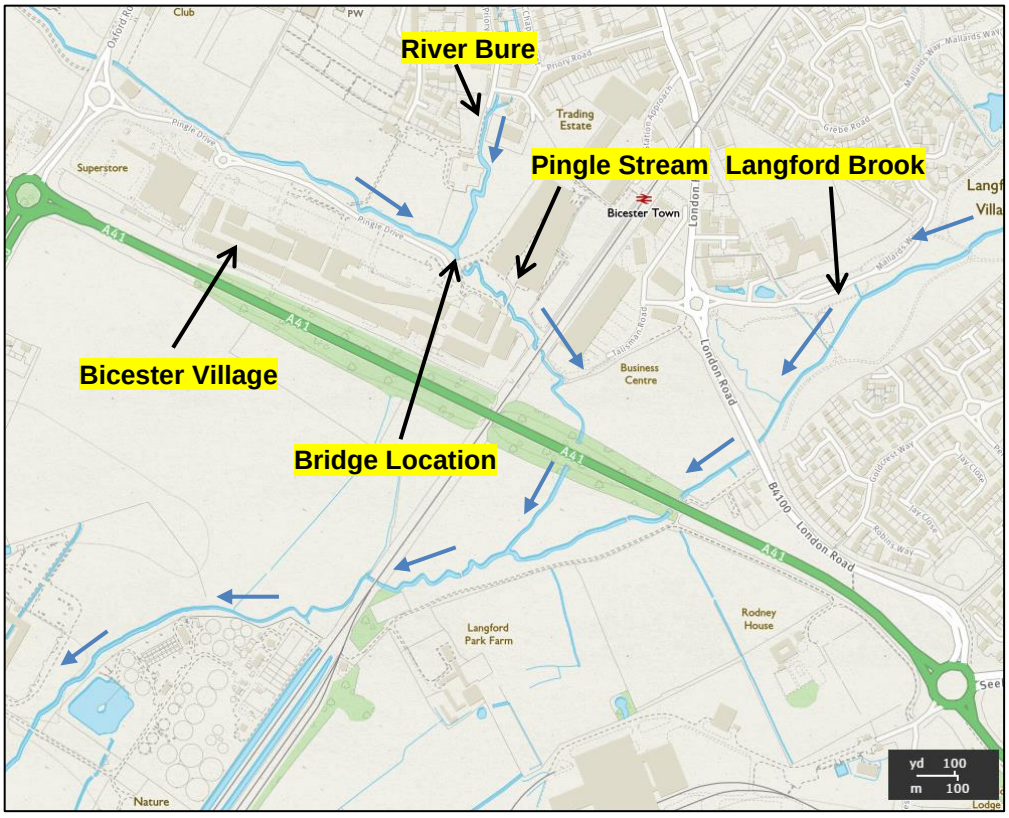
The Cherwell is a predominantly clay-based catchment, underlain by Lower Lias clay to the north and Oxford Clay to the south-east. The geology of these areas results in a high run-off component meaning the river system responds rapidly to both high rainfall and drought periods. As such, the river shows considerable seasonal

variation and is referred to as 'flashy' in character. There is a small proportion of the centre of the catchment underlain by Inferior Oolite and Great Oolite Limestones, which help to regulate river flows, with groundwater from these aquifers contributing to the river's base flow. The water supply during low flow periods is also enhanced by a number of small reservoirs in the region.

2.3.2 Local Hydrological Setting

Pingle Stream sources in the south-west of Bicester and travels in a southeasterly direction where it is joined by the River Bure immediately upstream of the proposed pedestrian bridge. From this confluence the river flows below two vehicular bridges, the railway and the A41 before discharging into the Langford Brook approximately 430m downstream of the site near Langford Park Farm. Refer to **Figure 3** showing the local hydrological setting of the site (direction of flow path shown by the blue arrows).

Figure 3: Local Hydrological Setting



2.4 Geology and Hydrogeology

British Geological Survey map data indicates that the site is underlain by Alluvium associated with river deposition above the solid bedrock geology of the Kellaways Clay Member which comprises impermeable mudstones.

In June 2010, Clarkebond undertook trial pit investigations of ground conditions of land alongside the proposed bridge location (See **Appendix D**). **Table 1** shows the typical strata displayed across the majority of the site.

Most trial pits terminated on Cornbrash Limestone, with the exception of TP1 and TP2, which are closest to the proposed bridge.

Table 1: Typical Strata

Depth (m)	Description
GL to 0.1	Loose dark brown silt with plant roots. (TOPSOIL/SUBSOIL)
0.1 to 0.6 - 1.50	Dark/light brown with orange mottles/orange brown silty Sand/ silty sandy Clay with occasional fine to coarse angular to rounded limestone gravel. (ALLUVIUM)
0.6 – 1.50 to 1.7	Orange yellow silty sandy fine to coarse rounded limestone Gravel. (ALLUVIUM)
1.7+	Very weak light grey and orange sandy silty shelly Limestone. (WEATHERED CORNBRASH LIMESTONE)

Groundwater was encountered between 0.9m and 1.4m below ground level in the Alluvial Gravels. According to EA mapping, the site is not within a groundwater source protection zone and so construction work is unlikely to pose a risk to important groundwater sources.

3. FLOOD RISK ASSESSMENT

3.1 Strategic Flood Risk Assessment

A Strategic Flood Risk Assessment (SFRA) is produced by or on behalf of local councils in consultation with the Environment Agency. A Level 1 SFRA is used to provide evidence when allocating potential development sites in terms of the Sequential Test, where sites with a lower risk of flooding are allocated in favour of sites with a higher flood risk. A Level 2 SFRA is undertaken to provide the LPA with a more detailed understanding of flood risk at potential development sites so that sufficient evidence can be provided for the Exception Test to be applied.

A Level 1 SFRA was produced for Cherwell District Council by Scott Wilson in April 2009. Information was taken from this report in order to inform this site specific FRA, and will be included in the subsequent sections. From looking at the Cherwell District Council website, there does not appear to be a Level 2 SFRA for the area.

3.2 Sources of Flood Hazards Identified

The Level 1 SFRA states that the predominant risk of flooding in the Cherwell District is from rivers, i.e. fluvial. The Cherwell catchment is considered to be very responsive to rainfall – posing a risk of flooding following heavy rainfall events. This highlights the importance of considering the risk from river flooding in detail.

3.3 Vulnerability Classification of Proposal and Use of Flood Risk Zones

The National Planning Policy Framework (NPPF) requires the use of the Sequential Test, a risk based approach, which steers development towards the areas at lowest risk of flooding. Flood Zones have been defined which describe the risk of land flooding from rivers and sea; these are used as the primary indicator of whether the land is suitable for development. The definition of the flood zones is shown below:

- Flood Zone 1 – low probability of flooding (less than 1 in 1,000 annual probability of river or sea flooding in any year)
- Flood Zone 2 – medium probability of flooding (between a 1 in 100 and 1 in 1,000 annual probability of river flooding and between a 1 in 200 and 1 in 1,000 annual probability of sea flooding in any year)
- Flood Zone 3a – high probability (1 in 100 year or greater annual probability of river flooding or 1 in 200 or greater annual probability of sea flooding in any year)
- Flood Zone 3b – functional floodplain (where water is stored in times of flood, including water conveyance routes, annual probability of 1 in 20 or greater in any given year or is designed to flood in a 1 in 1,000 flood event).

In order to ensure that a development is appropriate for the flood risk zone in which it is located, the vulnerability classification of the land use must be considered. The proposed development is considered to be 'Water-Compatible Development' according to Table 2 'Flood Risk Vulnerability Classification' in the PPG. Table 3 of the PPG sets out the 'compatibility' of the vulnerability classification with identified Flood Zones. This has been applied to this proposed development as shown in **Table** .

This means that if there are not suitable areas outside the flood risk zone (as is often the case for this land use) the development is permitted in the higher risk zones. The footbridge is required to provide pedestrian access in this specific location and so its location is considered appropriate and acceptable under NPPF guidance.

Table 2: Summary of Flood Risk Vulnerability classification and 'compatible' Flood Zones

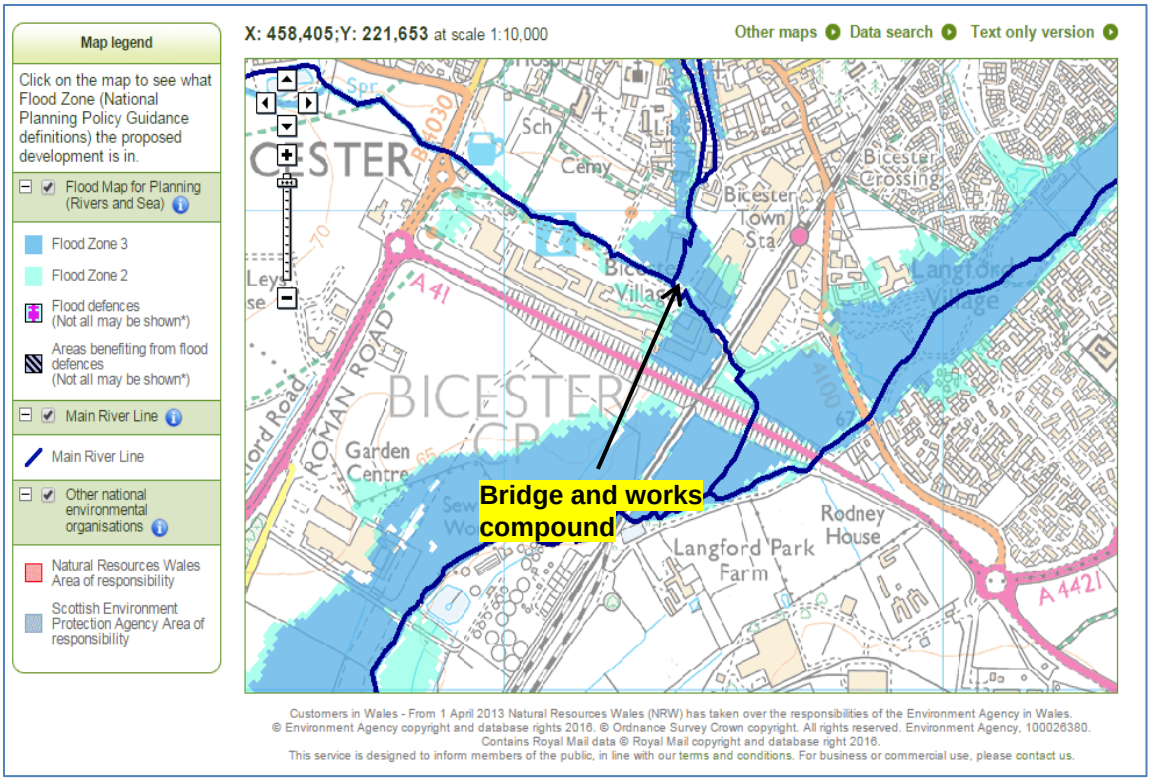
Elements of the Proposed Development	Flood Risk Vulnerability classification	Flood Zone 'Compatibility'
Bicester footbridge	Water-Compatible Development	Acceptable in all Flood Zones subject to application of the Sequential Test. In Flood Zone 3b the development should be designed and constructed to: • remain operational and safe for users in times of flood; • result in no net loss of floodplain storage; • not impede water flows and not increase flood risk elsewhere

3.4 Fluvial Flooding

3.4.1 Flood Zones

The EA Flood Maps show that the site is in Flood Zone 3 (See **Figure 4**). This indicates the site is at risk of flooding at least every 1 in 100 years, or more frequently. The SFRA flood map of Bicester also differentiates between Flood Zone 3a and 3b, indicating that the site is in Flood Zone 3b, with an annual flooding probability of 1 in 20 or greater (See **Appendix E**). This FRA must demonstrate that the bridge adheres to the requirements for Water-Compatible Development in Flood Zone 3b as shown in **Table 2**. It is important that the construction phase is also considered when assessing the flood risk and obstruction of flows.

Figure 4: EA Flood Zone Map (Rivers and Sea)



3.4.2 Flood Levels and Depths

Clarkebond obtained flood levels from the EA in 2010 for an FRA undertaken for the development of Bicester Coach Park just north of the proposed bridge. These levels were taken from the Langford Brook and Pingle-Back-Bure 2010 (Bicester) hydraulic model. This model has been used to inform various stages of development in Bicester Village including the most recent Phase 4 and for consistency it will be used to inform this FRA.

A number of model nodes were provided near to the proposed bridge, each representing flood levels within a 5m x 5m cell (See **Appendix F**). A node located just upstream of the proposed bridge was selected to represent flood levels (Grid Ref: SP 58391 21846); the levels provided for this node are shown in **Table 3** below.

Table 3: EA Flood Level Data

Event	Flood Level (mAOD)
1 in 20 year	66.90
1 in 100 year	66.94
1 in 100 year + CC	66.97
1 in 1000 year	67.10

The SFRA discusses a backwater effect upstream of the confluences of the Pingle Stream, the River Bure and Langford Brook; this effect was represented in the 2010 model.

The extent and depths of flooding for the 1 in 100 year plus 20% climate change event was mapped out using the EA flood level of 66.97m AOD and ground levels obtained from the topographic survey (See **Appendix G**). This shows that the works compound is above the flood level and outside the floodplain. The mitigation of the risk posed by the construction phase and the bridge is discussed in **Section 4**.

3.5 Climate Change

The NPPF states that where sites are at risk of flooding from fluvial, surface water or other modelled flood data, the FRA should assess the increased risk posed by climate change over the anticipated lifetime of the development.

The EAs guidance for climate change allowances discusses how planners should account for the effects of climate change when assessing and mitigating flood risk. The allowances are detailed in **Table 3** below. Developments should be designed against the 1 in 100 year flood accounting for climate change over the expected development lifetime. 2013 climate change guidance states that river flows should be increased by 20% to allow for the effects of climate change in 100 years' time. The EA level data included an assessment of climate change (20% increase of peak flows) on the 1 in 100 year level, as discussed in the previous section.

It is recognised that new EA guidance on climate change allowances to support the NPPF came into effect in February 2016. However, the EA have advised that they will base their advice on the previous allowances where development plans or proposals are well advanced. As the pedestrian bridge is part of the wider Bicester

Village development it is considered appropriate to use the same flood model data and climate change allowance for consistency. Confirmation of the EA's acceptance of this is included in **Appendix B**.

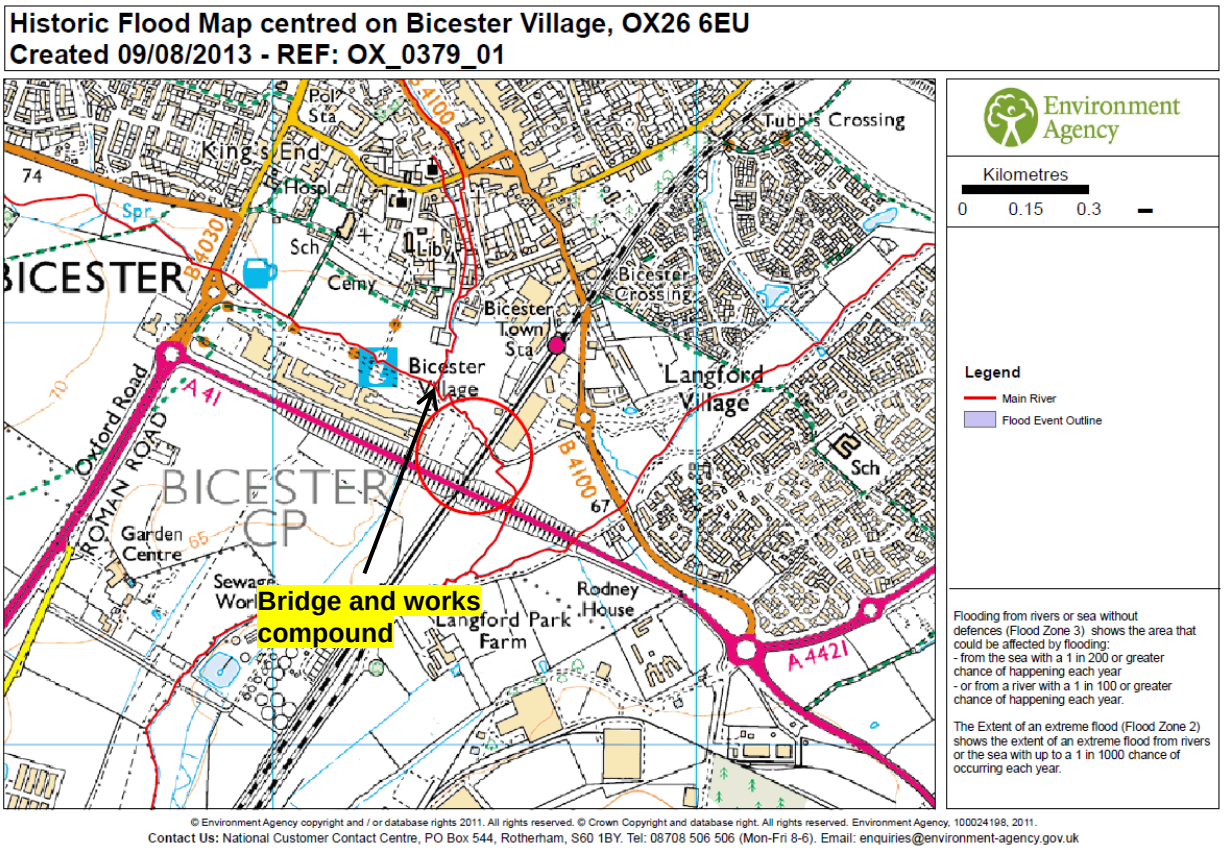
Table 3: Predicted climate change variables within South-East England

	1990-2025	2025-2055	2055-2085	2085-2115
Net sea level rise (mm/yr)	4	8.5	12	15
Peak rainfall intensity	+5%	+10%	+20%	+30%
Peak river flow	+10%	+20%	+20%	+20%
Offshore wind speed	+5%	+5%	+10%	+10%
Extreme wave height	+5%	+5%	+10%	+10%

3.6 Historic Flooding

The EA data obtained in 2013 confirmed that there is no record of the Pingle Stream flooding (See **Figure 6**).

Figure 6: Historic Flood Extents at in Bicester Village



3.7 Other Sources of Flooding

3.7.1 Ground Water

The SFRA states that there are locations within the Cherwell District that are affected by high water tables and are susceptible to spring fed activity. This may result in standing water on low lying ground that is unable to

drain to a ditch or watercourse, or percolate through the ground due to seasonally high water groundwater levels.

The settlements considered to be most at risk of groundwater flooding are those at the bases of hilly outcrops embankments. The EA Maps indicate that the site overlies a Secondary A aquifer which can be attributed to the Alluvium layer. This could pose a flood risk as it is a shallow layer of unconsolidated sediment which overlies unproductive bedrock (Kellaways Clay Member). However, the fact this aquifer is not confined to a small area and the site is not close to a hilly outcrop would suggest that groundwater flooding would not be a significant risk. The SFRA also concludes that development within this area would not be materially affected by groundwater flooding and does not state any requirement to assess groundwater flood risk further.

3.7.2 Sewer Flooding

Thames Water is responsible for the public sewer systems within Bicester and they maintain a register of historical sewer flooding events called the DG5 register. There is a strong correlation between historic events and future flood risk as issues are often contained within certain areas which have limited sewage capacity or sewage systems in need of repair. Therefore, if an area has not been highlighted as problematic then the risk is likely to be low unless there is significant expansion in an area.

The DG5 register was reviewed in the Level 1 SFRA and there were no records of flooding from sewers at the site. Therefore, the likelihood of sewer surcharge under normal operating conditions is considered to be low.

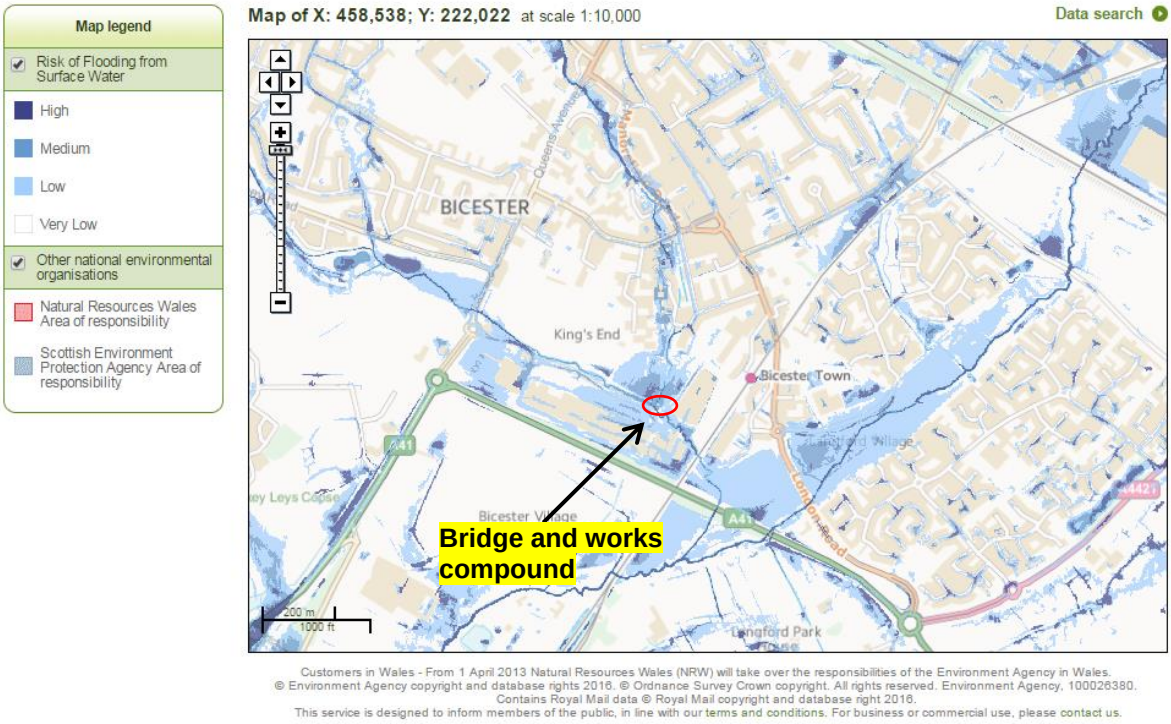
3.7.3 Surface Water Flooding

Under natural conditions, surface water flooding occurs either in high intensity rainfall events, where the intensity of rainfall exceeds the infiltration capacity of the ground, or when the ground is fully saturated. Lower lying areas and areas covered by impermeable land cover are most at risk of surface water flooding. In urban areas surface water flooding occurs in low lying land that is not served by adequate surface water drainage systems or from a blockage in the drains.

The SFRA does not mention Bicester as being at a significant risk of surface water flooding. However, there may be a risk of surface water flooding of the works compound due to the ground being low-lying and relatively impermeable. The EA's indicative map of surface water flood risk was reviewed, which suggests that this land is at a 'Low' to 'Medium' risk of flooding from surface water (See **Figure 7**). 'Low' risk is defined as between a 1 in 100 and 1 in 1000 chance of flooding and 'Medium' risk is defined as between a 1 in 100 and 1 in 30 chance. However, the corresponding surface water depth maps indicate that if a flood were to occur, there is a low likelihood of flood depths being greater than 300mm. Therefore surface water flooding is considered to be a manageable risk, which will be discussed further in the mitigation section of this report.

The bridge deck must also be designed to ensure runoff is managed adequately and safely for extreme rainfall events.

Figure 7: EA map of surface water flood risk



3.7.4 Artificial sources

The broad assessment of flood risk provided within the SFRA Level 1 confirms that the site is not at risk of flooding from artificial sources such as canals, dams and reservoirs. The EA map confirms that the site is not within an area which could be flooded due to reservoir failure.

4. FLOOD MITIGATION & WATERCOURSE MANAGEMENT

4.1 Sequential Test

The bridge is classified as 'water-compatible development' under NPPF guidance which is acceptable in all flood zones. The site therefore passes the Sequential Test and is appropriate for development.

4.2 Proposed Flood Risk Mitigation

The bridge is located in Flood Zone 3b so as part of the flood risk assessment the following points must be considered:

- The bridge must remain operational and safe for users in times of flood;
- The bridge will result in no net loss of floodplain storage;
- The bridge will not impede water flows and not increase flood risk elsewhere

4.2.1 Operation of Pedestrian Bridge

The bridge soffit levels will be set at 67.57m AOD as agreed with the EA, which is 600mm above the 1 in 100 year plus 20% climate change level. This will ensure that the bridge is safe for use by pedestrians, and remains operational in the 1 in 100 year event up to 2115. The deck design also incorporates handrails for added safety.

4.2.2 Impact on Floodplain Storage and Flows

As the majority of the bridge superstructure is above the 1 in 100 year plus climate change flood level, the effect on flood storage and displacement of water will be minimal. The only structures which will be within the floodplain are the six supporting columns, which are each approximately 300mm in diameter. These columns have been located to maximise the span clearance from the main channel as far as is practical so that normal in-bank flows will be unaffected by the structure. The plan drawing included in **Appendix A** (SKP-303) shows the location of the six columns in relation to the main channel banks.

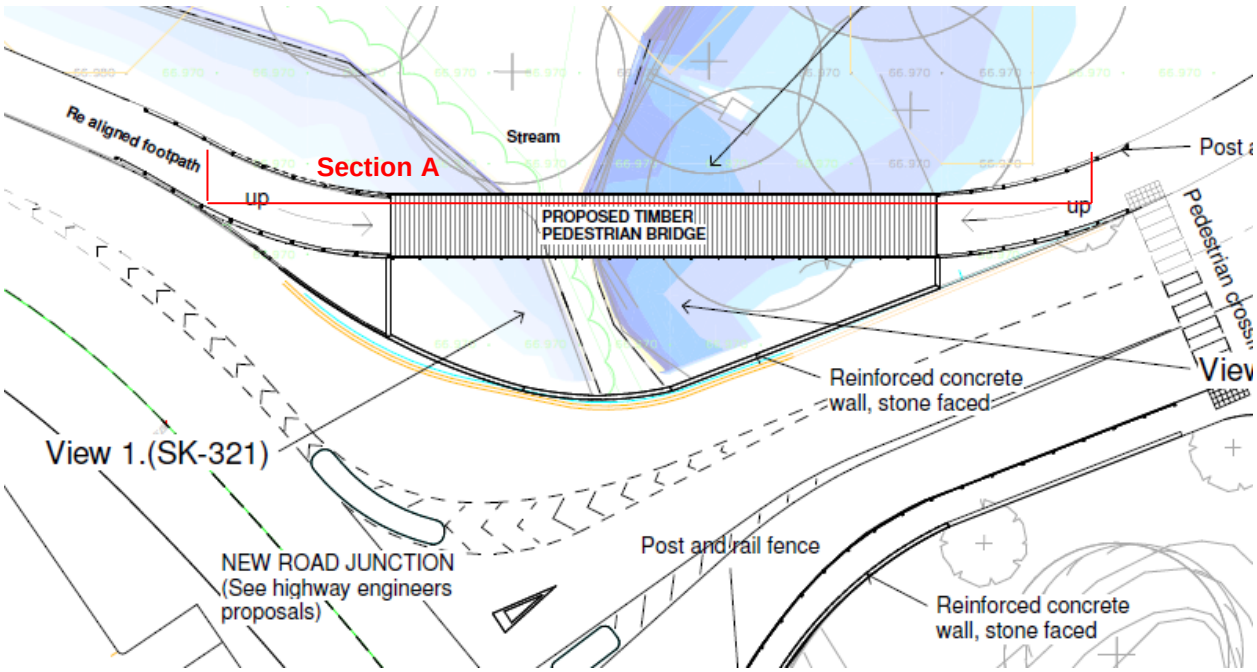
An assessment was undertaken to ascertain the level of obstruction to the watercourse caused by the bridge columns for two chosen water levels; 66.97m AOD and 66.22m AOD. The higher flow level is the 1 in 100 year plus climate change level and the lower level was selected to provide a comparison of the obstruction of the bridge for a much lower flow event.

A cross-section was taken through the northern end of the bridge at the location of 3 of the upstream bridge columns and the percentage area of obstruction was calculated for the two flow levels (See **Figure 8** and **Table 4**). This indicated that the 3 columns obstructed 3.34% of the overall river cross-section for the 66.97m AOD level and 1.49% for the 66.22m AOD level. Similar percentages would apply to the 3 downstream columns. This is considered to be a very minor obstruction which will not lead to an increased flood risk elsewhere or cause adverse impact on the flow patterns and regime. In addition, since this assessment was undertaken, the bridge has been redesigned to locate the columns as far as possible from the main channel so the level of obstruction in the 66.22m AOD level would now be less than 1.49%.

Table 4: Assessment of percentage cross-sectional area obstructed by bridge columns

	Cross-section A		
	Area m2	Area of obstruction m2	% of obstructed area
Water level up to 66.97m AOD	17.38	0.58	3.34
Water level up to 66.22m AOD	2.01	0.03	1.49

Figure 8: Location of Cross-section



4.2.3 Drainage of Bridge Deck

The bridge deck will be designed to intercept and manage bridge deck surface runoff discharging into the Pingle Stream so it does not pose a surface water flood risk. This could be achieved either by small gaps in between the timber cladding or a slight camber in the surface to promote drainage off the side of the bridge.

4.2.4 Flood risk in the Construction Phase

The proposed works compound is above the 1 in 100 year plus climate change flood level providing a safe area of storage for machinery and equipment. The EA surface water flood risk map indicated that there is a low to medium risk of surface water flooding of the works compound of up to 300mm depth. This risk could be managed by either providing temporary drainage of the land into the Pingle Stream, or ensuring there is temporary flood protection measures on site for any buildings/equipment which would be vulnerable to flood depths of 300mm e.g. sand bags.

The fluvial flood risk posed by the compound to surrounding areas is considered to be minimal as the site is above the 1 in 100 year plus climate change level. The influence on surface water runoff will also be negligible as the site is a previously developed, impermeable area.

All construction works including temporary works will be undertaken in accordance with method statements agreed with the Local Authority/Environment Agency. It is therefore envisaged that the risk of construction debris and materials reducing the river conveyance to be suitably managed.

4.3 Flood Defence Consent

Pingle stream is identified as a 'Main River' by the EA. Any works in, under or over a Main River requires Flood Defence Consent (FDC) from the EA under the Water Resources Act 1991.

FDCs will be replaced by permits for flood risk activities from 6th April 2016 subject to Parliamentary approval. The type of permit required will depend on whether the development may impact on historic and planned Water Framework Directive improvement plans.

5. CONCLUSION

The SFRA and EA flood data show the proposed site is located in Flood Zone 3b. The proposed bridge is classed as 'Water-Compatible Development' under PPG land use categories which is considered suitable for this flood zone. The development therefore passes the Sequential Test and is considered acceptable.

The FRA has demonstrated that with the proposed mitigation measures in place, the bridge will be safe and will not pose a flood risk to surrounding areas.

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Appendix A – Bridge Plan and Elevation Drawings

A0

09/068 / P-301 / -

Client
Value Retail

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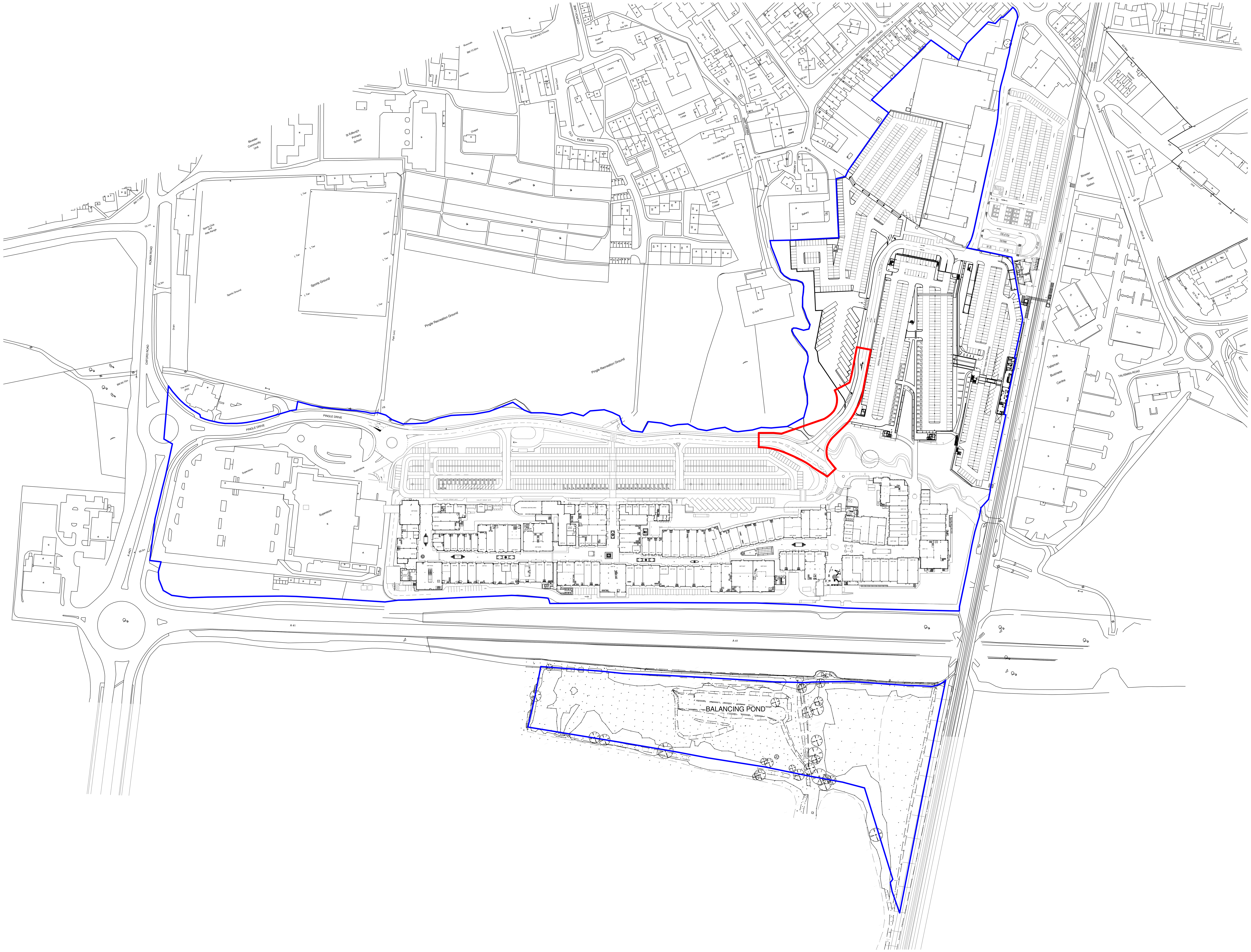
Index	Revision	Date	Int	Chk'd
-	Issued for Planning	27/04/2016	RT	SA



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P-301
P-301 - Existing Location Plan
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APPROXIMATE NORTH

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Bicester Village Retail Outlet Centre - Phase 4

Job N Drg N	Rev	Scale	Status	Job
09/068 / P-301	-	1 : 1250	PLANNING	Bicester Village Retail Outlet Centre - Phase 4
Date	Director	Author	Check	Drawing
27/04/16	SA	RT	SA	Existing Location Plan

NOTE: All figures are approximate and have been measured and expressed in a manner as defined by the current edition of the RICS/ISVA Code of Measuring Practice. Figures relate to the current stage of the project and any development decisions to be made on the basis of this information should include due allowance for the increases and decreases inherent in the design and building processes. Reproduced from Ordnance Survey mapping under Licence Numbers AR152978 & 100020449

This drawing may be scaled or cross referenced to the scale bar for Planning Application purposes only. Do not scale for any other purpose, use figured dimensions only. Subject to site survey and all necessary consents. All dimensions to be checked by user and any discrepancies, errors or omissions to be reported to the Architect before work commences. This drawing is to be read in conjunction with all other relevant materials.

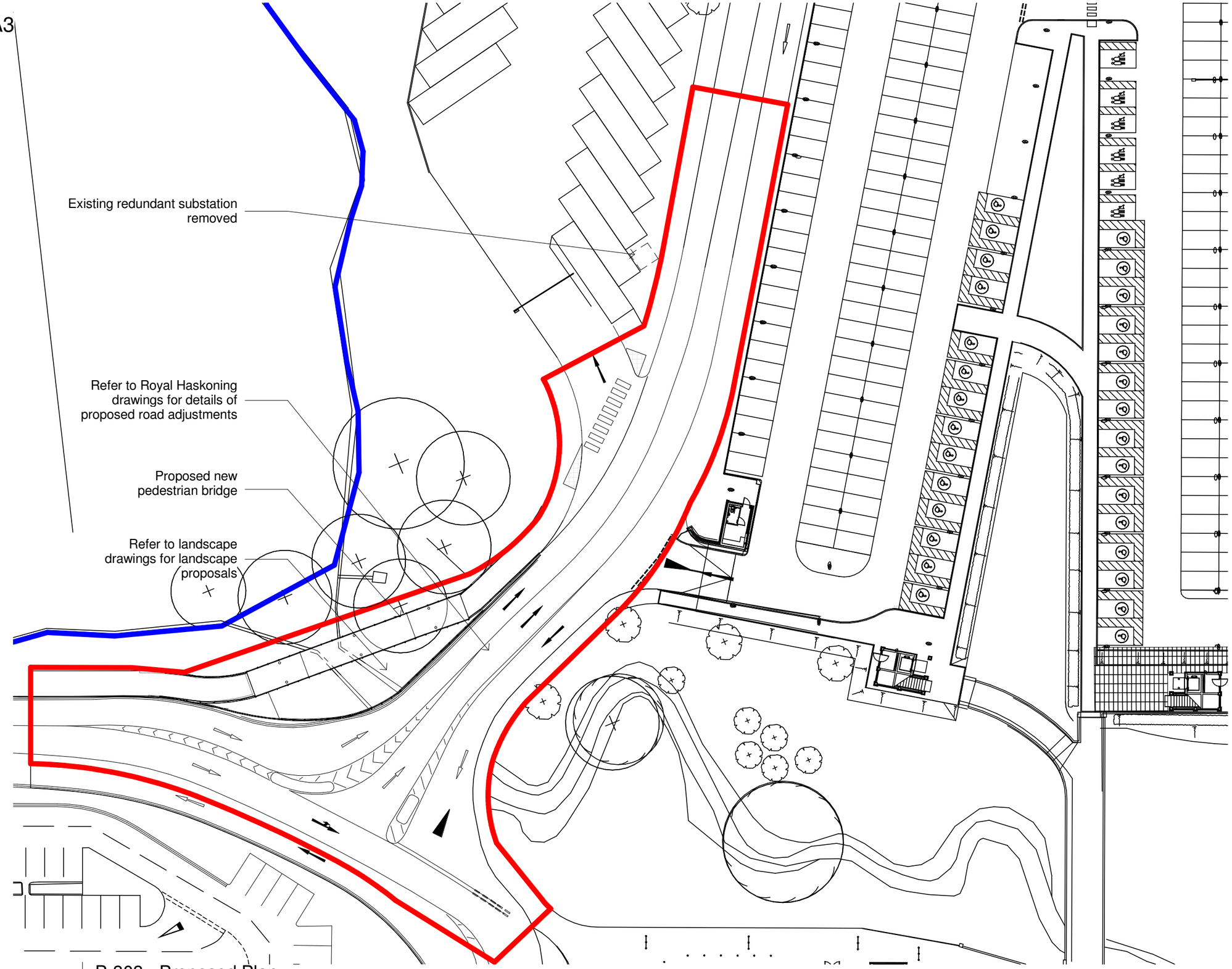
A3

Existing redundant substation removed

Refer to Royal Haskoning drawings for details of proposed road adjustments

Proposed new pedestrian bridge

Refer to landscape drawings for landscape proposals



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APPROXIMATE NORTH

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Value Retail

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Index	Revision	Date	Int	Chk'd
-	Issued for Planning	27/04/2016	RT	SA

LYONS+SLEEMAN+HOARE | **Architects**

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Job N Drg N	Rev	Scale	Status	Job
09/068 / P-303	-	1 : 500	PLANNING	Bicester Village Retail Outlet Centre - Phase 4
Date	**Director**	**Author**	**Check**	**Drawing**
27/04/16	SA	RT	SA	Proposed Plan

NOTE: All figures are approximate and have been measured and expressed in a manner as defined by the current edition of the RICS/ISVA Code of Measuring Practice. Figures relate to the current stage of the project and any development decisions to be made on the basis of this information should include due allowance for the increases and decreases inherent in the design and building processes.

This drawing may be scaled or cross referenced to the scale bar for Planning Application purposes only. Do not scale for any other purpose, use figured dimensions only. Subject to site survey and all necessary consents. All dimensions to be checked by user and any discrepancies, errors or omissions to be reported to the Architect before work commences. This drawing is to be read in conjunction with all other relevant materials.

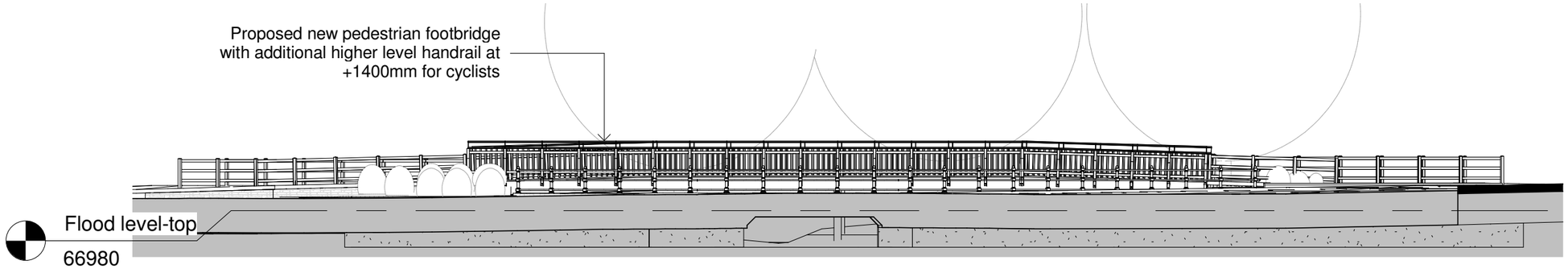
A3

09/068 / P-304 / -

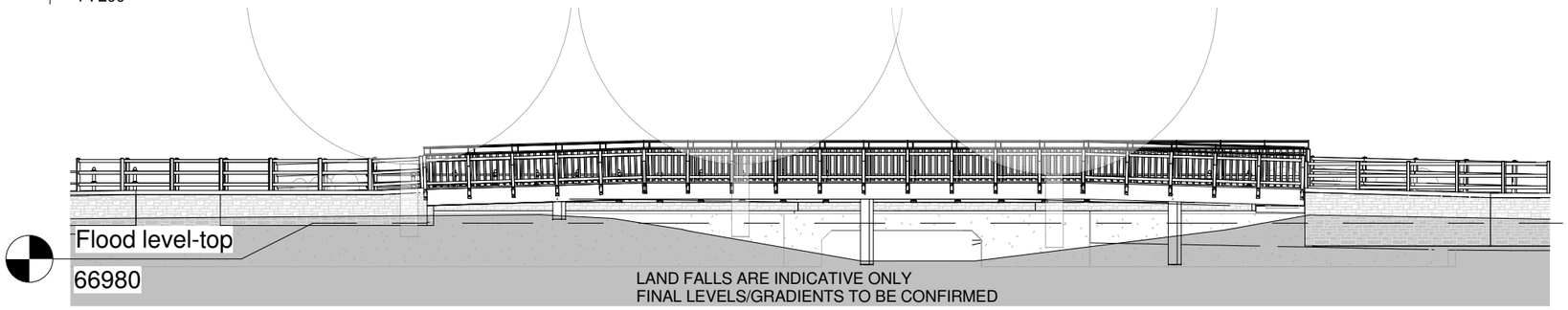
Client
Value Retail

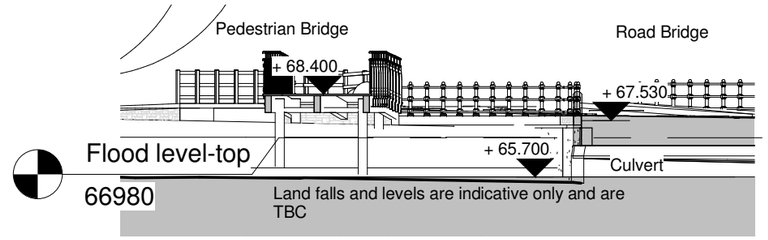
C:\Revitlocal\2016\09068 Bicester Village, Phase 4 (central lvl adj)_1092.rvt

Index	Revision	Date	Int	Chk'd
-	Issued for Planning	27/04/2016	RT	SA



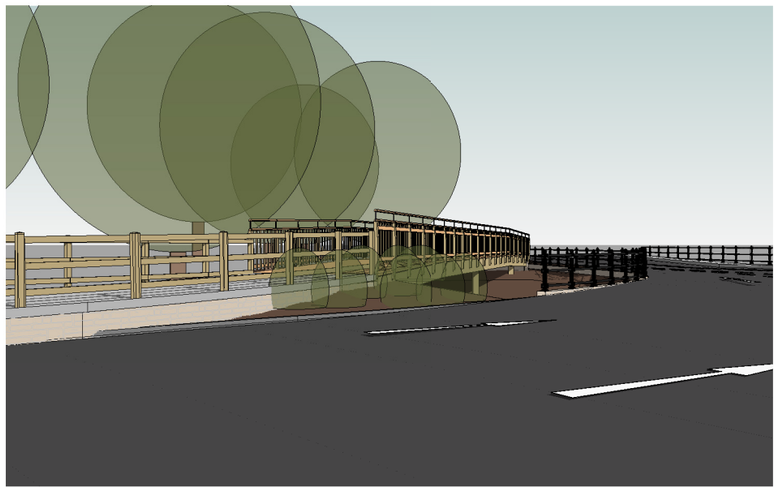
6 P-304 - Bridge South Elevation
1 : 200



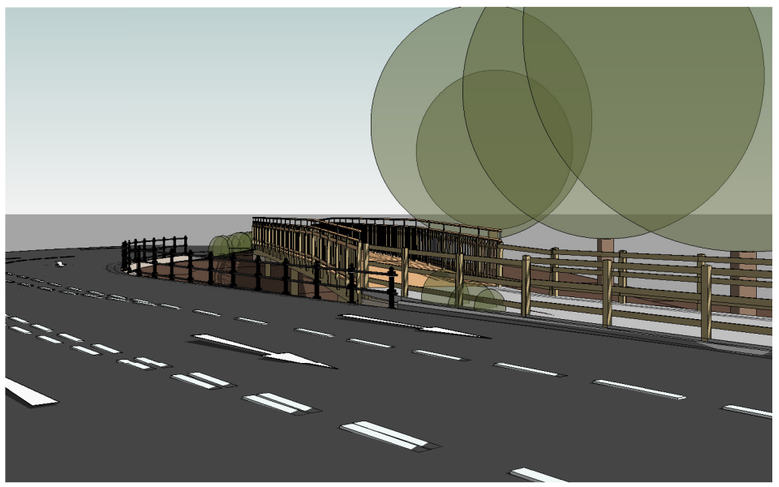


5 P-304 - Bridge North elevation
1 : 200

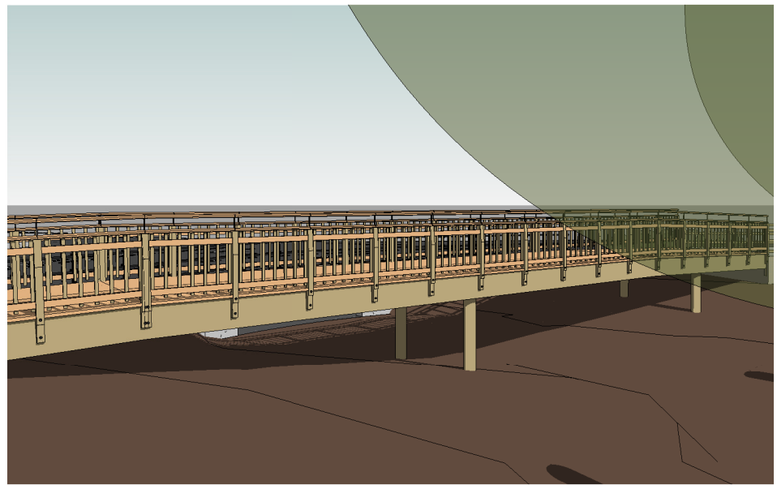
3 P-304 - Section 1
1 : 200



1 P-304 Bridge view 1



4 P-304 Bridge view 2



2 P-304 Bridge view 3

0 2 8m
1:200

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Job N Drg N	Rev	Scale	Status	Job
09/068 / P-304	-	1 : 200	PLANNING	Bicester Village Retail Outlet Centre - Phase 4

Date	Director	Author	Check	Drawing
27/04/16	SA	RT	SA	Proposed Pedestrian Bridge Sections and 3D views

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clarkebond

Appendix B – EA Correspondence

Hi Gemma,

Thanks for your email.

We are still awaiting guidance ourselves on how to apply the new climate change allowances so I can't unfortunately provide you with any cast iron guarantees I'm afraid.

In this instance, I would advise that designing the soffit level of the bridge to 600mm above the 1 year plus climate change allowance would probably be fine in this location given the nature of the Pingle Stream.

Thanks,

Jack Moeran
Planning Specialist

Planning Specialist - Wallingford Sustainable Places - West Thames Area

ext: 02030259655

From: Gemma Goodmore [mailto:GemmaGoodmore@clarkebond.com]
Sent: 08 March 2016 14:26
To: Planning-Wallingford; Moeran, Jack
Subject: RE: PAC-WTHAMS-00264 (121961)

Hi Jack,

The level we are designing the bridge against is 66.97 AOD which is the 1 in 100 year plus 20% climate change level. We recognise that there is new EA climate change guidance, but this development is part of the wider Bicester Village development which is already well advanced. In the EA guidance it states that original climate change allowances can be used in such cases.

Can you please confirm that the soffit level of the bridge being 600mm above 66.97m AOD is acceptable.

Kind regards

Gemma Goodmore
Assistant Engineer (Hydrology & Flood Risk)
For and on behalf of clarkebond

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