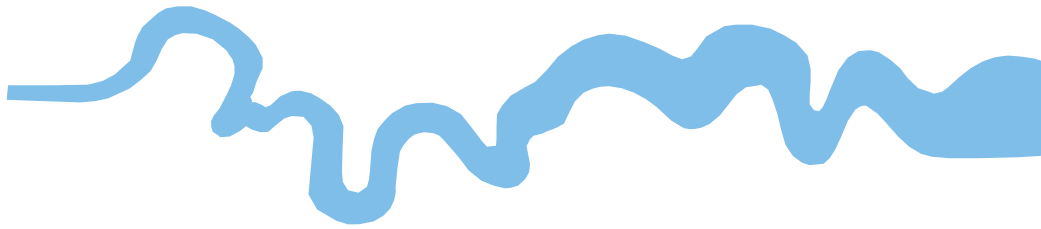


T V A S



SOUTH WEST

**School Lodge, Matson Lane, Matson,
Gloucester, Gloucestershire**

Archaeological Evaluation

by Nicholas Dawson

Site Code: SLM20/18

(SO 8497 1567)

School Lodge, Matson, Matson Lane, Gloucester, Gloucestershire

An Archaeological Evaluation for LRM Planning

by Nicholas Dawson

Thames Valley Archaeological Services Ltd

Site Code SLM 20/181

December 2020

Summary

Site name: School Lodge, Matson, Gloucester, Gloucestershire

Grid reference: SO 8497 1567

Site activity: Archaeological Evaluation

Date and duration of project: 3rd – 4th December 2020

Project manager: Agata Socha-Paszkievicz

Site supervisor: Nicholas Dawson

Site code: SLM 20/181

Area of site: c. 0.3ha

Summary of results: A single shallow pit containing three sherds of either later Iron Age or probably Saxon pottery was found.

Location and reference of archive: The archive is presently held at TVAS South West, Taunton and will be deposited will be deposited at Gloucester City Museum in due course.

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www.tvas.co.uk/reports/reports.asp.*

Report edited/checked by:	Steve Ford✓ 23.12.20
	Steve Preston✓ 23.12.20

School Lodge, Matson, Matson Lane, Gloucester, Gloucestershire

An Archaeological Evaluation

by Nicholas Dawson

Report 20/181

Introduction

This report documents the results of an archaeological field evaluation carried out at School Lodge, Matson, Gloucester, Gloucestershire (NGR SO 8497 1567) (Fig. 1). The work was commissioned by Ms Charlotte Bellamy of edp-UK, First Floor, The Bonded Warehouse, Atlantic Wharf, Cardiff, CF10 4HF on behalf of LRM Planning Limited, 22 Cathedral Road, Cardiff, CF11 9LJ.

Planning permission is to be sought from Gloucester City Council for the retention and restoration of School Lodge to provide a single dwelling and the construction of a three-storey apartment block on a 0.32ha parcel of land located on the south side of Matson Lane (Fig. 2). As a consequence of the possibility of archaeological deposits on the site which may be damaged or destroyed by groundworks, field evaluation has been requested by Mr Andrew Armstrong, City Archaeologist at Gloucester City Council, to inform the planning process with regard to potential archaeological implications and to permit a mitigation strategy to be developed if appropriate. This is in accordance with the Ministry of Housing, Communities and Local Government's *National Planning Policy Framework* (NPPF 2019) and the Council's heritage policies.

The fieldwork was undertaken by Nicholas Dawson, between 3rd and 4th December 2020 and the site code is SLM 20/181. The archive is presently held at TVAS South West, Taunton and will be deposited with the Museum of Gloucester in due course.

Location, topography and geology

The site is located within the southern suburbs of the city of Gloucester some 2.8km from the city centre (Fig. 1). It covers an area of c. 0.32ha, the northern half of which is a Tarmacked parking area and the southern is parkland. It is bounded to the north by Matson Lane, to the north-west by the early to mid-19th century School Lodge and to the east by a residential development. To the south and west lies a public park, Matson Park (Fig. 2). The overall site sits at c.50m above Ordnance Datum (aOD) and the underlying geology is mapped as Blue Lias Formation and Charmouth Mudstone Formation, with no superficial deposits recorded (BGS 2017). The natural geology recorded in the trench was a firm pale-blue/grey/yellow clay.

Archaeological background

The archaeological potential of the site has been set out in a desk-based assessment (Robinson 2019) and therefore will only be summarized here. School Lodge is closely associated with the Grade II* listed Matson House. While there is no known archaeology within the site boundaries its archaeological potential derives from Roman and Saxon finds indicating possible settlement in the area, with some potential for medieval deposits. Much of the evidence for the Roman period consists of ditches indicating field systems or enclosures. Saxon remains include a trackway recorded to the north-east of the site and possible evidence of settlement to the west, including a hearth. Directly across the road to the north is the scheduled monument of Matson moated site, primarily dating from the 13th century AD but also sealing 12th/13th century and Saxon features below. The main medieval settlement of Matson lies to the south-west. The site also sits within the general proximity of Gloucester city centre which has been occupied since the 1st century AD.

Objectives and methodology

The purpose of the evaluation was to determine the presence/absence, extent, condition, character, quality and date of any archaeological deposits within the area of development.

Specific aims of the project are:

- to clarify the presence/absence and extent of any buried archaeological remains within the Site that may be impacted by development;

- to identify, within the constraints of the evaluation, the date, character, condition and depth of any surviving remains within the Site;

- to assess the degree of existing impacts to sub-surface horizons and to document the extent of archaeological survival of buried deposits; and

- to produce a report which will present the results of the evaluation in sufficient detail to allow an informed decision to be made concerning the Site's archaeological potential.

The potential and significance of any such deposits located will be assessed according local or thematic research priorities as necessary (Webster 2008).

A single trench 45m in length and 2m wide was to be excavated mechanically under constant archaeological supervision to expose the top of the archaeologically relevant horizon or the natural geology, whichever comes first. Where archaeological features were certainly or probably present, the stripped areas were to be cleaned using appropriate hand tools and sufficient of the archaeological features and deposits exposed were to be excavated or sampled by hand to satisfy the aims outlined above, without compromising the

integrity of any features or deposits which might warrant preservation *in situ*, or might better be excavated under conditions pertaining full excavation.

Results

The single trench aligned NW – SE was opened to a total length of 47.2m and was 2m wide. Due to safety concerns the trench was excavated in two halves so as not to leave open excavations overnight. This was done with the agreement of Mr Andrew Armstrong, Gloucester City Archaeologist. The northern half (section A) was 23.36m long and the southern (section B) 23.84m.

Located wholly within the carpark area, section A was opened to a depth of 0.58m reaching the top of the natural geology. The stratigraphy consisted of 0.05m of Tarmac surface above 0.12m of black tar-stained levelling gravel, then 0.21m of mixed pale cream and orange gravel and then finally mottled blue grey clay disturbed by roots. All sat on a natural pale blue grey clay. At 7m from the trench's north-west end was a shallow pit (1) 0.94m in diameter and 0.21m deep cut into the natural. From its mottled pale grey brown silty clay fill three sherds of later Iron Age or Saxon pottery were recovered. At the southern end of the north section of the trench a modern service trench (2) orientated WNW-ESE was identified complete with ceramic service pipe and from the backfill came a fragment of clay tobacco pipe stem, probably 19th century.

The service trench (2) continued into the north end of section B. The northern 5.9m of section B sat within the carpark area and had the same stratigraphy as section A. The stratigraphy of the remainder of section B consisted of 0.03-5m of mud trample followed by 0.36m of pale brown path gravel above the pale blue grey clay natural geology. No further archaeological finds or features were found.

Finds

Pottery by Richard Tabor

Three pottery wall sherds (30g) recovered from pit 1 were probably from two vessels. Two sherds had 7mm thick walls (10g) and the other a thickness of 8mm (20g). A slight turn on one edge of the latter sherd suggests that it is from a shoulder. The sherds were inspected at a magnification of x8.

The sherds were from handmade vessels in moderately hard, very micaceous fabrics with rare to sparse very fine (<0.2mm) to fine (0.5mm) sub-rounded quartz. The thinner sherds included moderate fine (<1mm) to sparse medium (<2mm) iron-rich grains of sandy clay pellets or friable stone. Sparse 0.2mm to 1mm wide, up to 6mm long, linear voids on both surfaces may be traces of organic matter. The thicker sherd lacked the linear

voids and differed also in the size and frequency of the iron-rich inclusions which ranged from moderate to common fine (<1mm), through sparse medium (<2mm) to sparse coarse (<6mm).

The fabrics may derive from a Malvernian source such as that to the west of the hills for Peacock's Group C sandstone fabrics which he associated with middle to later Iron Age mainly closed ovoid jars with rows of fingertip impressions on or slightly below the rim exteriors (Peacock 1969, 423, fig. 4, 19-22). However, similar fabrics were used at later dates and a Saxon date cannot be excluded.

Conclusion

The evaluation at School Lodge, Matson was undertaken successfully, and recorded a single archaeological feature, this being a shallow pit of either Iron Age or Saxon date. Given that previously a number Saxon ditches were identified immediately north of site it may be suggested that the pit found is more likely Saxon in date.

BGS, 2017, *British Geological Survey*, 1:50,000, Sheet **296**, Solid and Drift Edition, Keyworth

NPPF, 2019, *National Planning Policy Framework (revised)*, Ministry of Housing, Communities and Local Govt, London

Peacock, D, 1969, 'A Petrological Study of Certain Iron Age Pottery from Western England', *Proc Prehist Soc* **34**, 414–27

Robinson, J, 2019, 'School Lodge, Matson, Gloucester: a Heritage Desk-Based Assessment', Cotswold Archaeology report CR0172_1, Cirencester

Webster, C J (ed) 2008, *The archaeology of South-West England, South West Archaeological Research Framework. Resources Assessment and Research Agenda*, Somerset County Council, Taunton

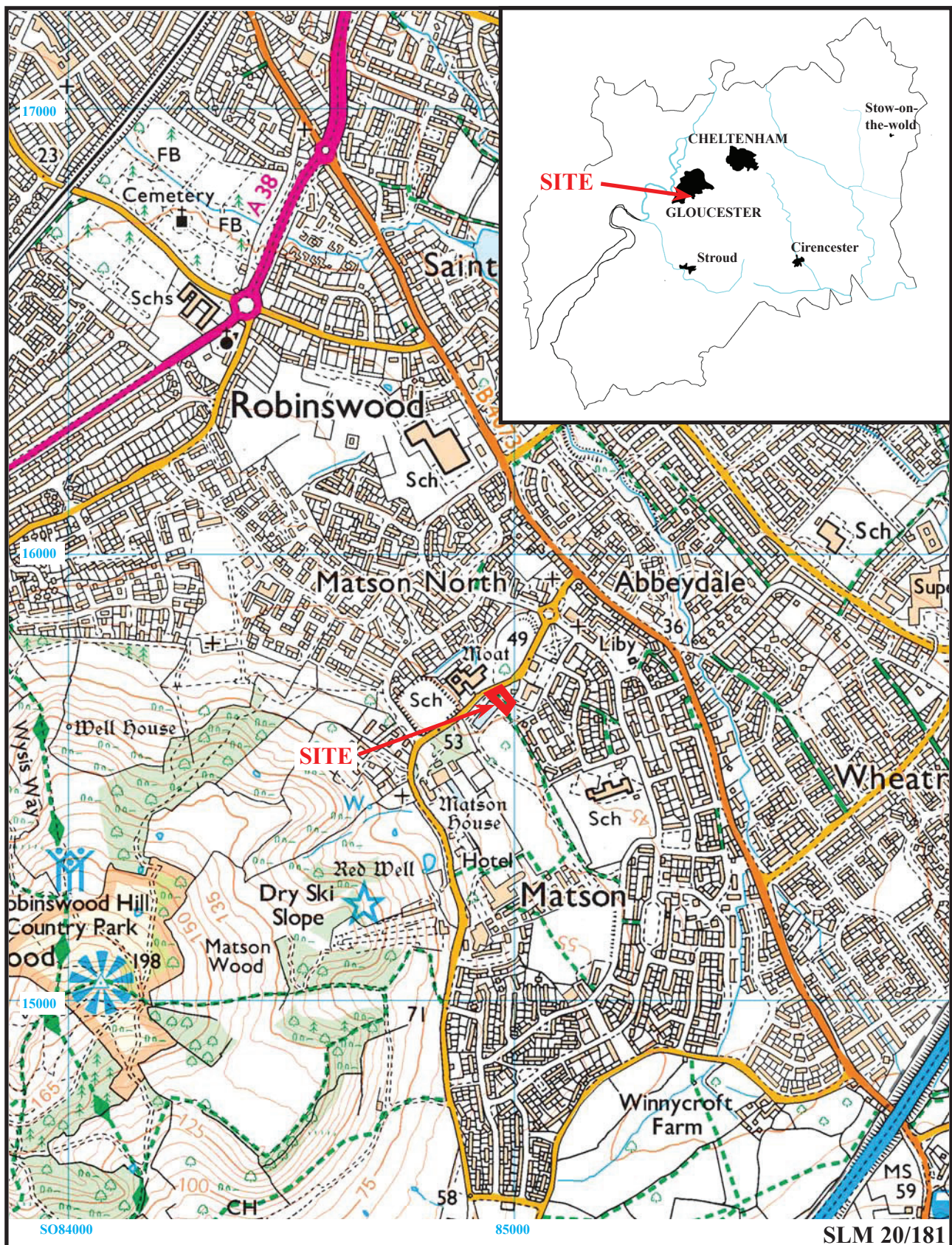
APPENDIX 1: Trench details

<i>Trench</i>	<i>Length (m)</i>	<i>Breadth (m)</i>	<i>Depth (m)</i>	<i>Comment</i>
1	47.2	2	0.58	North end 0-0.05m Tarmac (50), 0.05-0.17m black gravel (51), 0.17-0.38m mixed pale cream and orange gravel (52), 0.38-0.58m mottled blue grey clay disturbed by roots. South end 0-0.05m (56), 0.05-0.41m cream gravel. All above pale blue grey clay natural geology. Pit 1, service trench 2. [Pls 1–4]

0m at North-West end

APPENDIX 2: Feature details

<i>Trench</i>	<i>Cut</i>	<i>Fill (s)</i>	<i>Type</i>	<i>Date</i>	<i>Dating evidence</i>
1		50	Tarmac surface	Modern	
1		51	Levelling gravel	Modern	
1		52	Makeup gravel		
1		53			
1	1	54	Pit	Iron Age or Saxon	Pottery
1	2	55	Service trench	Modern	
1		56	Footpath	Modern	
1		57	Makeup gravel		



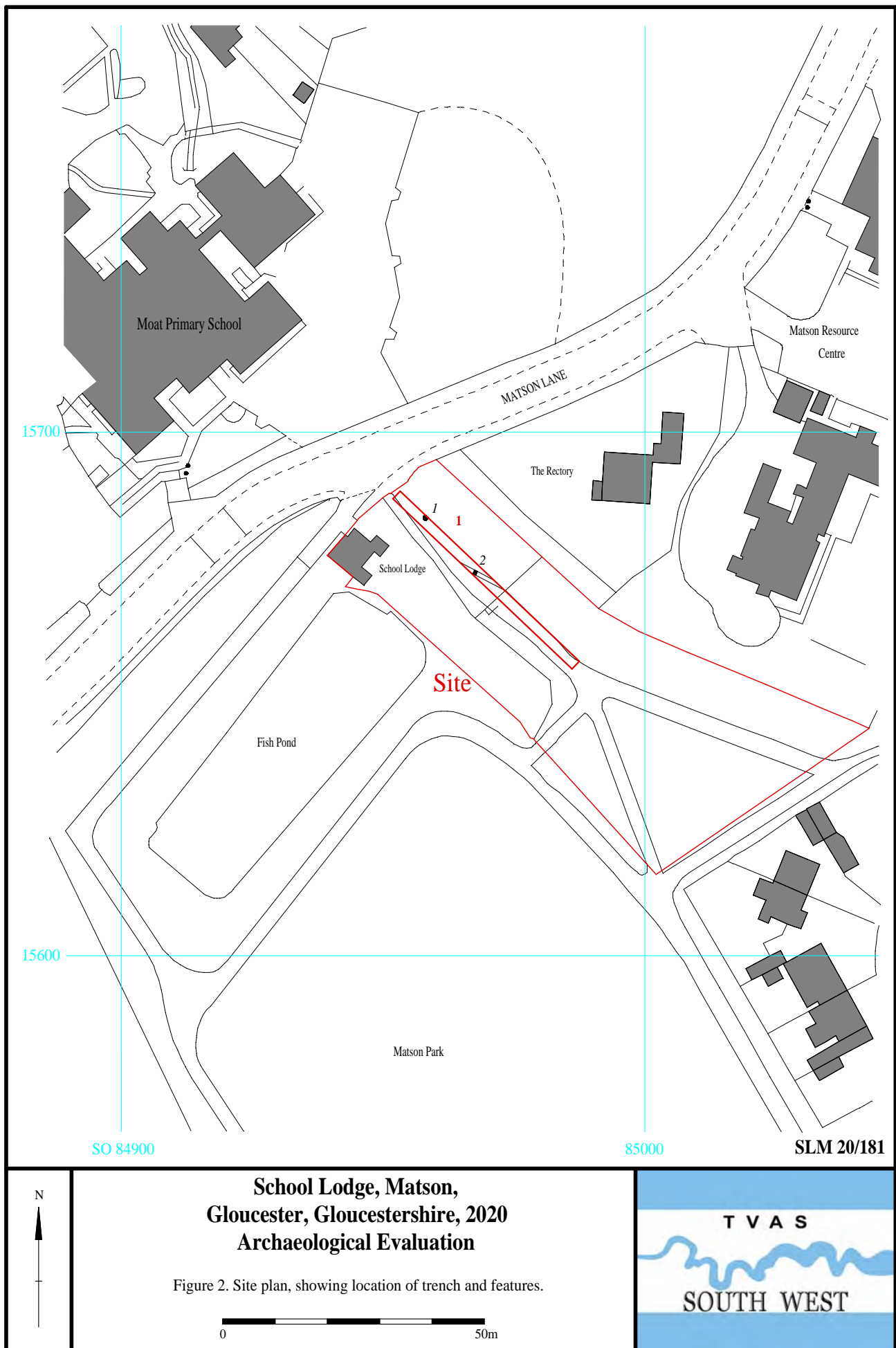
**School Lodge, Matson,
Gloucester, Gloucestershire 2020
Archaeological Evaluation**

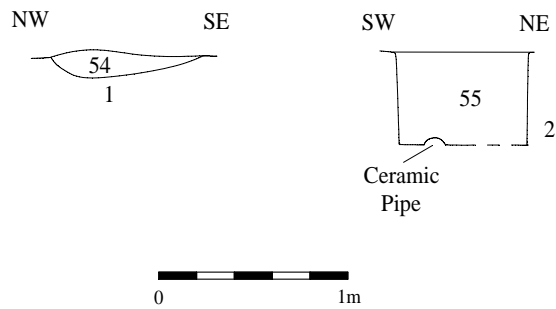
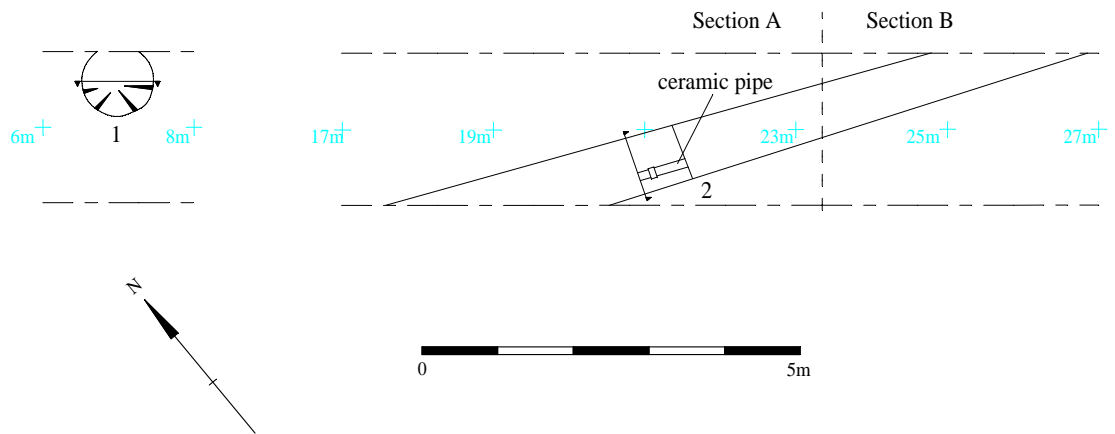
Figure 1. Location of site within Gloucester and Gloucestershire.

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T V A S

SOUTH WEST





SLM 20/181

**School Lodge, Matson,
Gloucester, Gloucestershire, 2020
Archaeological Evaluation**

Figure 3. Trench plan and section.

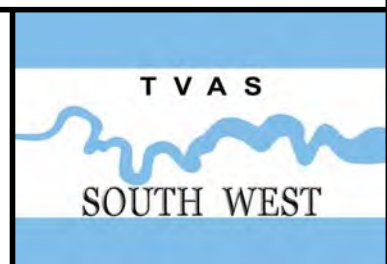




Plate 1. Trench 1 section A, looking South East,
Scales: 2m, 1m and 0.3m.



Plate 2. Trench 1 section B, looking South East,
Scales: 2m, 1m and 0.3m.



Plate 3. Pit 1, looking North East,
Scales: 1m, 0.3m and 0.1m.



Plate 4. Service trench 2, looking North East,
Scales: 1m and 0.5m.

SLM 20/181

**Shool Lodge, Matson,
Gloucester, Gloucestershire, 2020
Archaeological Evaluation
Plates 1 to 4.**

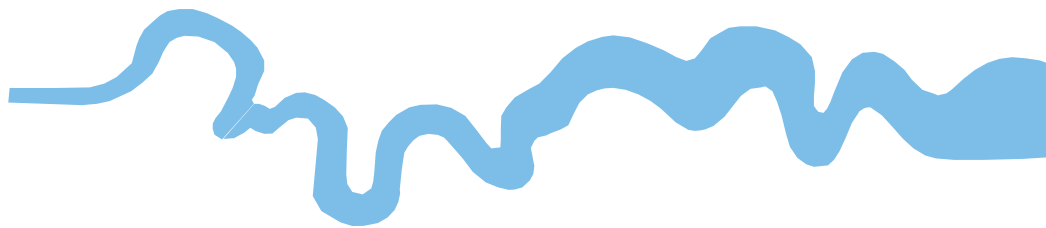


TIME CHART

Calendar Years

Modern _____	AD 1901
Victorian _____	AD 1837
Post Medieval _____	AD 1500
Medieval _____	AD 1066
Saxon _____	AD 410
Roman _____	AD 43
	AD 0 BC
Iron Age _____	750 BC
Bronze Age: Late _____	1300 BC
Bronze Age: Middle _____	1700 BC
Bronze Age: Early _____	2100 BC
Neolithic: Late	3300 BC
Neolithic: Early	4300 BC
Mesolithic: Late	6000 BC
Mesolithic: Early	10000 BC
Palaeolithic: Upper	30000 BC
Palaeolithic: Middle	70000 BC
Palaeolithic: Lower	2,000,000 BC





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and Ennis (Ireland)***



Design & Access Statement

School Lodge
Matson

Reference:

5591-P-4005

Revision:

-

Author:

Daniel Christison

Date of Creation:

February 2022

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01 Introduction

School Lodge, Matson

Quattro Design Architects have been appointed by Gloucester City Homes to design a residential scheme with community use on land adjacent to Matson Lane, in Matson.

This application seeks the approval for 9no 1Bed Flats in a 2 storey block, with independent access to each flat.

The currently vacant School Lodge on site is considered to be in curtilage of Grade II* Listed, Matson House. It is proposed this will be converted into a community use building.

This application has been crafted with support from the following consultants:

Gloucester City Homes - Client

Quattro Design Architects - Architect

LRM - Planning Consultant

Lime Transport - Highways Engineer

AD Horner - Topographic Survey



View of proposed site entrance from Matson Lane



Proposed Site entrance from Matson Lane



View of proposed site entrance from Matson Lane

01 Introduction

1.1 Previous Application

This site has been the subject of a number of proposed schemes over the past few years. An application was submitted in October 2019 (19/01110/FUL) which sought the approval of refurbishment to School Lodge and the development of 9no Flats on land south of Matson Lane, Gloucester. This proposal included reinstating residential use in School Lodge creating a 2Bedroom House and the associated grounds converted into a 3-storey block of 9no 1Bedrooms flats with open space, landscaping, sustainable drainage and a car parking court.

Objections were raised by the Conservation Officer that a 3-storey development would be too large in context with surrounding listed buildings and other residential properties. These concerns were addressed during the determination period with amendments to form and materials to lessen impact however a suitable solution could not be agreed upon, therefore the application was refused.

This revised application takes on board all the feedback and advise made during the previous application. Making every effort to create the best solution for the context of the site and meeting the requirements of our client and the community.



Previously proposed front elevations



Previously proposed rear elevations

02 Site Location

School Lodge, Matson

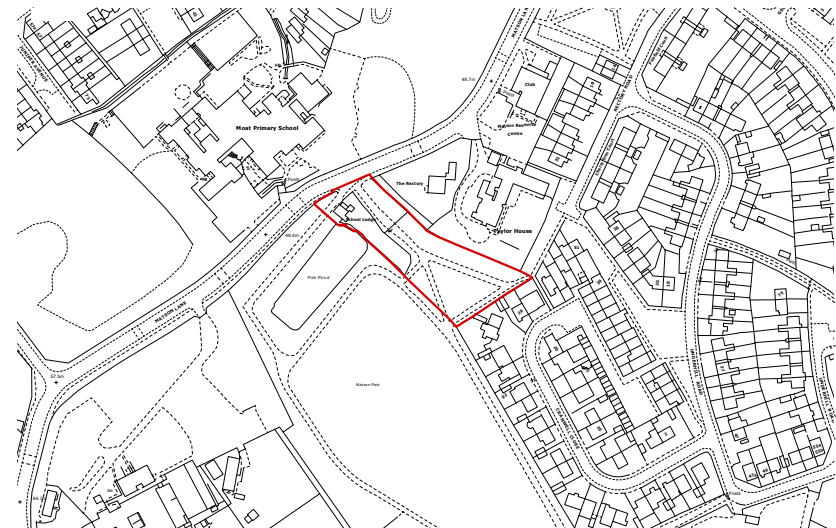
2.1 Site Location and Description.

The application site is located in Matson, Gloucestershire. The site is close to bus service routes into the centre of Gloucester, where rail services connect to London, Birmingham, Bristol and Cardiff lines. The site is also in close proximity to Junction J11a onto the M5. Matson contains a good mix of amenities, and schools including primary and secondary. Moat Primary School is located directly to the west of the site on the opposite side of Matson Lane. There are also nearby supermarkets and plenty of employment opportunities both within Gloucester and wider Gloucestershire.

The site is located on Matson Lane which runs along the north western boundary of the site. The site is bounded to the south west by a fishing lake and parkland, and to the north east and south east by existing residential properties. The site currently sits within an open green space and is heavily populated by mostly self seeded trees and is currently an under utilised space. The site is used as a pedestrian link from Matson Lane to the neighbouring housing estates and parkland.



Site Location Plan



03 Site Analysis

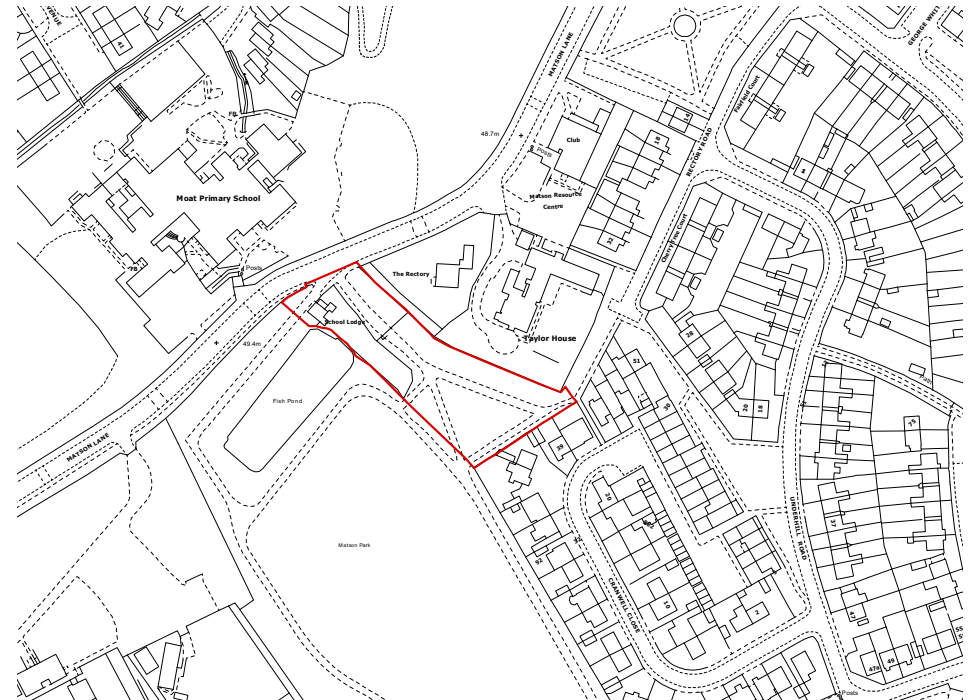
School Lodge, Matson

In this section we will identify key characteristics and provide an understanding of the site's context and constraints.

3.1 Site Constraints

The main site constraints have been assessed as follows:

- **Existing Site Access:** The site currently already has an existing access point from Matson Lane. This access will be retained and adapted to a new road layout within the site.
- **Services:** Existing services on site and surrounding the site have been taken into consideration in accordance with their required easements.
- **Public Right of Way:** A footpath runs through the site from the site entrance on the north boundary to the south corner of the site. This footpath has been diverted through the site. There is a further footpath running along the southern boundary of the site.
- **Close Proximity to open water:** A large body of open water sits close to the southern boundary of the site. The body of water is currently used as a fishing lake and is a significant feature of the surrounding area.
- **Existing Trees:** The site currently features a large number of trees throughout, forming part of a wooded area at the edge of the parkland.
- **Overlooking:** The site is relatively open and not overlooked apart from on its eastern boundary which is situated in close proximity to a housing estate with houses backing onto the site.
- **Adjacent Buildings:** Directly to the east is Taylor House which is currently used by Elim Housing Association as well as an NHS GP Surgery.
- **Listed Buildings:** To the south west of the site, there are a number of listed buildings. Matson House, the former stable block and the boundary wall are all Grade II or Grade II* listed.



Site Location Plan

3.2 Response to constraints:

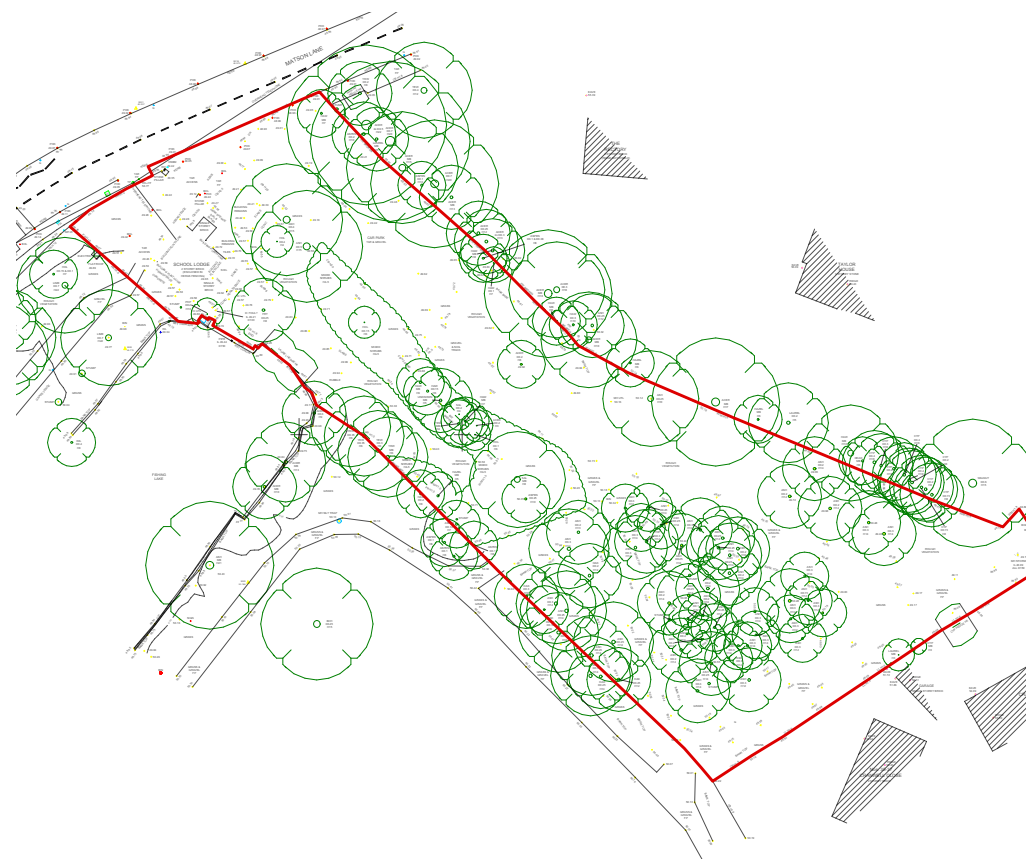
We have carefully considered the appropriate balance between providing the accommodation required and a scheme that is appropriate to its context, whilst respecting the character and appearance of the area.

The scheme has retained the existing access to the site removing the need for additional adjustment to the existing roads. The existing route through the site has been retained and enhanced by creating a more significant paved pathway for pedestrians through the site to replace the existing dirt pathway. The new pathway runs along side the new development through the site connecting to the existing pathway on the parkland to the south of the site.

The proposed layout takes into account the body of water close to the site, to account for this we have introduced an easement to avoid building within close proximity of the water. The body of water will also have fencing where a path runs alongside in order to protect from a potential falling hazard.

The site features a significant number of trees of which some will need to be removed, however the majority of these are of low quality or category C trees which feature little significance to the area. The majority of significant trees will be retained.

The proposal is such that it appears subservient to the adjacent Matson House, Taylor House and other existing residential buildings by containing just 2 storeys.



Existing Site Layout

3.3 Local Amenities

A number of amenities including supermarkets, a Primary and Secondary School, Churches, sports facilities and a Pharmacy are accessible in Matson.

- Primary School : Moat Primary School
- Secondary School : Gloucester Academy
- Supermarket : Morrisons
- Pharmacy : Glevum Pharmacy - Alphega Pharmacy
- Community Centre : Abbeydale Sport & Community Centre
- Library - Matson Library



Amenity Distance Map



● Primary School - Moat Primary School



● Supermarket - Morrisons



● Pharmacy - Glevum Pharmacy - Alphega Pharmacy



● Secondary School - Gloucester Academy



● Community centre - Abbeydale Sport & Community Centre



● Library - Matson Library

3.4 Local Buildings

Matson is a suburb of Gloucester, located 1.9 miles south east of the centre of Gloucester.

The surrounding buildings are a mix of education, health care and residential all of which display different architectural styles and characteristics. The majority are between two and three storeys with predominantly pitched roofs. The residential developments within close proximity of the site display a wide palette of materials including multiple colours of brick, render and painted timber cladding.

The area as a whole doesn't have a specific style, instead the area is made up of the various housing developments of different styles and eras as well as the schools and care facilities.

To the SW of the site there are a cluster of Grade II and Grade II* listed buildings on the Matson House estate. As well as the adjacent Taylor House which backs onto the site. Both are concealed by a screen of trees.

The proposed scheme aims to enhance the local area and provide new high quality apartments. These will remain separate from the surrounding area due to the site's isolation from other houses but also its location and heavy planting.

This scheme will look at representation of the area through the use of materiality and texture from the surrounding buildings but also selecting materials which will help to ensure that the building sits harmoniously within the site.



Site Location Plan



1 ●



2 ●



3. ●



4. ●



5. ●



6 ●

Local Building Types

4.1 Revised scheme

The proposal includes the refurbishment of School Lodge and conversion into community use. The remaining new build element will remain as per the previous application generating 9no 1Bed flats.

The main difference to the previous application is the apartment block to the rear / south of the site. Following the former objections, the proposed block is reduced in height to 2 storeys. The form also reflects a more typical residential scale, being elongated into a setting similar to a run of terrace houses. 4no flats are located on the ground floor with a shared bin and bike store, and the remaining 5no flats are located to the first floor. Flats are stacked one on top of the other, with ground floor flats accessed from independent front doors and first floor flats accessed from multiple stair cores. This provides more active frontage onto the adjacent public footpath, park and neighbouring fishing pond.

Existing public right of way, Saintbridge Matson Footpath 39, will be retained with through access provided between Matson Lane, the fishing pond and Matson Park. Other pathways within the pedestrian network have also been retained and incorporated into the design. The ground floor flats to the north and south front outward towards their respective adjacent pathways, providing active frontage and overlooking onto them.

A car parking court is proposed off the main site access. This provides 11no parking spaces and a turning head for refuse collection. From this parking court access is also available to the private rear amenity space, which also has direct access to the bin and bike store.

Landscaping is crucial within the proposed layout. Public and private areas have been defined with use of soft landscaping and boundary treatments such as metal railings. A knee high rail is also proposed between the parking area and the fishing pond, to clearly define the limits of both without interrupting the visual connection. The existing stone pillars to the north of the site, next to School Lodge, have also been retained to preserve the appearance and characteristic of the approach to the park and pond.

This redesign is a culmination of all the principles gained from the previous application. It sits lower in the landscape, with active frontages to all surrounding pedestrian links. Two gable-fronting ends frame the western elevation, seen from the park, which also allows for sloped roofs to be presented from the north and south approached. Brick is the primary elevational material, in keeping with School Lodge and much of the surrounding area. The massing is dispersed with sections of grey standing seam blending in with the grey roof tiles. There are also subtle changes to the brickwork with a stacked soldier string-course running horizontally along the centre of the block, again aiding in the visual subdivide of the building. These elements combined with the principles of the form make the proposed element of the design subservient to the neighbouring Grade 2* listed Matson House, and prioritise the prominence of School Lodge.

5.1 Layout

The layout of the scheme has arisen through the combination of the site constraints and our established principles for development. These principles include the following:

- Reaction to the site's location
- Arrangement between public and private space.
- Interaction and reinforcement of the scheme with the existing built form and townscape.
- Appropriate scale of building within this environment
- Movement of people, both vehicular and pedestrian, relating to the site.

5.2 Vehicular Entrance and Movement

Vehicular access to the site will be via the north western boundary of the site situated on Matson Lane.

5.3 Pedestrian Movement

Pedestrian access is provided at the same point as vehicular access into the site, on Matson Lane. The existing public right of way through the site will be diverted, maintaining the connection between the Matson Park public open space and Matson Lane. Additionally, access to the public right of way from the northeastern corner of the lake will be reinstated.



Proposed Site Layout

5.4 Amount & Scale

Due to the site constraints mentioned above, we have carefully considered the appropriate balance between providing the accommodation required, and a scheme that is appropriate to its context and respects the character and appearance of the area. The accommodation schedule is as follows:

9no.	Unit 1	1B2P Flat @ 47.2sqm
	Unit 2	1B2P Flat @ 49.5sqm
	Unit 3	1B2P Flat @ 49.5sqm
	Unit 4	1B2P Flat @ 47.2sqm
	Unit 5	1B2P Flat @ 52sqm
	Unit 6	1B2P Flat @ 54.2sqm
	Unit 7	1B2P Flat @ 49.5sqm
	Unit 8	1B2P Flat @ 52.5sqm
	Unit 9	1B2P Flat @ 52sqm

**9no. Total Residential Units
&**

**1no. Conversion and refurbishment of School Lodge for
community use**

5.5 Scheme Layout

The scheme is for residential accommodation with associated access, parking and landscaping. The layout of the scheme has arisen through the combination of the site constraints and our established principles for development.

The proposal aims to take advantage of the surrounding area by locating the proposed building in the centre of the site, providing homes with aspects overlooking both the lake and the neighbouring parkland. The road and parking court are located at the entrance of the site, minimising the amount of hardstanding. A paved pathway leads through the site from the entrance on Matson Lane to the parkland to the south/southeast. This pathway forms the diversion for the existing public right of way which currently runs through centre of the site.

The northern boundary is heavily planted with a tree line providing a screen between the proposal and the Rectory to the north. This gives privacy to both the existing buildings and the new accommodation.

5.6 Scale

The size and scale of the proposal has been informed through the consultation process. Careful consideration has been paid to the appropriateness of the development on the site, responding to the likely impact the scheme may have upon its setting against the park and neighbouring listed buildings.

The proposal is 2 storey which has been designed in such a way that upon entrance to the site you are faced with a low impact facade. This helps initially to disperse the massing of the building, subdividing it into multiple forms, giving them different heights and scales. This form is also reflective of its placement within surrounding trees. These flats have also been arranged in a form similar to a short run of terrace houses, comparable in scale and mass to other dwellings in the immediate area.

All landscaping is intended to provide an attractive and sustainable public realm. New planting will be incorporated into the site to further integrate the units with the surrounding environment.

Extensive work has been undertaken to create the most appropriate landscaping environment for the proposal. Please see the additional information submitted with this application for further details.

6.1 Layout

The scheme comprises the renovation of the existing School Lodge at the north west corner of the site and the erection of a new apartment building situated centrally. A parking court is located at the entrance on the northwestern boundary of the site.

The north of the site is characterised by a tall, dense tree line which stretches along the northeastern boundary. This tree line will be maintained and will provide a privacy screen between the proposal and the neighbouring property to the north. To the south of the site is Matson Park. Another tree line adds a level of privacy from the open public space.

Formal landscaping forms a buffer between the parking court and the front of the proposed building and a formal communal garden to the rear.

6.2 Ecology

Due to the being situated amongst trees and parkland it is important to deliver a scheme that compliments these surroundings. To keep the site with the surrounding parkland the development will be made to look more rural. Planting will be added in order aid in supporting the areas wildlife and eco-system.



Proposed Landscaping Plan

7.1 Scheme Design

It has been our aim to provide an attractive and appropriate scheme reflecting the scale of the surrounding built form and the immediate context of the site. The area features various styles and types of building which vary in architectural quality, as well as the use of a range of materials that can be found surrounding the site. From the local area elements have been carefully selected and used to design a cohesive scheme.

The proposal has been designed in such a way that upon entrance to the site there is a low impact facade. This helps initially to disperse the massing of the building, subdividing it into multiple forms, giving them different heights and scales. Materials have been selected to compliment this further by using aluminium standing seam cladding in protruding elements from a mainly red brick elevation.



Front Elevation

Side Elevation



Rear Elevation

Side Elevation

7.1 Scheme Design - School Lodge

In addition to the new build apartments the scheme proposes the renovation of the existing School Lodge building on the site. The proposal is to carefully restore the building, and offer it to the local community.

Since the building has been unoccupied it has fallen into a state of disrepair. The conservatory and front porch have been demolished and all openings have been heavily damaged and boarded up. The proposal is to replace the porch and all windows and doors in order to reinstate the building to its original appearance. Internal renovations and alterations are proposed to provide community use.



School Lodge in its current state



Existing Side Elevation



Existing Front Elevation



Proposed Side Elevation



Proposed Front Elevation

8.1 National Planning Police Framework

The proposed scheme adheres to the guidance with the NPPF and follows the principles laid out within the National Design Guide and National Model Design Code. This includes considering the context of the site, situated in a predominately residential area adjacent to a public open space. The broader area has a mixed identity with Matson having a number of large flatted block with high density in close proximity to large detached family home. There is also a mixture of build forms inherited from the spectrum of developments over the years. The propose scheme seeks to combine these with the use of some contemporary design elements whilst being sympathetic and honouring the existing school lodge on site and surrounding listed buildings. Primary movement into the site will be via the existing established access point off the main highway, and incorporates and enhances the existing right of way running thought the site. There are a number of existing trees on site that will be incorporated into the scheme with the proposed built form nestled within the existing vegetation. Proposed soft landscaping treatments will also be utilised to limit the visual effects of the development and the proposed built form has been orientated to front the existing pond located within the public open space. Improved public spaces will come from upgrading the existing public right of way, increased surveillance onto otherwise secluded areas of the public open space and the conversion of School Lodge for community use. There is an aspiration both locally and nationally for the increase in available housing. This scheme is and opportunity to provide much needed affordable housing. Homes and buildings. We consider this scheme to be a sustainable reuse of an existing building increasing its life span.

8.2 Gloucester, Cheltenham and Tewkesbury Joint Core Strategy 2011 - 2031 (December 2017)

Policies within the local joint core strategy echo much of the sentiment from the NPPF. These point have been largely covered in the previous sub-section however below highlights all the relevant local policies:

Of key relevance is Policy SD4 Design Requirements

Principles to be incorporated

- Context, character and sense of place
- Legibility and identity
- Amenity and space
- Public realm and landscape
- Safety and security
- Inclusiveness and adaptability
- Movement and connectivity

SD3 Sustainable design and construction

Aims of sustainability by increasing energy efficiency and minimising waste and avoid pollution.

SD6 Landscape

Development will seek to protect landscape character for its own intrinsic beauty and its benefit to economic, environmental and social well being.

Proposal to have regard to local distinctiveness and historic character of different landscapes.

SD8 Historic Environment

Development should make a positive contribution to local character and distinctiveness, having regard to valued and distinctive elements of the historic environment.

SD9 Biodiversity and Geodiversity

Biodiversity and geodiversity resource will be protected and enhanced in order to establish and reinforce ecological networks that are resilient.

SD10 Residential development

Seek to achieve maximum density compatible with good design and site context.

SD11 Housing Mix and Standards

Provide an appropriate mix of dwelling sizes, types and tenures to contribute to mixed and balanced communities. New housing should meet and where possible exceed appropriate minimum space standards and should be accessible and adaptable.

SD12 Affordable housing

Housing should remain at an affordable price for future eligible households, or subsidy recycled for alternative affordable provision.

SD14 Health and environmental quality

Protect and seek to improve environmental quality

INF1 Transport Network

Provide safe and accessible connections to transport network to enable travel choice including credible travel choices by sustainable modes.

INF 3 Green Infrastructure

Multifunctional linked green corridors by improving quantity and /or quality, improving linkage and design.

INF 4 Social and community infrastructure

Infrastructure should be centrally located and easily accessible to the population it serves. Developers should aim to provide flexible, multi functional facilities creating shared space.

8.3 Gloucester City Plan 2016-2031 (yet to be adopted)

Although the City Plan has not been adopted yet it is important that these policies are considered within the design and meet all to the best ability the site will allow.

Policy A1 Effective and efficient use of land

Proposals are required to make an effective and efficient use of land. Amongst other things, they should:

- Result in improvement to the built and natural environment;
- Be of suitable scale for the site;
- Provide adequate off-street parking (and covered and secure cycle storage);
- Not prejudice the potential for the comprehensive development of adjacent land;
- Provide outdoor amenity space and garden space at a level that reflects the character of the local area; and
- Provide adequate and appropriately located bin storage.

Policy A6 Accessible and adaptable homes

50% of housing development should be able to achieve Building Regs M4(2) 'accessible and adaptable dwellings'. 4% of the affordable rented component of every housing development should also meet Building Regs M4(3) 'wheelchair user dwellings'.

Policy C1 Active design and accessibility

Proposals must demonstrate the layout accords with the principles of Active Design as outlined by Sport England (or any future iteration) and meet the highest possible standards of accessible and inclusive design (convenient and welcoming with no disabling barriers

Policy F1 materials and finishes

Development proposals should achieve high quality architectural detailing, external materials and finishes that are locally distinctive. Innovative modern materials will be encouraged where they strongly compliment local distinctiveness.

Policy F2 Landscaping and planting

Major development proposals must be accompanied by a landscape scheme, incorporating existing features, hard landscaping and planting details, indicating areas for adoption and ensuring space is available for the maturing of large-scale trees.

Policy F3 Community safety

Development must be designed to ensure community safety is a fundamental principle of the proposed development. Such considerations include: (1) natural surveillance; (2) promoting perimeter block development; (3) secure rear gardens; (4) parking on

plot or to the front of active frontages; (5) attractive to use, safe and vibrant streets; and (6) footpaths that are well designed, lit, straight and overlooked.

Policy F4 Gulls

To prevent gull roosting, nesting and damage, gull mitigation measures shall be well designed and sympathetic to the building and its setting.

Policy F6 Space standards

Development proposals for new residential development must meet Nationally Described Space Standards.

Policy G1 Sustainable transport

New development shall provide car parking and cycle provision in accordance with the latest version of Gloucestershire Manual for Streets and any subsequent amendments. Current standards are:

- One bed – one space;
- Two bed – one space;
- Three bed – two spaces;
- Four bed – three spaces;
- Five bed – three spaces; and
- Visitor spaces – one space per five units.

Policy G2 Charging infrastructure for electric vehicles

An electric vehicle charging point/socket will be provided at every new residential property which has a garage or dedicated residential car parking space within its curtilage community use.

As a design ethos, we consider a 'fabric first' approach to be the most appropriate response to carbon reduction, rather than using renewable technologies. This means that there is physically less carbon used, rather than the same amount of carbon usage but coming from a more sustainable source. We see this as a more efficient and future-proof system to ensure continued low carbon usage.

The following information sets out the approach to waste management that will be applied to the design, construction and occupation of the proposed development. We have looked to cover as far as possible the construction and occupation waste issues and the preventative measures that will be put in place to reduce the amount of waste produced.

The following list specifies the expected sources of waste from the construction process:

- Building materials from the demolition of the existing buildings on site.
- Soils from site clearance works.
- Organic waste from site clearance works.
- Wastage of construction materials during build phase (aggregate, brick, tiles, timber, metal, paint, various types of plastics, etc).
- Cardboard (from packaging).
- Steel and aluminium containers.
- Telephone directories.
- Paper, newspapers and magazines.
- Plastic bottles.
- Cardboard.
- Glass.
- Textiles.
- Organic waste.
- Non-recyclable items.

A.1 Site Clearance, Site Preparation and Excavations.

There are anticipated wastes associated with the site preparation and site clearance.

High quality topsoil will be separated during excavation works and stored within the site. This can then be re-used on site where appropriate (gardens, planting areas, highway verges etc). Where possible the amount of excavated material will be kept to a minimum and will be re-used on site to re-grade any required areas.

The proposed access road has been designed to follow existing ground levels as much as possible. This will ensure that the new access road will not require extensive excavation.

A.2 Construction.

All timber used within the scheme will be sourced from suppliers registered with FSC.

Where possible, we will look to use pre-fabricated and standardised components. These factory made items tend to generate less waste and by using standard product sizes, this also helps to reduce off-cut wastage. All non-standardised items and materials used in the construction will be accurately ordered, thus reducing potential waste occurring from over ordering.

All site operatives will be made aware of the segregated skip system that will be put in place to keep waste materials apart prior to being taken to a registered waste disposal company.

It is proposed that the main contractor will utilise a colour coding system for waste materials. This system will dictate and identify which types of waste go into which container. The colour coding are standardised by the Institution of Civil Engineers for use throughout the construction industry.

During the construction process there will a commitment made by the principal contractor that a minimum of 10% of the materials used in the construction will be comprised of recycled content. Sustainably sourced materials will be used where possible and appropriate.

Preference should be given to suppliers of materials who will collect unused materials and packaging for re-use and recycling.

Any materials that are delivered to site will be carefully stored in a secure materials compound, with special consideration given to any hazardous materials and waste – although wherever possible materials that do not have hazardous content will be specified. Suitable Method Statements will be completed by the contractor for all potentially dangerous products and materials.

Items will be stored in a sensible manner so that materials are easily accessible in the correct order. This will reduce the potential for breakages and will therefore in turn, reduce waste materials.

A.3 Site Occupation.

All waste disposal and recycling facilities will be agreed with the local planning authority. In accordance with the services already provided by the District Council.

Each property will be given the opportunity to recycle as much waste as possible, through the provision of separated recycling and non-recycling bins

as the local authority waste collection dictates.

A.4 Transportation of Waste.

Registered carriers will be used for the transportation of all construction waste, in line with 'Duty of Care' requirements. All waste will be taken to appropriately licenced sites.

Appropriate waste transfer documentation will be required to be completed by those delivering the waste, and the Site Manager will keep a detailed account of all aspects of disposal, including a register of carriers, disposal sites and relevant licensing details.

The Council will collect domestic waste. Sufficient space has been provided for all properties to manoeuvre all bins directly from their rear garden to their own bin collection point. Access into the site has been provided for bin lorries, and a relevant turning circle has been designed into the scheme, in compliance with Manual for Streets.

The proposal set out by this Waste Minimisation Statement can be said to be in accordance with the governing criteria in practice within the area. The site will provide a sustainable ethos that promotes waste minimisation, waste re-use and recycling throughout the lifespan of the development.



DRAINAGE STRATEGY REPORT

Gloucester City Homes

School Lodge, Matson

9529/REP04

April 2022

Grays (Consulting Engineers) Limited

5-6 Deryn Court
Wharfedale Road
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Cardiff
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TITLE: School Lodge, Matson, Drainage Strategy

CLIENT: Gloucester City Homes

REF NO: 9529/RM

This document has been prepared and checked in accordance with
Grays (Consulting Engineers) Limited QS (BS EN ISO 9001:2015)

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The conclusions resulting from this study and contained in this report are not necessarily indicative of future conditions or operating practices at or adjacent to the property.

Any costs quoted are purely indicative estimates for comparison/ budget purposes. Accurate cost estimates should be obtained from a suitably qualified Quantity Surveyor or Building Contractor once specifications for repairs have been developed and agreed.

The insulation/ thermal properties/ improvements are outside the scope of this report.

Any information contained in this report which has been provided by others, has neither been checked or verified by Grays (Consulting Engineers) Limited.

1 INTRODUCTION

- 1.1 Grays (Consulting Engineers) Limited has been instructed to prepare a drainage strategy in respect of a proposed housing development at School Lodge, Matson. GL4 6DX.
- 1.2 The report has been prepared on behalf of Gloucester City Homes and is intended to support a planning application for the residential development of 9 No. Flats.
- 1.3 The purpose of this report is to describe the existing site and associated drainage infrastructure and to identify a sustainable solution for the purposed surface and foul water drainage, a review of the flood risk has also been carried out.
- 1.4 The site occupies approximately 0.424ha. The National Grid Reference is SO849156

Figure 1.0 – Site Location



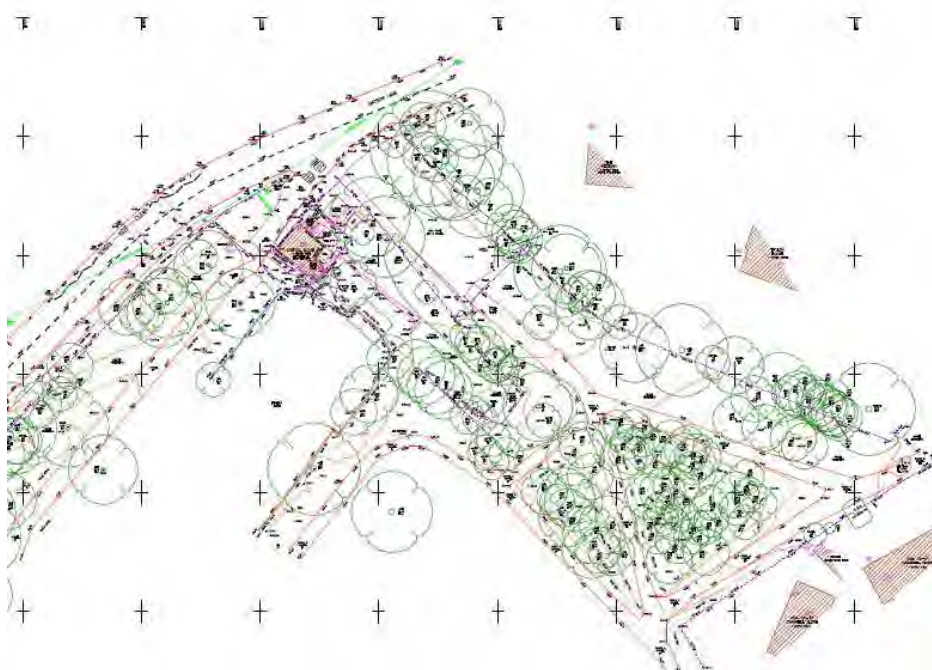
Source: www.streetmap.co.uk

- 1.5 The site is not in a tidal or fluvial flood zone, however within this report consideration has been given to flooding from all sources.
- 1.6 This document has been prepared in consultation with the Client of this project, Severn Trent Water and Gloucester City Council.
- 1.7 Grays (Consulting Engineers) Limited has prepared this report in accordance with the instructions of the Client, Gloucester City Homes.

2 EXISTING SITE

- 2.1 The development is located off Matson Lane in the village of Matson, which is situated approximately 3km southeast of Gloucester City Centre.
- 2.2 Vehicle access to the site and the existing property is served from Matson Road, which runs along the north western edge of the application site.
- 2.3 The site is an existing school lodge with a gravel car park, a woodland area is located to the back of the site. Adjacent to site is a fishing lake.
- 2.4 The application site is located within a predominately residential area, with a primary school to the north.
- 2.5 The total site area is approximately 0.424ha which consists of 0.0845ha of impermeable surface. This consists primarily of the access road, existing school lodge and parking area.
- 2.6 From the site walk over and maps provided by Severn Trent Water, established a surface water sewer to the south east of the application site. There's of also a foul sewer in close proximity.
- 2.7 The site is relative with a maximum level difference of approximately 1.8m, levels across the site ranger from 49.0m to 50.8m AOD. These levels have been derived from the topographical survey. There is a local high point towards the western end of the application site and then falls away in all directions

Figure 2.0 – Extract from topographical survey



Drg No. 5285-02JAN18-01 available to scale within Appendix A

3 EXISTING DRAINAGE PROVISION

- 3.1 There is an existing Severn Trent foul and surface water apparatus located in close proximity or within the application site, a copy of the Severn Trent Water sewer records is included in [Appendix B](#).

Figure 3.0 – Extract from Severn Trent Water Public Sewer Records



Severn Trent Public Sewer Records available to scale within Appendix B

- 3.2 There is a 225mm diameter public surface sewer located within Matson Lane to the northwest of the application site.
- 3.3 There is also a 150mm diameter surface water and a 150mm foul sewer located to the rear of the properties adjacent to the boundary of the application site at Cranwell Close. The surface water manhole is within the application boundary area.
- 3.4 It is assumed that there is a positive foul drainage connection from the School Lodge building, however the location of its connection is unknown. Information relating to the surface water drainage at the existing site is unknown.
- 3.5 There is no existing ground investigation information currently available for the application site.
- 3.6 We do recommend that in any event prior to the detailed design stage, soakaway testing should be undertaken to confirm that there is potential for infiltration drainage to be used at the application site.

4 PROPOSED DEVELOPMENT

- 4.1 The proposed development comprises the construction of 9 No 1B2P Flats.

Figure 4.0 – Proposed Site Layout



Source: Quattro Design Architects – 5591-P-1000-H

- 4.2 A new vehicular access will be created from Matson Lane to the northwest. The proposed development plan is included in [Appendix A](#).
- 4.3 As part of the residential development proposals a new parking area, refuse & recycling store and infrastructure enabling works will be carried out.

5 PROPOSED DRAINAGE STRATEGY

- 5.1 Separate foul and surface water systems are to be provided. The proposed drainage systems will be designed in accordance with Building Regulations Document H 2010, Sewers for Adoption 7th Edition and BRE Digest 365 where appropriate and will comply with any further Local Authority Design Guides and requirements of statutory undertakers.

5.2 Surface Water Run-off Destination

- 5.2.1 Means of surface water disposal will be explored in the hierarchical order recognised by Sustainable Urban Drainage Systems (SUDS) industry best practice.

5.2.2 Level 1 – Rainwater Collected For Use

- 5.2.2.1 Integrating rainwater harvesting systems can offer a significant reduction in run-off volume. This method alone will not be adequate enough to deal with site wide generated run-off, or be suitable for highway / external run-off. Given overflow provision will be required with a Level 2 or lower priority disposal method in conjunction with rainwater harvesting, it does not typically make this solution cost effective for integration to developments in this type of application.

5.2.3 Level 2 - Discharge to Ground

- 5.2.3.1 At present no infiltration testing has been carried out at the application site. Prior to the detailed design stage, soakaway testing will be undertaken to confirm the potential for infiltration drainage to be utilized at the application site. The strategy below will be progressed on the basis that no infiltration drainage is viable however, should infiltration rates be suitable, a new strategy and calculations should be carried out based on the infiltration results.

5.2.4 Level 3 - Discharge to Sewer

- 5.2.4.1 Discharge to the sewer is not deemed an option on this occasion, given the close proximity of the adjacent pond next to the application site. The surface water from the site currently discharges to an unknown location. However a CCTV survey should be carried out to verify the location of the outfall.

5.2.5 Level 4: Discharge to Watercourse

- 5.2.5.1 The fishing pond to the west of the application site has a positive outfall, so would be a suitable location for the surface water drainage from the application site. Gloucester City Council have confirmed that flow from the site could discharge to the pond, subject to an annual service charge. Please refer to [Appendix D](#).

Table 1 – WinDES (Source Control) Greenfield Discharge Rates

Storm Event	Greenfield Run off (l/s)
Qbar	1.4
1:30 year	2.8
1:100 year	3.7

- 5.2.5.2 The existing site has a small area of hard standing paved driveway equating to approximately 0.010ha. The existing run off rate is therefore greater than greenfield run off figures and is estimated to be 7.9l/s based on a nominal 50mm/hour storm combined with the remaining 88% of the Qbar greenfield rate.

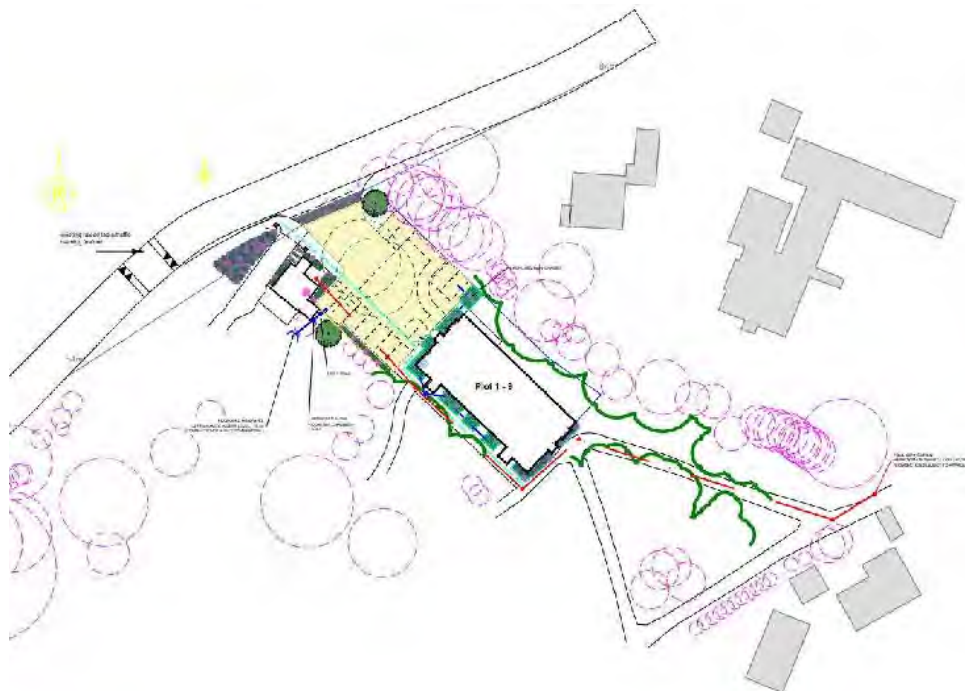
$$\text{Flow rate} = (0.000278 \times 50 \times 480) + (0.88 \times 1.4) = 7.9 \text{ l/s}$$

- 5.3.5.3 It is proposed to restrict surface water from the development at the above rate by using a hydrobrake or similar approved device. It is proposed to retain the surface water on site for all storm events up to the 1:100 year event allowing for climate change growth. A calculation has been undertaken to determine the approximate volume of attenuation that would be required for the 1:100 year + 40% (climate change) discharge rate. The total impermeable areas on the new development have been calculated as 0.074ha. This included within [Appendix C](#) and also summarized below.

Storm Event	Discharge Rate (l/s)	Approximate volume required (m3) Total
1:100 year + 40%	5.5	31m3

- 5.3.5.4 To accommodate the 1:100 year + 40% allowance for climate change it is proposed that the below ground storage will be accommodated through the proposed permeable paving make -up. Please refer to [Appendix A.](#)

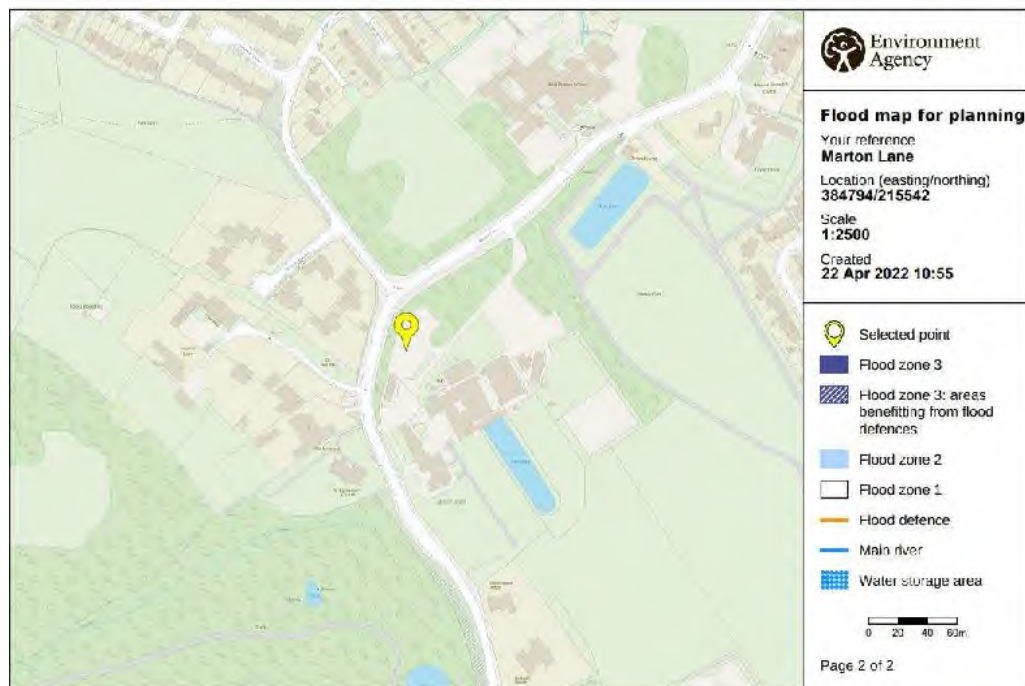
Figure 5.0 – Indicative Drainage Strategy



Source: C D Gray & Associated – 5929 – SK01

5.3 Flood Risk

- 5.3.1 The site appears on the Government Long Term Flood Risk Maps as being located within Flood Zone 1. This zone comprises land assessed as having less than a 0.1 percent (1:1000) chance of flooding occurring each year and is categorized as an area with little or no risk of fluvial or coast/tidal flooding.



Source: Environment Agency Flood Map

- 5.3.2 A flood risk assessment is not required to support this development however we have reviewed the risk of flooding of other non-tidal/fluvial sources discussed below:-

Flood Source	Presence *	Notes
Fluvial (River)	X	Not present
Tidal (Sea)	X	Not present
Canals	X	Not present
Groundwater	X	No evidence
Sewers	X	No evidence of flooding
Reservoirs	X	Not present
Pluvial (Rain)	X	Area of surface water flooding risk within Matson Lane to the north
Development Drainage	✓	Considered within this report

*Comments where relevant are discussed below

5.3.3 Fluvial

As described above the Environment Agency (EA) flood maps do not identify significant risk from watercourses in this area.

5.3.4 **Groundwater**

There is no indication that there is any risk of groundwater flooding at the application site.

5.3.5 **Pluvial**

The risk of flooding from a pluvial source is very low on the application site.

There is risk of fluvial flooding on the hardstanding area of Matson Lane to the north of the application site, however this is not within the application boundary.

5.3.6 **Sewers**

A pre-development enquiry was carried out with Severn Trent Water and no incidences of sewer flooding in the area were highlighted.

5.4 **Foul Drainage**

- 5.4.1 It is proposed that the foul water from the development will discharge via the 150mm foul sewer to the southeast of the application site, with the reference 0603. The Severn Trent asset maps indicate that there is an invert level of 46.28m AOD at this manhole which means that a gravity connection will be feasible.

Severn Trent Water has confirmed foul capacity for approximately 0.2l/s. Refer to [Appendix D](#).

6 CONCLUSIONS & RECOMMENDATIONS

- 6.1 Means of surface water disposal have been explored in the hierarchical order dictated by Building Regulations Document H, 2002.
- 6.2 Separate foul and surface water systems are to be provided by the proposed development.
- 6.3 Means of surface water disposal have been explored in the hierarchical order and it is proposed to discharge surface water run-off to the fishing pond to the west of the application site, subject to final approval by Gloucester City Council.
- 6.4 Final drainage design has been developed in conjunction with previous discussions with the Local Authority on a previous planning application.
- 6.5 Taking on board the drainage comments previously received in a previous planning application, it is proposed that the surface water drainage will be quantified and stored with the make-up of the car park and access road areas via the introduction of a permeable paving design.
- 6.6 Before discharging to fish pond, the site will require restriction of development flows in order to achieve 5.5l/s in the Q100 + 40% storm. In order to achieve this, attenuation will be required, potentially in the form of below ground storage through the make-up of the car park construction (permeable paving) and will accommodate all flows up to and including the 1 in 100 year storm event plus an additional 40% allowance for climate change. The attenuation volume requirement is approximately 31m³, in order to achieve a 30% betterment on existing condition, which is the method by which the 5.5% flow rate has been derived.
- 6.7 Pervious paving provides a pavement suitable for pedestrians and vehicular traffic, while allowing rainwater to infiltrate through the surface and into the underlying structural layers. The water is temporarily stored beneath the overlying surface before infiltrating to the ground and/or controlled discharge. Pervious surfaces, together with their associated substructures are an efficient means of managing surface water runoff close to its sources, intercepting runoff, reducing the volume and frequency of runoff, and providing a treatment medium. Treatment processes that occur within the surface structure, the substructure and geotextile layers include, filtration, absorption, biodegradation and sedimentation.
- 6.8 A calculation has been undertaken to determine the approximate storage volume that would be required for this site. This is based on:- 1:100 year + 40% (climate change). Contributing area is 825m² and restricted discharge rate being 4.7l/s.
- Parking Area 505 m²
Sub base thickness 300mm
30% void ration = 31m³
Storage available (permeable paving) = 45m
- 6.9 For the permeable paving proposal to work effectively our design proposal is based on a minimum of 350mm of clean crushed stone storage, carefully shaping the car park formation level so that the surface water drainage flows towards a silt trap and hydro-brake manhole before discharging into the pond at a controlled restricted rate. [Appendix A](#)
- 6.10 As well as permeable paving and to support the benefits towards amenity, biodiversity and water quality, two rain gardens have been introduced to pick up the roof drainage from



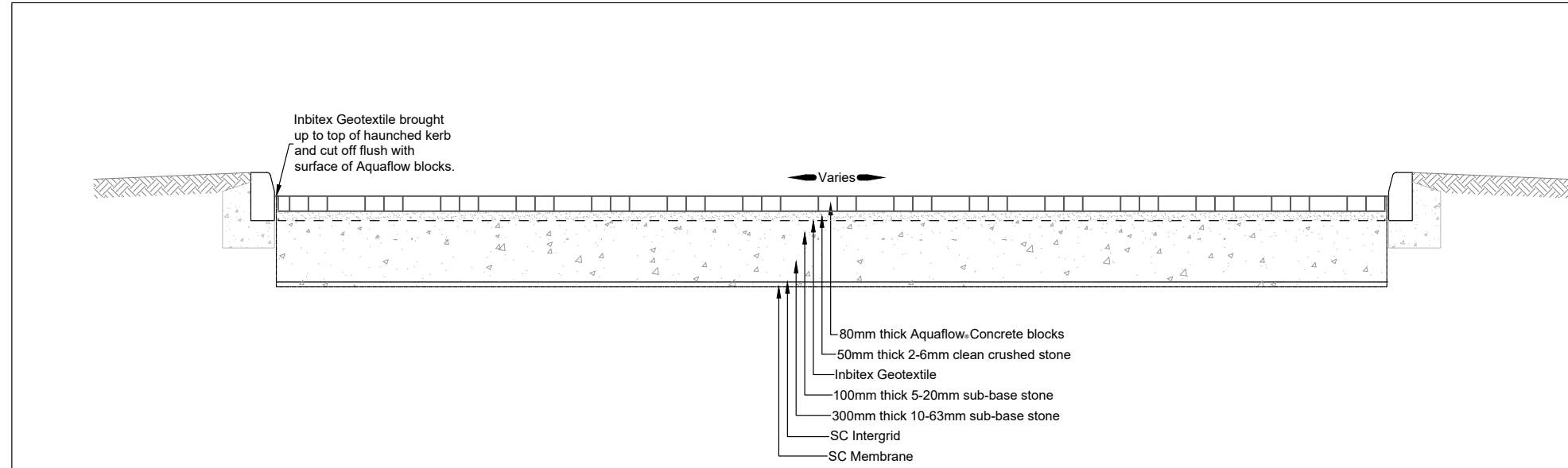
the new building. The roof drainage will discharge into the rain garden and to control the flow an outlet pipe will be connected to the permeable paving infrastructure.

- 6.11 It is understood that the Client will provide a maintenance management plan that will be put in place to make sure that it can continue to perform their drainage function effectively.

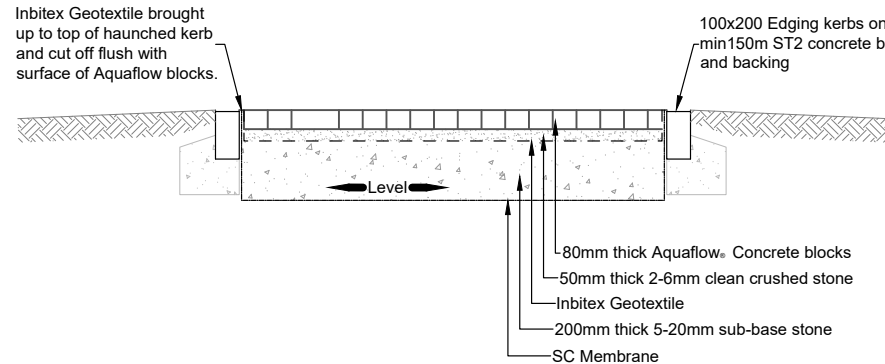
Exceedance Flow plan has been provided to show where the flow of surface water will travel across and off the site during rainfall events that exceed the design of the drainage network (1:100 year +40). This drawing shows the intent but will be designed accordingly during the detailed design stage to reflect this. [Appendix A.](#)



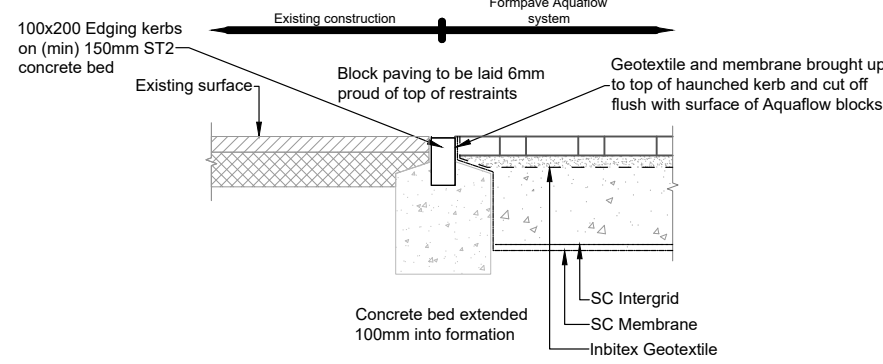
APPENDIX A – DRAWINGS



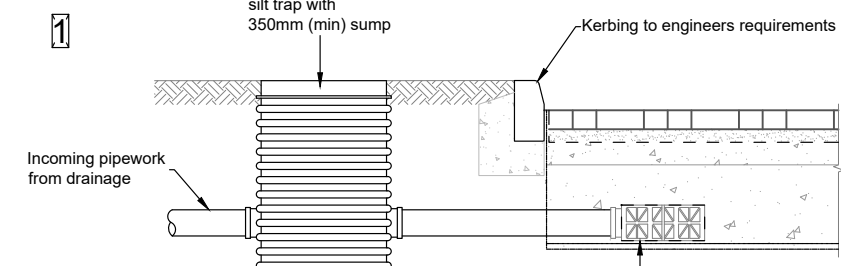
TYPICAL SECTION THROUGH AQUAFLOW ATTENUATION SYSTEM
(MINIMUM CONSTRUCTION DEPTH FOR TRAFFICKED AREAS)



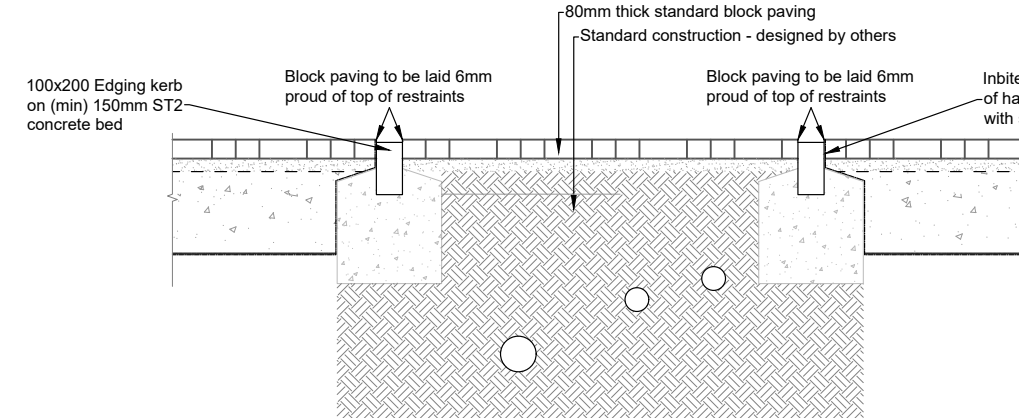
TYPICAL SECTION THROUGH AQUAFLOW ATTENUATION SYSTEM
(FOOTPATH CONSTRUCTION)



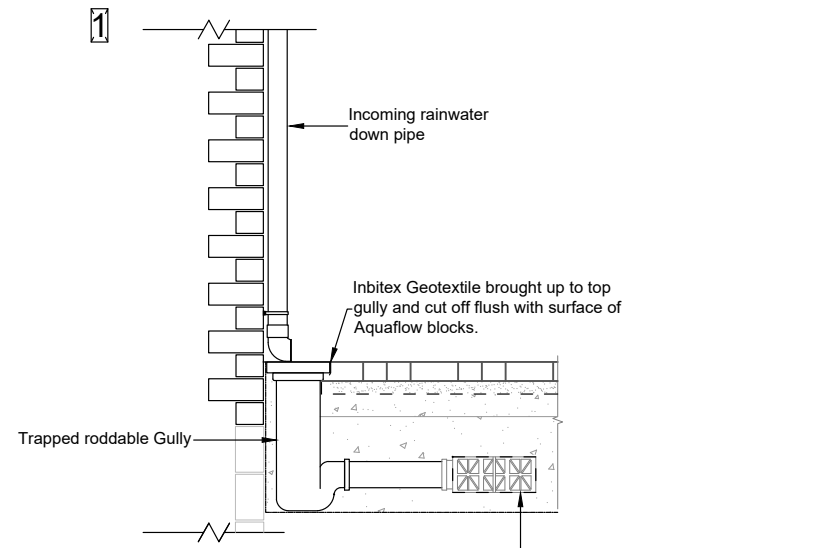
FULL HEIGHT RESTRAINT DETAIL
(EXISTING CONSTRUCTION TO AQUAFLOW TRANSITION)



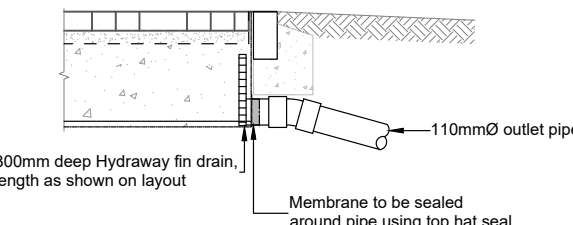
TYPICAL INLET DETAIL
(SINGLE SIZE 0.35 x 0.70 x 0.15m DEEP)



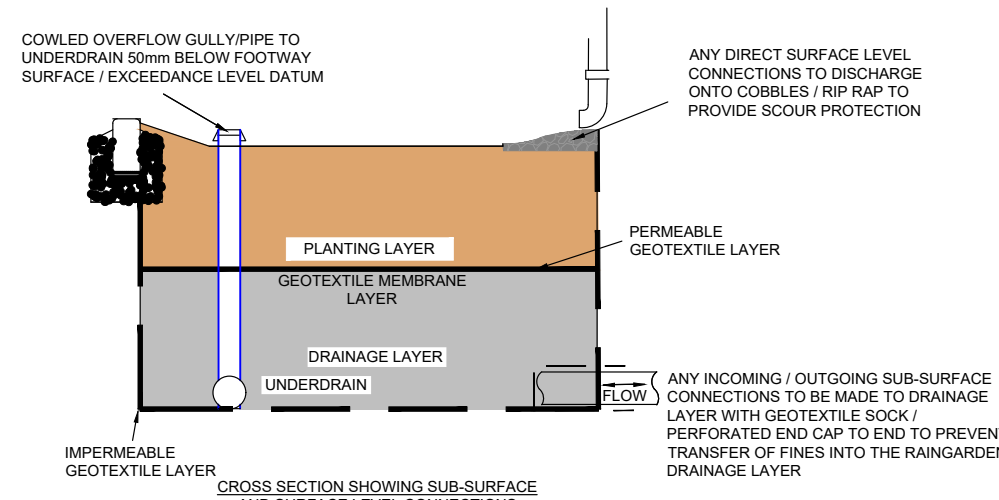
TYPICAL SERVICE STRIP DETAIL



TYPICAL INLET DETAIL
(SINGLE SIZE 0.35 x 0.70 x 0.15m DEEP)



TYPICAL FIN DRAIN OUTLET DETAIL



NOTE
ROAD LEVEL RAISED TO 50.50 AOD MINIMUM TO PROTECT DRAINAGE

- MAXIMUM ALLOWABLE DISCHARGE 5.5 l/s
- CONTRIBUTING AREA 825m²
- Q100 +40% CLIMATE CHANGE
- TOP OF FORMATION TO BE SHAPED SO THAT APPROPRIATE GRADIENT CAN ALLOW SURFACE WATER TO BE CHANNELLED TO APPROPRIATE MANHOLES.



STORM WATER SOURCE CONTROL SYSTEM
AquafLOW paving.

TYPE(S) OF PAVING
Permeable concrete block paving

REFERENCE
AquafLOW

SIZE
100 x 200 x 80 Thick

COLOURS

Red brindle, Golden brindle, Natural, Charcoal, Burnt red.

SETTING OUT

AquafLOW and Aquasetts:

900 herringbone with double stretcher course around all perimeters.

KERBS

Standard kerb system or Forest Edging: both to be haunched with concrete.

F:\Jobs\9529-GRY-01-00-DR-C-003-1-Graded\9529-GRY-01-00-DR-C-003-1-Indicative Drainage Strategy

LAYING COURSE*

50mm depth of 5mm. single size clean crushed stone to BS882.

GEOTEXTILE

Inhibex Geotextile as noted

SUB-BASE SPECIFICATION*

The granular sub-base material shall comprise crushed rock or concrete possessing well defined edges. It must be sound, clean, non friable and free from clay or other deleterious matter.

The material must be non plastic when tested in accordance with BS1377 Test No 4. *The crushed stone used for the laying course and sub-base must have a minimum 10% fines value of 150kN when tested in accordance with BS812 Part 111.

The selected test samples not be over dried and should be soaked in water at room temperature for 48-hours before the test. The 100mm deep upper layer of sub-base material should be graded 20mm-5mm to BS882.

The 63-10mm material should be graded as follows:-

BS Sieve size	% passing
100mm	100
63mm	90-100
37.5mm	60-80
20mm	15-30
10mm	0-5

DEPTH OF SUB-BASE

It is recommended that a sub-base depth of 350mm should be used. The depth of sub-base may be varied at the discretion of the engineer.

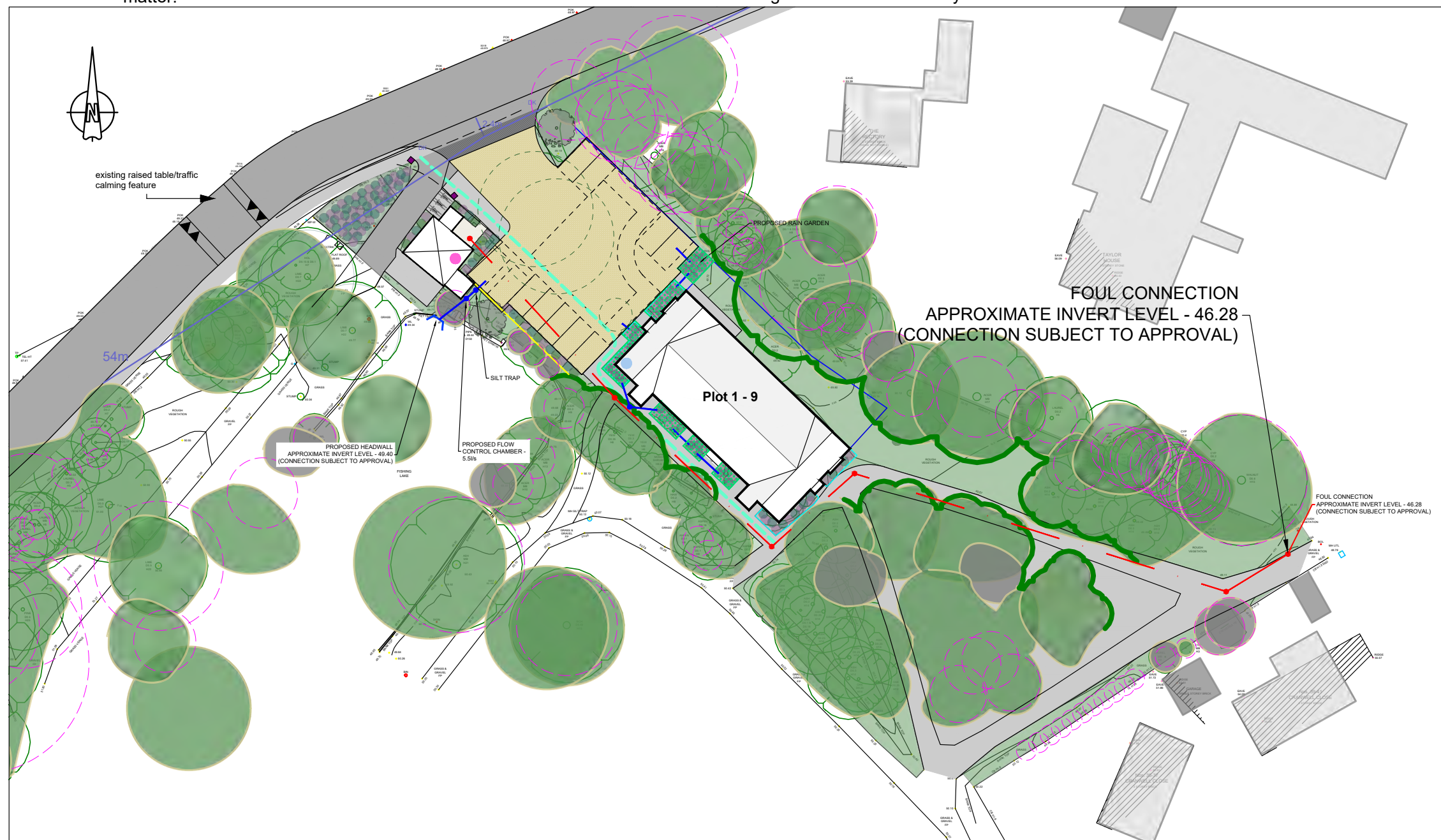
Intergrid(S) * - SC Intergrid

ASPHALT RUNNING COURSE

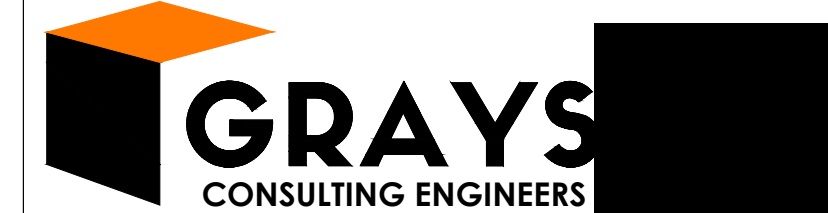
To be 20mm dense bitumen base course manufactured with 125pen bitumen to BS4987.

SURFACE FINISH

The blocks should be vibrated with a vibrating plate Type DVP75/22" or similar. Following the first pass with a vibrating plate a light dressing of 3mm single size clean stone should be applied to the surface and brushed in, approximately 2kg per m2. (available from Formpave in 40 kg bags). Blocks should again be vibrated and any debris brushed off.



REV	DESCRIPTION	BY	CHK	DATE
-----	-------------	----	-----	------



CLIENT
GLOUCESTER CITY HOMES

PROJECT TITLE
SCHOOL LODGE
GLOUCESTER

DRAWING TITLE
INDICATIVE DRAINAGE
STRATEGY

DRAWN	CHECKED	APPROVED	DATE	SHEET SIZE/SCALE	GRAYS JOB No.
GJ	RM	RM	17.07.2019	1:200@A1	9529

SUITABILITY	S2	REVISION	P1
-------------	----	----------	----

DRAWING NUMBER
9529-GRY-01-00-DR-C-003



NOTES

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH CURRENT CDM REGULATIONS 2015 AND HSG150. IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, PLEASE NOTE THE FOLLOWING:

- NOTES
1. DRAINAGE DESIGN SUBJECT TO APPROVAL.
 2. DO NOTE SCALE FROM THIS DRAWING, USE FIGURED DIMENSIONS ONLY.
 3. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE LATEST ENGINEERS, ARCHITECT'S DRAWINGS & SPECIFICATIONS.
 4. ALL RELEVANT DRAINAGE AND ASSOCIATED WORKS TO BE LAID IN ACCORDANCE WITH SEWERS FOR ADOPTION 7TH EDITION AND BUILDING REGULATIONS PART H (2010) UNLESS OTHERWISE STATED.

KEY

FLOW

DIRECTION OF FLOW

P2	REVISED TITLEBLOCK	GJ	RM	22.04.22
REV	DESCRIPTION	BY	CHK	DATE

GRAYS

CONSULTING ENGINEERS

CLIENT
GLOUCESTER CITY HOMES

PROJECT TITLE
SCHOOL LODGE
GLOUCESTER

DRAWING TITLE
FLOOD EXCEEDANCE
EVENT

DRAWN	CHECKED	APPROVED	DATE	SHEET SIZE/SCALE	GRAYS JOB No.
GJ	RM	RM	18.11.2019	1:200@A1	9529

SUITABILITY	S2	REVISION	P2
-------------	----	----------	----

DRAWING NUMBER
9529-GRY-01-00-DR-C-004

NOTES

This drawing is the copyright of Quattro Design Architects Ltd and should not be reproduced in whole or in part without written permission. Only figured dimensions to be used for construction. Check all dimensions on site. Any discrepancies are to be reported to the Architect as soon as possible.

REVISIONS

REV: DATE - DRAWN - CHECKED: NOTES

~: 26.02.20 - SS:
A: 21.07.20 - DC - CC:
Site plan revised following planning officers comments.
B: 29.07.20 - DC - CC:
Site plan updated with revised units. Bin and bike store now located within ground floor of accommodation block.
C: 10.09.20 - BM - CC:
Site plan updated with revised units.
D: 22.10.20 - DC:
Boundary treatment to rear of parking spaces adjacent to pond changed to knee rail. Stone pillars to adjacent to site access retained.
E: 12.11.20 - DC:
Schedule of accommodation updated following floor plan revisions.
F: 26.11.20 - DC:
Access track to north of School Lodge connecting to fishing pond reduced to 3.5m in line with Highways comments. Schedule updated with revised floor areas.
G: 10.02.22 - DC:
Site plan updated. Reduction of proposed residential units to 9no flats. Existing lodge building to be converted into community use.
H: 21.02.22 - DC:
Hardstanding and bike rack positions around School Lodge revised. Additional parking space added.

DRAWING TITLE

Proposed Site Layout

PROJECT

School Lodge, Matson

CLIENT

Gloucester City Homes

SCALE

1:500@A3

DATE

Feb 2020



DRAWING NO.

5591-P-1000

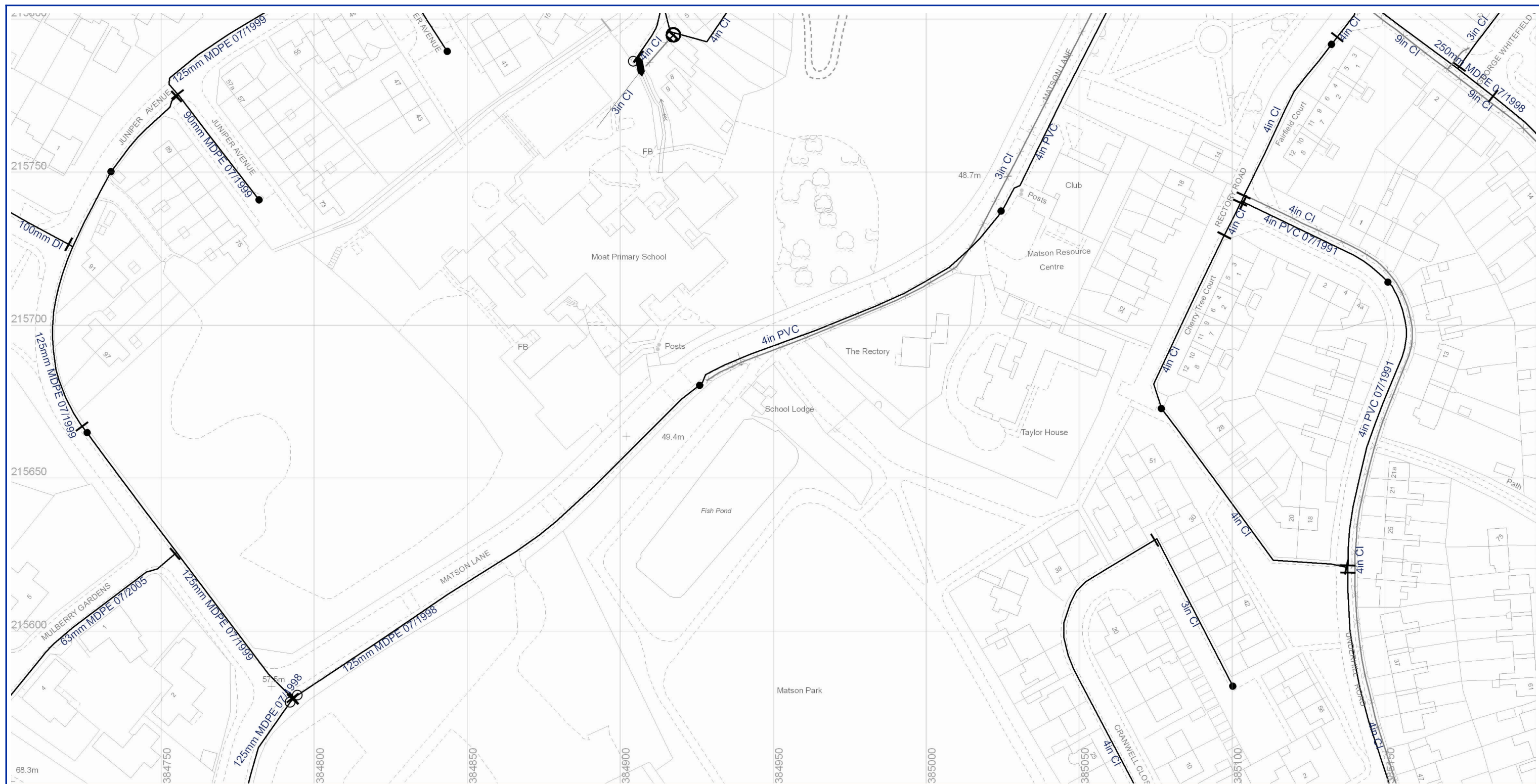
REV

H





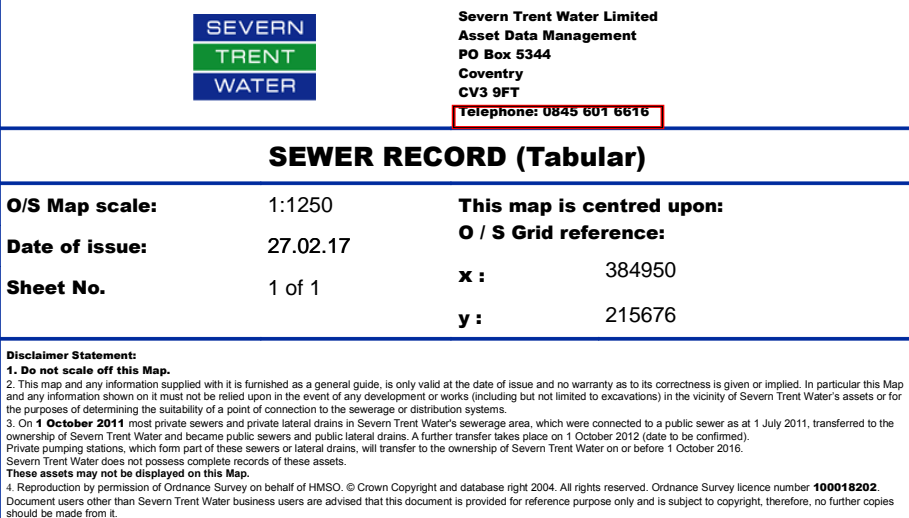
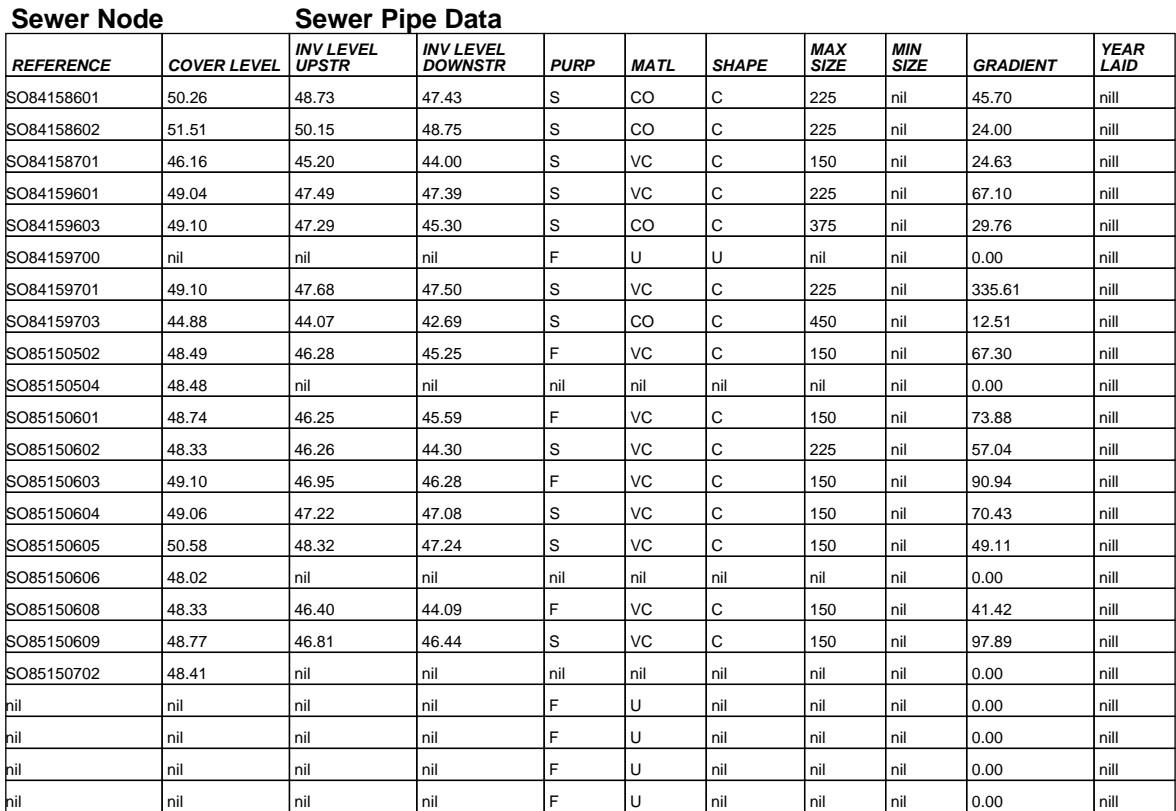


APPENDIX B – SEVERN TRENT WATER SEWER RECORDS



	Distribution Main		Pumping Facility		Water Isolation Valve (Closed)		Change In Characteristic	MATERIALS AC - ASBESTOS CEMENT AK - ALKATHENE C - CONCRETE CI - CAST IRON CU - COPPER DI - DUCTILE IRON GF - GLASS FIBRE GRC - GLASS REINFORCED CONCRETE GRP - GLASS REINFORCED PLASTIC HDPE - HIGH DENSITY POLY HDPE - HIGH PERFORMANCE POLY LDPE - LOW DENSITY POLY LEAD - LEAD MDPE - MEDIUM DENSITY POLY O - OTHER PC - PRE-STRESSED CONCRETE PF - PITCH FIBRE PP - POLY PROPYLENE PSC - PLASTIC STEEL COMPOSITE PVC - POLY VINYL CHLORIDE RPM - REINFORCED PLASTIC MATRIX SI - SPUN IRON SST - STAINLESS STEEL ST - STEEL UPVC - UNPLASTICISED PVC	LINING BI - BITUMEN CL - CEMENT PL - PLASTIC RL - RESIN O - OTHER
	Trunk Main (local/primary)		Booster Facility		Water Isolation Valve (Open)		Marker Post		
	Strategic Main		Potable Water Storage		Water Isolation Valve (Partially Open)		Cable Junction		
	Fire Supply Main		Water Tower		Water Air Valve		Anode		
	Fire Main		Well / Borehole		Pressure Reducing Valve		Boundary Box		
	Non-Domestic Customer Service Pipe		Intake		Pressure Sustaining Valve		Stop tap		
	Domestic Customer Service Pipe		Water Treatment Works / Chamber		Non-Return Valve		Cross Piece		
	Abandoned Main		Draw-off Tower		Float Valve		Strainer		
	Elevated Main		Bowser Point		Hydrant (Single/Double)		Listening Post		
	Aqueduct		Water Facility Connection		Washout (Single/Double)		Revenue Meter		
	Duct		Quality Sample Point		Bulk Meter		Housing, Building		
	Cable, Earthing				Water Hatch Box		Housing, Kiosk		
	Cable, Optical Fibre/Instrumentation				Pressure Tapping		Housing, Other		
	Cable, Low Voltage				Insertion Flow Meter Point		Pipe Support Structure		
	Cable, High Voltage				Water Chemical Injection Point		Open Pipe		
	Cable, Other				Motive Water Point		Discharge		
							End Cap		
							SSSI Area		
							Access Right		
							Pre-1937 Properties		

		Severn Trent Water Limited Asset Data Management PO Box 5344 Coventry CV3 9FT 	
<h2 style="margin: 0;">WATER MAINS RECORD</h2>			
O/S Map scale:	1:1250	This map is centred upon:	
Date of issue:	27.02.17	O / S Grid reference:	
		x :	384950
		y :	215676
Disclaimer Statement			
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APPENDIX C – CALCULATIONS

School Lodge: Matson Gloucester City Homes	Date: 14/04/2022		
	Designed by: BC	Checked by: LJ	Approved By: RM
Report Details: Type: Inflows Storm Phase: Phase	Grays Consultant Engineers Ltd: 5-6 Deryn Court Whalfedale Road Cardiff		



Catchment Area

Type : Catchment Area

Area (ha)	0.029
-----------	-------

Preliminary Sizing

Volumetric Runoff Coefficient	1.000
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100



Catchment Area (1)

Type : Catchment Area

Area (ha)	0.045
-----------	-------

Preliminary Sizing

Volumetric Runoff Coefficient	1.000
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100

School Lodge: Matson Gloucester City Homes	Date: 14/04/2022		
	Designed by: BC	Checked by: LJ	Approved By: RM
Report Details: Type: Stormwater Controls Storm Phase: Phase	Grays Consultant Engineers Ltd: 5-6 Deryn Court Whalfedale Road Cardiff		



Cellular Storage

Type : Cellular Storage

Dimensions

Exceedence Level (m)	49.407
Depth (m)	0.500
Base Level (m)	48.600
Number of Crates Long	8
Number of Crates Wide	8
Number of Crates High	1
Porosity (%)	95
Crate Length (m)	1
Crate Width (m)	1
Crate Height (m)	0.5
Total Volume (m³)	30.707

Inlets


Inlet

Inlet Type	Point Inflow
Incoming Item(s)	Pipe (2)
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	No Delay
Outlet Type	Free Discharge

School Lodge: Matson Gloucester City Homes		Date: 14/04/2022			
		Designed by: BC	Checked by: LJ		Approved By: RM
Report Details: Type: Inflow Summary Storm Phase: Phase		Grays Consultant Engineers Ltd: 5-6 Deryn Court Whalfedale Road Cardiff			

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Catchment Area	Standard MH (2)		Time of Concentration	0.029	100	0	100	0.029
Catchment Area (1)	Standard MH (1)		Time of Concentration	0.045	100	0	100	0.045
TOTAL		0.0		0.074				0.074

School Lodge: Matson Gloucester City Homes	Date: 14/04/2022		
	Designed by: BC	Checked by: LJ	Approved By: RM
Report Details: Type: Network Design Criteria Storm Phase: Phase	Grays Consultant Engineers Ltd: 5-6 Deryn Court Whalfedale Road Cardiff		



Flow Options

Peak Flow Calculation	(UK) Modified Rational Method
Min. Time of Entry (mins)	5
Max. Travel Time (mins)	30

Pipe Options

Lock Slope Options	None
Design Level	Level Inverts
Min. Cover Depth (m)	1.200
Min. Slope (1:x)	500.00
Max. Slope (1:x)	40.00
Min. Velocity (m/s)	1.0
Max. Velocity (m/s)	3.0
Use Flow Restriction	<input type="checkbox"/>
Reduce Channel Depths	<input type="checkbox"/>

Pipe Size Library

Default

Add. Increment (mm)	75
---------------------	----

Diameter (mm)	Min. Slope (1:x)	Max. Slope (1:x)
100	0.00	0.00
150	0.00	0.00

Manhole Options

Apply Offset	<input type="checkbox"/>
Synchronise Manhole Invert Levels	<input checked="" type="checkbox"/>

School Lodge: Matson Gloucester City Homes	Date: 14/04/2022		
	Designed by: BC	Checked by: LJ	Approved By: RM
Report Details: Type: Outfall Details Storm Phase: Phase	Grays Consultant Engineers Ltd: 5-6 Deryn Court Whalfedale Road Cardiff		



Outfalls

Outfall	Outfall Type	Fixed Surcharged Level (m)	Level Curve
Standard MH (1)	Free Discharge		

School Lodge: Matson Gloucester City Homes	Date: 14/04/2022		
	Designed by: BC	Checked by: LJ	Approved By: RM
Report Title: Rainfall Analysis Criteria	Grays Consultant Engineers Ltd: 5-6 Deryn Court Whalfedale Road Cardiff		



Runoff Type	Dynamic
Output Interval (mins)	1
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	<input type="checkbox"/>

Rainfall

FEH

Type: FEH

Site Location	GB 384982 215669 SO 84982 15669
Rainfall Version	2013
Data Type	Point
Summer	<input checked="" type="checkbox"/>
Winter	<input checked="" type="checkbox"/>

Return Period

Return Period (years)	Increase Rainfall (%)
100.0	40

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
240	480
360	720
480	960
960	1920
1440	2880

School Lodge: Matson Gloucester City Homes	Date: 14/04/2022		
	Designed by: BC	Checked by: LJ	Approved By: RM
Report Details: Type: Inflows Summary Storm Phase: Phase	Grays Consultant Engineers Ltd: 5-6 Deryn Court Whalfedale Road Cardiff		



Critical Storm

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow (m³)
Catchment Area	FEH: 100 years: +40 %: 15 mins: Summer	0.03	24.1	10.730
Catchment Area (1)	FEH: 100 years: +40 %: 15 mins: Summer	0.05	37.3	16.615

School Lodge: Matson Gloucester City Homes	Date: 14/04/2022		
	Designed by: BC	Checked by: LJ	Approved By: RM
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Grays Consultant Engineers Ltd: 5-6 Deryn Court Whalfedale Road Cardiff		



Critical Storm

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residual Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Cellular Storage	FEH: 100 years: +40 %: 60 mins: Winter	49.080	49.080	0.480	0.480	26.2	29.166	0.000	0.000	5.2	18.820	5	OK

School Lodge: Matson Gloucester City Homes	Date: 14/04/2022		
	Designed by: BC	Checked by: LJ	Approved By: RM
Report Details: Type: Inflow Results Storm Phase: Phase	Grays Consultant Engineers Ltd: 5-6 Deryn Court Whalfedale Road Cardiff		



Catchment Area
Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

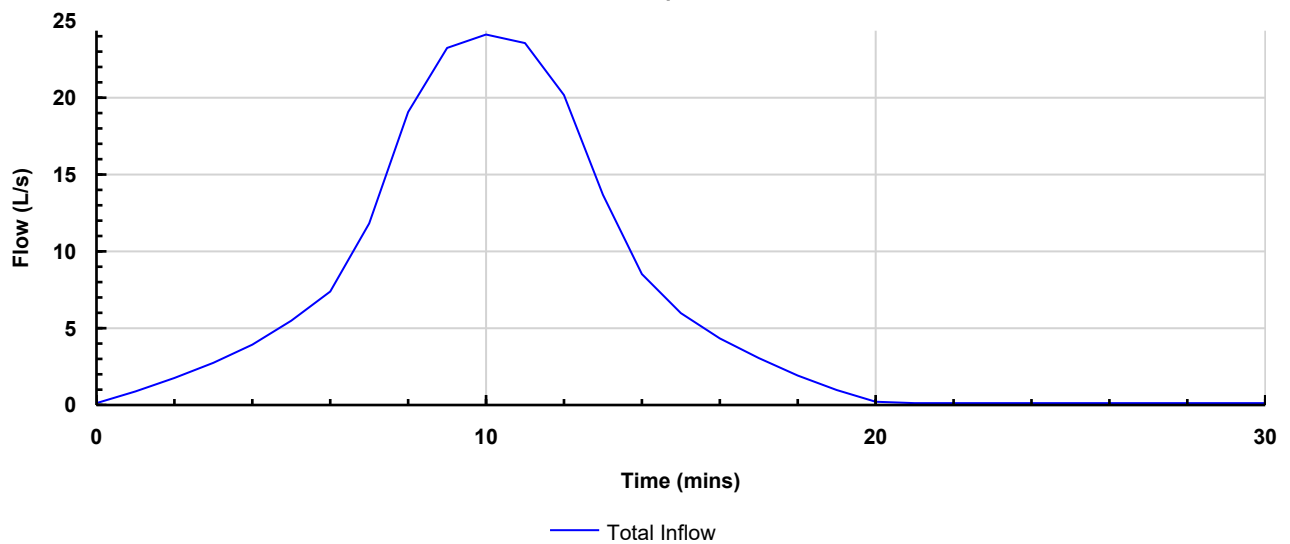
Type : Catchment Area

Inflow

Max. Inflow (L/s)	24.1
Total Inflow Volume (m³)	10.730

Graphs

Flow Graph



School Lodge: Matson Gloucester City Homes	Date: 14/04/2022		
	Designed by: BC	Checked by: LJ	Approved By: RM
Report Details: Type: Inflow Results Storm Phase: Phase	Grays Consultant Engineers Ltd: 5-6 Deryn Court Whalfedale Road Cardiff		

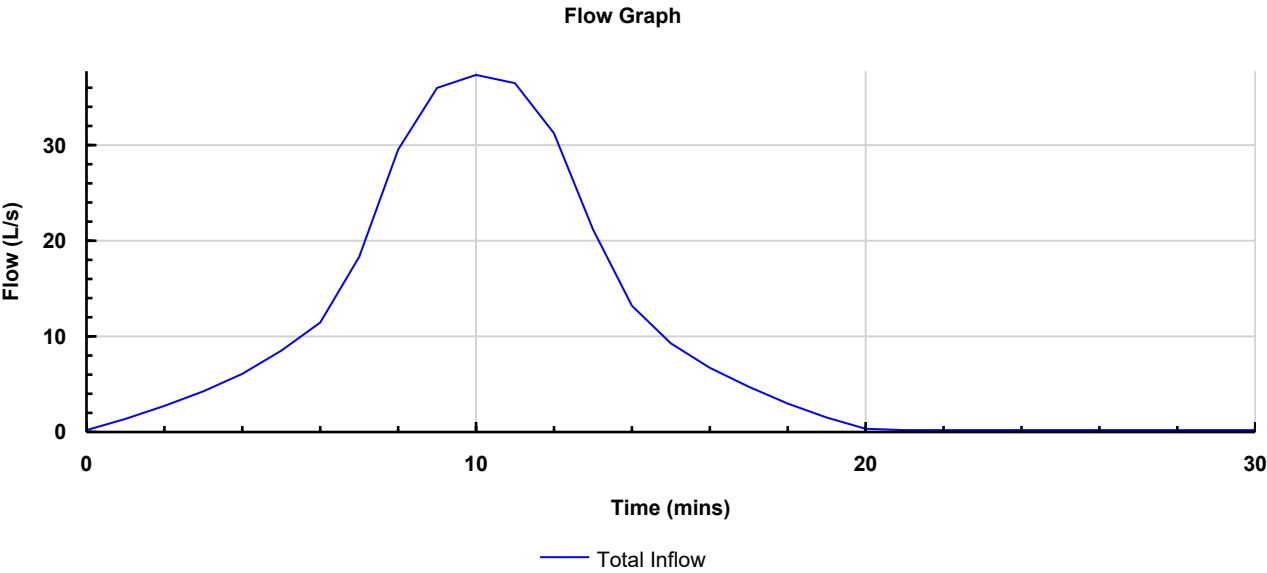


Catchment Area (1)
Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

Type : Catchment Area

Inflow	
Max. Inflow (L/s)	37.3
Total Inflow Volume (m³)	16.615

Graphs



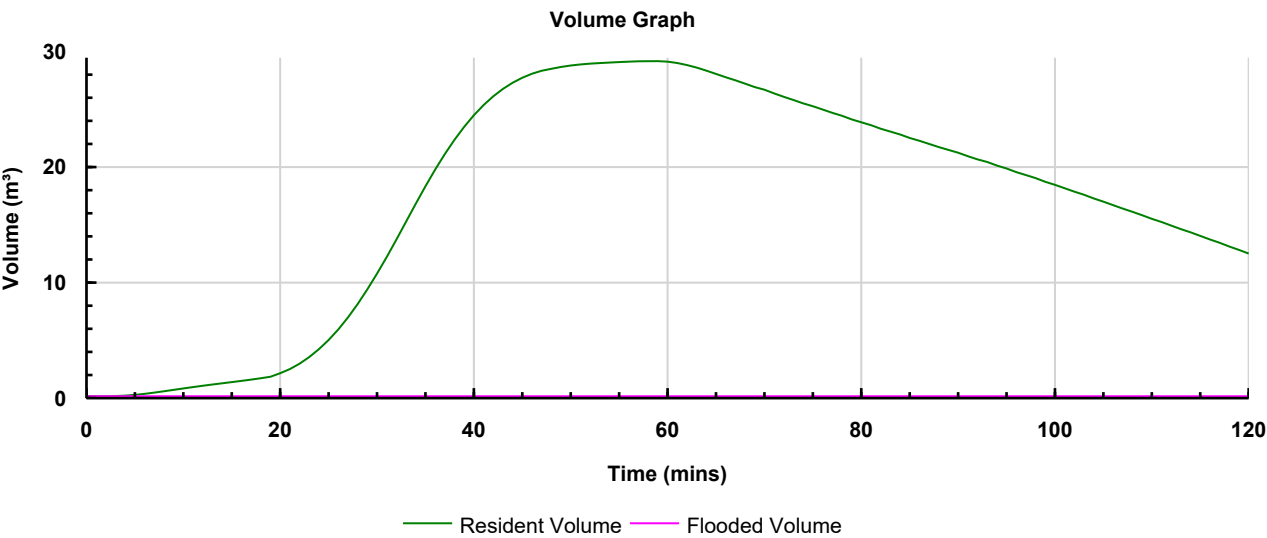
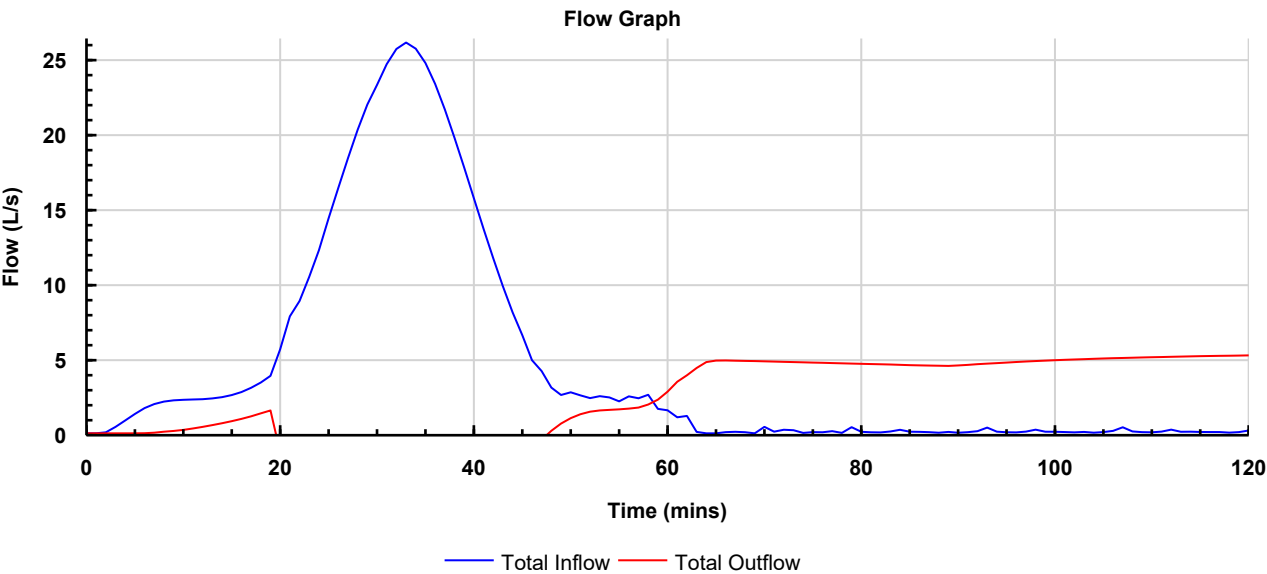
School Lodge: Matson Gloucester City Homes	Date: 14/04/2022		
	Designed by: BC	Checked by: LJ	Approved By: RM
Report Details: Type: Stormwater Control Results Storm Phase: Phase	Grays Consultant Engineers Ltd: 5-6 Deryn Court Whalfedale Road Cardiff		




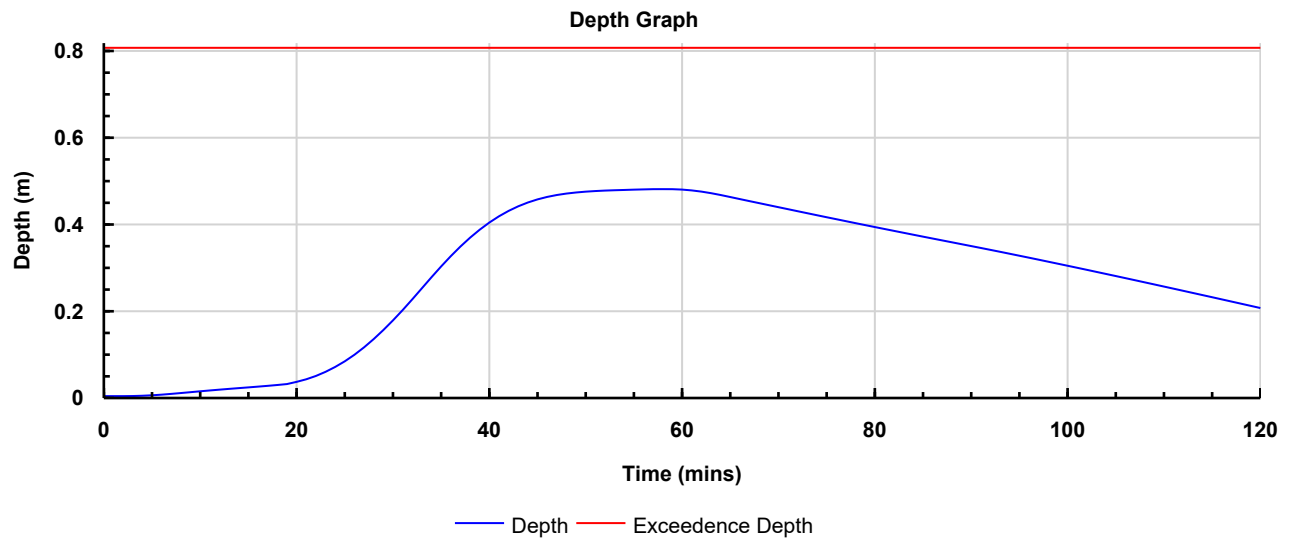
Cellular Storage
Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 60 mins: Winter

Type : Cellular Storage

Graphs



School Lodge: Matson Gloucester City Homes	Date: 14/04/2022		
Report Details: Type: Stormwater Control Results Storm Phase: Phase	Designed by: BC	Checked by: LJ	Approved By: RM
Grays Consultant Engineers Ltd: 5-6 Deryn Court Whalfedale Road Cardiff			





APPENDIX D – CORRESPONDENCE

Lead Local Flood Authority

Shire Hall
Gloucester
GL1 2TH

Paul Instone
Gloucester City Council
Planning
Shire Hall
Westgate Street
Gloucester
GL1 5TG

Please ask for: Peter Siret

Phone:

Our Ref: G/2019/043906

Your Ref:
19/01110/FUL/LLFA

Date: 4 November 2019

Dear Paul Instone,

TOWN AND COUNTRY PLANNING ACT 1990 LEAD LOCAL FLOOD AUTHORITY RECOMMENDATION

LOCATION: The School Lodge 1 Matson Lane Gloucester GL4 6DX

PROPOSED: Proposed development of 10 residential units (including 3 storey building comprising 9no. 1 bedroom flats, and conversion of the existing curtilage listed lodge (curtilage to Grade 2 listed building) to 1no. 2 bedroom house), open space, landscaping, sustainable drainage system, car parking and associated works

I refer to the notice received by the Lead Local Flood Authority (LLFA) requesting comments on the above proposal. The LLFA is a statutory consultee for surface water flood risk and management for major planning applications and has made the following observations and recommendation.

Flood Risk

As the site is less than 1ha and is in flood zone 1, a flood risk assessment was not required for this planning application. However, the applicant has included one in their drainage strategy document (July 2019, CDGA-9529-REP01), which demonstrates that there is a low risk of flooding to the site.

Surface water management

Discharge strategy

The applicant has not carried out any infiltration tests but state they will do so prior to submitting a detailed drainage design. Instead, they have provided a strategy to discharge into the adjacent fishing pond and have provided correspondence with the drainage engineer at Gloucester City Council (6th February 2018) with approval of this.

Discharge rates

The existing runoff rate has been calculated as 7.9l/s, which is a combination of the greenfield runoff rate and the runoff rate from the existing hardstanding areas. The proposed discharge rate is 5.5l/s. The LLFA asks that, for brownfield sites, if restricting the discharge rate to the greenfield runoff rate is not practicable then a betterment of 40% should be sought (see our website for our standing advice: <https://www.gloucestershire.gov.uk/planning-and-environment/flood-risk-management/surface-water-drainage-and-major-planning-applications/>). Although the applicant is restricting the discharge rate, the proposed betterment is 30 % rather than 40%.

Please can the applicant provide a strategy that provides betterment that meets the LLFAs guidance? This is likely to result in an increase to the size of the underground storage tank, however, given the space available on site, this appears possible.

Drainage strategy and indicative plan

The applicant is proposing to use underground attenuation tanks for the method of storing surface water. While this is sufficient to manage the water quantity aspects of SuDS, it doesn't offer any benefits towards amenity, biodiversity or water quality. The latter is particularly important because the surface water is being collected from the car park, could contain hydrocarbons and is being discharged into a fishing lake. The Gloucester City Council drainage engineer also raised this issue when consulted in February 2018 and recommended using a tanked, permeable paving system. This will be sufficient to meet guidance set out in the CIRIA SuDS guide C753.

Please can the applicant provide a drainage strategy that manages water quality as well as water quantity?

Climate change

The applicant is using 40% for climate change, which meets the Environment Agency's current estimates.

Exceedance flow paths

A specific plan showing the exceedance flow paths, which identify where surface water will travel across and off the site during rainfall events that exceed the design of the drainage network (1 in 100 year plus 40% for climate change), has not been included. However, the topography on the Indicative Drainage Strategy (Drawing no: SK-01, Revision: P1), shows the site broadly falls to the northwest towards Matson Lane. As long as the site topography doesn't alter this, this would be satisfactory. This information can be provided in a detailed drainage design.

LLFA Recommendation

The LLFA recommends an **objection** to this application as the drainage strategy provided does not adequately restrict the surface water discharge rate or manage water quality.

NOTE 1 :The Lead Local Flood Authority (LLFA) will give consideration to how the proposed sustainable drainage system can incorporate measures to help protect water quality, however pollution control is the responsibility of the Environment Agency

NOTE 2 : Future management of Sustainable Drainage Systems is a matter that will be dealt with by the Local Planning Authority and has not, therefore, been considered by the LLFA.

NOTE 3: Any revised documentation will only be considered by the LLFA when resubmitted through suds@gloucestershire.gov.uk e-mail address. Please quote the planning application number in the subject field.

Yours sincerely,

Peter Siret
Sustainable Drainage Engineer



APPENDIX E – EA FLOOD MAP

Flood map for planning

Your reference
Marton Lane

Location (easting/northing)
384794/215542

Created
22 Apr 2022 10:55

Your selected location is in flood zone 1, an area with a low probability of flooding.

You will need to do a flood risk assessment if your site is **any of the following:**

- bigger than 1 hectare (ha)
- In an area with critical drainage problems as notified by the Environment Agency
- identified as being at increased flood risk in future by the local authority's strategic flood risk assessment
- at risk from other sources of flooding (such as surface water or reservoirs) and its development would increase the vulnerability of its use (such as constructing an office on an undeveloped site or converting a shop to a dwelling)

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence **which** sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2021 OS 100024198. <https://flood-map-for-planning.service.gov.uk/os-terms>











Flood map for planning

Your reference
Marton Lane

Location (easting/northing)
384794/215542

Scale
1:2500

Created
22 Apr 2022 10:55

-  Selected point
-  Flood zone 3
-  Flood zone 3: areas benefiting from flood defences
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Water storage area

0 20 40 60m



info@wyedean-ecology.com

ECOLOGICAL APPRAISAL; LAND AT MATSON, GLOUCESTER.

ISSUE 1

Client	Gloucester City Homes
Consultants	Wyedean Ecology Ltd.
Surveyors	Denis Jackson, MSc CBiol FRSB MCIEEM Mem.MBA, Camilla Winder BSc(Hons) MSc MPhil MCIEEM
Report Author(s)	Denis Jackson,
Checked by	Val Jackson BSc
Report Date	4 th September 2019

Editorial History

Activity	Date	Name / reason
Draft 1	31 st August 2019	Denis Jackson
Issue 1	2 nd September 2019	Denis Jackson / typographical corrections
Issue 2	4 th September 2019	Denis Jackson / minor amendments to scheme detail.

Contents

1 NON-TECHNICAL SUMMARY	4
2 INTRODUCTION	5
2.1 Background	5
2.2 Assessment and Report Objectives	5
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1 NON-TECHNICAL SUMMARY

This section provides an overview of the findings of the assessment undertaken together with key recommendations. The main body of the report contains important information in respect of how the assessment was undertaken, its findings, its recommendations and any constraints which may apply. It is essential that the report is read in full by any person intending to rely on its contents.

In order to determine the ecological impact of a proposed housing scheme, a Ecological Appraisal was undertaken of the proposed development site. The work included assessments of the habitats present, the potential for protected species to be present and assessments of any potential impacts of the development on those habitats and species, both present on site and within the zone of impact of the proposed development.

The proposed development site is ecologically very small and there are no rare, scarce or protected habitats within the site boundary. Much of the site is hard standing and footpaths. Other than a small, low conservation status bat roost in the lodge building on site, historical use of the adjacent fishing lake by Otter, and use of the building and vegetation by breeding birds, there is no evidence or likelihood of the site being used by protected species.

In order to progress works to the lodge, a licence from Natural England will be required. Within the report, we have made recommendations in respect of precautionary working methods, mitigation and enhancement to comply both with legislation and with current planning policy.

Once the timing and sequence of works is known and before any works commence on site, a Construction Ecological Management Plan (CEMP) will be required. The CEMP will detail how clearance, ground work and construction activities shall be undertaken and managed in accordance with the recommendations the ecological requirements detailed within this Ecological Appraisal together with any additional planning conditions which may be applied by Gloucestershire City Council during the course of the planning application.

Depending on the anticipated timing of works, because of seasonal restrictions on removal of scrub etc. to avoid committing offences in respect of nesting birds and reptiles, it may be that cutting back and or removing scrub before planning consent is granted would be appropriate. Before doing so, however, it is strongly recommended that consent to do so is requested from the relevant, local authority planning officer.

Under current regulations, it should be noted that, because of the proximity of the site to the nearby protected sites, it is likely that a Habitats Regulation Assessment screening by the planning authority will be required.

2 INTRODUCTION

2.1 BACKGROUND

Wyedean Ecology Ltd. was commissioned by Mr. Robert Panou, on behalf of Gloucester City Homes, to undertake an Ecological appraisal, of a parcel of land known as School Lodge, Matson, Gloucester, in support of a planning application. This report details the findings of that appraisal and provides an initial assessment of the ecological value of the site, the potential ecological impacts of the proposed development, recommendations for further surveys (where required) and outline recommendations in respect of mitigation and biodiversity enhancement.

2.2 ASSESSMENT AND REPORT OBJECTIVES

The survey and report have been designed thus:

- A desk study to identify, collate, analyse, and interpret historical biological records, and other ecological reference material pertaining to the site;
- A field survey to collect new biological and ecological data from the site;
- To identify what, if any, additional ecological surveys or assessments may be required;
- To use all the above data, as appropriate, to determine the positive and/or negative impacts on biodiversity which will accrue as a result of the proposed development, and to determine the significance of those impacts on the habitats and species present on the site; and
- To offer recommendations for avoidance, mitigation and enhancement to reduce significant adverse impacts, and to quantify residual impacts and biodiversity gains.

2.3 SITE LOCATION AND EXTENT OF SURVEY

The site sits within the Gloucestershire suburb of Matson. The approximate site centroid is SO 8496 1566.

The red-line site boundary extends to approximately 0.345ha and the area within that subject to development works is approximately 0.16ha.

The whole site lies within the jurisdiction of Gloucester City Council (GCC). A map showing the approximate location of the site is provided in Figure 1.

The desk study considered a circular area with a 2km radius, centred on the approximate centroid of the proposed development site. The field survey examined the area within the confines of the site boundary, but also considered those habitats immediately adjacent to that boundary, at least up to 50m beyond it, where access could be legally obtained. In addition, all ponds and other water bodies which could be identified within 250m of the proposed development, where they were not separated from the site by a significant physical barrier and where access could be obtained, were evaluated for their probability to support Great Crested Newt.

Figure 1 – General location of School Lodge site, Matson(site arrowed red)



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2.4 PROPOSED DEVELOPMENT

We are advised that the scheme comprises refurbishment, including re-roofing, of the existing School Lodge and construction of a small apartment block with associated walkways, car parking, lighting and landscaping. Works will require removal of scrub within the garden of the Lodge and small area of scrub outwith the lodge garden, removal of two mature Ash trees (numbered T29 and T31 within the Tree Survey Report), A Holly (T30), an Apple (T32) a mixed species group (T36) and a Norway Maple. A number of immature trees, throughout the site will

also require removal. There will be some cutting back (but not felling or removal) of mature trees elsewhere on site.

The southern part of the site will not form part of the land to be developed. As a consequence of this, less than 1/3 of the currently vegetated parts of the site within the red-line boundary will be developed.

2.5 CRITERIA FOR EVALUATION

The site was assessed for its ecological value and the potential impact of the proposed development, generally following the recommendations given in Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2017).

3 DESKTOP STUDY

3.1 BACKGROUND

The desk study is intended to identify historical and current information on statutory designations, known habitat types present, historical species records, and historical site usage. It can inform the ecological assessment of the site, including the value of the habitats present on the site within a wider landscape setting.

3.2 METHODOLOGY

A data search undertaken by the Gloucestershire Centre for Environmental Records (GCER) for information on and historical records of protected and/or scheduled species within a 2km radius of the site's central grid reference was commissioned. The data search also included details of designated sites within 10km.

Aerial photographs and maps were examined, prior to the site visit, to obtain an initial overview of the habitat on the site and the surrounding areas. Dr Gareth Parry of Gloucestershire Wildlife Trust was subsequently contacted to discuss reports of Otter on the site.

3.3 DESKTOP STUDY RESULTS

3.3.1 STATUTORY DESIGNATIONS

The site is not subject to any statutory conservation designations, nor are there any such sites within 500m of the site boundary.

Robinswood quarry, a geological Site of Special Scientific Interest (SSSI), is approximately 1.45km to the south west. This was the only SSSI within 2km of the site boundary.

There is one Special Area of Conservation (SAC) within 10km; Cotswold Beechwoods, approximately 3.7km to the south east and one Special Protection Area (SPA), Walmore Common, approximately 10km to the south west.

3.3.2 NON-STATUTORY DESIGNATIONS

The nearest non-statutory designated site is Robinswood Hill Country Park Key Wildlife Site (KWS), approximately 350m to the west. The qualifying feature at this site is semi-natural grassland. There is another site, Matson Woods KWS, designated for its ancient semi-natural broadleaved woodland, approximately 450m to the south. Within 2km, there are two Local Nature Reserves (LNR); Robinswood Hill, approximately 425m distant and Saintbridge Balancing Pond, approximately 860m distant.

3.3.3 GRANTED EUROPEAN PROTECTED SPECIES LICENCES

There were two records of European Protected Species Licences (EPSL) being issued within 2km of the site boundary. Within 500m, there was a record of a single EPSL issued in 27/06/2013 (EPSM2012-4851) to permit the destruction of a non-breeding resting place used by Great Crested Newt (GCN).

Between 1km and 1.5km, there was a record of a single EPSL issued in 2013 (EPSM2013-6193) in respect of Brown Long Eared Bat.

3.4 PROTECTED, PRIORITY, AND OTHER SPECIES (E.G. SECTION 41) SPECIES

There were no historical species records made at the proposed development site.

Within 500m of the site centroid, the following records with potential to be relevant to the development were returned: -

- Common Frog (228m, 2000) and several other records of this species;
- Grass Snake (286m, 2005);
- Common Toad (2013) and several other records of this species;
- Great Crested Newt (294m, 2016) and another record, dated 2010, 285m distant;
- Hedgehog (382m, 2017); and
- Slow Worm (285m, 2017);

In addition to the records above, there were numerous records returned from within the search area for highly mobile, mostly avian species, including gulls, ducks and waders.

3.5 STATIC WATER BODIES

Mapping showed one small lake immediately adjacent to the site boundary. Another was shown approximately 185m from the site boundary, to the south west. A pond was shown approximately 215m to the south with another 286m in the same direction. A number of other ponds were identified more distantly.

3.6 CONSTRAINTS

Some historical species records returned in the data search were only provided (and possibly originally recorded) at 1km resolution, meaning that it was not possible to determine if the records were made within or outwith the site boundary.

4 FIELD SURVEY

4.1 SUMMARY

The following habitats are present on (or immediately adjacent to) the site:

- Dense, scattered and ephemeral scrub;
- Trees;
- Hedges;
- Hard surfaces;
- Amenity grassland;
- A static waterbody; and
- A building.

The site is considered to have potential to have impacts on the following habitats and protected species:

- Trees;
- Water Vole;
- Badger;
- Otter;
- Hedgehog;
- Reptiles;
- Great Crested Newt;
- Fish and other aquatic/marine species; and
- Breeding and wintering birds.

4.2 BACKGROUND

A Phase 1 Habitat Survey is a method and habitat classification system that was developed by the Nature Conservation Council (now Joint Nature Conservation Committee) to map habitats and land use categories to a “*consistent level and accuracy*”. Vegetation and habitats are mapped to provide a summary of broad habitat types, allowing visual assessment of the extent and distribution, and where appropriate, target notes highlight any potential features of interest.

An Extended Phase 1 Habitat Survey also records provisional signs of protected or notable species (including European Protected Species) and assesses the potential suitability of the habitats on site and within the accessible surroundings to support such species. These species include (but are not limited to):

- Otter;
- Water Vole;
- Hedgehog
- Bats (all species);
- Dormouse;
- Badger;
- Reptiles;
- Great Crested Newt;
- Fish and other aquatic/marine species; and
- Birds.

4.3 METHODOLOGY

4.3.1 WALKOVER SURVEY

A walkover survey was undertaken, by Denis Jackson, MSc CBiol FRSB MCIEEM Mem.MBA, an ecologist with twelve years professional ecological experience, and who holds survey and/or disturbance licences for Bats, Dormouse, Great Crested Newt, White-Clawed Crayfish, Barn Owl, Red Kite and Goshawk, and Camilla Winder BSc(Hons) MSc MPhil MCIEEM, an ecologist and botanist with 15 years experience of professional ecological practice. The survey visit took place on 3rd December 2018. The survey was undertaken in general accordance with the guidance on field surveying outlined in the Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit (JNCC 2010).

It should be noted that, because the standard Phase 1 survey recording and mapping protocols do not work well for small sites of this nature, with many different habitat-types present, some deviation from the published protocol has been made to more accurately describe the fine scale habits present, and to facilitate a more complete understanding of the site for those readers who have not been able to visit in person.

It should also be noted that the botanical survey was undertaken at a sub-optimum time of year for such surveys. Given the nature of the habitats present on site, this is not considered to be a significant constraint and it was not considered necessary to repeat the botanical survey at any other time of year as any such additional survey work was considered extremely unlikely to modify the conclusions of this report. Although the species-list was not updated during the course of subsequent work, no botanical species of note were reported by any of the team members, during any of the species-specific surveys we have undertaken.

4.3.2 BAT SURVEY

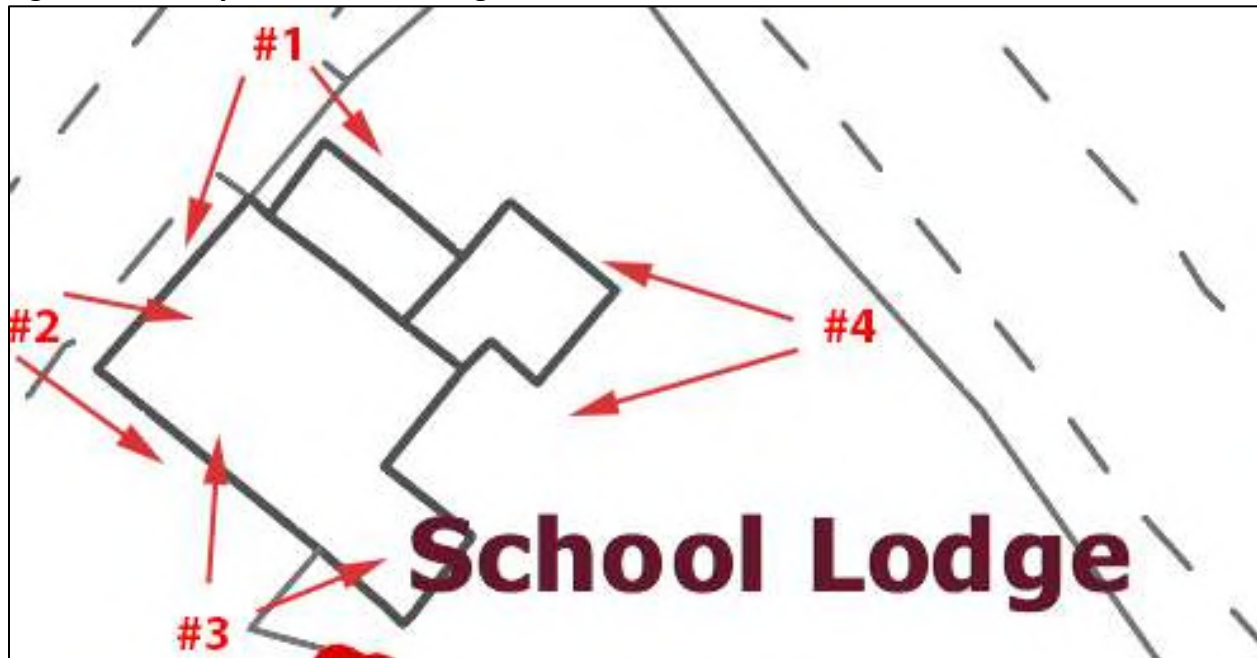
In addition to the habitat survey, a scoping survey for bats was undertaken by Mr Jackson of the school lodge building (the only building on the site) on the same day as the walkover survey. All trees on site were subject to a ground-based inspection. Two trees to be removed (T29 and T31 in the Tree Report) were considered to have unresolved potential for bats to be present and were subsequently subject to a climbing survey on 23rd August 2019 by Mr. Darren Woolfall BSc (Hons), an arborist with experience of undertaking such investigations.

Subsequent to the scoping survey of the building, which found a small number of bat droppings in the roof of the lodge, bat activity surveys were also undertaken. All bat survey work was undertaken in accordance with Collins, J. (ed.) (2016). The bat activity surveys were led by Mr. Jackson, assisted by Val Jackson BSc who has more than five years' bat survey experience, Stuart Skinner, who has more than five years' bat survey experience, and Petra Mitchard BA MSc, a trainee with one years' bat survey experience. Bat detectors used were Batlogger Ms and an Anabat Walkabout. Details of the survey visits are provided in Table 1. Location of surveyors is shown in Figure 2.

Table 1 – Summary of surveys undertaken (Wind using Beaufort scale)

Survey Type	Date	Timing	Sunset/sunrise	Weather
Survey 1 - Dusk	15.05.19	20:40 – 22:45	20:55	Clear & Dry. 10% cloud cover. Wind F0 - 1. Temp 18 - 14°C
Survey 2 - Dusk	16.06.19	21:10 – 23:10	21:25	Clear & Dry. 10 - 30% cloud cover. Wind F0 - 1. Temp 14°C
Survey 3 – Dawn	25.07.19	03:35 – 05:35	05:20	Clear & Dry. 10% cloud cover. Wind F0. Temp 16°C

Figure 2 – Surveyor locations and sight lines.



4.3.3 GREAT CRESTED NEWT SURVEY

A Habitat Suitability Index (HSI) was undertaken of the fishing lake adjacent to the site in accordance with the methodology given in Oldham *et al.* (2010). Based on the results of this assessment, water from the lake was collected on April 16th 2019 in accordance with the field protocol given in Biggs *et al* (2014) and the samples sent to an accredited laboratory, SureScreen Scientifics Ltd, the same day.

A second pond, approximately 190m to the south west, within the grounds of Matson House could not be investigated. This property is now a nursing home. We emailed and wrote to Selwyn Care, the owners and operators but unfortunately, our messages were not returned. It was not possible to view this water body from any public right of way and therefore, we can provide no further details of it. A third pond was located approximately 250m to the south east of the boundary of that part of the site to be developed. This pond was also subject to an HSI assessment.

4.4 FIELD SURVEY RESULTS

4.4.1 HABITATS

The habitats identified on site are described below and their extent and distribution is shown in Figure 3. Site photographs are provided in Appendix 1.

The scale of the development proposals at the time of survey was greater than that which is now proposed. For completeness, we have reproduced herein mapping of all habitats and ecological features within the area we surveyed. The current scheme outline/red line boundary is shown in Figure 4.

A number of features of interest were also recorded, either for which there is no appropriate categorisation, or which were very small and would result in a cluttered map, which would be difficult to read. These have been annotated as Target Notes (TN, detailed in Table 2). Tree species identified have been coded and a key provided in Table 3.

The map shows a garden area with various habitats and features. Seven numbered red boxes (1-7) highlight specific areas of interest. The legend in the bottom left corner defines the symbols used for different vegetation types and features.

Legend:

- Broadleaved trees
- Mixed trees, scrub & ruderals
- Mixed garden and native shrubs
- Amenity grassland
- Dense scrub
- Ephemeral/short perennial
- Tall ruderals, disturbed ground
- Hard standing
- Native hedgerow
- Conifer hedge
- Ornamental shrub hedge
- Fence panel
- Broadleaved tree

Map Labels:

- Posts
- The Rectory
- Taylor House
- 49.4m
- Fish Pond
- 39

Figure 4. Current scheme proposal including red line boundary.

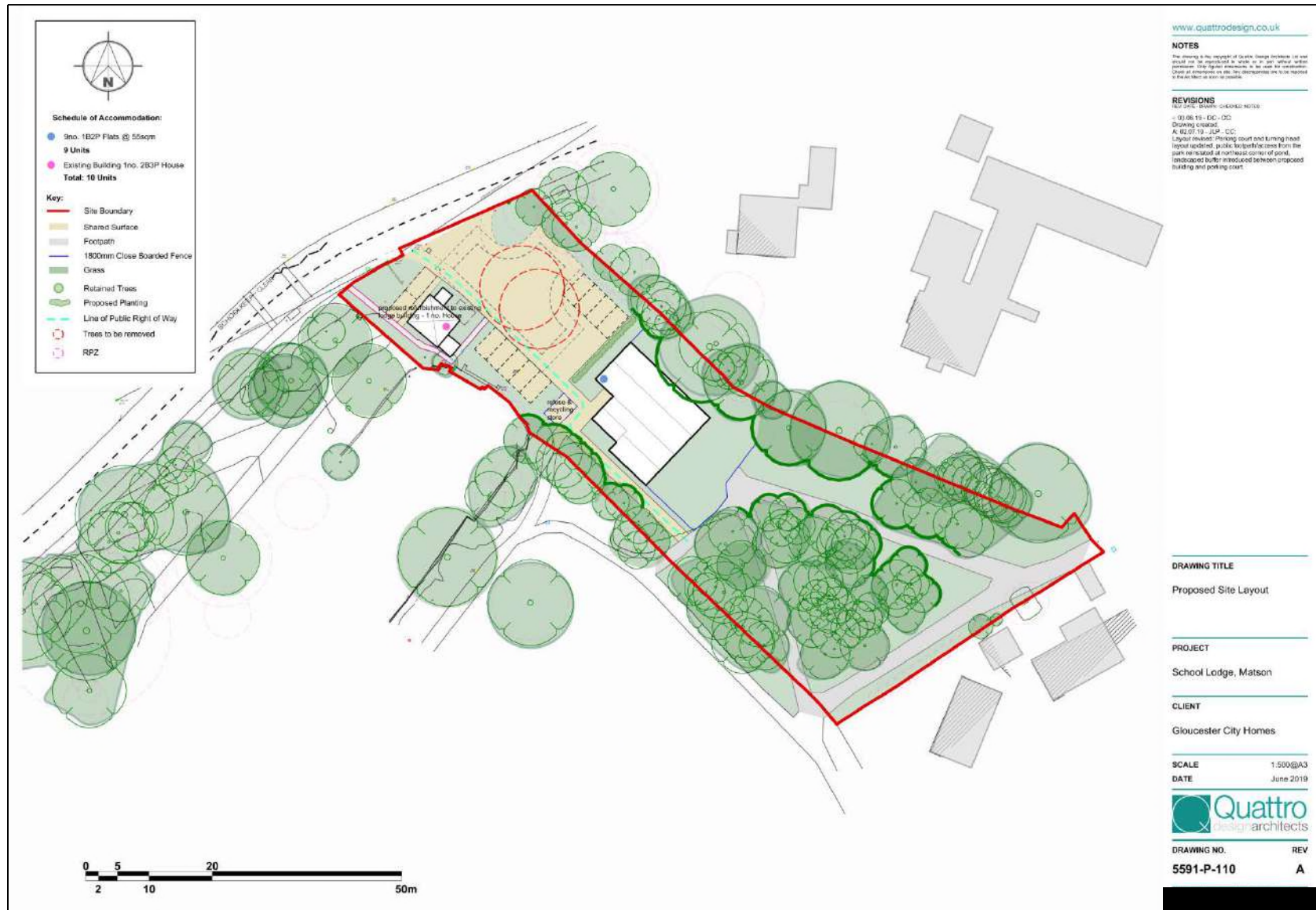


Table 2. Tree species codes.

Species Code	Species
Tb	Taxus baccata-Yew
Teu	Tilia europaea-Common lime
Pca	Populus x Canadensis- Hybrid black poplar
Fe	Fraxinus excelsior- Ash
Pop.	Populus sp.-Poplar sp.
Ca	Corylus avellana-Hazel
Sa	Salix alba-White willow
Ps	Prunus spinosa
Cm	Crataegus monogyna
Ia	Ilex aquifolium-Holly
Pc	Pyrus communis-Pear
Pd	Prunus domestica-Wild plum/damson
Mp	Malus pumila- Apple
Jr	Juglans regia- Walnut
Rp	Robinia pseudacorus- False acacia
Sv	Syringa vulgaris – Lilac
Fc	Ficus carica - Fig

Table 3 Target Notes (TN).

Target Note number	Description
TN1	Park entrance & road verge (Plate 1)
TN2	Lodge Building (Plate 2)
TN3	Overgrown lodge garden (Plate 3)
TN4	Large area of hard standing (Plate 4)
TN5	Fishing lake adjacent to site boundary (Plate 5 & 5a)
TN6	Stand of young Ash with some Oak (Plate 6)

4.5 BASELINE ECOLOGICAL CONDITIONS - HABITATS

The area within the red line boundary is approximately 0.35a in size, with the area with the area subject to development approximately 0.16ha. The site is accessed via an existing gateway, from Matson Lane (TN1, Plate 1).

The largest parts of the site are the lodge building (TN2, Plate 2) and its associated, now overgrown, garden area (TN3, Plate 3), with hedge bordering it, an area of hard standing (TN4, Plate 4) currently used for parking by people visiting the park and an adjacent fishing lake, immediately adjacent to the site boundary (TN5, Plate 5)

Elsewhere on the site there are areas of scrub, ruderals, a small stand of immature Oak and Ash mature trees and footpaths.

Immediately outwith the development site to the north and west, the site is bounded by dense housing and roads. Immediately to the south is the fishing lake, previously mentioned and beyond this, and also to the east, is a large area of parkland, largely mowed but with many areas of scrub, particularly along boundaries. There are many mature trees and hedges and a number of ponds.

During the considerable time we have spent on site, we have noted that the parkland is much favoured by joggers and dog-walkers. The fishing lake is managed by a local angling club and is stocked, usually twice a year, with a range of coarse fish.

4.5.1 TREES

Trees on and adjacent to the site are well documented in the tree report and, as a consequence, not all are fully described herein.

Near to the house, there were two tall Ash trees (T29 and 31 in the Tree Report) and a smaller holly tree, on the north boundary. On the south hedgerow boundary a tall apple tree and smaller holly tree were present

At the site boundary, adjacent to the hard standing area shown in Plate 4, is a line of trees including three tall, densely Ivy-clad False Acacia standards at northern end, and three Sycamore standards, with smaller Holly, Hawthorn and Sycamore in between.

Towards the south part of the site (and outwith the part subject to development), is a small stand of young Oak and (predominantly) Ash (TN6, Plate 6).

Some evidence of Ash dieback was seen on other Ash trees, outwith the current development site boundary but close to the fishing lake.

4.5.2 DENSE, SCATTERED AND EPHEMERAL SCRUB

The densest area of scrub was within the fenced garden of the Lodge but all areas of scrub were relatively small and poorly connected.

At the front (north side) of the house, behind a high fence, overgrown shrubs including Wild Clematis, Firethorn and Winter Jasmine were present. Near to the back of the house was a yard with bare ground/rubble, where an outbuilding and yard had once been present. A young Fig Tree was present, adjacent to the house. Scattered ephemeral/short perennial herbs included Greater Plantain, Herb Robert, Cock's Foot, Wood Avens, Feverfew, Dandelion, Petty Spurge, and occasional Alpine Butterbur. Part of the boundary was formed by an Ivy clad fence with localised patch of Cyclamen beneath.

The northern half of the garden comprised outgrown garden shrubs and herbs, including tall ruderal herbs, with a shaded, woodland character. Species present included Pear (dwarf rootstock), Hazel, Holly, Dogwood, various ferns, Mock Orange, Lilac, Goldenrod, Spirea, Hydrangea, Black eyed Susan, Japanese Anemone. Winter Heliotrope was locally frequent, with Bramble, Hedge Bindweed, Common Nettle, Black Medic and Wood False Brome present throughout. An informal paved track was present through the centre.

The southern half of the garden showed evidence of relatively recent earthworks. Mounded earth, brash piles and tall ruderals were present, including Common Orache, Corn Mint,

Common Ragwort, Ground Elder, Horse Radish, Great Willowherb, Wood False Brome and Black Mustard.

General views of the scrubbed over garden are provided in Plates 7, 8 & 9.

Other areas of scrub on site are considerably less dense and mainly confined to un-mown areas at the periphery of the site.

4.5.3 HEDGES

The garden hedges comprised a number of parts. The northern hedgerow comprised tall Hawthorn and Hazel, with frequent Blackthorn to the southern end. Some Holly and Yew was also present. Midway along, a small hollow with dead wood/brush infill is present, well shaded by vegetation, which may form winter pond/seasonal ponding but no evidence of this was seen over the eight months we have been working on site.

The south-eastern garden boundary comprised mostly tall very outgrown Blackthorn, some of which included contorted stems of an old *Prunus domestica*, possibly old coppice regrowth, probably approaching senescence. This area contains fallen limbs and dead wood and whilst providing a visual barrier, no longer forms an intact boundary. A wire fence marks the garden boundary. There is some recently disturbed ground, ruderals comprising common nettle, hedge bindweed, wood false brome, herb robert, and cow parsley.

The southern garden hedge comprised a section of Cherry Laurel, bordering the fishing lake, and a gap of approx. 5m, a stretch of approx. 5m mature Yew hedge, then mixed Yew and hazel to the south. Adjacent to the southwest end of the hedge there is a bank of dense bramble with 3 x dead young trees (possibly Elm).

The hedges, being garden hedges, are excluded from the jurisdiction of the Hedgerow Regulations (1997).

4.5.4 HARD SURFACES

These comprise the car parking area shown in Plate 4 and a number of pathways through the site (e.g. Plate 10). A number of common, ephemeral ruderals were present, mostly at the periphery of these areas.

4.5.5 AMENITY GRASSLAND

Although originally included within the scheme boundary, all amenity grassland, which is extensive nearby, is now outwith the area to be developed. As a consequence, this habitat type, which is of very low ecological value, will not be considered further in this report.

4.5.6 WATERBODIES

There is a small lake (TN5, Plates 5 & 5a) adjacent to the site boundary. This feature is managed by the local angling club and their members provided much useful background information, during discussions on site.

There was little aquatic vegetation visible at any time of year between December and August. Bankside vegetation was largely amenity grassland, with a small fringe of trees, scrub and brash at the southern end (e.g. Plates 11 & 12).

We advised by members of the angling club that the lake is regularly stocked with a variety of fish, some of which have reached considerable size, thanks to the 'catch and release' policy operated by the club. We frequently heard, and occasionally saw, large fish at the surface during the course of bat activity surveys and there was an automatic aerator present, driven by a substantial electric motor.

We were advised by members of the angling club that an Otter had been occasionally seen around the lake during 2018. Discussion with Gareth Parry of Gloucestershire Wildlife Trust confirmed this. Dr Parry also confirmed that spraint had been found on a tree stump and that there was a possible layup within the bankside scrub and brash at the south end.

When we returned to the site to undertake the first bat activity survey visit, on 15th May 2019, we noted that the brash at the south end, which formed the majority of the cover present, had been removed by person or persons unknown.

4.6 PROTECTED SPECIES SURVEYS

4.6.1 BATS

The lodge was built of brick, beneath a hipped, tiled roof (e.g. Plates 2, 13 & 14). It had been empty for some time and had been subjected to vandalism. There were numerous potential bat access points present, mostly resulting from damage to the roof (e.g. Plate 15). There were also some potential bat roosting features present, including gaps behind flashings (e.g. Plate 16) and holes in walls (e.g. Plate 17).

Inside, on the ground and first floors, again, much vandalism had taken place and consequently, with missing floorboards and holes in wales, numerous opportunities for roosting bats were available.

The roof was in poor condition, with evidence of water ingress and several holes to daylight visible. The roof was unlined (e.g. Plate 19), sparsely cobwebbed and with approximately 20cm of fibre-type insulation, between the joists. Numerous rodent droppings were present, as were a small number of mostly old (12+ months) but some (<20) more recent droppings characteristic of *Pipistrellus* species.

No bats were seen nor were there any signs of breeding birds present.

4.6.2 BAT ACTIVITY SURVEY

During the course of the first bat activity, a single Common Pipistrelle was seen to emerge from the location indicated with a black arrow in Plate 20 and a Great Tit was seen accessing the building at the location indicated by a red arrow, on the same plate. This was the only occasion when bats or birds were seen to be using the building.

Other than the above, all three of the bat activity survey visits produced very similar results. Almost all the bats seen and heard were Common and Soprano Pipistrelles. The majority of bats seen and heard were foraging over the adjacent lake and surrounding vegetation. Up to two *Pipistrellus* species were observed occasionally foraging around street lamps along the adjacent Matson Lane during the two dusk survey visits but not during the dawn visit. Noctules were only heard during the dawn visit and none were seen. Only occasional *Pipistrellus* species were seen by Surveyor #4 over the car park/hard-standing area to the north of the building.

A single Serotine call was recorded by Surveyor #3 (located at the south of the building, adjacent to the lake) during the dawn survey together with two call sequences characteristic of Whiskered or Brandt's Bat. Neither was seen. A single Lesser Horseshoe Bat flew over the lake and house at 22:12 during the first bat activity survey and a single bat with a call characteristic of Daubenton's bat was also seen foraging over the lake during the same visit.

4.6.3 BAT TREE SURVEY

The tree climbing survey did not identify any cavities, splits, bark flakes or other potential features likely to be used by either roosting bats or nesting birds in the two Ash trees, T29 and T31.

4.6.4 GREAT CRESTED NEWT SURVEY

During the course of the time we have spent on site, we witnessed a number of large fish being caught in the fishing lake and, during the summer months, fish regularly jumping too. The pond approximately 250m to the south east (e.g. Plate 21) did not appear to contain fish. It was not deep and seemed popular with dogs. Talking with dog walkers suggested that it dried only extremely rarely. HSI results for the fishing lake and the pond to the south east are shown in Tables 4.

Table 4. Pond HSI calculations.

Date HSI assessment undertaken	05/04/2019	05/04/2019
Pond ref	Fishing pond	Pond 250m to south east
SI1 - Location	1	1
SI2 - Pond area	0.91	0.05
SI3 - Pond drying	0.9	0.9
SI4 - Water quality	0.67	0.67
SI4 - Shade	1	1
SI6 - Fowl	0.67	1
SI7 - Fish	0.01	1
SI8 - Ponds	0.72	0.72
SI9 - Terr'l habitat	0.67	0.67
SI10 - Macrophytes	0.4	0.9
HSI	0.48	0.65

The HSI calculation suggests that the potential for GCN to be present is less than 10%. Because of the proximity of the pond to the site, and the presence of nearby, historical GCN records, an eDNA assessment for GCN was also undertaken. The eDNA test produced a negative result (see Appendix .

Although the more distant pond had an HSI score which suggested further survey works would be required, this pond was subsequently scoped out for the reasons given in Section 5.6.

4.7 INVASIVE SPECIES

There were some small Bamboo plants within the lodge garden. Some species can be particularly invasive but we were unable to identify the species present. More Bamboo was found, outwith the site boundary, at the southern end of the lake.

There are two Mature False Acacia, close to the car park entrance (see Figure 3). This species is included on Schedule 9 of the Wildlife and Countryside Act (1981).

4.8 THE SITE IN THE CONTEXT OF THE WIDER ENVIRONMENT

Occupying a position on the southern outskirts of Gloucester, to the north and east, the site is surrounded by high density housing. The site occupies the northern-most part of a recreational area known as Matson Park. To the west, approximately 250m distant is the large expanse of Robins Wood Hill Country Park.

The dominant habitat type immediately to the south and west of the site is amenity grassland with trees and some scrub. The area is heavily used by dog walkers, both during the day and after dark and the associated disturbance from this, plus predation from domestic cats, is considered likely to limit the potential for terrestrial species to move through the park area.

On the basis of the above, the site at Matson would be considered to have moderate, ecologically connectivity to the wider environment.

4.9 CONSTRAINTS TO SURVEYS

The only identified survey constraint was that not all parts of the eastern part of the roof of the lodge could be seen from the ground during the course of the bat activity survey. The results of the activity surveys were however consistent with the number of droppings seen within the building during the course of the scoping survey.

4.10 BASELINE ECOLOGICAL CONDITIONS – SPECIES

4.10.1 BATS

The roof of the lodge is an occasional day roost, used by a single (probably male) Common Pipistrelle. It may be that more bats use the building at other times of year. It may also be that, when the building was inhabited, and the roof was intact, that a larger roost was present but as there is now some water ingress and, without major repairs, the building will continue to deteriorate and the roost will, ultimately, be lost.

The fishing lake was regularly used by Common and Soprano Pipistrelles, with up to three seen regularly foraging in this area. The same was true immediately outwith the site boundary with Matson Lane. Occasional other species were seen but no significant foraging or commuting areas were identified. It may be that light-spill from street lamps onto the site deters them.

There was very little bat activity to the north of the site (where the car park will be located) and only a little more over the overgrown lodge garden.

4.10.2 DORMOUSE

The desk study did not identify any historical records of Dormouse within the boundaries of the site and there were no records returned from within the 2km search area. Given the presence nearby of several designated sites and nature reserves, which are likely to be regularly surveyed and monitored by both amateur and professional ecologists, it is likely that, were this species present locally, it would have been recorded.

On the basis of the above, Dormouse is likely not present on the site and is therefore not considered material to the proposed development. Dormouse will not therefore be considered further in this assessment.

4.10.3 WATER VOLE

There were no historical records of this species on the site and no historical records within the search area. Given the presence nearby of several designated sites and nature reserves, which are likely to be regularly surveyed and monitored by both amateur and professional ecologists, it is likely that, were this species present locally, it would have been recorded.

Little suitable habitat for this species exists around the fishing lake and no signs of use, such as droppings or distinctively cut vegetation were found around the lake, despite numerous visits being made to the site, some at optimum times of the year to detect this species. The frequent presence of dogs and domestic cats on the site, which continues for both species after dark, is likely to be a deterrent.

On the basis of the above, Water Vole is likely not present on the site and is therefore not considered material to the proposed development. Water Vole will not therefore be considered further in this assessment.

4.10.4 BADGER

There are only very limited areas of habitat likely to be of value to this species and, despite a thorough search, no signs of use of the site by these animals were noted (e.g. setts, snuffle holes and latrine pits) and there is little habitat present with potential value to them. The nearest historical record was more than 1.3km distant.

Given the lack of nearby records and the small quantity of suitable habitat present, it is considered that any presence of Badger on site would relate to very occasional prospecting and/or foraging by individuals. On that basis, no further survey work is recommended, and the mitigation provided later in this report for other species (e.g. Otter) will also benefit Badger.

This species will therefore not specifically be considered further in this assessment.

4.10.5 OTTER

The nearest record of this species returned in the data search was from Abbeydale, approximately 1.1km distant, in 2017. As previously noted however, we are aware from discussion with both Dr Parry and anglers on site that a single Otter had been seen near the fishing lake over the winter of 2017/18 and spraint had also been seen close to it. It is possible that an Otter had been using brash which had been dumped at the southern end of the lake (outwith the site boundary) although, as previously noted in our report, this appears to have been removed sometime between December 2018 and April 2019. Dr Parry, an acknowledged authority on this species, suggests that the animal seen was likely to be a young male, perhaps pushed out of more suitable habitat, coming to feed on the well-stocked fishing lake.

The only habitat present within the site boundary with potential to be of value to this species was the over-grown lodge garden where, despite a thorough search, no signs (prints, spraint, layups) were found.

There were no records of Otter from the proposed development site. The nearest record was approximately 446m distant, along the River Ebbw. There were a small number of records from the local area but the low number of records is likely to be a consequence of under-reporting.

The adjacent river and reen are considered to have potential value to Otter although no signs were found. The relatively thin hedges on site are highly unlikely to be used for holts or layups. It is however considered that animals could pass through or adjacent to the site, from time to time, although, because of the limited habitat present, this is considered more likely to be in facilitating occasional movement between other sites, rather than any regular and continuous use.

4.10.6 HEDGEHOG

The desk study did not identify any historical records from within the site boundary. The nearest record was from a site approximately 1.3km distant of an individual found dead on a road at Abbeydale.

There is habitat present with potential to support Hedgehog. No signs to suggest that this species might be using the site were found. It is possible that individuals could be present, from time to time, if only to pass through.

4.10.7 REPTILES

The desk study did not identify any historic records of reptiles within or immediately adjacent to the site boundary, but several records of common reptiles were returned from within the search area. There was a record of a Grass Snake, dating from 2005, at a location approximately 290m to the south west, and a record of Slow Worm from Robinswood Golf Club, approximately 400m to the south, dated 2010.

Habitat on site with potential to support reptiles is limited to the lodge garden and small areas of scrub at the perimeter of the site. The presence of many dogs and domestic cats is considered to reduce the potential for reptiles to be present, but it is likely that these species will pass through the site from time to time.

4.10.8 GREAT CRESTED NEWT

The nearest record of Great Crest Newt (GCN) returned from the data search was from April 2016 and reported individuals being assisted across the road at a “Toad Patrol” on Matson lane, approximately 270m to the south west. Another record, dated 2010, was from Robinswood Golf Club, approximately 390m to the south. Other records included - 2007/670m to the north east, 2008/840m to the north east and 2007/930m to the south west. There were additional records more than 1km distant.

Survey results confirm that the adjacent fishing lake is not used by this species. The eDNA survey undertaken would have detected animals passing through, even if they had been predated by large fish before having the opportunity to breed.

Habitat on site with potential to support this species is limited to the lodge garden and small areas of scrub at the perimeter of the site. The presence of many dogs and domestic cats is considered to reduce the potential for GCN to be present.

4.10.9 FISH AND OTHER AQUATIC SPECIES

The adjacent fishing lake was, as previously noted, regularly stocked with fish and some are known to have reached considerable size. Netting produced few invertebrates and neither did post-bat survey torching. There is no evidence that Otter are still using the lake. There is a ditch at the southern end which appears to feed into the lake (which was dry during the summer) and a possible outflow at its northern end.

4.10.10 BIRDS

The desk study did not identify any historic records of breeding or wintering birds within the site boundary but there were many records of a wide variety of relatively common, and some scarcer species within the local area.

There is potential within the site boundary for breeding birds to use the building (which appeared to have been used by nesting Great Tit in the 2019 breeding season) trees, hedges and scrub (particularly within the overgrown lodge garden).

Some evidence of low-level use of the adjacent lake by waterfowl was noted (droppings) but no individuals seen and discussion with anglers suggests that use of the lake by birds is not frequent.

5 EVALUATION, IMPACT, CHARACTERISATION AND ASSESSMENT

5.1 HABITATS

Evaluation

The largest area of continuous habitat subject to development is the car park hard standing. An area of dense scrub, some immature trees and two mature Ash trees will be removed from what is currently the lodge garden area. Some small trees will also be removed elsewhere (the Tree Report refers).

All of these habitat types are common and frequent in the local area, in particular, at the fringes of the contiguous Matson Park and Robinswood Country Park. No rare, scarce, notable or protected flora was seen during the course of many survey visits undertaken over several months.

The adjacent fishing lake is a largely artificial habitat with low biodiversity as a consequence of the regular release and presence of predatory fish. It does not support Great Crested Newt and, although it has been used by Otter, such use does not seem to have continued through the spring and summer of 2019. The lake may drain to the north but we are not aware of what ongoing connectivity this may offer.

Potential Impacts

Removal of what are ecologically very small areas of scrub and largely grown-out hedges are considered to result in only a minor significant effect at a local level. Removal of six mature trees is more significant but most are small and some are in poor condition. Two of these trees (T29 and T31) are substantial (11m) Ash but, given the presence of Ash Dieback in the local area, these trees have a probability of becoming diseased and failing in the short to medium term, whether the development proceeds or not.

There is potential for trees to be damaged by the use of heavy machinery during the construction phase of the project.

There is potential, during the construction phase of the project, for pollutants and silt arising from works to enter the lake, and be carried down-stream into other watercourses potentially resulting in a significant adverse effect at a national level, depending on the course of outflows from the lake. There is also potential for any heavy machinery working close to the bank of the lake to cause it to collapse. There is further potential for pollution to enter the lake as a consequence of surface water discharge from vehicles and domestic activities, during the operational phase of the scheme, which would result in a similar potential impact.

It should be noted that species-specific impacts are considered later in this report.

Mitigation Measures

The Tree Report considers not only those trees within the current site boundary, but also those around the entire periphery of the lake and some others outwith the current development site boundary. Implementing the “Recommended work excluding development” described in Section 4.5.2 of the Tree Report will serve to reduce the risk of trees failing (e.g. T25), offer enhanced habitats for other species (e.g. G40) and improve public safety (e.g. T25, G43). Thinning Ash and Oak at G54 would result in those trees being able to fulfil their potential, replacing T29 and T31 in due course although there is a risk that these Ash will succumb to disease already present adjacent to the site.

Any plantings and landscaping on site should use native species. Additional screening will be planted between the scheme and the lake.

Bamboo plant material within the lodge garden should be removed from site and disposed of correctly such that it is not caused to grow in the wild elsewhere.

Precautionary working methods (which have been described in the Tree Report) will be required, including using fencing to protect trees and their root zones (where not already

fenced). A pollution control plan, covering both the construction and operational phases of the development is required to avoid damaging the lake and any watercourses it discharges into.

Significance of residual effects

It is considered that there will be no residual effects.

5.2 BATS

Evaluation

The lodge is an occasional day roost used by a single Common Pipistrelle Bat. The fishing lake is used by a significant number of bats for foraging. There is some less intense foraging over the lodge garden but little bat activity generally within the development site boundary.

The only two mature trees to be removed which were determined by a ground-based inspection to have unresolved potential to support bats, Ash trees T29 and T31. These were subject to climbing inspection and no features with potential to be used by bats were found.

Potential Impacts

Works to refurbish the lodge will result in destruction of a bat roost and could result in the killing and injuring of any bats present during the course of stripping the roof to make good resulting in a significant adverse effect at a local level.

Because they are ecologically very small, the loss of the small areas of scrubby habitats on site are not considered to result in a significant reduction in foraging habitat but the removal of the outgrown hedge adjacent to the lake and the installation of artificial lighting as part of the scheme is likely to result in a significant adverse effect at a local level.

Mitigation Measures

Because the roof will be recovered and a new bat access point will need to be installed, a licence will be required before works may commence. As part of procuring the licence, a detailed Method Statement (MS) must be compiled. The MS will include the progression and supervision of works, how any bats encountered during works will be dealt with, the provision of a bat box nearby to provide alternative bat roosting provision whilst works progress, new bat access into the roof via a proprietary or fabricated bat access tile, at the location of the existing access point, facing the lake. Only bitumen felt Type 1F to BS8747 will be used to line the roof. No restrictions on the timing of works are considered to be required for this low conservation status roost.

All lighting will be installed with a lighting plan, informed by the conclusions of this report, which has been produced by Kimberley Bartlett of WSP. This lighting plan accompanies the planning application. The lighting plan has been designed to minimise light spill onto the lake and beyond the boundaries of the scheme.

Significance of residual effects

It is considered that there will be no residual effects.

5.3 OTTER

Evaluation

There is evidence that at least one animal has used the adjacent fishing lake during the last two years but no evidence was found to suggest use of any habitats within the development site boundary, despite a careful search. The piles of brash at the south end of the fishing lake have now been removed and no spraints or other signs have been seen in 2019 at any nearby location. It may be that a single animal had visited the lake occasionally, looking for food. This individual may have moved elsewhere or may have been killed on the adjacent road.

Potential Impacts

Pollution of watercourses during the construction phase of the project could result in animals being killed or injured and also depletion in food supplies. This is considered to be a significant adverse effect on Otters at a county scale. A small area of potential Otter habitat (limited to the denser areas of scrub within the lodge garden) will be lost.

Without precautionary working methods, during the course of development, Otters could be disturbed due to noise and light pollution, and be killed or injured as a consequence of falling into pits or trenches on site or exposure to toxic substances. A further pollution risk arises from leaks, spills, cleaning and other activities during the operational phase of the development.

The above is considered to result in a significant adverse effect on Otter at a local level.

Mitigation Measures

Precautionary working methods, including some relevant to other species, including avoidance of night working during the construction phase of the scheme, securing or providing access out from sub-surface excavations will be required (to prevent animals becoming trapped) and a lighting plan (see Section 5.2) to control light-spill will be required.

A pollution control plan, covering the storage and management of hazardous substances on site, refuelling of construction plant and machinery and managing any accidental spills will also be required. This plan must also detail how surface water management will ensure that no oil or other contaminants from the use of the site by vehicles, post construction, can be discharged into the lake.

Specifically, it is NOT recommended that any new potential Otter habitats are created within or anywhere near the scheme. Encouraging this species to use habitats so close to human habitation and roads is likely to result in injury or death as a consequence of interaction with humans, dogs or road vehicles.

Significance of residual effects

It is considered that there will be no significant adverse residual effects.

5.4 HEDGEHOG

Evaluation

Although no signs of use by this species were seen during the course of survey, there is suitable habitat on site and it's considered likely that individuals pass through the site from time to time.

Potential Impacts

There will be some loss of small areas of suitable habitat resulting in a significant adverse effect at a local level. There is potential for individuals to be killed or injured, either during the course of ground clearance or during works as a consequence of falling into sub-surface excavations and being unable to escape, resulting in a similar scale, adverse effect.

Mitigation Measures

Many of the significant adverse effects to this species will be mitigated by the methods given in Section 5.3 (Otter). Landscaping within the garden area, particularly using native species, is likely to provide suitable alternative foraging habitat.

Access to the new habitats on site must be provided by installing "Hedgehog Passes", small holes 13cm x 13cm, at the base of fences.

Those parts of the site within the red line boundary, but towards the southern part and outwith the area to be developed, should be subject to a 'minimal maintenance' regime post-development,

allowing them to cover with dense scrub which will provide additional habitat for Hedgehog (and other species, including reptiles).

Significance of residual effects

It is considered that there will be no significant adverse residual effects.

5.5 REPTILES

Evaluation

There is some potential reptile habitat on site. Because of the very small areas of suitable habitat to be cleared, it was agreed with the LPA ecology team that the presence of reptiles would be assumed and no survey would be undertaken.

Potential Impacts

There will be some loss of small areas of suitable habitat resulting in a significant adverse effect at a local level. There is potential for individuals to be killed or injured, either during the course of ground clearance, or during works as a consequence of falling into sub-surface excavations and being unable to escape, resulting in a similar scale, adverse effect.

Mitigation Measures

Ground clearance, including reducing any scrub or hedges to a height of less than 30cm, will not take place between October and March (inclusive) when reptiles are likely to be hibernating and unable to move away from works. Working into October or March MAY be possible, if temperatures are sufficiently warm for several days.

Site clearance will take place in accordance with a MS, which will include details of the timings and ecological supervision of works, details of the stepped and directional of cutting vegetation and how any reptiles found on site will be dealt with. There is much suitable reptile habitat outwith the site boundary into which any reptiles found during the course of clearance can be translocated.

Habitat improvements described in Section 5.4 for Hedgehog (allowing new, dense scrub to develop within the red line boundary) will also benefit reptiles.

Due to the number of dogs and domestic cats which have been seen to use the area, the installation of artificial refugia and/or hibernacula has deliberately been omitted from the scheme design.

Significance of residual effects

It is considered that there will be no significant adverse residual effects.

5.6 GREAT CRESTED NEWT

Evaluation

There are historical records of this species in the local area. There is some habitat on site with potential to support Great Crested Newt (GCN). The adjacent fishing lake produced a negative result for the presence of this species. There are two water bodies between 190m and 250m distant. One we were unable to access. The other, at 250m distant from the area to be developed, had a Habitat Suitability Index value suggesting some potential but no further surveys were carried out after discussion with the LPA ecology team. It is possible that this species does pass through the site from time to time although the lack of eDNA evidence of presence in the adjacent fishing lake, a water body which, because of the large number of predatory fish present represents something of an ecological trap, suggests this is unlikely.

Potential Impacts

Although there are areas of habitat on site with potential value to this species, these are ecologically very small. Natural England's "Rapid Risk Assessment" tools suggest that, for a site with an area of up to 0.5ha of habitat lost or damaged, between 100 and 250m of any breeding pond, offences being committed in respect of this species was highly unlikely. The area within the red line boundary is approximately 0.35a in size, with the area with the area subject to development approximately 0.16ha (of which approximately 0.03ha is comprised of hard surfaces).

Much of the habitat between these more distant ponds and the site boundary is amenity grassland which further serves to reduce the probability that these animals will be found on the site. To the north and east of the site are areas of dense housing whilst to the south and west there is much, likely high quality amphibian habitat, with many static water bodies. There is a "toad patrol" on Matson lane, the south west, where GCN have been historically reported, lending weight to the above hypothesis.

On the basis of the above, it is considered that there will be no significant adverse effects to this species at any scale as consequence of the proposed development.

Mitigation Measures

No specific recommendations are provided for this species however, the recommendations made in Section 5.5 (Reptiles) will ensure that in the highly unlikely event that GCN are encountered, they can be safely removed to a location outwith the working area. The recommendations made will also provide new terrestrial habitat for this species.

It is recommended that gully pots should be located 100mm from kerbs to reduce the probability of GCN , other amphibians and small mammals falling into them . Installing gully pot ladders (e.g. <https://www.thebhs.org/shop/the-bhs-amphibian-gully-pot-ladder>) would also serve to significantly reduce any amphibian species becoming entrapped. Potentially, small mammals will also use these.

It should be noted that in the highly unlikely event that GCN are encountered within the development site during the course of works, all works must cease until Natural England have been contacted for advice on how to proceed. It may be necessary to obtain a licence from Natural England (or a District Level Licence) before works can be permitted to proceed.

Significance of residual effects

To be determined.

5.7 FISH AND OTHER AQUATIC SPECIES.

Evaluation

Although limited in ecological diversity, the adjacent lake has been used by Otter and it is uncertain where the outflow of the lake leads into.

Potential Impacts

Pollution of watercourses during the construction phase of the project could result in fish and other species (including Otter) being killed or injured and also depletion in food supplies. This is considered to be a significant adverse effect on a range of species at a county scale.

Mitigation Measures

The mitigation measures detailed in Section 5.3 (Otter) will protect aquatic life in general and safeguard any downstream watercourses.

Significance of residual effects

It is considered that there will be no significant adverse residual effects.

5.8 BIRDS

Evaluation

The habitats on site are likely to be used by a range of avian species, widespread and common in the local area.

Potential Impacts

There is potential for nesting birds to be killed, injured or disturbed during the course of vegetation clearance or works to the lodge. There will be a net loss of potential bird nesting habitat.

It is considered that there would be a significant adverse impact at the local level.

Mitigation Measures

Unless subject to a pre-removal inspection by a suitably qualified ecologist, no vegetation removal (including felling, reducing or thinning of trees) or works to the roof of the lodge will take place during the bird breeding season (generally considered to be April to August (inclusive)).

On each new building, four WoodStone Build-in Swift Nest Box B (or similar) will be installed, immediately beneath the eaves on an elevation / elevations which do not receive full sun for the majority of the day i.e. either north facing or subject to shading from nearby trees.

On the lodge, two Schwegler 1SP Sparrow Terraces (or similar) will be similarly installed.

Significance of residual effects

It is considered that there will be no significant adverse residual effects.

5.9 CUMULATIVE EFFECTS

This is a very small development on land that largely comprises an overgrown garden and a car park, with a low conservation bat roost present. Even in the absence of all the committed mitigation, it is hard to conceive how a development of this scale can result in a significant cumulative effect.

5.10 COMPENSATION

It is considered that no compensation is required.

5.11 ENHANCEMENT

To comply with national planning policy, a number of enhancement options should be considered, including;

- Installing bat tubes within the walls of all new buildings;
- Funding bat boxes to be placed elsewhere within the park together with encouraging monitoring by the local bat group;
- Further tree planting, outwith the site boundary, elsewhere on Matson Park;
- Removal of potentially invasive Bamboo at the south end of the lake; and
- Creating a new pond with associated terrestrial habitats, either elsewhere within Matson Park or at another, local location. This could perhaps be within school grounds to assist with outdoor learning initiatives.

5.12 MONITORING

Post development monitoring is not considered to be required.

6 CONCLUSIONS

This report provides details of the habitats and species present on site and also describes the likely ecological impacts of the scheme, together with the mitigation measures which will be required to reduce the ecological impact of the development proposals to an acceptable level.

The habitats within the site boundary are ecologically very small and of a type widespread and common in the local area. The lodge roof, holds a low conservation status Common Pipistrelle roost, and there is some potential for protected species to be present elsewhere on the site. The presence, day and night, of humans, dogs and cats reduces that potential and it is likely that predation rates as a result of pets and death or injury on the adjacent Matson Lane is relatively high.

Section 5 of this report details the ecological impacts of the scheme and outlines both mandatory and recommended mitigation. This section also makes recommendations for biodiversity enhancement, in order to comply with national planning policy. It should be noted that originally, the scheme proposals were larger, and involved considerably greater vegetation clearance than currently proposed. These plans were scaled back, in part to reduce its ecological impacts.

Assuming development consent for the scheme is granted, before any works on site commence, a Construction Ecological Management Plan (CEMP) must be submitted to and approved by Gloucestershire City Council. The CEMP will detail how clearance, ground work and construction activities shall be undertaken and managed in accordance with the recommendations of the ecological requirements detailed within this Ecological Appraisal, together with any additional planning conditions which may be applied by Gloucestershire City Council during the course of the planning application. The CEMP will include:-

- Planning conditions to be met/discharged;
- Responsibilities and contact details;
- Timing and/or progression of site works and mitigation works;
- Requirements for ecological supervision of works;
- Site briefings to staff and contractors;
- Full details of ecological mitigation measures including species-specific Method Statements (as required);
- Pollution prevention measures;
- The emergency spill response procedure; and
- Reference to previously submitted reports and surveys

Depending on the anticipated timing of works, because of seasonal restrictions on removal of scrub etc. to avoid committing offences in respect of nesting birds and reptiles, it may be that cutting back and or removing scrub before planning consent is granted would be appropriate. Before doing so, however, it is strongly recommended that consent to do so is requested from the relevant, local authority planning officer.

Finally, we are aware from correspondence with the LPA ecology team that Natural England has recently started requesting that the Planning Authority undertake a Habitats Regulations Assessment (HRA) for all new housing developments with 10km of an internationally protected site. There are two relevant to this scheme (see Section 3.3.1). We consider any significant adverse impacts on either of these two sites as a result of the proposals for this development to be highly unlikely, both because of their distance from the scheme boundary and due to the very small size of the scheme. It may be, however, that the HRA assessment does determine

that there will be some impact and further mitigation, enhancement or compensation works may be required as a consequence.

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Any ecological survey can only identify what was present on site when it was conducted. Habitat types and usage by species can change over time, and if development works do not begin within twelve months of the date of this report, further survey may be required to identify any change of use of the site, in particular by protected species.

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9 REFERENCES

Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dunn F (2014). **Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA.** Oxford. Freshwater Habitats Trust.

CIEEM (2018) **Guidelines for Preliminary Ecological Appraisal.** Winchester, CIEEM

Collins, J. (ed.) (2016) **Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn).** London: Bat Conservation Trust

JNCC (2010) **Handbook for Phase 1 habitat survey – A Technique for Environmental Audit.** Peterborough, JNCC

The Hedgerow Regulations (1997) London: TSO

Oldham, R. S., Brady, L. D., Sewel, D. L. & Baker, J. M. R. (2010) **ARG Advice Note 4: Great Crested Newt Habitat Suitability Index.** Amphibian and Reptile Conservation.

B J Unwin Forestry Consultancy (2019) **Land at School Lodge, Matson, GL4 6DX - BS5837 Tree Constraints, Impact Assessment & Tree Protection Method Statement for re-development.**

10 APPENDIX 1 SITE PHOTOGRAPHS

Plate 1 – Park entrance & road verge. (TN1).



Plate 2 – Lodge Building (TN2).



Plate 3 – Lodge Garden (TN3).



Plate 4 –Large area of hardstanding (TN4).



Plate 5 – Adjacent fishing lake (TN5).



Plate 5a – Adjacent fishing lake (TN5).



Plate 6 – Stand of young Ash with some Oak (TN6)



Plate 7 – General view of scrubbed over garden.



Plate 8 – General view of scrubbed over garden.



Plate 9 – General view of scrubbed over garden.



Plate 10 – Example of pathway (leading south from the car park).



Plate 11 – Brash and scrub at southern end of lake. Brash was removed over the winter of 2018/19. Note Bamboo.



Plate 12 – Brash and scrub at southern end of lake. Brash was removed over the winter of 2018/19.



Plate 13 – General view of lodge.



Plate 14 – General view of lodge.



Plate 15 – Potential bat access points into lodge.



Plate 16 – Potential bat access points into lodge.



Plate 17 – Potential bat access point/roosting feature in lodge wall.



Plate 18 – General internal view of lodge.



Plate 19 – General view of lodge roof.



Plate 20 - Bat (red) and bird (black) access points into lodge.



Plate 21 – Pond 250m to the south east of the development site.



11 APPENDIX 2. SPECIES LIST

Table of plants seen on 3rd December 2018 with some species added during other visits through 2019.

R= Rare, O=Occasional, F=Frequent, A=Abundant, D=Dominant, prefix L =Locally

Please note that many of these species were noted outwith the current red line site boundary but all are inside or within 50m of the current scheme.

Common Name	Scientific name	Abundance
Lodge Garden Area		
Hedgerow		
Hazel	<i>Corylus avellana</i>	F
Hawthorn	<i>Crataegus monogyna</i>	F
Yew	<i>Taxus baccata</i>	F
Wild plum	<i>Prunus domestica</i>	LF
Blackthorn	<i>Prunus spinosa</i>	LF
Sycamore	<i>Acer pseudoplatanus</i>	O
Ash	<i>Fraxinus excelsior</i>	O
Holly	<i>Ilex aquifolium</i>	O
Elder	<i>Sambucus nigra</i>	O
Apple	<i>Malus pumila</i>	R
Poplar sp.	<i>Populus sp.</i>	R
English elm	<i>Ulmus procera</i>	R
Walnut	<i>Juglans regia</i>	Regen/sapling - R

Common Name	Scientific name	Abundance
Native shrubs & climbers		
Ivy	<i>Hedera helix</i>	F
Wild clematis	<i>Clematis vitalba</i>	O
Male fern	<i>Dryopteris felix-mas</i>	O
Honeysuckle	<i>Lonicera periclymenum</i>	O
Shield fern sp.	<i>Polystichum sp.</i>	O
Dogwood	<i>Cornus sanguinea</i>	R
Pear	<i>Pyrus communis</i>	R
Ornamental shrubs		
Winter jasmine	<i>Jasminum nudiflorum</i>	LF
Firethorn	<i>Pyracantha coccinea</i>	LF
Berberis	<i>Berberis sp.</i>	O
Mexican orange	<i>Choisya ternata</i>	O
Shrubby rock rose	<i>Cistus sp.</i>	O
Clematis sp.	<i>Clematis sp.</i>	O
Oregon grape	<i>Mahonia aquifolium</i>	O
Mock orange	<i>Philadelphus coronarius</i>	O
Spirea sp.	<i>Spirea japonica</i>	O
Lilac	<i>Syringa vulgaris</i>	O
Butterfly-bush	<i>Buddleja davidii</i>	R

Common Name	Scientific name	Abundance
Fig	<i>Ficus carica</i>	R
Ruderal herbs		
Hedge bindweed	<i>Calystegia sepium</i>	F
Bramble	<i>Rubus fruticosus</i>	F
Cow parsley	<i>Anthriscus sylvestris</i>	LF
Wood avens	<i>Geum urbanum</i>	LF
Black medic	<i>Medicago lupulina</i>	LF
Yarrow	<i>Achillea millefolium</i>	O
Ground elder	<i>Aegopodium podagraria</i>	O
Garlic mustard	<i>Alliaria petiolata</i>	O
Common orache	<i>Atriplex patula</i>	O
Wood false brome	<i>Brachypodium sylvaticum</i>	O
Black mustard	<i>Brassica nigra</i>	O
White bryony	<i>Bryonia dioica</i>	O
Spear thistle	<i>Cirsium vulgare</i>	O
Cock's foot	<i>Dactylis glomerata</i>	O
Great willowherb	<i>Epilobium hirsutum</i>	O
Broadleaved willowherb	<i>Epilobium montanum</i>	O
Petty spurge	<i>Euphorbia peplus</i>	O
Herb Robert	<i>Geranium robertianum</i>	O

Common Name	Scientific name	Abundance
White dead-nettle	<i>Lamium album</i>	O
Greater plantain	<i>Plantago major</i>	O
Annual meadowgrass	<i>Poa annua</i>	O
Knotgrass	<i>Polygonum aviculare</i>	O
Common ragwort	<i>Senecio jacobaea</i>	O
Smooth sowthistle	<i>Sonchus oleraceus</i>	O
Hedge woundwort	<i>Stachys sylvatica</i>	O
Feverfew	<i>Tanacetum parthenium</i>	O
Dandelion	<i>Taraxacum officinale</i>	O
Common nettle	<i>Urtica dioica</i>	O
Ornamental herbs		
Winter heliotrope	<i>Petasites fragrans</i>	LF
Goldenrod	<i>Solidago virgaurea</i>	LF
Greater periwinkle	<i>Vinca major</i>	LF
Sowbread	<i>Cyclamen hederifolium</i>	LO
Alpine butterbur	<i>Adenostyles alpina</i>	O
Japanese anemone	<i>Anemone hupehensis</i> <i>x vitifolia</i> = <i>A. x hybrid</i>	O
Snapdragon	<i>Antirrhinum majus</i>	O
Columbine	<i>Aquilegia vulgaris</i>	O
Pendulous sedge	<i>Carex pendula</i>	O

Common Name	Scientific name	Abundance
Corydalis sp.	<i>Corydalis sp.</i>	O
Montretia	<i>Crocosmia pottsii x aurea</i> = <i>C. x crocosmiiflora</i>	O
Sweetpea	<i>Lathyrus odoratus</i>	O
Lemon balm	<i>Melissa officinalis</i>	O
Corn mint	<i>Mentha arvensis</i>	O
Black-eyed susan	<i>Rudbeckia fulgida</i>	O
Stachys sp.	<i>Stachys sp.</i>	O
Pond and Road Verge		
Trees		
Hybrid black poplar	<i>Populus x canadensis</i>	2 x stds
White willow	<i>Salix album</i>	1 by pond, small
Yew	<i>Taxus baccata</i>	2 x stds
Common lime	<i>Tilia x europaea</i>	2 x stds
Shrubs & climbers		
Bamboo	(unknown-various)	LF
Ivy	<i>Hedera helix</i>	LF
Honeysuckle	<i>Lonicera periclymenum</i>	O
Elder	<i>Sambucus nigra</i>	O
Sapling trees		
Sycamore	<i>Acer pseudoplatanus</i>	regen/sapling

Common Name	Scientific name	Abundance
		plus youg stds x3
Hawthorn	<i>Crataegus monogyna</i>	regen/sapling
Ash	<i>Fraxinus excelsior</i>	regen/sapling
Holly	<i>Ilex aquifolium</i>	regen/sapling
Wild cherry	<i>Prunus avium</i>	regen/sapling
English elm	<i>Ulmus procera</i>	regen/sapling plus old stump
Ruderal herbs & grasses		
Perennial rye grass	<i>Lolium perenne</i>	A
White clover	<i>Trifolium repens</i>	A
Common daisy	<i>Bellis perennis</i>	F
Hedge bindweed	<i>Calystegia sepium</i>	F
Cock's foot	<i>Dactylis glomerata</i>	F
Wood avens	<i>Geum urbanum</i>	F
Nipplewort	<i>Lapsana communis</i>	F
Greater plantain	<i>Plantago major</i>	F
Bramble	<i>Rubus fruticosus</i>	F
Wood dock	<i>Rumex sanguinea</i>	F
Common nettle	<i>Urtica dioica</i>	F
Creeping bent	<i>Agrostis stolonifera</i>	LF

Common Name	Scientific name	Abundance
Garlic mustard	<i>Alliaria petiolata</i>	LF
Cow parsley	<i>Anthriscus sylvestris</i>	LF
False oatgrass	<i>Arrhenatherum elatius</i>	LF
Wood false brome	<i>Brachypodium sylvaticum</i>	LF
Winter heliotrope	<i>Petasites fragrans</i>	LF
Annual meadowgrass	<i>Poa annua</i>	LF
Creeping buttercup	<i>Ranunculus repens</i>	LF
Shepherd's purse	<i>Capsella bursa-pastoris</i>	LO
Knotgrass	<i>Polygonum aviculare</i>	LO
Bush vetch	<i>Vicia sepium</i>	LO
Bittercress sp.	<i>Cardamine sp.</i>	O
Pendulous sedge	<i>Carex pendula</i>	O
Marsh thistle	<i>Cirsium palustris</i>	O
Dove's foot crane's bill	<i>Geranium molle</i>	O
Herb robert	<i>Geranium robertianum</i>	O
Yorkshire fog	<i>Holcus lanatus</i>	O
Prickly sowthistle	<i>Sonchus asper</i>	O
Pond sp.		
Pendulous sedge	<i>Carex pendula</i>	O
Hornwort sp.	<i>Ceratophyllum sp.</i>	O

Common Name	Scientific name	Abundance
Yellow flag iris	<i>Iris pseudacorus</i>	O
Other areas not specifically mentioned above		
Trees		
Ash	<i>Fraxinus excelsior</i>	F
Oak	<i>Quercus robur</i>	F
Saplings		
Hawthorn	<i>Crataegus monogyna</i>	F
Ash	<i>Fraxinus excelsior</i>	F
Oak	<i>Quercus robur</i>	F
Horse chestnut	<i>Aesculus hippocastanum</i>	O
Climbers		
Ivy	<i>Hedera helix</i>	F
Grasses & herbs		
False oatgrass	<i>Arrhenatherum elatius</i>	A
Cock's foot	<i>Dactylis glomerata</i>	F
Wood avens	<i>Geum urbanum</i>	F
Hogweed	<i>Heracleum sphondylium</i>	F
Bramble	<i>Rubus fruticosus</i>	F

Common Name	Scientific name	Abundance
Wood dock	<i>Rumex sanguinea</i>	F
Common nettle	<i>Urtica dioica</i>	F
Cleavers	<i>Galium aparine</i>	LF
Wood speedwell	<i>Veronica montana</i>	O
Dusky crane's bill	<i>Geranium phaeum</i>	R
False archangel	<i>Lamium galeobdolon</i> <i>ssp. Argentatum</i>	R
Track		
Common daisy	<i>Bellis perennis</i>	F
Annual meadow grass	<i>Poa annua</i>	F
Understorey		
Wood avens	<i>Geum urbanum</i>	F
Bramble	<i>Rubus fruticosus</i>	F
Broadleaved dock	<i>Rumex obtusifolius</i>	F
Common Nettle	<i>Urtica dioica</i>	F
Cow Parsley	<i>Anthriscus sylvestris</i>	LF
Nipplewort	<i>Lapsana communis</i>	LF
Knotgrass	<i>Polygonum aviculare</i>	LO
Great Willowherb	<i>Epilobium hirsutum</i>	O

12 APPENDIX 3. EDNA TEST RESULT – FISHING LAKE



Folio No: E4465
Report No: 1
Order No: DJ1
Client: WYEDEAN ECOLOGY
Contact: Denis Jackson
Contact Details: [REDACTED]
Date: 24/04/2019

TECHNICAL REPORT

ANALYSIS OF ENVIRONMENTAL DNA IN POND WATER FOR THE DETECTION OF GREAT CRESTED NEWTS

Date sample received at Laboratory: 17/04/2019
Date Reported: 24/04/2019
Matters Affecting Results: None

RESULTS

Lab Sample No.	Site Name	O/S Reference	SIC	DC	IC	Result	Positive Replicates
0585	Matsons	SO 8493 1564	Pass	Pass	Pass	Negative	0

SUMMARY

When Great Crested Newts (GCN); *Triturus cristatus* inhabit a pond, they deposit traces of their DNA in the water as evidence of their presence. By sampling the water, we can analyse these small environmental DNA (eDNA) traces to confirm GCN habitation, or establish GCN absence.

The water samples detailed below were submitted for eDNA analysis to the protocol stated in DEFRA WC1067 (Latest Amendments). Details on the sample submission form were used as the unique sample identity.

RESULTS INTERPRETATION

Lab Sample No.- When a kit is made it is given a unique sample number. When the pond samples have been taken and the kit has been received back in to the laboratory, this sample number is tracked throughout the laboratory.

Site Name- Information on the pond.

Forensic Scientists and Consultant Engineers
SureScreen Scientifics Division Ltd, Morley Retreat, Church Lane, Morley, Derbyshire, DE7 6DE
[REDACTED]
Company Registration No. 08950940

Page 1 of 3

School Lodge, Matson

Ecological Method Statement for Bats

edp5305_r003_DRAFT

1. Introduction

- 1.1 This Bat Method Statement has been prepared by The Environmental Dimension Partnership Ltd (EDP) on behalf of Gloucester City Homes (hereafter referred to as 'the Client'), in relation to the detailed application at School Lodge, Matson (hereafter referred to as 'the Site') submitted as 19/01110/FUL The School Lodge to Gloucester City Council.
- 1.2 It has been produced in response to the Ecology comments and recommendations received from Michelle Newman (Planning Ecological Advisor on behalf of Gloucester City Council) which were based on the Ecological Appraisal produced by Wyedean Ecology, September 2019. Specifically, the following recommendation:

"1. As Natural England have now appointed local authorities to assess applications that require bat licences using the three favourable tests, the local planning authority ecologist will need to review the method statement that would usually support the licence application, it has been briefly outlined within the report and an expansion on this would be satisfactory as long as it satisfies the tests by Natural England. The bat mitigation will also need to include a lighting scheme for the Site, which will also need to be reviewed by the local planning authority as a pre-commencement condition."

Bats on Site

- 1.3 In brief, the proposals are for refurbishment, including re-roofing, of the existing School Lodge and construction of a small apartment block with associated walkways, carparking, lighting and landscaping.
- 1.4 Surveys conducted by Wyedean Ecology in 2019 found the School Lodge building to be used as an occasional day roost by a single common pipistrelle (*Pipistrellus pipistrellus*) bat.

2. Method Statement

Licensing Requirements

- 2.1 Given that refurbishment works, including re-roofing, will result in the destruction of a bat roost and potential harm to bats during the course of the works, a licence will be required before works may commence. Therefore, a European Protected Species (EPS) mitigation licence from Natural England will be required for the proposed works to lawfully commence, in accordance with the Conservation of Habitats and Species Regulations 2017 (as amended). Such a licence can take

at least 30 working days to be determined, and will only be issued once full, detailed planning permission has been granted and any relevant planning conditions discharged.

2.2 It should be noted that a licence for any proposed development works will only be approved if it can be demonstrated that the following three derogation tests (as required under the Habitats Directive) can be met:

- (i) That there is no satisfactory alternative;
- (ii) That there is no detriment to maintaining the favourable conservation status of the species; and
- (iii) That the development is in the interest of public health and public safety, or of other reasons of overriding public interest (including those of a social or economic nature and beneficial consequences of primary importance for the environment).

2.3 There is an alternative licensing route now available from Natural England for obtaining EPS mitigation licences, dependent on the species and roost types to be impacted. Given that the roosts at the Site are of low numbers of common species, and are non-breeding and non-hibernating roost types, the Bat Mitigation Class Licence system is the most appropriate route for licensing the site works. This licence system is a simpler and cheaper route for dealing with schemes that will only affect roosts of low conservation status. The turnaround time for the determination period of this licence is ten working days, but it must be applied for by a qualified Registered Consultant.

2.4 A summary of the proposed mitigation strategy is provided below.

Roosting Provision

2.5 The lodge is considered only likely to be used as a very occasional roost of low conservation status. A single common pipistrelle bat was recorded emerging from the lodge during surveys conducted in 2019 on one occasion. Therefore, it is not considered necessary for additional roosting provision other than that suitable for an individual common pipistrelle, to be provided.

2.6 Therefore, it is recommended that a flat model, tree-mounted bat box (Schwegler 1FF or similar) should be erected on a nearby suitable mature tree. This will provide a safe roosting space to transport any bats that are found during the works to, that is away from any noise or vibration caused by the works. Indicative location of a suitable retained tree is proposed on **Figure EDP 1** below.



Figure EDP 1: Indicative location of tree-mounted bat box.

- 2.7 Suitable long-term roosting provision will consist of a bat access tile to be incorporated into the new roof, in the same location as the existing roost (indicative location shown on **Figure EDP 2** below).



Figure EDP 2: Indicative location of the bat tile to be incorporated into the new roof.

Pre-commencement

- 2.8 Prior to any renovation works commencing on the Site, an appropriate EPS bat mitigation licence must have been approved by Natural England and any associated compensatory roosting provision must be in place.
- 2.9 Prior to any renovation works, an update internal and external bat inspection must be carried out by a Natural England bat licensed ecologist.
- 2.10 On the first day of scheduled works, before any works commence, a suitably qualified and licensed ecologist will be present to provide a 'tool box talk'. During the tool box talk, all site managers and contractors working on the project will be made aware of the potential presence of bats, their legal protection and of the agreed working practices to be implemented to avoid harming bats during the course of the works. They will also be informed that if any bats are found when a licensed bat ecologist is not in attendance the bat must not be handled, works must stop immediately, and advice sought from the licensed bat ecologist.
- 2.11 A copy of the method statement and EPS licence documents will necessarily remain on the Site at all times.

- 2.12 A pre-commencement inspection of the interior of the building will then be undertaken by the bat licensed ecologist to check for any bats that may be present.

Timing and Methods of Works

- 2.13 The times of year when bats are most vulnerable to disturbance are in the maternity season (when they are having babies/raising young) and when they are hibernating. This is because damage to a roost or disturbance of bats that are pregnant or raising young could cause the bats to abort their pups/abandon the roost, which could have a detrimental effect on the population. If they are disturbed when they are hibernating, they will expend precious energy in waking up and there will not be sufficient prey species around to allow them to survive.
- 2.14 Although a maternity roost was not found, the lodge is potentially suitable for maternity roosting. Therefore, as a precaution, it is recommended that the commencement of works to the building should be timed to avoid the breeding period (i.e. should not be commenced between May and September inclusive).
- 2.15 Precautionary measures will be employed during all the renovation works, in order to ensure that no bats are harmed in the process. These will entail a suitably licensed bat ecologist to be present during any works to areas identified as offering potential to support roosting bats, most notably during the manual removal ('soft strip') of the existing roof, re-pointing the walls and when removing/replacing/fitting any windows and doors. The ecologist will inspect all areas with potential to support roosting bats with an endoscope and/or torch, as appropriate.
- 2.16 Any bats that are found during the works will, where possible, be removed by the licensed ecologist only; no other site staff are permitted to handle bats. The ecologist will capture it with gloved hands (or a hand net, if required) and place it into a cloth bag. The bat will then be checked over for any injuries or signs of ill health by the ecologist, and, if healthy, will be transported safely to the tree-mounted bat box. If the bat is injured or sick it will be placed into a ventilated box with a tea towel for cover, a jam jar lid of water and some meal worms and will be taken to a local BCT registered bat carer.
- 2.17 If a bat is found within a feature that it cannot be safely extracted from, a one-way exclusion device should be affixed to the feature, which should allow the bat to leave the roost at dusk but will not allow it entry back into it in the morning. The ecologist will return to the Site the next day to inspect the feature and will confirm whether works can continue in this area. If the feature cannot be fully inspected, the exclusion device will be affixed for five days (during weather conditions suitable for bats to be active).
- 2.18 Only bitumen felt Type 1F to BS8747 will be used to line the roof.

Lighting

- 2.19 The lighting plan has been designed to minimise light spill onto the lake and beyond the boundaries of the scheme.

- 2.20 The lighting plan assessed is appended to the rear of this report (**Appendix EDP 1**). It follows the recognised published guidance¹ and uses warm white LED lights which are, typically less than 3000 lumen and contain no UV wavelengths. They are mounted on a column height of six metres and are mounted horizontally, with no upward light spill.
- 2.21 The southern elevation of the lodge forms part of a dark corridor for bats that links to the lake to the south where a majority of the foraging was observed. The bat tiles are also to be installed into this dark elevation. This corridor will have a lux level of no more than 1lux, which is within the range for a bright moonlit night¹ and thus acceptable for even light intolerant species.

Potential Enhancements

- 2.22 In order to enhance the bat roosting opportunities within the lodge following renovation and ensure long term roost provision, it is recommended that a second bat access tile is installed within the roof on the southern elevation, facing the lake. The type of access tile will be determined to be in visual keeping with the type of roof tile used. This will keep the scheme in line with national and local planning policies in providing a net gain in biodiversity. The tree-mounted bat box must be in place until the new roof has been completed, but also should remain in perpetuity to provide an enhancement in bat roosting opportunities.

3. Conclusion

- 3.1. Provided the mitigation and enhancement recommendations made within this method statement are implemented and a Bat Mitigation Class Licence is obtained, it is considered that the proposals could proceed lawfully and in line with planning policy requirements.

¹ Bat Conservation Trust and Institution of Lighting Professionals *Guidance Note 08/18: Bats and Artificial Lighting in the UK*, 2018



Appendix EDP 1
Lighting Plan

(WSP, Drawing No: 70062229-1300-01, Rev: P02, September 19)



DO NOT SCALE

A

PROPOSED 6m STANDARD TUBULAR STEEL RAISE & LOWER ROAD LIGHTING COLUMN WITH DW WINDSOR KIRIUM PRO MINI LUMINAIRE COMPLETE WITH 7 PIN NEMA SOCKET AND FRONT SHIELD.
MOUNTING HEIGHT: 6m
OUTREACH BRACKET ARM: POST TOP
LAMP: 8xLED
REF NO: KIRIUM PRO MINI 8LED 2.7k B5 CLO 250mA
OPTIC SETTING: B5
TILT: 0
GLAZING: FLAT GLASS
CONTROL GEAR: INTEGRAL ELECTRONIC DALI
DIMMABLE
ISOLATION: SECONDARY ISOLATOR FITTED WITH BS88 FUSE
SWITCHING: 35/18 PECU
FOUNDATIONS: PLANTED
QUANTITY: 1

B

PROPOSED 6m STANDARD TUBULAR STEEL ROAD LIGHTING COLUMN WITH DW WINDSOR KIRIUM PRO1 LUMINAIRE COMPLETE WITH 7 PIN NEMA SOCKET AND SHIELDS WHERE REQUIRED.
MOUNTING HEIGHT: 6m
OUTREACH BRACKET ARM: POST TOP
LAMP: 8 x LED
REF NO: KIRIUM PRO1 8LED 2.7k C1 CLO 850mA
OPTIC SETTING: C1
TILT: 0
GLAZING: FLAT GLASS
CONTROL GEAR: INTEGRAL ELECTRONIC DALI
DIMMABLE
ISOLATION: SECONDARY ISOLATOR FITTED WITH BS88 FUSE
SWITCHING: 35/18 PECU
FOUNDATIONS: PLANTED
QUANTITY: 4

NOTES:

1.

LIGHTING AND ELECTRICAL INFRASTRUCTURE LOCATIONS ARE INDICATIVE AND SUBJECT TO FURTHER DESIGN DEVELOPMENT.

2.

LIGHT SPILL CONTOURS HAVE BEEN CALCULATED USING A MAINTENANCE FACTOR (MF) OF 1.0 AND DO NOT TAKE ACCOUNT OF LANDSCAPING TO REPRESENT A WORST-CASE SCENARIO.

3.

REQUIREMENTS FOR LUMINAIRE SHIELDS AND FURTHER ENVIRONMENTAL MITIGATION TO BE DEVELOPED FURTHER WHERE REQUIRED.

4.

LIGHTING DESIGNED TO BS5489-1:2020 .

5.

THIS DRAWING IS FOR PLANNING PURPOSES ONLY. NOT FOR CONSTRUCTION.

P02	05/01/2021		UPDATED TO INCLUDE NEW MASTERPLAN		
P01	05/09/2019	OJM	FIRST ISSUE	NG	KB
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS:

S2 - FOR INFORMATION

wsp

Unit 9 The Chase, John Tate Road, Foxholes
Business Park, Hertford, SG13 7NN, UK
wsp.com

CLIENT:

GLOUCESTER CITY HOMES

ARCHITECT:

QUATTRO DESIGN ARCHITECTS

SITE/PROJECT:

SCHOOL LODGE, MATSON

TITLE:

PROPOSED LIGHTING LAYOUT

SCALE @ A1:	NTS	CHECKED:	NG	APPROVED:	KB
PROJECT NO:	70062229	DESIGNED:	OJM	DRAWN:	OJM
				DATE:	September 19
DRAWING No:	70062229-1300-01				REV:
					P02

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Energy Statement

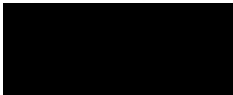

Residential Development, School Lodge, Matson

Prepared for Gloucester City Homes
21st August 2019



envision

Revision	Date
B	21/08/2019
A	13/08/2019

Author	Signature
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EXECUTIVE SUMMARY

1. This Energy Statement has been prepared by Envision on behalf of Gloucester City Homes (the applicant), and is submitted to support a planning application for the construction of a 3 storey building to accommodate 9 no. residential units (Class C3) including the refurbishment of the existing lodge to provide a single dwelling, car parking, landscaping, external waste storage at The School Lodge, Matson.
2. The primary purpose of this document to explain how the scheme can meet with the energy policies found within the Gloucester City Council Adopted Development Plan.
3. Envision have undertaken a review of the relevant policies and worked with the design team to determine and agree the relevance and approach that should be taken to fulfil each policy.
4. Envision has produced Part L1A compliant SAP calculations in order to determine the energy and CO₂ emissions for the proposed development.
5. The development is expected to reduce CO₂ emissions by **7.68%** beyond the Part L1a baseline.
6. To reduce the energy consumption of the development and to assist in achieving a Building Regulation Part L1a 2013 compliant development, the following design measures are recommended and will need to be incorporated into the detailed design:
 - Building fabric construction U-values significantly improved compared with standard Building Regulations U-values;
 - Reduced Air Permeability, lower than standard Buildings Regulations, and in accordance with prospective development building occupiers;
 - High-efficient Air-Source Heat Pumps providing efficient space and water heating to each apartment;
 - High efficient LED lighting throughout.
7. The figures used as the basis for this assessment are discussed further in Section 4 of this report.

Water Conservation

8. Policy SD3 of the adopted Joint Core Strategy (2017) requires proposals to demonstrate that development is designed to use water efficiently, will not adversely affect water quality, and will not hinder the ability of a water body to meet the requirements of the Water Framework Directive.
9. The measures employed in this scheme for water conservation are envisaged to be the following:

- Potable water consumption will be reduced through the specification of efficient water fittings where feasible;
- A water consumption target of 120 litres/bedspace/day will be followed.

1 INTRODUCTION

- 1.1 Envision is a dynamic building services, energy and sustainability consultancy, dedicated to providing strategic and technical advice to clients through all phases of planning and development.
- 1.2 We have been appointed by Gloucester City Homes (the applicant) to produce an Energy Statement to support a planning application for the construction of a 3 storey building to accommodate 9 no. residential units (Class C3) including the refurbishment of the existing lodge to provide a single dwelling, car parking, landscaping, external waste storage at The School Lodge, Matson.

Scope

- 1.3 This Energy Statement provides information on the predicted carbon emissions of the development and includes an analysis of the potential contribution that renewable and low carbon technologies could contribute towards reducing the energy and associated CO₂ emissions for the scheme.
- 1.4 This Energy Statement sets the parameters of detailed design, but remains at a strategic level. The calculations in this document are an indication of system size and carbon emissions based on guidance documents, approved software and practical experience. They are not design calculations but establish the viability and feasibility of various technologies for the proposed development.
- 1.5 This statement is structured as follows:
- Section 2 provides a description of the site and the development proposals;
 - Section 3 provides a description of the main energy policies relevant to the application;
 - Section 4 provides an energy assessment, structured against the requirements of the policies examined in Section 3;
 - Section 5 provides a concluding summary.

2 CONTEXT AND PROPOSALS

Location & Existing Development

- 2.1 The application site is located on land at The School Lodge, off Matson Lane. The site is within an urban area surrounded by residential properties, educational facilities and open playing areas. The site is bound to the immediate north by Matson Lane and Moat Primary School, to the east by residential properties. The south of the site is bound by Matson Park, whilst Matson Anglers makes up the western boundary of the site. The site is located within the Matson and Robinswood Ward (within Gloucester City Council).

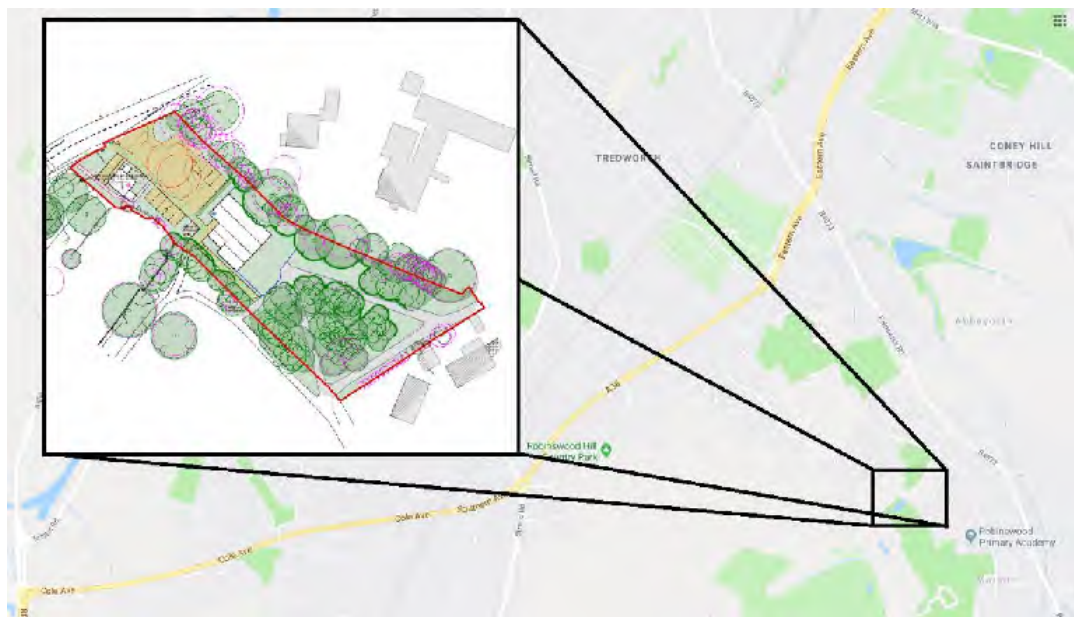


Figure 2.1 – Site Location

The Proposed Development

- 2.2 The planning application seeks consent for the construction of a 3 storey building to accommodate 9 no. residential units (Class C3) including the refurbishment of the existing lodge to provide a single dwelling, car parking, landscaping, external waste storage at The School Lodge, Matson.

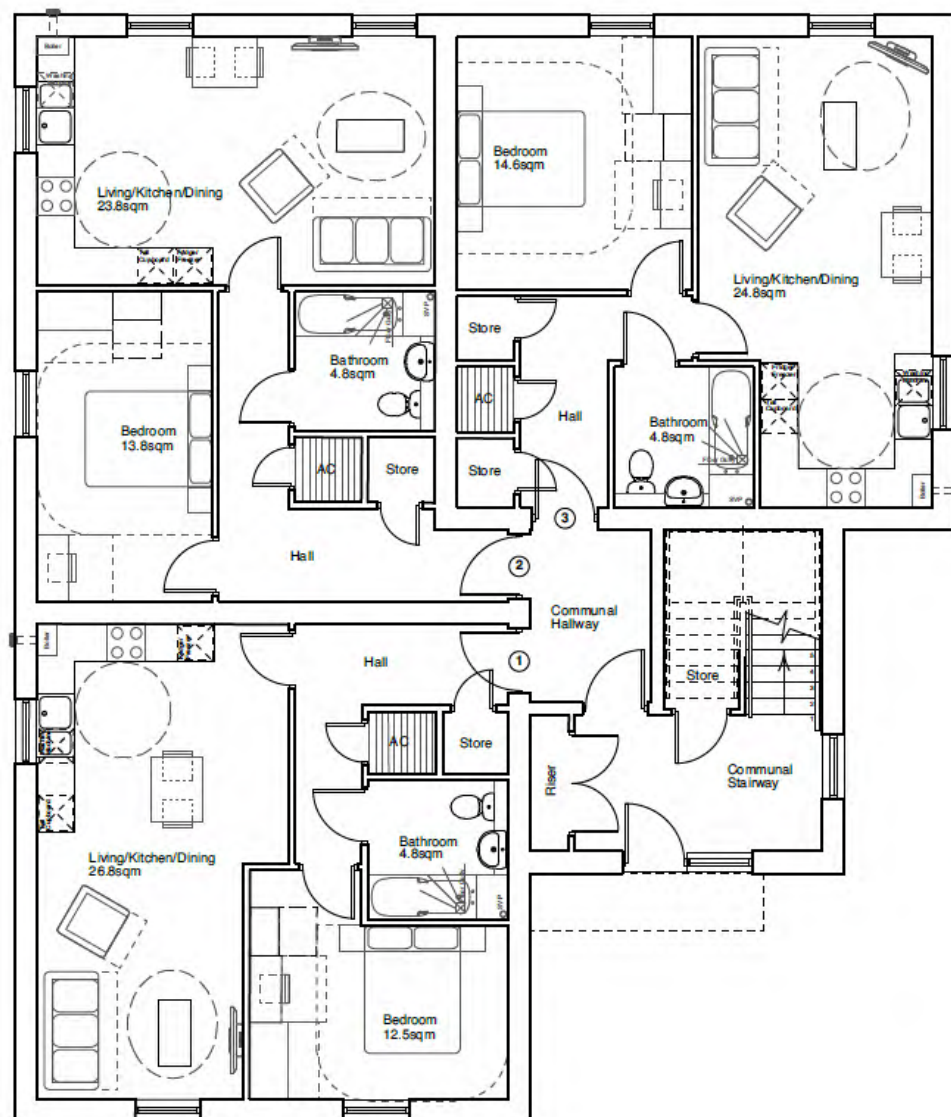


Figure 2.2 – Typical Floor Plan (Image courtesy of Quattro Design Architects)

3 ENERGY POLICY CONTEXT

- 3.1 A key mechanism for delivering the principles of low-carbon development lies within the UK planning system, which is implemented through national guidance along with regional and local planning policies. A review of all the relevant policy documents was undertaken in order to gain an understanding of the guiding policies for energy and CO₂ reduction.

National Planning Policy Framework

- 3.2 The revised National Planning Policy Framework (NPPF) was published in February 2019. It sets out the framework for all planning policy in England and how these policies are expected to be applied. The NPPF sets out a presumption in favour of sustainable development, and the need to support economic growth through the planning system.
- 3.3 Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives):
- an economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;
 - a social objective – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and
 - an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.
- 3.4 Planning plays a key role in helping shape places to radical reductions in greenhouse gas emissions, minimising vulnerability and providing resilience to the impacts of climate change, and supporting the delivery of renewable and low carbon energy and associated infrastructure. This is central to the economic, social and environmental dimensions of sustainable development. The NPPF does not include detailed measures on sustainable design codes and standards to apply, although expects that when setting any local requirement for a building's sustainability, local planning authorities should do so in a way consistent with the national technical standards.

Gloucester City Council Planning Policy

- 3.5 The Gloucester City Council adopted Local Plan consists of the Joint Core Strategy (2017) and Gloucester Local Plan (1983) – saved policies.
- 3.6 The Joint Core Strategy (JCS) is a partnership between Gloucester City Council, Cheltenham Borough Council, and Tewkesbury Borough Council.
- 3.7 The JCS was adopted by the three local authorities in December 2017. It is a co-ordinated strategic development plan that sets out how the area will develop between 2011 and 2031.
- 3.8 The policies within the JCS relevant to the energy performance of new residential development are:

3.9 **Policy SD3: Sustainable Design & Construction**

1. Development proposals will demonstrate how they contribute to the aims of sustainability by increasing energy efficiency, minimising waste and avoiding the unnecessary pollution of air, harm to the water environment, and contamination of land or interference in other natural systems. In doing so, proposals (including changes to existing buildings) will be expected to achieve national standards
2. All development will be expected to be adaptable to climate change in respect of the design, layout, siting, orientation and function of both buildings and associated external spaces.
3. Proposals must demonstrate that development is designed to use water efficiently, will not adversely affect water quality, and will not hinder the ability of a water body to meet the requirements of the Water Framework Directive;
4. All development will be expected to incorporate the principles of waste minimisation and re-use. Planning applications for major development must be accompanied by a waste minimisation statement, which demonstrates how any waste arising during the demolition, construction and subsequent occupation of the development will be minimised and sustainably managed
5. To avoid unnecessary sterilisation of identified mineral resources, prior extraction should be undertaken where it is practical, taking into account environmental acceptability and economic viability relating both to extraction of the mineral(s) and subsequent implementation of the non-minerals development of the site
6. Major planning applications must be submitted with an Energy Statement that clearly indicates the methods used to calculate predicted annual energy demand and associated annual Carbon Dioxide (CO₂) emissions.

3.10 **Policy INF5: Renewable Energy/Low Carbon Energy Development**

1. Proposals for the generation of energy from renewable resources, or low carbon energy development (with the exception of wind turbines), will be supported, provided the wider environmental, social or economic benefits of the installation would not be outweighed by a significant adverse impact on the local environment, taking into account the following factors:
 - (a) The impact (or cumulative impact) of the scheme, including any associated transmission lines, buildings and access roads, on landscape character, local amenity, heritage assets or biodiversity;
 - (b) Any effect on a protected area such as The Cotswolds AONB or other designated areas such as the Green Belt; iii. Any unacceptable adverse impacts on users and residents of the local area, including emissions, noise, odour and visual amenity;
2. Proposals are more likely to be supported when they demonstrate:
 - (a) i. That they have been designed and sited so as to minimise any adverse impacts on the surrounding area;
 - (b) Benefits arising directly from the scheme to the local economy, the community and achievement of national targets;
 - (c) The feasibility and cost-effectiveness of removing any installation and re-instatement of the site in future years;
 - (d) The net gain of carbon savings, taking into account carbon use through manufacturing and installation of the technology.

4 ENERGY STATEMENT

- 4.1 Policy SD3 of the adopted Joint Core Strategy (2017) requires development proposals to demonstrate how they contribute to the aims of sustainability by increasing energy efficiency in addition to being adaptable to climate change in respect of the design, layout, siting, orientation and function of both buildings and associated external spaces.

Methodology – Retained School Lodge

- 4.2 The retained school lodge will undergo refurbishment and is therefore subject to the requirements of Approved Document L1B (Conservation of Fuel & Power in existing dwellings) and is therefore not required to undergo a SAP assessment to demonstrate CO₂ reductions.
- 4.3 Any upgrade to thermal elements, provision of new thermal elements, along with installation of new building services in the retained school lodge will be in accordance with the relevant requirements as set out in Section 3, 4, & 6 of Approved Document L1B.

Methodology – New Build Units

- 4.4 The appropriate methodology for calculating the development's energy performance is "The Government's Standard Assessment Procedure for Energy Rating of Dwellings". This procedure was undertaken using Stroma FSAP 2012 version 1.0.4.18 which is a DCLG approved software and methodology for undertaking SAP assessments to ensure compliance with Part L1A of the Building Regulations.
- 4.5 For the purposes of the energy assessment, each of the 9 proposed flats were chosen for analysis through SAP.
- 4.6 The Dwelling Emission Rate (DER) and the Target Emission Rate (TER) are the headline CO₂ figures which SAP calculations measure. The makeup of these figures will determine whether a new dwelling passes or fails on its emission targets.
- 4.7 As a result of the design stage SAP calculations, a TER is derived, which is the target CO₂ emissions figure which must be achieved by the proposed dwelling. This figure is determined based on a notional dwelling of the same type, size and heating fuel as the one proposed.
- 4.8 Although there are several compliance criteria which determine a pass or fail within SAP (fabric, design, controlled services and fittings etc) if this headline target is not achieved the dwelling will not pass. The figure is measured in kg of CO₂ per m².

Step 1 - Establishing the Target Emission Rate (TER)

- 4.9 The total emissions savings calculated in this report are expressed against a Building Regulation 2013 Target Emission Rate. This is the Baseline against which the measures implemented must show an improvement.
- 4.10 The Target Emission Rates for the development have been established using CLG approved methodology and software. The calculated carbon emissions for the Target Emission Rates are illustrated overleaf.
- 4.11 The calculated carbon emissions and total energy demand for the development Target Emission Rate are illustrated below. The calculated figure demonstrates a Building Regulations 2013 (Part L1A) compliant model.

Table 4.1 – Target CO₂ emissions for the proposed development

Unit	Total Floor Area (m ²)	TER	Total Target CO ₂ (kg.CO ₂ .yr)	Target Regulated Energy (kWh.yr)
Flat 1 (GF)	55	27.46	1,510.30	4,308.04
Flat 2 (GF)	56.65	26.53	1,502.92	4,292.35
Flat 3 (GF)	55	29.28	1,610.40	4,607.51
Flat 1 (MF)	55	23.79	1,308.45	3,705.90
Flat 2 (MF)	56.65	22.95	1,300.12	3,686.07
Flat 3 (MF)	55	25.52	1,403.60	3,988.92
Flat 1 (TF)	55	27.46	1,510.30	4,308.04
Flat 2 (TF)	56.65	26.53	1,502.92	4,292.35
Flat 3 (TF)	55	29.28	1,610.40	4,607.51
		Total =	13,259.42	37,796.69

- 4.12 The figure of **13,259.42 kg.CO₂.year** is the target that must be reached and improved upon by the proposals in order to comply with Building Regulations Part L 2013. This will be achieved through the implementation of fabric efficiency, energy-reduction and carbon-saving measures as outlined in the following sections.

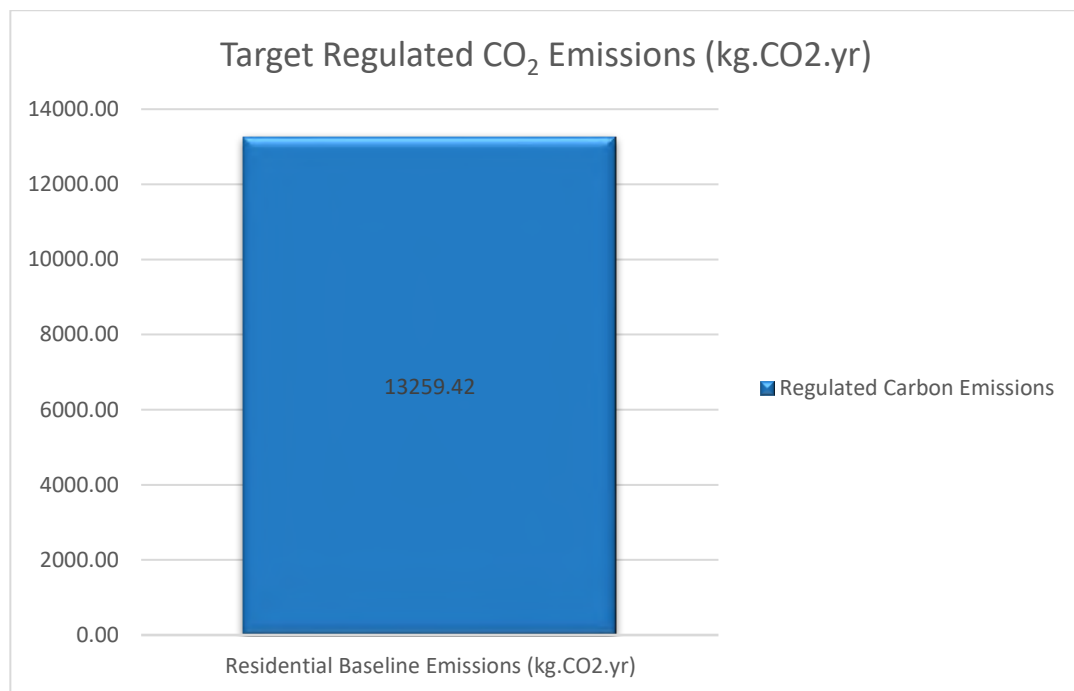


Fig 4.1 – Target CO₂ emissions for the proposed development

Step 2 – Complying with Part L1A of Building Regulations

- 4.13 Robust low-carbon design requires buildings to follow a ‘fabric first’ approach. This is achieved through buildings using less energy by improving u-values, air-tightness and lighting efficiency amongst others. This is the first step to consider in reducing a building’s carbon emissions before the efficient delivery of power, heat or renewables are considered by a design-team.

Fabric Efficiency

- 4.14 U-Values, are used to measure how effective elements of a building’s fabric are as insulators. That is, how effective they are at preventing heat from transmitting between the inside and the outside of a building. The lower the U-value of an element of a building’s fabric, the more slowly heat is able to transmit through it, and so the better it performs as an insulator. Very broadly, the better (i.e. lower) the U-value of a buildings fabric, the less energy is required to maintain comfortable conditions inside the building. Therefore, the following U-Values are proposed:

Table 4.2 Proposed U-Values

Elements	New Thermal Elements: U-Values – W/m ² K	Comment
External Wall	0.14	-
Wall to Unheated Corridor	0.16	-
Ground Floor	0.11	-
Flat Roof	0.13	n/a
Windows	1.2	Assumed as double-glazed, argon filled with a G-value of 0.63
External Solid Doors	2	Including apartment doors to unheated corridors
Party Walls	0	Fully filled cavity with effective sealing at all exposed edges and in line with insulation layers in abutting elements.

- 4.15 For the purposes of this energy assessment, the circulation core of the apartment block has been considered as unheated. Therefore, all adjoining walls to residential units are considered as external and must be insulated as such as per the second column in the table above.

Air Permeability

- 4.16 The designed Air Permeability Rate (APR) has been set at 3 m³/h.m² @ 50Pa for the new-build residential units.

Lighting Strategy

- 4.1 The SAP calculation software used for assessing the residential development does not allow for the specification of lighting elements. However, it is assumed that the light fittings will be specified as LED, low-energy with local manual switching and if appropriate, occupancy sensing.

Space & Water Heating

- 4.17 It is proposed that in order to meet the requirements of Building Regulations, and to maximise the sustainability of the development, each apartment will utilise an air-source heat pump (ASHP) to provide efficient space & water heating. ASHPs with the following specifications have been assumed for each portion of the development;
- The ASHP will have a minimum SCOP of 2.9 for heating¹;
 - Each dwelling will be supplied with a 200 litre DHW cylinder, with a maximum standing heat loss of 1.63 kWh/24 hours. The pipework is assumed to be fully insulated with the water heating timed separately.

Ventilation Strategy

- 4.18 Ventilation will be via basic extract fans to all WCs, bathrooms and kitchen hoods.

¹ Mitsubishi Ecodan QUHZ Monobloc Air Source Heat Pump or similar assumed

CO₂ Reductions achieved via the Energy Efficiency Strategy

- 4.19 The following tables and graphs represent the improvements for the proposed development against Part L 2013 Target Emission Rate (TER) following the application of CO₂ reduction measures;

Table 4.5 –Development CO₂ Reductions

Unit	Total Floor Area (m ²)	DER	Total CO ₂ (kg.CO ₂ .yr)	Regulated Energy (kWh.yr)
Flat 1 (GF)	55	25.43	1,398.65	2,695.35
Flat 2 (GF)	56.65	24.32	1,377.73	2,654.87
Flat 3 (GF)	55	27.24	1,498.20	2,886.49
Flat 1 (MF)	55	21.88	1,203.40	2,318.29
Flat 2 (MF)	56.65	20.80	1,178.32	2,270.90
Flat 3 (MF)	55	23.83	1,310.65	2,525.53
Flat 1 (TF)	55	25.43	1,398.65	2,695.35
Flat 2 (TF)	56.65	24.32	1,377.73	2,654.87
Flat 3 (TF)	55	27.24	1,498.20	2,886.49
		Total =	12,241.53	23,588.14
		Difference over Baseline	1017.89	14208.55
		% Difference	7.68%	37.59%

- 4.20 As can be seen above, the developments predicted CO₂ emissions after applying the CO₂ reduction measures is an **7.68%** below a Part L1A baseline.

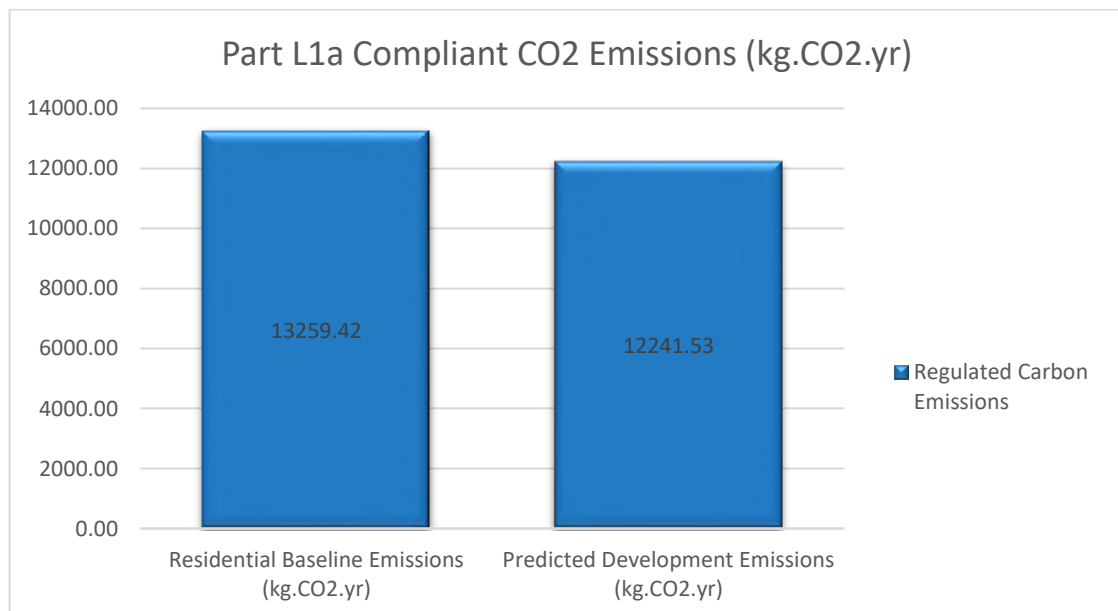


Fig 4.2 Graph of Development CO₂ reduction

5 CONCLUSION

- 5.1 This Energy Statement has been prepared by Envision on behalf of Gloucester City Homes (the applicant) to support a planning application for the construction of a 3 storey building to accommodate 9 no. residential units (Class C3) including the refurbishment of the existing lodge to provide a single dwelling, car parking, landscaping, external waste storage at The School Lodge, Matson.
- 5.2 The report demonstrates how the development could be taken forward in accordance with best practice sustainable design and construction techniques. In particular it demonstrates alignment with Policy SD3 of the Joint Core Strategy (JCS).
- 5.3 Policy SD3 of the adopted Joint Core Strategy (2017) requires development proposals to demonstrate how they contribute to the aims of sustainability by increasing energy efficiency in addition to being adaptable to climate change in respect of the design, layout, siting, orientation and function of both buildings and associated external spaces.
- 5.4 The proposed strategy utilises high performance thermal construction for the roof, walls and glazing, LED lighting, and delivers efficient space and water heating through the use of Air Source Heat pumps.
- 5.5 As the energy targets demonstrated by this report are mandated in the national building regulations, it is not recommended that any further planning conditions are imposed on energy efficiency, as these will be addressed through statutory approvals with building control.

APPENDIX I – SAP BLOCK COMPLIANCE WORKSHEETS

Block Compliance WorkSheet: School Lodge - Matson

User Details

Assessor Name:
Stroma Number:
Software Name: Stroma FSAP

Software Version:

Version: 1.0.4.18

Calculation Details

Dwelling	DER	TER	DFEE	TFEE	TFA
Flat 1 (GF)	22.95	27.46	44.5	43.6	55
Flat 2 (GF)	21.91	26.53	42	42.2	56.65
Flat 3 (GF)	24.75	29.28	51.2	49.9	55
Flat 1 (MF)	21.88	23.79	29	31.1	55
Flat 2 (MF)	20.8	22.95	26.9	30	56.65
Flat 3 (MF)	23.83	25.52	35.6	37.2	55
Flat 1 (TF)	22.95	27.46	44.5	43.6	55
Flat 2 (TF)	21.91	26.53	42	42.2	56.65
Flat 3 (TF)	24.75	29.28	51.2	49.9	55

Calculation Summary

Total Floor Area	499.95
Average TER	26.52
Average DER	22.85
Average DFEE	40.73
Average TFEE	41.05
Compliance	Pass
% Improvement DER TER	13.84
% Improvement DFEE TFEE	0.78

APPENDIX II – CARBON EMISSION FIGURES

The Building Regulations Part L 2013 Fuel Factors have been used within this report and are summarised below against the previous 2010 Fuel Factors.

FUEL	2013 kgCO ₂ /kWh	2010 kgCO ₂ /kWh
Natural Gas	0.216	0.198
Grid Supplied Electricity	0.519	0.517
Grid Displaced Electricity	0.519	0.529

DATE: 14 March 2022
DESIGNER: Kimberly Bartlett
PROJECT No: 70062229-CAL-LI-1302 - P03
PROJECT NAME: School Lodge, Matson






School Lodge, Matson Proposed Calculation
Proposed Lighting Design at maintenance factor of 1.0 unity.
Lighting Calculation in accordance with the requirements of BS
5489-1:2020 small car park and lighting class P5.

Required Levels - Car Park:	Required Levels - Footpaths:
Eav = 5.0	Eav = 3.00 - 4.50
Uo = 0.25	Emin = 0.60

Equipment Utilised: 6m Columns complete with DW Windsor Kirium
Pro 1 luminaires incorporating 8LEDs to Optic settings C1 and B5.
Unit klm reduced by 8% to account for reduction in colour
temperature as per manufacturer guidance.

Outdoor Lighting Report

Designer:	 Bartlett, Kimberly (UKKCB002) DESIGNER 2022.03.14 10:48:58
Checked:	 Griffin, Nick (UKNJG004) Checker 2022.03.18 11:00:33 Z
Approved:	 Batchelor, Paul (UKPJ004) cn=Batchelor, Paul (UKPJ004), ou=Active, email=Paul.Batchelor@wsp.com Approved 2022.03.18 11:38:09

PREPARED BY: WSP
Unit 9 The Chase
John Tate Road
Foxholes Business Park
Hertford
SG13 7NN

Layout Report

General Data

Dimensions in Metres Angles in Degrees

Calculation Grids

ID	Grid Name	X	Y	X' Length	Y' Length	X' Spacing	Y' Spacing
1	CAR PARK	979.08	1940.31	82.61	70.91	1.42	1.48
2	Bat Zone 1	982.63	1978.08	18.57	8.00	0.74	0.32
3	Bat Zone 2	1014.99	1965.08	12.96	8.00	0.52	0.32
4	East Footpath	1038.75	1932.29	24.68	37.27	1.45	1.49
5	Bat Corridor	1044.90	1943.53	46.85	8.00	1.00	1.00

Luminaires



Luminaire A Data

Supplier	D W Windsor
Type	KIRIUM PRO1 8LED 3k C1 CLO 850mA UMS UG 42 0022 0000 100
Lamp(s)	8 x 3k LED
Lamp Flux (klm)	2.30
File Name	KIRIUM PRO1 8LED 3k C1 CLO_850mA UM SUG 42 0022 0000 100.ies
Maintenance Factor	1.00
Lum. Int. Class	G6
No. in Project	4



Luminaire E Data

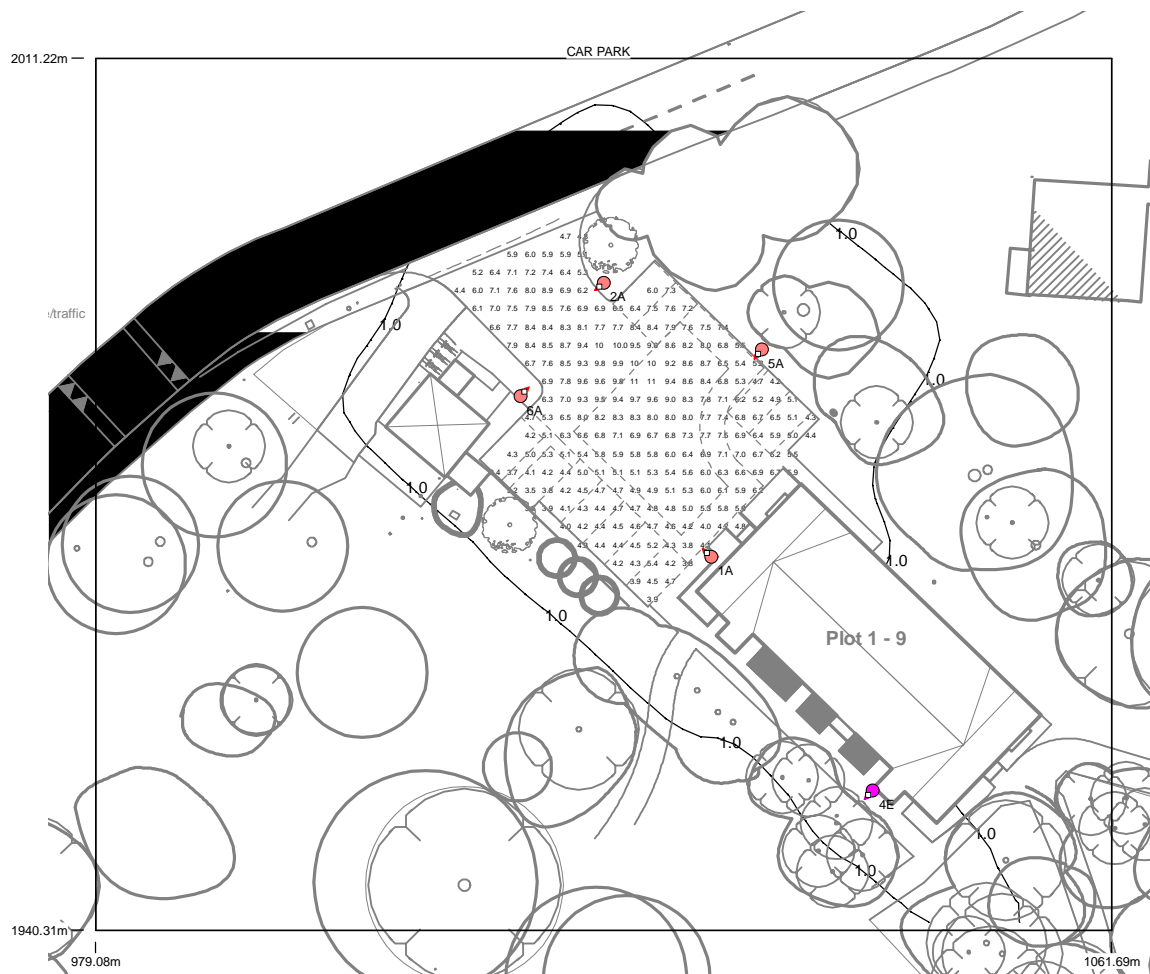
Supplier	D W Windsor
Type	KIRIUM PRO MINI 8LED 3k B1 CLO 250mA UMSUG 42 0007 0000 100
Lamp(s)	8 x 3k LED
Lamp Flux (klm)	0.81
File Name	KIRIUM PRO MINI 8LED 3k B1 CLO_250mA UMSUG 42 0007 0000 100.ies
Maintenance Factor	1.00
Lum. Int. Class	G3
No. in Project	1

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	A	1029.13	1970.67	6.00	136.00	0.00	0.00	0.50			
2	A	1020.38	1992.98	6.00	222.00	0.00	0.00	0.50			
4	E	1042.25	1951.71	6.00	225.00	0.00	0.00	0.50			
5	A	1033.23	1987.56	6.00	233.00	0.00	0.00	0.50			
6	A	1013.63	1983.74	6.00	49.00	0.00	0.00	0.50			

Horizontal Illuminance (lux)

CAR PARK



Results

Eav	6.41
Emin	3.23
Emax	10.53
Emin/Emax	0.31
Emin/Eav	0.50

Illuminance (lux)

Bat Zone 1

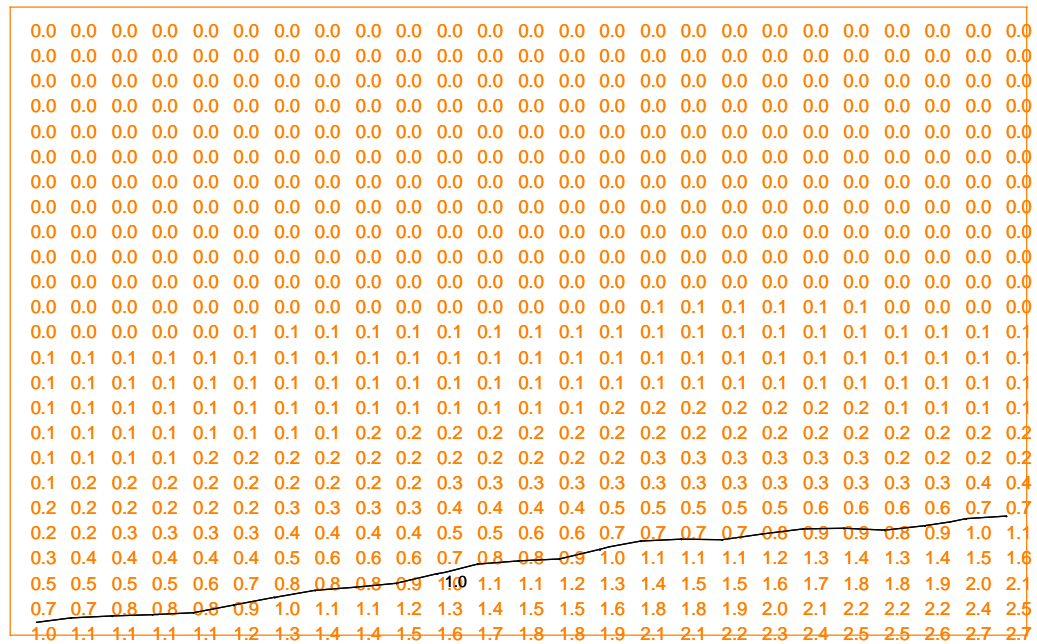
[illegible]

Results

Eav	0.01
Emin	0.00
Emax	0.24
Emin/Emax	0.00
Emin/Eav	0.00

Illuminance (lux)

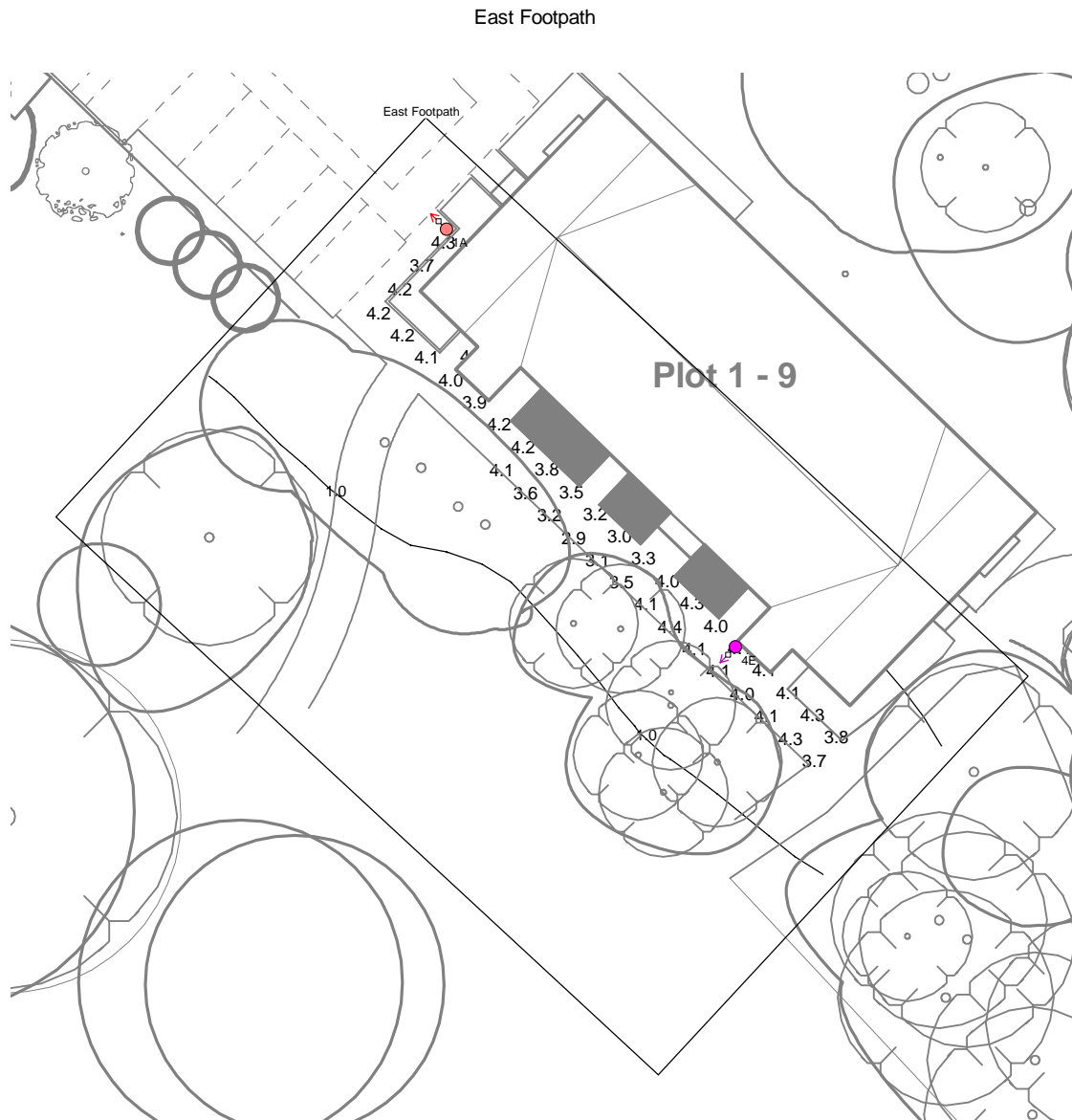
Bat Zone 2



Results

Eav	0.30
Emin	0.00
Emax	2.72
Emin/Emax	0.00
Emin/Eav	0.00

Horizontal Illuminance (lux)

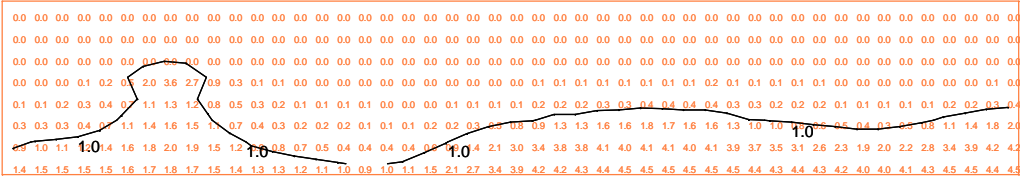


Results

Eav	3.91
Emin	2.93
Emax	4.53
Emin/Emax	0.65
Emin/Eav	0.75

Illuminance (lux)

Bat Corridor



Results

Eav	0.83
Emin	0.00
Emax	4.54
Emin/Emax	0.00
Emin/Eav	0.00



LRM
PLANNING
LIMITED

LAND AT SCHOOL LODGE, MATSON, GLOUCESTER

Planning Statement

Full application for residential
development and community use

Prepared by LRM Planning Limited on behalf of
Gloucester City Homes

April 2022



Report Control

Project: School Lodge, Matson

Client: Gloucester City Homes

Job Number: 18.272

Document checking

Primary author: John-Rhys Davies

Initialled: JRD

Review by: Sam Courtney

Initialled: SC

Issue	Date	Status	Checked for issue
0	28/04/2022	Final	JRD



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Appendices

APPENDIX 1 – SITE LOCATION PLAN
APPENDIX 2 – SITE LAYOUT



1 Introduction

- 1.1 This Planning Statement accompanies a full planning application, submitted on behalf of Gloucester City Homes (the applicant), for the development of 9 dwellings and a community use on land at School Lodge, Matson, Gloucester. This Planning Statement explains the proposals in the context of relevant local and national planning policy and, in these terms, justifies the grant of planning permission.
- 1.2 This application follows pending applications at the same site by the same applicant; 19/01084/DSUF; 19/01110/FUL & 19/01080/LBC for a similar development of 10 no. dwellings. This new submission is made for a new full application which presents a revised scheme in response to officer comments.
- 1.3 The application site is identified on the location plan provided in Appendix 1. It is wholly within the administrative area of Gloucester City Council and is within the existing residential envelope of Matson. The development proposals (site layout) are shown in Appendix 2.
- 1.4 In accordance with Section 70(2) of the Town and Country Planning Act 1990 and Section 38(6) of the Planning and Compulsory Purchase Act 2004. Both provisions require that the decision in relation to this application is taken in accordance with the development plan, unless there are material considerations that indicate otherwise.
- 1.5 In the case of Gloucester City, at the time of writing the Development Plan comprises the following documents:
 - The Adopted Gloucester, Cheltenham and Tewkesbury Joint Core Strategy 2011-2031; and
 - The Saved Policies of the Gloucester Local Plan 1983.
- 1.6 As outlined in this Planning Statement, the proposed development is in accordance with the adopted Development Plan and therefore it should be approved *“without delay”*. In accordance with the provisions of paragraph 11 of the National Planning Policy Framework (NPPF).
- 1.7 The complete application submission comprises the following:
 - Application forms;
 - Site location plan;
 - Existing plans and elevations;
 - Proposed plans and elevations;
 - Planning Statement;
 - Design and Access Statement;
 - Transport Assessment;
 - Drainage Strategy Report;
 - Proposed lighting scheme;
 - Tree Survey, Impact Assessment and Tree Protection Method Statement;
 - Ecology Assessment and Bat Method Statement;
 - HRA Shadow Appropriate Assessment;



- Archaeological Assessment;
- Heritage Assessment;
- Landscape and Visual Appraisal;
- Energy Statement; and
- Waste Minimisation Statement;

1.8 Together these documents provide a detailed explanation of the proposals and their implications upon the surrounding environs. They demonstrate that the proposal represents an acceptable and appropriate design response. A complete list of the supporting application documentation is provided within the covering letter accompanying the application submission.



2 Site Description

The Site Context

- 2.1 The subject site measures approximately 0.345ha and comprises vacant land located to the north of Matson Park, Gloucester. A derelict two storey fishing lodge and area of hard standing are present to the north of the site with a small fishing lake directly to the west. The southern part of the site comprises an area of grassland and vegetation including a footpath network which links to Matson Park, a large area of Public Open Space. Mature vegetation forms the immediate boundaries of the site to the north east, south and south west.
- 2.2 The site is further bound to the north by Matson Lane (a single carriageway 30mph road) and Moat Primary School, to the east by 'Taylor House' (a residential building), to the south by existing residential development along Cranwell Close and to the west by Matson Park. A Public Right of Way crosses the site from north to south. The wider residential envelope of Matson forms the wider surrounding context to the east of the site, with Robinswood Hill Country Park to the west.
- 2.3 The local vernacular of the properties located to the south east of the site along Cranwell Close comprises Post War terraced and semi-detached two storey housing finished in buff brick with brown concrete tile roofs. The majority of the properties benefit from on plot parking and small front and rear gardens, with detached garages. Taylor House comprises a 3 storey building finished in buff brick with a brown concrete tile roof.
- 2.4 There are no statutory designations (or any other form of designation) located within, or immediately adjoining the site boundary. A Scheduled Ancient Monument (Matson Moated Site) is located within 80m to the north east of the site.

Sustainability

- 2.5 In terms of local services and facilities, a Tesco Express and Londis Store are located within 430m to the north of the site, with Saintbridge Sports Centre approximately 700m to the north. In addition, a Morrisons Supermarket, Pub, Pharmacy and Vets are located within 1.5km. A wide range of large retail outlets including a Lidl Supermarket, Farmfoods, Pizza Hut, The Range, Homebase, B&M Bargains, Halfords, Howdens and Screwfix are also located within 2.7km (a 20 minute bus journey) to the north of the site along Eastern Avenue and Metz Way.
- 2.6 In terms of education and healthcare provision, Moat Primary School is located immediately opposite the proposed development site, with Robinswood Primary Academy within 600m to the south. Ribston Hall High School and St Peter's High School and Sixth Form Centre are located within 3.6km and 3.8km respectively. Matson Lane Surgery is located within 250m to the west of the site, with Abbeymead Dental Care located approximately 2km to the east.

Accessibility

- 2.7 Vehicular access to the site is available off Matson Lane, which connects to the wider highway network via Matson Avenue. There are footways along both the northern and



southern side of Matson Lane with provide pedestrian connectivity to the wider area. Pedestrian connectivity is also available to the south of the site through Matson Park providing access to a further convenience store and Matson Rugby and Football Club.

- 2.8 There are two bus stops within 250m of the site providing services to local destinations in Gloucester and further afield every 10 minutes throughout the day. Gloucester Rail Station is also located within 4.7km providing regular services to Cheltenham Spa, Cardiff Central, Weymouth and other local destinations.

Planning History

- 2.9 There is no recent planning history associated with the application site aside for previous submission relating to a similar development by the same applicant; 19/01084/DSUF; 19/01110/FUL & 19/01080/LBC.
- 2.10 The proposed development acts as a revision to previous applications following advice received from officers.



3 Proposed Development

Overview

3.1 This full application proposes the construction of the following principle components:

- 9no. 1 bedroom flats;
- Refurbishment of the existing lodge building to provide a community use;
- Public open space including dedicated footpath link;
- Landscaping;
- SUDs;
- Car parking; and
- Associated works.

3.2 A summary of each of the main components of the application is provided in the following paragraphs.

Residential Units/Accommodation

3.3 The block of apartments comprises 4no. 1 bedroom flats on the ground floor, with 5 no. 1 bed flats on the first floor above. Ground floor flats are served with direct access from ground floor and first floor flats served from communal corridors off stairways, save for 1 no. which has direct stair access from ground floor.

3.4 The suite of accommodation for each flat comprises of an open plan living/kitchen/dining area, a bathroom, bedroom and stores. All the proposed flats are over 50sqm in size in keeping with nationally described space standard (NDSS).

3.5 The apartment building also contains a communal refuse and recycling store area (29.5sqm) and communal bike store (23.7sqm) at ground floor. There is also an allocated car parking space for each dwelling.

3.6 All of the proposed dwellings will be affordable rent, general needs affordable housing delivered by Gloucester City Homes as outlined in the housing schedule below.

Plot number	Unit Type	Tenure	Number of bedrooms	Sqm
1	GF Flat (direct access)	Affordable Rent	1B2P	50.2
2	GF Flat (direct access)	Affordable Rent	1B2P	50.3
3	GF Flat (direct access)	Affordable Rent	1B2P	50.3
4	GF Flat (direct access)	Affordable Rent	1B2P	50.2
5	FF Flat (communal stair access)	Affordable Rent	1B2P	53.4



6	FF Flat (communal stair access)	Affordable Rent	1B2P	54.2
7	FF Flat (communal stair access)	Affordable Rent	1B2P	50.3
8	FF Flat (communal stair access)	Affordable Rent	1B2P	52.9
9	FF Flat (direct stair access)	Affordable Rent	1B2P	67.7

Restoration and Change of Use of School Lodge building

- 3.7 The lodge will retain its exterior features and be refurbished to comprise a community use (Use Class F2) with ancillary kitchen/café and office/store area. The building will provide a hub and meeting point for the local community.

Layout/Form

- 3.8 The proposed layout has been designed over two storeys (revised from a former three storey proposal) to minimise the impact of the proposed development on the surrounding mature vegetation and existing footpath network to the south of the site which connects to Matson Park. The location of the apartments respects the relevant separation distances in relation to Taylor House and the existing residential dwellings to the south of the site. The density of the proposed development equates to approximately 26 dwellings per hectare which is considered appropriate given the site context, the requirement to retain an element of open space within the scheme and the nature of the proposed development, which is primarily formed by apartments.
- 3.9 The orientation of the dwellings has been designed to allow for strong natural surveillance over the public realm, whilst private spaces are clearly defined with boundary treatments such as hedgerows, close boarded fencing and railings.

Access, car parking and refuse collection

- 3.10 Vehicular and pedestrian access is proposed off Matson Lane to the north of the site in the location of the existing site access, which will serve an adoptable turning head, thereby allowing ease of maneuvering and delivery vehicles. A total of 9 dedicated residents parking bays are provided at a ratio of 1 per bedroom per property. This level of parking is in accordance with the Council's adopted guidelines. In addition, there is provide dedicated cycle storage within the ground floor of the proposed apartment block. Dedicated car parking is also provided adjacent to the lodge building and additional cycle stores.
- 3.11 It is proposed to divert the existing Public Right of Way which runs through the site from north to south and create a dedicated route to the west of the site connecting to the existing footpath network. The new footpath link will comprise a metalled surface including lighting and therefore is considered an improvement in comparison with the existing route which currently is not defined or lit and is suffering with degradation. This diversion is



subject to a separate Public Right of Way diversion application.

- 3.12 Storage for recycling and refuse is provided in a dedicated store within the ground floor of the proposed apartment building.

Trees, Landscaping and Public Open Space

- 3.13 The proposed site layout includes an area of Public Open Space to the south of the site, this area will retain the existing trees and vegetation and footpath network which connects to Matson Park and include new amenity grassland. In addition, a new landscape buffer including native tree species and structure planting will be implemented along south western boundary of the site to further screen the new dwellings from Matson Park. New tree planting is also proposed to the north of the site along Matson Lane to mitigate the small loss of trees proposed to accommodate the proposed development. The remainder of the existing mature tree cover within the site will also be retained to add instant maturity to the scheme and minimise the impact on Matson Park.

Appearance, Materials and Boundary Treatments

- 3.14 The local vernacular within the vicinity of the site is varied with no particular character or style and therefore the new apartments have been designed with a unique character designed to reflect its setting to the north of Matson Park. The proposal includes gable ends and variety in materials and fenestration to disperse the massing of the building.
- 3.15 Materials have been selected to reflect the sites existing treed setting and include green and natural timber paneling. This paneling contrasts with seam metal cladding surrounding the larger gable elements. In addition, blue engineering brick is used to reflect the existing lodge building.
- 3.16 In terms of boundary treatments a 1.8m close board fence will demarcate the boundary between public and private space to the east and south of the site, whilst 1.2m close board fencing will be used along the western edge of the site to enclose the private garden boundary of the lodge.

Flood Risk and Drainage

- 3.17 In relation to flood risk, the drainage strategy accompanying this application confirms that the site is located in Flood Zone 1 as outlined on the Government's Development Advice Map and is not in a tidal or fluvial flood zone.
- 3.18 It is proposed to dispose of foul water via the existing foul drainage network to the south east of the application site. With regards to surface water, rain water gardens are incorporated in to the drainage strategy which seeks to attenuate surface water prior to discharge at a controlled rate into the existing fishing lake to the west of the site.

Ecology

- 3.19 In order to inform this planning application, Wydean Ecology undertook an initial ecological appraisal of the site in December 2019 with subsequent bat surveys undertaken between May 2019 and September 2019. There are no rare, scarce or protected habitats within the



site boundary, other than a small low conservation status bat roost located within the existing lodge, historical use of the adjacent fishing lake by Otter and use of the lodge building and vegetation by breeding birds.

- 3.20 Prior to any works being completed on the lodge building, a Protected Species License from Natural England will be required in respect of bats. It is also proposed to compile a Construction Ecological Management Plan which will detail how site clearance, ground work and construction activities shall be undertaken and managed in accordance with the recommendations and ecological requirements outlined in the Ecological Appraisal Report accompanying this application. It is considered that the implementation of this Management Plan can be controlled via a suitably worded planning condition.
- 3.21 A Shadow Habitats Regulation Assessment has been prepared by CSA and is included in the application for consideration.

Heritage

- 3.22 The Heritage Impact Assessment accompanying this application outlines that the site includes School Lodge, a 19th Century lodge which forms part of the curtilage of Grade II* listed Matson House. School Lodge is currently in a state of disrepair and is at high risk of further decay without renovation works. The report confirms that the retention and renovation of the lodge has the potential to result in a small heritage benefit to the overall significance of Matson House.
- 3.23 With regards to archaeology, the site has some potential for Romano-British and Saxon activity/remains, however these remains are not anticipated to be of sufficient heritage value to preclude the proposed development. It is considered that a programme of appropriate and proportionate archaeological mitigation controlled by a suitably worded condition would mitigate any harm to these assets.



4 Amended Development Proposals

- 4.1 The proposed scheme has been subject to extensive engagement, including pre-application consultation and a previous application, which remains pending, for 10 dwelling (Ref: 19/01110/FUL). The proposed development is submitted in response to feedback received to date and represents an improved high quality development. A summary of changes in response to previous concerns is outlined under relevant headings below.

Scale, Design & Visual Impact

- 4.2 The design of the proposed apartment building has been amended reducing the height and overall massing of the structure compared to that originally proposed. The building has been reduced from three storey to two, whilst changes to its form and appearance have been made with the resulting structure more akin to a terrace of cottages. Bookend units have been incorporated to both uplift the design and visual appearance and also present active frontages over both the site entrance and parking courtyard (to the north west) and to the footpath network which lead into Matson Park (to the south east).
- 4.3 A more contemporary appearance has been adopted for the structure with use of high-quality materials, including red facing brick and grey roofing tiles, providing a connection/link with the local vernacular without visually 'competing' with the curtilage listed Lodge building.

Highways

- 4.4 Following completion of further speed surveys, previous comments raised by Highways Dept have been addressed with an amended Transport Statement prepared and revised vision splay drawing issued. It is noted that the vision splay requires the relocation of a short section of a post and rail fence. As this land is not in third party ownership it is anticipated that this can be secured via an appropriately worded condition.

Nationally Described Space Standards.

- 4.5 Following review of the apartment designs all of the proposed units can meet relevant NDSS.

Archaeology/Heritage.

- 4.6 An Archaeological Evaluation has been prepared by TVAS with resulting analysis undertaken following completion of trial trenching on site. Furthermore, Cotswold Archaeology have updated the Heritage Assessment.

Ecology, Trees, Landscape and Landscape Impact.

- 4.7 Further to the comments provided during the application appraisal stage, accompanying this submission is a Bat Method Statement prepared by EDP, together with Lighting Assessment provided by WSP. The previously issued reports have been updated to take into account revisions made to the design.



5 The Development Plan

- 5.1 This section of the Planning Statement describes the Development Plan for Gloucester City. In accordance with Section 38(6) of the Planning and Compulsory Purchase Act and Section 70(2) of the Town and Country Planning Act 1990, all applications for planning permission should be determined in accordance with the Development Plan, unless material considerations indicate otherwise.
- 5.2 For Gloucester City the principal documents within the Development Plan relevant to this application at the time of writing is the:
- City of Gloucester Plan (1983); and
 - The Joint Core Strategy (2017).
- 5.3 A number of other planning documents are capable of forming material considerations in assessing the merits of this application. These include:
- The City of Gloucester Plan (1996); and
 - The Local Plan Deposit Draft (2002).

The City of Gloucester Plan (1983)

- 5.4 In relation to the City of Gloucester Local Plan 1983, in light of the adoption of the JCS and a review of the NPPF, only two policies from the Local Plan remain A1.a (Heights of buildings and protection of views) C1.e (Site identified at Abbeydale to provide two Primary Schools).
- 5.5 Policy A1.a seeks to control the height of buildings within the vicinity of Gloucester Cathedral in order to protect important views. The application site doesn't fall within any of the specified zones within which height restriction applies and therefore this policy is not considered relevant in the context of the development proposal.
- 5.6 Similarly, Policy C1.e relates specifically to primary school provision at Abbeydale and therefore is also not relevant in the context of the development proposal.

The Joint Core Strategy (2017)

- 5.7 The Joint Core Strategy (hereafter JCS) was prepared jointly between Gloucester City, Cheltenham and Tewkesbury Borough's and was Adopted in December 2017.
- 5.8 The JCS sets out the long-term vision and objectives for the Gloucester, Cheltenham and Tewkesbury administrative areas. It provides strategic policies for shaping new development and locations development up to 2031. Its policies contribute to a strategic planning framework which guides future planning decision and helps achieve the overall vision for the area.
- 5.9 It provides the "higher level" or "strategic part" of the Development Plan for the area. In this regard it includes strategic allocations defined in the JCS' policies. It is intended to be complemented by more detailed locally-specific policies that will be set out in respective



“District Plans”. The District Plan for Gloucester will be the City Plan, which is at an early stage of preparation (Draft stage).

5.10 A summary of the policies relevant to this application is provided below.

Vision

5.11 The JCS' Vision intends for the area as a whole to have continued to develop as a highly attractive and accessible place to live, work and socialise. It will be recognised nationally as enjoying a vibrant, competitive economy with increased job opportunities and a strong reputation for being an attractive place and in which to invest. The character and identity of communities will have been retained, whilst improved access to housing will have addressed the needs of young families, single people and the elderly.

5.12 With regards to new development, this will be:

- built to the highest possible standard of design and focused on protecting the quality and distinctiveness of each community;
- sustainably located without increasing the risk of flooding; and
- sensitively designed respecting the natural and built environment.

5.13 All future residents and business will benefit from improved infrastructure, roads, public transport and services and community facilities.

5.14 For Gloucester, the Vision intends that the town will continue to be the economic and administrative capital of the County. The focus is on delivering an ambitious regeneration programme to revitalise the City and its centre. This will involve the provision of housing, jobs, retail, leisure facilities and infrastructure.

Strategic Objectives

5.15 To support and deliver the Vision, the JCS sets out 9 Strategic Objectives which relate to: 1. A Thriving Economy; 2. A Sustainable Natural, Built and Historic Environment; and 3. A Healthy, Safe and Inclusive Community. The Strategic Objectives inform the Plan's Spatial and Sustainable Development Policies.

Spatial Strategy

5.16 **Policy SP1 (The Need for New Development)** outlines that during the plan period provision will be made to meet the need for approximately 35,175 new homes and that this is to be delivered by *inter alia* development within existing urban areas through District Plans, existing commitments, urban extensions to Cheltenham and Gloucester, and the provision of Strategic Allocations at Ashchurch. The specific need within Gloucester is at least 14,359 new homes.

5.17 **Policy SP2 (Distribution of New Development)** confirms that to support their roles as the principal providers of jobs, services and housing, and in the interests of promoting sustainable transport, development will be focused at Gloucester and Cheltenham. To meet the needs of Gloucester City, the JCS will make provision for at least 14,359 new homes, of which at least 13,287 dwellings will be provided within the Gloucester City administrative



boundary. Table SP2a states that 832 of these dwellings will be made up from windfall development.

Sustainable Development Policies

- 5.18 **Policy SD3 (Sustainable Design and Construction)** seeks to ensure that development proposals are designed and constructed to maximise the principles of sustainability. Such considerations relate to energy efficiency, adaptability to climate change, avoiding pollution, waste minimisation and mineral safeguarding. Such matters relate both to individual buildings and to the integration of new development with new and existing communities.
- 5.19 **Policy SD4 (Design Requirements)** encourages development proposals to incorporate good design principles such as:
- context, character and sense of place;
 - legibility and identity;
 - amenity and space;
 - public realm and landscape;
 - safety and security;
 - inclusiveness and adaptability; and
 - movement and connectivity.
- 5.20 **Policy SD6 (Landscape)** seeks to ensure that development will protect landscape character and will have regard to the local distinctiveness and historic character of the different landscapes in the JCS area. Proposals are required to demonstrate how the development will protect or enhance landscape character and avoid detrimental effects on types, patterns and features which will make a significant contribution to the character, history and setting of a settlement or area.
- 5.21 **Policy SD8 (Historic Environment)** outlines that development should make a positive contribution to the local character and distinctiveness, having regard to valued and distinctive elements of the historic environment. It also seeks to ensure that designated and undesignated heritage assets and their settings are conserved and enhanced as appropriate to their significance, and for their important contribution to local character, distinctiveness and sense of place. Proposals that secure the future conservation and maintenance of heritage assets and their settings that are at risk through neglect or decay are encouraged.
- 5.22 **Policy SD9 (Biodiversity and Geodiversity)** seeks to ensure that biodiversity and geodiversity resources are protected and enhanced through the safeguarding of protected species and their habitats and the creation of new habitat, green infrastructure links and management of landscapes.
- 5.23 **Policy SD10 (Residential Development)** confirms that on sites which are not allocated, housing development and conversions to dwellings will be permitted on previously developed land in the existing built up area of Gloucester except where restricted by policies within District Plans. Housing development on other sites will only be permitted where it is *inter alia* infilling within the existing built up area of the City of Gloucester except where restricted by policies within District Plans.
- 5.24 Policy SD10 further confirms that proposals involving the sensitive, adaptive re-use of



vacant or redundant buildings will be encouraged.

- 5.25 **Policy SD11 (Housing Mix and Standards)** states that housing development will be required to provide an appropriate mix of dwelling sizes, types and tenures and that development should address the needs of the local area. New housing should also be designed to be adaptable and accessible as far is compatible with the local context and meet appropriate space standards.
- 5.26 **Policy SD12 (Affordable Housing)** provides standards in relation to the provision of affordable housing, in particular it states that affordable housing should also adhere to the provisions of policy SD11.
- 5.27 **Policy SD14 (Health and Environmental Quality)** requires high-quality development to protect and seek to improve environmental quality. New development should not create or exacerbate conditions that could impact on human health or cause health inequality. It should also not cause unacceptable harm to local amenity including the amenity of neighbouring occupants or result in unacceptable levels of air, noise, water, light or soil pollution or odour.

Infrastructure Policies

- 5.28 **Policy INF1 (Transport Network)** outlines that developers should provide safe and accessible connections to the transport network to enable travel choice for residents and commuters. In particular, all proposals should ensure that safe and convenient access to the highway network is provided for all transport modes as well as connections to existing walking, cycling and passenger transport networks to encourage use.
- 5.29 **Policy INF2 (Flood Risk Management)** states that development proposals must avoid areas at risk of flooding and must not increase the level of risk to the safety of occupiers of a site, the local community or the wider environment either on the site or elsewhere.
- 5.30 **Policy INF3 (Green Infrastructure)** outlines that development proposals should consider and contribute positively towards green infrastructure, including the wider landscape context and that existing green infrastructure will be protected in a manner that reflects its contribution to ecosystem services and the connectivity of the green infrastructure network.
- 5.31 It further outlines that development proposals that will have an impact on woodlands, hedges and trees will need to include a justification for why this impact cannot be avoided and should incorporate measures acceptable to the Local Planning Authority to mitigate the loss. Where assets are created, retained or replaced within a scheme, they should be properly integrated into the design and contribute to local character and distinctiveness.
- 5.32 **Policy INF4 (Social and Community Infrastructure)** states that proposals to develop land or buildings currently or previously in use as a community facility will demonstrate why the facility is no longer required and, as appropriate, how, when and where suitable local replacement facilities will be provided.
- 5.33 **Policy INF6 (Infrastructure Delivery)** confirms that where infrastructure requirements are generated as a result of a individual site, new development will be served by and supported by adequate and appropriate on and/or offsite infrastructure and services.



- 5.34 **Policy INF7 (Developer Contributions)** outlines that arrangements for direct implementation or financial contributions towards the provision of infrastructure and services required as a consequence of development, including its wider cumulative impact, and provision where appropriate for its maintenance, will be negotiated with developers before the grant of planning permission.

The City of Gloucester Plan (1996)

- 5.35 In order to reflect the changes to Gloucester's administrative area, the Council published two Local Plan documents in 1996, as follows:
- City of Gloucester Local Plan (Pre-1991 Boundary Extension); and
 - City of Gloucester Local Plan (Additional Areas Post-1991 Boundary Extension).
- 5.36 Although both Plans were the subject of an Independent Examination and an Inspector's Report published, they were never formally Adopted.
- 5.37 The Local Authority contends that the Local Plan is capable of being a material consideration in the determination of a planning application. However, had the Plan been adopted, it would now be time expired and was formed against the policy framework of the Gloucestershire Structure Plan First Alteration (1992), which itself is both time expired and had been superseded by the now revoked Gloucestershire Structure Plan Second Review (1999). Given that there is an up-to-date Development Plan document (the JCS), it is considered that no material weight can be attributed to this Plan in the consideration of this application.

Local Plan Deposit Draft (2002)

- 5.38 Gloucester City Council began preparation of a new Local Plan in 2000. This culminated in the publication of the Local Plan Second Stage Deposit Draft in 2002. Following changes to the planning system brought by the 2004 Planning and Compulsory Purchase Act, the Local Authority decided not to progress with its preparation.
- 5.39 Despite being used by the Local Authority for development control purposes, it should be attributed no weight in the determination of this application. Had the Plan been adopted, it would now be time expired.

Supplementary Planning Documents

- 5.40 The following Supplementary Planning Documents are considered relevant to the development proposal:
- SPG1 – Sustainable Urban Drainage Systems (November 2004)
 - SPG6 – New Housing and Open Space (June 2001)
 - Designing Safer Places (August 2008)

Summary

- 5.41 Planning law necessitates that applications are determined in accordance with the Development Plan unless material considerations indicate otherwise. The Development Plan



for Gloucester City comprises the 1983 City Plan and the JCS (2017).

- 5.42 The principal document within the Development Plan comprises the JCS. As demonstrated within section 8 of this Planning Statement, the proposed development is in accordance with the relevant policies of the JCS.
- 5.43 Saved policies contained within the 1983 City Plan also forms part of the Development Plan for Gloucester City, however as outlined above the two remaining saved policies of this Plan are not considered relevant in the context of the proposed development.
- 5.44 Whilst not formally adopted under the statutory process, we are aware that the Local Authority uses the 1996 City of Gloucester Plan and the 2002 Draft Deposit Plan for development control purposes. Both Plans are time expired and therefore do not provide an up-to-date expression of policy. As their housing policies and proposals will have been formed against out-dated evidence and they were not formally Adopted, they should be considered as being out-of-date and they should not be attributed any weight in the determination of this application.



6 Emerging Development Plan

Gloucester City Plan 2016-2031

- 6.1 To supplement the JCS, District Plans are being prepared by each of the Councils. The emerging Gloucester City Plan is being prepared by Gloucester City Council and will form the District Plan for the area. On adoption it will sit beneath the JCS and provide details of how the strategic planning policy framework provided by the JCS will be implemented.
- 6.2 The City Plan is at an advance stage having been subject to examination (Hearing Sessions concluded in June 2021) and the Council are in the process of finalising a schedule of Main Modifications. Accordingly, some weight can be afforded to the Plan, in accordance with para. 48 of the NPPF. A summary of the key emerging policy framework is provided below.

Vision

- 6.3 The draft City Plan outlines a Vision for Gloucester City. It states that by 2031 significant progress would have been made in regenerating the City and therefore, it will be a flourishing, healthy, modern and ambitious place to live and work. A significant number of new homes will be delivered, in a way that meets identified needs and that supports economic growth. Active streets, open spaces, playing fields, community infrastructure, environmental quality, connectivity and access will be integral components of new development, which will be built to the highest possible standards. Gloucester's heritage, cultural and natural environment will be safeguarded and enhanced to create a highly attractive place that residents and visitors can enjoy.

Key Principles

- 6.4 To support and deliver the Vision for Gloucester, the City Plan sets out 14 key principles. Relevant to this application, they include: promoting sustainable development; ensuring that new development is supported by the necessary infrastructure; providing a balanced mix of new housing that meets the needs of the area; to protect and enhance the City's leisure, recreation and environmental assets, including valuable heritage, public open space, allotments, area of nature conservation, landscapes, playing fields and sporting facilities; to ensure development delivers high quality design; to ensure that development minimises its impact on climate change; and to ensure that developments provides good access to quality open spaces, playing fields and community facilities, whilst protecting residents from pollution and contamination.
- 6.5 The policies contained within the emerging Plan provide the planning response to each of the identified key principles.

Development Management Policies

- 6.6 **Policy A1 Effective and efficient use of land:** Proposals are required to make an effective and efficient use of land. Amongst other things, they should:
- Result in improvement to the built and natural environment;



- Be of suitable scale for the site;
- Provide adequate off-street parking (and covered and secure cycle storage);
- Not prejudice the potential for the comprehensive development of adjacent land;
- Provide outdoor amenity space and garden space at a level that reflects the character of the local area; and
- Provide adequate and appropriately located bin storage.

- 6.7 **Policy A2 Affordable Housing:** seeks at least 25% affordable housing within major residential development.
- 6.8 **Policy A6 Accessible and adaptable homes:** 50% of housing development should be able to achieve Building Regs M4(2) 'accessible and adaptable dwellings'. 4% of the affordable rented component of every housing development should also meet Building Regs M4(3) 'wheelchair user dwellings'.
- 6.9 **Policy C1 Active design and accessibility:** Proposals must demonstrate the layout accords with the principles of Active Design as outlined by Sport England (or any future iteration) and meet the highest possible standards of accessible and inclusive design (convenient and welcoming with no disabling barriers).
- 6.10 **Policy D1 Historic environment:** Development proposals must conserve the character, appearance and significance of designated and non-designated heritage assets and their settings.
- 6.11 **Policy E1 Landscape character and sensitivity:** Applicants will be expected to adopt a balanced approach, providing for housing, employment and/or other needs whilst seeking to protect and enhance features of the local landscape which contribute to a sense of environmental quality and local distinctiveness. Trees should be retained where possible.
- 6.12 **Policy E2 Biodiversity and geodiversity:** Development proposals must demonstrate the conservation of biodiversity, in addition to providing net gains appropriate to the ecological network.
- 6.13 **Policy E4 Trees, woodlands and hedgerows:** Development proposals should seek to ensure there are no significant adverse impacts on existing trees, woodlands or hedgerows and that every opportunity is taken for appropriate new planting on site.
- 6.14 **Policy E5 Green Infrastructure:** Development must contribute towards the provision, protection and enhancement of Gloucester's Green Infrastructure Network. Major development proposals will be designed in accordance with 'Building with Nature' standards.
- 6.15 **Policy E6 Flooding, sustainable drainage and wastewater:** All development will be expected to incorporate Sustainable Drainage Systems (SuDS) to reduce surface water discharge rates and address water quality, unless it can be shown, to the satisfaction of the City Council, that this is not feasible.



- 6.16 **Policy F1 Materials and finishes:** Development proposals should achieve high quality architectural detailing, external materials and finishes that are locally distinctive. Innovative modern materials will be encouraged where they strongly compliment local distinctiveness.
- 6.17 **Policy F2 Landscaping and planting:** Major development proposals must be accompanied by a landscape scheme, incorporating existing features, hard landscaping and planting details, indicating areas for adoption and ensuring space is available for the maturing of large-scale trees.
- 6.18 **Policy F3 Community safety:** Development must be designed to ensure community safety is a fundamental principle of the proposed development. Such considerations include:
- Natural surveillance;
 - Promoting perimeter block development;
 - Secure rear gardens;
 - Parking on plot or to the front of active frontages;
 - Attractive to use, safe and vibrant streets; and
 - Footpaths that are well designed, lit, direct and overlooked.
- 6.19 **Policy F6 Space standards:** Development proposals for new residential development must meet Nationally Described Space Standards.
- 6.20 **Policy G1 Sustainable transport:** New development shall provide car parking and cycle provision in accordance with the latest version of Gloucestershire Manual for Streets and any subsequent amendments.
- 6.21 **Policy G2 Charging infrastructure for electric vehicles** An electric vehicle charging point/socket will be provided at every new residential property which has a garage or dedicated residential car parking space within its curtilage.

Summary

- 6.22 Whilst the emerging City Plan is yet to be adopted, as demonstrated in section 8 of this Planning Statement the proposed development provides a strong fit with the emerging policy framework provided by the City Plan.



7 The National Planning Policy Framework

Introduction

- 7.1 The latest iteration of the National Planning Policy Framework (hereafter NPPF) was published in July 2021. It sets out the Government's planning policies for England and how they are to be applied (section. 1 refers). The NPPF is required to be taken into account in the preparation of local and neighbourhood plans and is a material consideration in planning decisions (para. 2 refers).
- 7.2 As a comprehensive expression of the Government's planning policies, the NPPF contains a considerable amount of guidance which is relevant to this application. This Section however, deals solely with the national planning policy which relates to this planning application. The supporting application documentation also contains a summary of national planning policy as expressed in the NPPF, relevant to each individual topic area.

Achieving Sustainable Development

- 7.3 The NPPF confirms that the purpose of the planning system is to contribute to the achievement of sustainable development (para. 7 refers). There are three overarching objectives (economic, social and environmental objectives), which are intrinsically linked and should be pursued in complimentary ways. Para 9 confirms that these objectives are not criteria that should be used to judge every proposal against.
- 7.4 Para. 10 states that the presumption in favour of sustainable development is pursued in a positive way, at the heart of the Framework.
- 7.5 For decision taking this means approving development proposals that accord with the development plan "*without delay*". It follows that as this application is submitted in accordance with the Adopted Development Plan, it should be approved forthwith.

Decision Making

- 7.6 Planning applications should be determined in accordance with the Development Plan, unless material considerations indicate otherwise (paras. 2 and 47 refer).
- 7.7 Paragraph 219 states that existing policies in Adopted Local Plans should not be considered out of- date just because they were adopted prior to the publication of the NPPF. Due weight should be given to relevant policies in existing plans according to their degree of consistency with the Framework (the closer the policies in the plan to the policies in the Framework, the greater the weight that may be given). It will therefore be for the decision maker to afford the relevant weight to the Adopted Development Plan for Gloucester City during the determination of this application.
- 7.8 Local Planning Authorities should approach decisions on planning applications in a positive way and should seek to approve applications for sustainable development (para. 38 confirms).

Delivering a Sufficient Supply of Homes

- 7.9 Para. 60 states that in order to support the Government objective of "*significantly boosting the supply of homes*" it is important that a sufficient quantum of a variety of land comes



forward, where it is required.

- 7.10 In order to determine the number of homes needed, strategic policies in Local Plans should be informed by a local housing need assessment, conducted using the standard method, unless exceptional circumstances justify an alternative approach. Any needs that cannot be met within neighbouring areas should also be taken into account when establishing the amount of housing to be planned for (para. 61 refers).
- 7.11 Within this context, the size, type and tenure of housing for different groups within the community should be assessed (para. 62 refers).
- 7.12 Para 65. outlines that where major development involving the provision of housing is proposed, planning policies and decisions should expect at least 10% of the homes to be available for affordable home ownership, however exemptions should be made to this policy where the proposed development is exclusively for affordable housing.

Promoting Healthy and Safe Communities

- 7.13 Planning policies and decisions should aim to achieve healthy, inclusive and safe places which *inter alia* are safe and accessible to that crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion and enable and support healthy lifestyles for example through the provision of safe and accessible green infrastructure (para 92 refers).
- 7.14 In relation to open space and recreation, access to a network of high quality open spaces and opportunities for sport and physical activity is important for the health and wellbeing of communities. Planning policies should be based on up to date assessments of the need for open space, sport and recreation facilities (including quantitative or qualitative deficits or surpluses) and opportunities for new provision. Information gained from the assessments should be used to determine what open space, sport and recreational provision is needed.
- 7.15 Para. 99 outlines that open space, sports and recreational buildings and land, including playing fields, should not be built on unless *inter alia*:
- An assessment has been undertaken which has clearly shown the open space, buildings or land to be surplus to requirements; or
 - The loss resulting from the proposed development would be replaced by equivalent or better provision in terms of quantity and quality in a suitable location.
- 7.16 Planning policies and decisions should also protect and enhance public rights of way and access, including taking opportunities to provide better facilities for users, for example by adding links to existing rights of way networks (para. 100 refers).

Promoting Sustainable Transport

- 7.17 Para. 112 outlines that applications for development should give priority first to pedestrian and cycle movements and second, as far as possible to facilitating access to high quality public transport and address the needs of people with disabilities and mobility requirements as well as creating places that are safe, secure and attractive.

Making Efficient Use of Land



- 7.18 Planning decisions should promote the effective use of land in meeting identified development needs, whilst protecting and enhancing the environment and ensuring healthy living conditions. Previously developed land should be used as much as possible as part of a Local Planning Authority's strategy for meeting their objectively assessed needs (para. 119 refers).
- 7.19 Relevant to this application, para. 120 states that planning decisions should amongst other things:
- Recognise that some undeveloped land can perform many functions, such as for wildlife, recreation, flood risk mitigation, cooling/shading, carbon storage or food production;
 - Give substantial weight to the value of using suitable brownfield land within settlements for homes and other identified needs and support appropriate opportunities to remediate derelict land; and
 - Promote and support the development of under-utilised land and buildings, especially where this would help meet identified needs for housing where land supply is constrained.
- 7.20 Development proposals should also be designed to ensure an efficient use of land, taking account of the identified needs for different types of housing, local market conditions and viability, the availability of infrastructure and services, the character and setting of an area and the importance of creating well-designed places (para. 124).

Achieving Well Designed Places

- 7.21 The creation of high-quality, beautiful and sustainable buildings is fundamental to what the planning process should seek to achieve, with good design being a key aspect of sustainable development (para. 126 confirms).
- 7.22 Planning decisions should ensure that schemes:
- Function well and add to the overall quality of the area over the lifetime of the development;
 - Are visually attractive and provide a good architectural style, layout and landscape treatment;
 - Are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change;
 - Establish a strong sense of place;
 - Optimise the potential of the site to accommodate an appropriate mix of development; and
 - Create safe, inclusive and accessible places (para. 130 refers).
- 7.23 Design quality should be considered throughout the evolution of a proposal. Early discussion between the local planning authority, the applicant and the local community about the design should be encouraged (para. 132 refers).

Planning for Climate Change

- 7.24 Para.154 outlines that new development proposals should be planned in ways that:



- Avoid increased vulnerability to the impacts arising from climate change; and
- Helps reduce greenhouse gas emissions.

Conserving and Enhancing the Natural Environment

- 7.25 Planning decisions should contribute to and enhance the local environment by inter alia, protecting sites of biodiversity value, recognising the value of trees and woodland, minimising impacts on and providing net gains for biodiversity (para.174 refers).

Conserving and Enhancing the Historic Environment

- 7.26 Para.194 of the NPPF requires applicants to 1) describe the significance of any designated heritage assets affected by a proposal, including the contribution made by its setting. Local Planning Authorities should, when determining applications, assess the significance of any heritage asset that could be affected by the scheme. They should take this assessment into account when considering the impact of a proposed development on a heritage asset, in order to avoid or minimise the conflict between the asset's conservation and any aspect of the proposal (para. 195 refers).
- 7.27 Para. 203. confirms that the effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that directly or indirectly affect non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset.

The Development Plan

- 7.28 Para. 218 of the NPPF states that the policies within the Framework are material considerations which should be taken into account in dealing with applications from the day of its publication. However, existing policies should not be considered out of date simply because they were adopted or made prior to the publication of the Framework. Due weight should be given to them, according to their degree of consistency with the Framework (the closer the policies in the plan to the policies in the Framework, the greater the weight that may be given) – para. 219 refers.

Summary

- 7.29 The NPPF sets the Government's policy relating to planning in England. It is capable of being a material consideration in the determination of planning applications. The scheme provides a good fit with national planning policy and therefore contributes towards sustainable development.
- 7.30 Moreover, as demonstrated within section 8 of this Planning Statement, this application accords with the Adopted Development Plan. Consequently, in line with the NPPF, it should be approved without delay.



8 The Justification for the Proposed Development

8.1 This section of the Planning Statement provides the justification for the development proposals and outlines the material considerations relevant to this application, for the avoidance of doubt these are considered to be:

- The Development Plan and the Presumption in Favour of Sustainable Development;
- Housing land supply and affordable housing provision;
- Other considerations; and
- The planning balance.

8.2 Each is assessed below in turn.

The Development Plan and the Presumption in Favour of Sustainable Development

8.3 The principal document within the Development Plan for Gloucester City comprises the JCS (2017). The analysis presented in this Planning Statement demonstrates that the application is in general conformity with all the policies contained in the JCS. As outlined in section 5 the Saved Policies of the Gloucester Local Plan 1983 are not considered relevant in the context of this application. Given that the application is in broad accordance with the Development Plan, in line with para. 11, it should be approved without delay.

8.4 In addition, the proposed development aligns with the principles of the emerging City Plan, through high quality design, that has been revised in light of officer feedback.

8.5 Given that the application is in broad accordance with the Development Plan, in line with para. 11, it should be approved without delay.

Housing Land Supply and Affordable Housing Provision

8.6 As indicated in section 7 of this Planning Statement, Local Planning Authorities are required to be able to identify a sufficient supply of specific deliverable sites to provide five years worth of housing and that as of October 2020, the latest official statement released by the Council, they could demonstrate 4.9 years housing land supply.

8.7 The proposed development site would help towards meeting this windfall allowance which contributes to the overall supply. Should this windfall allowance not be met, this could lead to City's housing land supply falling further below the current 4.9 year figure, which is below the required 5 year requirement.

8.8 The proposed development specifically caters to affordable housing need through provision of 9 affordable rent units.

Public Open Space

Quantity of Open Space Provision



8.9 Whilst the proposed development site is located within the settlement boundary as shown on the JCS Adopted Proposals Map, the proposed development site is also shown as Public Open Space within the Council's Open Space Strategy 2021-2026 (The Strategy).

8.10 Para. 99 of the of the NPPF states:

"Existing open space, sports and recreational buildings and land, including playing fields should not be built on unless inter alia:

a) an assessment has been undertaken which has clearly shown the open space, buildings or land to be surplus to requirements; or

b) the loss resulting from the proposed development would be replaced by equivalent or better provision in terms of quantity and quality in a suitable location; or

c) the development is for alternative sports and recreational provision, the benefits of which clearly outweigh the loss of the current or former use"

8.11 In relation to point a) above the application site falls within the Matson and Robinswood ward as outlined in the Gloucester Open Space Strategy. This ward currently has 137.84(ha) of open space, and a population of 9,541 (2017), therefore a provision of approximately 14ha per 1000 of the population. This reflects an overprovision when compared to the standard requirement of 2.8ha per 1000 people.

8.12 Matson Park itself comprises a number of different types of open space including:

- Type J – Sports Provision
- Type H – Spaces for Children
- Type E – Green Infrastructure
- Type A – Parks and Gardens

8.13 It also comprises a LEAP, MUGA 1 adult football pitch and 1 adult rugby pitch.

8.14 The Strategy indicates that there is an under provision of sports pitch provision and formal play provision in the ward, the application site clearly does not fall into either of these categories.

8.15 It is also considered that due to the sites proximity to Matson Park and Robinswood Hill Country Park, these areas would have the capacity to absorb any need arising from the loss of open space in this area.

8.16 In light of the information outlined above, the proposed development site is clearly surplus to requirements from a quantitative perspective in accordance with point a) of para. 99.

8.17 Furthermore, the Gloucester Council published the Matson Estate Regeneration Supplementary Planning Document in November 2019, whilst this document remains in draft, section 3.3.7 confirms that *"Space for new development within the estate is limited and as such it is anticipated that there may be proposed building on some of the existing open space within Matson."*



Quality of Open Space Provision

- 8.18 In addition to the significant overprovision of open space within the Matson and Robinswood ward, the application site has been subject to significant vandalism and anti-social behaviour over recent years including fly tipping and dumping of trolley's bikes etc. This clearly diminishes the amenity value this area can contribute towards Matson Park. Furthermore, the north of the site comprises a gravelled car park area which is clearly distinct from the land to the south in terms of its character and in turn its relationship with Matson Park. The proposed design of the development will achieve an uplift in appearance and residential development in this location will also introduce an active frontage allowing natural surveillance to help reduce anti-social behaviour.
- 8.19 The location of the built form within the proposed development is confined to the northern part of the site which currently comprises an area of hardstanding, with the remainder of the site remaining as open space within the Park. In addition, the proposals include a new landscape buffer including native tree species and structure planting along the south western boundary of the site to further screen the new dwellings from Matson Park. New tree planting is also proposed to the north of the site along Matson Lane to mitigate the small loss of trees proposed to accommodate the proposed development. The remainder of the existing mature tree cover within the site will also be retained to add instant maturity to the scheme and minimise the impact on Matson Park.
- 8.20 In addition, the scheme seeks to increase legibility regarding the existing Public Right of Way running from north to south through the site by providing a safe, lit dedicated surfaced route through the development which will benefit from natural surveillance.
- 8.21 The northern part of the site is therefore also considered surplus to requirements from a qualitative perspective in accordance with point a) of para. 99.

Proposed Mitigation

- 8.22 The Council's Open Space Strategy outlines that whilst the Matson and Robinswood ward meets the council's adopted standards for open space quantity, a number of sites fall well short of the expected standard in terms of quality of park infrastructure and facilities. Improvements in provision should therefore concentrate on expanding high quality park infrastructure (paths, seats, bins etc), play and sports facilities. Other priorities are to be developed in consultation with the local community as part of the development of the Matson and Robinswood Ward Open Space Action Plan.
- 8.23 Therefore to address point b) of para. 99, in addition to the benefits the scheme proposes as outlined above, in order to mitigate the loss of open space within the proposed development and provide better quality provision elsewhere, it is proposed to provide a financial contribution of to fund improvements to Matson Park.

Other Considerations

- 8.24 **Landscape** – The Landscape and Visual Appraisal accompanying this application confirms that due to the small scale of the proposed development, changes to the landscape as a result of the proposed development are limited to the immediate setting of the site. In



addition, the proposals include new structure and tree planting within the site, this together with the retention of the School Lodge building would provide a beneficial contribution to the character of the local context. Upon completion, through the retention of the southern areas of the site, which function as part of Matson Park, the site would continue to have regard to the local distinctiveness and historic character of the area. The proposed development is limited to those areas within the site which have a clear distinction from the wider Matson Park. Furthermore, the proposed refurbishment of the Lodge to bring it back into beneficial use and prevent further dilapidation is considered to be a significant benefit arising from the scheme.

- 8.25 The high quality landscaping scheme proposed will enhance the local landscape character and will seamlessly connect to the northern part of Matson Park. The diversion of the existing Public Right of Way through the site along a metalled, lit route will also aid legibility.
- 8.26 **Access** – safe and convenient pedestrian and vehicular access to the existing highway network is provided off Matson Lane serving a turning head within the site allowing service and delivery vehicles to turn and exit safely. In addition, car and cycle parking is provided in line with the Council's parking guidelines.
- 8.27 **Ecology** – As outlined in section 3, there are no rare, scarce or protected habitats within the site boundary, other than a small low conservation status bat roost located within the existing lodge, historical use of the adjacent fishing lake by Otter and use of the lodge building and vegetation by breeding birds. Prior to any works concerning the lodge building a European Protected Species Licence will be sought from Natural England in respect of bats, in addition to controlling works on site via a Construction Environmental Management Plan. Subject to these measures it is not considered that any adverse impacts will arise in respect of ecology as a result of the proposed development.
- 8.28 **Trees** – The proposal seeks to retain the majority of mature trees and vegetation within the application site which contribute towards the character of Matson Park. In addition, the landscaping scheme accompanying this application includes the provision of new trees and landscaping along the boundaries and frontage of the site to mitigate for the small loss of trees proposed.
- 8.29 **Heritage** – The Heritage Impact Assessment accompanying this application confirms that the retention and renovation of the Lodge has the potential to result in a small heritage benefit to the overall significance of Matson House.
- 8.30 **Archaeology** – The Heritage Impact Assessment accompanying this application confirms that subject to the implementation of a programme of appropriate and proportionate archaeological mitigation, the proposed development would not result in an adverse impact on any archaeological assets.
- 8.31 **Flood Risk and Drainage** – the accompanying drainage strategy report, confirms that there are viable solutions for the discharge of both storm and foul water. The proposal will incorporate SUDS including rain water gardens.
- 8.32 In addition, as demonstrated in the submitted application material, there are no technical constraints that will preclude development on the subject site.



The Planning Balance

- 8.33 As outlined above, the proposed development adheres to the relevant policies as outlines in both the NPPF and the Development Plan. The application will deliver a number of significant benefits for Gloucester City including the re-use of a derelict site for the provision of much needed affordable housing, and when assessed against the very limited harm attributed to the loss of open space resulting from the proposed development, it is considered that the benefits significantly outweigh this in the planning balance and therefore the application should be approved without delay.

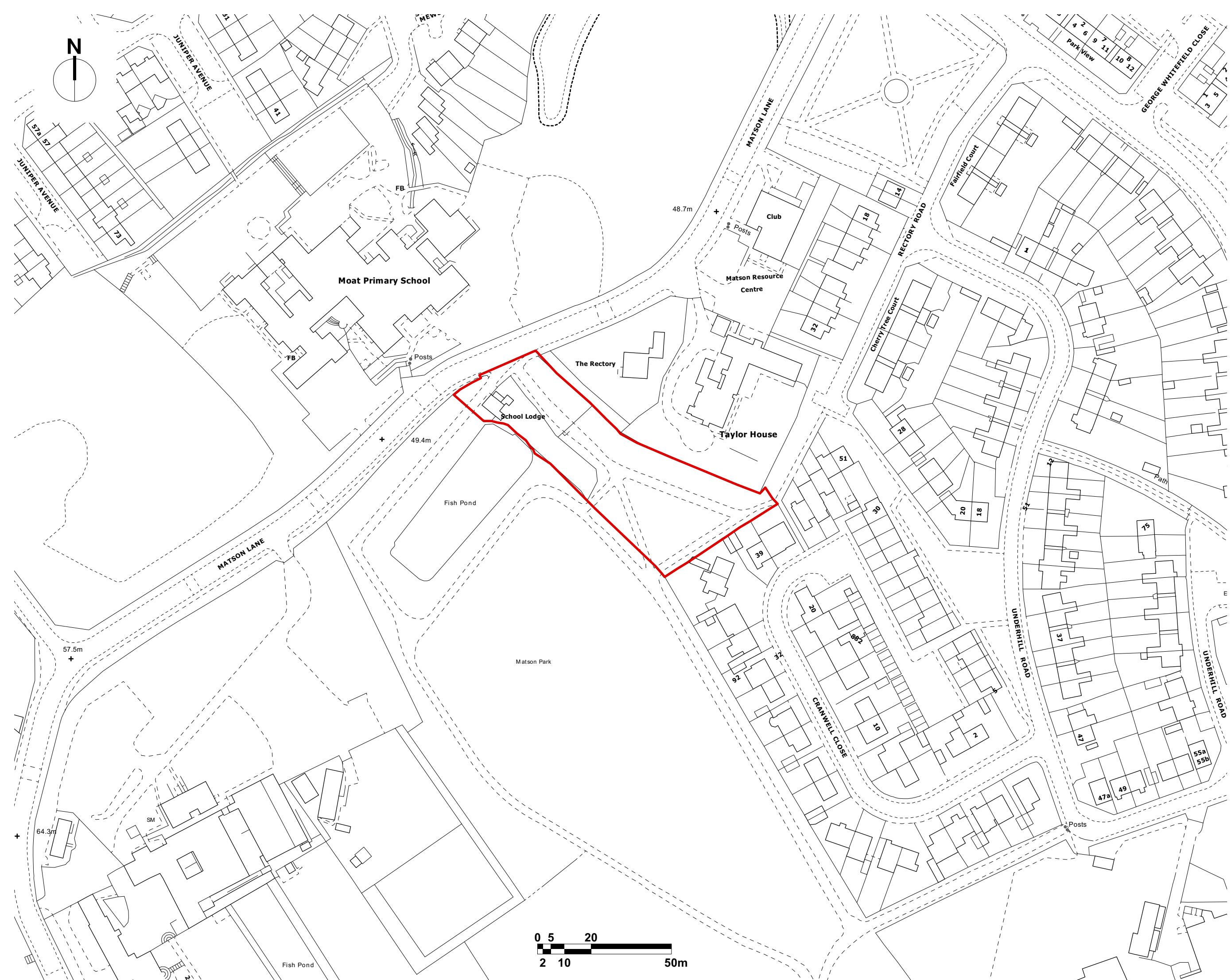


9 Conclusions

- 9.1 This Planning Statement is submitted on behalf of Gloucester City Homes in support of a full application for a proposed development comprising:
- 9no. 1 bedroom flats;
 - Refurbishment of the existing lodge building to provide a community use;
 - Public open space;
 - Landscaping;
 - SUDs;
 - Car parking; and
 - Associated works.
- 9.2 The proposal represents a high quality design that has been subject to extensive consultation. The proposed scheme has been revised and improved in response to officer feedback.
- 9.3 The principle of the proposal, in land use policy terms, accords with the relevant national and local policy as outlined in the NPPF and the Adopted Development Plan for Gloucester City. Whilst the site is currently designated as open space, this statement demonstrates how the application adheres to the provisions of para. 99 of the NPPF, which justified the loss of open space in specific circumstances. In this respect, the Matson and Robinswood ward currently benefits from a significant overprovision of open space, and there is alternative provision in close proximity to the site, providing the opportunity to provide qualitative improvements to mitigate the loss of the application site. Furthermore, the development proposal would seek to utilise a derelict site which currently suffers from antisocial behavior. Finally, the development will also provide much needed affordable housing in Gloucester City.
- 9.4 The proposed development has sought to provide a design that provides its own unique character akin to its location to the north of Matson Park. In this respect, matters of scale, form, layout and materials finishes are considered acceptable given the sites immediate surrounding context and adhere to the relevant policies as outlined in the JCS.
- 9.5 The proposed development is located in a sustainable location in close proximity to various services and amenities.
- 9.6 Accordingly, it is considered that the scheme represents a suitable and well-considered form of development and it is respectfully recommended that Gloucester City Council approve this application.



Appendix 1 – Site Location Plan



NOTES
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REVISIONS
REV: DATE - DRAWN - CHECKED: NOTES
-: 27.03.18 - ATo - CC: Drawing created.
A: 29.05.18 - ATo: Site boundary ammended.
B: 25.07.18 - CC: Site boundary ammended.
C: 11.11.20 - DC: Site boundary revised.

DRAWING TITLE

Site Location Plan

PROJECT

School Lodge, Matson

CLIENT

Gloucester City Homes

SCALE

1:1250@A3

DATE

Mar 2018



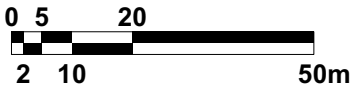
DRAWING NO.

REV

5591-P-01

C

Matthews Warehouse, High Orchard Street
Gloucester Quays, GL2 5QY





Appendix 2 – Site Layout

NOTES

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REVISIONS

REV. DATE - DRAWN - CHECKED: NOTES

-: 26.02.20 - SS:
A: 21.07.20 - DC - CC:
Site plan revised following planning officers comments.
B: 29.07.20 - DC - CC:
Site plan updated with revised units. Bin and bike store now located within ground floor of accommodation block.
C: 10.09.20 - BM - CC:
Site plan updated with revised units.
D: 22.10.20 - DC:
Boundary treatment to rear of parking spaces adjacent to pond changed to knee rail. Stone pillars to adjacent to site access retained.
E: 12.11.20 - DC:
Schedule of accommodation updated following floor plan revisions.
F: 26.11.20 - DC:
Access track to north of School Lodge connecting to fishing pond reduced to 3.5m in line with Highways comments. Schedule updated with revised floor areas.
G: 10.02.22 - DC:
Site plan updated. Reduction of proposed residential units to 9no flats. Existing lodge building to be converted into community use.
H: 21.02.22 - DC:
Hardstanding and bike rack positions around School Lodge revised. Additional parking space added.
J: 22.04.22 - DC:
Rainwater garden locations added.

DRAWING TITLE

Proposed Site Layout

PROJECT

School Lodge, Matson

CLIENT

Gloucester City Homes

SCALE

1:500@A3

DATE

Feb 2020



DRAWING NO.

5591-P-1000

REV

J

Matthews Warehouse, High Orchard Street
Gloucester Quays, GL2 5QY

N

Schedule of Accommodation:

Unit 1	1B2P Flat @ 50.2sqm
Unit 2	1B2P Flat @ 50.3sqm
Unit 3	1B2P Flat @ 50.3sqm
Unit 4	1B2P Flat @ 50.2sqm
Unit 5	1B2P Flat @ 53.4sqm
Unit 6	1B2P Flat @ 54.2sqm
Unit 7	1B2P Flat @ 50.3sqm
Unit 8	1B2P Flat @ 52.9sqm
Unit 9	1B2P Flat @ 67.7sqm

9 Units

● Converted Building - Community Use

Key:

- Site Boundary
- Shared Surface
- Footpath
- Road
- Granite setts
- 900mm Metal Railings
- 1800mm Close Boarded Fence
- 450mm High Knee Rail
- Retained Stone Pillars
- Grass
- Retained Trees
- Proposed Trees
- Proposed Planting
- Line of Public Right of Way
- Trees to be removed
- RPZ
- Rainwater Gardens





School Lodge, Matson, Gloucester, Gloucestershire

Project specification for an archaeological evaluation

16th November 2020



20e125ev

School Lodge, Matson, Gloucester, Gloucestershire Project specification for archaeological evaluation

1.0 Background

1.1 The site lies on the south side of Matson Lane at Matson, Gloucester (SO 8497 1567) (Fig. 1). Planning permission is to be sought from Gloucester City Council for the retention and restoration of School Lodge to provide a single dwelling and the construction of a three storey apartment block on a 0.32ha parcel of land (Fig. 2). The results of a field evaluation have been requested to determine if the site has archaeological potential and if so produce information to mitigate the impact of the proposed development.

1.2 The archaeological potential of the site has been highlighted in a desk-based assessment (Robinson 2019). In summary the potential derives from Romano-British and Saxon finds indicating possible settlement in the area, with some potential for medieval deposits. The site is also in close proximity to Gloucester city centre which has been occupied since the c.1st century AD.

2.0 Requirement for Work

2.1 As a consequence of the possibility of archaeological deposits on the site which may be damaged or destroyed by groundworks, fieldwork has been requested as detailed in the *National Planning Policy Framework* (NPPF 2019) and the Council policies on archaeology. This to determine the archaeological potential of the site and if necessary, inform a mitigation strategy for the project.

2.2 One component of work is proposed at this stage; a field evaluation by means of machine trenching. Further fieldwork may be required if significant archaeological deposits are encountered.

3.0 Aims and Objectives

3.1 The aims of the evaluation will be to determine the presence/ absence, extent, condition, character, quality and date of any archaeological or palaeoenvironmental deposits within the area of development.

3.2 This work will be carried out in a manner which will not compromise the integrity of archaeological features or deposits which warrant preservation in-situ, or might better be excavated under conditions pertaining to full excavation.

3.3 The specific research aims of this project are;

- a) To determine if archaeologically relevant levels have survived on this site.
- b) To determine if archaeological deposits of any period are present.
- c) To provide information in order to draw up an appropriate mitigation strategy if required.
- d) To report on the findings of the evaluation.

The potential and significance of any such deposits located will be assessed according to the research priorities such as set out by Historic England (2017) or any more local or thematic research priorities as necessary (Webster 2008).

4.0 Methodology

4.1 Machine trenching

4.2.1 We propose to attempt to dig 1 trench 1.6m wide and c45m long.

4.2.2 The approximate trench locations are as indicated on Figure 1. The trench position may also be adjusted and subdivided once details of any services are known and to avoid other obstructions such as preserved trees.

4.2.3 A contingency for an additional 45m of trenching is included within the proposal should this be needed to clarify the initial findings. This contingency may be used to widen the trench to allow for more detailed examination of deposits revealed.

4.3 Excavation Methodology

4.3.1 Topsoil and any other overburden will be removed by a JCB-type or 360° machine. A toothless ditching bucket will be used to expose archaeologically sensitive levels. The trench will be dug to examine the full depth of deposits above natural bedrock. Topsoil/turf will be stored separate from subsoil and will be replaced last.

4.3.2 Where archaeological features are certainly or probably present, the stripped areas will be cleaned using appropriate hand tools.

4.3.3 Sufficient of the archaeological features and deposits exposed will be excavated or sampled by hand to satisfy the aims of this scheme of work brief, without compromising the objective set out in 3.2.

4.3.4 In general, all finds and artefacts will be retained, though all but a sample of some classes of building material will be discarded after recording.

4.3.5 Conservation on site will follow guidelines in First Aid for Finds with any other specialist conservation work sub-contracted to the project conservator (see project team, below).

4.3.6 A programme of environmental sampling will take place should sufficient well stratified subsoil deposits be located. Typically this involves samples of up to 40 L depending on the size of the feature examined. A programme of environmental sampling will take place, if any significant deposits are encountered. These will be sampled in consultation with our environmental consultants. Sampling will take place according to Historic England guidance (HE 2015b).

4.3.7 Discovery of any human remains will be reported to the coroner and the archaeological advisor to Gloucester City Council but no further action will be taken as part of the evaluation exercise, unless requested as additional work by the client in consultation with the archaeological advisor to Gloucester City Council and after receipt of a Ministry of Justice licence. Where necessary, guidance provided by Historic England will be followed (HE 2018).

4.3.8 Spoilheaps will be searched for finds.

4.3.9 Metal detectors will be used by in-house staff to enhance the recovery of metal finds as the topsoil is removed.

4.3.10 All gold, silver, prehistoric base metal and any associated treasure objects will be removed to a safe place and reported to the local coroner and county finds liaison officer according to the procedures relating to the Treasure Act (1996) and its subsequent amendments. Where removal cannot be effected on the same working day as the discovery suitable security measures will be taken to protect the finds from theft. No title will be assumed by the finder of any items of value.

4.3.11 Following completion of all excavation and recording, the trenches will be efficiently backfilled and compacted but will not be re-surfaced, re-turfed or re-seeded.

4.3.12 No liability is accepted for damage to any services unless a plan of these is provided by the client.

4.4 Recording Methodology

4.4.1 A single context recording system will be used in accordance with the TVAS Field Recording Manual (7th edition 2011). Descriptions of individual deposits and features will be recorded on pro-forma context recording sheets.

4.4.2 All archaeological deposits exposed will be planned at a scale of 1:20 and sections drawn at a scale of 1:10. All site drawings will be by pencil on drafting film.

4.4.3 Heights above OD will be taken and recorded on plans and sections.

4.4.4 Where appropriate, significant finds will be recorded in 3D.

4.4.5 The locations of the trenches, and of all plans and sections will be tied into the National Grid.

4.4.6 A full photographic record will be made of the evaluation project, consisting of digital image. It will record all features and finds discovered, both in detail and in their general context.

4.5 Post-fieldwork

4.5.1 Post-fieldwork will be completed according to TVAS post-fieldwork manual (5th edition 2011). Finds processing and analysis will commence immediately following the completion of the fieldwork.

4.5.2 Artefacts/ecofacts will be cleaned, conserved and prepared for long term museum storage.

4.5.3 Specialist reports will be prepared on the artefacts recovered. Particular attention will be paid to correlating the pottery recovered with local or regional fabric type sequences.

4.5.4 Specialist analysis and reporting will be carried out by the following specialist staff or consultants as appropriate:-

pottery - Dr Jane Timby, Dr. Malcolm Lyne, (consultants) or Dr. Richard Tabor (TVAS)

bone - Ms Sheila Hamilton-Dyer, Dr Matilda Holmes, (consultants) or Dr Ceri Falys or Ms Lizzie Lewins (TVAS)

human bone- Dr Ceri Falys (TVAS)

struck flint - Dr Steve Ford (TVAS)

charred plant remains/environment - Professor Mark Robinson (Oxford University) or Ms Rossy McKenna (consultant)

metalwork- Mr Aidan Colyer, (TVAS) or Dr R Taylor (consultant)

Conservation- Wiltshire County Council Conservation Service

5.0 Report and Dissemination

5.1 A report on the results of the evaluation should be available within 1-2 weeks of completion of the fieldwork.

5.2 The report will follow our established format, comprising a descriptive text, illustrations and catalogues in appendices.

5.3 The text will address the aims and objectives of the evaluation, the methodology employed, describe the basic nature of the archaeological deposits discovered, and report on the artefacts recovered. It will then attempt to place the significance of the findings in their local, regional and national setting if appropriate.

5.4 The report will include a frontsheet providing the following information:

- *Site name
- *Grid reference
- *Site activity (eg. evaluation trenching, geophysical survey, fieldwalking, watching brief, excavation etc.)
- *Date and duration of project
- *Site code
- *Area of site
- *Summary of results
- *Monuments identified (referenced to the RCHME Thesaurus of Monument Types)
- *Location and reference of archive

5.5 The illustrations will include:

- a site location plan
- a trench layout plan
- trench plans and sections
- distribution of artefacts
- profiles/sections of excavated features
- a selection of colour photos of significant findings

5.6 Catalogues giving descriptions of trenches, archaeological features and artefacts will be contained in a series of appendices.

5.7 Any findings, even if negative will be published as a note in an appropriate journal such as the *Bristol and Gloucestershire Archaeological Society Review*.

5.8 A digital (pdf) and a paper copy of the results will be supplied to the Gloucester HER. Non-published report(s) will be made available for inspection or download on the TVAS web site.

5.9 Copies of photographs (digital images) will be supplied to Gloucester HER for publicity or lecture purposes if requested.

5.10 Details will be supplied to the OASIS project.

6.0 Archive Deposition

6.1 The finds and site archive will be prepared in accordance with guidelines in MoRPHE (HE 2015a), CIfA guidance (CIfA 2014a) and after consultation with the recipient museum.

6.2 The site and finds archive will be deposited with the Museum of Gloucester.

6.3 With the consent of the landowner, the site finds will be deposited with Museum of Gloucester.

6.4 The records will be copied onto microfiche for the National Archaeological Record.

7.0 General Items

7.1 The project will be managed on a regular basis by a Member of the Chartered Institute for Archaeologists (S. Ford, J. Pine or A. Taylor) with an appropriate area of competence.

7.2 The project will be carried out in accordance with the CIfA Standard and Guidance for archaeological excavation (2014b) and Code of Conduct (2014c) and the quality control mechanisms set out in the TVAS fieldwork and post-fieldwork manuals.

7.3 Safe working practices as set out in TVAS health and safety manual will be adopted and current health and safety regulations will be adhered to. If the site is accessible to the public, the trenches will be fenced with barrier mesh/bunting and road pins or heras fencing as necessary.

7.4 Our insurance cover comprises £10 million for public liability, £10 million for employee liability, cover for any hired-in plant, and professional indemnity cover of £5m.

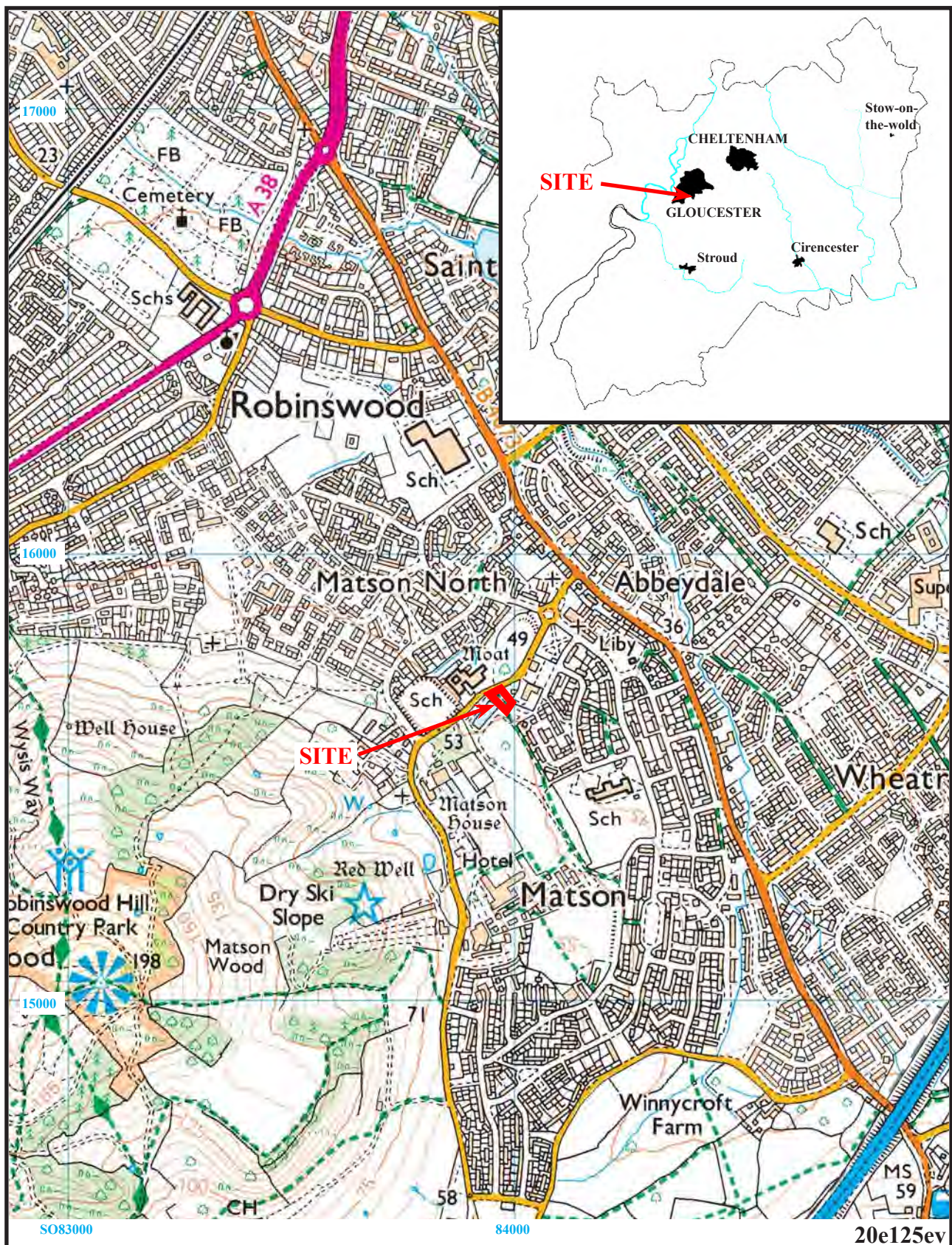
7.5 The fieldwork and post-fieldwork will be monitored by the Archaeological Adviser to Gloucester City Council and all reasonable access will be provided to the works. Any changes in the agreed project design will be discussed and agreed with the Archaeological Adviser before implementation.

8.0 Resources

It is anticipated that 1-2 man/days will be required on site with a smaller number for post-fieldwork.

9.0 References

- CIfA, 2014a, *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives*, Chartered Institute for Archaeologists, Reading
- CIfA, 2014b, *Standard and guidance for archaeological evaluation*, Chartered Institute for Archaeologists Reading
- CIfA, 2014c, *Code of Conduct*, Chartered Institute for Archaeologists, Reading
- HE, 2018, *The Role of the Human Osteologist in an Archaeological Fieldwork Project*, Historic England, Swindon.
- HE, 2017, *Research Agenda*, Historic England, Swindon.
- HE, 2015a, *Management of Research Projects in the Historic Environment, MoRPHE project planning*, Historic England, London
- HE 2015b, *Environmental Archaeology*. Centre for Archaeology Guidelines 1, Historic England, Portsmouth. (3rd edn)
- NPPF, 2019, National Planning Policy Framework (revised), Ministry of Housing, Communities and Local Govt, London
- Robinson, Joanne, 2019, 'School Lodge, Matson, Gloucester: A Heritage Desk-Based Assessment', Cotswold Archaeology report, CR0172_1, Cirencester
- Webster, C J (ed) 2008, *The archaeology of South-West England, South West Archaeological Research Framework. Resources Assessment and Research Agenda*, Somerset County Council, Taunton



**School Lodge, Matson,
Gloucester, Gloucestershire 2020**
Project specification for an archaeological evaluation
 Figure 1. Location of site within Gloucester and Gloucestershire.

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**School Lodge, Matson,
Gloucester, Gloucestershire 2020**
Project specification for an archaeological evaluation
Figure 2. Location of Trench.





School Lodge, Matson,

Shadow Habitats Regulations Assessment

Prepared by
CSA Environmental

on behalf of
Gloucester City Homes

Report No: CSA/4243/01

March 2022

This report may contain sensitive ecological information. It is the responsibility of the Local Authority to determine if this should be made publicly available.

Report Reference	Date	Revision	Prepared by	Approved by	Comments
CSA/4243/01	30/08/2019	-	TP	MR	
CSA/4243/01	03/09/19	A	KK	-	Minor amendments
CSA/4242/01	26/11/2020	B	TP	KK	Updated to reflect revised development plans and recent SAC information
CSA/4242/01	31/03/2022	C	TP	KK	Updated to reflect revised development plans



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Appendices

Appendix A: Location map of the Costwold Beechwoods SAC in relation to the Site

Appendix B: Proposed Site Layout (5591-P-1000 Rev E)

1.0 INTRODUCTION

- 1.1 This document has been prepared by CSA Environmental on behalf of Gloucester City Homes, in relation to School Lodge, Matson (hereafter referred to as 'the Site') where residential development of a block of flats and the conversion of the old school lodge to community use with a cafe is proposed. It provides information to assist Gloucester City Council, as the competent authority, in their consideration of whether the proposed development will have likely significant effects on European sites, and in ascertaining any adverse effects on their integrity, as required under Regulation 63 of the Conservation of Habitats and Species Regulations 2017.

Project Description

- 1.2 The development proposals are to refurbish the current school lodge and convert it to community use with a café and construct an apartment block which contains nine one bedroom apartments, thereby resulting in a net increase in residential accommodation. The Site is currently designated as public open space and the proposals would therefore result in the impacts to a small area of 0.345ha of public open space, although approximately 50% of the Site will comprise retained green infrastructure.
- 1.3 Direct footpath connections are to be provided with Matson Park, an area of existing public open space to the south-west of the development.

Exemption, Exclusion and Elimination

- 1.4 If the answer to any of Questions 1-3 below is Yes, then no further screening for likely significant effects under the Habitats Regulations is required.

Table 1: Preliminary Screening: Exemption, Exclusion and Elimination

Preliminary Screening		
Q1. Is the whole proposed development directly connected with or necessary to the management of a European site for nature conservation purposes?	No	If yes, project is exempt
Q2. Is the proposed development the continuation, without material change, of ongoing activities not subject to any form of authorisation?	No	If yes, project is excluded
Q3. In light of the nature, scale, duration and location of the proposed development, is it obvious that it could not have any conceivable effect on any European site?	No	If yes, project is eliminated

- 1.5 In respect of Question 3 above, the European site(s) which could conceivably be affected by the proposed development are as follows:

- Cotswold Beechwoods SAC

- 1.6 Further details of the Cotswold Beechwoods SAC are given in Section 2.0. A 'shadow' screening assessment for likely significant effects is provided within section 3.0.

2.0 EUROPEAN SITE CHARACTERISTICS

2.1 Table 2 provides a description of the character of the Cotswold Beechwoods SAC, and its relationship with the Site.

Table 2: Site Characteristics Table

Cotswold Beechwoods SAC	
Distance and direction from Site	c. 3.5km south-east
Size	590.2ha
Grid reference	SO898134
Component SSSIs	Cotswold Commons and Beechwoods SSSI
Qualifying features (Directive 92/43/EEC Annex I habitats / Annex II species)	<ul style="list-style-type: none"> • Asperulo-Fagetum beech forests: the SAC represents the most westerly extensive block of this habitat type, is floristically rich and structurally varied: considered to be one of the best examples of its type in the UK. • Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites): Floristically rich calcareous grassland with a number of associated rare plants and a noteworthy invertebrate fauna. The SAC is also an important orchid site for hosting important populations of several rare orchid species including musk orchid <i>Herminium monorchis</i> and fly orchid <i>Ophrys insectifera</i>. <p>The SAC also supports populations of the Annex II lesser and greater horseshoe bats <i>Rhinolophus hipposideros/ ferrumequinum</i> although these are not a qualifying feature of the designation.</p>
Published Conservation Objectives	<p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:</p> <ul style="list-style-type: none"> • The extent and distribution of qualifying natural habitats • The structure and function (including typical species) of qualifying natural habitats, and • The supporting processes on which qualifying natural habitats rely
Known vulnerabilities	<p>As listed within the Standard Data Form and Site Improvement Plan, the following threats have been identified:</p> <ul style="list-style-type: none"> • Outdoor recreational activities (particularly dog walking, mountain biking and horse riding) • Air pollution (atmospheric nitrogen) • Invasive non-native species and problematic native species (e.g. deer grazing) • Disease (e.g. ash dieback) • Changes in species distribution

3.0 SCREENING FOR LIKELY SIGNIFICANT EFFECTS

- 3.1 In the context of the above information, Table 3 below presents a review of the potential impact pathways between the Site and the Cotswold Beechwoods SAC.
- 3.2 Pathways are considered on the basis of the development *as proposed*, including any facets which may, in addition to their primary purpose, act to mitigate potential effects on European sites (such as standard pollution prevention controls). However, in accordance with the 'People Over Wind' ruling of the Court of Justice for the European Union (Case 323/17), screening for likely significant effects takes place in the absence of measures specifically adopted to avoid or reduce effects on European sites.

Table 3: Screening for Likely Significant Effects

<i>Describe any likely changes to the SAC or its qualifying features arising as a result of the propose development, by the following impact pathways:</i>	
Land take by development within European site	None.
Fragmentation of European site habitats	None.
Increased mortality of key species	None.
Disturbance to key species / deterioration of habitats	<p>The SAC is currently under pressure from recreational impacts and there are numerous access points and public rights of way (including the highly popular National Trail – The Cotswold Way) through the woodland and grasslands with both formal and informal car parking areas available. Recreational activity within sensitive habitats can lead to increased erosion and/or compaction of soils as well as eutrophication (i.e. from dog and horse faeces) which can have a negative effect on habitat quality and the persistence of notable flora. Public recreation also has a disturbance effect on wildlife although this is not directly linked to the qualifying features of the SAC.</p> <p>A visitor survey was commissioned by the surrounding Local Authorities in 2019. This identified that 75% of visitors traveling from home lived within 15.4km of the SAC (Panter, C. & Caals, Z. 2019) Previously to the release of this visitor survey Natural England had advised that the zone of influence for the Cotswold Beechwoods SAC was 10 – 15km (Natural England Letter 22 August 2018 ref G, C & T JCS & local plans HRA), within which any net increase in dwellings could undermine the integrity of the SAC. This distance is consistent with data collected during the 2019 visitor survey and so still considered to be relevant, pending the publication of a revised mitigation strategy for neighbouring Local Authorities</p> <p>The proposed development will comprise creation of nine two-person flats and the conversion of the old school lodge to community use with a café, resulting in a net increase of c. 18 people within c. 3.5km of the SAC. Natural England advice is that</p>

	<p>any net increase in residential development within the zone of influence of the SAC needs to be subject to an Appropriate Assessment of potential effects arising from an increase in recreational pressure.</p> <p>The proposal for community facilities is not considered likely to result in increased visits to the SAC and this aspect of the development is screened out of further assessment.</p> <p>The development proposals will also result in the reduction of the amount of public open space within the area of Matson by 0.345ha reducing the local availability of public open space. This could potentially exacerbate the possible increase in recreational pressure at the SAC.</p>
Damage or deterioration of supporting habitats, outside European site	None (the Site does not support the Annex I habitats or associated species found at the Cotswold Beechwoods SAC).
Atmospheric pollution/air quality	The Cotswold Beechwoods SAC is sensitive to changes in air quality and the A46 is within 200m of the site (Enfusion, 2019). The minor increase in traffic from the Site, resulting from increased residential dwellings, is likely to make use of roads leading towards Gloucester, Cheltenham or Stroud as the main centres of employment opportunities in the area. The main routes to these towns/cities do not pass within 200m of the SAC, and do not use the stretch of the A46 that passes through the SAC. As such, any additional vehicle movements from Site are not considered likely to have a significant effect of the SAC, as it is unlikely to generate a tangible increase in traffic using the roads bordering the SAC.
Changes to soil chemistry	As above (Air quality).
Hydrological regime change	None.
Pollution of surface/ground water	None (the Site does not share direct hydrological connectivity with the Cotswold Beechwoods SAC).
<i>Describe from the above those facets of the proposed development, or combination of facets, where the above effects have the potential to be significant, or where the scale or magnitude of effects is not known.</i>	
The proposed development will result in a net increase in residential dwellings within the defined zone of influence of the SAC and could therefore potentially result in an increase in recreational pressure on the SAC. The development should be screened in for further assessment with respect to recreational pressure.	

Outcome of Screening

- 3.3 Based on review of the above impact pathways, conclusions on the potential for likely significant effects on the Cotswold Beechwoods SAC to arise from the proposed development, both alone and in combination with other plans or projects, are made in Table 4 and 5 below.

Table 4: Outcome of Screening (alone)

Screening Result: proposed development alone	
Will there be any effect on the European site? (proposed development alone) <i>If no, proposed development is screened out</i>	Yes The proposed development will result in an increase in residential dwellings within the zone of influence of the SAC.
Will there be likely significant effects on the European site, or does uncertainty remain over the potential for significant effects? (proposed development alone) <i>If yes, proposed development is screened in</i> <i>If no, assess in combination with other plans or projects below</i>	Yes Any increase in residential development within the Zone of influence has the potential to increase recreational pressure and the SAC is already being adversely affected. The LPA ecologist response to the previous application (19/01110/FUL) thought the proposed development had the potential to cause a likely significant effect when considered alone and in Combination.

- 3.4 Although likely significant effects of development have been identified for the Site alone and it is not strictly necessary to consider in combination effect these are considered in Table 5 below.

Table 5: In combination effects

In combination effects (proposed development in combination with other plans or projects)	
<i>Outline any other plans or projects with likely significant effects when considered in combination with the proposed development:</i>	
The Joint Core Strategy (JCS) 2011-2031 for Cheltenham Borough Council, Gloucester City Council and Tewkesbury Borough Council identifies a need for 35,175 homes within the JCS area over the plan period. The SAC also partly falls within Stroud District and the Cotswold and Forest of Dean districts occur within 10km of the SAC. Local development plans for these areas also make provision for new housing and will need to be considered in-combination with the proposed development.	
<i>Describe any potential impact pathways and characterise any likely significant effects on the European site:</i>	
The proposed development will contribute a very minor increase in the local population due to the net increase in residential dwellings. This may act in combination with general provision of new housing within the other districts surrounding the SAC as described above. It is reasonable to assume that new residents will seek out opportunities for recreation within the local countryside, including at the Cotswold Beechwoods SAC, and therefore may exacerbate existing pressures on its sensitive habitats.	
<i>Are significant effects likely when considered in combination with other plans or projects?</i> <i>If yes, proposed development is screened in</i>	YES

- 3.5 Based on the information provided here-in, it is anticipated that Gloucester City Council, in their capacity as competent authority under Regulation 63 of the Conservation of Habitats and Species Regulations 2017, will conclude that the proposed development has the potential to result, in the absence of mitigation, in significant effects on the Cotswold Beechwoods SAC relating to recreational impacts as the development is within the zone of influence.

- 3.6 As such, further Appropriate Assessment is required, including consideration of any proposed measures intended to avoid or reduce

effects, in order that Gloucester City Council may ascertain whether the proposed development will have any adverse effect on the integrity of the Cotswold Beechwoods SAC.

4.0 COSTWOLD BEECHWOODS SAC: APPROPRIATE ASSESSMENT

- 4.1 Potential effects to the Cotswold Beechwoods SAC have been identified in relation to recreational impacts. Further discussion of this is provided below.

Likely Significant Effects

- 4.2 It is acknowledged by Natural England and Local Authorities within Gloucestershire (Natural England 2015) that recreational pressure is an existing pressure on the Cotswold Beechwoods SAC with consequences including, but not limited to:
- Erosion of soils and flora (both on and off existing pathways), leading to loss of soil quality, reduction in biodiversity and ground flora cover
 - Ground compaction along well-used routes with negative effects on tree roots, ground flora and hydrology (i.e. reduced permeability of soils)
 - Increased nitrification of the soil from dog/horse faeces leading to a change in floral species composition and distribution – detrimental for sensitive species such as orchids
 - Disturbance of wildlife and other anthropogenic impacts such as littering, fires and vandalism
 - Introduction of non-native species or diseases (e.g. on footwear).
- 4.3 These impacts result in changes to the structure and function of the SAC's qualifying habitats, as well as supporting processes on which these habitats rely (such as hydrology), and therefore undermine its conservation objectives.
- 4.4 The majority of the SAC is open access land for pedestrians with additional bridleway routes for use by horse riders and cyclists. The Cotswold Way also runs through a significant proportion of the SAC with connections to the nearby Wysis Way (also a National Trail).
- 4.5 Within the SAC 'Site Improvement Plan', recreation is cited to be of lower priority than other management-associated threats, such as invasive species, deer browsing and disease, although it has potential to be a more significant issue as the local population increases. Mountain biking and horse riding have been identified as two of the most damaging activities, particularly where these create new, unofficial routes through the woodland (Natural England, 2015).
- 4.6 Visitor surveys were undertaken by Footprint Ecology in 2019 (Panter, C. & Caals, Z. 2019) on behalf of the local planning authorities to inform Habitats Regulations Assessments of the emerging respective Local Plan documents. Some limitations are acknowledged within the report but the key findings of relevance to this assessment include:

- The majority of visitors travelled to the SAC directly **from home** (85%), with other visiting on holiday (13%) or staying with friends or family locally (2%)
- Most visitors surveyed at the SAC arrived by **car/motor vehicle** (67%) with the next highest category **on-foot** (28%).
- Roughly 83% of all interviewees said they would not have changed their mode of transport had other means been available
- **Walking** (without a dog) was the most common activity (45%) followed by **dog walking** (40%), with cycling also noted as a reason for visiting (may be under recorded)
- The largest two classes of visit duration were “between **30 minutes and 1 hour**” and “**1-2 hours**”, each given by roughly a third of interviewees (both 32%), followed by “**more than 2 hours**” (27%). As a result, the average visit duration was estimated to be **100 minutes**.
- Mapping the postcodes given by visitors showed 26% of interviewees were from Stroud District, followed by Gloucester District (17%), Tewkesbury District (13%), Cotswold District and Cheltenham District (each 10%).
- Considering only those who visited from home, as this accounts for the majority of visitors, **75% travelled from within 15.4km**.

Potential Usage of the SAC

- 4.7 The development will result in an increase of c. 18 people (nine 2 person apartments) c. 3.5km from the Cotswold Beechwoods SAC. There is potential some of the new residents will choose to visit the Cotswold Beechwoods for recreation but this is not considered likely to result in a significant increase in recreational pressure to the SAC given the small scale of the proposals.
- 4.8 Natural England report that recreational impacts are particularly caused by mountain biking and horse-riding as these tend to cause greater erosion and the development of new informal paths through the site (Natural England, 2015). The development is also unlikely to result in an increase in local horse ownership or a significant increase in horse riding activity locally as no facilities for this are provided within the scheme, and opportunities will be restricted by the number of livery yards or riding schools with easy access to the SAC.

Routes and Transport Links to the SAC

- 4.9 The SAC is well served by multiple car parking areas including roadside laybys suitable one or two cars, and more formal designated parking areas suitable for between ten and 20 cars. The visitor survey described above found that 67% of visitor access to the SAC was by Car/Motor vehicle.
- 4.10 The Site is located to the north-west of the SAC and new residents would be most likely to make use of well-used car parks accessing Buckholt Wood (off Portway, and Buckholt Road) and Upton Wood (off Painswick Road/A46) if accessing the SAC, due to their closer proximity and ease

of access from main roads. Approximate driving times to these car parks is likely to around 10 minutes from the Site.

- 4.11 There are several pedestrian paths entering the SAC however connectivity with the Site is very limited. Public Rights of Way connecting the Site boundary and the nearest SAC access point have been measured at c. 4.6km. More direct routes would need to make use of main roads (B4073 or Portway) both of which have fast traffic and limited pavements likely to dissuade pedestrians. It is unlikely that new residents would make use of the public footpath network as a regular means of accessing the SAC.
- 4.12 The local 66 bus (Stagecoach) travels along the A46, passing the SAC, and there are several stops which might allow people (particularly from Stroud, Cheltenham or Cranham) to access the woodlands. The Cotswold Green 228 bus service also travels to/from Stroud via Cranham and several local roads with access to the SAC.

Discussion of In-combination Effects

- 4.13 The Joint Core Strategy (JCS) 2011-2031 for Cheltenham Borough Council, Gloucester City Council and Tewkesbury Borough Council identifies a need for 35,175 homes within the JCS area. The SAC also partly falls within Stroud District and the Cotswold and Forest of Dean districts occur within 15.4km of the SAC, the zone within which most visitors are likely to originate. Local Plans for these areas also make provision for new housing as detailed in Table 6 below, and will need to be considered in-combination with the proposed development.

Table 6: Projected housing requirement for Local Authorities within 10km of the Cotswold Beechwoods SAC

Local Authority	Housing Requirement (No. of dwellings)	Timeframe
Gloucester	14,359	2011-2031 ¹
Stroud	3,615 (plus an additional 1,050 – 2,400 homes)	2015-2031 (Requirement for 11,400 homes identified for the period 2006-2031, most of which had been completed by publication of the Local Plan ² (A public consultation document for the Stroud District Council Plan Review notes the need for an additional 1,050 – 2,400 homes between now and 2040 ³)
Cheltenham	10,917	2011-2031
Tewkesbury	9,899	2011-2031

¹ Adopted Joint Core Strategy for Gloucester, Cheltenham and Tewkesbury (December 2017)

² Stroud District Local Plan, November 2015

³ Stroud District Local Plan Review Draft Plan Additional housing options Public Consultation - October 2020

Cotswold	8,400	Expected housing delivery between April 2011 and 2031 ⁴
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- 4.14 Whilst it is not possible or practical to review all other sites which may act in-combination with the School Lodge Matson development to have recreational impact on the SAC, it is acknowledged that without sufficient mitigation, the increasing local population will contribute to recreational pressure on the SAC and may lead to an adverse effect on its integrity.

Mitigation Measures

- 4.15 A draft Mitigation Strategy for the Cotswold Beechwoods SAC is being prepared but is not yet in the public domain (per comms A. Muller, Natural England March 2022). In lieu of approved formal guidance, a mitigation strategy has been outlined below. This is in line with the basic principles set out in a letter from Natural England to the Gloucester, Cheltenham and Tewksbury Joint Core Strategy Authorities in 2018 (Natural England 2018c).

Footpath link to Matson Park and Robinswood Hill Country Park

- 4.16 There are currently a total of 555.57 hectares of open space in Gloucester, across more than 200 public spaces, which equates to an indicative overall provision of 4.30ha of open space per 1000 population compared to the national standard of 2.4ha/1000) (Gloucester City Council, 2021). Of this total, 137.84ha is within the Matson and Robinswood Ward with a population of 9,541 equating to an open-space provision of 14.45ha/1000 population within the ward itself.
- 4.17 Alternative recreational opportunities to the Cotswold Beechwoods SAC exist in close proximity to the Site in the form of Matson Park immediately adjacent to the south-west, Robinswood Hill Country Park c. 300m to the west, and a network of public footpaths in the wider area. These areas of public open space within such close proximity and ease of accessibility are likely to absorb most of the day-to-day recreational activities, such as dog walking, generated by existing residents and new residents of the proposed development.
- 4.18 The development of the Site will result in the impacts to a small area (0.345ha) of currently designated public open space however c. 50% of the Site will comprise of green infrastructure. This will reduce the amount public open space available to the residents of Matson and has the potential to increase the recreational pressure on the SAC. However as described above the Matson and Robinswood Ward has a large over provision of public open space with a total of 137.84ha and further public open space provisions within neighbouring wards. As a results the impacts to this small area (0.25% if taken as the whole Site) of public

⁴ Cotswold District Local Plan Council, Adopted August 2018.

open space within Matson and Robinswood Ward is unlikely to deter people from using these alternatives to the SAC.

- 4.19 Within the wider area, Leckhampton Hill, Crickley Hill Country Park and parts of the Stroud Valley provide the most similar recreational opportunities to those of the Cotswold Beechwoods SAC, with a rural setting, expansive views and naturalistic woodland and grassland habitats for walking, cycling and horse riding.
- 4.20 The development proposals show the construction of footpaths with direct links to the Matson Park area of public open space adjacent to the south-west of the Site. This will increase accessibility to this public open space and it is considered the majority of the day to day recreational activities of new residents will be served by Matson Park.
- 4.21 The Site will also maintain its public rights of way that link it to Robinswood Hill Country Park c. 300m to the west. This Country Park provides similar habitats and recreational opportunities to the SAC and it is thought most people will likely use this due to its ease of access and proximity.

Residents' Packs

- 4.22 It is considered likely that the adjacent open space within Matson Park and that of Robinswood Hill Country Park c. 300m west of the Site will absorb the majority of day-to-day recreational outings made by new residents of the Site and that surplus visits to the Cotswold Beechwoods SAC will be insignificant. However, to ensure that new residents are fully aware of the alternative opportunities available to them, and that those choosing to visit local nature conservation sites are fully aware of their ecological sensitivities and the need for appropriate protection and management, Resident's Packs will be provided to all new residents moving into the development. The mechanism for this is still to be determined but it is likely that the information will be included as part of paperwork issued by the housing provider.
- 4.23 The Resident's Packs will include the following information in the form of a booklet with separate maps as needed.
- Details of proximal recreational opportunities (e.g. offsite play areas, green spaces and other recreational areas e.g. Matson Park (adjacent to the South-west) and walking/cycle routes to nearby facilities such as shops, pharmacies, churches and community centres.
 - Details of the surrounding public right of way network and links with the Site.
 - Locations of bus routes/stops, cycle routes and details of other sustainable transport opportunities such as local car-share schemes;

- Discussion of the ecological sensitivities of local nature sites, particularly the Cotswold Beechwoods SAC/SSSIs but also Range Farm Fields SSSI and Robinswood Hill Country Park. This will include details of their importance and what to do/not to do when visiting (i.e. stick to formal paths, curb your dog, do not remove firewood or pick wildflowers etc)
 - Details of local nature conservation organisations and volunteer opportunities for habitat management and conservation.
- 4.24 The provision of Residents Packs to all new residents was accepted by Gloucester City Council and Natural England as part of the mitigation package for the HMP, Gloucester development (17/00659/FUL), and was also a mitigation measure for consented Perrybrook, Brockworth development and this could be secured through a planning condition.
- 4.25 Reliance on these mitigation measures was also accepted in principle by both Natural England and Gloucester City Council within their consultation responses to a previous application at the Site (Ref: 19/01110/FUL) for a slightly larger number of proposed dwellings (21). It is therefore considered that they remain appropriate for use with the current scheme in the absence of an approved mitigation strategy and would be able to fully mitigate any potential significant effect of the proposed development on the Cotswold Beechwoods SAC either alone or in combination with other plans and projects.

Effects on Integrity

- 4.26 With consideration of the proposed measures intended to avoid or reduce development effects, whether introduced specifically with respect to biodiversity or required for other purposes (e.g. footpath links to Matson Park) it is considered that the proposed development will have no adverse effect on the integrity of any European site, either alone or in combination with other plans or projects.

5.0 CONCLUSION

- 5.1 Based on the information provided here-in, it is anticipated that Gloucester City Council (GCC), in their capacity as competent authority under Regulation 63 of the Conservation of Habitats and Species Regulations 2017, will conclude that in the absence of mitigation the proposed development has the potential to result in significant effects on the Cotswold Beechwoods SAC. Gloucester City Council must therefore undertake an Appropriate Assessment of the implications of the proposed development on the qualifying features of this European site in light of its published conservation objectives.
- 5.2 Recreational pressure was screened in for further assessment within this report as the SAC is highly accessible and already suffering some adverse effects. A net increase in residential dwellings as a result of the development could contribute to this pressure in the absence of mitigation and thus undermine the SAC's conservation objectives.
- 5.3 To reduce the potential impact of the development, mitigation measures will be incorporated into the development, including the provision of direct footpath links to Matson Park to the south-west and production of a Resident's Pack to inform new residents of the alternative recreational opportunities available to them, the sensitivities of local nature sites and details for becoming involved in their ongoing conservation which could be secured through a planning condition.
- 5.4 With consideration of the proposed measures intended to avoid or reduce effects, it is anticipated that the Council's Appropriate Assessment will ascertain that the proposed development will not have any adverse effect on the integrity of the Cotswold Beechwoods SAC, either alone or in combination with other plans or projects, as set out here-in.
- 5.5 Through submission of this Shadow Appropriate Assessment, it is considered that Gloucester City Homes have discharged their duty under Regulation 63(2) to, "*provide such information as the competent authority may reasonably require for the purposes of the assessment.*"

6.0 REFERENCES

APIS, 2016. *Site Relevant Critical Loads (Cotswold Beechwoods SAC)* [online]. Available at: <http://www.apis.ac.uk/src1/select-a-feature?site=UK0013658&SiteType=SAC&submit=Next>

ARUP, 2014. *Gloucester City Council, Cheltenham Borough Council & Tewkesbury Borough Council Infrastructure Delivery Plan Final Report*. Arup & Partners Ltd, Bristol.

CDA, 2018. *Winneycroft Farm, Gloucester. Transport Assessment*. Bristol: Condon Drew Associates.

EDP, 2015. Letter to Mrs Meneaud (Principal Planning Officer for Gloucester City Council) from Will Lishman (Senior Ecologist at the Environmental Dimension Partnership). Dated 08 July 2015. EDP reference L/EDP1806/WL/jm.

Enfusion, 2016. *Joint Core Strategy Proposed Main Modifications. Sustainability (Integrated) Appraisal Addendum Report*. Bradford-on-Avon: Enfusion.

Enfusion, 2019. Gloucester City Plan 2016-2031: Pre-Submission Habitats Regulations Assessment (HRA) Report: Revised Screening & Appropriate Assessment (AA)

Gloucester City Council, 2021. *Gloucester Open Space Strategy 2021-20126*. Gloucester: GCC.

JCS Local Planning Authorities, 2014. *Draft Green Infrastructure Strategy* [online]. Available at: https://drive.google.com/file/d/0BwVPoSbUL_uXamdadDRHMIF0Z0k/view.

JCS Local Planning Authorities, 2017. *Gloucester, Cheltenham and Tewkesbury Joint Core Strategy 2011-2031*. Adopted December 2017.

Multi-Agency Geographic Information for the Countryside (MAGIC), 2013. *Interactive Map*. [online] Available at: <http://www.magic.gov.uk/MagicMap.aspx> [Accessed January 2019].

Natural England, 2015. *Site Improvement Plan Cotswold Beechwoods* [online]. Available at: <http://publications.naturalengland.org.uk/publication/6276086220455936>.

Natural England. 2017. *Cotswold Commons and Beechwoods SSSI - Painswick Beacon (026)*. SSSI Units Site Detail [online]. Available at:

<https://designatedsites.naturalengland.org.uk/UnitDetail.aspx?UnitId=1028989> [accessed 28 January 2019].

Natural England, 2018a. *European Site Conservation Objectives for Cotswold Beechwoods Special Area of Conservation*
Site Code: UK0013658 (Version 3, 27 November 2018) [online]. Available at: <http://publications.naturalengland.org.uk/publication/6200815333146624>.

Natural England, 2018b. *European Site Conservation Objectives: Supplementary advice on conserving and restoring site features. Cotswold Beechwoods Special Area of Conservation (SAC). Site code: UK0013658* [online]. Available at: <http://publications.naturalengland.org.uk/publication/6200815333146624>.

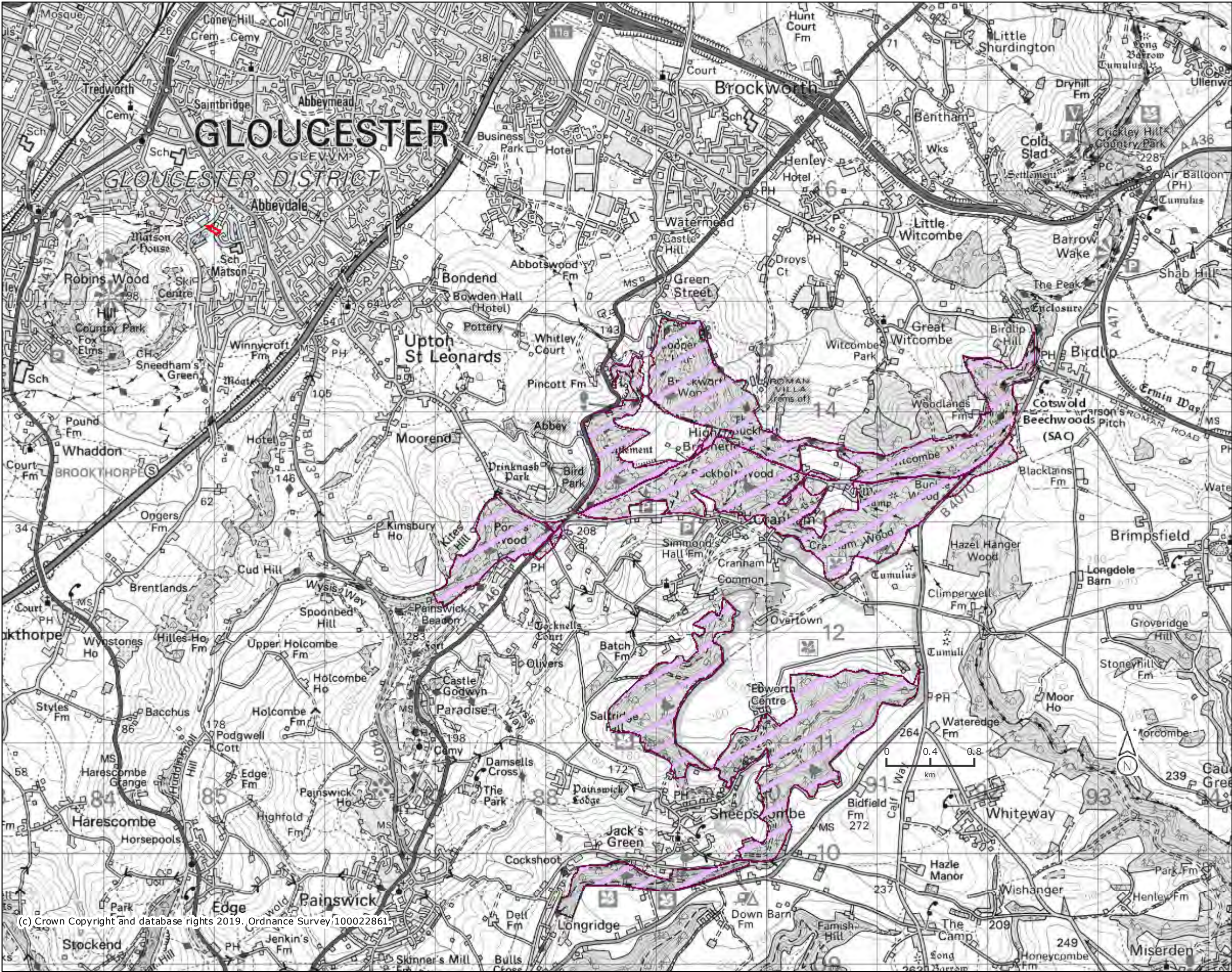
Natural England, 2018c. Letter of 22 August 2018 between Antony Muller of Natural England and Adam Gooch of Gloucester City Council. Evidence gathering in relation to recreation pressure on European Sites - Information to inform an interim approach to Habitats Regulations Assessment of planning applications (Natural England reference: G,C & T JCS & local plans HRA).

Natural England, 2018d. Letter of 30 August 2018 between Antony Muller of Natural England and Joann Meneaud of Gloucester City Council. Formal consultation response to planning application 14/01470/OUT (Natural England reference: 254198). Available at: <http://planningdocs.gloucester.gov.uk/NorthgatePublicDocs/00210136.pdf>.

Panter, C. & Caals, Z. 2019. Cotswold Beechwoods Visitor Survey 2019. Unpublished report by Footprint Ecology.

Appendix A

Location map of the Cotswold Beechwoods SAC in relation to the Site



Legend

Special Areas of Conservation (England)

Projection = OSGB36
xmin = 379800
ymin = 208800
xmax = 397500
ymax = 217800

Map produced by MAGIC on 21 August, 2019.
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Appendix B

Proposed Site Layout (5591-P-1500 Rev A)

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NOTES

This drawing is the copyright of Quattro Design Architects Ltd and should not be reproduced in whole or in part without written permission. Only figured dimensions to be used for construction. Check all dimensions on site. Any discrepancies are to be reported to the Architect as soon as possible.

REVISIONS

REV. DATE - DRAWN - CHECKED: NOTES

-: 26.02.20 - SS:
A: 21.07.20 - DC - CC:
Site plan revised following planning officers comments.
B: 29.07.20 - DC - CC:
Site plan updated with revised units. Bin and bike store now located within ground floor of accommodation block.
C: 10.09.20 - BM - CC:
Site plan updated with revised units.
D: 22.10.20 - DC:
Boundary treatment to rear of parking spaces adjacent to pond changed to knee rail. Stone pillars to adjacent to site access retained.
E: 12.11.20 - DC:
Schedule of accommodation updated following floor plan revisions.
F: 26.11.20 - DC:
Access track to north of School Lodge connecting to fishing pond reduced to 3.5m in line with Highways comments. Schedule updated with revised floor areas.
G: 10.02.22 - DC:
Site plan updated. Reduction of proposed residential units to 9no flats. Existing lodge building to be converted into community use.
H: 21.02.22 - DC:
Hardstanding and bike rack positions around School Lodge revised. Additional parking space added.

DRAWING TITLE

Proposed Site Layout

PROJECT

School Lodge, Matson

CLIENT

Gloucester City Homes

SCALE

1:500@A3

DATE

Feb 2020



DRAWING NO.

5591-P-1000

REV

H

Matthews Warehouse, High Orchard Street
Gloucester Quays, GL2 5QY

N

Schedule of Accommodation:

Unit 1	1B2P Flat @ 50.2sqm
Unit 2	1B2P Flat @ 50.3sqm
Unit 3	1B2P Flat @ 50.3sqm
Unit 4	1B2P Flat @ 50.2sqm
Unit 5	1B2P Flat @ 53.4sqm
Unit 6	1B2P Flat @ 54.2sqm
Unit 7	1B2P Flat @ 50.3sqm
Unit 8	1B2P Flat @ 52.9sqm
Unit 9	1B2P Flat @ 67.7sqm

9 Units

● Converted Building - Community Use

Key:

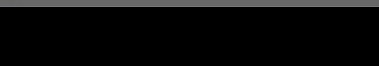
- Site Boundary
- Shared Surface
- Footpath
- Road
- Granite setts
- 900mm Metal Railings
- 1800mm Close Boarded Fence
- 450mm High Knee Rail
- Retained Stone Pillars
- Grass
- Retained Trees
- Proposed Trees
- Proposed Planting
- Line of Public Right of Way
- Trees to be removed
- RPZ



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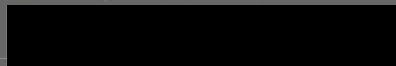


Dixies Barns, High Street, Ashwell,
Hertfordshire SG7 5NT



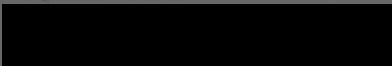
www.csaenvironmental.co.uk

Suite 1, Deer Park Business Centre, Eckington,
Pershore, Worcestershire WR10 3DN



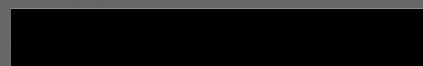
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Office 20, Citibase, 95 Ditchling Road,
Brighton BN1 4ST



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Ltd

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Chartered Forester

Arboricultural Association Registered Consultant

Fellow of the Arboricultural Association

Chartered Environmentalist.



Parsonage Farm
Longdon
Tewkesbury
Glos. GL20 6BD
UK



27th August rev 20th Dec 2019, & 25th Nov 2020 - BJU/mmi

Ms Kelly Thomas,

E <mailto:Kelly.Thomas@gch.co.uk>

Gloucester City Homes Limited,

Railway House, Bruton Way, Gloucester GL1 1DG.



Dear Kelly,

Land at School Lodge, Matson, GL4 6DX - BS5837 Tree Constraints, Impact Assessment & Tree Protection Method Statement for Residential Development.

1. Instruction.

- 1.1 **Gloucester City Homes** have instructed B J Unwin Forestry Consultancy to prepare a report to accompany a planning application for re-development, summarised in section 5 below.
- 1.2 The local authority (Gloucester City Council) will require a tree constraints report as part of application to re-develop the site. They also require an impact assessment and tree protection method statement. The local authority may require mitigation by new planting for any trees lost as part of any re-development.
- 1.3 We have used survey by **A D Horner Ltd 5285-02JAN18-01 of January 2018** for constraints plans. We have added some trees. We have used **Proposed Site plan 5591-P-1000 Rev E by Quattro Design Architects of 12/11/20** shown in section 5, to guide our tree retention & protection method statement & Tree Retention & Protection Plan, which is section 6 of our tree-protection report.)
- 1.4 Therefore methodology of the report below follows *BS5837:2012 Trees in Relation to Design, Demolition & Construction*.
- 1.5 BS5837 flowchart overleaf. List of appendices on signature page.

Notes:

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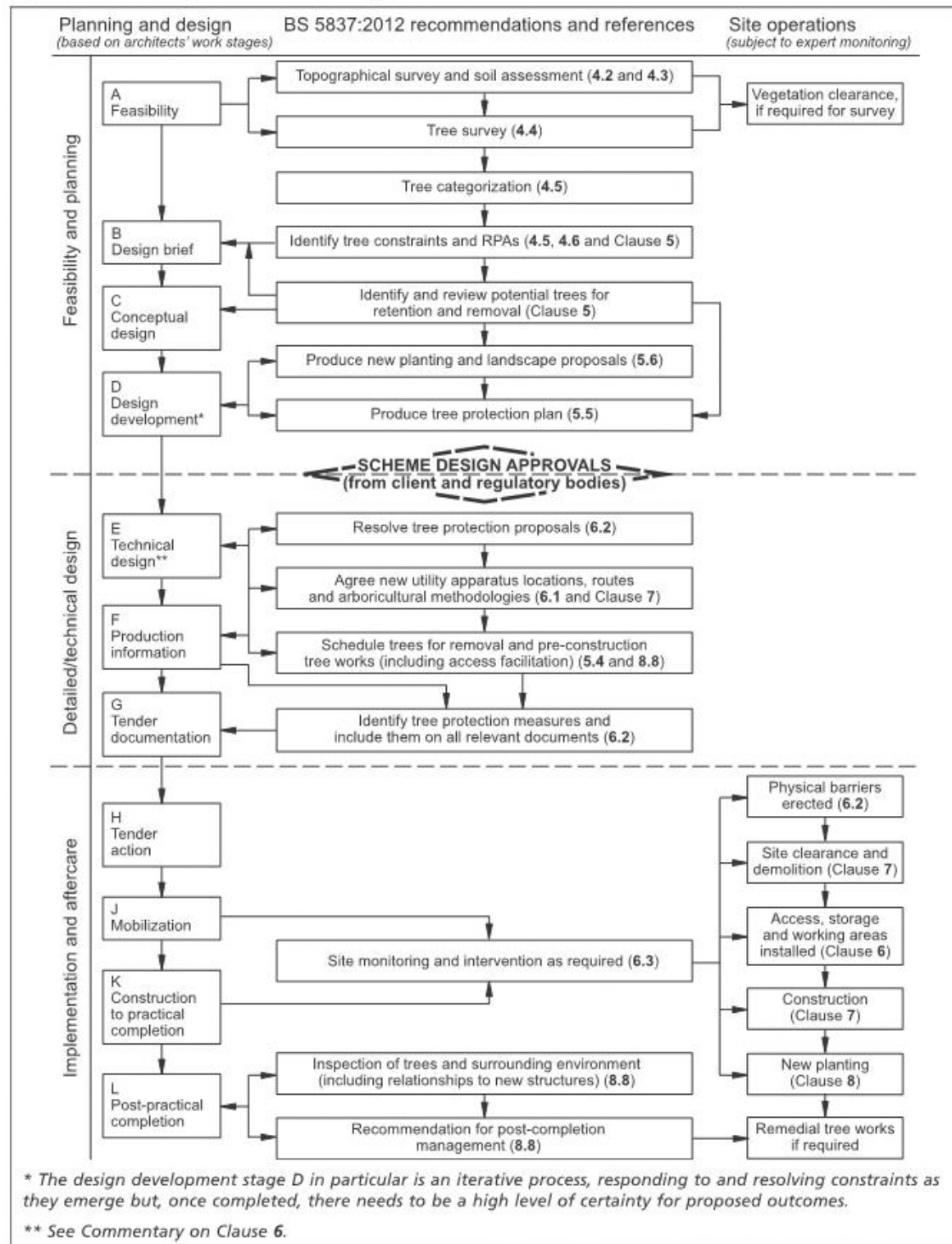
Limitation of Report: -The statements made in this Report do not take account of the effects of extremes of climate, vandalism or accident, whether physical, chemical or fire. BJUFC cannot therefore accept any liability in connection with these factors, nor where prescribed work is not carried out in a correct and professional manner in accordance with current good practice. The authority of this Report ceases at any stated time limit within it, or if none stated after two years from the date of the survey or when any site conditions change, or pruning or other works unspecified in the Report are carried out to, or affecting, the Subject Tree(s), whichever is the sooner.

Tree and Woodland Consultancy
Woodland Valuation and Timber Sales
Landscape Management

Visit our website: www.bjunwin.co.uk for more information



Figure 1 The design and construction process and tree care



2. Inspection methodology.

- 2.1 Owen Hutchison visited the property on 25th January 2018, and made an unaccompanied inspection.
- 2.2 The survey was from ground level, involving visual observation (Visual Tree Assessment: Mattheck and Breloer, 1994 and Lonsdale, 1999). Trees were measured or estimated for dbh, paced or measured for crown spreads, and estimated for heights. We added a few trees, but the survey plan was adequate.
- 2.3 The survey and report for this project are by Owen Hutchison and are checked by Jim Unwin. Owen has twelve years' experience working with trees (professional-CV attached).

3. The Site.

- 3.1 The surveyed site comprises land on the north-west and south-eastern banks of Matson fishing lake. Also included, are the gardens to the rear, and land to the south east and north east of the School Lodge. The north-eastern part of the site comprises a carpark which borders public open space to the south east. The area inspected is about 85m x 90m in size.
- 3.2 The site is low-lying, between 55m and 50m aod. Therefore the site is not exposed to wind.
Local solid geology (from BGS data) is: Blue Lias Formation And Charmouth Mudstone Formation (undifferentiated) – Mudstone. Sedimentary Bedrock formed approximately 183 to 210 million years ago in the Jurassic and Triassic periods. Local environment previously dominated by shallow lime – mud seas.
Superficial deposits: None recorded.
Therefore, subsoil may be fine-textured, with volume-change potential.
- 3.3 The north-western boundary runs parallel to Matson Lane, with Moat Primary School located to the north west. Around the peripheries of Matson Lake are well-used footpaths. The Gardens to the rear of the Old School Lodge are located in the center of the site. The north-eastern part of the site comprises a parking area surfaced with loose stone and tar. The south-eastern part of the site comprises public open space, with close-planted young ash and oak. Both the north-eastern and south-eastern boundaries boarder residential dwellings and gardens. A public footpath runs along the north-eastern boundary.

4. The Trees.

- 4.1 Trees on site:
- Along the north-western site boundary and lake bank, there are a number of large trees interspersed with smaller, suppressed trees. Most of these trees are located in a border, situated between the site boundary and lakeside path. It is evident that a significant quantity of understorey has been removed from the border in recent months. It is also evident that the ground around many of the remaining trees has been rotavated.
 - Ash T25 is located on the south-western bank of the lake. This tree very broad and is one of the more characterful trees on the site.
 - Tree groups and hedges in the rear garden of the school lodge are largely neglected. The southern boundary G37 is the most neglected area. Ash trees T29 and T31 are located on the garden's eastern boundary. These are the highest quality trees within the garden area.
 - G38 is located on the north-eastern site boundary. The group contains three large false acacias with a mixed species understorey. The group significantly overhangs the parking area.
 - There is a large multi-stemmed sycamore T42 located on the north-eastern boundary. This is of coppice origin and is prominent in its surroundings.
 - The public open space forming the south-eastern part of the site is planted with predominantly young ash. This is a close-planted block, and there are many poorer quality trees within the block. The safe useful life expectancy of the group can be improved by thinning. This can be achieved through removing poorer-quality trees.

4.2 Off-site trees:-

- G1, T2 and G5 are off-site trees and groups, at the far north-western extremity of the site.
- The majority of off-site trees are located in the residential gardens bordering the north-eastern boundary. G48, H50 and T51 are the most prominent off-site trees. T51 is a particularly attractive Walnut.

4.3 Amenity: This could describe an attractive tree, a screening function, habitat potential, or historic/veteran tree.

- The larger trees on the north-western boundary have the highest amenity Value, as they can be viewed from Matson Lane.
- The trees located on the north-eastern boundary (G38-T51) are prominent in the landscape and offer screening for the residential properties beyond. They can also be viewed from the public footpath, which run adjacent.
- G54 offers visual amenity in a residential setting.

4.4 Photos below:



4.4.1 View north east along north-western boundary limes T22 and T24 visible at far end.



4.4.2 View north-west of school lodge garden. Ash T29 and T31 visible, rear right.



4.4.3 View south east along school lodge garden. H35 right, G36 left, G37 ahead.



4.4.4 View north from carpark. G38 ivy clad false acacia, with sycamore and laurel understorey.



4.4.5 View east to G54, ash planting.

4.5 Detailed Tree Descriptions

4.5.1 Trees **on, or potentially influencing** the site, are individually described in the table below, and shown on the plans in Appendices.

Age class is described as:-

Sap:	Very young tree, or sapling, one-five years old.
Y:	Young tree less than fifteen years old and <1/3 fully grown.
Sm:	Semi-mature tree having attained 1/3 to 2/3 full stature and 1/3 to 1/2 estimated lifespan.
Em:	Early mature: tree at 2/3 to virtually full size, and halfway through its safe life.
M:	Mature: fully-grown tree with useful life expectancy.
Lm:	Late-mature: fully grown, of declining vigour, but still healthy.
Om:	Overmature tree: fully grown and starting to decline in health (but may still have many years of safe life).
Vet:	Veteran: usually very old; of significant historic, habitat or cultural value.

Condition / Health:- Self-explanatory:- **Good, Fair, Poor or Dead.**

Remaining Safe Useful Life

Prediction of safe life in its location, estimated as:-
<5 years, <10 years, 10-20 years, 20-40 years, >40 years.

Retention categories, based on BS 5837 Section 4.5, are:-

Retain:

A =	High quality or value >40yrs safe life:	Light Green*
B =	Moderate quality or value >20yrs safe life:	Mid Blue*
C =	Low quality or value >10yrs safe life or young trees <150mm stem diameter:	Grey*

Remove:

U =	<10yrs safe life or should be removed for sound arboricultural reasons:	Dark Red*
------------	--	-----------

(*Colour marking on relevant Tree plan)

Sub-category for retention:-

- 1 = Arboricultural Value
- 2 = Landscape Value
- 3 = Cultural and/or Habitat Conservation Value

BS 5837:2012 Root Protection Area:

The estimated volume of soil 1m deep required to sustain the tree, usually expressed as a disc 1m deep, centred on the tree's trunk.

**THE RPA CAN BE A VARIED SHAPE ENCLOSING THE CORRECT ROOTABLE AREA:
but SHOWN AS A CIRCLE FOR CONVENIENCE.**

Calculated as:-

Single-stem tree, radial distance = $12 \times \text{stem diameter at } 1.5\text{m ht.}$

Multi-stem trees 1-5 stems = *Square root of (sum of individual stem diameters squared).*
> 5 stems = *Square root of (average dbh squared x number of stems).*

4.5.2

Land at School Lodge, Matson – BJUFC BS5837 inspection –25th January 2018

No. T=tree S= shrub H= hedge G= group	Species	Dbh (stem diam @ 1.5m ht) mm.	Total height. Ht to base of crown. Est Ht in 10 yrs. m.			Crown radii m.				Age class	Health	Structural Condition	SULE	Comment (All are in average to good health and condition, unless stated otherwise.)	Retention category A (best) to C. U = (remove) Sub-category 1, 2 or 3	BS 5837 Root Protection Area radius. m.	Recommended WORK excluding development.
						NW	NE	SE	SW								
G1	Laurel	150	6	0	10	1	4	2.5	0	Sm	F	F/P	20 - 30	Off-site group of suckering laurel. Leans into site.	C2	1.8	
T2	Sycamore	250, 250	15	6	18	4	7	7	4	Sm	F	F/P	20 - 30	Off-site ivy clad tree. Twin stems at 1.5m. Estimated position and dimensions.	C2	3.5	Remove ivy from base to a height of 1m.
T3	Common lime	1110	24	4	25	9	5	7	7	M	F	F	20 - 30	Previously reduced. Ivy up main stem and scaffold branches. Significant epicormic at base.	B2	13.3	Remove ivy from base to a height of 1m and remove basal growth.
T4	English oak	690	18	6	20	7	7	0	0	Sm	F	F/P	40+	Asymmetric crown caused by neighbouring lime.	B2	8.3	

G5	Sycamore, yew and lime	250	14	2	16	9	8	6	3	Y / Sm	F	F/ P	20 - 30	Group of off-site, ivy clad trees. Estimated position and dimensions	C2	3.0	
G6	Laurel and yew	150	6	1	8	2	2	2	2	Sm	F	F/ P	10 - 20	Small yew within group of laurels.	C2	1.8	
T7	Larch	580	24	9	24	4	4	4	4	M	F	F	20 - 30	Previously reduced. Dead ivy up main stem.	B2	7.0	
G8	Laurel	150	10	4	12	3	3	3	3	Sm	F	F	20 - 30	Group of drawn up laurels	C2	1.8	
T9	Sycamore	540	16	4	18	7	7	4	5	Sm	F	F / P	20 - 30	Twin stems at 2m with included union. Ivy on stems recently severed.	C2	6.5	
T10	Common lime	600	20	5	23	4	5	4	6	Sm	F	F	30- 40	Ivy clad with thick basal growth.	B2	7.2	Remove ivy from base to a height of 1m. Remove basal growth.
T11	Ash	310	14	4	18	5	5	5	5	Y	F	F	30 - 40	Growing on lake bank. Off survey with estimated position and dimensions.	C2	3.7	
T12	Common lime	620	20	4	23	4	4	3	4	Sm	F	F	30 - 40	Previous reduction work. Minor deadwood throughout.	B1	7.7	

T13	Yew	100	8	4	10	4	6	2	2	Y	F	F/ P	40+	Multi stemmed at base. Ivy throughout. Heavy lean north.	C2	1.2	
G14	Sycamore	150	8	4	12	4	4	3	0	Y	F	F/ P	10- 20	Poor quality self-seeded sycamore stems. One stump.	C2	1.8	
T15	Black poplar	300, 300	16	10	16	0	0	10	10	Sm	F	F/ P	10- 20	Off survey with estimated position and dimensions. Heavy lean over lake.	C2	4.2	
T16	Crack willow	210	11	3	14	2	2	4	4	Sm	F	F/ P	20- 30	Pollarded at 1m with one stem allowed to grow.	C2	2.5	Repollard at 1m.
T17	Sycamore	270	8	3	8	4	2	1	1	Sm	F/ P	F/ P	10 - 20	Poor quality ivy clad tree with lost leader.	C2	3.2	Sever Ivy at base.
T18	Yew	100	9	2	11	3	2	3	3	Y	F	F/ P	40+	Six stems at 1.5m. Subject to crude pruning and crown raising.	C2	2.5	Target prune old stubs.
T19	Black poplar.	510	22	8	24	5	5	5	5	Em	F	F/ P	20- 30	Dead ivy up main stem. Old stub at 12m south.	B2	6.1	Target prune stub.
T20	Black poplar	590	22	12	24	9	9	5	1	Em	F	F	20- 30	Mistletoe in crown. Asymmetric crown.	B2	7.1	

T21	Yew	250	8	3	10	2	3	4	2	Y	F	F/P	40+	Stunted beneath T20. Subject to crude pruning.	C2	3.0	Target prune old stubs.
T22	Common lime	760	20	3	22	6	6	6	5	Em	F	F/P	30-40	Historic pruning work.	B2	9.1	
T23	Holly	130, 110	5	2	8	3	3	1	1	Y	F	F/P	10-20	Stunted growth and poor form due to T22.	C2	1.7	
T24	Common lime	750	20	3	22	5	6	5	5	Em	F	F	30-40	Historic pruning work. Mistletoe throughout.	B2	9.0	
T25	Ash	500, 500, 400	16	4	18	9	9	8	9	M	F	F/P	20-30	Cavity at base of easterly stem. Estimated stem diameters.	B2	8.1	Crown reduction to mitigate against stem failure.
G26	Sycamore	200	9	2	12	3	3	3	3	Y	F	P	10-20	Group of multi stemmed sycamores on lake bank.	C2	2.4	
T27	Beech	500	16	2	18	7	7	7	7	Y	F	F	40+	Minor bark wounds to the north. Nice tree with good potential.	B1, 2	6.0	
T28	Maidenhair Tree	160	11	2	13	2	2	2	2	Sm	F	F/P	10-20	Poor form and location. Growing on lake bank.	C2	1.9	

T29	Ash	450	18	7	20	5	2	5	Sm	F	F	30-40	Ivy clad stem. Asymmetric crown but good potential.	B2	5.4	Remove Ivy from base to a height of 1m.
T30	Holly	400	6	2	10	2	2	2	Em	F	F/P	10-20	Historically pollarded at 2.5m.	C2	4.8	
T31	Ash	550	18	6	20	2	7	8	Em	F	F	30-40	Ivy up main stem and scaffold branches. Nice tree, but asymmetric crown.	B2	6.6	Sever Ivy at base.
T32	Apple	240	9	2	12	3	2	4	Em	F	F	40+	Minor stem lean and crowded canopy.	B2	2.8	Prune for fruit production. Remove Mistletoe.
H33	Laurel	100	7	0	14	1	1	1	Em	F	F	20-30	Previously maintained at approximately 3m	C2	1.2	Reduce to 3m and trim annually.
T34	Holly	130	7	2	10	2	2	2	Sm	F	F	30-40	Garden ornamental.	C2	1.6	
H35	Yew	140	6	1	10	1	1	1	Sm	F	F/P	40+	Previously topped and maintained as a hedge.	C2	1.7	Reduce to 3m and trim annually.
G36	Hawthorn, holly and yew.	150	5	1	8	2	2	2	Em	F	F/P	40+	A mixed species group previously maintained as a hedge at approximately 3m.	C2	1.8	Reduce to 3m and trim annually.

G37	Hazel, willow, yew and holly.	150	6	1	10	2	2	2	2	Em	F	F/ P	20- 30	A neglected group, thick with ivy. Many broken wind-blown stems. Good wildlife habitat.	C2	1.8	Remove broken and wind- blow stems.
G38	False acacia, sycamore, purple plum and laurel	400	18	5	20	6	9	5	9	M	F	F/ P	20- 30	Three large false acacia with predominantly sycamore understorey. Ivy and deadwood throughout.	B2	4.8	Remove ivy at base to a height of 1m. Remove deadwood greater than 25mm in diameter.
T39	Yew	600	12	2.5	14	8	6	6	4	Em	F	F	40+	Off-site tree viewed from a distance. Nice form.	B1, 2	7.2	
G40	Sycamore, elm, hazel and laurel.	150	14	2	16	3	3	3	3	Sm	F	F/ P	10- 20	Group of drawn up self-seeded stems with thick ivy cover. Lapsed hazel coppice with broken stem on boundary fence.	C2	1.8	Sever ivy and re-coppice hazel.
T41	Holly	400	12	3	14	2	2	2	2	Sm	F	F	20- 30	Off-site tree viewed from a distance. Estimated position and location.	C2	4.8	
T42	Sycamore	450	18	3	20	7	5	9	9	M	F	F/ P	20- 30	Large multi stemmed tree of coppice origin. Ivy throughout.	B2	5.4	Remove ivy from base to a height of 1m.
G43	Hawthorn, ash and laurel.	150	9	2	11	2	4	2	3	Sm	F	P	10- 20	Forms understorey beneath T42. Ash has a heavy lean north east over the garden.	C2	1.8	Fell one leaning ash in the group.

T44	Norway maple	150	11	3	14	1	0	2	2	Y	F	P	10-20	Bark damage to base and main stem.	C2	1.8	
G45	Sycamore, hazel and laurel.	250	10	1	14	3	3	3	3	Em	F	P	10-20	Off-site mass of ivy clad sycamore, hazel and laurel.	C2	3.0	
T46	Ash	230	11	3	14	5	2	2	5	Y	F	F	40+	Asymmetric crown due to neighbouring sycamore.	C2	2.8	
T47	Sycamore	400	17	1.5	20	8	7	8	8	M	F	F	20-30	Large off-site multi stemmed tree of coppice origin.	B2	4.8	
G48	Laurel, hazel, walnut, hawthorn and leyland cypress.	250	15	0	17	3	4	3	7	M	F	F	20-30	Group of off-site trees and shrubs. Viewed from a distance with estimated positions and dimensions.	C2	3.0	
G49	Ash	250	15	3	18	3	3	4	3	Y	F	F	40+	Group of drawn up ash planted at the same time as adjacent plantation.	C2	3.0	
G50	Leyland cypress	300	18	1	20	4	3	2	5	M	F	F	10-20	Row planted for screening.	C2	3.6	

T51	Walnut	650	17	1	19	5	7	7	7	Em	F	F	40+	Off-site tree. Nice example. Estimated dimensions.	A2	7.8	Fell neighbouring Leyland cypress to provide space for future growth.
H52	Leyland cypress	250	6	1	6	1	1	1	1	Sm	F	F	10- 20	Off-site boundary hedge. Estimated dimensions.	C2	3.0	
G53	Lawson cypress and laurel.	100	4	0	4	1	1	1	1	Sm	F	F	10- 20	Well-trimmed ornamentals. Possibly planted by house holders outside of their own boundary.	C2	1.2	
G54	Ash and oak	280	16-18	2	18-20	2	2	2	2	Y	F	F/ P	40+	Block plantation comprising predominantly ash with a small number of oak. Tall drawn up, thin trees.	C2	3.4	Thin by removing smaller poorer quality trees.

End of table.

5. Proposal & Tree Constraints.

5.1 The Proposal

- 5.1.1 Proposed development is shown on **Proposed Site plan 5591-P-1000 Rev E by Quattro Design Architects of 12/11/20**, extract below.
- 5.1.2 The development is a block of nine residential flats, The existing School Lodge will be refurbished to provide one further residential dwelling.
- 5.1.3 The existing tar and gravel carpark and the rear garden of the School Lodge will be used to provide parking.
- 5.1.4 Additional sections of footpath are constructed to north-west and south-east of the School Lodge.



5.2 Tree Constraints and Impacts.

- 5.2.1 There are six potential arboricultural constraints to the development of the site:
- **physical contact of above-ground** parts of the tree,
 - **below-ground** parts,
 - **shading,**
 - **over-bearing, and falling material,**
 - **subsidence/heave, and root growth**
 - **impact on amenity value.**

5.3 Physical contact of above-ground parts of trees.

5.3.1 General:-

Tree Plans in Appendices shows tree locations and crown spreads. Crown dimensions: spread in four directions, base of crown and tree height, are given in Table 4.5.2.

5.3.2 Specific above-ground impacts:-

- Trees T29 to T32 and T34 will be lost to allow the construction of new parking and shared surfaced areas. These comprise two 'B' category ash and one apple and one 'C' category holly.
- Mixed species group G36 and Norway maple T44 will be lost to allow the construction of the block of flats.
- The northern tip of yew hedge H35 will be lost to allow the construction of the new south-westerly section of footpath. This is a resilient species and the long-term health of the hedge is unlikely to be compromised.
- Small T28 between lake and Lodge wont tolerate refurbishment. Remove.

5.4 Below-ground root spread.

5.4.1 General:-

BS5837 defines a tree's Root Protection Area as a disc of soil 1m deep required to maintain long-term health a full-canopied tree, of a given stem size, usually 12 x stem diameter. We show it as an idealised circle. Rooting areas are never symmetrical, but ideally there should be no ground disturbance within the RPA zone. At the discretion of an arboriculturalist, the RPA can be offset if work is proposed on one side only, and the tree can root in the opposite direction. It is not appropriate to rely on the reduced RPA where potential disturbance extends halfway or more around the tree.

Typically the structural rootplate of a tree to resist windthrow is much smaller than the RPA. Therefore tree stability should not be affected by disturbance up to RPA boundary.

5.4.2 Specific Rootzone Impacts:-

- The construction of the shared parking, falls within the RPA of group G38. This is a group of predominantly false acacia, sycamore and purple plum. The long-term health of the group will not be compromised, provided that the existing sub-base is retained, leaving roots undisturbed and in situ. The existing surface may be removed using a hand-held breaker and hand tools.
- An extension of the footpath to the west of the School Lodge requires construction within the RPA of lime tree T22. Minimal impact.
- The refurbishment of the School Lodge may require the trafficking of the RPAs of trees T22 & T24. Localised soil compaction should be prevented using temporary ground protection.

5.5 Light Interception & Shading.

5.5.1 General:-

The sun rises to 60° at mid-day in mid-Summer when trees are in leaf (ratio of 16m vertical height to 10m horizontal distance).

The sun only rises to 12° in mid-Winter. However, in winter deciduous trees are leafless, so shading is reduced.

Theoretical shadows of arcs equal to estimated tree height in ten-years' time is recommended in BS5837. *This is the shadow pattern for a period from May to September inclusive, from 10.00hrs to 18.00hrs daily.*

5.5.2 Specific Shading Impacts:-

- Trees T22 and T24 will continue to shade the School Lodge. This is not a significant impact.
- Yew hedge H35 will shade the south-western elevation of the new residential block. However, this may be controlled by reducing its height from 6m back to 3m. It should then be trimmed annually to maintain it at this height.
- Shading of the parking area will be much reduced, following the removal of trees T29 to T32.

5.6 Over-bearing and Falling material.

5.6.1 General:-

All trees drop flower parts, leaves, twigs and fruits throughout the year. These can create a mulch layer on roads. Bird droppings and honeydew can spoil car paintwork. Big trees make adjacent dwellers nervous.

5.6.2 Specific Impacts:-

- The south-western canopy of G38 overhangs the parking area. This will require pruning back now, and periodic crown raising and deadwood removal.
- Sycamore T42 spreads to the new building. Crown reduction needed on SW side. See 6.2 below.
- Leaves will continue to be blown across the site, from the lake-side trees to the south-west. These may require periodic clearing, particularly in the autumn months.

5.7 Subsidence/heave & root growth.

5.7.1 To be assessed by an engineer referring to NHBC 4.2:2017.

- BGS data suggests fine-textured subsoils with volume change potential. Foundations should be designed accordingly.

5.8 Amenity impact.

5.8.1 Amenity can be *visual landscape, habitat or heritage/historic.*

- Ash trees T29 and T31 and apple T32 are the only trees of significance to be removed. Trees T31 and T29 are visible from Matson Lane, but in the context of the wider site, represent only a modest loss of amenity.

6. Arboricultural Method Statement in sequential order for proposed development at School Lodge, Matson.

6.1 Supervision

6.1.1 We would recommend the following inspections:-

- **Pre-start site meeting** between building contractor, Council Tree Officer and retained arboriculturalist, to agree feasibility of tree retention, tree protection and working methods.
- **Installation of protection fencing.**
- **Installation of minimal-dig footprint.**

6.1.2 All inspections to be followed with emailed supervision log with action points, copied to client and landscape officer.

6.2 Tree Management

6.2.1 Tree Work prior to ground work:-

No	Species	RPA radius m.	Work for landscape / tree health.	<u>ADDITIONAL WORK FOR DEVELOPMENT</u>
G1	Laurel	1.8		
T2	Sycamore	3.5	Remove ivy from base to a height of 1m.	
T3	Common lime	13.3	Remove ivy from base to a height of 1m and remove basal growth.	
T4	English oak	8.3		
G5	Sycamore, yew and lime	3.0		
G6	Laurel and yew	1.8		
T7	Larch	7.0		
G8	Laurel	1.8		
T9	Sycamore	6.5		
T10	Common lime	7.2	Remove ivy from base to a height of 1m. Remove basal growth.	
T11	Ash	3.7		
T12	Common lime	7.7		
T13	Yew	1.2		
G14	Sycamore	1.8		

T15	Black poplar	4.2		
T16	Crack willow	2.5	Repollard at 1m.	
T17	Sycamore	3.2	Sever Ivy at base.	
T18	Yew	2.5	Target prune old stubs.	
T19	Black poplar.	6.1	Target prune stub.	
T20	Black poplar	7.1		
T21	Yew	3.0	Target prune old stubs.	
T22	Common lime	9.1		
T23	Holly	1.7		
T24	Common lime	9.0		
T25	Ash	8.1	Crown reduction to mitigate against stem failure.	
G26	Sycamore	2.4		
T27	Beech	6.0		
T28	Maidenhair Tree	1.9		<u>FELL AND GRIND OUT STUMP.</u>
T29	Ash	5.4	Remove Ivy from base to a height of 1m.	<u>FELL AND GRIND OUT STUMP.</u>
T30	Holly	4.8		<u>FELL AND GRIND OUT STUMP.</u>
T31	Ash	6.6	Sever Ivy at base.	<u>FELL AND GRIND OUT STUMP.</u>
T32	Apple	2.8	Prune for fruit production. Remove Mistletoe.	<u>FELL AND GRIND OUT STUMP.</u>
H33	Laurel	1.2	Reduce to 3m and trim annually.	
T34	Holly	1.6		
H35	Yew	1.7	Reduce to 3m and trim annually.	<u>REMOVE NORTHERN STEM. TRIM THE REST HARD BACK ON NE SIDE.</u>
G36	Hawthorn, holly and yew.	1.8	Reduce to 3m and trim annually.	<u>FELL AND GRIND OUT STUMPS.</u>
G37	Hazel, willow, yew and holly.	1.8	Remove broken and wind-blow stems.	<u>REMOVE SOME AND TRIM BACK OTHER STEMS HARD.</u>

G38	False acacia, sycamore, purple plum and laurel	4.8	Remove ivy at base to a height of 1m. Remove deadwood greater than 25mm in diameter.	<u>TRIM BACK WHOLE OF SOUTH-WESTERN SIDE: REDUCING CROWN RADII OVER THE CARPARK FROM 9M TO 6M, TO FULL HEIGHT OF TREES.</u> (Remove ivy & dead wood).
T39	Yew	7.2		
G40	Sycamore, elm, hazel and laurel.	1.8	Sever ivy and re-coppice hazel.	
T41	Holly	4.8		
T42	Sycamore	5.4	Remove ivy from base to a height of 1m.	<u>TRIM BACK WHOLE OF SOUTH-WESTERN SIDE: REDUCING CROWN RADII OVER THE CARPARK FROM 9M TO 5M, TO FULL HEIGHT OF TREE.</u> (Remove ivy & dead wood).
G43	Hawthorn, ash and laurel.	1.8	Fell one leaning ash in the group.	
T44	Norway maple	1.8		<u>FELL AND GRIND OUT STUMP.</u>
G45	Sycamore, hazel and laurel.	3.0		
T46	Ash	2.8		
T47	Sycamore	4.8		
G48	Laurel, hazel, walnut, hawthorn and leyland cypress.	3.0		
G49	Ash	3.0		
G50	Leyland cypress	3.6		
T51	Walnut	7.8	Fell neighbouring Leyland cypress to provide space for future growth.	
H52	Leyland cypress	3.0		
G53	Lawson cypress and laurel.	1.2		
G54	Ash and oak	3.4	Thin by removing smaller poorer quality trees.	

End of table.

6.2.2 Treework informatives, included for general information:-

6.2.2.1 Disturbance to wildlife.

It is essential to check for nesting birds, bat roosts, badgers and hibernating animals such as hedgehogs under trees, before pruning or removing trees, as negligent disturbance is an offence under the EC Habitat Directive 1992, CROW Act 2000 & Protection of Badgers Act. The Habitat Regulations were amended in August 2007 to include as an offence **any** damage or destruction of a breeding site or resting place of European Protected species: mainly bats in a tree context.

In general, autumn tree work: **September, October and November** is least disruptive to bats and birds.

6.2.2.2 Permission

Trees may be protected by a TPO, and could lie within a Conservation Area.

Trees may be owned by third-parties.

Trees may be protected by planning conditions.

Therefore, a contractor must satisfy himself that all necessary permissions from the local planning authority or tree owners are in place before touching trees.

6.2.2.3 Quality of Tree Work

All off-ground tree work should be done by insured tree surgeon with certificates in aerial chainsaw use (new designations:- NPTC 020-04, 0020-05, 0020-07, 0021-01, 0021-07; LANTRA 600/5703/8, 600/5717/8, 600/5715/5, 600/5704/X, 600/5714/2), and working to BS3998:2010 and working to BS3998:2010, and "*Treework at Height*", the Arboricultural Association's ICoP.

(Stumps can be left to shoot again, ground out, or grubbed out, or poisoned depending on location.)

6.3 Tree Protection

6.3.1 Requirement

The most important tree-protection measure is effective protective fencing, erected as close as possible to the Root Protection Area (RPA) boundary before any other work starts on site including demolition in the vicinity of trees. It must be maintained until all work is completed, except final soft landscaping. Here tree protection is proposed for retained trees, and for areas of possible new planting where this is feasible: called landscape protection zones.

6.3.2 Vertical Tree Protection

6.3.2.1 Tree Protection fencing **locations** are shown on Tree Protection Plan in Appendices.

6.3.2.2 Two **specifications** for suitable protective fencing are given in Appendix II. Lightweight will suffice here.

6.3.2.3 Within the fenced off **CEZ** Construction Exclusion Zone: there must be:-

- no construction access,
- no storage of materials, including soil,
- no ground disturbance.

6.3.2.4 Fencing to remain until all demolition, construction and hard landscaping work is completed, and removed only for final soft landscaping.

6.3.3 Temporary Ground Protection (TGP) within RPAs:-

6.3.3.1 IF work is required to be closer than the all-round protection zone, then the fenced off zone can be made smaller on that side, or entered temporarily, subject to permission from retained

arboriculturalist.

Within such zones, temporary horizontal ground protection plus temporary fencing would be essential.

TGP will be required for construction access to the south-western elevation of the School Lodge, within the RPAs of T22 & T24.

6.3.3.2 Four obvious options for temporary ground protection would be:-

- **Retain existing paving throughout construction.**
- Temporary ground protection plates such as aluminium "Eve Trakway" or plastic interlocking-plate ground protection, both on 150mm depth of woodchip or bark, shown in Appendix III.
- A layer of woven geo-textile under minimum 250mm depth of graded aggregate which is lifted after work.
- Butted scaffold boards or 22mm plyboard laid on bearers on 150mm depth woodchip or bark mulch (pedestrian access only).

6.4 Construction Access.

6.4.1 General points:-

- We assume that access will be via the existing carpark on Matson Lane. The existing surface must remain in situ, within the RPAs of G38, throughout the construction process.
- All nearby trees need protection.
- No pedestrian, vehicle, plant or machinery to enter RPAs without concrete or temporary ground protection as detailed in para 6.3.3 above.

6.4.2 Site huts could be placed within RPA of trees and hedges; provided they stand elevated on stilt feet, no excavation is required for temporary services, and pedestrian and vehicle access is ground protected as detailed in 6.3.3 above.

6.5 Demolition / Excavation within RPAs:-

- The new parking area within the RPA of G38 must retain and utilise the existing sub-base.
- Removal of the existing gravel and tar surface may be done utilising ONLY a hand-held breaker and hand tools.

6.6 Foundations within RPAs:-

- As above, the existing carpark sub-base must be retained within the RPA of group G38.
- Roots must remain undisturbed and in situ.

6.7 Drainage.

6.7.1 Storm-water drainage: Any soak-away system must be designed to avoid significant increase and no decrease of ground water in trees' rooting zones.

6.7.2 Foul Drainage: keep away from trees. Link to existing wherever possible.

6.7.3 Sustainable Urban Drainage System: Any SUDS scheme, to reduce the load on local mains drainage, must not significantly add to the soil water in trees' root zones.

6.8 Service Trenches within RPAs.

- 6.8.1 Service trenches (electric lights, utilities, telecoms, drains etc) must be **designed** to run as far from trees as possible.
- 6.8.2 Trenches **within RPAs should be avoided. Use existing runs wherever possible.**
- 6.8.3 Otherwise use this onerous, work method:-
- Hand digging* or trench-less systems must be used.
*Use an air-spade to reveal roots (Appendix V).
 - Retain roots >15mm diameter within service trenches. Thread service pipe underneath.
 - No roots >25mm diameter must be exposed or severed without express written permission of local authority tree officer or retained arboriculturalist.
 - Any excavation within the RPA of a tree must be covered immediately after digging with damp hessian, topped by tarpaulin & plyboard, to prevent root desiccation.
 - Hole must be backfilled within five days of opening.
 - Wrap exposed roots >20mm with hessian, and surround by 50mm depth sand, as part of backfill medium.
 - Tamp backfill material by hand thumper or whacker plate only.

6.9 Minimal-dig construction for new access drives, parking & paths

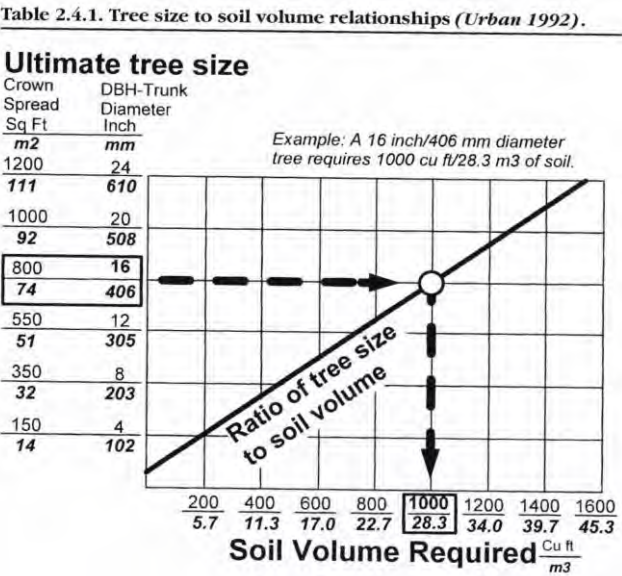
- 6.9.1 If roads, footpaths, cycle-ways, yards or parking are required near trees, they can be constructed in two ways:-
Conventional construction:- If outside a tree's RPA.
Minimal-dig construction:- If within a tree's RPA.
- 6.9.2 No special measures required. See Appendix IV if minimal-dig required.

6.10 Tree work following construction.

- 6.10.1 Trees should be re-inspected. This inspection would reveal the need for remedial tree work for the following reasons:-
-to rectify damage occurring during construction (regrettable but possible),
-to allow additional clearance,
-or complete tree removal if trees were considered too close for safe retention.
- 6.10.2 All additional work subject to further local authority agreement if trees are protected by TPO or planning conditions, or stand within a Conservation Area.

6.11 New Planting.

- 6.11.1 There is limited space for new planting and the site already has good tree cover.
- 6.11.2 Any planting must provide adequate long-term soil-moisture availability: graph from James Urban (Up by Roots, ISA, 2008), to remind designers:



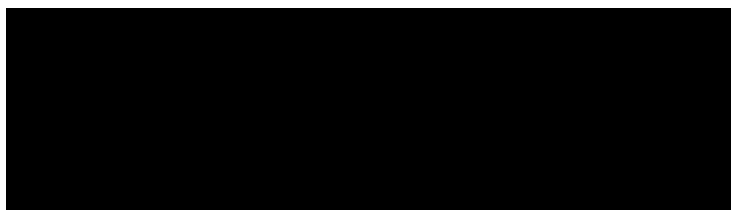
- 6.11.3 Any planting and maintenance to comply with: **BS 8545 “Trees: from nursery to independence in the landscape – Recommendations”**. BSI 2014.

7.0 Conclusions

- 7.1 The development requires the removal of three category ‘B’ trees and the removal, or partial removal of five category ‘C’ trees groups or hedges. In the context of the surrounding landscape, this represents a very modest loss of amenity.
- 7.2 Construction of the new carpark within the RPA of G38, requires the retention of the existing sub-base.
- 7.3 We recommend the use of a minimal-dig sub-base, for the construction of the footpath within the RPA of T22. All details in section 6 above, and shown on our TRP Plan.

Please contact us for further information.

Yours sincerely,



B J Unwin Forestry Consultancy.

References:

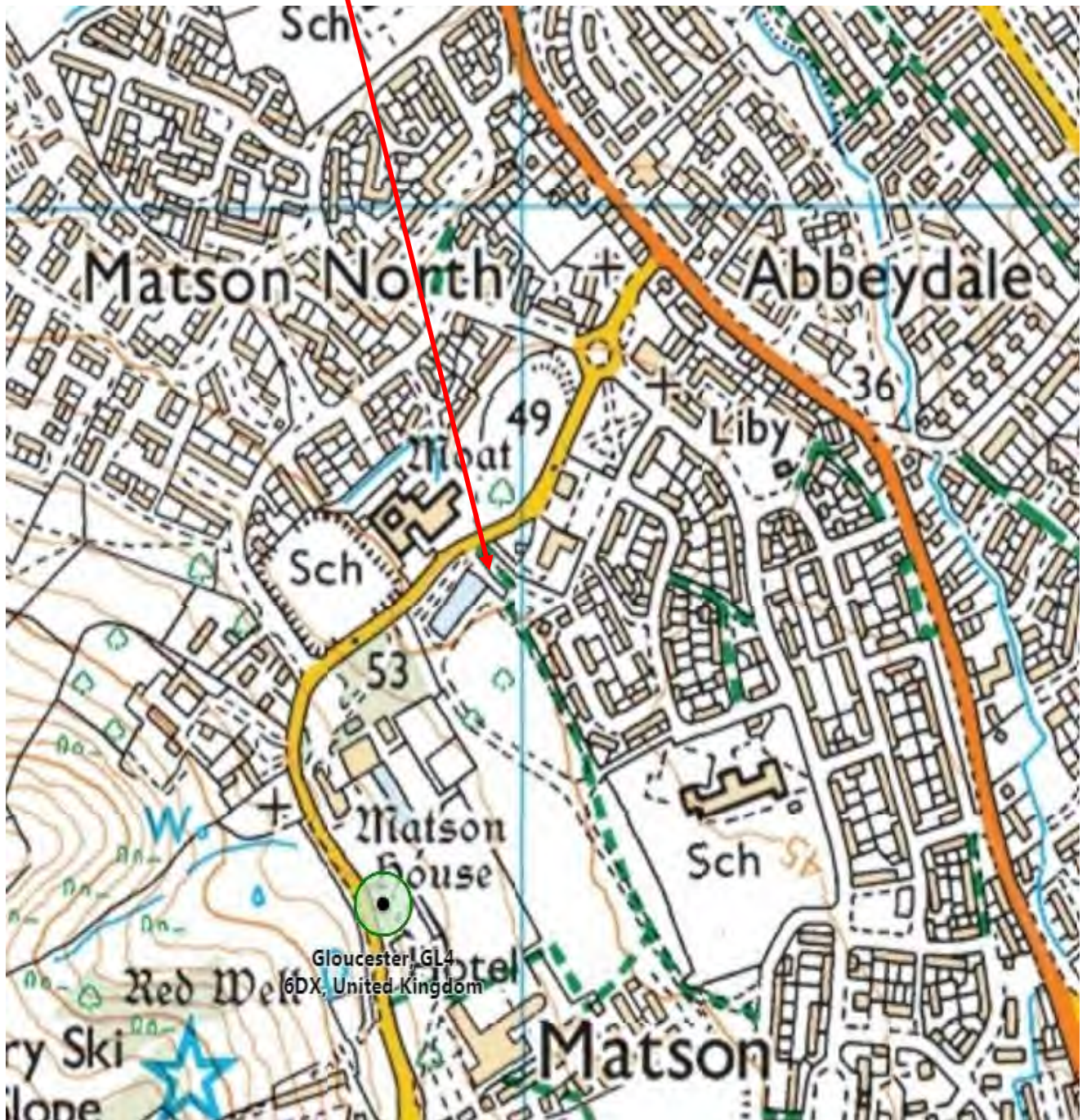
- "The Body Language of Trees"*. Claus Mattheck and Helge Breloer. HMSO 1994.
"Principles of Tree Hazard Assessment and Management". David Lonsdale. HMSO 1999.
BS 3998: 2010 *"British Standard Recommendations for Treework"*.
BS 5837: 2012 *"Trees in Relation to Design, Demolition & Construction"*.
BS 8545 *"Trees: from nursery to independence in the landscape – Recommendations"*. BSI 2014.
NJUG Volume 4 2007 *"Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees"*. NJUG, 30 Millbank, London, SW1P 4RD.
"Trees and Development". Nelda Matheny and James R Clark. ISA. 1998.
BS 8206:1992 *"Lighting for buildings"*.
BRE guide 209 (2002) *"Site Layout planning for daylight and sunlight"*.
NHBC Chapter 4.2, *Building Near Trees*. National House Building Council, 2013.
"Tree Roots in the Built Environment". J Roberts, N Jackson & M Smith. R.A.T.8, TSO (The Stationary Office), London, 2006.
"Treework at Height" Industry Code of Practice. Arboricultural Association. 2014.

Appendices 1 to VIII.

- Appendix I Location & Google Earth aerial.
Appendix II Vertical Tree Protection Fencing, from BS58
Appendix III Horizontal Ground Protection x 2 examples
Appendix IV Shallow trays for strengthening gravelled or grassed areas.
Slightly deeper (50mm or 80mm trays for strengthening gravelled or grassed areas.
Deeper Cellweb 3-D grid for strengthening tracks.
Appendix V Example of Air-spade.
Appendix VI **B J UNWIN FORESTRY CONSULTANCY CV.**
Appendix VII Constraints plans :- Tree Crowns
Root Protection Areas
Theoretical Shading.
Appendix VIII Tree retention and Tree Protection Plan

Appendix I

Location



Google Earth aerial.
Taken June 2018.



Appendix II

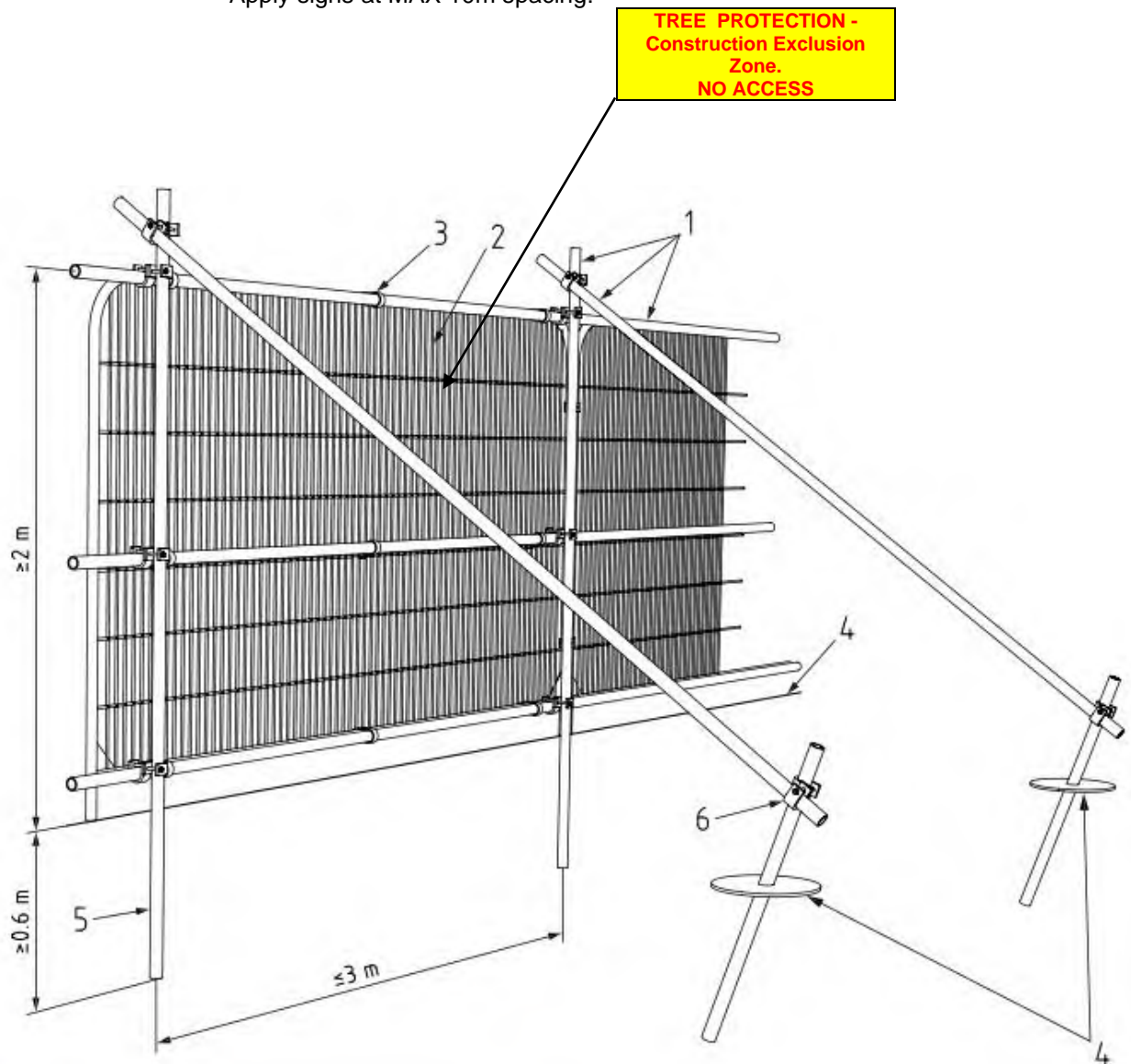
Vertical Tree Protection Fencing, from BS5837.

Heras panels on driven poles + braces on driven pegs.

Vertical protective fence: location on plan:

Default in situ > 3 months:-

Apply signs at MAX 10m spacing:



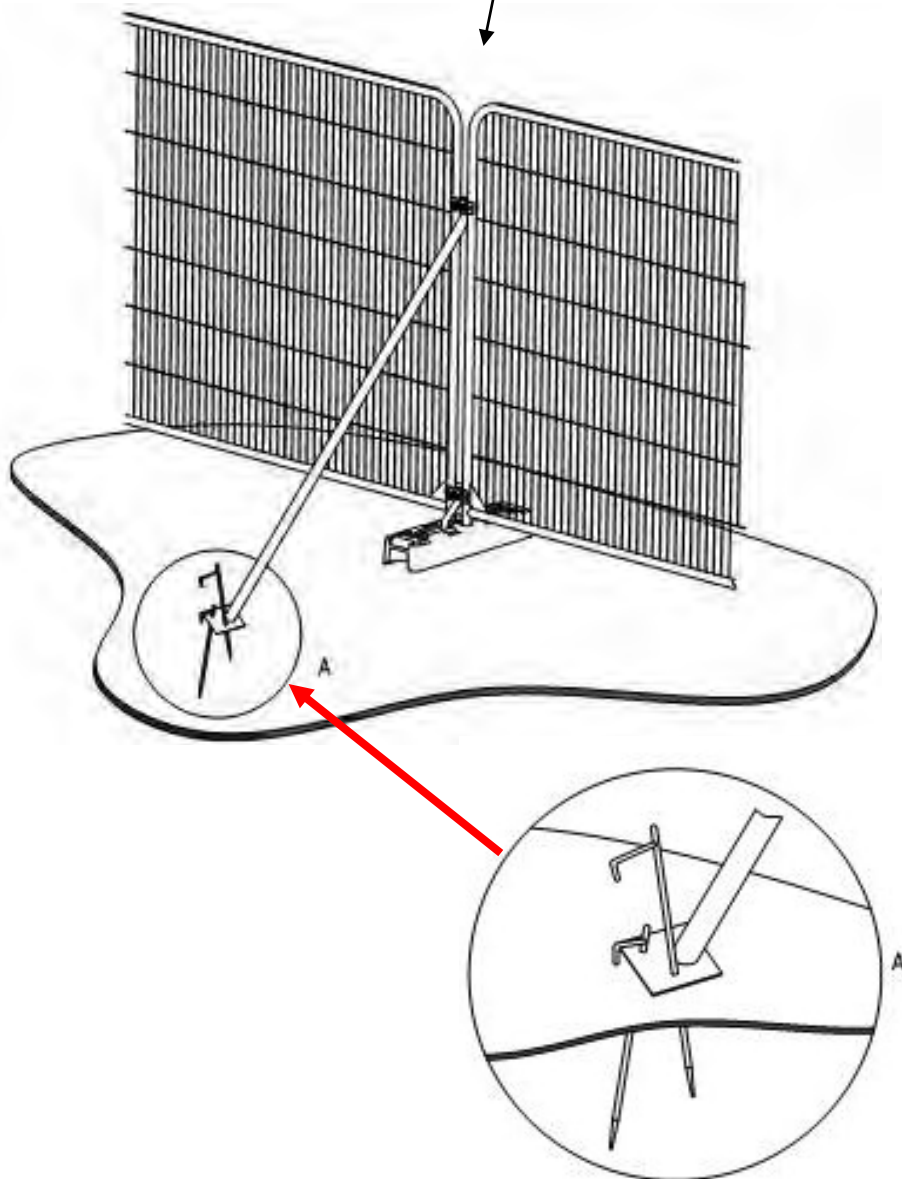
Key

- 1 Standard scaffold poles
- 2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
- 3 Panels secured to uprights and cross-members with wire ties
- 4 Ground level
- 5 Uprights driven into the ground until secure (minimum depth 0.6 m)
- 6 Standard scaffold clamps

Lightweight: in situ for < 3 months-

Apply signs at maxm 20m spacing:

**TREE PROTECTION -
Construction Exclusion
Zone.
NO ACCESS**



Appendix III

Horizontal Ground Protection x 2 examples

Example of aluminium temporary ground protection.

EVE TRAKWAY



Roadways - Medium Duty Trakpanel

The Medium Duty Trakpanel, or 'Box' panel, is ideal for where both pedestrian and vehicle access is required. This versatile panel can be laid with either a smooth or corrugated surface uppermost. The smoother surface finish provides excellent support underfoot, whilst the construction of the panel maintains a high load bearing capacity. Due to the way these panels fit together, a smooth joint is created therefore reducing trip hazards.

The Benefits:-

- Pedestrian friendly upper surface
- Suitable for heavy vehicles Ideal for where both pedestrians and vehicles require safe passage.

Technical Specifications	
Dimensions	2.5 x 3m (when installed 2.44m x 3m due to overlap)
Weight	274.7 kg
Carrying Capacity	A more pedestrian friendly roadway, this system is capable of taking any road going loads.

The following Roadways are available.
Please select an item to view more information:

Other Roadways products:-

- Heavy Duty Trakpanel-
- LD20-
- Roadway Ramps-
- Multi-Directional Trakpanel

Example of plastic temporary ground protection.

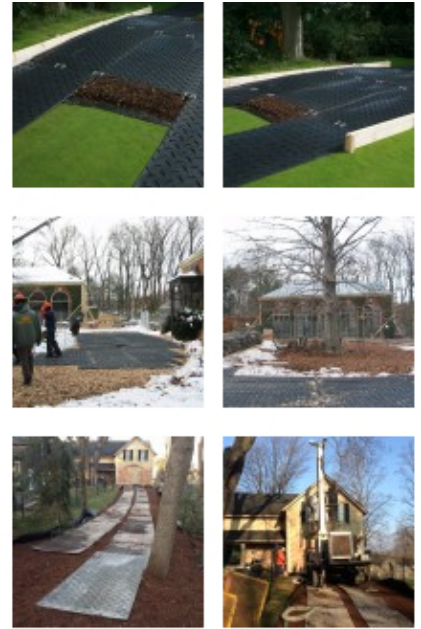
Ground-Guards Tree Root Protection

Tree root protection for construction projects

Planning Departments may often need to stipulate that site access roads will not involve any excavation because of the proximity of tree roots on the site. Furthermore, that they will also provide additional ground cushioning when passing over the immediate areas where there are tree roots beneath. This is very important to prevent compaction of the ground, and long-term damage to the soil structure, the tree roots, and ultimately, to the health of the trees themselves.

An effective means of protecting tree roots is to use a double layer of Ground-Guards. Panels with 150mm of wood chips sandwiched in-between which creates a suitably cushioned roadway for this purpose.

The Ground-Guards system is so durable and versatile that whatever your need, the team will be delighted to work with you to provide an effective solution. Please just call our team on 0113 267 6000 for friendly advice on any difficult site conditions that you need assistance with.



Appendix IV

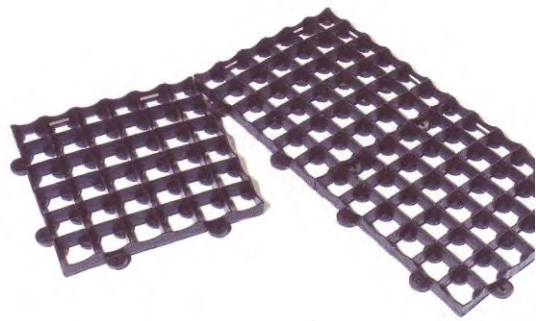
Trays for strengthening gravelled or grassed areas. (50mm or 80mm trays for strengthening gravelled or grassed areas.

DuoBlock

Grass Protection System



Using grass or gravel infill, DuoBlock 750 and 500 give architects, consulting engineers, landscape contractors and developers the ultimate in load-bearing performance combined with aesthetic appearance.



Porous paving systems have been available since the early 1990's and provide a durable yet aesthetically pleasing alternative to traditional surfacing solutions. Increased awareness of the need to manage storm water runoff in new developments and the advent of Sustainable Urban Drainage Systems (SUDS) has led to an increase in popularity.

DuoBlock is a permanent grass protection / gravel retention porous paving system. It is extremely versatile and may be used in a wide range of applications including:

Applications:

- Overspill car parking
- Emergency access and service roads
- Caravan hardstanding
- Verge hardening
- Service Roads
- Pedestrian walkways and towpaths
- Bridle ways
- Helipads
- Golf course pathways / Tee reinforcement

DuoBlock systems are uniquely designed to ensure the ultimate in load bearing performance and aesthetic appearance and have numerous benefits over traditional and first generation plastic systems such as:

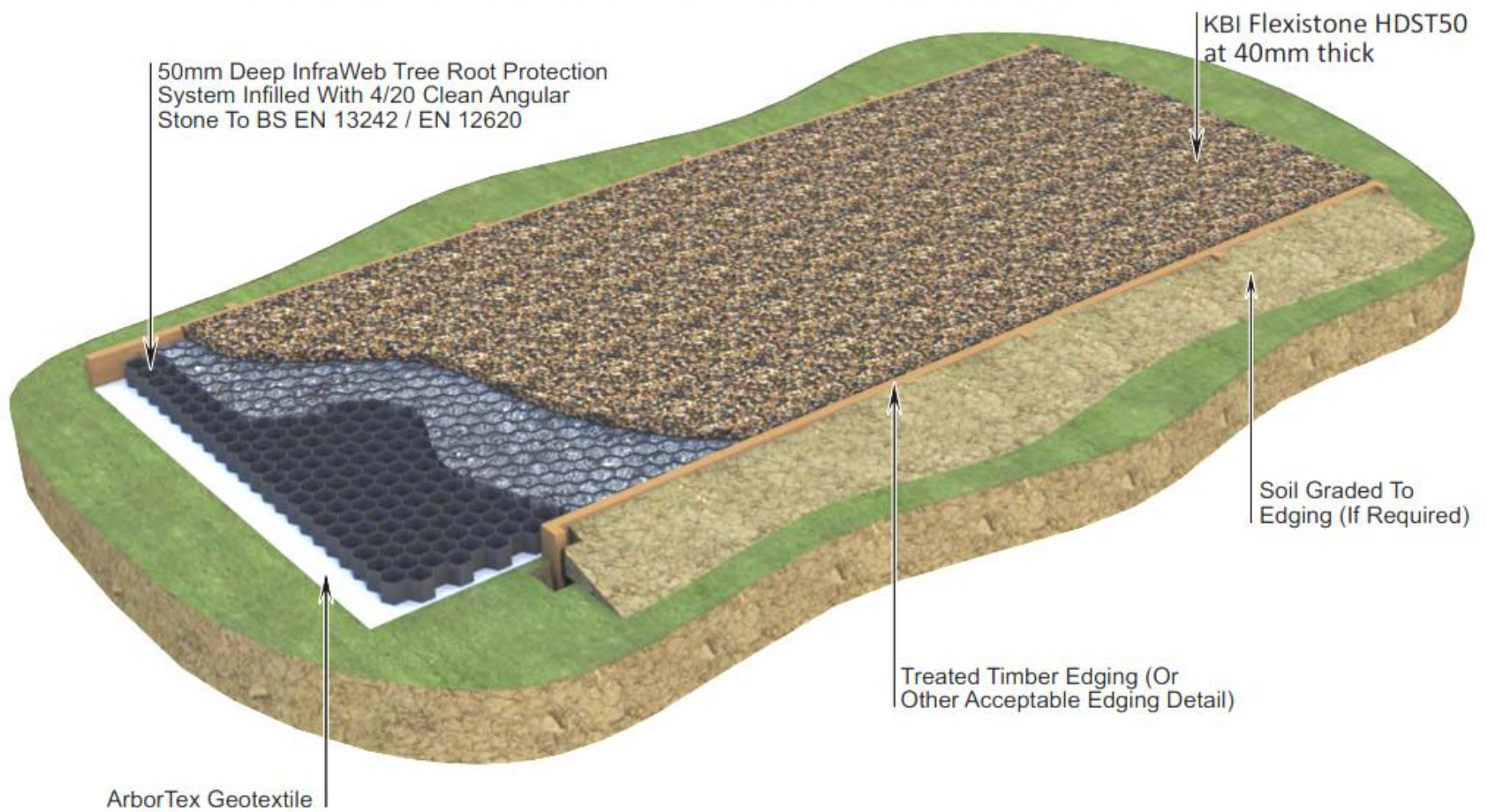
Benefits:

- 90% surface area available for infill
- Reduces surface water runoff
- Increases water Filtration
- Interconnecting cell walls
- High Load Performance
- Unique surface design for greater aesthetic appeal
- Positive interlock System

NEXT DAY
DELIVERY
from stock

InfraWeb TRP 50 Section - Tree Root Protection c/w Flexistone HDST50 at 40mm thick for pedestrian and cycleway use only

34



KBI
Longfields Court
Middlewoods Way
Whamcliffe Business Park
Barnsley
South Yorkshire
S71 3GN

InfraWeb TRP 50 Section - Tree Root Protection c/w Flexistone HDST50 at 40mm thick for pedestrian and cycleway use only

Date: 29/12/2016
Drawn By: NLG Design
Revision: A
Drawing Number: TRP50HDST50

Deeper Cellweb 3-D grid for strengthening tracks.

Cellweb® TRP is a 3D cellular confinement tree root protection system. The system provides a 'no dig' solution for the construction of new hard surfaces within root protection areas (RPAs). Cellweb® TRP has been designed and independently tested to comply with recommendations made in Arboricultural Practice Note 12 and BS 5837 2012 – Trees in relation to design, demolition and construction.



Cellweb® TRP Key Functions

Cellweb® is a 'no dig' solution which is constructed directly on the existing ground surface. This eliminates the requirement for excavation, preventing root severance.

Cellweb® is a completely porous system allowing continued water permeation and gas exchange between the rooting environment and atmosphere.

Cellweb® spreads point loads, minimising increases in soil compaction within the rooting environment. This maintains an open graded soil structure allowing continued root growth, water, gas and nutrient migration.

The Cellweb® TRP system comprises the following three components

Treetex™ Geotextile. Following minimal ground preparation the Treetex™ is laid onto the existing ground and top soil. This acts as a separation layer, separating the system above from the soil and rooting environment below. Treetex™ performs as a hydrocarbon pollution control measure in accordance with BS5837, holding 1.7lt of oil per square meter.

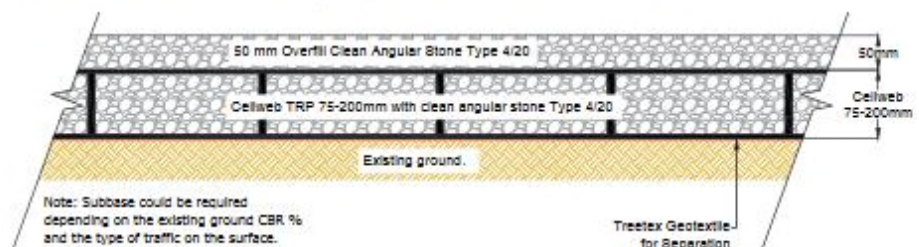
Cellweb® 3D Cellular Confinement. The Cellweb® is installed on top of the Treetex™ layer. This is fixed to the ground using ten steel J pins per panel. The panels can be cut to the required shape and adjoining panels can be connected using heavy duty staples or cell ties.

4-20mm Clean Angular Stone. The expanded Cellweb® is infilled with a 4-20mm clean angular stone. The confined angular stone locks together to produce a rigid stone mattress, while maintaining air pockets for continued water permeation and gas exchange. The low fines content of the stone prevents the Treetex™ layer from becoming blocked over time.

Which depth of Cellweb® TRP?

The Cellweb® System is provided in four different depths; 200mm, 150mm, 100mm and 75mm. The depth required is determined by the proposed traffic loadings and the site ground conditions. Geosynthetics in house engineering department can provide a free site specific technical recommendation. For free technical and engineering support please contact Geosynthetics Ltd 01455 617139 or the full installation guide can be found on our website www.geosyn.co.uk.

Indicative Cellweb with overfill



Geosynthetics
Engineered Solutions

Appendix V

Example of Air-spade.

HANDLE VIBRATION TEST

Product type – MBW Soil Pick SP125

Manufacturer of testing apparatus – Castle

Accelerometer was affixed to the rear of the handle on the Soil Pick and all three axes were tested.

Accelerometer position:

X axis = 0.0M/S²

Y axis = 0.0M/S²

Z axis = 0.0M/S²

Hand/arm vibration = 0.0M/S²

TREE CARE

MBW's Soil Pick provides a multi-functional air tool for a variety of applications in the tree care industry including:

Radial Trenching

Radial trenching is a process which involves aerating the soils around a tree root in a pattern resembling a wagon wheel. The Soil Pick provides a safe and damage free means of utilizing a high air pressure to loosen tightly compacted soils.

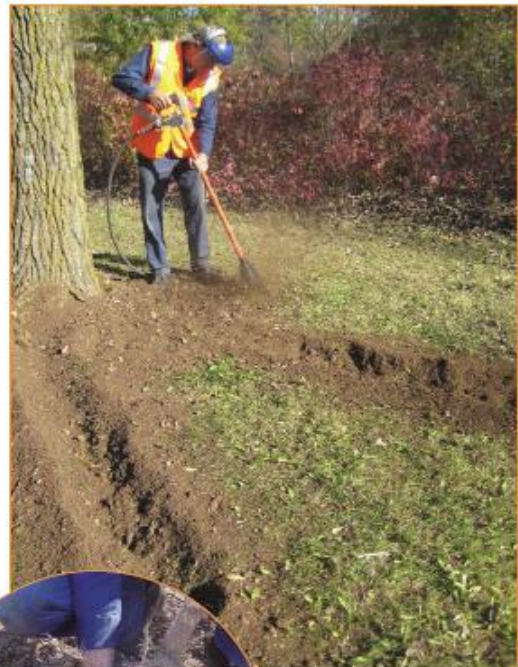
Aeration & Excavation

Root Locating for Utility Line Installation or Pruning

Investigating Root Structure and Damage

Transplanting or Bare Rooting

Reducing Soil Compaction



Appendix VI

- B J UNWIN FORESTRY CONSULTANCY Ltd. -

Head office: **Parsonage Farm, Longdon, Tewkesbury, Gloucestershire. GL20 6BD.**

Satellite Offices: - Haley Ridge, Highcliffe, **Nr. Wadebridge, Cornwall, PL27 6TN.**
-105 Charfield Court, 2 Shirland Road, **London, W9 2JR.**

Associate office: - 1 Market Place Mews, **Henley-on-Thames, Oxfordshire, RG9 2AH.**

Principal: **Jim Unwin BScFor, MICFor, FARborA, RCarborA, CEnv.**

**Chartered Forester - ICF Registered Consultant - Fellow of the Arboricultural Association -
Arboricultural Association Registered Consultant - Chartered Environmentalist.**

From:	Jim Unwin	To:	Prospective Client
Date:	Sept2019	No. of pages:	2
Subject:	Professional CV		

Below are set out **B J Unwin Forestry Consultancy's** competences and experience.

Insurance:-

£5m Public Liability & £2m Professional Indemnity (renewed June).

Personnel:-

B J Unwin (born 1956) started his forestry career as a tree surgeon and landscape contractor in 1975. He studied forestry at Aberdeen University from 1977 to 1981, worked for Unilever as a Forestry Manager in the Solomon Islands from 1981 to 1983. Since then he has been based in Gloucestershire assisting clients to manage their woodland, trees and vegetation throughout Southern Britain, and occasionally in northern England, Scotland and Northern Ireland.

In the mid-1980s to mid-1990s for a period of about ten years he taught chainsaw, tree felling and tree surgery courses at Worcestershire Agricultural College on a part-time basis. He was assessed and passed as a LANTRA assessor in these skills, and held NPTC certificates of competence in chainsaw use on the ground and up trees.

He now works as a tree consultant / manager / contract manager to a range of clients listed below. For tree decay testing we have a **PICUS II ULTRASOUND** tomograph with electronic callipers and **RESISTOGRAPH-R400** drill.

He works with two self-employed arboriculturalists of >20 years' combined experience:-

Jasper Fulford-Dobson Arboricultural Association Registered Consultant - Associate Member of the Institute of Chartered Foresters - Professional member of the International Society of Arboriculture - Technicians Certificate (ArborA) 2005, now regarded as NQF "level 4" - Professional Tree Inspection Certificate (LANTRA) 2013,

Owen Hutchison BSc(Hons) Agriculture & Estate Management, Level 4 Diploma Arboriculture, LANTRA Professional Tree Inspection & working with trees since 2007, &

Alex Collier who achieved in July 2018 Level 5 Arboriculture Foundation Degree with a Distinction. In June 2016 achieved Pershore College Level 3 Extended Diploma in Forestry and Arboriculture, completing the course with a Distinction grade (+SC30).

Plus a secretary/ plan technician; calling in extra help as required (eg ecologist or arboricultural assistant). On bigger projects he regularly works as a part of a multi-disciplinary team.

Current BJUFC qualifications are:-

BSc Forestry Hons 1st Class, Aberdeen 1981.

Chartered Forester No. 0330064, 1986.

Fellow of the Arboricultural Association, 1995.

Licensed Subsidence Risk Assessor, 1997-2001 (scheme closed in 2001).

Completed Training in September 2002 to Prepare Native Woodland Plans for CCW and FC in Wales.

Arboricultural Association Registered Consultant No. 42, 2004.

LANTRA certificate for Arboriculture and Bats, BJU in 2005.

Examined and approved to submit Welsh WGS as Management Planner and PAWS Assessor, 2006.

Joined Utilities Vendor DataBase, Supplier No: 88101 in Feb 2006 (left 2010).

Training and Certification in basic CAD operation 2006.

Chartered Environmentalist April 2008.

Woodfuel Production and Supply : LANTRA Certificate of Training Dec 2008.

Training in CAVAT amenity tree asset valuation October 2010.

Company Safety Policy:- We have been successfully assessed by Safety Management Advisory Services (SMAS) as meeting CDM Regs 2015 Core Criteria Stage 1, as a **Worksafe Consultant No. 90180**, expiry 27/09/2020.
CITB Health, Safety & Environment Test for Managers & Professionals passed 22/01/2015.
First-aid at work June 2013.

Current clients and typical work include:-

English Heritage	Tree safety inspection contract 2007-2013 for East Midlands, East Anglia, London and SE England. Tree safety inspection contract for West of England & Midlands 2013-2019.
Planning Inspectorate (PINS) & Dept for Communities and Local Government. 2000-2017.	Arboricultural Inspecting Officer in South-West England, South East England, West Midlands and East Midlands; advising the First Secretary of State on TPO appeals since 2000. Contract with DCLG expired April 2008 when transferred to PINS. Contract continued with PINS, as Non-Salaried Arboricultural Inspector, determining TPO appeals and High Hedge appeals. All non-salaried inspectors released in 2017.
Architects / Developers / Planning Appeals	Complete Tree Constraints, Impact Assessment & Tree Protection advice for planning, working with other professionals to input arboriculture into more complex development schemes. Recent assignments in Liverpool to Dorset, Kent, Norfolk & London. All using BS5837:2012. FULL CAD CAPABILITY.
Amey Mouchel Ltd	Overseeing Amey Tree Officer on motorway and trunkroad tree inspections throughout Midlands and Marches to 2012. Amey Mouchel are agents for Highways Agency.
CRH Tarmac Ltd, + Midland Quarry Products + Quarryplan (in Northern Ireland).	Since 1990 working with Estates staff, quarry managers and Landscape / ecological consultancies organising and managing contracts for tree and woodland planting both pre- and post- quarrying. Also preparing landscape restoration schemes for straightforward sites plus landscape management on sites throughout southern England, East Anglia and south and south-west Wales. (Commendations for Land Restoration and Environmental improvements from Spelthorne Borough Council 2003.) Also in England & Northern Ireland ongoing tree consultancy for Quarryplan.
Land Agents	Assisting Bruton Knowles clients' with woodland management and other tree issues since 1984. We also assist clients of Fisher German and Savills on a regular basis.
Tarmac Central now CRH Tarmac Ltd.	Since 1988 woodland management of Hopwas Hays Wood, Tamworth.
Rural estates in Herefordshire, Worcestershire and Gloucestershire, plus private woodland owners in southern England and Wales.	Since 1983 woodland management, tree management, hedgerow management. Many are Ancient woodlands and SSSI's requiring detailed ecological management plans produced in consultation with ecologists. About forty Farm Woodland Premium Schemes and about twenty Native Woodland Plans prepared to date in England and Wales. On-going EWGS grant applications. Input into Tir Gofal (and its successor) and Stewardship schemes. Better Woods for Wales (BWW) applications.
British Waterways	Ten-year Tree and Vegetation Management Plans along canals and around reservoirs in London, Hertfordshire, Berkshire, Birmingham, Staffordshire, Worcestershire, Gloucestershire, Shropshire, Llangollen Canal, etc: plus help in dispute with riparian owners. This work ceased around 2011.
Stroud District Council	Management of 49Ha woodland since 1989 on FC schemes plus grassland on DEFRA Stewardship Schemes, including HLS. Retired Nov07.
One-off clients	Since 1983 assisting tree owners, developers, lawyers etc throughout southern or midland Britain, including Wales, on a wide range of tree-related issues including planning, planning appeals, subsidence, health & safety, disputes, vegetation control, expert witness, valuation of woodlands, standing and felled timber, Christmas trees etc, and tree and landscape planting schemes. Recently High Hedge issues and BS5837 are hot topics.
Malvern Hills District Council. South Oxfordshire District Council	BJU Stand-in part-time Consultant Tree Officer Summer 2003. JF-D stand in Consultant Tree Officer summer 2009 to spring 2010.
Golf course & leisure facilities	Assistance with development of Carden Park golf course in Cheshire. Management advice for trees on other golf courses: Eg Ross Golf Club, Swindon Golf Club .
Farm management	Management of own 95Ha farmland since 1985.

Please do not hesitate to ask for further information. B J Unwin END.

Appendix VII

Constraints plan :-

- **Tree Plan**

Retention categories, based on BS 5837 Table 1:-

A = High quality & Value (>40yrs life): Green.

B = Moderate quality & Value (>20yrs life): Blue.

****C = Low quality & Value (>10yrs life): Grey.**

U = Trees to be removed (<10yrs life): Red.

****PLEASE NOTE. FOR CLARITY, C-CATEGORY TREES MAY NOT BE COLOURED.**

and

- **Root Protection Areas Plan**

RPA = circles.

See Tree Table for dimensions.

and

- **Theoretical Shading Plan**

= quadrant of tree height in ten years' time from north west (mid-morning) to due east (evening). This is a shadow pattern for 1 x tree height from 10.00-18.00hrs from May to September.

Plans are not included in pdf format of report.

Insert plans here in paper copy of report:-

Appendix VIII

Tree retention and Tree Protection Plan

Plans are not included in pdf format of report.

Insert plans here in paper copy of report:-

END.

Waste Minimisation Statement

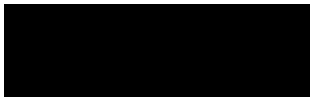
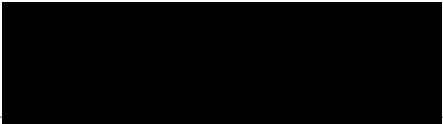
Residential Development, School Lodge, Matson

Prepared for Gloucester City Homes
21st August 2019



envision

Revision	Date
First Issue	13/08/2019
Final	21/08/2019

Author	Signature
Simon Rainsford	
Checked & Authorised	Signature
Charlotte Brewin	

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1 INTRODUCTION

- 1.1 This Waste Minimisation Statement (WMS) has been produced by Envision on behalf of Gloucester City Homes (the applicant), and is submitted to support a planning application for the construction of a 3 storey building to accommodate 9 no. residential units (Class C3), including the refurbishment of the existing lodge building to provide a single dwelling, car parking, landscaping and external waste storage at The School Lodge, Matson

Scope

- 1.2 This statement sets out how waste arising during the construction and operation of the proposed development will be managed.
- 1.3 This report has been prepared in accordance with the National Planning Policy Framework¹, Planning Practice Guidance for Waste (July 2015)², and Gloucestershire Waste Core Strategy³, (November 2012) - Policy WCS2: Waste Reduction, and the Council's Supplementary Planning Document – Waste Minimisation in Development Projects (2006).
- 1.4 A key element within Policy WCS2 is the Waste Hierarchy, which was first introduced as a concept in the Waste Framework Directive (1975/442/EEC). It was implemented in England and Wales by the Waste Regulations 2011. The waste hierarchy ranks waste management options according to the least impact on the environment:
- Prevention – most effective environmental solution to reduce the generation of waste, including the re-use of products.
 - Preparing for re-use – products checked, cleaned or repaired so they can be re-used.
 - Recycling – materials to be reprocessed into products, materials or substances.
 - Other recovery – serving a useful purpose by replacing other materials that would otherwise have to be used.
 - Disposal – least desirable solution where none of the above options are appropriate.
- 1.5 The diagram overleaf summarises the waste hierarchy.

¹ National Planning Policy Framework, February 2019

² Planning Practice Guidance, Waste. July 2015

³ Gloucestershire Waste Core Strategy (WCS), Gloucestershire County Council, 2012.



Figure 1.1 – Waste Hierarchy

- 1.6 Gloucester Waste Core Strategy incorporates the waste hierarchy to ensure the best use of waste within this region. Gloucester County Council have set their own targets of at least 60% recycling and composting for household waste by 2020 (between 9,000-17,000 tonnes/year for composting and 10,000-21,000 tonnes/year for recycling). This target is 10% higher than the national target over the same period.

2 CONTEXT AND PROPOSALS

Location & Existing Development

- 2.1 The application site is located on land at The School Lodge, off Matson Lane. The site is within an urban area surrounded by residential properties, educational facilities and open playing areas. The site is bound to the immediate north by Matson Lane and Moat Primary School, to the east by residential properties. The south of the site is bound by Matson Park, whilst Matson Anglers makes up the western boundary of the site. The site is located within the Matson and Robinswood Ward (within Gloucester City Council).

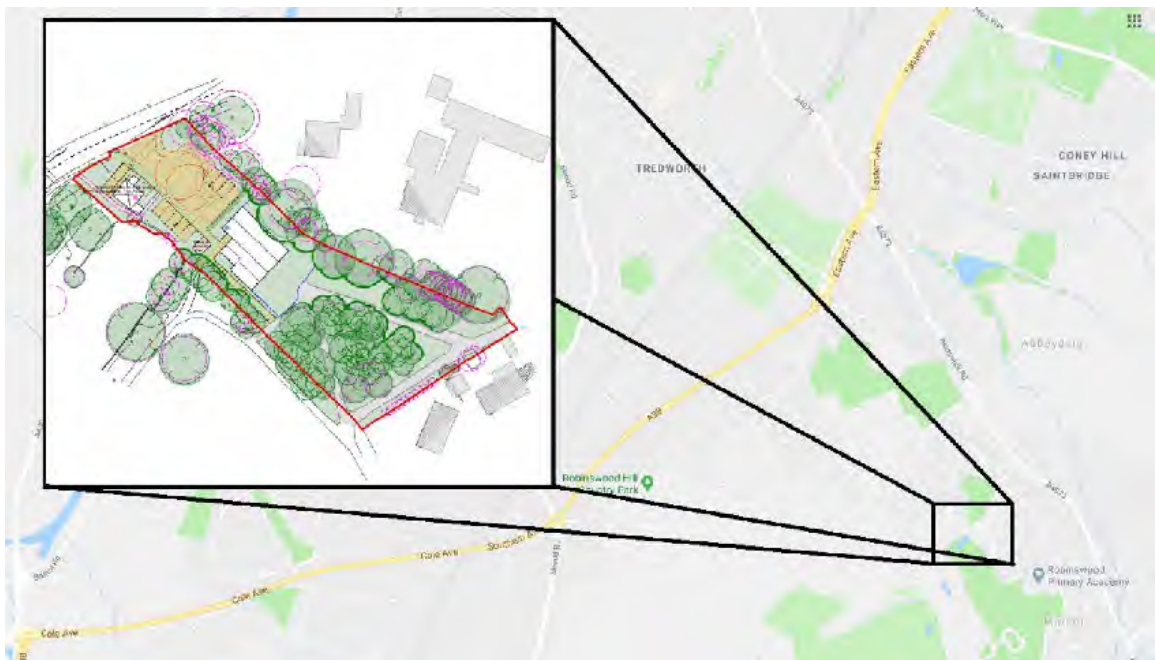


Figure 2.1 – Site Location

The Proposed Development

- 2.2 The planning application seeks consent for the construction of a 3 storey building to accommodate 9 no. residential units (Class C3) including all associated works, at The School Lodge, Matson. The scheme also involves the refurbishment of the lodge building to deliver a single 2 bedroom property.



Figure 2.2 – Site Plan (Image courtesy of Quattro Design Architects)

Policy and Legislation

- 2.3 This document has considered the national and local policy relevant to minimising and managing wastes in new developments, and is prepared in accordance with the requirements of the National Planning Policy Framework, in particular clause 8.c, National Planning Practice Guidance for Waste (October 2015) and National Planning Policy for Waste (2014), replacing Planning Policy Statement 10: Planning for Sustainable Waste Management (PPS 10).
- 2.4 The local planning policy is set out in the Gloucestershire Waste Core Strategy, (November 2012) - Policy WCS2: Waste Reduction, with the Supplementary Planning Document (SPD) for Waste

Minimisation in Development Projects⁴ providing further guidance and ideas for producing a Waste Minimisation Statement, considering the following stages: Project Planning and Design Stage, Construction Activities and Operational Life; this approach has been incorporated in this report.

- 2.5 The legislation framework for the management of construction wastes comprises the following:
- Environmental Protection Act 1990;
 - Environment Act 1995;
 - Hazardous Waste (England and Wales) Regulations 2005 (as amended);
 - Revised Waste Framework Directive (2008/98/EC);
 - Landfill Directive (1999/31/EC);
 - Environmental Permitting (England and Wales) Regulations 2010;
 - Waste Management (England and Wales) Regulations 2006;
 - Waste (England and Wales) Regulations 2011 (as amended); and
 - Waste Management: The Duty of Care Code of Practice (HSMO 1996) (currently being revised).
- 2.6 All waste generated by the construction of the proposed development will be managed in accordance to the legal obligations set out in the above.
- 2.7 The Site Waste Management Plan Regulations 2008 were repealed in December 2013 which removed the legal requirements for developers to prepare a Site Waste Management Plan (SWMP) for construction and demolition projects valued over £300,000. However, SWMPs are still regarded as a good practice tool for organisations such as Building Research Establishment (BRE), WRAP (Waste Resources Action Programme) and CIRIA.

⁴ SPD - Waste Minimisation in Development Projects (incorporating reduction, re-use and recycling requirements), Gloucestershire County Council, 2006.

3 CONSTRUCTION WASTE

3.1 In accordance with Core Policy WCS2, this Waste Minimisation Statement (WMS) sets out how the construction of the proposed development will follow the general principles of waste minimisation as stated:

- To design proposals sustainably;
- To reduce the amount of waste generated from development;
- To conserve natural resources through re-using material arising from construction;
- To re-use materials on-site to reduce transportation;
- To use recycled materials where possible; and
- To reduce waste generation during the operational lifetime of the development and facilitate recycling where waste does arise.

3.2 The site of the proposed development is occupied by a single property which is currently derelict, as well as patches of hard standing. The reuse and refurbishment of the existing school Lodge building supports the WMS principles by reusing an existing building. However to deliver the 9 residential flats, parts of the hard standing on site will require stripping back in preparation for the new residential block to be built. To address the requirements of Core Policy WCS2, the anticipated construction waste streams are discussed below.

3.3 The industry standard of 12 tonnes of waste per 100m² developed floor space is based on values reported by BRE in 2006, and relates to construction wastes only. Demolition and excavation wastes are excluded from this metric. The metric is derived from the following:

Table 3.1: BRE Construction Waste benchmark data

Waste Group	Tonnage per 100m ² floor area
Timber	0.39
Concrete	2.78
Inert	1.43
Ceramic	2.18
Insulation	0.16
Plastic	0.13
Packaging	1.59
Metal	1.04
Plaster and Cement	1.28
Miscellaneous	1
TOTAL	12

- 3.4 The proposed development would provide 9 new flats, with a proposed floor area of 55 sqm each. Based on the industry average of 12 tonnes per 100m², this gives a development area of approximately 495 sq.m excluding common areas, equivalent to 59.4 tonnes of waste during construction.
- 3.5 It is good practice however to achieve resource efficiency level better than 12 tonnes / 100 m² floor area. New standards such as the Home Quality Mark for residential developments recognise progressively higher levels of performance, with exemplary levels as low as 1.9 tonnes per 100 m². The development of the school lodge site to deliver 9 flats is unlikely to reach exemplary waste levels, simply due to the scale of the construction project and limited floor area, however it would be reasonable to expect levels less than the 2006 BRE benchmark. Through following the principles in this construction strategy, it should be possible to reach levels < 8.5 tonnes per 100 m², equivalent to 42 tonnes of construction waste.
- 3.6 With regards to the break-up of hard standing, the contractor shall explore the opportunity for reusing this material on site, should this be deemed suitable. This may form the subbase to access roads and hardstanding.

Construction Strategy

- 3.7 As a first principle, the design and construction of the scheme will attempt to avoid on site waste generation where possible and promote the use of materials with recycled content. One major opportunity is through the choice of materials. The following approaches will be considered through the further design stages:
- The use of pre-fabricated materials, where possible, for on-site assembly;
 - Designing to standard dimensions of blocks/frames to avoid off-cuts;
 - Order pre-cut internal materials and fittings to reduce the need to undertake cutting on site; and
 - Define a procurement strategy that commits to the use of recycled content and sustainably sourced materials where possible.
- 3.8 Waste minimisation can further be achieved by improving wastage rates when ordering materials. Wastage allowances are often accounted for during material orders as a result of general handling losses and surpluses as wastage allowances are often generic and not project specific. To tackle this a system will be put in place to enable the accurate estimates of material requirements at the start of the project. As well as managing construction materials on the site to avoid creating unnecessary waste, with measures such as:
- Avoiding long term storage of materials on site and promoting 'just in time' delivery principle;
 - Providing safe, suitable and secure storage for materials;
 - Consider the use of mechanical systems and machinery for moving materials to reduce the chance of damage;

- Programming and monitoring construction activities to avoid overlap of incompatible trades working in the same area and reduce the risk of damage and rework; and
- Designate a responsible individual as a project waste manager to oversee the above measures and monitor and report the volumes of waste generated during construction and site clearance.

3.9 Construction activities on site will be managed to maximise the level of waste recovered and diverted from landfill, including:

- Segregation of construction waste on site to maximise the potential for recycling/reuse;
- The use of suppliers who collect and reuse/recycle packaging materials;
- The use of off-site separation and recycling of materials in the case where on-site separation is not available; and
- Training of contractors in waste minimisation and materials reuse.

3.10 The waste disposal strategy seeks to limit the amount of waste produced by this development reaching landfill for disposal. The project has a target to divert over 90% of the non-hazardous waste from landfill, with the ambition to achieve higher rates of diversion where possible. The contractor will be required to achieve this target, which shall be monitored throughout the works.

3.11 Waste that leaves the site for disposal includes waste for recovery and potential reuse/recycling and waste intended for landfill. However, wherever possible waste should be directed to transfer stations for recovery over landfill or to alternate facilities such as:

- Metal recycling and transfer;
- Inert waste recovery and recycling;
- Hazardous waste;
- Putrescible (compostable waste).

3.12 Suitable waste processing facilities for construction waste arisings will be identified by the appointed contractor and agreed with the Waste Planning Authority (WPA). Both the facility and the carrier will be licenced. Facilities will reuse, recycle and recover as much waste as possible, and the facility will be located near the proposed site, which complies with the proximity principle and the waste hierarchy.

4 OPERATIONAL WASTE

- 4.1 The most recent recording of England's recycling rate for household waste was 45.2% in 2017/18, according to the DEFRA 2018 Publication⁵.
- 4.2 Total 'waste from households' in England was 22.4 million tonnes in 2017. This is equivalent to 403 kg per person.
- 4.3 As stated in the Gloucestershire Waste Core Strategy, the household composting and recycling rate has steadily increased to 42% in 2009/10, with Gloucestershire County Council targeting 60% by 2020. In 2017 recycle rates were 53%⁶, ahead of national levels.



Figure 3.1 –County Recycling Rate from 2002 to 2017 (Courtesy of Gloucestershire Joint Waste Team)

- 4.4 Based on these national levels, it is predicted that this new development, providing 21 bedspaces will see household waste arisings 8,463 kg per year.

⁵ UK Statistics on Waste, DEFRA, 2019.

⁶ Gloucestershire Joint Waste Team. <http://glostext.gloucestershire.gov.uk/documents/s36322/4Appendix%203%20-%20Recycling%20rates.pdf>

Operational Strategy

- 4.5 This proposed development will incorporate waste management and household recycling initiatives in cooperation with the operational requirements and standards of Gloucester City Council.
- 4.6 The council provides waste and recycling collections for all its residential dwellings, including flats. Recycling and general waste is collected fortnightly, with food waste collected weekly.
- 4.7 With regards to internal arrangements, the refurbished property and each flat will include sufficient waste storage in a dedicated cupboard. 30 litres of internal storage will be provided for each unit in fixed storage with the kitchens. This aligns with current best practices seen in Home Quality Mark.
- 4.8 With regards to external storage, Gloucester City provides design guidance for new developments. For flats, it is recognised that communal facilities are a more practical solution and one 1100L bin will be issued for every eight flats. Communal recycling facilities will also be provided and adequate space should be allowed for a combination of 5 bins up to 360L in size, able to segregate various recyclable waste streams.
- 4.9 The proposed development incorporates external waste storage within the car park for waste collection. This enables occupiers to dispose of waste and recycling at a convenient distance from their flats, all under 30m. The position of the store also enables the waste servicing vehicle to enter the site and will ensure that dragging distances are less than 10m.

5 CONCLUSIONS

- 5.1 This Waste Minimisation Statement (WMS) has been produced by Envision on behalf of Gloucester City Homes (the applicant), and is submitted to support a planning application for the construction of a 3 storey building to accommodate 9 no. residential units (Class C3), including the refurbishment of the existing lodge building to provide a single dwelling, car parking, landscaping and external waste storage at The School Lodge, Matson
- 5.2 The WMS has identified a number of measures to address waste minimisation i.e. taking care when considering the types of materials used, the impacts different materials have on waste generation, and initiatives to encourage recycling and managing household waste. The following waste estimates have been calculated in this report:
- The amount of construction waste produced during construction is predicted to be 59.4 tonnes, however with good practices this could be reduced to 42 tonnes, a saving of approximately 30%.
 - The amount of waste produced during occupation is predicted to be 8.4 tonnes per annum, which will be controlled through Gloucester City's waste management strategy.
- 5.3 The construction strategy illustrated in this WMS will help contribute to the overall reduction in waste materials that are generated during construction, in line with 'Towards Zero Waste 2020 Strategy'. In order to support this:
- A resource efficiency target of <8.5 tonnes per 100 m² of floor area should be set for the scheme.
 - The scheme will target a minimum of 90% landfill diversion, with an aspiration to achieve higher levels. Every effort will be made to further increase this percentage thereby striving to achieve the goal of zero waste to landfill where feasible;
- 5.4 The operational waste strategy outlines measures to reduce the amount of waste going to landfill. This will be achieved by providing fixed and dedicated internal waste storage within each residential unit, plus the proposal to make the external refuse accessible and convenient, with provision for various recycling containers.
- 5.5 The scheme is therefore considered to be in full accord with relevant national and local waste policy.