

## Application for Planning Permission

Town and Country Planning Act 1990 (as amended)

### Privacy Notice

This form is provided by Planning Portal and based on the requirements provided by Government for the sole purpose of submitting information to the Local Planning Authority in accordance with the legislation detailed on this form and 'The Town and Country Planning (Development Management Procedure) (England) Order 2015 (as amended).

Please be aware that once you have downloaded this form, Planning Portal will have no access to the form or the data you enter into it. Any subsequent use of this form is solely at your discretion, including the choice to complete and submit it to the Local Planning Authority in agreement with the declaration section.

Upon receipt of this form and any supporting information, it is the responsibility of the Local Planning Authority to inform you of its obligations in regards to the processing of your application. Please refer to its website for further information on any legal, regulatory and commercial requirements relating to information security and data protection of the information you have provided.

### Local Planning Authority details:



Development Control  
 Gloucester City Council  
 PO Box 3252, Gloucester, GL1 9FW  
 01452 396396  
 development.control@gloucester.gov.uk  
 www.gloucester.gov.uk/planning

### Publication on Local Planning Authority websites

Information provided on this form and in supporting documents may be published on the authority's planning register and website. Please ensure that the information you submit is accurate and correct and does not include personal or sensitive information. If you require any further clarification, please contact the Local Planning Authority directly.

#### 1. Applicant Name and Address

Title:  First name:

Last name:

Company (optional):

Unit:  House number:  House suffix:

House name:

Address 1:

Address 2:

Address 3:

Town:

County:

Country:

Postcode:

#### 2. Agent Name and Address

Title:  First name:

Last name:

Company (optional):

Unit:  House number:  House suffix:

House name:

Address 1:

Address 2:

Address 3:

Town:

County:

Country:

Postcode:

### 3. Description of the Proposal

Please describe the proposed development, including any change of use:

SINGLE STOREY REAR EXTENSION + ATTACHED NEW BUILD  
2 BEDROOM DWELLINGHOUSE.

Has the building, work or change of use already started?

Yes  No

If Yes, please state the date when building, work or use were started (DD/MM/YYYY):

(date must be pre-application submission)

Has the building, work or change of use been completed?

Yes  No

If Yes, please state the date when the building, work or change of use was completed (DD/MM/YYYY):

(date must be pre-application submission)

Reference number of permission in principle being relied on (technical details consent applications only):

Is the proposal for public service infrastructure development (within the meaning of article 2 of S.I. 2015/595 as amended by article 3 of S.I. 746/2021)?

Yes  No

### 4. Site Address Details

Please provide the full postal address of the application site.

Unit:  House number:  House suffix:

House name:

Address 1:

Address 2:

Address 3:

Town:

County:

Postcode (optional):

Description of location or a grid reference. (must be completed if postcode is not known):

Easting:  Northing:

Description:

### 5. Pre-application Advice

Has assistance or prior advice been sought from the local authority about this application?

Yes  No

If Yes, please complete the following information about the advice you were given. (This will help the authority to deal with this application more efficiently).

Please tick if the full contact details are not known, and then complete as much as possible:

Officer name:

Reference:

Date (DD/MM/YYYY):  (must be pre-application submission)

Details of pre-application advice received?

### 6. Pedestrian and Vehicle Access, Roads and Rights of Way

Is a new or altered vehicle access proposed to or from the public highway?  Yes  No

Is a new or altered pedestrian access proposed to or from the public highway?  Yes  No

Are there any new public roads to be provided within the site?  Yes  No

Are there any new public rights of way to be provided within or adjacent to the site?  Yes  No

Do the proposals require any diversions /extinguishments and/or creation of rights of way?  Yes  No

If you answered Yes to any of the above questions, please show details on your plans/drawings and state the reference of the plan (s)/drawings(s)

900420

### 7. Waste Storage and Collection

Do the plans incorporate areas to store and aid the collection of waste?  Yes  No

If Yes, please provide details:

AS ON PROPOSED G.F. PLAN.

Have arrangements been made for the separate storage and collection of recyclable waste?  Yes  No

If Yes, please provide details:

AS ABOVE.

### 8. Authority Employee / Member

It is an important principle of decision-making that the process is open and transparent. For the purposes of this question, "related to" means related, by birth or otherwise, closely enough that a fair-minded and informed observer, having considered the facts, would conclude that there was bias on the part of the decision-maker in the local planning authority.

Do any of the following statements apply to you and/or agent?  Yes  No With respect to the authority, I am:  
(a) a member of staff  
(b) an elected member  
(c) related to a member of staff  
(d) related to an elected member

If Yes, please provide details of their name, role and how you are related to them.

### 9. Materials

If applicable, please state what materials are to be used externally. Include type, colour and name for each material:

	Existing (where applicable)	Proposed	Not applicable	Don't Know
Walls	Brick / Render	Brick / Block / Render	<input type="checkbox"/>	<input type="checkbox"/>
Roof	Tile	TILE TO MATCH EXISTING	<input type="checkbox"/>	<input type="checkbox"/>
Windows	UPVC	UPVC	<input type="checkbox"/>	<input type="checkbox"/>
Doors	UPVC	UPVC	<input type="checkbox"/>	<input type="checkbox"/>
Boundary treatments (e.g. fences, walls)			<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vehicle access and hard-standing	Paved	Paved	<input type="checkbox"/>	<input type="checkbox"/>
Lighting			<input type="checkbox"/>	<input checked="" type="checkbox"/>
Others (please specify)			<input type="checkbox"/>	<input checked="" type="checkbox"/>

Are you supplying additional information on submitted plan(s)/drawing(s)/design and access statement?

Yes

No

If Yes, please state references for the plan(s)/drawing(s)/design and access statement:

### 10. Vehicle Parking

Please provide information on the existing and proposed number of on-site parking spaces:

Type of Vehicle	Total Existing	Total proposed (including spaces retained)	Difference in spaces
Cars	2	3	+ 1
Light goods vehicles/ public carrier vehicles			
Motorcycles			
Disability spaces			
Cycle spaces			
Other (e.g. Bus)			
Other (e.g. Bus)			

### 11. Foul Sewage

Please state how foul sewage is to be disposed of:

- Mains sewer
- Cess pit
- Septic tank
- Other
- Package treatment plant

Are you proposing to connect to the existing drainage system?  Yes  No

If Yes, please include the details of the existing system on the application drawings and state references for the plan(s)/drawing(s):

REFER DRAINAGE STRATEGY

### 12. Assessment of Flood Risk

Is the site within an area at risk of flooding? (Refer to the Environment Agency's Flood Map showing flood zones 2 and 3 and consult Environment Agency standing advice and your local planning authority requirements for information as necessary.)

- Yes
- No

If Yes, you will need to submit a Flood Risk Assessment to consider the risk to the proposed site.

Is your proposal within 20 metres of a watercourse (e.g. river, stream or beck)?

- Yes
- No

Will the proposal increase the flood risk elsewhere?

- Yes
- No

How will surface water be disposed of?

- Sustainable drainage system
- Existing watercourse
- Soakaway
- Pond/lake
- Main sewer

### 13. Biodiversity and Geological Conservation

To assist in answering the following questions refer to the guidance notes for further information on when there is a reasonable likelihood that any important biodiversity or geological conservation features may be present or nearby and whether they are likely to be affected by your proposals.

Having referred to the guidance notes, is there a reasonable likelihood of the following being affected adversely or conserved and enhanced within the application site, or on land adjacent to or near the application site?

a) Protected and priority species:

- Yes, on the development site
- Yes, on land adjacent to or near the proposed development
- No

b) Designated sites, important habitats or other biodiversity features:

- Yes, on the development site
- Yes, on land adjacent to or near the proposed development
- No

c) Features of geological conservation importance:

- Yes, on the development site
- Yes, on land adjacent to or near the proposed development
- No

### 14. Existing Use

Please describe the current use of the site:

RESIDENTIAL

Is the site currently vacant?

- Yes
- No

If Yes, please describe the last use of the site:

R.

When did this use end (if known)? DD/MM/YYYY

(date where known may be approximate)

Does the proposal involve any of the following?

If yes, you will need to submit an appropriate contamination assessment with your application.

Land which is known to be contaminated?  Yes  No

Land where contamination is suspected for all or part of the site?  Yes  No

A proposed use that would be particularly vulnerable to the presence of contamination?  Yes  No

### 15. Trees and Hedges

Are there trees or hedges on the proposed development site?  Yes  No

And/or: Are there trees or hedges on land adjacent to the proposed development site that could influence the development or might be important as part of the local landscape character?  Yes  No

If Yes to either or both of the above, you may need to provide a full Tree Survey, at the discretion of your local planning authority. If a Tree Survey is required, this and the accompanying plan should be submitted alongside your application. Your local planning authority should make clear on its website what the survey should contain, in accordance with the current 'BS5837: Trees in relation to design, demolition and construction - Recommendations'.

### 16. Trade Effluent

Does the proposal involve the need to dispose of trade effluents or waste?  Yes  No

If Yes, please describe the nature, volume and means of disposal of trade effluents or waste

### 17. Residential Units (Including Conversion)

Does your proposal include the gain, loss or change of use of residential units?  
If Yes, please complete details of the changes in the tables below:

 Yes

 No

#### Proposed Housing

Market Housing	Not known	Number of Bedrooms					Total
		1	2	3	4+	Unknown	
Houses	<input type="checkbox"/>		✓				1
Flats/maisonettes	<input type="checkbox"/>						
Sheltered housing	<input type="checkbox"/>						
Bedsit/studios	<input type="checkbox"/>						
Cluster flats	<input type="checkbox"/>						
Other	<input type="checkbox"/>						
<b>Totals (a + b + c + d + e + f) =</b>							

Social, Affordable or Intermediate Rent	Not known	Number of Bedrooms					Total
		1	2	3	4+	Unknown	
Houses	<input type="checkbox"/>						
Flats/maisonettes	<input type="checkbox"/>						
Sheltered housing	<input type="checkbox"/>						
Bedsit/studios	<input type="checkbox"/>						
Cluster flats	<input type="checkbox"/>						
Other	<input type="checkbox"/>						
<b>Totals (a + b + c + d + e + f) =</b>							

Affordable Home Ownership	Not known	Number of Bedrooms					Total
		1	2	3	4+	Unknown	
Houses	<input type="checkbox"/>						
Flats/maisonettes	<input type="checkbox"/>						
Sheltered housing	<input type="checkbox"/>						
Bedsit/studios	<input type="checkbox"/>						
Cluster flats	<input type="checkbox"/>						
Other	<input type="checkbox"/>						
<b>Totals (a + b + c + d + e + f) =</b>							

Starter Homes	Not known	Number of Bedrooms					Total
		1	2	3	4+	Unknown	
Houses	<input type="checkbox"/>						
Flats/maisonettes	<input type="checkbox"/>						
Bedsit/studios	<input type="checkbox"/>						
Other	<input type="checkbox"/>						
<b>Totals (a + b + c + d) =</b>							

Self Build and Custom Build	Not known	Number of Bedrooms					Total
		1	2	3	4+	Unknown	
Houses	<input type="checkbox"/>						
Flats/maisonettes	<input type="checkbox"/>						
Bedsit/studios	<input type="checkbox"/>						
Other	<input type="checkbox"/>						
<b>Totals (a + b + c + d) =</b>							

**Total proposed residential units (A + B + C + D + E) =**

#### Existing Housing

Market Housing	Not known	Number of Bedrooms					Total
		1	2	3	4+	Unknown	
Houses	<input type="checkbox"/>						
Flats/maisonettes	<input type="checkbox"/>						
Sheltered housing	<input type="checkbox"/>						
Bedsit/studios	<input type="checkbox"/>						
Cluster flats	<input type="checkbox"/>						
Other	<input type="checkbox"/>						
<b>Totals (a + b + c + d + e + f) =</b>							

Social, Affordable or Intermediate Rent	Not known	Number of Bedrooms					Total
		1	2	3	4+	Unknown	
Houses	<input type="checkbox"/>						
Flats/maisonettes	<input type="checkbox"/>						
Sheltered housing	<input type="checkbox"/>						
Bedsit/studios	<input type="checkbox"/>						
Cluster flats	<input type="checkbox"/>						
Other	<input type="checkbox"/>						
<b>Totals (a + b + c + d + e + f) =</b>							

Affordable Home Ownership	Not known	Number of Bedrooms					Total
		1	2	3	4+	Unknown	
Houses	<input type="checkbox"/>						
Flats/maisonettes	<input type="checkbox"/>						
Sheltered housing	<input type="checkbox"/>						
Bedsit/studios	<input type="checkbox"/>						
Cluster flats	<input type="checkbox"/>						
Other	<input type="checkbox"/>						
<b>Totals (a + b + c + d + e + f) =</b>							

Starter Homes	Not known	Number of Bedrooms					Total
		1	2	3	4+	Unknown	
Houses	<input type="checkbox"/>						
Flats/maisonettes	<input type="checkbox"/>						
Bedsit/studios	<input type="checkbox"/>						
Other	<input type="checkbox"/>						
<b>Totals (a + b + c + d) =</b>							

Self Build and Custom Build	Not known	Number of Bedrooms					Total
		1	2	3	4+	Unknown	
Houses	<input type="checkbox"/>						
Flats/maisonettes	<input type="checkbox"/>						
Bedsit/studios	<input type="checkbox"/>						
Other	<input type="checkbox"/>						
<b>Totals (a + b + c + d) =</b>							

**Total existing residential units (F + G + H + I + J) =**

**TOTAL NET GAIN or LOSS of RESIDENTIAL UNITS (Proposed Housing Grand Total - Existing Housing Grand Total):**

### 18. All Types of Development: Non-residential Floorspace

Does your proposal involve the loss, gain or change of use of non-residential floorspace?  Yes  No

If you have answered Yes to the question above please add details in the following table:

Use class/type of use	Not applicable	Existing gross internal floorspace (square metres)	Gross internal floorspace to be lost by change of use or demolition (square metres)	Total gross internal floorspace proposed (including change of use)(square metres)	Net additional gross internal floorspace following development (square metres)
A1	<input type="checkbox"/>				
Shops	<input type="checkbox"/>				
Net tradable area:	<input type="checkbox"/>				
A2	<input type="checkbox"/>				
Financial and professional services	<input type="checkbox"/>				
A3	<input type="checkbox"/>				
Restaurants and cafes	<input type="checkbox"/>				
A4	<input type="checkbox"/>				
Drinking establishments	<input type="checkbox"/>				
A5	<input type="checkbox"/>				
Hot food takeaways	<input type="checkbox"/>				
B1 (a)	<input type="checkbox"/>				
Office (other than A2)	<input type="checkbox"/>				
B1 (b)	<input type="checkbox"/>				
Research and development	<input type="checkbox"/>				
B1 (c)	<input type="checkbox"/>				
Light industrial	<input type="checkbox"/>				
B2	<input type="checkbox"/>				
General industrial	<input type="checkbox"/>				
B8	<input type="checkbox"/>				
Storage or distribution	<input type="checkbox"/>				
C1	<input type="checkbox"/>				
Hotels and halls of residence	<input type="checkbox"/>				
C2	<input type="checkbox"/>				
Residential institutions	<input type="checkbox"/>				
D1	<input type="checkbox"/>				
Non-residential institutions	<input type="checkbox"/>				
D2	<input type="checkbox"/>				
Assembly and leisure	<input type="checkbox"/>				
OTHER	<input type="checkbox"/>				
Please Specify	<input type="checkbox"/>				
Total					

N/A

In addition, for hotels, residential institutions and hostels, please additionally indicate the loss or gain of rooms

Use class	Type of use	Not applicable	Existing rooms to be lost by change of use or demolition	Total rooms proposed (including changes of use)	Net additional rooms
C1	Hotels	<input type="checkbox"/>			
C2	Residential Institutions	<input type="checkbox"/>			
OTHER		<input type="checkbox"/>			
Please Specify		<input type="checkbox"/>			

### 19. Employment

Please complete the following information regarding employees:

	Full-time	Part-time	Total full-time equivalent
Existing employees			
Proposed employees			

N/A

### 20. Hours of Opening

If known, please state the hours of opening (e.g. 15:30) for each non-residential use proposed:

Use	Monday to Friday	Saturday	Sunday and Bank Holidays	Not known

N/A

### 21. Site Area

Please state the site area in hectares (ha)

323 m<sup>2</sup>

## 22. Industrial or Commercial Processes and Machinery

Please describe the activities and processes which would be carried out on the site and the end products including plant, ventilation or air conditioning. Please include the type of machinery which may be installed on site:

Is the proposal a waste management development?  Yes  No

If the answer is Yes, please complete the following table:

	Not applicable	The total capacity of the void in cubic metres, including engineering surcharge and making no allowance for cover or restoration material (or tonnes if solid waste or litres if liquid waste)	Maximum annual operational throughput in tonnes (or litres if liquid waste)
Inert landfill	<input type="checkbox"/>		
Non-hazardous landfill	<input type="checkbox"/>		
Hazardous landfill	<input type="checkbox"/>		
Energy from waste incineration	<input type="checkbox"/>		
Other incineration	<input type="checkbox"/>		
Landfill gas generation plant	<input type="checkbox"/>		
Pyrolysis/gasification	<input type="checkbox"/>		
Metal recycling site	<input type="checkbox"/>		
Transfer stations	<input type="checkbox"/>		
Material recovery/recycling facilities (MRFs)	<input type="checkbox"/>		
Household civic amenity sites	<input type="checkbox"/>		
Open windrow composting	<input type="checkbox"/>		
In-vessel composting	<input type="checkbox"/>		
Anaerobic digestion	<input type="checkbox"/>		
Any combined mechanical, biological and/or thermal treatment (MBT)	<input type="checkbox"/>		
Sewage treatment works	<input type="checkbox"/>		
Other treatment	<input type="checkbox"/>		
Recycling facilities construction, demolition and excavation waste	<input type="checkbox"/>		
Storage of waste	<input type="checkbox"/>		
Other waste management	<input type="checkbox"/>		
Other developments	<input type="checkbox"/>		

Please provide the maximum annual operational throughput of the following waste streams:

Municipal	
Construction, demolition and excavation	
Commercial and industrial	
Hazardous	

If this is a landfill application you will need to provide further information before your application can be determined. Your waste planning authority should make clear what information it requires on its website.

## 23. Hazardous Substances

Does the proposal involve the use or storage of any of the following materials in the quantities stated below?  Yes  No  Not applicable

If Yes, please provide the amount of each substance that is involved:

Acrylonitrile (tonnes) <input type="text"/>	Ethylene oxide (tonnes) <input type="text"/>	Phosgene (tonnes) <input type="text"/>
Ammonia (tonnes) <input type="text"/>	Hydrogen cyanide (tonnes) <input type="text"/>	Sulphur dioxide (tonnes) <input type="text"/>
Bromine (tonnes) <input type="text"/>	Liquid oxygen (tonnes) <input type="text"/>	Flour (tonnes) <input type="text"/>
Chlorine (tonnes) <input type="text"/>	Liquid petroleum gas (tonnes) <input type="text"/>	Refined white sugar (tonnes) <input type="text"/>

Other:

Other:

Amount (tonnes):

Amount (tonnes):

## 24. Ownership Certificates and Agricultural Land Declaration

One Certificate A, B, C, or D, must be completed with this application form

### CERTIFICATE OF OWNERSHIP - CERTIFICATE A

**Town and Country Planning (Development Management Procedure) (England) Order 2015 Certificate under Article 14**

I certify/The applicant certifies that on the day 21 days before the date of this application nobody except myself/ the applicant was the owner\* of any part of the land or building to which the application relates, and that none of the land to which the application relates is, or is part of, an agricultural holding\*\*

**NOTE: You should sign Certificate B, C or D, as appropriate, if you are the sole owner of the land or building to which the application relates but the land is, or is part of, an agricultural holding.**

\* "owner" is a person with a freehold interest or leasehold interest with at least 7 years left to run.

\*\* "agricultural holding" has the meaning given by reference to the definition of "agricultural tenant" in section 65(8) of the Act.

Signed - Applicant:

Or signed - Agent:

Date (DD/MM/YYYY):

### CERTIFICATE OF OWNERSHIP - CERTIFICATE B

**Town and Country Planning (Development Management Procedure) (England) Order 2015 Certificate under Article 14**

I certify/ The applicant certifies that I have/the applicant has given the requisite notice to everyone else (as listed below) who, on the day 21 days before the date of this application, was the owner\* and/or agricultural tenant\*\* of any part of the land or building to which this application relates.

\* "owner" is a person with a freehold interest or leasehold interest with at least 7 years left to run.

\*\* "agricultural tenant" has the meaning given in section 65(8) of the Town and Country Planning Act 1990

Name of Owner / Agricultural Tenant	Address	Date Notice Served

Signed - Applicant:

Or signed - Agent:

Date (DD/MM/YYYY):

**24. Ownership Certificates and Agricultural Land Declaration (continued)**

**CERTIFICATE OF OWNERSHIP - CERTIFICATE C**

**Town and Country Planning (Development Management Procedure) (England) Order 2015 Certificate under Article 14**

I certify/ The applicant certifies that:

- Neither Certificate A or B can be issued for this application
- All reasonable steps have been taken to find out the names and addresses of the other owners\* and/or agricultural tenants\*\* of the land or building, or of a part of it, but I have/ the applicant has been unable to do so.

\* "owner" is a person with a freehold interest or leasehold interest with at least 7 years left to run.

\*\* "agricultural tenant" has the meaning given in section 65(8) of the Town and Country Planning Act 1990

The steps taken were:

Name of Owner / Agricultural Tenant	Address	Date Notice Served

Notice of the application has been published in the following newspaper (circulating in the area where the land is situated):

On the following date (which must not be earlier than 21 days before the date of the application):

Signed - Applicant:

Or signed - Agent:

Date (DD/MM/YYYY):

**CERTIFICATE OF OWNERSHIP - CERTIFICATE D**

**Town and Country Planning (Development Management Procedure) (England) Order 2015 Certificate under Article 14**

I certify/ The applicant certifies that:

- Certificate A cannot be issued for this application
- All reasonable steps have been taken to find out the names and addresses of everyone else who, on the day 21 days before the date of this application, was the owner\* and/or agricultural tenant\*\* of any part of the land to which this application relates, but I have/ the applicant has been unable to do so.

\* "owner" is a person with a freehold interest or leasehold interest with at least 7 years left to run.

\*\* "agricultural tenant" has the meaning given in section 65(8) of the Town and Country Planning Act 1990

The steps taken were:

Notice of the application has been published in the following newspaper (circulating in the area where the land is situated):

On the following date (which must not be earlier than 21 days before the date of the application):

Signed - Applicant:

Or signed - Agent:

Date (DD/MM/YYYY):

## 25. Planning Application Requirements - Checklist

Please read the following checklist to make sure you have sent all the information in support of your proposal. Failure to submit all information required will result in your application being deemed invalid. It will not be considered valid until all information required by the Local Planning Authority (LPA) has been submitted.

- |   |  |                          |
|---|--|--------------------------|
| <input type="checkbox"/> The original and 3 copies* of a completed and dated application form:  | <input type="checkbox"/> The correct fee:  | <input type="checkbox"/> |
| <input type="checkbox"/> The original and 3 copies* of the plan which identifies the land to which the application relates drawn to an identified scale and showing the direction of North: | <input type="checkbox"/> The original and 3 copies* of a design and access statement, if required (see help text and guidance notes for details):                                    | <input type="checkbox"/> |
| <input type="checkbox"/> The original and 3 copies* of other plans and drawings or information necessary to describe the subject of the application:  | <input type="checkbox"/> The original and 3 copies* of a fire statement, if required (see help text and guidance notes for details):   | <input type="checkbox"/> |
|   | <input type="checkbox"/> The original and 3 copies* of the completed, dated Ownership Certificate (A, B, C or D – as applicable) and Article 14 Certificate (Agricultural Holdings): | <input type="checkbox"/> |

\*National legislation specifies that the applicant must provide the original plus three copies of the form and supporting documents (a total of four copies), unless the application is submitted electronically or, the LPA indicate that a smaller number of copies is required. LPAs may also accept supporting documents in electronic format by post (for example, on a CD, DVD or USB memory stick). You can check your LPA's website for information or contact their planning department to discuss these options.

Plans can be bought from one of the Planning Portal's accredited suppliers: <https://www.planningportal.co.uk/buyaplanningmap>

## 26. Declaration

I/we hereby apply for planning permission/consent as described in this form and the accompanying plans/drawings and additional information. I/we confirm that, to the best of my/our knowledge, any facts stated are true and accurate and any opinions given are the genuine opinions of the person(s) giving them.

Signed - Applicant:

Or signed - Agent:

Date (DD/MM/YYYY):

(date cannot be pre-application)

## 27. Applicant Contact Details

Telephone numbers

Country code:	National number:	Extension number:
<input type="text"/>	<input type="text"/>	<input type="text"/>
Country code:	Mobile number (optional):	
<input type="text"/>	<input type="text"/>	
Country code:	Fax number (optional):	
<input type="text"/>	<input type="text"/>	

Email address (optional):

## 28. Agent Contact Details

Telephone numbers

Country code:	National number:	Extension number:
<input type="text"/>	<input type="text"/>	<input type="text"/>
Country code:	Mobile number (optional):	
<input type="text"/>	<input type="text"/>	
Country code:	Fax number (optional):	
<input type="text"/>	<input type="text"/>	

Email address (optional):

## 29. Site Visit

Can the site be seen from a public road, public footpath, bridleway or other public land?

Yes

No

If the planning authority needs to make an appointment to carry out a site visit, whom should they contact? (Please select only one)

Agent

Applicant

Other (if different from the agent/applicant's details)

If Other has been selected, please provide:

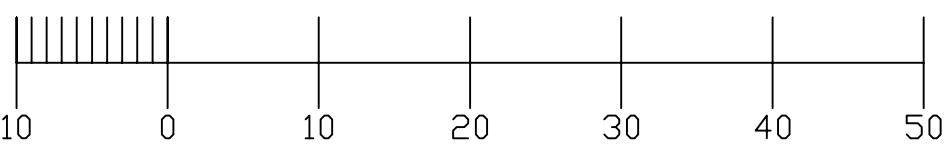
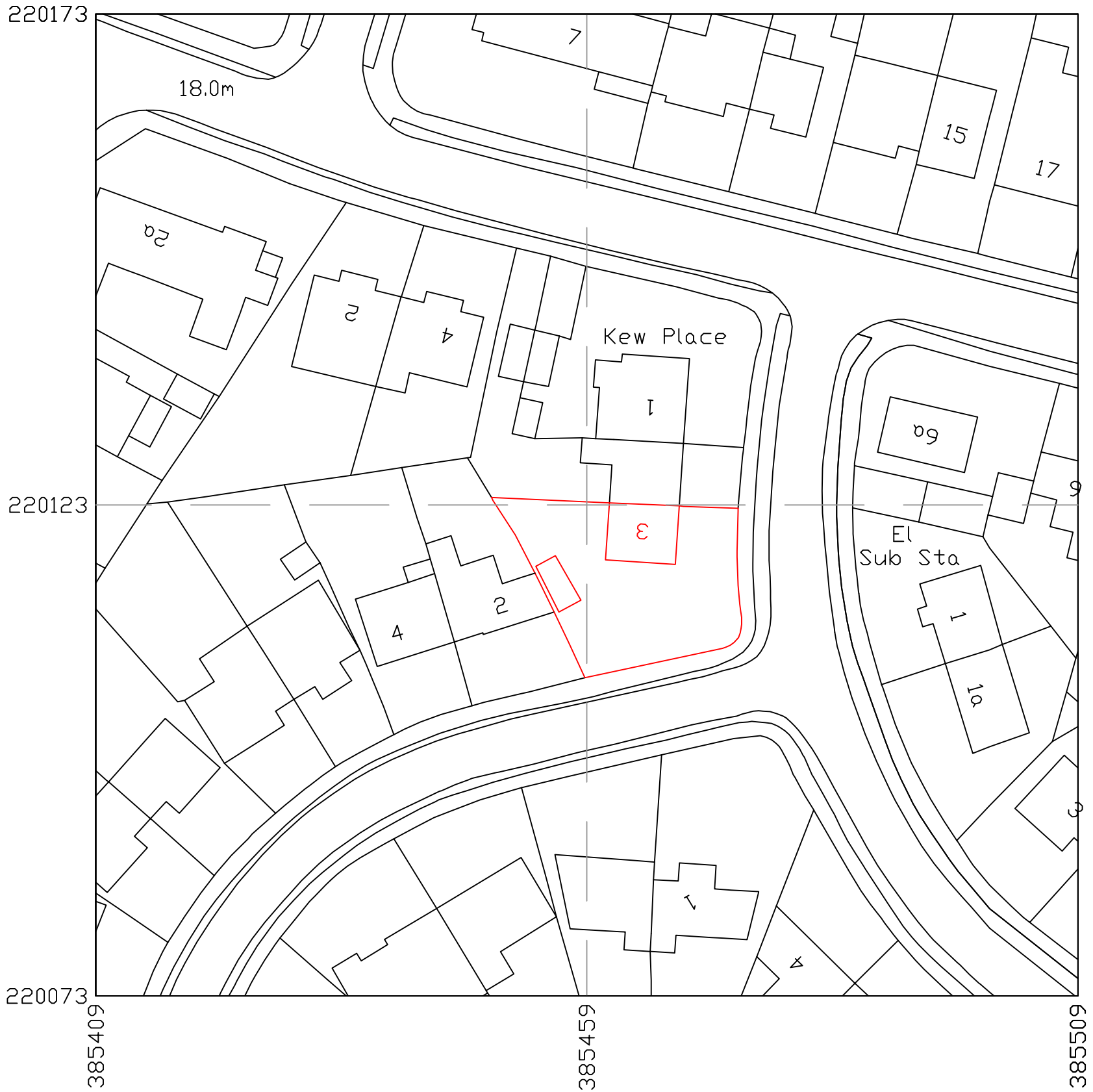
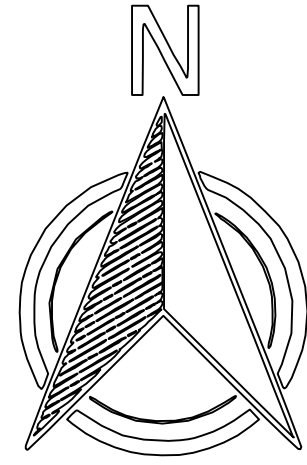
Contact name:

Telephone number:

Email address:

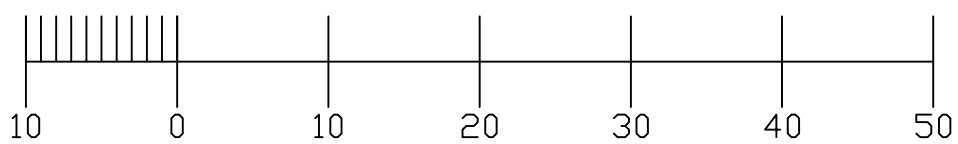
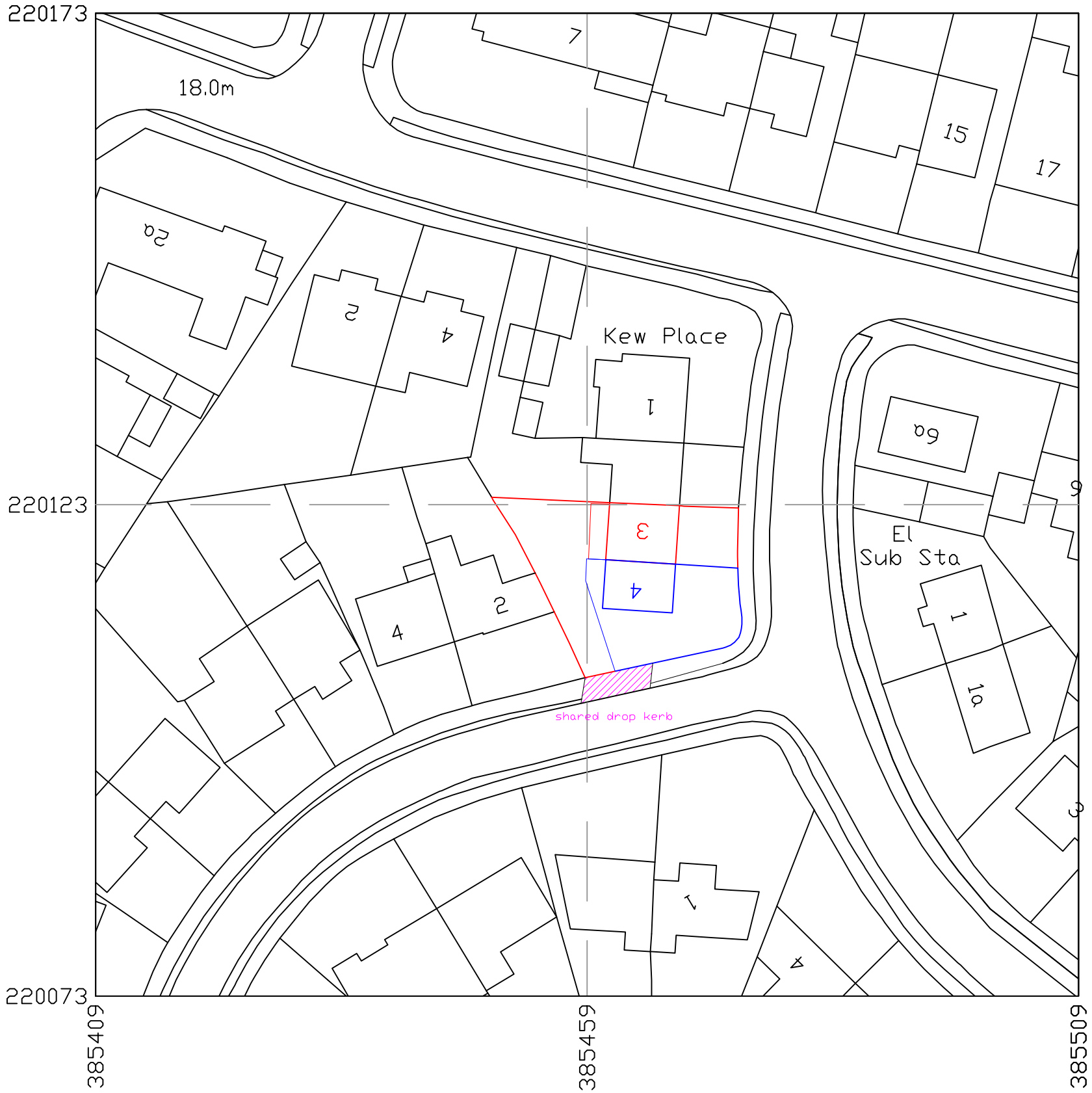
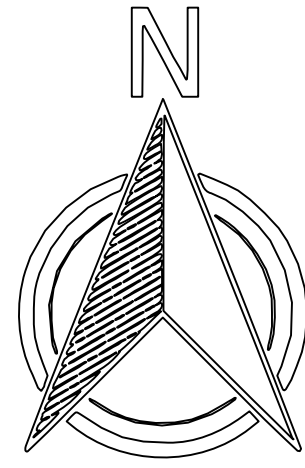
### 3 Kew Place, Richmond Gardens, Longlevens, Gloucester, GL2 0DX





**H A Planning**  
 67 Cleevemount Road  
 Cheltenham  
 Gloucestershire  
 GL52 3HD

<b>Client:</b> Randles 3 Kew Place Richmond Gardens Longlevens GL52 0DX	<b>Description:</b> Existing Block Plan
<b>Drawn:</b> AVB	<b>Job:</b> 900420
<b>Scale @ A3:</b>	1:500
<b>Date:</b>	12.11.21
<b>Dwg No:</b>	AE-01(900420)001



<b>H A Planning</b> 67 Cleevemount Road Cheltenham Gloucestershire GL52 3HD 	<b>Client:</b> Randles 3 Kew Place Richmond Gardens Longlevens GL52 0DX	<b>Description:</b> Proposed Block Plan
	<b>Drawn:</b> AVB	<b>Job:</b> 900420
	<b>Scale @ A3:</b> 1:500	
	<b>Date:</b> 16.06.22	
	<b>Dwg No:</b> AE-06(900420)001	



# Drainage Strategy

3 Kew Place, Richmond Gardens, Longlevens, GL2 0DX

Reference: 266 -Rev - V1

Date: Sep-22

- 1 Introduction
- 2 Site Characteristics
- 3 Discharge Arrangement
- 4 Peak Runoff
- 5 Proposed Sustainable Drainage
- 6 Maintenance and Management Plan

## Appendices

- A Distribution Existing and Proposed Areas
- B Site Characteristics
- C Drainage Calculations
- D Drainage System General Arrangement

### London Office

5th Floor, 167, 169 Great Portland St,  
London W1W 5PF

### Oxford Office

Oxford Innospace, Old Music Hall, 106-108  
Cowley Road, Oxford, OX4 1JE

## **Purpose of this report**

- 1.1 The purpose of this statement is to accompany the technical drawings and details showing the proposed Surface Water drainage system as part of the planning application for this development.

## Site Characteristics

- 2.1 The site background is clearly identified through answers to the questions in table 1 below.

Table 1: Site Characteristics . See appendix B for support documentation

TOPIC	QUESTION	ANSWER
Protected species or habitat	Is the site near to designated sites and priority habitats?	No
Flood Plain	Is the site located in the flood plain?	No
Soils and Geology	Soil permeability? - See appendix B for results	No
Space constraints	Space for SuDS components?	Yes
Topography	Sited on a flat site?	Yes
	Sited on a steep slope (5-15%)	No
	Sited on a very steep slope (>15%)	No
Groundwater	Is the site at groundwater flood risk?	Yes
Contaminated land	Are there contaminated soils on site?	Unknown
Source Protection Zone	Is the site within a SPZ 3?	No
Runoff characteristics	Is the development in a high risk flooding area?	No

## Existing and Proposed Site

- 2.2 The distribution of catchment areas for existing and proposed site is as per table 2 below. See appendix A for details

Table 2 : Existing and Proposed catchment areas in hectares

Description	Existing Site	Proposed Site
Impermeable Areas	0.018	0.016
Permeable Areas	Connected to Drainage	0.000
	Self Draining Areas	0.007
Areas Draining Away from drainage System	0.007	0.002
<b>Total Development Area</b>	<b>0.025</b>	<b>0.025</b>

- 2.3 It has been assumed that the positively drained areas will have different runoff coefficients depending on the type of surface as follow:

Impermeable Surface	1.0
Permeable Surfaces	0.5
Grass Areas	0.3

## Evaluation of Discharge Point

3.1 The SuDS design takes into account Building Regulations Section H3 and the National Planning Practice Guidance. The aim is to discharge surface water run-off as high up the drainage hierarchy, as reasonably practicable:

1. into the ground (infiltration);
2. to a surface water body;
3. to a surface water sewer, highway drain, or another drainage system;
4. to a combined sewer.

3.2 The discharge point has been evaluated following the NPPG and Building regulations. The findings are in table 3 below.

Table 3: Drainage Hierarchy evaluation

Superficial geology classification	The British Geological Society records show that the superficial deposits are Cheltenham Sand and Gravel - Sand and Gravel.
Bedrock geology classification	The British Geological Society records of the site show that it is located within the Charmouth Mudstone Formation - Mudstone.
Landis Top Soil Infiltration	The SOILSCAPE's records of the site show that it is located within an area of freely draining soils.
Groundwater	The British Geological Survey's flood risk susceptibility maps show that the development has potential for groundwater flooding below ground level. Groundwater levels would tend to vary seasonally and are influenced by ground and meteorological conditions and proximity to water features.
Is infiltration feasible?	Soakaway tests were undertaken for the site. The lowest infiltration rate for this site is 1.34323640960809E-05m/s or 0.0483565107458913m/hr.
Is a discharge to a watercourse possible?	There are no watercourses in the proximity to the site.
Is a discharge to a surface water sewer possible?	There are no surface water sewers in the proximity to the site.
Is a discharge to a combined sewer possible?	There is a combined water sewer.

## Existing and Proposed Peak Run-off Calculations

- 4.1 The current site is a Brownfield. The peak runoff rate for the existing site was calculated as per table 4 and discharge rates as per table 5.

Table 4: Peak run-off rate calculation method for existing site

Method Used	Calculation Method
	Report124 Flood Estimation for Small Catchments method has been used to estimate the site peak flow rates
X	This is a brownfield site, runoff rates are calculated in accordance with best practice simulation modelling and using the modified rational method
	This is a brownfield site where the pre-development drainage isn't known. The runoff rates are calculated using the Greenfield model with soil type 5

- 4.2 The runoff flow produced by the development will be controlled as per table 5.

Table 5: Runoff discharge rate control

Control Used	Description of runoff discharge
X	Water will be discharged into the ground via a SuDS as described in table 6 below
	The peak discharge rate has been reduced to Greenfield Qbar flow
	The peak discharge rate has been taken as 0.7 l/s as it is not possible to reduce it to the Greenfield Qbar rate
	The peak discharge rate has been reduced to Brownfield pre-development 1 in 1 flow
	The peak discharge rate has been reduced by 60% from the existing Brownfield pre-development 1 in 2 flow rate

## Run-off flows

- 4.3 The size of the SuDS has been calculated for all events up to the 1 in 100 including an allowance for climate change of 40%. As per tables above, it is proposed to discharge at a rate of Infiltration l/s. See table 6 for values and appendix C for calculations.

Table 6: Peak discharge rates for SuDS

Return Period Event	Discharge Rate (l/s)			Infiltration Rate (m/hr)
	Existing Greenfield	Existing Brownfield	Proposed	
Qbar	0.10	N/A	N/A	0.0484
1 in 1	0.10	2.10	0.0	0.0484
1 in 2	0.10	2.70	0.0	0.0484
1 in 30	0.10	4.90	0.0	0.0484
1 in 100	0.20	6.20	0.0	0.0484
1 in 100 + CC	N/A	N/A	0.0	0.0484

## Proposed Sustainable Drainage System

- 5.1 The following sustainable drainage systems have been used for this site. The drainage design uses these drainage system through out the site. See table 7 for details.

Table 7: Proposed Drainage System

SuDS Proposed	Feasible	Proposed
Use of green roofs	No	No
Store rainwater for later use	No	No
Use infiltration techniques, for instance soakaways, permeable surfaces	Yes	Yes
Attenuate rainwater in ponds or open water features for gradual release	No	No
Attenuate rainwater by storing in tanks or sealed water features for gradual release	No	No
<b>Discharge Point Proposed</b>		
Discharge rainwater direct to a watercourse	No	No
Discharge rainwater to a surface water sewer/drain	No	No
Discharge rainwater to the combined sewer	Yes	No

- 5.2 The location and details of the SuDS can be seen drainage layouts in appendix D. Calculations are in appendix C.
- 5.3 The drainage calculations demonstrate:
- No flooding occurs for the 1 in 30 storm events.
  - Any flooding for the 1 in 100 year + 40% climate change event can be safely contained on site
- 5.4 The proposed drainage strategy presents one possible solution to demonstrate that the development can be sustainably drained, to comply with the requirements of the NPPF. Other solutions may be feasible and may prove to be better suited to the site. These will become apparent during the detailed design stage. The strategy above should not therefore be interpreted as the definitive scheme solution.

### ■ Management of Exceedance Flows

- 5.5 The drainage network has been designed to attenuate surface runoff for all events up to and including the 1% AEP + CC(1 in 100 years). However consideration has been given to what may happen when the design capacity of the surface water drainage network is exceeded. Surface water will flow to the lowest points within the site located to the front of the property. The flood risk to the buildings would therefore remain low. See appendix D.

## Maintenance and Management plan responsibility

6.1 The SuDS will be maintained by The Owner the property

## Maintenance and Management plan for proposed SuDS

6.2 The maintenance and Management Plan Guidance from the SuDS Manual, CIRIA C753 (CIRIA, 2015) is to be followed for the effective maintenance of the proposed SuDS techniques outlined above. The maintenance for SuDS structures are as follow:

Operation and maintenance requirements for soakaways		
Maintenance schedule	Required action	Typical frequency
Regular maintenance	Inspect for sediment and debris in pre-treatment components and floor of inspection tube or chamber and inside of concrete manhole rings	Annually
	Cleaning of gutters and any filters on downpipes	Annually (or as required based on inspections)
	Trimming any roots that may be causing blockages	Annually (or as required)
Occasional maintenance	Remove sediment and debris from pre-treatment components and floor of inspection tube or chamber and inside of concrete manhole rings	As required, based on inspections
Remedial actions	Reconstruct soakaway and/or replace or clean void fill, if performance deteriorates or failure occurs	As required
	Replacement of clogged geotextile (will require reconstruction of soakaway)	As required
Monitoring	Inspect silt traps and note rate of sediment accumulation	Monthly in the first year and then annually
	Check soakaway to ensure emptying is occurring	Annually

Operation and maintenance requirements for pervious pavements		
Maintenance schedule	Required action	Typical frequency
Regular maintenance	Brushing and vacuuming (standard cosmetic sweep over whole surface)	Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturer's recommendations – pay particular attention to areas where water runs onto pervious surface from adjacent impermeable areas as this area is most likely to collect the most sediment
Occasional maintenance	Stabilise and mow contributing and adjacent areas	As required
	Removal of weeds or management using glyphosate applied directly into the weeds by an applicator rather than spraying	As required – once per year on less frequently used pavements
Remedial Actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50 mm of the level of the paving	As required
	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace lost jointing material	As required
	Rehabilitation of surface and upper substructure by remedial sweeping	Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging)
Monitoring	Initial inspection	Monthly for three months after installation
	Inspect for evidence of poor operation and/or weed growth – if required, take remedial action	Three-monthly, 48 h after large storms in first six months
	Inspect silt accumulation rates and establish appropriate brushing frequencies	Annually
	Monitor inspection chambers	Annually

# Appendix A

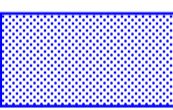


Do not scale from this drawing. Refer to figured dimensions only. RIDA Reports Ltd registered in England and Wales No. 10590566. This drawing is copyright of RIDA Reports Ltd.

Drawing Scale Bar			
Drawing scale	Line length	Drawing scale	Line length
1:5	= 0.25 metres	1:200	= 10.0 metres
1:10	= 0.5 metres	1:250	= 12.5 metres
1:20	= 1.0 metres	1:500	= 25.0 metres
1:25	= 1.25 metres	1:1000	= 50.0 metres
1:50	= 2.5 metres	1:1250	= 62.5 metres
1:100	= 5.0 metres	1:2500	= 125 metres

Measure length of line above for checking of scale

GENERAL NOTES

KEY

-  PERMEABLE AREAS
-  IMPERMEABLE AREAS
-  STUDY AREA

Rev	Details	Date	By	Chd

Drawing Status: **PRELIMINARY**

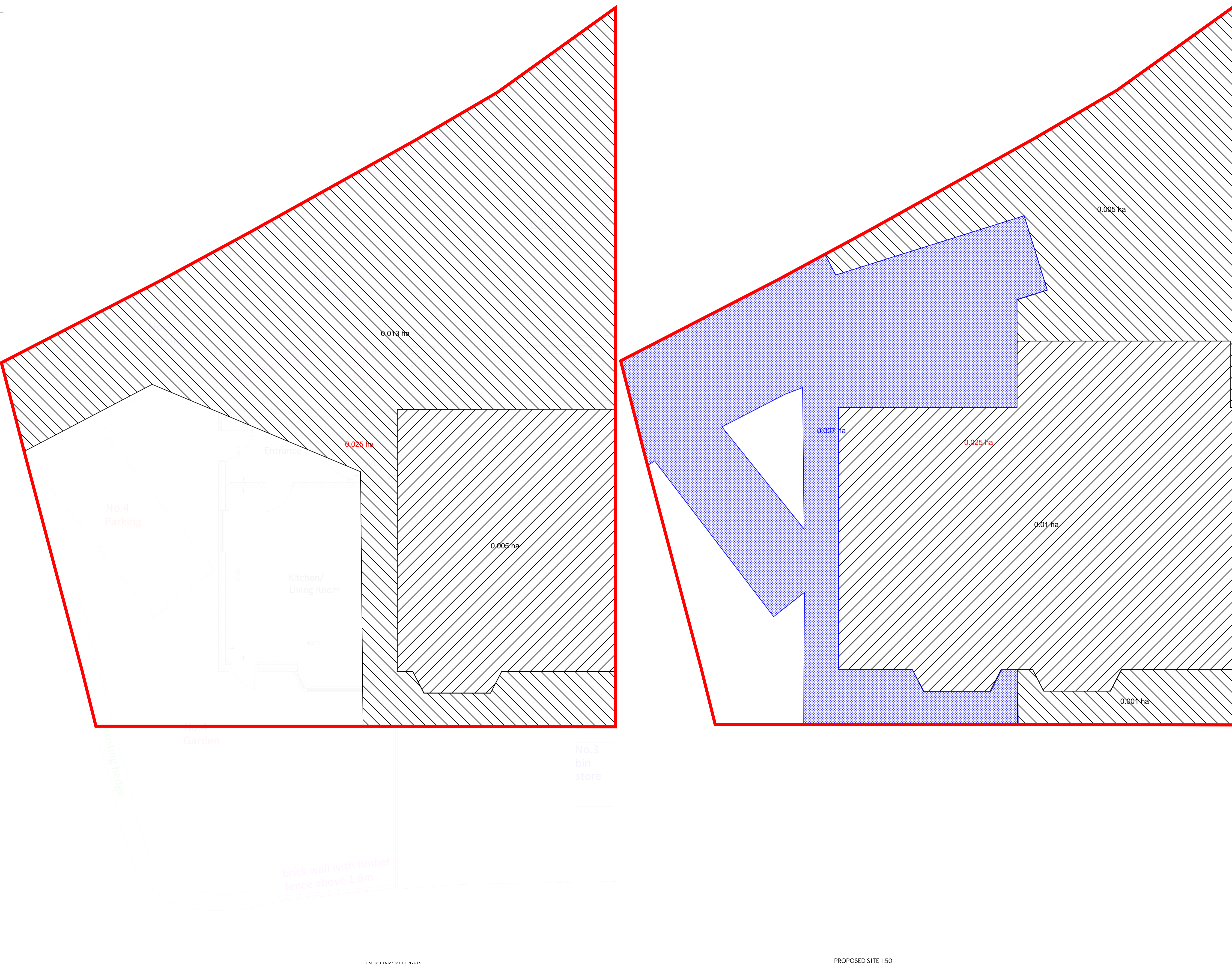


Client:

Project:  
3 Kew Place, Richmond Gardens, Longlevens, GL2 0DX

Drawing:  
Existing and Proposed Areas  
Permeable and Impermeable

Print Size: A1    Project No: 0266    Drawing No: 002    Revision: P1



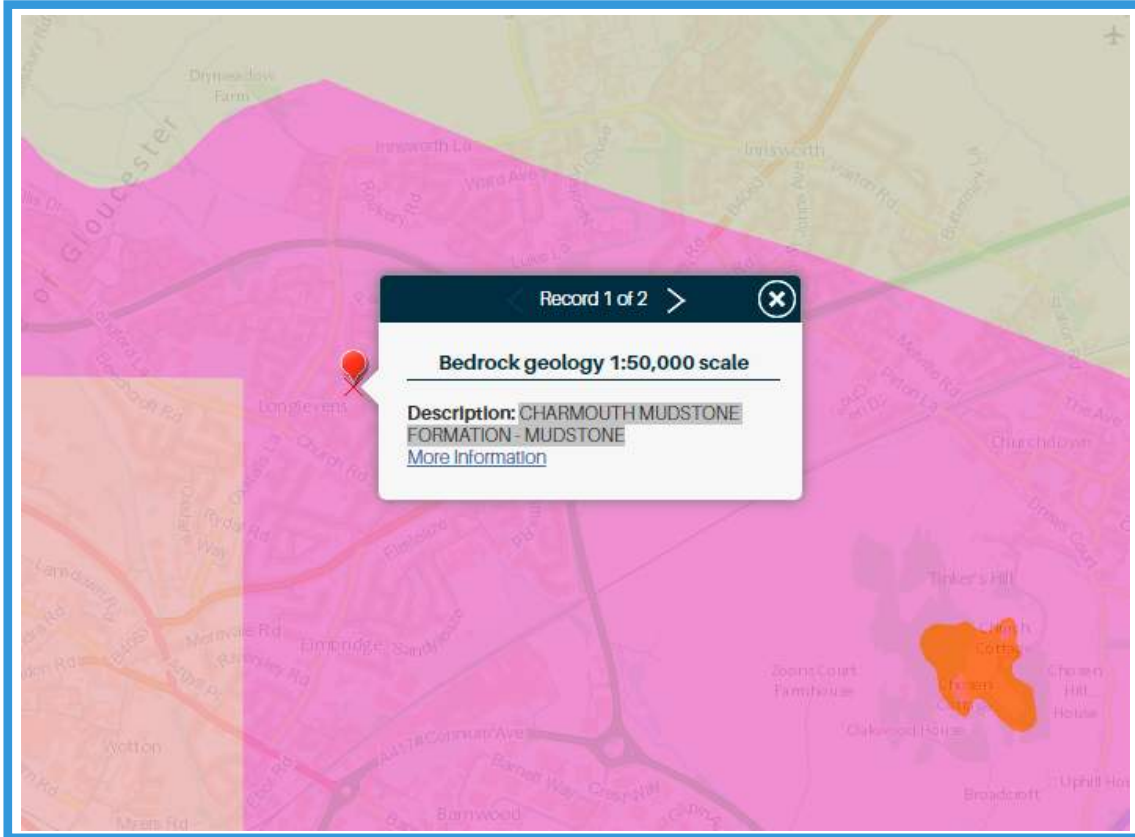
EXISTING SITE 1:50

PROPOSED SITE 1:50

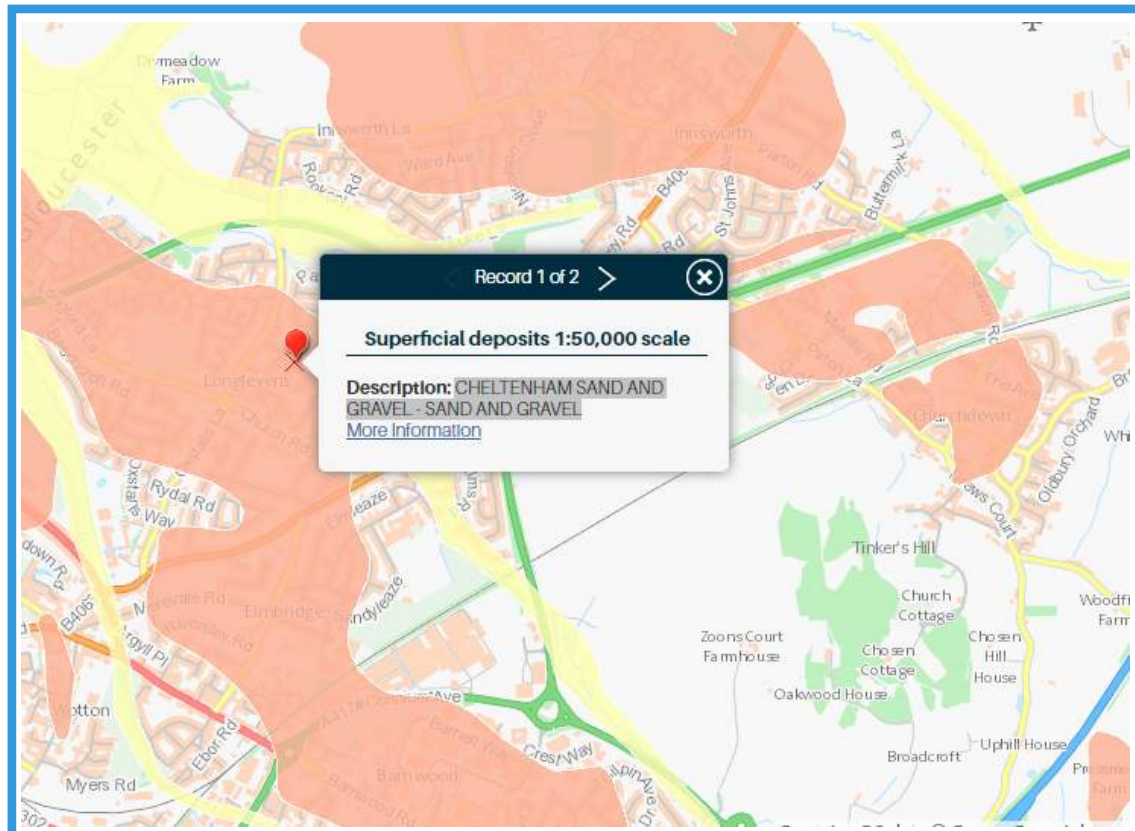
# Appendix B



GEOLOGY - BEDROCK - CHARMOUTH MUDSTONE FORMATION - MUDSTONE



GEOLOGY - SUPERFICIAL DEPOSITS - CHELTENHAM SAND AND GRAVEL - SAND AND GRAVEL



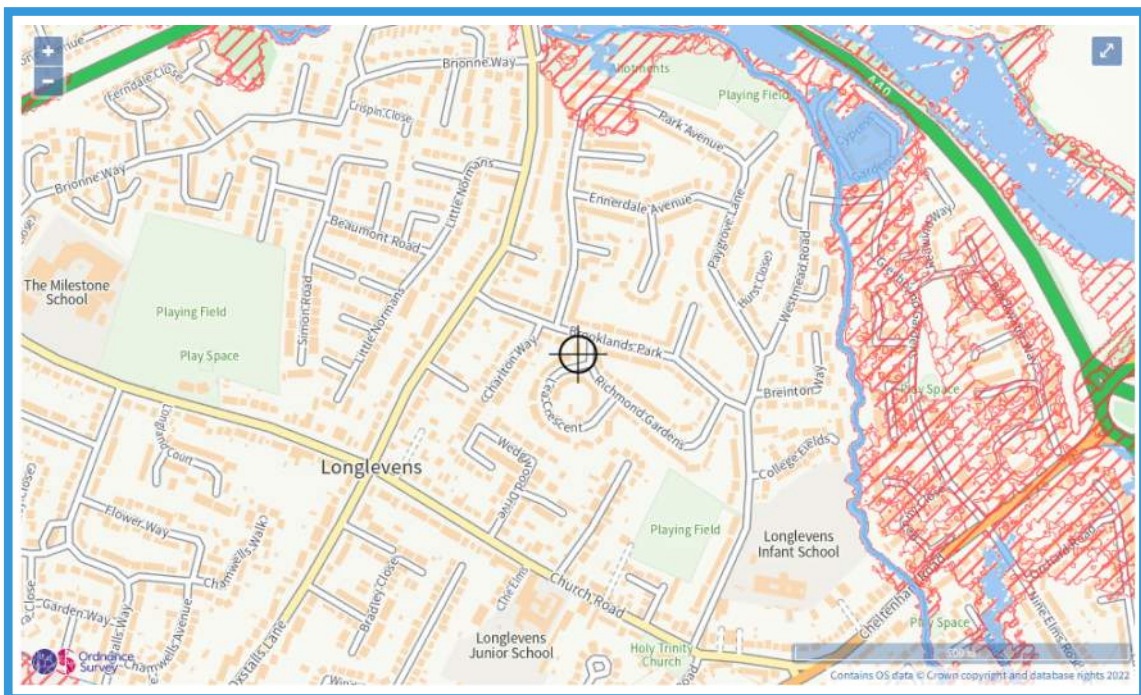


## Main River Map



Flood risk from reservoirs

Extent of flooding

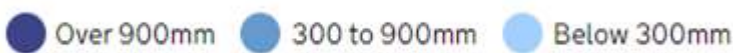
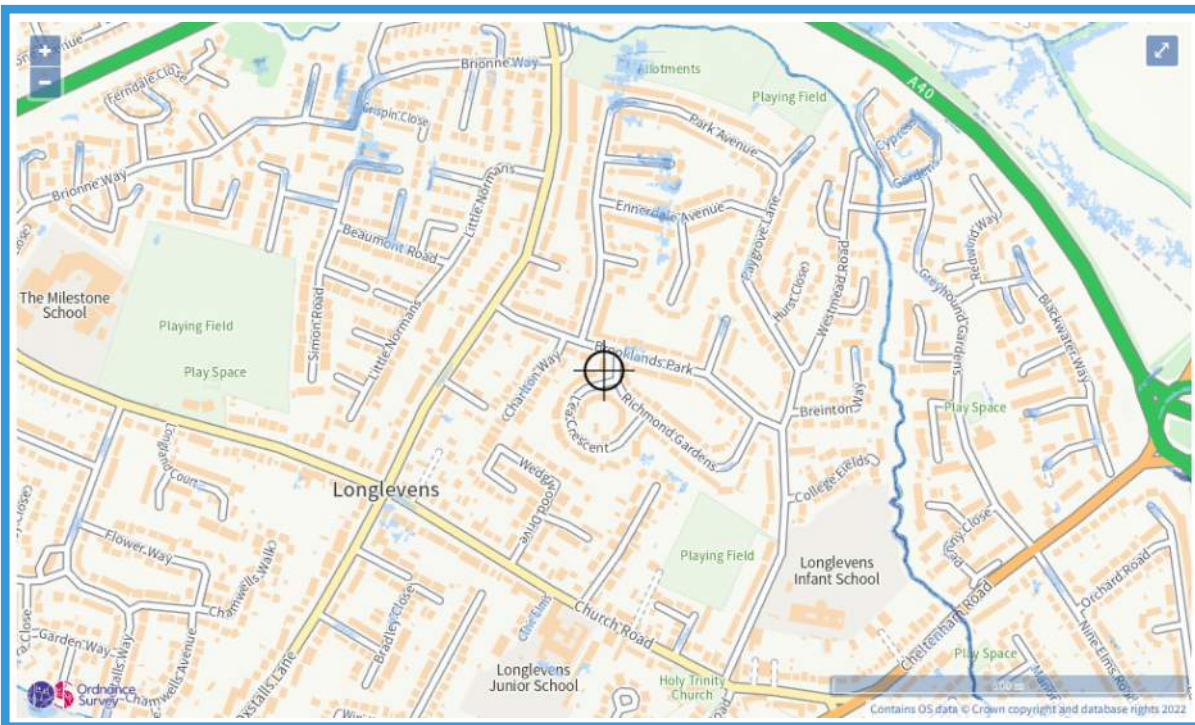


# SITE SURFACE WATER FLOOD RISK

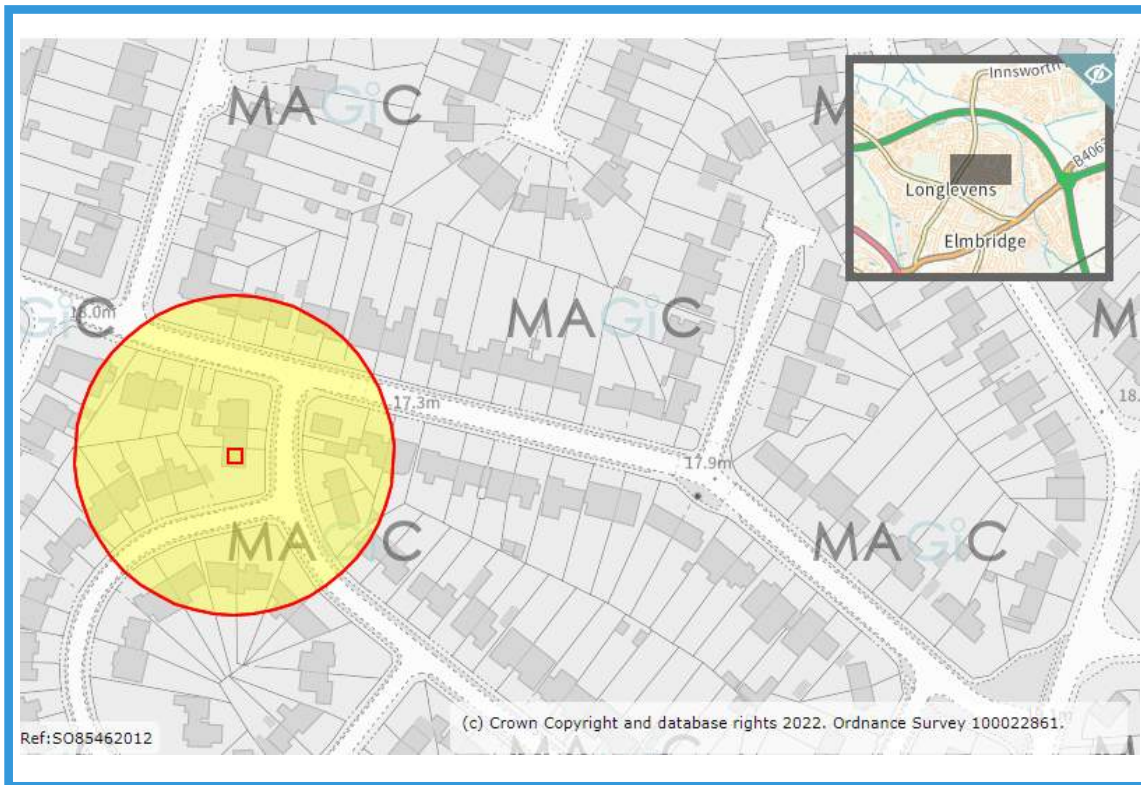
High risk means a chance of flooding greater than 3.3% (1:30)  
 Medium risk means a chance of flooding of btw 1% (1:100) and 3.3%  
 Low risk means a chance of flooding of btw 0.1% (1:1000) and 1%  
 Flooding from surface water is difficult to predict as rainfall location and volume are difficult to forecast. In addition, local features can greatly affect the chance and severity of flooding

Flood risk from surface water

Extent of flooding



# MAGIC RESULTS

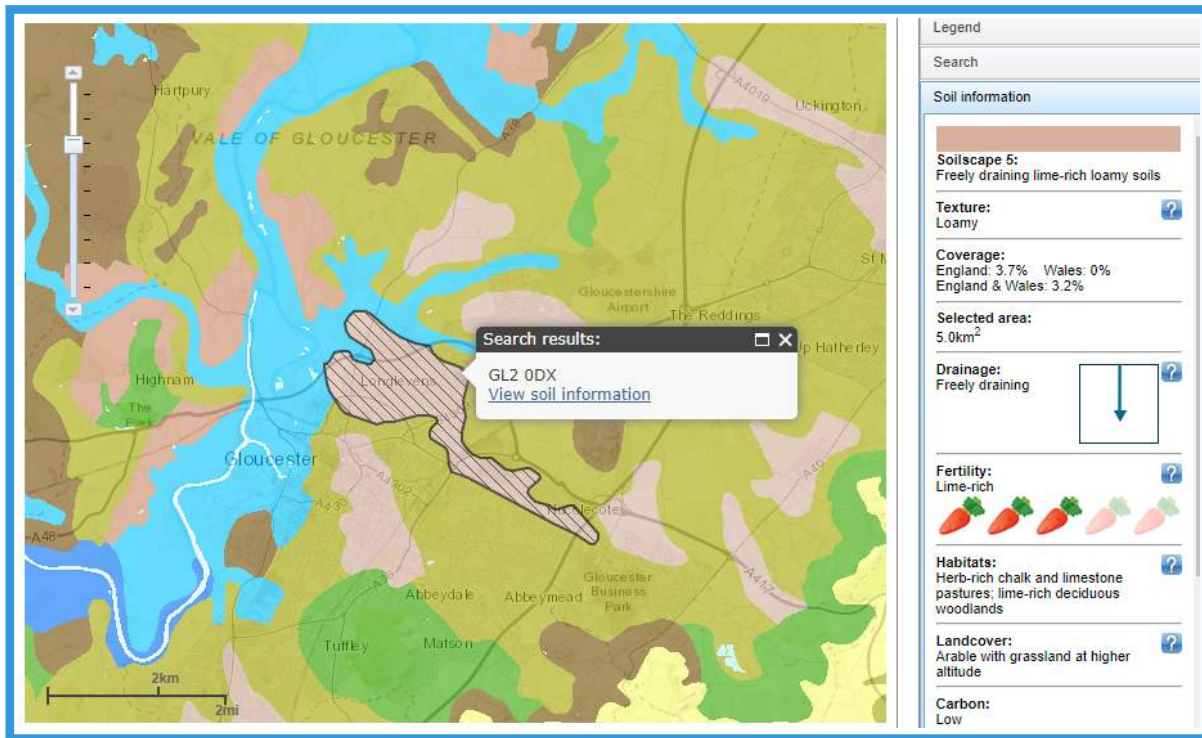


**Site Check Results** ✕

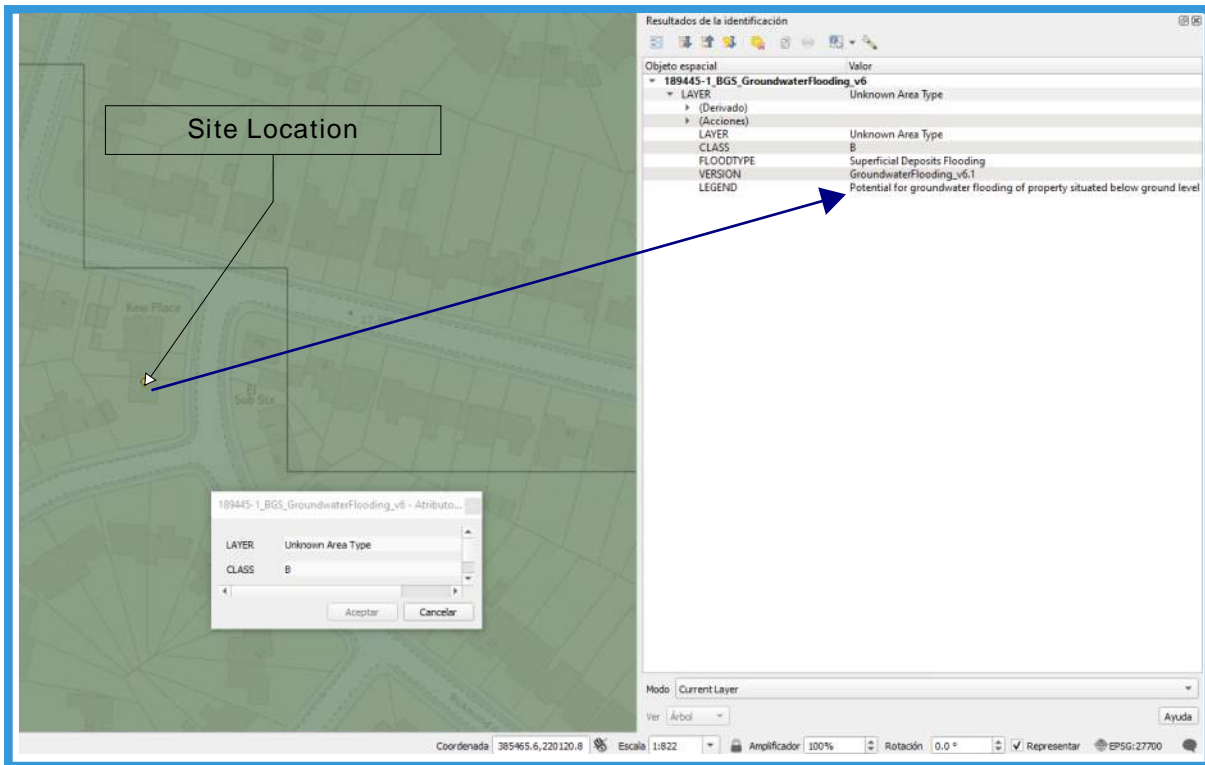
Site Check Report Report generated on Fri Aug 19 2022  
**You selected the location:** Centroid Grid Ref: S085462012  
 The following features have been found in your search area:

<b>Aquifer Designation Map (Bedrock) (England)</b>	
<b>Typology</b>	Secondary (undifferentiated)
<b>Aquifer Designation Map (Superficial Drift) (England)</b>	
<b>Typology</b>	Secondary A
<b>Source Protection Zones merged (England)</b>	
No Features found	

OK Cancel Export to CSV Print



## GROUND WATER FLOOD RISK



# Flood map for planning

Your reference  
**GL2 0DX**

Location (easting/northing)  
**385465/220119**

Created  
**19 Aug 2022 19:02**

**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>



**SSSI Impact Risk Zones - to assess planning applications for likely impacts on SSSIs/SACs/SPAs & Ramsar sites (England)**

**1. DOES PLANNING PROPOSAL FALL INTO ONE OR MORE OF THE CATEGORIES BELOW?** IF YES, CHECK THE CORRESPONDING DESCRIPTION(S) BELOW. LPA SHOULD CONSULT NATURAL ENGLAND ON LIKELY RISKS FROM THE FOLLOWING:

**All Planning Applications**

**Infrastructure**

Pipelines, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals.

**Wind & Solar Energy**

**Minerals, Oil & Gas**

Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction.

**Rural Non Residential**

**Residential**

**Rural Residential**

**Air Pollution**

Any industrial/agricultural development that could cause AIR POLLUTION (incl: industrial processes, livestock & poultry units with floorspace > 500m<sup>2</sup>, slurry lagoons & digestate stores > 200m<sup>2</sup>, manure stores > 250t).

**Combustion**

General combustion processes >20MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.

**Waste**

**Composting**

Landfill. Incl: inert landfill, non-hazardous landfill, hazardous landfill.  
Any composting proposal with more than 75000 tonnes maximum annual operational throughput. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management.

**Discharges**

**Water Supply**

Large infrastructure such as warehousing / industry where total net additional gross internal floorspace following development is 1,000m<sup>2</sup> or more.

**Notes 1**

**Notes 2**

New residential/tourist accommodation in this area requires an HRA to consider recreational disturbance on Cotswold Beechwoods. Check with Local Planning Authority.

**GUIDANCE - How to use the Impact Risk Zones**

[/Metadata for magic/SSSI IRZ User Guidance MAGIC.pdf](#)

**Aquifer Designation Map (Bedrock) (England)**

**Typology**

Secondary (undifferentiated)

**Aquifer Designation Map (Superficial Drift) (England)**

**Typology**

Secondary A

**Soilscape (England)**

**Reference**

5

**Name**

FREELY DRAINING LIME-RICH LOAMY SOILS

**Main Surface Texture Class**

LOAMY

**Natural Drainage Type**

FREELY DRAINING

**Natural Fertility**

LIME-RICH

**Characteristic Semi-natural Habitats**

HERB-RICH CHALK AND LIMESTONE PASTURES; LIME-RICH DECIDUOUS WOODLANDS

**Main Land Cover**

ARABLE AND GRASSLAND

**Hyperlink**

[/Metadata for magic/soilscape summary.pdf](#)

**Areas of Outstanding Natural Beauty (England)**

No Features found

**Limestone Pavement Orders (England)**

No Features found

**Local Nature Reserves (England) - points**

No Features found

**Local Nature Reserves (England)**

No Features found

**Moorland Line (England)**

No Features found

**National Nature Reserves (England) - points**

No Features found

**National Nature Reserves (England)**

No Features found

**National Parks (England)**

No Features found

**Ramsar Sites (England) - points**

No Features found

**Ramsar Sites (England)**

No Features found

**Proposed Ramsar Sites (England) - points**

No Features found

**Proposed Ramsar Sites (England)**

No Features found

**Sites of Special Scientific Interest Units (England) - points**

No Features found

**Sites of Special Scientific Interest Units (England)**

No Features found

**Sites of Special Scientific Interest (England) - points**

No Features found

**Sites of Special Scientific Interest (England)**

No Features found

**Special Areas of Conservation (England) - points**

No Features found

**Special Areas of Conservation (England)**

No Features found

**Possible Special Areas of Conservation (England) - points**

No Features found

**Possible Special Areas of Conservation (England)**

No Features found

**Special Protection Areas (England) - points**

No Features found

**Special Protection Areas (England)**

No Features found

**Potential Special Protection Areas (England) - points**

No Features found

**Potential Special Protection Areas (England)**

No Features found

**Biosphere Reserves (England) - points**

No Features found

**Biosphere Reserves (England)**

No Features found

**Less Favoured Areas (England)**

No Features found

**Nitrate Vulnerable Zones 2017 Designations (England)**


No Features found

**Wild Bird General Licence Protected Sites Condition Zone (England)**

No Features found

**Source Protection Zones merged (England)**

No Features found

Project:	3 Kew Place, Richmond Gardens, Longlevens, GL2 0DX	
Calculation By:		
Title :	Soakaway Calculation	
Date:	01/09/2022	

## SOAKAWAY TRIAL PIT 1

### TEST 1

**Pit Dimensions:**

L: 1500 mm  
W: 1500 mm  
D: 600 mm

**Key**

	Input
	Calculation

Mean Surface Area 3.81 m<sup>2</sup>  
Depth of water 520 mm  
Time at 25% or at 130 mm of water

Interpolating Values

Time	Water Depth
<span style="border: 1px solid black; padding: 2px;">180</span>	<span style="border: 1px solid black; padding: 2px;">130</span>
<span style="border: 1px solid black; padding: 2px;">200</span>	<span style="border: 1px solid black; padding: 2px;">110</span>

t: 180 min. From interpolating values

Time at 75% or at 390 mm of water

Interpolating Values

Time	Water Depth
<span style="border: 1px solid black; padding: 2px;">0</span>	<span style="border: 1px solid black; padding: 2px;">520</span>
<span style="border: 1px solid black; padding: 2px;">20</span>	<span style="border: 1px solid black; padding: 2px;">280</span>

t: 10.83 min. From interpolating values

Time Since Start	Water Level from GL	Depth of water
min	mm	mm
0	80	<span style="border: 1px solid black; padding: 2px;">520</span>
20	320	<span style="border: 1px solid black; padding: 2px;">280</span>
40	350	<span style="border: 1px solid black; padding: 2px;">250</span>
60	370	<span style="border: 1px solid black; padding: 2px;">230</span>
80	390	<span style="border: 1px solid black; padding: 2px;">210</span>
100	410	<span style="border: 1px solid black; padding: 2px;">190</span>
120	430	<span style="border: 1px solid black; padding: 2px;">170</span>
140	440	<span style="border: 1px solid black; padding: 2px;">160</span>
160	455	<span style="border: 1px solid black; padding: 2px;">145</span>
180	470	<span style="border: 1px solid black; padding: 2px;">130</span>
200	490	<span style="border: 1px solid black; padding: 2px;">110</span>
220	505	<span style="border: 1px solid black; padding: 2px;">95</span>
240	520	<span style="border: 1px solid black; padding: 2px;">80</span>
260	540	<span style="border: 1px solid black; padding: 2px;">60</span>
280	550	<span style="border: 1px solid black; padding: 2px;">50</span>
300	560	<span style="border: 1px solid black; padding: 2px;">40</span>
320	580	<span style="border: 1px solid black; padding: 2px;">20</span>
340	595	<span style="border: 1px solid black; padding: 2px;">5</span>

Volume of test Pit between 25% and 75% of water depth: 0.585 m<sup>3</sup>  
Time Taken to drain between 25% and 75% of water depth: 169.2 min or 2.819 hr

**Test 1 - Soil Infiltration rate:** 1.51E-05 m/s  
0.0545 m/hr

# SOAKAWAY TRIAL PIT 1

## TEST 2

**Pit Dimensions:**

L: 1500 mm  
 W: 1500 mm  
 D: 600 mm

**Key**

  Input  
  Calculation

Mean Surface Area 3.78 m<sup>2</sup>  
 Depth of water 510 mm  
 Time at 25% or at 127.5 mm of water

Interpolating Values  
 Time    Water Depth

<span style="border: 1px solid black; padding: 2px;">200</span>	<span style="border: 1px solid black; padding: 2px;">130</span>
<span style="border: 1px solid black; padding: 2px;">220</span>	<span style="border: 1px solid black; padding: 2px;">110</span>

t: 202.5 min. From interpolating values

Time at 75% or at 382.5 mm of water

Interpolating Values  
 Time    Water Depth

<span style="border: 1px solid black; padding: 2px;">0</span>	<span style="border: 1px solid black; padding: 2px;">510</span>
<span style="border: 1px solid black; padding: 2px;">20</span>	<span style="border: 1px solid black; padding: 2px;">330</span>

t: 14.17 min. From interpolating values

Time Since Start	Water Level from GL	Depth of water
min	mm	mm
0	90	<span style="border: 1px solid black; padding: 2px;">510</span>
20	270	<span style="border: 1px solid black; padding: 2px;">330</span>
40	310	<span style="border: 1px solid black; padding: 2px;">290</span>
60	330	<span style="border: 1px solid black; padding: 2px;">270</span>
80	350	<span style="border: 1px solid black; padding: 2px;">250</span>
100	380	<span style="border: 1px solid black; padding: 2px;">220</span>
120	400	<span style="border: 1px solid black; padding: 2px;">200</span>
140	420	<span style="border: 1px solid black; padding: 2px;">180</span>
160	440	<span style="border: 1px solid black; padding: 2px;">160</span>
180	450	<span style="border: 1px solid black; padding: 2px;">150</span>
200	470	<span style="border: 1px solid black; padding: 2px;">130</span>
220	490	<span style="border: 1px solid black; padding: 2px;">110</span>
240	520	<span style="border: 1px solid black; padding: 2px;">80</span>
260	525	<span style="border: 1px solid black; padding: 2px;">75</span>
280	550	<span style="border: 1px solid black; padding: 2px;">50</span>
300	560	<span style="border: 1px solid black; padding: 2px;">40</span>
320	560	<span style="border: 1px solid black; padding: 2px;">40</span>
340	570	<span style="border: 1px solid black; padding: 2px;">30</span>
360	580	<span style="border: 1px solid black; padding: 2px;">20</span>
380	600	<span style="border: 1px solid black; padding: 2px;">0</span>

Volume of test Pit between 25% and 75% of water depth: 0.574 m<sup>3</sup>  
 Time Taken to drain between 25% and 75% of water depth: 188.3 min or 3.139 hr

**Test 2 - Soil Infiltration rate:** 1.34E-05 m/s  
0.0484 m/hr

# SOAKAWAY TRIAL PIT 1

## TEST 3

**Pit Dimensions:**

L: 1500 mm  
 W: 1500 mm  
 D: 600 mm

**Key**

  Input  
  Calculation

Mean Surface Area 4.05 m<sup>2</sup>  
 Depth of water 600 mm  
 Time at 25% or at 150 mm of water

Interpolating Values  
 Time    Water Depth

180    160  
210    110

t: 186 min. From interpolating values

Time at 75% or at 450 mm of water

Interpolating Values  
 Time    Water Depth

30    510  
60    260


t: 37.2 min. From interpolating values

Time Since Start	Water Level from GL	Depth of water
min	mm	mm
0	0	<span style="border: 1px solid black; padding: 2px;">600</span>
30	90	<span style="border: 1px solid black; padding: 2px;">510</span>
60	340	<span style="border: 1px solid black; padding: 2px;">260</span>
90	380	<span style="border: 1px solid black; padding: 2px;">220</span>
130	410	<span style="border: 1px solid black; padding: 2px;">190</span>
150	420	<span style="border: 1px solid black; padding: 2px;">180</span>
180	440	<span style="border: 1px solid black; padding: 2px;">160</span>
210	490	<span style="border: 1px solid black; padding: 2px;">110</span>
240	510	<span style="border: 1px solid black; padding: 2px;">90</span>
270	530	<span style="border: 1px solid black; padding: 2px;">70</span>
300	550	<span style="border: 1px solid black; padding: 2px;">50</span>
330	550	<span style="border: 1px solid black; padding: 2px;">50</span>
360	560	<span style="border: 1px solid black; padding: 2px;">40</span>
390	580	<span style="border: 1px solid black; padding: 2px;">20</span>
420	600	<span style="border: 1px solid black; padding: 2px;">0</span>

Volume of test Pit between 25% and 75% of water depth: 0.675 m<sup>3</sup>  
 Time Taken to drain between 25% and 75% of water depth: 148.8 min or 2.480 hr

**Test 3 - Soil Infiltration rate:** 1.87E-05 m/s  
0.0672 m/hr

**SOAKAWAY TRIAL PIT 1 INFILTRATION RATE** 1.34E-05 m/s  
0.0484 m/hr

Project:	3 Kew Place, Richmond Gardens, Longlevens, GL2 0DX	
Calculation By:		
Title :	Soakaway Calculation	
Date:	01/09/2022	

## SOAKAWAY TRIAL PIT 2

### TEST 1

**Pit Dimensions:**

L: 1000 mm  
W: 1000 mm  
D: 1500 mm

**Key**

Input  
 Calculation

Mean Surface Area 3.40 m<sup>2</sup>  
Depth of water 1200 mm  
Time at 25% or at 300 mm of water

Interpolating Values  
Time Water Depth

<span style="border: 1px solid black; padding: 2px;">1225</span>	<span style="border: 1px solid black; padding: 2px;">430</span>
<span style="border: 1px solid black; padding: 2px;">#jREF!</span>	<span style="border: 1px solid black; padding: 2px;">#jREF!</span>

t: #jREF! min. From interpolating values

Time at 75% or at 900 mm of water

Interpolating Values  
Time Water Depth

<span style="border: 1px solid black; padding: 2px;">64</span>	<span style="border: 1px solid black; padding: 2px;">900</span>
<span style="border: 1px solid black; padding: 2px;">74</span>	<span style="border: 1px solid black; padding: 2px;">870</span>

t: 64 min. From interpolating values

Time Since Start	Water Level from GL	Depth of water
min	mm	mm
0	300	1200
4	320	1180
14	370	1130
23	430	1070
34	480	1020
44	540	960
54	570	930
64	600	900
74	630	870
84	650	850
94	670	830
100	720	780
114	730	770
124	730	770
134	730	770
144	710	790
154	720	780
174	760	740
964	1040	460
1225	1070	430

Volume of test Pit between 25% and 75% of water depth: 0.6 m<sup>3</sup>  
Time Taken to drain between 25% and 75% of water depth: #jREF! min or #jREF! hr

**Test 1 - Soil Infiltration rate:** #jREF! m/s  
#jREF! m/hr

**Fail**

## SOAKAWAY TRIAL PIT 2

### TEST 2

**Pit Dimensions:**

L:  mm  
 W:  mm  
 D:  mm

**Key**

Input  
 Calculation

Mean Surface Area  m<sup>2</sup>  
 Depth of water  mm  
 Time at 25% or at  mm of water

Interpolating Values

Time	Water Depth
<input type="text" value="1128"/>	<input type="text" value="450"/>
<input type="text" value="0"/>	<input type="text" value="0"/>

t:  min. From interpolating values

Time at 75% or at  mm of water

Interpolating Values

Time	Water Depth
<input type="text" value="60"/>	<input type="text" value="1100"/>
<input type="text" value="90"/>	<input type="text" value="1020"/>

t:  min. From interpolating values

Time Since Start	Water Level from GL	Depth of water
min	mm	mm
0	100	<b>1400</b>
30	300	<b>1200</b>
60	400	<b>1100</b>
90	480	<b>1020</b>
120	520	<b>980</b>
150	550	<b>950</b>
180	590	<b>910</b>
210	630	<b>870</b>
240	650	<b>850</b>
270	650	<b>850</b>
300	720	<b>780</b>
1128	1050	<b>450</b>

Volume of test Pit between 25% and 75% of water depth:  m<sup>3</sup>  
 Time Taken to drain between 25% and 75% of water depth:  min or  hr

**Test 2 - Soil Infiltration rate:**  m/s  
 m/hr



# Appendix C

### Simulation Settings

Rainfall Methodology	FSR	Drain Down Time (mins)	240
FSR Region	England and Wales	Additional Storage (m <sup>3</sup> /ha)	20.0
M5-60 (mm)	17.000	Check Discharge Rate(s)	✓
Ratio-R	0.400	1 year (l/s)	0.1
Summer CV	0.750	2 year (l/s)	0.1
Winter CV	0.840	30 year (l/s)	0.1
Analysis Speed	Normal	100 year (l/s)	0.2
Skip Steady State	x	Check Discharge Volume	x

### Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
2	0	0	0
30	0	0	0
100	0	0	0
100	40	0	0

### Pre-development Discharge Rate

Site Makeup	Greenfield	Growth Factor 30 year	1.99
Greenfield Method	IH124	Growth Factor 100 year	2.57
Positively Drained Area (ha)	0.025	Betterment (%)	0
SAAR (mm)	636	QBar	0.1
Soil Index	3	Q 1 year (l/s)	0.1
SPR	0.37	Q 2 year (l/s)	0.1
Region	4	Q 30 year (l/s)	0.1
Growth Factor 1 year	0.83	Q 100 year (l/s)	0.2
Growth Factor 2 year	0.89		

### Simulation Settings

Rainfall Methodology	FSR	Drain Down Time (mins)	240
FSR Region	England and Wales	Additional Storage (m <sup>3</sup> /ha)	20.0
M5-60 (mm)	17.000	Check Discharge Rate(s)	✓
Ratio-R	0.400	1 year (l/s)	0.1
Summer CV	0.750	2 year (l/s)	0.1
Winter CV	0.840	30 year (l/s)	0.1
Analysis Speed	Normal	100 year (l/s)	0.2
Skip Steady State	x	Check Discharge Volume	x

### Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
2	0	0	0
30	0	0	0
100	0	0	0
100	40	0	0

### Pre-development Discharge Rate

Site Makeup	Brownfield	Betterment (%)	0
Brownfield Method	MRM	Q 1 year (l/s)	2.1
Contributing Area (ha)	0.018	Q 2 year (l/s)	2.7
PIMP (%)	100	Q 30 year (l/s)	4.9
CV	0.750	Q 100 year (l/s)	6.2
Time of Concentration (mins)	6.00		

**Design Settings**

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	2	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Inverts
M5-60 (mm)	17.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	6.00	Enforce best practice design rules	✓

**Circular Link Type**

Shape	Circular	Auto Increment (mm)	75
Barrels	1	Follow Ground	x

**Available Diameters (mm)**

100 | 150

**Nodes**

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
Extension	0.006	6.00	18.000	450	-0.045	-0.088	0.300
Permeable Surface	0.004	6.00	18.000		9.961	0.031	0.460
Dummy			18.000	450	20.184	0.103	0.603

**Links**

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	Extension	Permeable Surface	10.000	0.600	17.700	17.540	0.160	62.5	100	6.17	50.0
1.001	Permeable Surface	Dummy	10.000	0.600	17.540	17.397	0.143	70.0	100	6.35	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	0.976	7.7	0.8	0.200	0.360	0.006	0.0	22	0.636
1.001	0.921	7.2	1.3	0.360	0.503	0.010	0.0	29	0.694

**Pipeline Schedule**

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	10.000	62.5	100	Circular	18.000	17.700	0.200	18.000	17.540	0.360
1.001	10.000	70.0	100	Circular	18.000	17.540	0.360	18.000	17.397	0.503

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	Extension	450	Manhole	Adoptable	Permeable Surface		Junction	
1.001	Permeable Surface		Junction		Dummy	450	Manhole	Adoptable

**Node Permeable Surface Online Pump Control**

Flap Valve	x	Invert Level (m)	17.540	Switch on depth (m)	0.500
Downstream Link	1.001	Design Depth (m)	0.500	Switch off depth (m)	0.010
Replaces Downstream Link	✓	Design Flow (l/s)	0.1		

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.001	0.000	0.500	0.000

**Node Permeable Surface Carpark Storage Structure**

Base Inf Coefficient (m/hr)	0.04836	Invert Level (m)	17.540	Slope (1:X)	400.0
Side Inf Coefficient (m/hr)	0.04836	Time to half empty (mins)	13	Depth (m)	0.350
Safety Factor	2.0	Width (m)	70.000	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

**Rainfall**

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
1 year 15 minute summer	92.521	26.180	2 year 240 minute winter	12.649	5.032
1 year 15 minute winter	64.927	26.180	2 year 360 minute summer	14.516	3.735
1 year 30 minute summer	60.022	16.984	2 year 360 minute winter	9.436	3.735
1 year 30 minute winter	42.121	16.984	2 year 480 minute summer	11.436	3.022
1 year 60 minute summer	40.398	10.676	2 year 480 minute winter	7.598	3.022
1 year 60 minute winter	26.839	10.676	2 year 600 minute summer	9.363	2.561
1 year 120 minute summer	24.980	6.602	2 year 600 minute winter	6.398	2.561
1 year 120 minute winter	16.596	6.602	2 year 720 minute summer	8.339	2.235
1 year 180 minute summer	19.271	4.959	2 year 720 minute winter	5.605	2.235
1 year 180 minute winter	12.527	4.959	2 year 960 minute summer	6.846	1.803
1 year 240 minute summer	15.301	4.043	2 year 960 minute winter	4.535	1.803
1 year 240 minute winter	10.165	4.043	2 year 1440 minute summer	4.967	1.331
1 year 360 minute summer	11.775	3.030	2 year 1440 minute winter	3.338	1.331
1 year 360 minute winter	7.654	3.030	30 year 15 minute summer	226.195	64.005
1 year 480 minute summer	9.342	2.469	30 year 15 minute winter	158.733	64.005
1 year 480 minute winter	6.207	2.469	30 year 30 minute summer	147.452	41.724
1 year 600 minute summer	7.682	2.101	30 year 30 minute winter	103.475	41.724
1 year 600 minute winter	5.249	2.101	30 year 60 minute summer	98.615	26.061
1 year 720 minute summer	6.859	1.838	30 year 60 minute winter	65.517	26.061
1 year 720 minute winter	4.609	1.838	30 year 120 minute summer	59.946	15.842
1 year 960 minute summer	5.653	1.489	30 year 120 minute winter	39.827	15.842
1 year 960 minute winter	3.745	1.489	30 year 180 minute summer	45.598	11.734
1 year 1440 minute summer	4.127	1.106	30 year 180 minute winter	29.640	11.734
1 year 1440 minute winter	2.773	1.106	30 year 240 minute summer	35.759	9.450
2 year 15 minute summer	119.760	33.888	30 year 240 minute winter	23.758	9.450
2 year 15 minute winter	84.042	33.888	30 year 360 minute summer	26.939	6.932
2 year 30 minute summer	77.518	21.935	30 year 360 minute winter	17.511	6.932
2 year 30 minute winter	54.399	21.935	30 year 480 minute summer	20.981	5.545
2 year 60 minute summer	51.720	13.668	30 year 480 minute winter	13.940	5.545
2 year 60 minute winter	34.361	13.668	30 year 600 minute summer	17.039	4.661
2 year 120 minute summer	31.549	8.338	30 year 600 minute winter	11.642	4.661
2 year 120 minute winter	20.961	8.338	30 year 720 minute summer	15.093	4.045
2 year 180 minute summer	24.133	6.210	30 year 720 minute winter	10.143	4.045
2 year 180 minute winter	15.687	6.210	30 year 960 minute summer	12.278	3.233
2 year 240 minute summer	19.039	5.032	30 year 960 minute winter	8.133	3.233

**Rainfall**

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
30 year 1440 minute summer	8.788	2.355	100 year 1440 minute winter	7.579	3.023
30 year 1440 minute winter	5.906	2.355	100 year +40% CC 15 minute summer	408.473	115.584
100 year 15 minute summer	291.766	82.560	100 year +40% CC 15 minute winter	286.647	115.584
100 year 15 minute winter	204.748	82.560	100 year +40% CC 30 minute summer	268.775	76.054
100 year 30 minute summer	191.982	54.324	100 year +40% CC 30 minute winter	188.614	76.054
100 year 30 minute winter	134.724	54.324	100 year +40% CC 60 minute summer	180.954	47.821
100 year 60 minute summer	129.253	34.158	100 year +40% CC 60 minute winter	120.222	47.821
100 year 60 minute winter	85.873	34.158	100 year +40% CC 120 minute summer	110.370	29.168
100 year 120 minute summer	78.836	20.834	100 year +40% CC 120 minute winter	73.327	29.168
100 year 120 minute winter	52.377	20.834	100 year +40% CC 180 minute summer	83.953	21.604
100 year 180 minute summer	59.966	15.431	100 year +40% CC 180 minute winter	54.572	21.604
100 year 180 minute winter	38.980	15.431	100 year +40% CC 240 minute summer	65.765	17.380
100 year 240 minute summer	46.975	12.414	100 year +40% CC 240 minute winter	43.693	17.380
100 year 240 minute winter	31.209	12.414	100 year +40% CC 360 minute summer	49.370	12.705
100 year 360 minute summer	35.264	9.075	100 year +40% CC 360 minute winter	32.092	12.705
100 year 360 minute winter	22.923	9.075	100 year +40% CC 480 minute summer	38.291	10.119
100 year 480 minute summer	27.350	7.228	100 year +40% CC 480 minute winter	25.439	10.119
100 year 480 minute winter	18.171	7.228	100 year +40% CC 600 minute summer	30.992	8.477
100 year 600 minute summer	22.137	6.055	100 year +40% CC 600 minute winter	21.176	8.477
100 year 600 minute winter	15.126	6.055	100 year +40% CC 720 minute summer	27.387	7.340
100 year 720 minute summer	19.562	5.243	100 year +40% CC 720 minute winter	18.406	7.340
100 year 720 minute winter	13.147	5.243	100 year +40% CC 960 minute summer	22.191	5.844
100 year 960 minute summer	15.851	4.174	100 year +40% CC 960 minute winter	14.700	5.844
100 year 960 minute winter	10.500	4.174	100 year +40% CC 1440 minute summer	15.789	4.232
100 year 1440 minute summer	11.278	3.023	100 year +40% CC 1440 minute winter	10.611	4.232

**Results for 1 year Critical Storm Duration. Lowest mass balance: 100.00%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m <sup>3</sup> )	Flood (m <sup>3</sup> )	Status
15 minute winter	Extension	11	17.724	0.024	0.7	0.0133	0.0000	OK
15 minute winter	Permeable Surface	14	17.547	0.007	1.1	0.1928	0.0000	OK
15 minute summer	Dummy	1	17.397	0.000	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m <sup>3</sup> )	Discharge Vol (m <sup>3</sup> )
15 minute winter	Extension	1.000	Permeable Surface	0.7	0.981	0.092	0.0080	
15 minute winter	Permeable Surface	Pump	Dummy	0.0				0.0
15 minute winter	Permeable Surface	Infiltration		0.6				

**Results for 2 year Critical Storm Duration. Lowest mass balance: 100.00%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m <sup>3</sup> )	Flood (m <sup>3</sup> )	Status
15 minute winter	Extension	10	17.725	0.025	0.8	0.0142	0.0000	OK
15 minute winter	Permeable Surface	14	17.548	0.008	1.3	0.2647	0.0000	OK
15 minute summer	Dummy	1	17.397	0.000	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m <sup>3</sup> )	Discharge Vol (m <sup>3</sup> )
15 minute winter	Extension	1.000	Permeable Surface	0.8	1.027	0.105	0.0089	
15 minute winter	Permeable Surface	Pump	Dummy	0.0				0.0
15 minute winter	Permeable Surface	Infiltration		0.7				

**Results for 30 year Critical Storm Duration. Lowest mass balance: 100.00%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m <sup>3</sup> )	Flood (m <sup>3</sup> )	Status
15 minute winter	Extension	10	17.735	0.035	1.6	0.0198	0.0000	OK
15 minute winter	Permeable Surface	15	17.552	0.012	2.5	0.6265	0.0000	OK
15 minute summer	Dummy	1	17.397	0.000	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m <sup>3</sup> )	Discharge Vol (m <sup>3</sup> )
15 minute winter	Extension	1.000	Permeable Surface	1.6	1.226	0.210	0.0145	
15 minute winter	Permeable Surface	Pump	Dummy	0.0				0.0
15 minute winter	Permeable Surface	Infiltration		1.2				

**Results for 100 year Critical Storm Duration. Lowest mass balance: 100.00%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m <sup>3</sup> )	Flood (m <sup>3</sup> )	Status
15 minute winter	Extension	11	17.741	0.041	2.1	0.0228	0.0000	OK
30 minute winter	Permeable Surface	24	17.555	0.015	2.7	0.9031	0.0000	OK
15 minute summer	Dummy	1	17.397	0.000	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m <sup>3</sup> )	Discharge Vol (m <sup>3</sup> )
15 minute winter	Extension	1.000	Permeable Surface	2.1	1.307	0.275	0.0176	
30 minute winter	Permeable Surface	Pump	Dummy	0.0				0.0
30 minute winter	Permeable Surface	Infiltration		1.4				

**Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 100.00%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m <sup>3</sup> )	Flood (m <sup>3</sup> )	Status
15 minute winter	Extension	11	17.748	0.048	2.9	0.0270	0.0000	OK
30 minute winter	Permeable Surface	24	17.558	0.018	3.8	1.3833	0.0000	OK
15 minute summer	Dummy	1	17.397	0.000	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m <sup>3</sup> )	Discharge Vol (m <sup>3</sup> )
15 minute winter	Extension	1.000	Permeable Surface	2.9	1.414	0.380	0.0222	
30 minute winter	Permeable Surface	Pump	Dummy	0.0				0.0
30 minute winter	Permeable Surface	Infiltration		1.7				

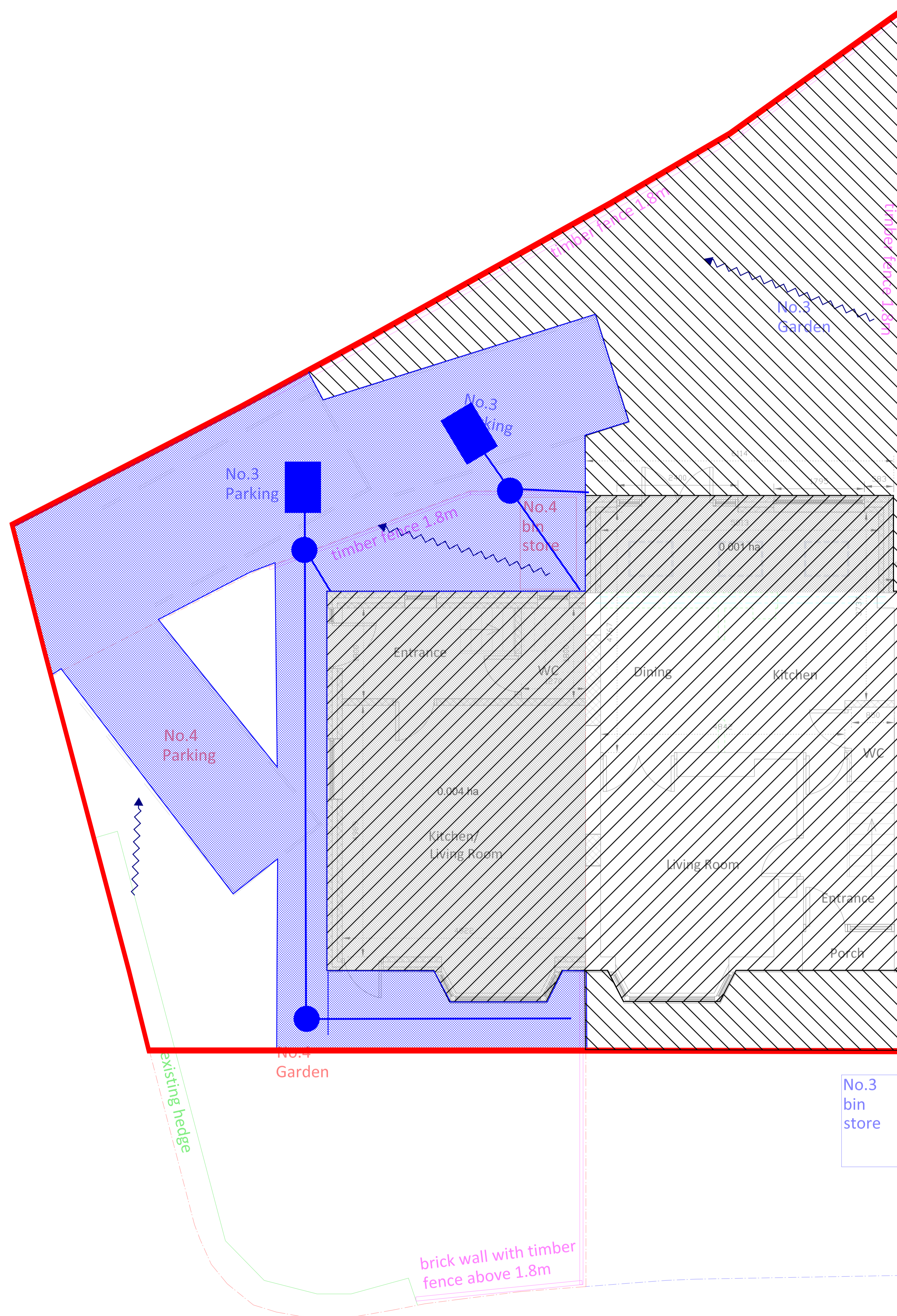
# Appendix D

Drawing Scale Bar			
Drawing scale	Line length	Drawing scale	Line length
1:5 = 0.25 metres	1:200 = 10.0 metres	1:250 = 12.5 metres	
1:10 = 0.5 metres	1:500 = 25.0 metres	1:1000 = 50.0 metres	
1:20 = 1.0 metres	1:1000 = 50.0 metres	1:1250 = 62.5 metres	
1:25 = 1.25 metres	1:2500 = 125 metres		
1:50 = 2.5 metres			
1:100 = 5.0 metres			

Measure length of line above for checking of scale

**GENERAL NOTES**

- All dimensions are in millimetres and levels in m AOD unless stated otherwise.
- Do not scale. If in any doubt, consult Engineer.
- Read in conjunction with the architects and engineers schedule drawings.
- Check inverts and sizes of existing pipes prior to the commencement of any work. Report any discrepancies to the engineer and await instructions.
- The location of services is shown as indicative. This drawing should be read in conjunction with the utilities drawings. No warranty to their accuracy can be given. The contractor shall take all necessary measures to satisfy himself as to the location of the existing services and connection points. Excavation should be undertaken in compliance with HSG47.
- Concrete structures design sulphate class and ACEC concrete class unknown.
- Pipework to be 110mm Thermoplastics U-PVC (Polypipe or similar) installed at levels marked on this drawing. Pipe bedding should be class Z in pipes within 1.5m of the building or shallower than 700mm below ground level. For all other areas the pipe bedding should be class S.
- Joints and fittings for gravity sewers shall comply with the relevant provisions of BS EN 1401-1, BS EN 1852 and BS EN 12866-1. Pipes shall have a limit of 6% deformation. Pipes shall be SN8 ring stiffness and stamped accordingly. Pipe sections shall not be longer than 3m.
- Plastic chambers and rings, including demarcation chambers, shall comply with BS EN 3598-1 or BS EN 13398-2 as appropriate.
- Inspection chamber covers and frames shall comply with the relevant provisions of BS EN 124 and should be double sealed.
- All inspection chamber covers shall be the non-ventilating type and shall have closed keyways.
- Testing of pipelines should be as follows:  
Gravity Pipework: Air pipe testing. Pipework should withstand a pressure of 100mm water gauge and this should not fall by more than 25mm in a 5minute period. However where traps or gullies are connected they should withstand a pressure of 50mm water gauge and this should not fall by more than 12mm in a 5minute period. It is recommended that pipework installations are tested in sections rather than waiting to complete in one operation.
- Manhole covers to be set square to the building. Covers of existing manholes to be adjusted to match final ground levels.
- Granular Bedding for pipes shall be constructed by spreading and compacting granular bedding material over the full width of the pipe trench. After the pipes have been laid, additional granular material shall, if required, be placed and compacted equally on each side of the pipes and, where practicable, this shall be done in sequence with the removal of the trench supports.



**KEY**

- Proposed Surface Water Sewer Pipe
- Exceedance Flows
- Permeable Surface  
150mm Finished Permeable Surface  
350mm Type 3
- Silt Trap
- Sump and Dispersion Unit

SCALE 1:50

Rev	Details	Date	By	Chd

Drawing Status: **PRELIMINARY**



Client:

Project:

3 Kew Place, Richmond Gardens, Longlevens, GL2 0DX

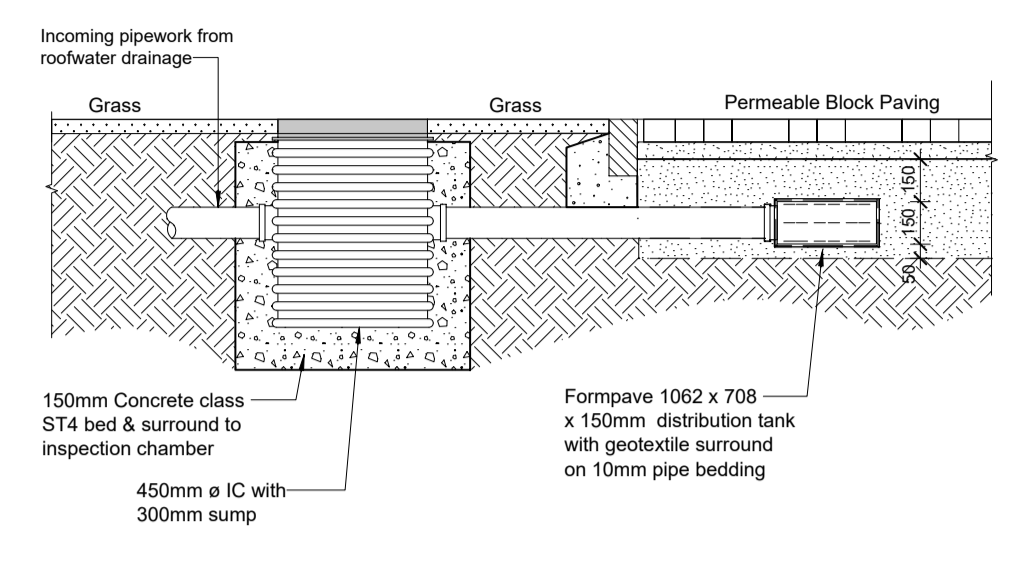
Drawing:

Proposed Drainage Strategy

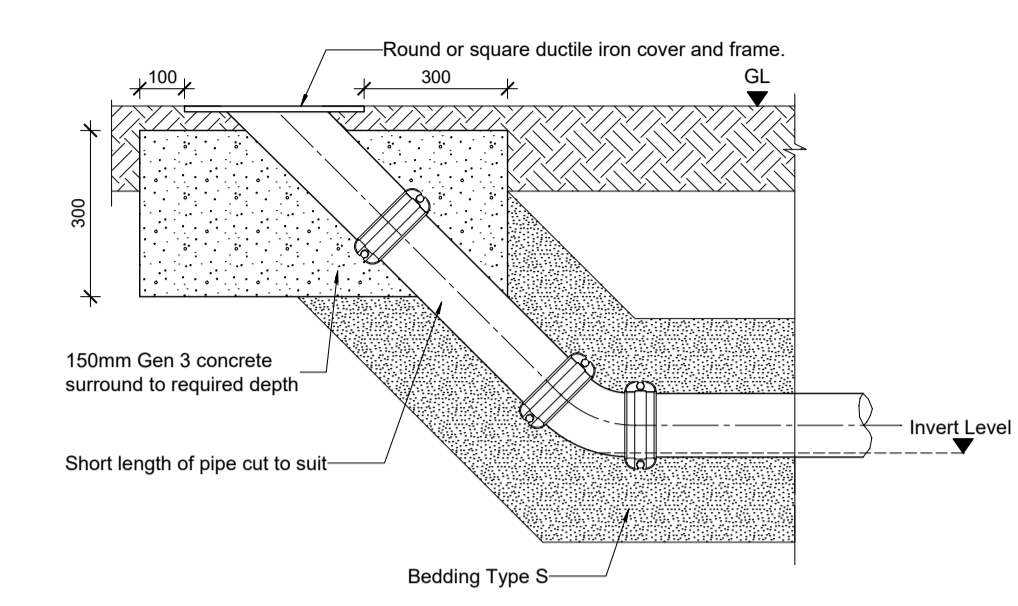
Drawing Scale Bar			
Drawing scale	Line length	Drawing scale	Line length
1:5	= 0.25 metres	1:200	= 10.0 metres
1:10	= 0.5 metres	1:250	= 12.5 metres
1:20	= 1.0 metres	1:500	= 25.0 metres
1:25	= 1.25 metres	1:1000	= 50.0 metres
1:50	= 2.5 metres	1:1250	= 62.5 metres
1:100	= 5.0 metres	1:2500	= 125 metres

Measure length of line above for checking of scale

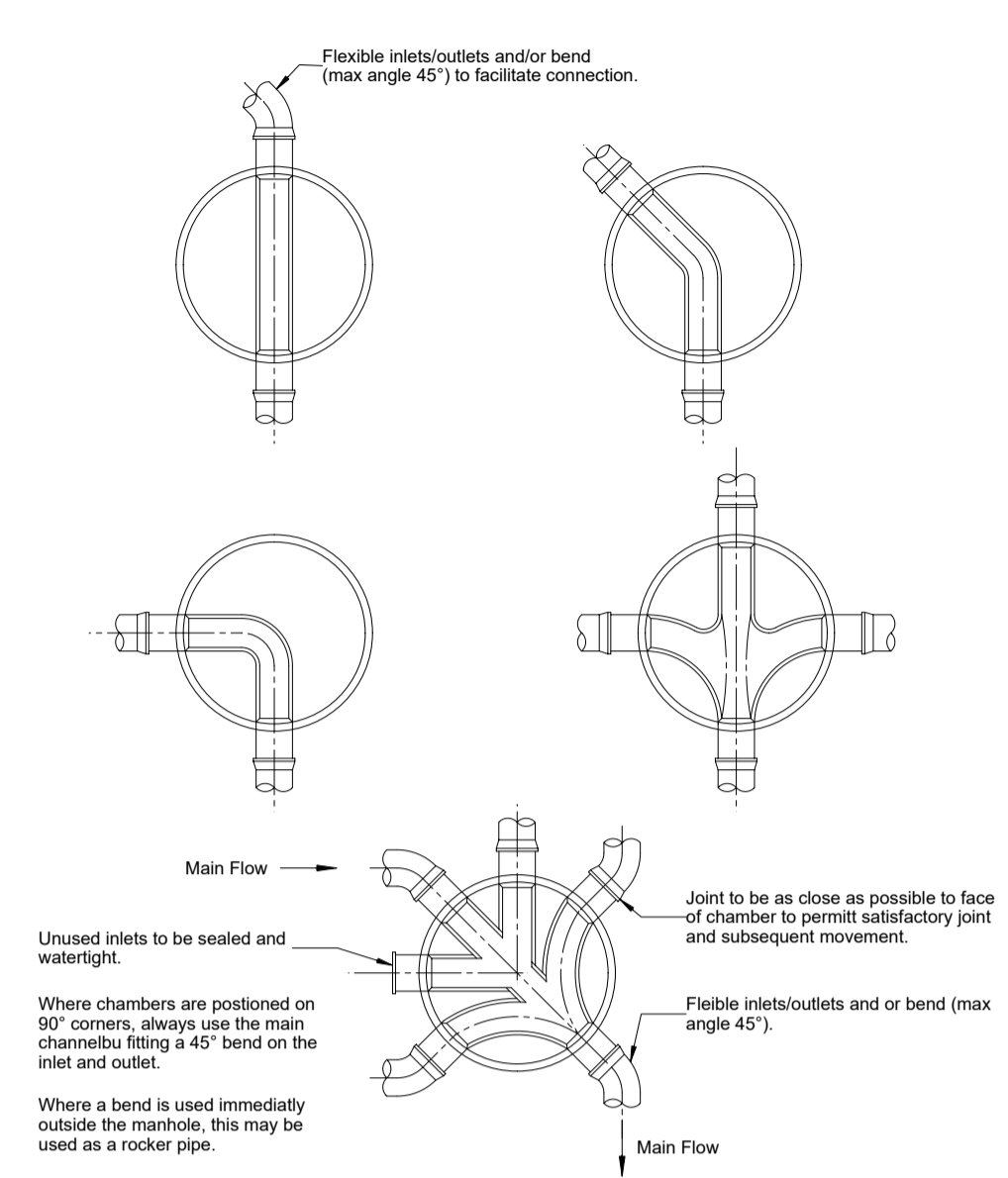
GENERAL NOTES



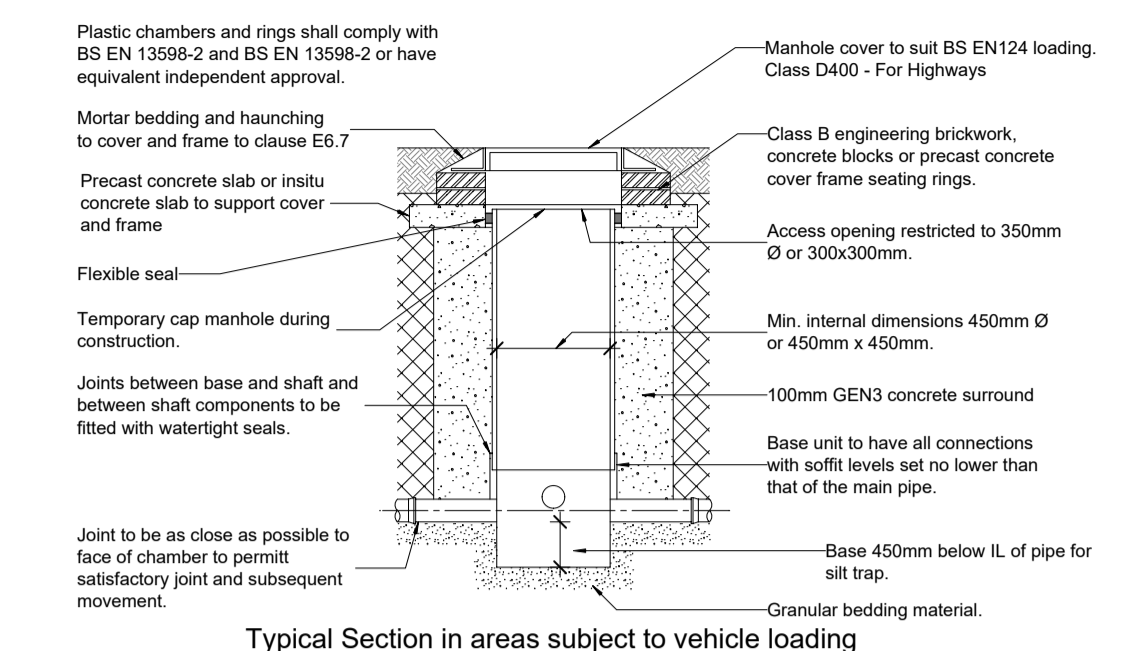
SD064 - Sump and Dispersion Unit



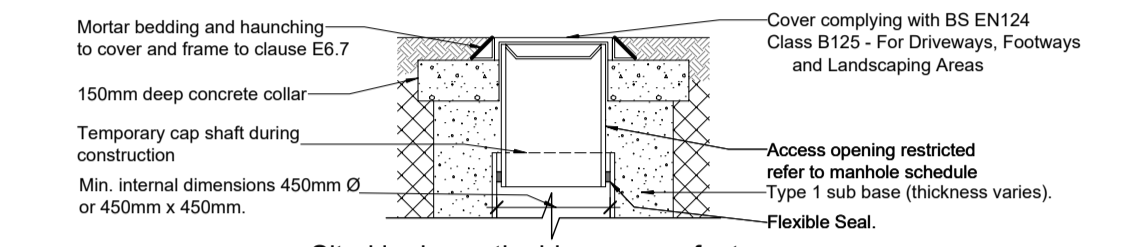
External Rodding Eye Detail



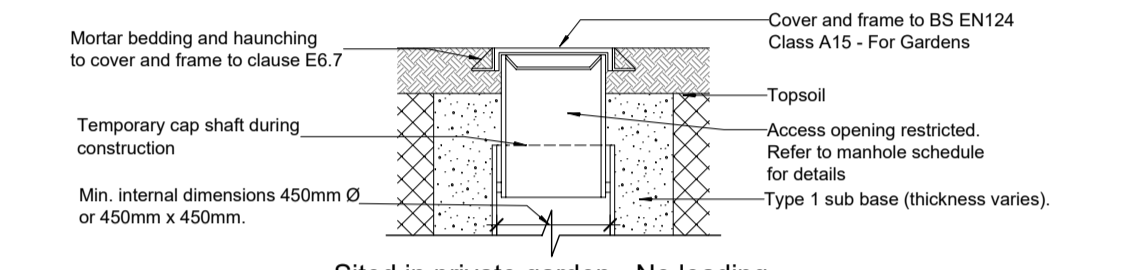
Chamber Type 3 Base Layouts



Typical Section in areas subject to vehicle loading



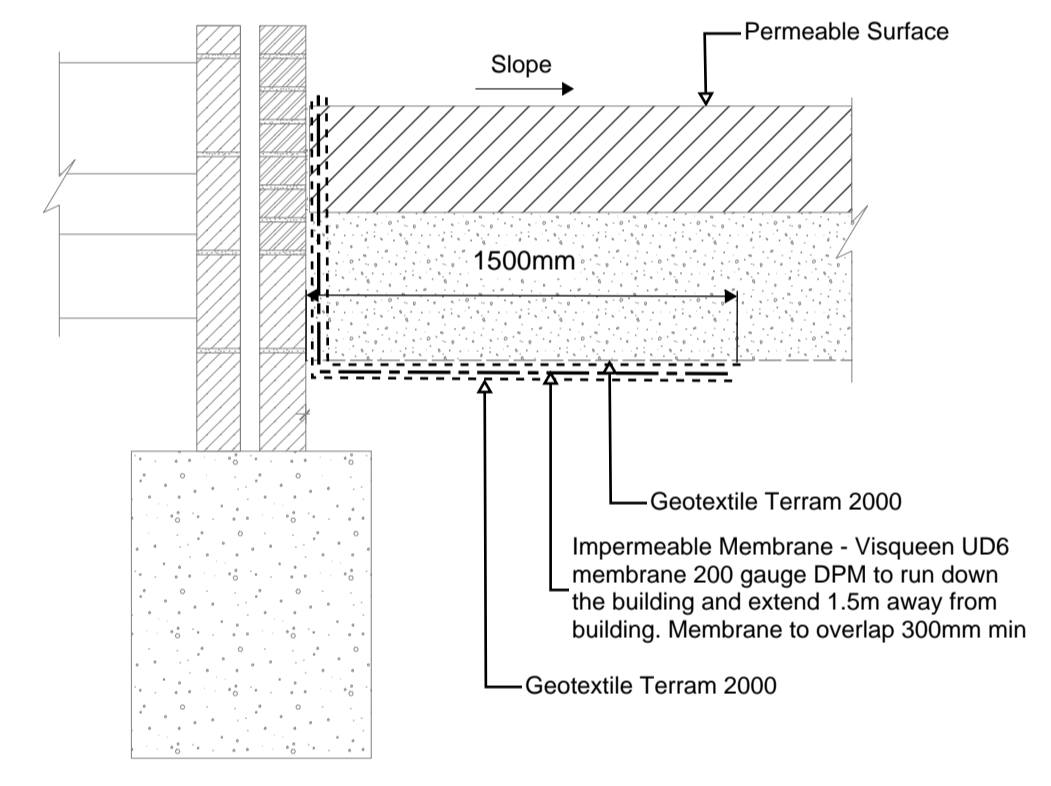
Sited in domestic driveways or footways



Sited in private garden - No loading

Notes:  
1. Refer to drawing 8193 for base layouts.

Silt Trap Plastic



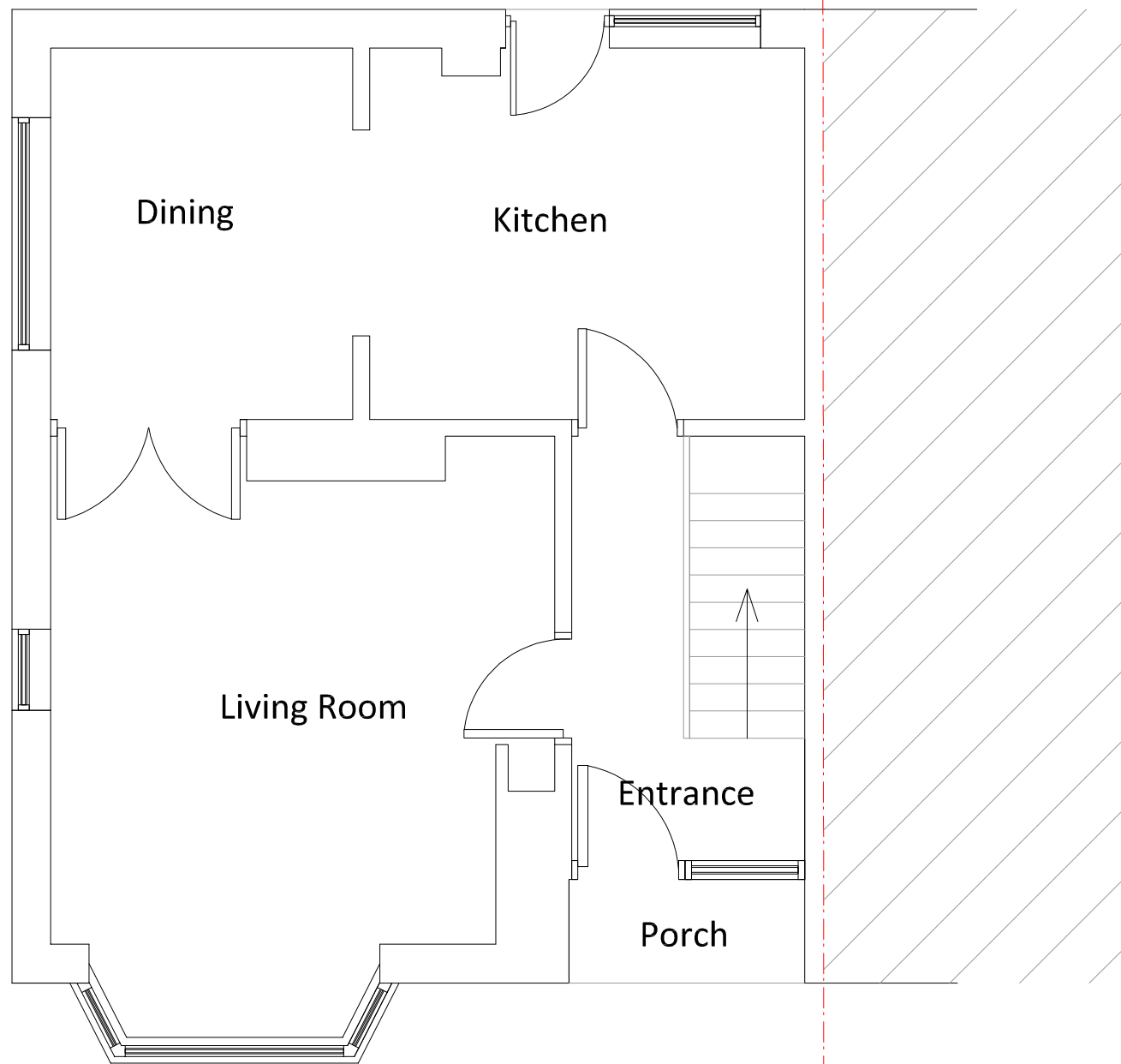
Permeable Surface Against Building

Rev	Details	Date	By	Chd

Drawing Status:  
**PRELIMINARY**

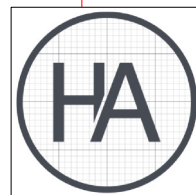
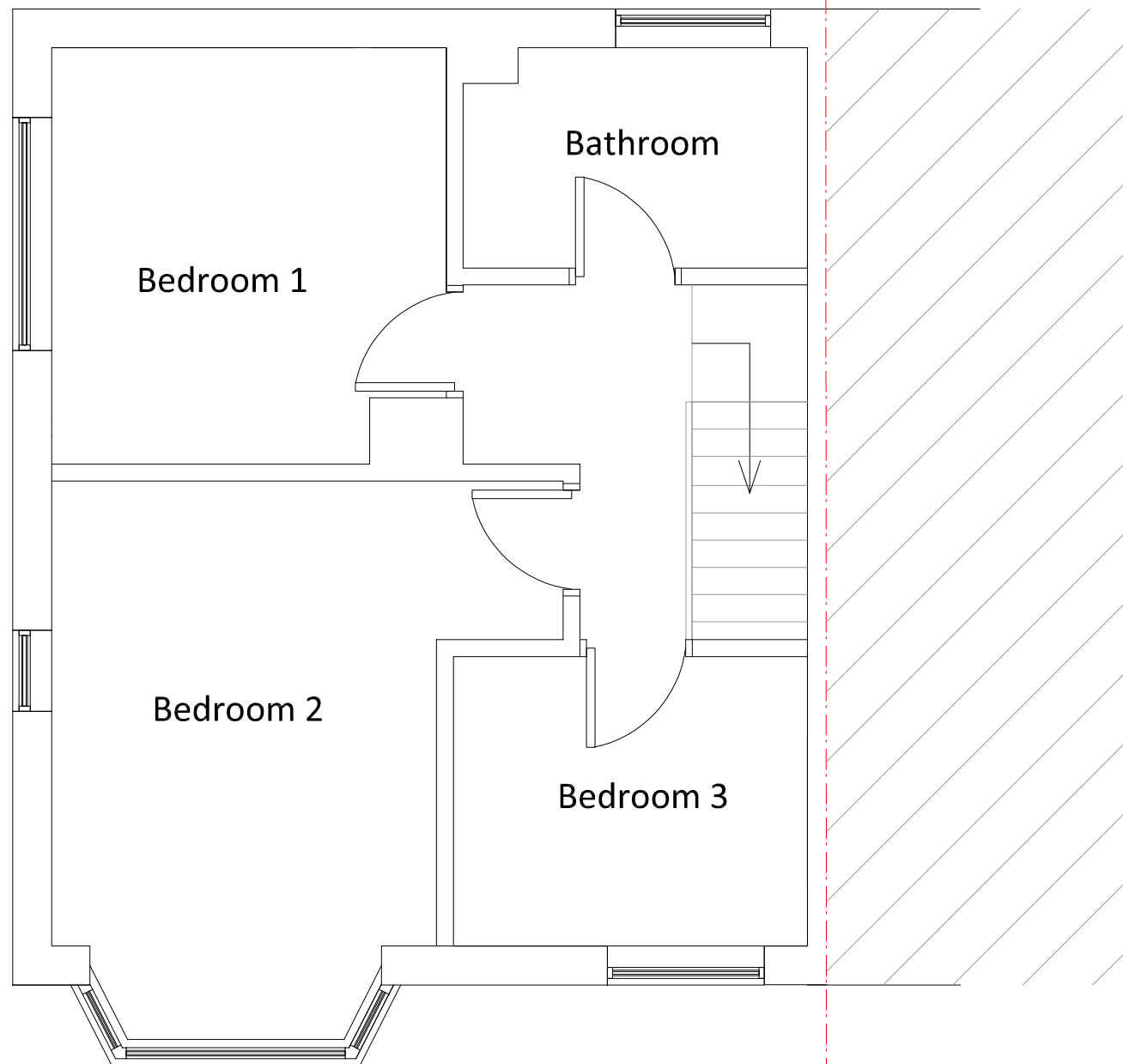


Client:  
Project:  
3 Kew Place, Richmond Gardens, Longlevens, GL2 0DX  
Drawing:  
Standard Details



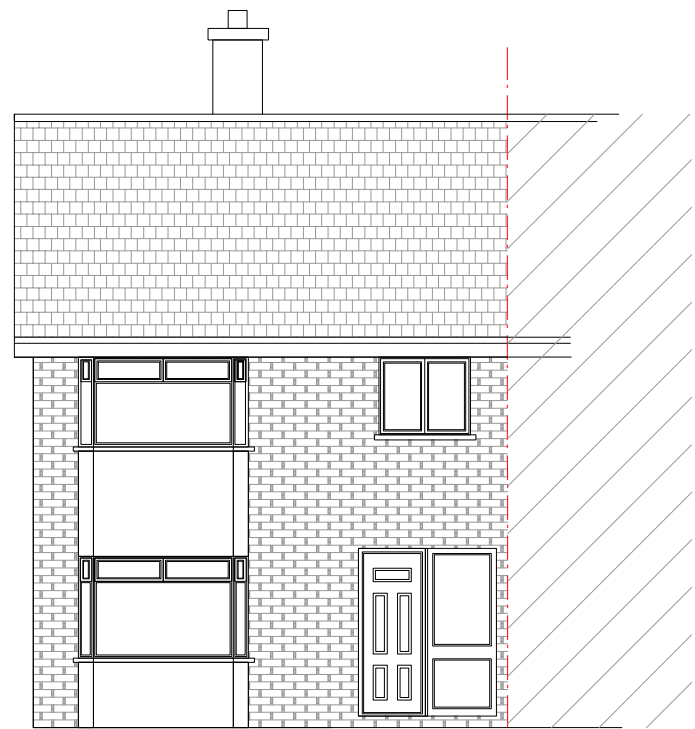
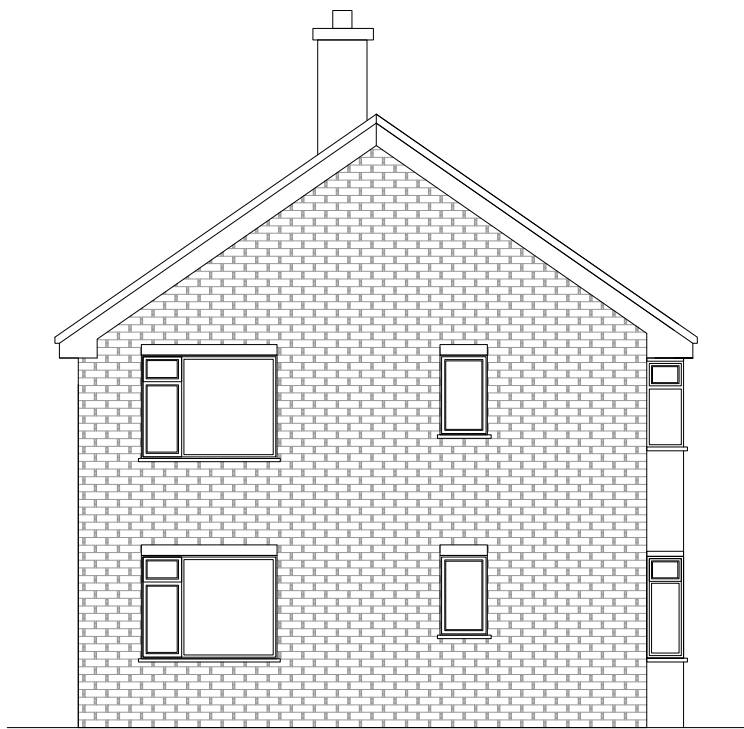
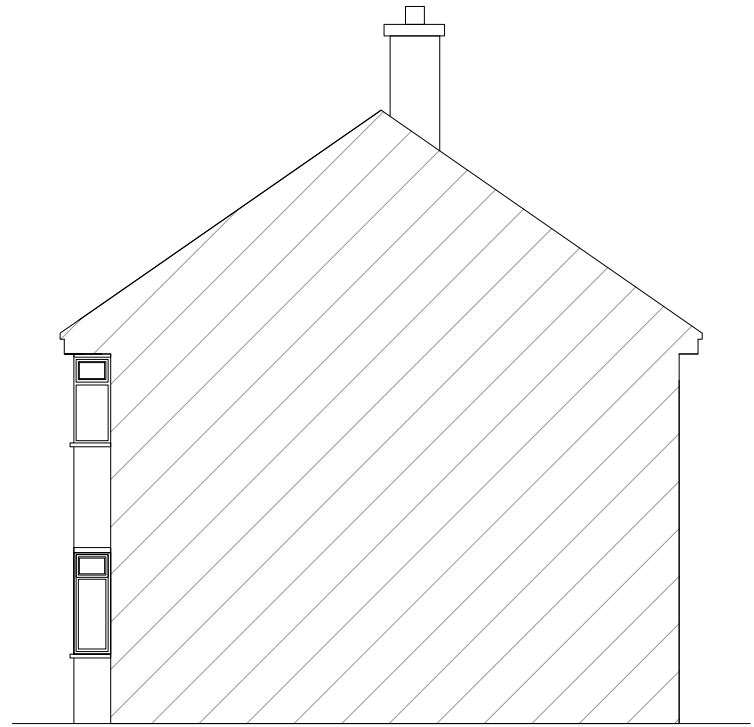
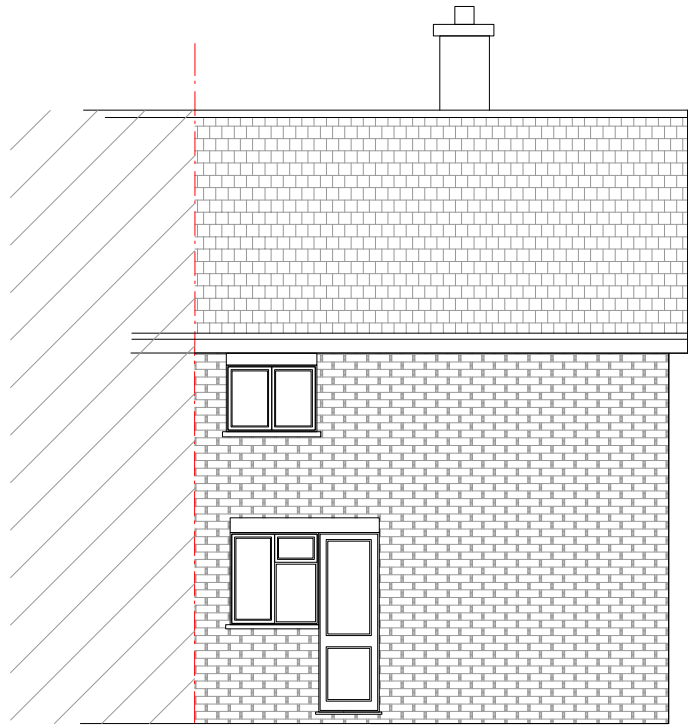
**H A Planning**  
67 Cleevemount Road  
Cheltenham  
Gloucestershire  
GL52 3HD

<b>Client:</b> Randles 3 Kew Place Richmond Gardens Longlevens GL52 0DX	<b>Description:</b> Existing Ground Floor Plan
<b>Drawn:</b> AVB	<b>Job:</b> 900420
<b>Scale @ A3:</b>	1:50
<b>Date:</b>	12.11.21
<b>Dwg No:</b>	AE-02(900420)001



**H A Planning**  
67 Cleevemount Road  
Cheltenham  
Gloucestershire  
GL52 3HD

<b>Client:</b> Randles 3 Kew Place Richmond Gardens Longlevens GL52 0DX	<b>Description:</b> Existing First Floor Plan
<b>Drawn:</b> AVB	<b>Job:</b> 900420
<b>Scale @ A3:</b>	1:50
<b>Date:</b>	12.11.21
<b>Dwg No:</b>	AE-03(900420)001



**H A Planning**  
67 Cleevemount Road  
Cheltenham  
Gloucestershire  
GL52 3HD

**Client:**  
Randles  
3 Kew Place  
Richmond Gardens  
Longlevens  
GL52 0DX

**Description:**  
Existing  
Elevations

**Drawn:** AVB

**Job:** 900420

**Scale @ A3:**

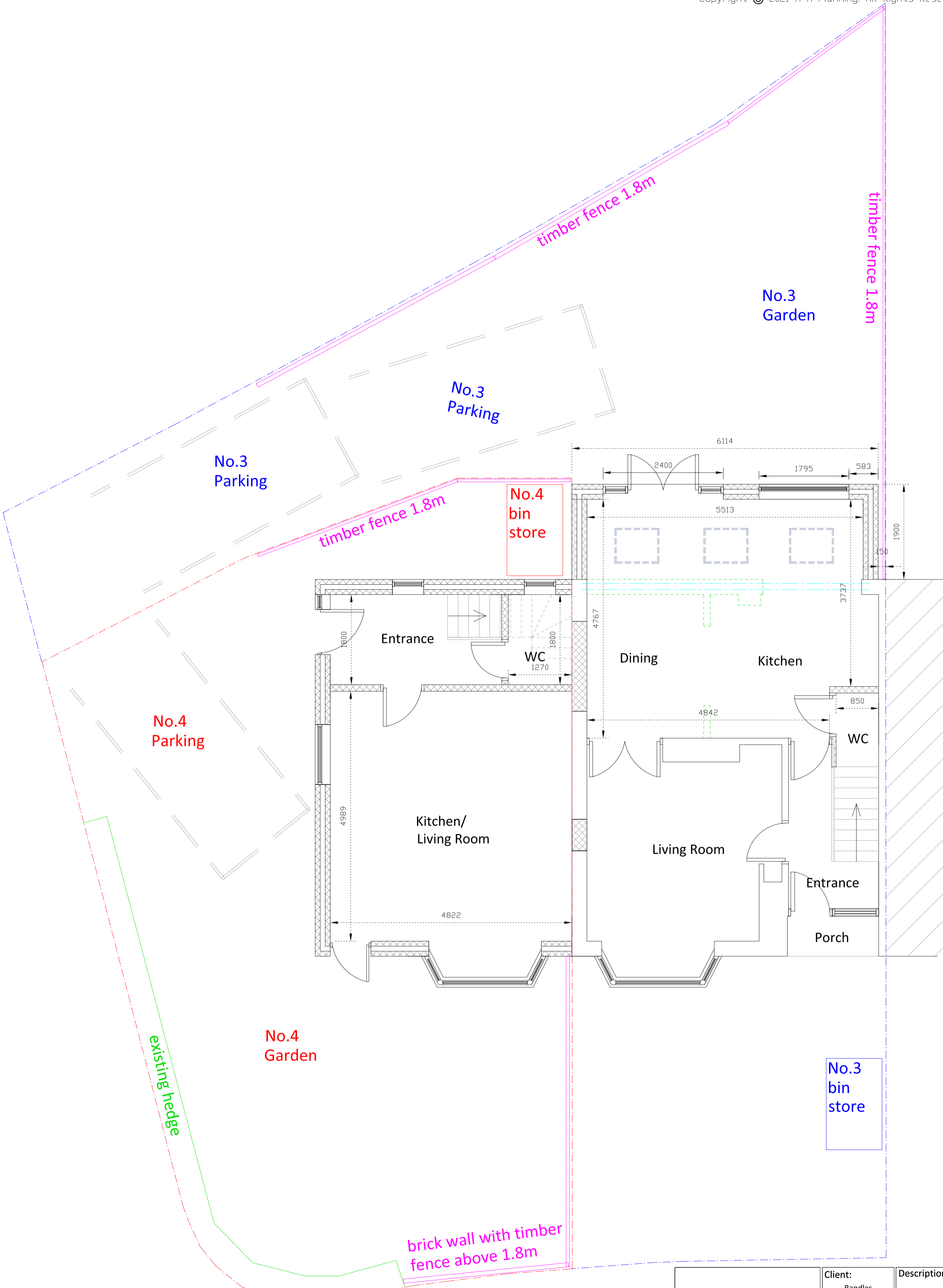
1:100


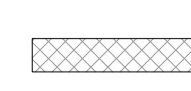
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12.11.21

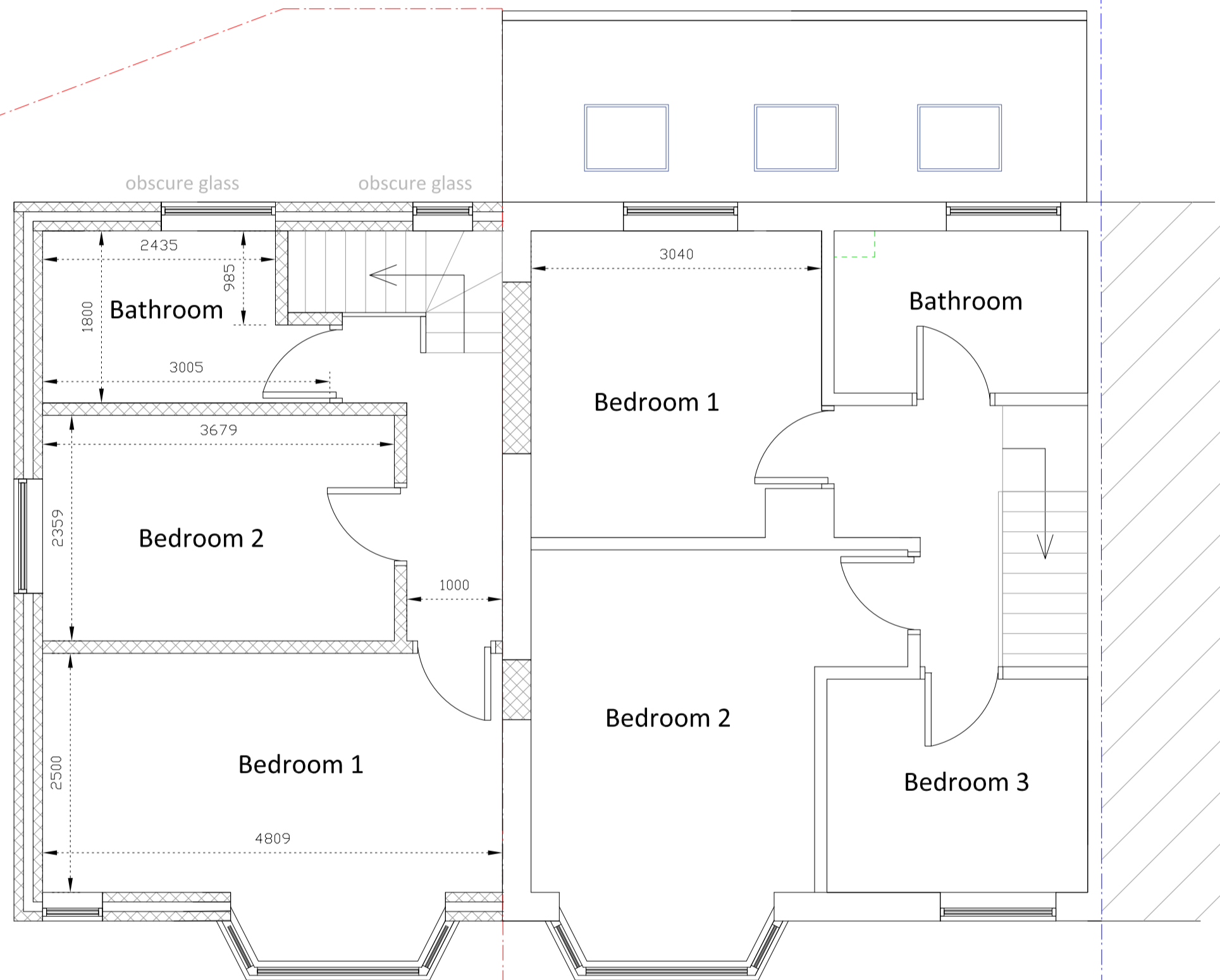
**Dwg No:**

AE-04(900420)001



 existing wall to be demolished shown in dotted lines  
 new wall

<p><b>H A Planning</b>                  67 Cleevemount Road                  Cheltenham                  Gloucestershire                  GL52 3HD</p>	<p><b>Client:</b>                  Randles                  3 Kew Place                  Richmond Gardens                  Longlevens                  GL52 0DX</p>	<p><b>Description:</b>                  Proposed Ground                  Floor Plan</p>
	<p><b>Drawn:</b> AVB</p>	<p><b>Job:</b> 900420</p>
	<p><b>Scale @ A2:</b> 1:50</p>	
	<p><b>Date:</b> 07.11.22</p>	
	<p><b>Dwg No:</b> AE-05(900420)001</p>	



existing wall to be demolished shown in dotted lines

new wall

**H A Planning**  
 67 Cleevemount Road  
 Cheltenham  
 Gloucestershire  
 GL52 3HD

**Client:**  
 Randles  
 3 Kew Place  
 Richmond Gardens  
 Longlevens  
 GL52 0DX

**Description:**  
 Proposed First  
 Floor Plan

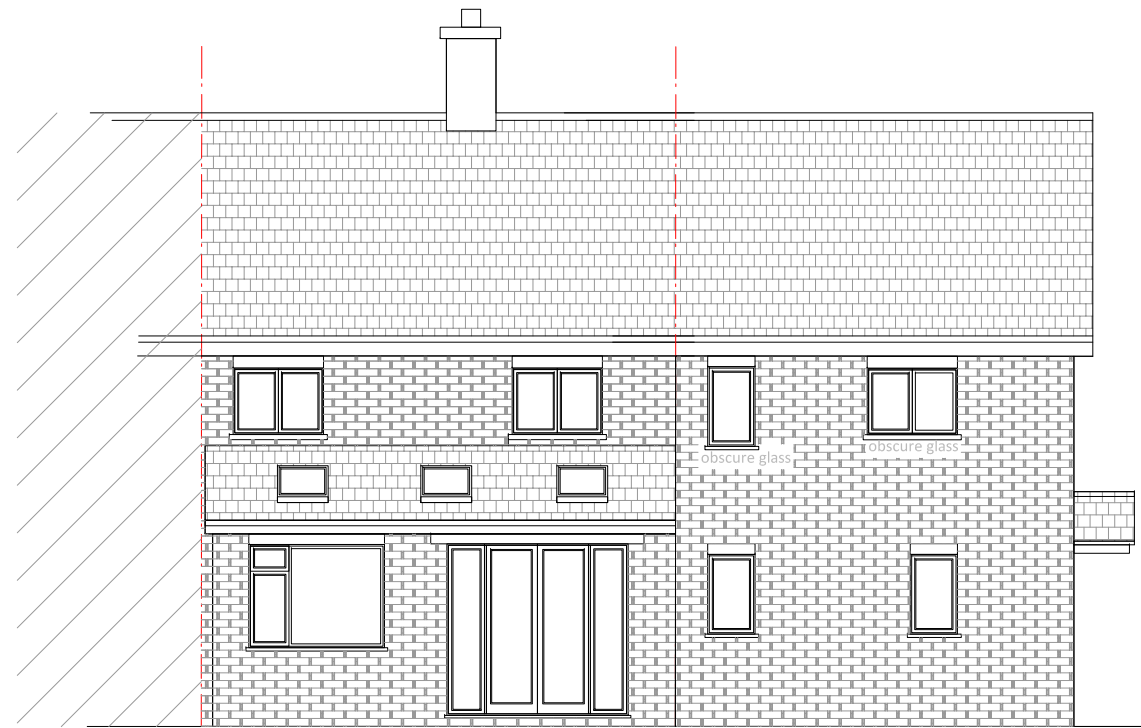
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**Job:** 900420

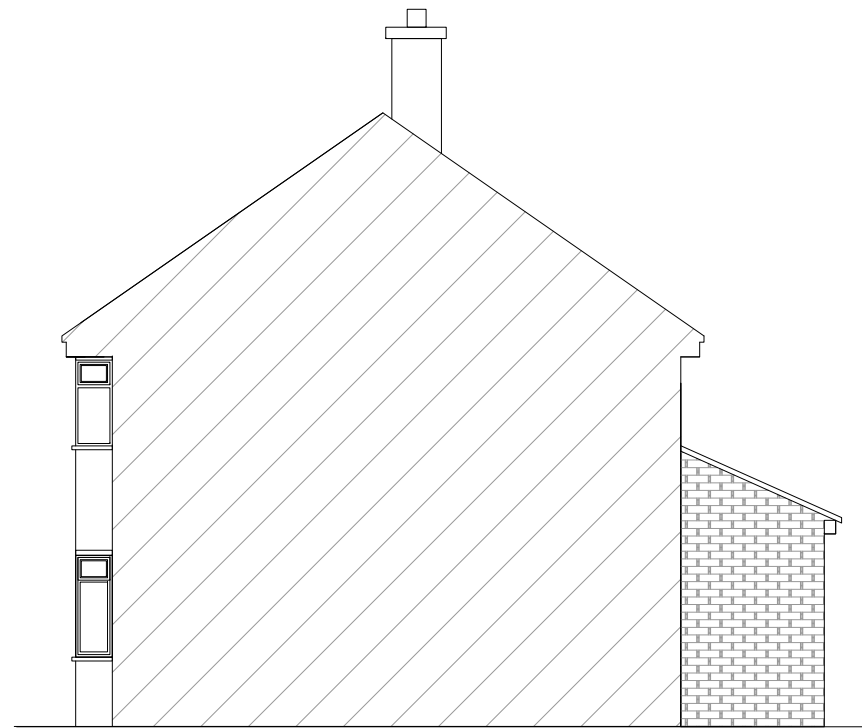
**Scale @ A2:** 1:50

**Date:** 11.07.22

**Dwg No:** AE-07(900420)001



Rear Elevation



Right Elevation



Left Elevation



Front Elevation

H A Planning  
 67 Cleevemount Road  
 Cheltenham  
 Gloucestershire  
 GL52 3HD

<b>Client:</b> Randles 3 Kew Place Richmond Gardens Longlevens GL52 0DX	<b>Description:</b> Proposed Elevations
<b>Drawn:</b> AVB	<b>Job:</b> 900420
<b>Scale @ A3:</b>	1:100
<b>Date:</b>	11.07.22
<b>Dwg No:</b>	AE-08(900420)001