



Land off Devizes Road, Hilperton

Redcliffe Homes

Flood Risk Assessment
August 2026





Document Control

Job No.	22-0460	
Project Name	Land off Devizes Road, Hilperton	
Document Title	Flood Risk Assessment	
Status	Planning	
Client	Redcliffe Homes	
	Name	Date
Prepared By	Rowan Jameson	January 2026
Checked By	Charlotte Granger	January 2026
Approved By	Simon Mirams	January 2026

Record of Revisions

Revision	Date	Details	Made By
Draft	20/01/26	Draft for Comment	RJ/CG/DG
P01	30/01/26	First Issue	RJ/CG/DG
P02	03/02/26	Revised Following WW Correspondence	DG
P03	03/08/26	Updated following latest EA Flood Map for Planning and latest layout	RJ

Rappor Consultants Ltd

A: Pressworks, 7-9 Ambrose Street, Cheltenham, GL50 3LH

W: www.rappor.co.uk

T: 01242 523696

E: hello@rappor.co.uk

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1 Introduction

Background

- 1.1 The purpose of this Flood Risk Assessment (FRA) is to assess the risk of flooding to the proposed development and where possible provide sufficient mitigation to demonstrate that the future users of the development would remain safe throughout its lifetime, that the development would not increase flood risk on site and elsewhere and, where practicable, that the development would reduce flood risk overall.

Site Proposals

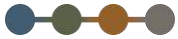
- 1.2 Redcliffe Homes are seeking outline planning approval, with all matters reserved except for the main point of access from Devizes Road, for the demolition of existing building, and development of up to 80 dwellings, public open space, drainage, landscaping and ancillary works.
- 1.3 A copy of the proposed development drawings is included within **Appendix A**.

National & Local Planning Policy

- 1.4 The National Planning Policy Framework (NPPF)¹ sets out the Government's national policies on different aspects of land use planning in England in relation to flood risk. Planning Practice Guidance (PPG) is also available online².
- 1.5 The PPG sets out the vulnerability to flooding of different land uses. It encourages development to be located in areas of lower flood risk where possible and stresses the importance of preventing increases in flood risk off site to the wider catchment area.
- 1.6 The NPPF states that a site-specific Flood Risk Assessment will be required for proposals:
- a) that are greater than 1 hectare in area within Flood Zone 1
 - b) for all proposals for new development (including minor development and change of use) in Flood Zones 2 and 3
 - c) in an area within Flood Zone 1 which has critical drainage problems; and where proposed development or a change of use to a more vulnerable class may be subject to other sources of flooding
 - d) in an area within Flood Zone 1 identified in a Strategic Flood Risk Assessment as being at increased flood risk in the future
 - e) in an area in Flood Zone 1 that may be subject to other sources of flooding, where its development would introduce a more vulnerable use
- 1.7 This FRA aims to provide sufficient flood risk information to satisfy the requirements of the NPPF, PPG and regional/local government plans and policies.
- 1.8 This assessment considers the risks of all types of flooding to the site including tidal, fluvial, surface water, groundwater, sewer and artificial sources and provides mitigation measures

¹ <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

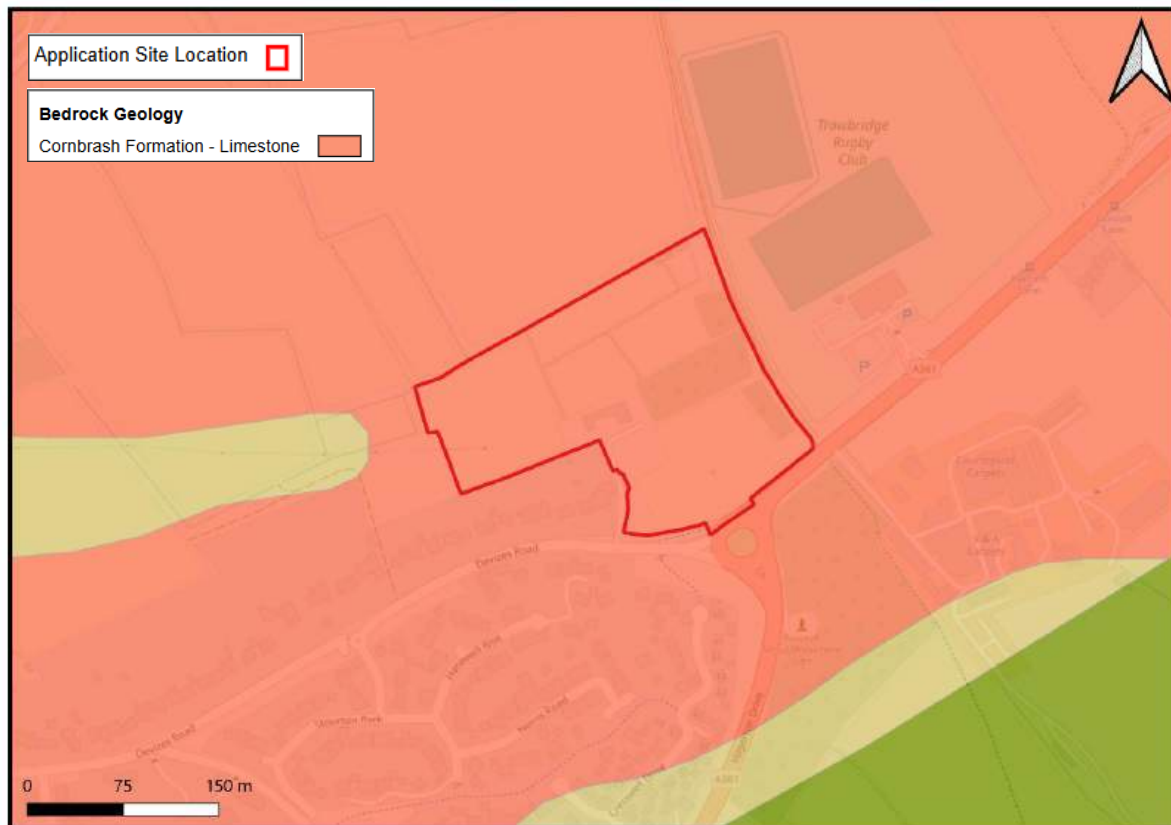
² <https://www.gov.uk/guidance/flood-risk-and-coastal-change>



to ensure that the flood risk to the site is minimised and that flood risk off-site is not increased.

Ground Conditions

- 2.4 Geological data held by the British Geological Survey (BGS)³ shows that the bedrock geology underlying the site is Cornbrash Formation – Limestone. No superficial deposits are recorded. This can be seen in **Figure 2.2**.



(Source: OpenStreetMaps/BGS)

Figure 2.2 Bedrock Geology

- 2.5 The nearest borehole log with freely available information is located approximately 650m north of the site and was recorded to a depth of 63.25m, obtained via online BGS maps⁴. The borehole log reference number is ST85NE1. The log identifies the presence of mudstone and limestone.
- 2.6 Soils mapping⁵ indicates the underlying soil as freely draining, shallow lime-rich soils over chalk or limestone.
- 2.7 Soakaway testing was undertaken during December 2025 (see **Appendix C**). A total of 6no. test pits were established, and testing was undertaken in accordance with BRE 365 'Soakaway Design' methodology guidance.
- 2.1 The test pits were excavated to a maximum depth of 2 metres below ground level (mbgl). The borehole logs confirm the soils and geology as depicted by the soils and geology mapping.

³ <https://geologyviewer.bgs.ac.uk/>

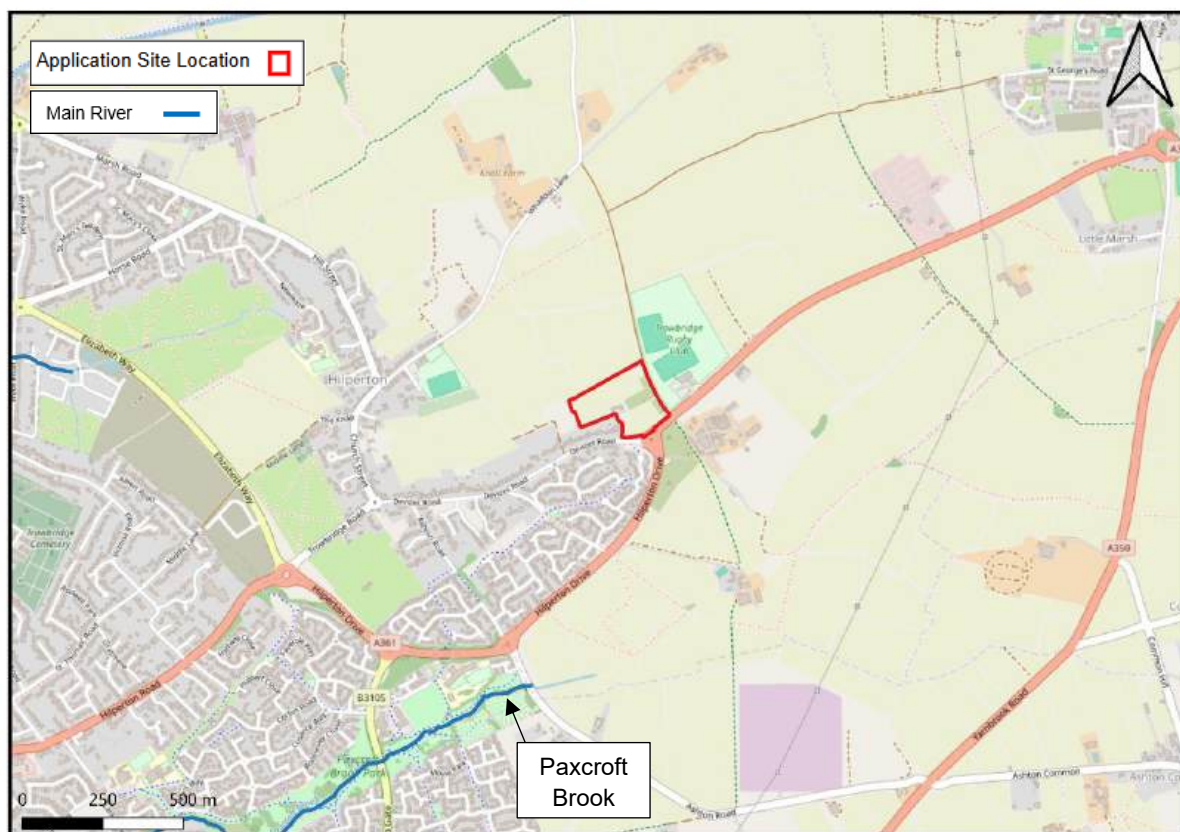
⁴ https://mapapps2.bgs.ac.uk/geoindex/home.html?layer=BGSBoreholes&_ga

⁵ <http://www.landis.org.uk/soilsclapes/>

- 2.1 The results from the soakaway testing confirmed negative infiltration capabilities across the Proposed Development and therefore discharge to ground for surface water management is not viable.
- 2.2 Groundwater ingress was encountered in the majority of soakaway trial pits, ranging from 0.9 to 1.5 mbgl.
- 2.3 Department for Environment, Food & Rural Affairs (DEFRA) Magic Service Mapping⁶ shows the site is not located in a groundwater Source Protection Zone (SPZ).

Existing Drainage & Hydrology

- 2.4 There is no Environmental Agency (EA) designated main river on or in the immediate vicinity of the site.
- 2.5 The closest waterbody is a ditch circa 400m to the southeast which is part of a wider ditch network that eventually drains into the EA designated main river, Paxcroft Brook, approximately 750m to the south of the site (**Figure 2.3**).

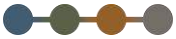


(Source: OpenStreetMaps/EA)

Figure 2.3 Existing Hydrology

- 2.6 Wessex Water asset plans show that there is a 150mm diameter public Foul sewer within Devizes Road directly south of the site that flows west away from the site. Public Foul and Surface water sewers are also found in Hilpert Drive 85m south of the site with these

⁶ <https://magic.defra.gov.uk/MagicMap.aspx>



directing flows in a southerly direction away from site. Wessex Water sewer records are contained in **Appendix D**.

- 2.7 The DEFRA Magic Map (England and Wales) shows there are no designated sites (SSSIs) in or close to the site including downstream (from a flood risk and drainage perspective).

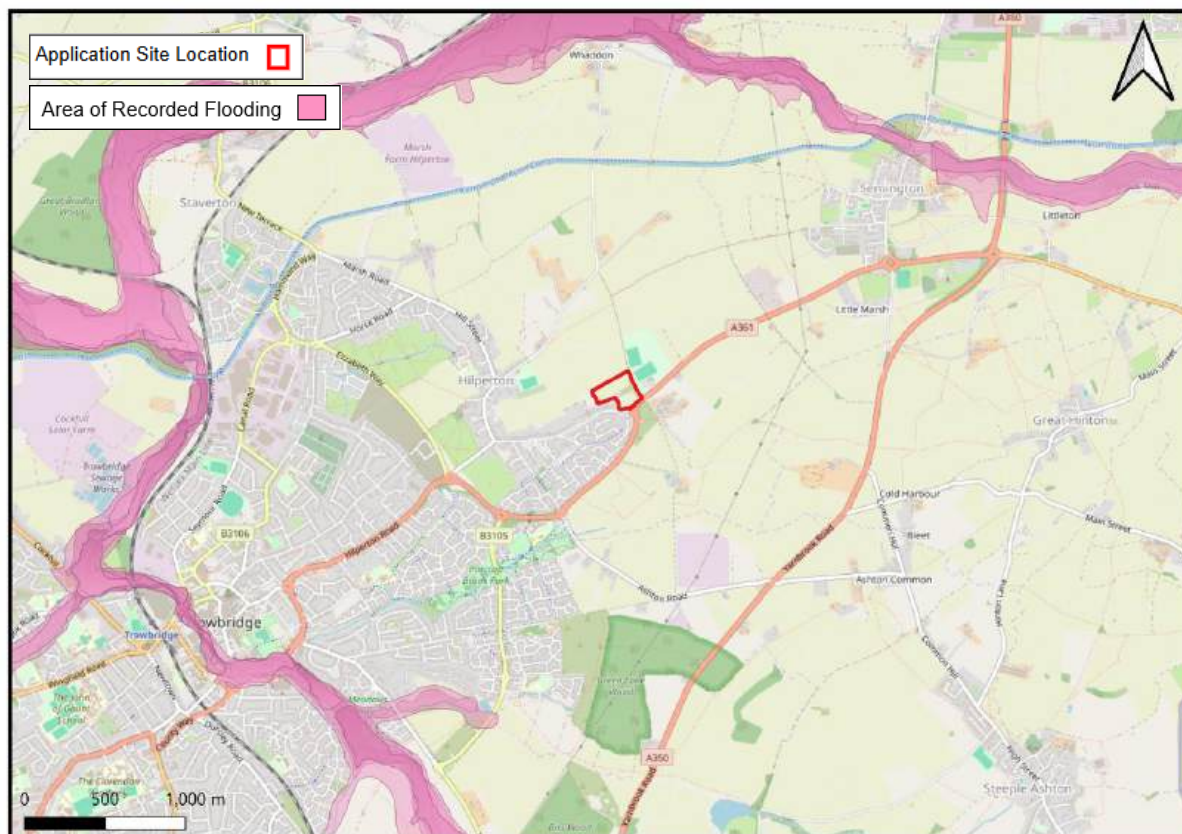
3 Site Specific Flooding

National Planning Policy Framework (NPPF)

- 3.1 Local Planning Authorities, (LPA) have a statutory obligation to consult the EA on all applications in flood risk zones. The EA will consider the effects of flood risk in accordance with the NPPF.
- 3.2 In accordance with paragraph 181 of the NPPF, as part of the planning process, it requires:
- a) A 'site specific' Flood Risk Assessment will be undertaken for any site that has a flood risk potential.
 - b) Flood risk potential is minimised by applying a 'sequential approach' to locating 'vulnerable' land uses
 - c) Sustainable drainage systems are used for surface water disposal where practical
 - d) Flood risk is managed through the use of flood resilient and resistant techniques.
 - e) Residual risk is identified and safely managed
- 3.3 Table 1 of NPPF, categorises flood zones into:
- a) Zone 1- Low risk, less than 0.1% Annual Event Probability (AEP) (< 1 in 1000 years)
 - b) Zone 2- Medium risk, 0.1% AEP (1 in 1000 - 1 in 100 years)
 - c) Zone 3a- High risk, 1% AEP (> 1 in 100 years)
 - d) Zone 3b- High risk - Functional Floodplain, 3.33% AEP (>1 in 30 years)
- 3.4 In accordance with the NPPF, this FRA considers all sources of flooding including:
- a) Tidal flooding – from sea;
 - b) Fluvial flooding – from rivers and streams;
 - c) Pluvial flooding – overland surface water flow and exceedance;
 - d) Groundwater flooding – from elevated groundwater levels or springs;
 - e) Flooding from sewers – exceedance flows from existing sewer systems; and
 - f) Artificial sources – reservoirs, canals etc.
- 3.5 The latest National Planning Policy Guidance for Flood Risk defines a “design flood” as a flood event of a given annual flood probability, which is generally taken as:
- a) river flooding likely to occur with a 1% annual probability (a 1 in 100 chance each year); or
 - b) tidal flooding with a 0.5% annual probability (1 in 200 chance each year); or
 - c) surface water flooding likely to occur with a 1% annual probability (a 1 in 100 chance each year),
- plus, an appropriate allowance for climate change.

Historic Flooding

- 3.6 There are no records of the site being flooded historically based on the EA flood mapping. EA mapping shows the closest recorded Historic Flooding to be 1.8km to the north associated with the Semington Brook due to the channel capacity being exceeded.



(Source: OpenStreetMaps/EA)

Figure 3.1 Historic Flooding

- 3.7 The Wiltshire Council Strategic Flood Risk Assessment (SFRA) (November 2024)⁷ notes several widespread flooding incidents have occurred across the County, with the most recent occurring in July 2015. No incidents associated with the Semington Brook are mentioned in the report. The River Biss was stated to have caused flooding in Trowbridge (west of the site) in November 2012; however, the site is not within close proximity of the area impacted based on the Environment Agency flood mapping.

⁷ https://www.wiltshire.gov.uk/media/14497/SD67-Wiltshire-Level-1-Strategic-Flood-Risk-Assessment-2024/pdf/SD67_Wiltshire_Level_1_Strategic_Flood_Risk_Assessment_2024.pdf?m=1733141632550

Tidal Flooding

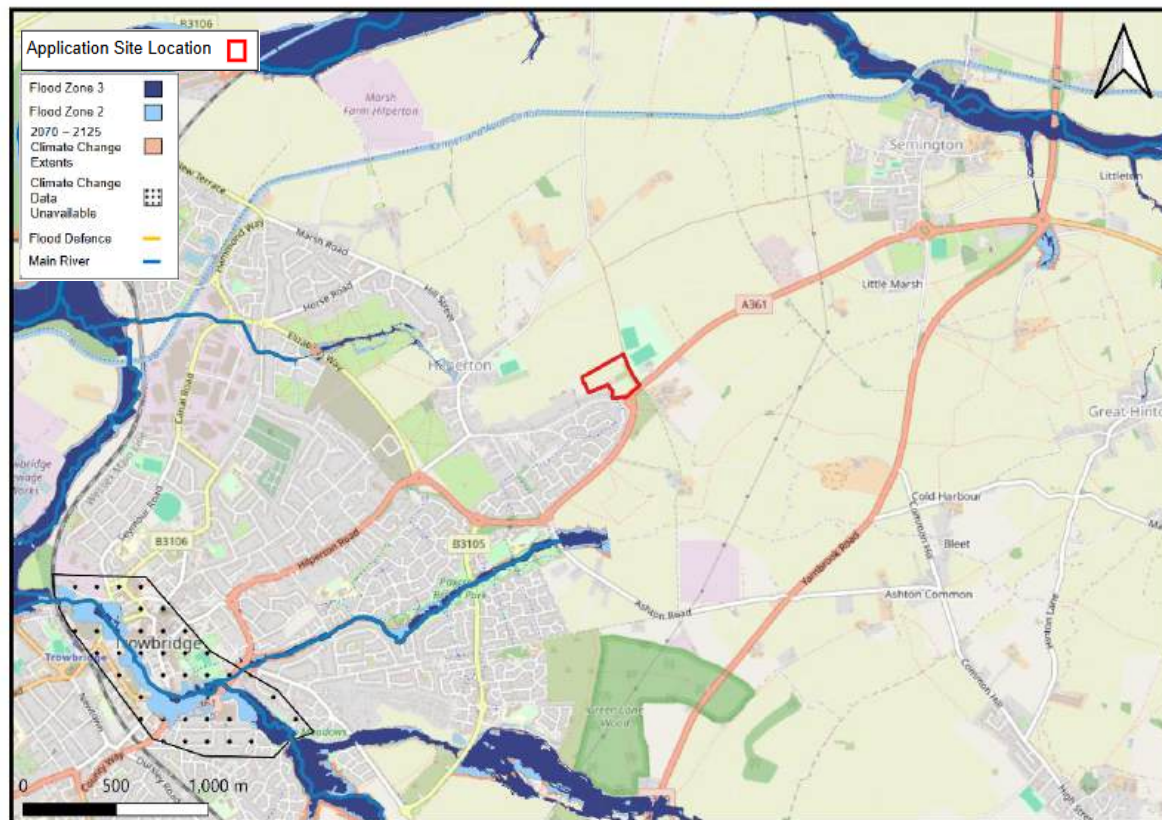
- 3.8 Inundation of low lying coastal areas by the sea may be caused by seasonal high tides, storm surges and storm driven wave action. Tidal flooding is most commonly a result of a combination of two or more of these mechanisms, which can result in the overtopping or breaching of sea defences. River systems may also be subject to tidal influences.
- 3.9 There are no watercourses/waterbodies in the vicinity of the site that pose a tidal risk to the site. The risk of tidal flooding is therefore negligible.

Topography

- 3.10 A detailed topographic survey was carried out during November 2025, a copy of which is included within **Appendix B**. Ground levels on the site fall towards the east of the site from 65.81 metres Above Ordnance Datum (mAOD) in the north-western corner to 61.01mAOD located in the site's south-eastern corner.

Fluvial Flooding

- 3.11 Flooding from watercourses occurs when flows exceed the capacity of the channel, or where a restrictive structure is encountered, which leads to water overtopping the banks into the floodplain.
- 3.12 The site is located within Flood Zone 1 as shown on **Figure 3.2**. This is the area shown to be at low risk of river flooding with a less than 0.1% AEP of flooding occurring.



(Source: OpenStreetMaps/EA)

Figure 3.2 Environmental Agency Flood Map for Planning

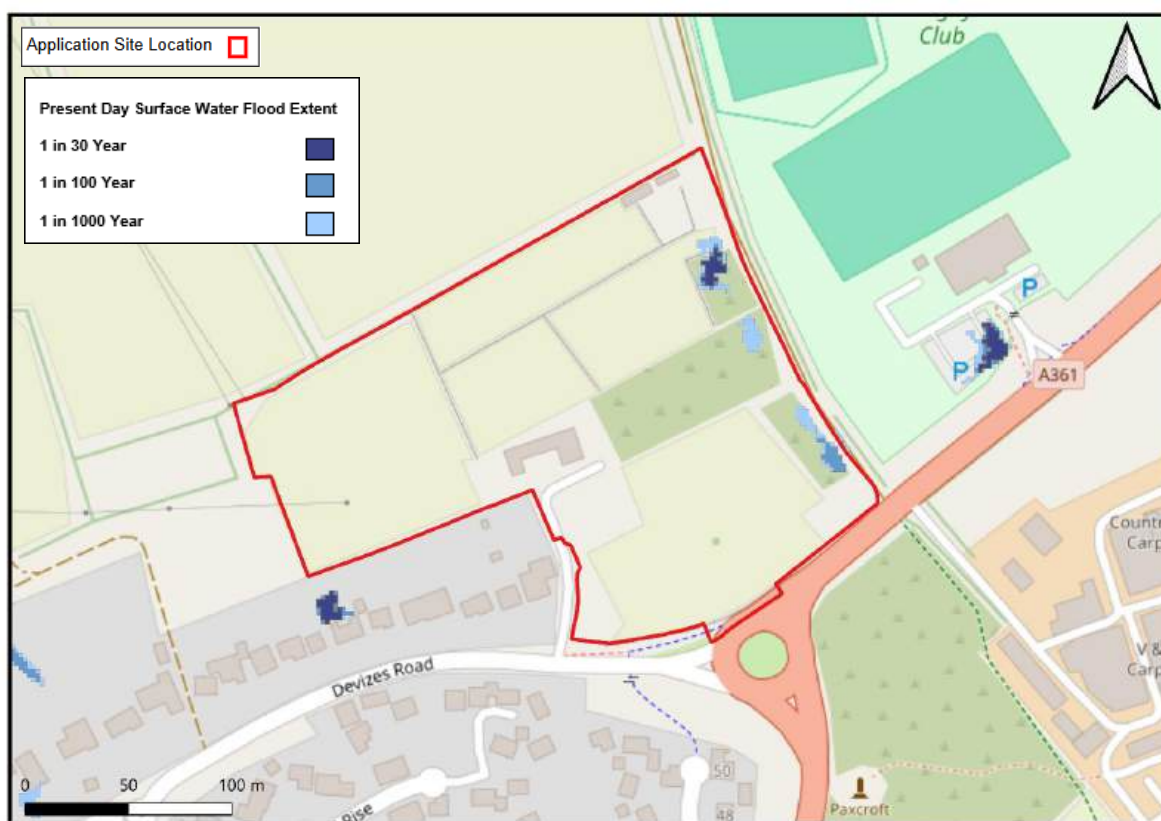
3.13 Fluvial flood risk for the proposed development is considered to be low.

Pluvial Flooding

3.14 Pluvial flooding can occur during prolonged or intense storm events when the infiltration potential of soils, or the capacity of drainage infrastructure is overwhelmed leading to the accumulation of surface water and the generation of overland flow routes.

3.15 Risk of flooding from surface water mapping has been prepared⁸, this shows the potential flooding which could occur when rainwater does not drain away through the normal drainage systems or soak into the ground but lies on or flows over the ground instead.

3.16 The Present Day Surface Water (Pluvial) Flood Extent map provided by the Environment Agency (**Figure 3.3**) indicates that the majority of the site is at very low risk of pluvial flooding. There are isolated small areas of low to high risk flooding projected along the eastern site boundary, aligned with topographical low points within the site. These are isolated depressions that are not connected to any wider flow routes. No flooding is indicated at the access point to the site.

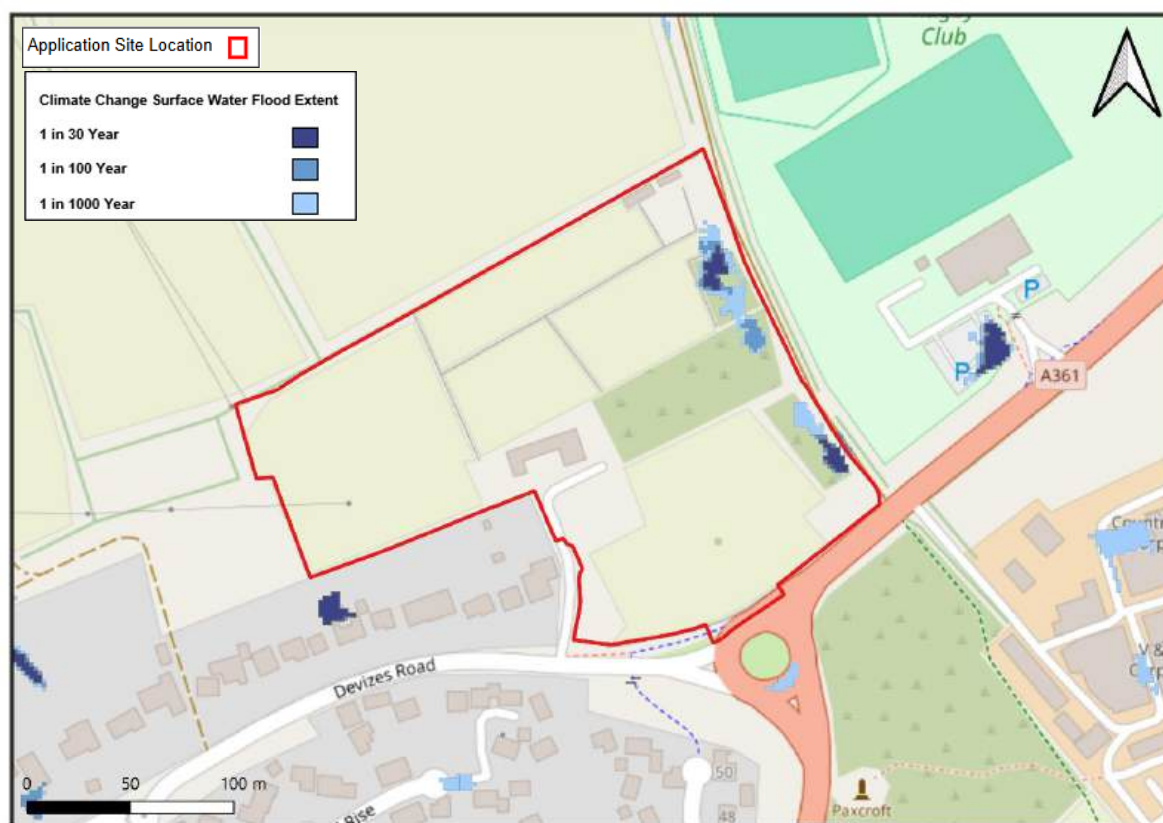


(Source: OpenStreetMap/EA)

Figure 3.3 Environmental Agency Present Day Surface Water Flood Extent

⁸ <https://flood-warning-information.service.gov.uk/long-term-flood-risk/map>

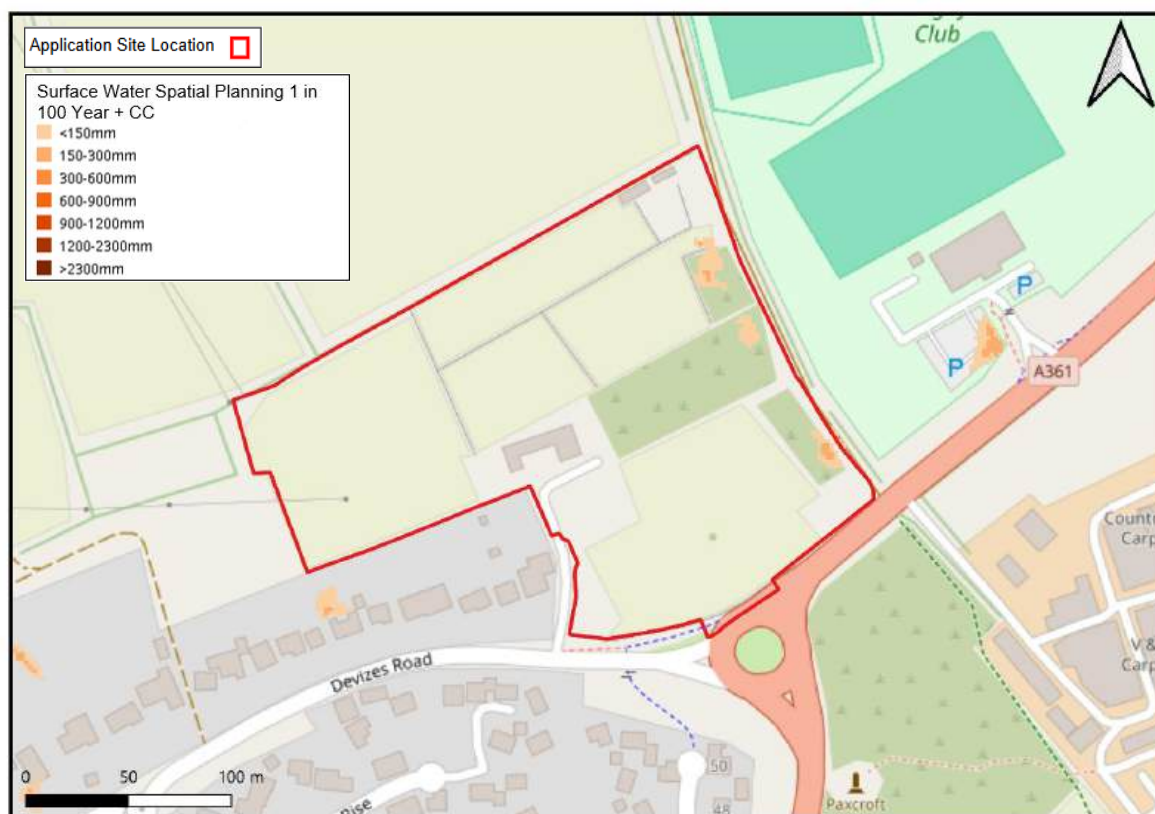
3.17 When Climate Change allowances are applied the isolated small areas of low to high risk flooding projected along the eastern site boundary are shown to marginally increase in extent. There are no new areas of surface water flood risk observed under the climate change allowances. This can be seen in **Figure 3.4**.



(Source: OpenStreetMaps/EA)

Figure 3.4 Environmental Agency Climate Change Surface Water Flood Extent

3.18 In the design event (1 in 100 yr + CC) the maximum depth of surface water flood risk on site is shown to be 150mm to 300mm which is deemed shallow and not a risk as such. These depths are associated with small, isolated areas of risk along the eastern site boundary. These are isolated depressions that are not connected to any wider flow routes. This is shown in **Figure 3.5**.



(Source: OpenStreetMaps/EA)

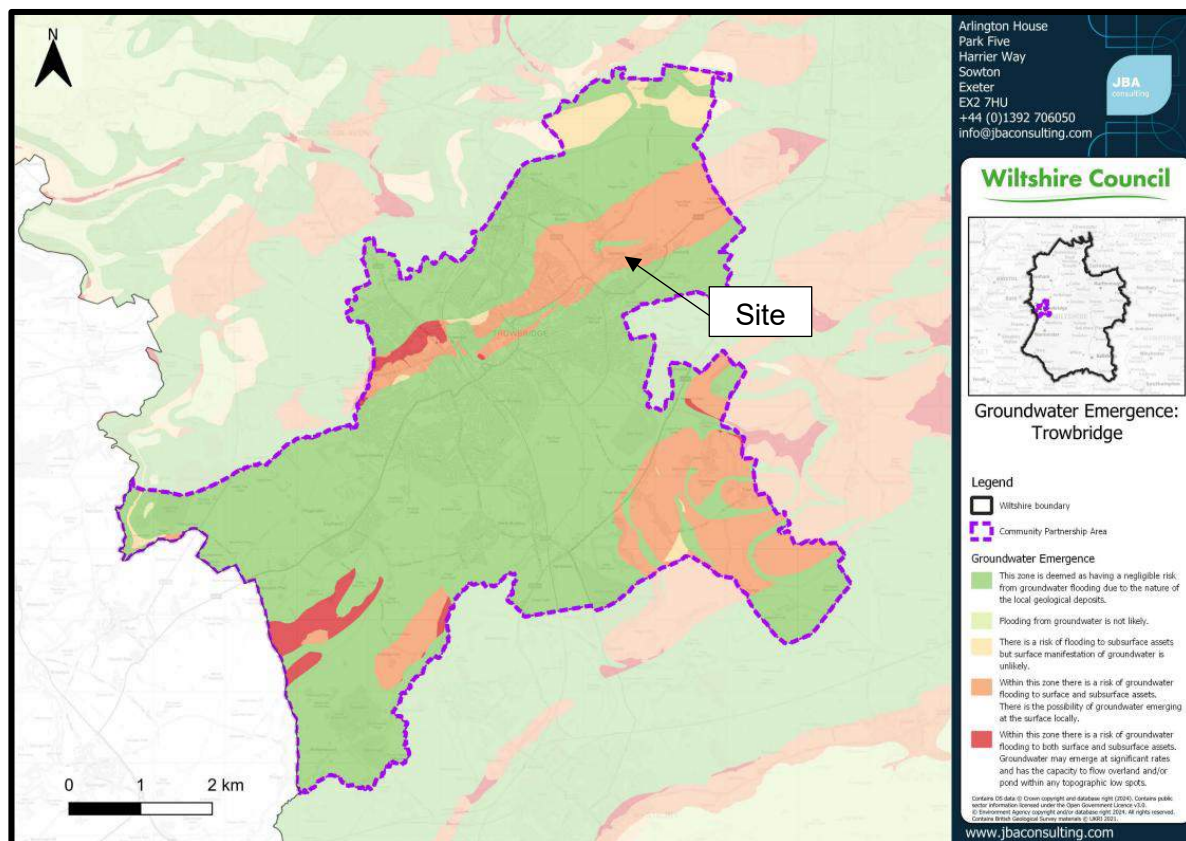
Figure 3.5 Environmental Agency Climate Change Surface Water Flood Depths

- 3.19 Hilpert is not included in the areas listed at risk from surface water flooding in the SFRA.
- 3.20 The pluvial maps do not fully represent any underground drainage systems and therefore any flooding entering the site from existing roads is likely to be intercepted by road gullies and discharged into the local drainage network.
- 3.21 Pluvial flood risk for the proposed development is considered to be low.

Groundwater Flooding

- 3.22 Groundwater flooding occurs when the water table rises above ground elevations. It is most likely to happen in low lying areas underlain by permeable geology. This may be regional scale chalk or sandstone aquifers, or localised deposits of sands and gravels underlain by less permeable strata such as that in a river valley.
- 3.23 As aforementioned geological data held by BGS shows that the bedrock geology underlying the site is Cornbrash Formation – Limestone. No superficial deposits are recorded. The bedrock geology of the site has levels of permeability and porosity that makes the risk of groundwater emergence a possibility.
- 3.24 Groundwater ingress was encountered in the majority of soakaway trial pits, during testing undertaken in December 2025, which ranged from 0.9 to 1.5 mbgl (refer to **Appendix C**).

- 3.25 The SFRA identifies the site to be in an area where groundwater flooding is a risk to both surface and subsurface assets and there is a possibility of groundwater emerging at the surface locally. This can be seen in **Figure 3.6**.



(Source: OpenStreetMaps/SFRA)

Figure 3.6 Groundwater Emergence Risk Mapping – Trowbridge Study Area

- 3.26 Although site investigations have evidenced an inconsistent range in groundwater depth emergence across site, the pits were excavated at a time when groundwater tends to be at the highest point following a typically seasonally wet period, the SFRA does not mention any historic site specific groundwater flood incidents, and therefore it is sensible to assume that for any worst-case scenario where groundwater may emerge, it will be close to surface level and a consideration for construction but not deemed a 'risk' as such through planning.
- 3.27 The risk of flooding from groundwater at this stage is considered to be low.
- 3.28 Further groundwater monitoring will be undertaken within the deep monitoring wells installed on-site.

Sewer Flooding

- 3.29 Sewer flooding can occur when the capacity of the infrastructure is exceeded by excessive flows, or as a result of a reduction in capacity due to collapse or blockage, or if the downstream system becomes surcharged. This can lead to the sewers flooding onto the surrounding ground via manholes and gullies, which can generate overland flows.

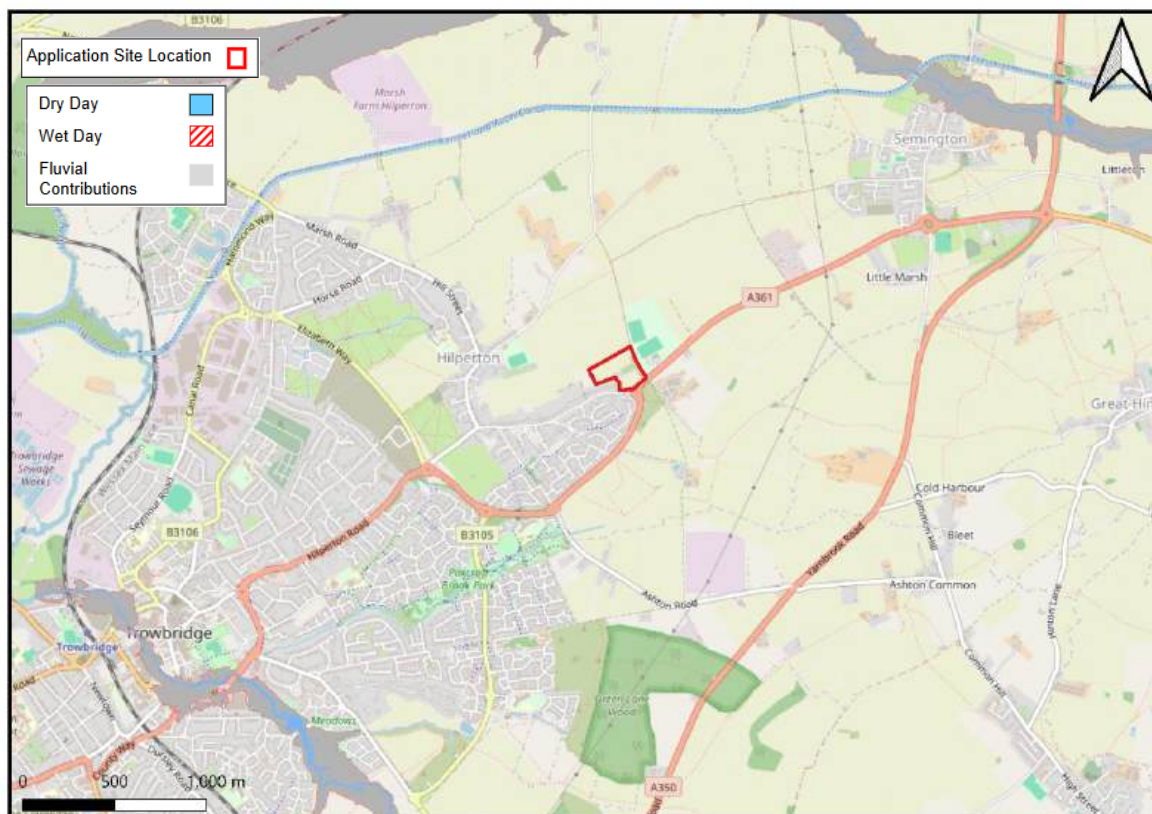
- 3.30 Wessex Water asset plans show that there is a 150mm diameter public foul sewer within Devizes Road directly south of the site. Public Foul and Surface water sewers are also found in Hilperton Drive 85m south of the site with these directing flows south away from site. Wessex Water sewer records are contained in **Appendix C**.
- 3.31 The SFRA mentions no incidents of sewer flooding in the vicinity of the site.
- 3.32 The risk of sewer flooding to the site is therefore considered to be low.

Flooding from Artificial Sources

Reservoirs

- 3.33 Flooding can occur from large waterbodies or reservoirs if they are impounded above the surrounding ground levels or are used to retain water in times of flood. Although unlikely, reservoirs and large waterbodies could overtop or breach leading to rapid inundation of the downstream floodplain.
- 3.34 To help identify this risk, reservoir failure flood risk mapping has been prepared⁹, this shows the largest area that might be flooded if a reservoir were to fail and release the water it holds. The map displays a worst case scenario and is only intended as a guide. **Figure 3.7** displays the reservoir flood risk to the site. This identifies the site isn't at risk from this source.

⁹ <https://flood-warning-information.service.gov.uk/long-term-flood-risk/map>



(Source: OpenStreetMaps/EA)

Figure 3.7 Reservoir Flooding

3.35 The development is considered to be at negligible risk of flooding from reservoirs.

Canals

3.36 The site is located approximately 1.3km south of the Kennet and Avon Canal however poses no risk to the site.

3.37 The development is considered to be at low risk of flooding from canals.

4 NPPF Requirements

Sequential Test

- 4.1 The Sequential Test is a simple decision-making tool designed to ensure that areas at little or no risk of flooding are developed in preference to areas at higher risk. Local Planning Authorities (LPAs) should make the most appropriate use of land to minimise flood risk, substituting land uses so that the most vulnerable development is in the lowest risk areas.
- 4.2 Details on requirements for the application of a Sequential Test are included as part of the Planning Practice Guidance (PPG) that supports the NPPF.
- 4.3 A Sequential Test is required for the development proposal if both of the following apply:
 - a) The development is in Flood Zone 2 or 3
 - b) A Sequential Test hasn't already been carried out for a development of the type proposed
- 4.4 The Sequential Test also requires demonstration of the 'reasonable availability' of sites and those sites in areas with a lower probability of flooding 'would be appropriate to the type of development or land use proposed', which would clearly include the suitability of land with a lower flood risk in terms of planning balance as well as availability.
- 4.5 A Sequential Test is not required if one has already been undertaken for a development of the type proposed including for sites allocated for development in the LPAs Local Plan.
- 4.6 A Sequential Test is also not required if either of the following apply:
 - a) The proposal is a minor development
 - b) The development includes a change of use unless the development is a caravan, camping chalet, mobile home or park home site
 - c) The development site is in Flood Zone 1, unless there are flooding issues in the area of the proposal as identified within the relevant LPAs SFRA
- 4.7 Following the update to the PPG (17/09/25), a Sequential Test is also not required "where a site-specific flood risk assessment demonstrates clearly that the proposed layout, design and mitigation measures would ensure occupiers and users remain safe from current and future surface water flood risk for the lifetime of the development, without increasing the risk elsewhere."
- 4.8 Based on the EA Flood Map for Planning, the entirety of the site is located in Flood Zone 1, and the assessment of flood risk identifies the site to be at low risk from all sources of flooding. The Drainage Strategy details included in Section 5 will detail how development drainage will be managed to ensure flood risk is not increased elsewhere. It should also be noted that a sequential approach to the proposed development has been taken, as per paragraph 175 of the NPPF.

Exception Test

- 4.9 The proposed development is considered to be 'More Vulnerable' in terms of its land use type flood risk vulnerability as shown in Annex 3 of the PPG¹⁰.
- 4.10 **Table 4.1** shows the matrix indicating the flood risk vulnerability types of development that are acceptable in different flood zones based upon the Flood Map for Planning and where an Exception Test is not required as shown in Table 2 of the PPG¹¹. The tick marks in the table show where the principle of a development proposal is acceptable. The cross marks indicate where development would not be permitted.

Flood Zones/ Vulnerability	Essential Infrastructure	Highly Vulnerable	More Vulnerable	Less Vulnerable	Water Compatible
Flood Zone 1	✓	✓	✓	✓	✓
Flood Zone 2	✓	Exception Test Required	✓	✓	✓
Flood Zone 3a~	Exception Test Required~	✗	Exception Test required	✓	✓
Flood Zone 3b*	Exception Test Required*	✗	✗	✗	✓*

(Flood Risk Table 2)

Table 4.1 Flood Risk Vulnerability and Flood Zone Compatibility

“~” In Flood Zone 3a essential infrastructure should be designed and constructed to remain operational and safe in times of flood.

“*” In Flood Zone 3b (functional floodplain) essential infrastructure that has passed the Exception Test, and water-compatible uses, should be designed and constructed to:

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

- 4.11 The Exception Test is a method to demonstrate and help ensure that flood risk to people and property will be managed satisfactorily, while allowing necessary development to go ahead in the situations where suitable sites at lower risk of flooding are not available.
- 4.12 The Exception Test requires two additional elements to be satisfied (as set out in paragraph 178 of the National Planning Policy Framework) before allowing development to be allocated or permitted in situations where suitable sites at lower risk of flooding are not available following application of the Sequential Test.
- 4.13 There are two parts to the Exception Test. It should be demonstrated that:
- development that has to be in a flood risk area will provide wider sustainability benefits to the community that outweigh flood risk; and

¹⁰ <https://www.gov.uk/guidance/national-planning-policy-framework/annex-3-flood-risk-vulnerability-classification>

¹¹ <https://www.gov.uk/guidance/flood-risk-and-coastal-change#para77>



- b) the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

- 4.14 The development proposals are classed as 'More Vulnerable' within Flood Zone 1 and therefore an exception test is not required.
- 4.15 All proposed residential dwellings are to be located within the Flood Zone 1 areas of the site. This is the area in which all forms of development are considered acceptable.
- 4.16 It is recommended that Finished Floor Levels (FFLs) are set at minimum 300mm above the finished external ground level to provide a design for exceedance approach and ensure appropriate mitigation measures are taken in the area of development.

Access & Egress

- 4.17 Safe pedestrian access/egress to the site is available south on Devizes Road and east on an unnamed lane, both of which are located in Flood Zone 1 and identified to be at low risk of surface water flooding.

5 Proposed Drainage Strategy

Introduction

- 5.1 Consideration of flood issues is not confined to the floodplain. This is recognised in the NPPF and associated guidance. The alteration of natural surface water flow patterns through developments can lead to problems elsewhere in a catchment, particularly flooding downstream; and replacing permeable vegetated areas with low permeability roofs, roads and other paved areas will increase the speed, volume and peak flow of surface water runoff.
- 5.2 A surface water management strategy for the development is proposed to manage and reduce the flood risk posed by surface water runoff from the site. The surface water drainage arrangements for any development site should be such that the volume and peak flow rates of surface water leaving a developed site are no greater than the rates prior to the proposed development unless specific off-site arrangements are made and result in the same net effect.
- 5.3 An assessment of the surface water runoff rates was undertaken to determine the surface water options and attenuation requirements for the site and is discussed below.

Existing Drainage

- 5.4 The majority of the site is greenfield and considered to drain informally via natural infiltration. The area in the northwest of the site where the existing dwelling is situated is considered brownfield and positively drained.
- 5.5 The existing greenfield runoff rates have been calculated using the HR Wallingford UK SuDS greenfield runoff rate estimation tool using the Flood Estimation Handbook Statistical method. The resulting calculations are included within **Appendix E**. The runoff rates were calculated as follows in **Table 5.1**:

Return Period (Yrs)	Runoff Rate (l/s/ha)	Runoff Rate with 30% Betterment (l/s/ha)
1	2.4	1.68
30	5.9	4.13
100	7.4	5.18
QBAR	3.0	2.10

Table 5.1 Greenfield Runoff Rates

Surface Water Management

- 5.6 Sustainable drainage system measures (SuDS) should be used to control the surface water runoff from the proposed development site, thereby managing the flood risk to the site and surrounding areas from surface water runoff. These measures will also improve the quality of water discharged from the site.



- 5.7 Based on the latest National Standards for SuDS guidance¹², the SuDS hierarchy demands that surface water run off should be disposed of as high up the following list as practically possible:
- a) Collected for non-potable use
 - b) Into the ground (infiltration) and re-use, or then;
 - c) To a surface water body, or then;
 - d) To a surface water sewer, highway drain or another drainage system, or then;
 - e) To a combined sewer.
- 5.8 The National Standards for SuDS guidance requires that the development applies a 'SuDS approach' so that at least the first 5mm of rainfall for the majority of rainfall events does not result in runoff from the site to surface waters or piped drainage systems.

Water Reuse

- 5.9 The proposed development provides an opportunity to reuse surface water throughout the provision of rainwater harvesting products, that could be considered further at the detailed design stage.
- 5.10 Rainwater butts should be provided at suitable locations where feasible, to reduce the volume of water entering the underground drainage system and the demand on the water supply network.
- 5.11 Harvested rainwater may be used for garden watering and other applications where a pressurised hose connection is not required. Stored rainwater also provides a source of clean water when hosepipe bans are in effect.

Infiltration Testing

- 5.12 The British Geological Survey (BGS) indicates the bedrock geology underlying the site is of Cornbrash Formation (slightly clayey gravel) over the Forest Marble Formation (stiff clay).
- 5.13 Soakaway testing was undertaken in accordance with BRE 365 in December 2025, which demonstrated that infiltration was not possible. No infiltration rates were observed within any of the test pits (**Appendix C**).
- 5.14 Additionally, groundwater was encountered in most of the soakaway trial pits. Further groundwater monitoring will be undertaken within the deep monitoring wells installed on-site.
- 5.15 Trial Pits TP03A and TP03B (refer to **Appendix C** for location) were situated on the eastern part of the site where potential SuDS features could be located. Groundwater was found at 0.9mbgl and 1.4mbgl respectively. Due to this it would not be viable to utilise infiltration since any infiltration medium would require a minimum of 1m clearance between its base and groundwater levels.

¹²<https://www.gov.uk/government/publications/national-standards-for-sustainable-drainage-systems/national-standards-for-sustainable-drainage-systems-suds>



- 5.16 Therefore from the above points, and the summary provided in **Appendix C**, infiltration cannot be utilised as a means of discharge for the site, and an alternative drainage strategy has been proposed.

Proposed Drainage

- 5.17 The introduction of hardstanding associated with the proposed development will result in an impermeable area, which will increase the amount of runoff generated and could increase flood risk elsewhere unless managed to Wiltshire County Council drainage requirements.
- 5.18 As infiltration is deemed unsuitable, the proposed drainage strategy will seek to connect to a surface water body, or surface water sewer in the vicinity of the site.
- 5.19 Since there are no nearby watercourses to the site, connection will be sought from a nearby Wessex Water asset in Hilperton Drive (A361) to the south of the site.
- 5.20 It is proposed to introduce a new gravity stormwater sewer with attenuation and a controlled discharge up to the 1 in 100-year event plus 45% climate change allowance, which will reduce risk of flooding downstream.
- 5.21 The overall site area has been calculated as approximately 4.012ha. There is, however, a large portion of the site that is dedicated open space. As such, this area has been excluded from the 'development' area of approximately 2.954ha.
- 5.22 At the current stage, the development area is assumed to be 60% impermeable, providing a total impermeable area of 1.772ha.
- 5.23 New dwellings and hard landscaped areas are to be drained via a gravity stormwater drainage system and conveyed towards the east and south of the site, before connecting to the existing surface water sewer in Hilperton Drive (A361). Prior to connecting to the existing sewer, a flow control chamber will be utilised discharging at the calculated limiting rates of discharge.
- 5.24 Wessex Water have confirmed the proposal for discharge of surface water to their existing asset within Hilperton Drive (A361) is acceptable (**Appendix D**), noting the discharge rate must not exceed the 1 in 30-year rate. Additionally, an infiltration summary, and the lack of surface water body present on or near the site, has been provided to Wessex Water following their request for evidence that demonstrates all higher priority final destinations have been utilised to the maximum extent practicable.
- 5.25 The overall discharge rate from the site will be restricted via a complex flow control, with discharge rates limited to the 1-year rate and 30-year rate with 30% betterment for all return periods at 1.68l/s/ha and 4.13l/s/ha respectively. Therefore using an impermeable area of 1.772ha, the development will be required to discharge at 2.98l/s for events up to the 30-year event, and 7.32l/s for events over the 30-year event.
- 5.26 To demonstrate that the necessary storage volume can be accommodated for the 1 in 100-year event plus 45% climate change allowance, Microdrainage Source Control calculations have been provided in **Appendix F**. This provides a requirement of approximately 1,060m³/ha. Therefore using an impermeable area of 1.772ha, the attenuation required would be approximately 1,880m³.



- 5.27 The proposed strategy will utilise a combination of attenuation basins and below ground crate attenuation.
- 5.28 Flow controls will be required between attenuation features to fully utilise the provided attenuation.
- 5.29 An illustrative drainage layout has been prepared and has been included in **Appendix G**.
- 5.30 A combination of proposed detention basins, permeable paving, and rain gardens will be utilised to meet the everyday rainfall requirements of the National Standards for SuDS.
- 5.31 The final layout and design of the surface water drainage network will be determined at the detailed design stage as the development masterplan evolves.

Exceedance Events

- 5.32 The proposed attenuation features will be designed with a capacity up to a 1 in 100-year (plus 45% climate change) event, with a minimum freeboard allowance of 300mm, and the final limiting discharge rate based on the complex flow control restricted discharge rate. This provides a betterment (reduction) in runoff when compared to existing undeveloped conditions.
- 5.33 A storm event in excess of this design standard would be extreme and would cause the attenuation basins to overtop (with no sudden deluge) and would then shed overland following the topography of the site, as per existing conditions.
- 5.34 Finished floor levels of new dwellings will be set above external levels, which will mitigate the residual risk of overtopping.

Water Quality

- 5.35 The SuDS Manual (CIRIA C753) states that the design of surface water drainage should consider minimising contaminants in surface water runoff discharged from the site. The level of treatment required depends on the proposed land use, according to the pollution hazard indices. For this site contaminant risks come from the residential roofing and parking.
- 5.36 To ensure that adequate treatment is provided the SuDS mitigation indices for the development must be equal to, or exceed, the pollution hazard indices. Surface water runoff from residential roofs is considered to present a **very low** hazard to water quality, whilst general residential parking presents a **low** hazard.
- 5.37 To ensure a suitable mitigation index is achieved the affected stormwater system has been assessed. **Table 5.2** indicates satisfactory water quality is achieved.
- 5.38 It is also recommended, as good practice, that gullies and chambers have suitable silt traps/catchpits to reduce sediments entering the system.
- 5.39 Additionally, for further water quality benefits, the attenuation crates could be designed to allow infiltration to a lined 300mm bed of gravel before draining to the flow control device via perforated pipes.

		Pollution Hazard Level	Total suspended solids	Metals	Hydro-carbons
Land Use	Residential Parking	Low	0.5	0.4	0.4
Total			0.5	0.4	0.4
SuDS Component	Detention Basin		0.5	0.5	0.6
Total			0.5	0.5	0.6
Total SuDS Mitigation Indices $\geq$ Pollution Hazard Indices			Yes	Yes	Yes

(As per C753 The SuDS Manual)

Table 5.2 Water Quality Indices

Water Reuse

- 5.40 The proposed development provides an opportunity to reuse surface water throughout the provision of rainwater harvesting products.
- 5.41 Rainwater butts should be provided at suitable locations where feasible, to reduce the volume of water entering the underground drainage system and the demand on the water supply network.
- 5.42 Harvested rainwater may be used for garden watering and other applications where a pressurised hose connection is not required. Stored rainwater also provides a source of clean water when hosepipe bans are in effect.

Foul Water Management

- 5.43 All foul sewerage should be designed in accordance with Building Regulations Part H. In areas where sewers are to be adopted by Wessex Water, sewerage should be designed in accordance with Sewerage Sector Guidance Appendix C (Design and Construction Guidance) and supplemented with additional standards provided by Wessex Water. An application to enter into an agreement for sewer adoption must be made in writing to Wessex Water prior to any works commencing on site. A connection point should be agreed with Wessex Water.
- 5.44 Foul water from the proposed buildings shall be collected through a traditional gravity drainage system and directed to the south of the site before discharging to the existing Wessex Water asset within Hilperton Drive (A361). Wessex Water have confirmed that the proposed connection is acceptable (**Appendix D**).

Maintenance Regime

- 5.45 Maintenance of SuDS features are essential to ensure that the surface water drainage system operates effectively and that flooding of the site and surrounding areas is prevented.
- 5.46 The responsibility of maintaining the private surface water and foul water drainage components would lie with the landowner of the site, who may delegate responsibility to an appointed external private management company.

5.47 A full maintenance regime should be carried out to ensure that the drainage system remains operational over its lifetime. **Table 5.3** summarises an initial maintenance plan for the drainage components proposed within the development. The SuDS Manual (CIRIA C753) and manufacturer's guidelines should be referred to for further maintenance information.

Drainage Component	Required Action	Typical Frequency
Pipework, manholes, flow control chambers, catch pits and silt traps	Stabilise adjacent areas	As required
	Remove weeds	As required
	Clear any poor performing structures.	As required
	Inspect all structures for poor operation	Three monthly, 48 hours after large storms in first six months
	Monitor inspection chambers. Inspect silt accumulation rates and determine silt clearance frequencies	Annually
Attenuation Tank	Inspect and identify any areas that are not operating correctly. If required, take remedial action	Monthly for 3 months, then annually.
	Remove debris from the catchment surface (where it may cause risks to performance)	Monthly
	Inspect inlets, outlets, banksides, structures, Repair/rehabilitate inlets, outlet, overflows and vents	As Required
	Remove sediment from pre-treatment structures and/or internal forebays. and overflows to ensure that they are in good condition and operating as designed.	Annually
	Inspect inlets, outlets, banksides, structures, Repair/rehabilitate inlets, outlet, overflows and vents	
	Survey inside of tank for sediment build-up and remove if necessary	Every 5 years or as required.
Detention Basin	Remove litter and debris	Monthly
	Cut grass – for spillways and access routes	Monthly (during growing season), or as required
	Cut grass – meadow grass in and around basin	Half yearly (spring – before nesting season, and autumn)
	Manage other vegetation and remove nuisance plants	Monthly (at start, the as required)
	Inspect inlets, outlets and overflows for blockages, and clear if required	Monthly
	Inspect banksides, structures, pipework etc. for evidence of physical damage	Monthly
	Inspect inlets and facility surface for silt accumulation. Establish appropriate silt removal frequencies	Monthly (for the first year), then annually or as required
	Check an penstocks and other mechanical devices	Annually
	Tidy all dead growth before start of growing season	Annually



	Remove sediment from inlets, outlet and forebay	Annually (or as required)
	Manage wetland plants in outlet pool – where provided	Annually (as set out in Chapter 23 of Ciria SuDS Guidance)
	Reseed areas of poor vegetation growth	As required
	Prune and trim any trees and remove cuttings	Every 2 years, or as required
	Remove sediment from inlets, outlets, forebay and main basin when required	Every 5 years, or as required (likely to be minimal requirements where effective upstream source control is provided)
	Repair erosion or other damage by reseeding or re-turfing	As required
	Realignment of rip-rap	As required
	Repair/rehabilitation of inlets, outlets and overflows	As required
	Relevel uneven surfaces and reinstate design levels	As required
Bioretention Systems (i.e. Rain Gardens)	Inspect infiltration surfaces for silting and ponding, record de-watering time of the facility and assess standing water levels in underdrain (if appropriate) to determine if maintenance is necessary	Quarterly
	Check operation of underdrains by inspection of flows after rain	Annually
	Assess plants for disease infection, poor growth, invasive species etc. and replace as necessary	Quarterly
	Inspect inlets and outlets for blockage	Quarterly
	Remove litter and surface debris and weeds	Quarterly (or more frequently for tidiness or aesthetic reasons)
	Replace any plants, to maintain planting density	As required
	Remove sediment, litter and debris build-up from around inlets or from forebays	Quarterly to biannually
	Infill any holes or scour in the filter medium, improve erosion protection if required	As required
	Repair minor accumulations of silt by raking away surface mulch, scarifying surface of medium and replacing mulch	As required
	Remove and replace filter medium and vegetation above	As required but likely to be >20 years

(As per C753 The SuDS Manual)

Table 5.3 Initial Operation and Maintenance Plan

6 Summary and Conclusions

- 6.1 This assessment has considered the risks of all types of flooding to the Site including tidal, fluvial, surface, groundwater, sewer and artificial sources and provides mitigation measures to ensure that the flood risk to the Site is minimised and that flood risk off-site is not increased.
- 6.2 This assessment has confirmed that the Site is shown to be at low risk from fluvial flooding and located within Flood Zone 1 as shown on the Environment Agency Flood Map for Planning, and at low risk from all other sources of flooding. EA mapping does indicate minor, shallow pockets of up to 150mm to 300mm of surface water flooding within the Site boundary, however this is associated with topographical depressions and outside of the Proposed Development areas. The principle of all forms of Proposed Development in Flood Zone 1 locations is considered acceptable.
- 6.3 Application of the Sequential Test is not considered to be required as the proposal is located within Flood Zone 1 and considered to be at low risk from all sources of flooding.
- 6.4 Given the Flood Zone 1 location, the Exception Test does not need to be applied.
- 6.5 Safe pedestrian access/egress to the site is available south on Devizes Road and east on an unnamed lane, both of which are located in Flood Zone 1 and identified to be at low risk of surface water flooding.
- 6.6 In compliance with the requirements of the National Planning Policy Framework, and subject to the mitigation measures proposed, the development will not cause or be subject to significant flood risk issues.
- 6.7 The proposed development discharges via a complex flow control with discharge rates limited to the 1-year and 30-year event rates with a 30% betterment on existing greenfield rates for all return periods at 1.68l/s/ha and 4.13l/s/ha respectively.
- 6.8 The required attenuation for the proposed development has been calculated as 1,060m³/ha.



Appendix A – Proposed Development Drawings





Appendix B – Topographical Survey



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KEY.

LEVEL INFORMATION.

NOTES.

[illegible]

Project	DEVIZES ROAD HILPERTON
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MIKE PRINGLE
DEVELOPMENT SERVICES



DRN BY MJP	SCALE 1/500	DRAWING NUMBER HILP-01	REV A
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Appendix C – Infiltration Testing

Mark Winter
Redcliffe Homes
Holly House
4 High Street
Chipping Sodbury
Bristol
BS37 6AH



Date: 29th January 2026
Our ref: S2067-4117_JA_MW_Issue 2

Dear Mark,

Re: Devizes Road, Hilperton, BA14 6JB – Infiltration Assessment

Following instruction by Redcliffe Homes, this report presents the results of a ground investigation undertaken at a parcel of land adjacent to Devizes Road, Hilperton (the site).

Site Location and Description

The site is irregular in shape measuring approximately 250m x 100m and occupying approximately 2.1Ha. The site comprises paddocks/grazing fields and is located within a mixed residential and agricultural area on the outskirts of Hilperton.

Geological Setting

From available British Geological Survey (BGS) records, the site is shown to be underlain by limestone of the Cornbrash Formation. This in turn overlies Mudstone of the Forest Marble Formation.

Project Background

Information presented to T&P indicates that the proposed development is intended to comprise the construction of 74No traditional dwellings with associated soft landscaping and hard landscaped access and parking. Infiltration basins are proposed in the south-east and north-east of the site.

A ground investigation report was previously completed for the south-eastern half of the site by Johnson Poole & Bloomer (JPB) in 2022. The JPB investigation encountered a thin layer of 'disturbed ground' in TP2, TP3, TP4, WS3 and WS4, which comprised of slightly gravelly slightly sandy clayey silt, containing ash and some fragments of brick.

Topsoil was found to cover much of the site, approximately 0.3m thick. Beneath the topsoil, the ground conditions varied geographically. In the northern area of the investigation, the topsoil was underlain by up to 1.6m of clay overlying a gravel layer, with expected bedrock at the base of the gravel. In the central and southern areas, the bedrock was absent and the gravel was underlain by a stiff clay with lithorelicts proven up to 3.70m depth.

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Preliminary infiltration testing indicated that soakaways may be feasible in the northern area of the site, which hadn't yet been investigated by JPB. However, further testing was recommended to confirm this.

Scope of Work

A ground investigation was carried out by T&P on 8th December 2025 within the northern half of the site, and comprised the following:

- Excavation of 6N° trial pits using a wheeled JCB 3CX backhoe excavator to a maximum depth of 2.00m below ground level (bgl).
- Infiltration testing within each trial pit in general accordance with BRE 365 guidance.
- Logging of holes by an experienced engineer in general accordance with BS5930.

An exploratory hole location plan is included within Appendix A with exploratory hole logs in Appendix C. A selection of photographs from the ground investigation are included within Appendix B.

Ground Conditions

The results of the ground investigation confirmed the published geology.

Topsoil

Topsoil, comprising slightly gravelly clay, was recorded in each location to an approximate depth of 0.30mbgl.

Cornbrash Formation

Underlying the topsoil in the central and western areas (TP01A – TP02B) a slightly clayey gravel was encountered to approximately 1mbgl, grading into a slightly gravelly clay. The base of the Cornbrash Formation was encountered at approximately 1.5mbgl at which point the Forest Marble Formation was encountered.

Forest Marble Formation

The Forest Marble Formation was encountered beneath the Cornbrash Formation in the central and western site areas, and directly beneath the topsoil in the eastern area (TP03A – TP03B). It initially comprised a firm to stiff sandy clay, which graded into strong light limestone. The base of this unit was not proven.

Infiltration Testing

Summary of Field Testing

Infiltration testing was undertaken within each trial pit, at either shallow depths to support permeable paving design, or greater depths to support traditional soakaway design. Graphical representations of the data are contained within Appendix D.

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Soil Infiltration Rate Calculations

The infiltration testing was carried out in general accordance with the methodologies detailed within BRE 365¹. Ideally, to fully comply with the BRE methodology, infiltration tests should be undertaken a minimum of three times. However, due to the lack of any infiltration achieved, it was not possible to complete the repeat testing.

A summary of the results of the infiltration tests and calculated infiltration rates is provided in Table 1.

Table 1: Summary of Infiltration Test Results

Exploratory Location	Pit Dimensions (m)	Total Measured water level drop (m)	Time Period (mins)	Calculated infiltration rate (m/s)
TP01A	1.5L x 0.3W x 2.00D	0.00	300	N/A
TP01B	0.7L x 0.3W x 0.85D	0.00	240	N/A
TP02A	1.5L x 0.3W x 2.00D	0.00	180	N/A
TP02B	1.2L x 0.3W x 1.40D	0.00	180	N/A
TP03A	1.5L x 0.3W x 1.70D	0.00	180	N/A
TP03B	1.2L x 0.3W x 1.50D	0.00	180	N/A

Discussion

The test results indicate the strata beneath the site have very poor infiltration characteristics which is reflective of the high cohesive content of the shallow soils and lack of significant fractures within the limestone bedrock. Furthermore, shallow groundwater was encountered (0.90 – 1.50mbgl), and water levels during testing were noted to rise in all locations except TP03B. In the absence of any infiltration over several hours, extrapolation of the data cannot be undertaken, though it is evident that 50% discharge would not be achieved over 24 hours and the tests are therefore considered to have failed.

Based upon the test results, site observations and presence of shallow groundwater, it is considered that traditional soakaways are unlikely to offer a viable solution for surface water discharge due to the lack of any infiltration achieved during the testing. Recourse to alternative options, such as utilising the existing drainage network, is recommended.

Further Work

In addition to the work detailed within this letter, deep monitoring wells were installed on-site to enable recording of groundwater levels over the winter period. An update to this report is planned for issue in Spring 2026 upon completion of the monitoring.

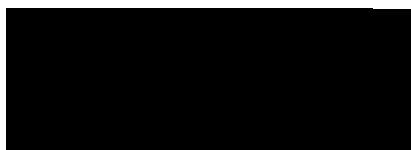
We trust these details are acceptable and sufficient for your purposes. However, if you have any queries or would like to discuss any of the details above then please feel free to contact us.

¹ Soakaway Design BRE Digest DG-365 (2016).

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Yours sincerely,



Jon Adams

For ***T&P Regeneration Ltd***

Appendix A – Drawings

Appendix B – Photographs

Appendix C – Exploratory hole logs

Appendix D – Infiltration results

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Appendix A - Drawings

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— Site Boundary

T&P Investigation

■ Trial Pit Locations
(TP01A, TP01B, TP02A, TP02B, TP03A, TP03B)



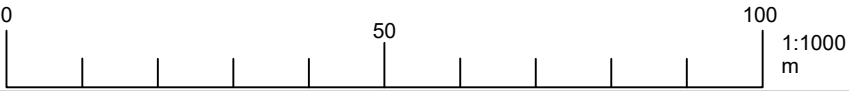
Base Map
Company: - Autodesk Licence
DWG Title: -
DWG Number: -
Date: -

Drawn	Checked	Amendment	Date	Rev.
Redcliffe Homes				Client
Ground Investigation				Project
Exploratory Hole Location Plan (Dec 25)				Title
Scale	Date	Drawn by	Check by	Rev.
1:1000@A3	09/12/25	DA	EC	-



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Bristol, BS14 0BN
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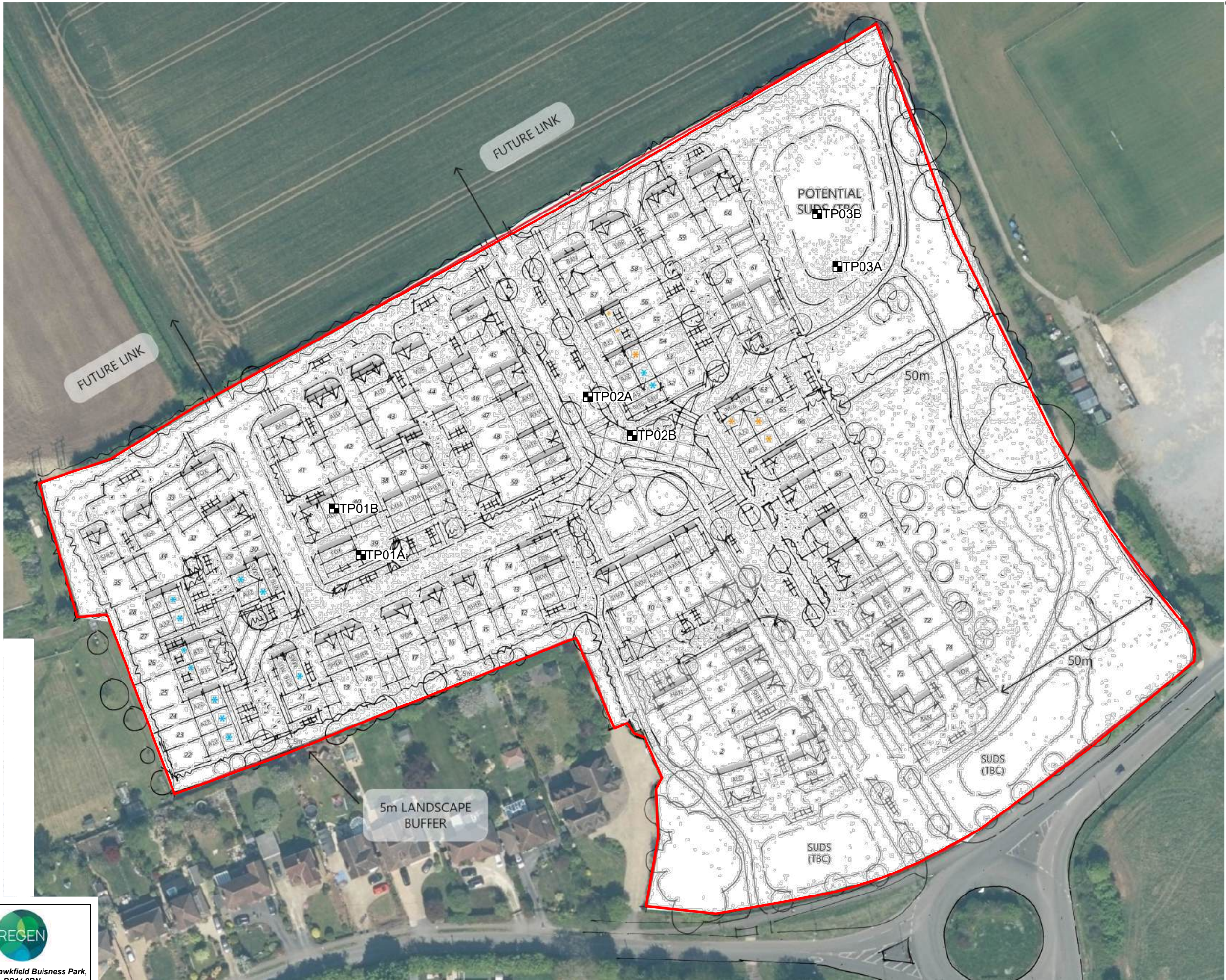
Scale	Date	Drawn by	Check by	Rev.	Drawing No.
1:1000@A3	09/12/25	DA	EC	-	P2067-4117-01-001



— Site Boundary

T&P Investigation

- Trial Pit Locations
(TP01A, TP01B, TP02A, TP02B, TP03A, TP03B)



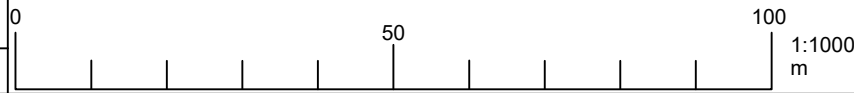
Base Map
Company: - Thrive Architects
DWG Title: - Sketch Layout - 01
DWG Number: - SKL - 01
Date: - 02/12/25

Drawn	Checked	Amendment	Date	Rev.
Redcliffe Homes				
Ground Investigation				
Exploratory Hole Location Plan (Development Plan/Dec 25)				
Scale	Date	Drawn by	Check by	Rev.
1:1000@A3	09/12/25	DA	EC	-



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Email: info@tp-regen.co.uk

Drawing No.
P2067-4117-01-004



Appendix B - Photographs

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PLATE 01 – TP01A Sidewalls.



PLATE 02 – TP01A Spoil.



PLATE 03 – TP01B Sidewalls.



PLATE 04 – TP01B Spoil.



PLATE 05 – TP02A Sidewalls.



PLATE 06 – TP02A Spoil.



PLATE 07 – TP02B Sidewalls.



PLATE 08 – TP02B Spoil.



PLATE 09 – TP03A Sidewalls.



PLATE 10 – TP03A Spoil.



PLATE 11 – TP03B Sidewalls.



PLATE 12 – TP03B Spoil.

Appendix C - Exploratory Hole Logs

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T&P REGEN www.tandpregeneration.co.uk	Contract Name: Devises Road, Hilperton			Client: Redcliffe Homes			Trial Pit ID: TP01A				
	Contract Number: S2067 / CS-4117		Date Started: 08/12/2025		Logged By: EC		Checked By: MC		Status: FINAL		
	Easting: 387977.04		Northing: 159315.71		Ground Level: 65.09mOD		Plant Used: JCB 3CX		Scale: 1:25		
Trial Pit Log			Weather: Dry			Termination: Engineer Instruction			Stability: Stable		
Samples & In Situ Testing			Strata Details						Water	Backfill	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description					
			64.79	0.30 (0.30)		Dark brown slightly gravelly CLAY with frequent rootlets. Gravel is angular to subangular fine to coarse of limestone.					
			64.29	0.80 (0.50)		Light brown slightly clayey GRAVEL. Gravel is angular to subangular fine to coarse of limestone. (CORNBRAsh FORMATION)					
			64.29	0.80 (0.80)		Firm light grey mottled orange slightly gravelly CLAY. Gravel is angular to subangular fine to coarse of limestone. (CORNBRAsh FORMATION)			1		
			63.49	1.60 (0.40)		Stiff dark grey CLAY. (FOREST MARBLE FORMATION)					
			63.09	2.00		End of Trial Pit at 2.00m			2		
									3		
									4		
									5		
Sample Key: B = Bulk Disturbed D = Small Disturbed U = Undisturbed Open-Drive W = Water G = Gas ES = Environmental Soil EW = Environmental Water											
Remarks: Groundwater seepage at 1.50mbgl.						Dimensions:					
						Length: 1.50m		Orientation: °			
						Width: 0.30m					
						Groundwater Details					
						Depth encountered (m)		Remarks			
						T&P Regeneration TP Template Issue Number: 1 Issue Date: June 2016					

T&P REGEN www.tandpregeneration.co.uk	Contract Name: Devises Road, Hilperton			Client: Redcliffe Homes			Trial Pit ID: TP01B				
	Contract Number: S2067 / CS-4117		Date Started: 08/12/2025		Logged By: EC		Checked By: MC		Status: FINAL		
	Easting: 387969.84		Northing: 159328.29		Ground Level: 65.26mOD		Plant Used: JCB 3CX		Scale: 1:25		
Trial Pit Log			Weather: Dry			Termination: Engineer Instruction			Stability: Stable		
Samples & In Situ Testing			Strata Details						Water	Backfill	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description					
			64.96	(0.30)		Dark brown slightly gravelly CLAY with frequent rootlets. Gravel is angular to subangular fine to coarse of limestone.					
				0.30		Light brown slightly clayey GRAVEL. Gravel is angular to subangular fine to coarse of limestone. (CORNBRAsh FORMATION)					
			64.46 64.41	(0.50)							
				0.80 0.85		Firm light grey mottled orange slightly gravelly CLAY. Gravel is angular to subangular fine to coarse of limestone. (CORNBRAsh FORMATION)					
						End of Trial Pit at 0.85m			1		
									2		
									3		
									4		
									5		
Sample Key: B = Bulk Disturbed D = Small Disturbed U = Undisturbed Open-Drive W = Water G = Gas ES = Environmental Soil EW = Environmental Water											
Remarks: Groundwater not encountered.						Dimensions:					
						Length: 0.70m		Orientation: °			
						Width: 0.30m					
						Groundwater Details					
Depth encountered (m)						Remarks					
T&P Regeneration TP Template Issue Number: 1 Issue Date: June 2016											

T&P REGEN www.tandpregeneration.co.uk	Contract Name: Devises Road, Hilperton			Client: Redcliffe Homes			Trial Pit ID: TP02A				
	Contract Number: S2067 / CS-4117		Date Started: 08/12/2025		Logged By: EC		Checked By: MC		Status: FINAL		
	Easting: 388038.57		Northing: 159358.53		Ground Level: 63.32mOD		Plant Used: JCB 3CX		Scale: 1:25		
Trial Pit Log			Weather: Dry			Termination: Engineer Instruction			Stability: Stable		
Samples & In Situ Testing			Strata Details						Water	Backfill	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description					
			63.02	(0.30) 0.30		Dark brown slightly gravelly CLAY with frequent rootlets. Gravel is angular to subangular fine to coarse of limestone.			1 ▼		
				(0.90)		Light brown slightly clayey GRAVEL. Gravel is angular to subangular fine to coarse of limestone. (CORNBRAsh FORMATION)					
			62.12	1.20		Firm light grey mottled orange slightly gravelly CLAY. Gravel is angular to subangular fine to coarse of limestone. (CORNBRAsh FORMATION)					
			61.87	1.45		Firm to stiff light grey CLAY (FOREST MARBLE FORMATION)					
			61.62	1.70		Stiff dark grey CLAY. (FOREST MARBLE FORMATION)					
				(0.30)							
			61.32	2.00		End of Trial Pit at 2.00m			2		
									3		
									4		
									5		
Sample Key: B = Bulk Disturbed D = Small Disturbed U = Undisturbed Open-Drive W = Water G = Gas ES = Environmental Soil EW = Environmental Water											
Remarks: Groundwater seepage at 1.20mbgl.						Dimensions:					
						Length: 1.50m		Orientation: ° ←			
						Width: 0.30m					
						Groundwater Details					
						Depth encountered (m)		Remarks			
1.20											
T&P Regeneration TP Template						Issue Number: 1		Issue Date: June 2016			

 www.tandpregeneration.co.uk	Contract Name: Devises Road, Hilperton			Client: Redcliffe Homes			Trial Pit ID: TP02B						
	Contract Number: S2067 / CS-4117		Date Started: 08/12/2025		Logged By: EC		Checked By: MC		Status: FINAL				
	Easting: 388050.55		Northing: 159348.06		Ground Level: 63.10mOD		Plant Used: JCB 3CX		Scale: 1:25				
Trial Pit Log				Weather: Dry				Termination: Engineer Instruction				Stability: Stable	
Samples & In Situ Testing				Strata Details								Water	Backfill
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description							
			62.80	(0.30)		Dark brown slightly gravelly CLAY with frequent rootlets. Gravel is angular to subangular fine to coarse of limestone.							
				0.30		Light brown slightly clayey GRAVEL. Gravel is angular to subangular fine to coarse of limestone. (CORNBRAsh FORMATION)							
				(1.10)					1	▼			
			61.70	1.40		End of Trial Pit at 1.40m							
									2				
									3				
									4				
									5				
Sample Key: B = Bulk Disturbed D = Small Disturbed U = Undisturbed Open-Drive W = Water G = Gas ES = Environmental Soil EW = Environmental Water													
Remarks: Groundwater encountered at 1.00mbgl.						Dimensions:							
						Length: 1.20m			Orientation: °				
						Width: 0.30m							
						Groundwater Details							
						Depth encountered (m)			Remarks				
1.00													
T&P Regeneration TP Template Issue Number: 1 Issue Date: June 2016													

T&P REGEN www.tandpregeneration.co.uk	Contract Name: Devises Road, Hilperton			Client: Redcliffe Homes			Trial Pit ID: TP03A				
	Contract Number: S2067 / CS-4117		Date Started: 08/12/2025		Logged By: EC		Checked By: MC		Status: FINAL		
	Easting: 388106.10		Northing: 159393.78		Ground Level: 61.58mOD		Plant Used: JCB 3CX		Scale: 1:25		
Trial Pit Log											
Weather: Dry				Termination: Refusal on limestone.				Stability: Stable			
Samples & In Situ Testing				Strata Details						Water	Backfill
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description					
			61.28	(0.30)		Dark brown slightly gravelly CLAY with frequent rootlets. Gravel is angular to subangular fine to coarse of limestone.					
				0.30		Firm dark brown sandy CLAY. (FOREST MARBLE FORMATION)					
			60.68	(0.60)		Firm to stiff dark brown CLAY. (FOREST MARBLE FORMATION)				1	
			60.08	1.50		Strong light grey LIMESTONE. Recovered as angular to subangular fine to coarse gravel. (FOREST MARBLE FORMATION)					
			59.88	1.70		End of Trial Pit at 1.70m					
										2	
										3	
										4	
										5	
Sample Key: B = Bulk Disturbed D = Small Disturbed U = Undisturbed Open-Drive W = Water G = Gas ES = Environmental Soil EW = Environmental Water											
Remarks: Groundwater seepage at 0.90mbgl.						Dimensions:					
						Length: 1.50m		Orientation: °			
						Width: 0.30m					
						Groundwater Details					
						Depth encountered (m)		Remarks			
0.90											
T&P Regeneration TP Template						Issue Number: 1		Issue Date: June 2016			

T&P REGEN www.tandpregeneration.co.uk	Contract Name: Devises Road, Hilperton			Client: Redcliffe Homes			Trial Pit ID: TP03B							
	Contract Number: S2067 / CS-4117		Date Started: 08/12/2025		Logged By: EC		Checked By: MC		Status: FINAL					
	Easting: 388100.63		Northing: 159408.05		Ground Level: 61.62mOD		Plant Used: JCB 3CX		Scale: 1:25					
Trial Pit Log			Weather: Dry			Termination: Refusal on limestone.			Stability: Stable					
Samples & In Situ Testing			Strata Details						Water	Backfill				
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description								
			61.32	(0.30)		Dark brown slightly gravelly CLAY with frequent rootlets. Gravel is angular to subangular fine to coarse of limestone.								
				0.30		Firm dark brown sandy CLAY. (FOREST MARBLE FORMATION)								
			60.82	(0.50)										
				0.80		Stiff dark brown CLAY. (FOREST MARBLE FORMATION)			1					
				(0.50)										
			60.32	1.30		Strong grey LIMESTONE. Recovered as angular to subangular fine to coarse gravel. (FOREST MARBLE FORMATION)								
			60.12	1.50		End of Trial Pit at 1.50m								
									2					
									3					
									4					
									5					
Sample Key: B = Bulk Disturbed D = Small Disturbed U = Undisturbed Open-Drive W = Water G = Gas ES = Environmental Soil EW = Environmental Water														
Remarks: Groundwater seepage at 1.40mbgl.						Dimensions: Length: 1.20m Width: 0.30m Orientation: °								
						Groundwater Details <table><tr><td>Depth encountered (m)</td><td>Remarks</td></tr><tr><td>1.40</td><td></td></tr></table>					Depth encountered (m)	Remarks	1.40	
Depth encountered (m)	Remarks													
1.40														
						T&P Regeneration TP Template Issue Number: 1 Issue Date: June 2016								

Appendix D - Infiltration Results

T&P Regeneration Ltd

Registered Office: Unit 5, Septimus, Hawkfield Business Park, Bristol, BS14 0BN | Registered No. 04464180
www.tandpregeneration.co.uk | Tel 0117 927 7756 | Email: info@tp-regen.co.uk



Infiltration Test Results in Accordance with BRE Digest 365:2016

Project Name: Devises Road, Hilperton

Project ID: 4117

Client: Redcliffe Homes

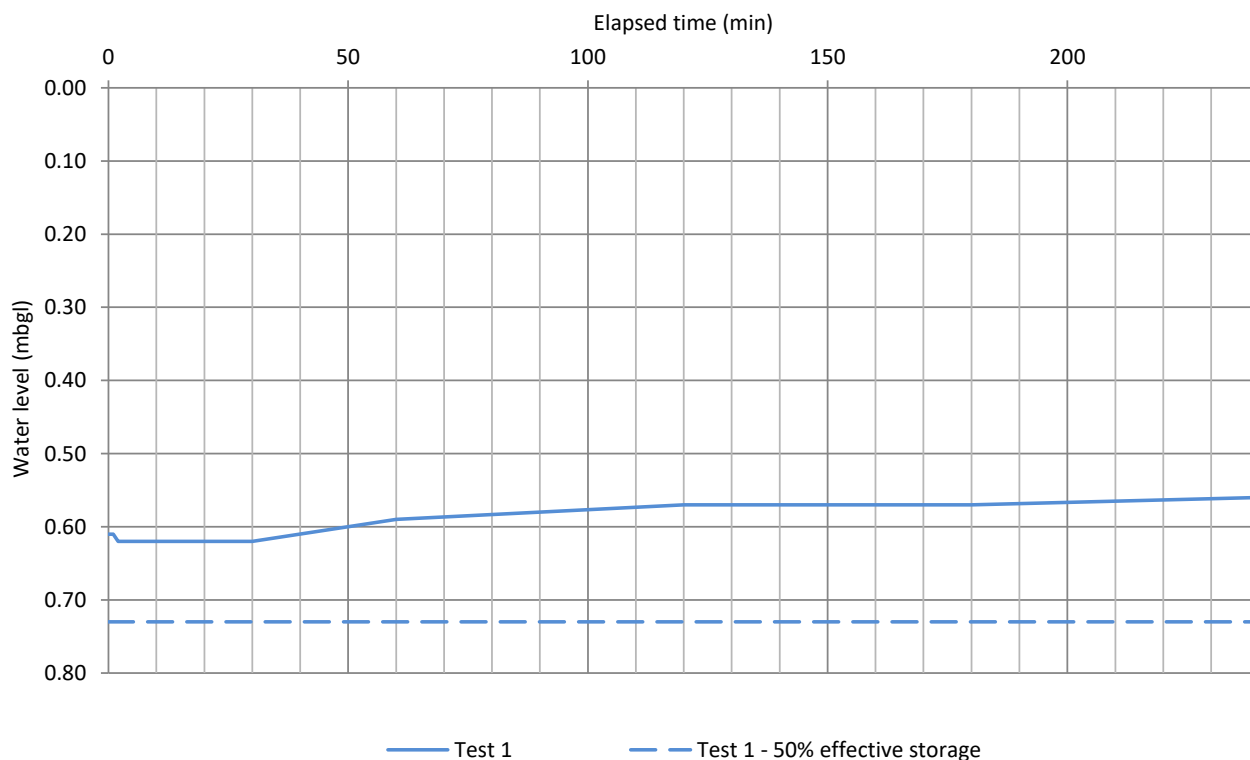
Hole ID: TP01B

Test Date: 08/12/2025

Logged: EC

Checked: JA

Test 1						Soakaway Dimensions: Test 1 - Depth (m)		Length (m)		0.70	
Time (mins)	Depth (m)							Width (m)		0.30	
0	0.61							Test 1 - Depth (m)		0.85	
1	0.61										
2	0.62							Test 1			
3	0.62					Depth to water at start of test (m)		0.61			
4	0.62					Depth to water at end of test (m)		0.62			
5	0.62					Total head drop (m)		0.00			
10	0.62					Depth to water at 75% level (m)		0.67			
20	0.62					Depth to water at 50% level (m)		0.73			
30	0.62					Depth to water at 25% level (m)		0.79			
60	0.59										
120	0.57					Base area of pit (m ²)		0.21			
180	0.57					Computed Internal Surface Area A _{p50} (m ²)		0.45			
240	0.56					Effective Storage Volume V _{p75-25} (m ³)		0.03			
						Elapsed time at 75% level (mins)					
						Elapsed time at 25% level (mins)					
						Total discharge during test		0%			
						50% discharge in 24 Hours					
						Soil infiltration rate <i>f</i> (m/s)					
						Design soil infiltration rate <i>f</i> (m/s)		n/a (Insufficient infiltration)			



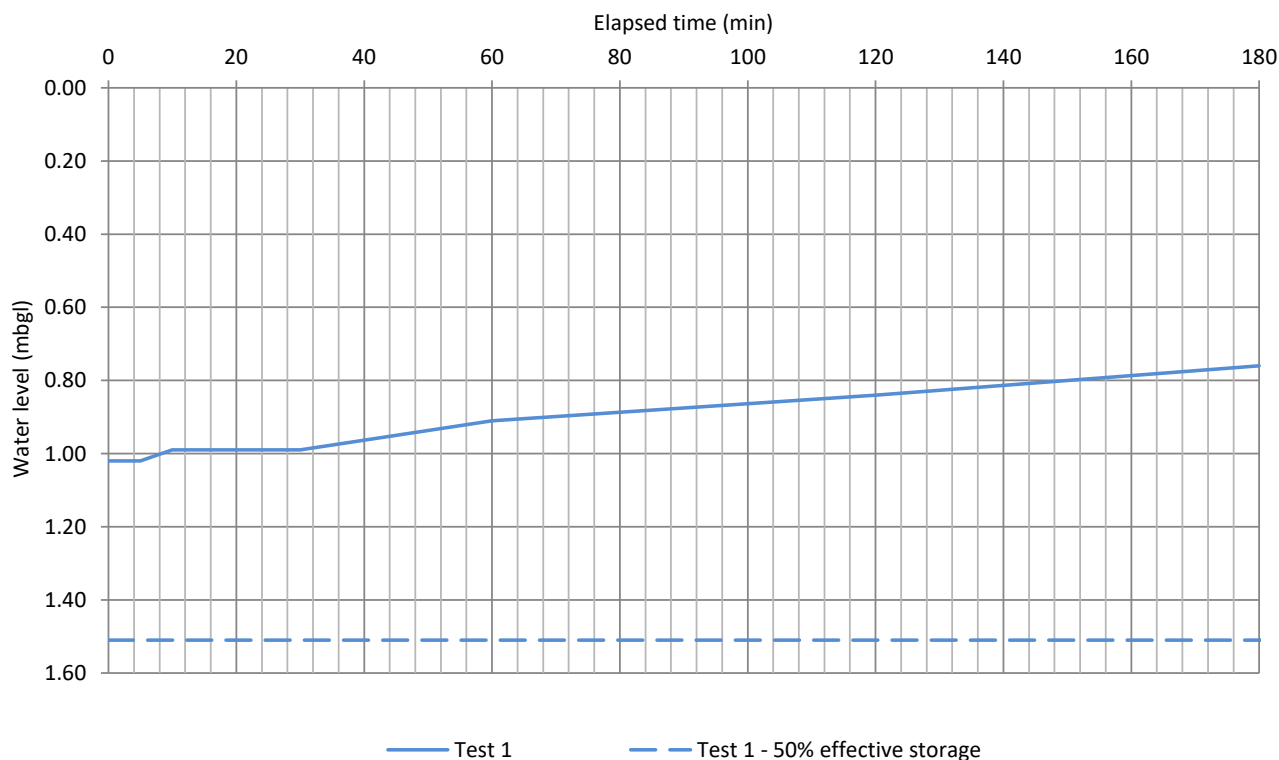
Remarks:

Rise in water level during test.



Infiltration Test Results in Accordance with BRE Digest 365:2016

Project Name:		Devises Road, Hilperton					Project ID:		4117			
Client:		Redcliffe Homes										
Hole ID:		TP02A		Test Date:		08/12/2025		Logged:	EC	Checked:	JA	
Test 1						Length (m) Width (m) Soakaway Dimensions: Test 1 - Depth (m)				1.50		
Time (mins)	Depth (m)									0.30		
										2.00		
0	1.02											
1	1.02											
2	1.02									Test 1		
3	1.02					Depth to water at start of test (m)		1.02				
4	1.02					Depth to water at end of test (m)		1.02				
5	1.02					Total head drop (m)		0.00				
10	0.99					Depth to water at 75% level (m)		1.27				
20	0.99					Depth to water at 50% level (m)		1.51				
30	0.99					Depth to water at 25% level (m)		1.76				
60	0.91											
120	0.84					Base area of pit (m ²)		0.45				
180	0.76					Computed Internal Surface Area A _{p50} (m ²)		2.21				
						Effective Storage Volume V _{p75-25} (m ³)		0.22				
						Elapsed time at 75% level (mins)						
						Elapsed time at 25% level (mins)						
						Total discharge during test		0%				
						50% discharge in 24 Hours						
						Soil infiltration rate <i>f</i> (m/s)						
						Design soil infiltration rate <i>f</i> (m/s)		n/a (Insufficient infiltration)				



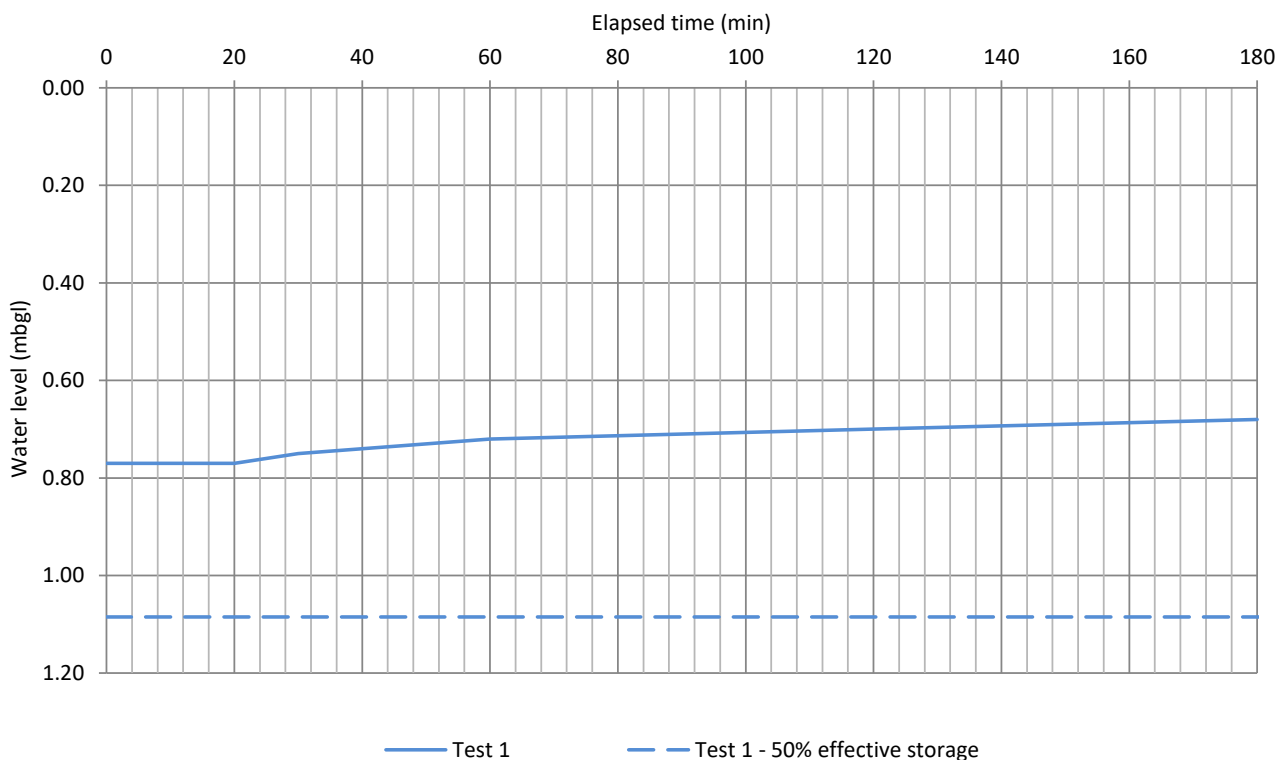
Remarks:

Rise in water level during test.



Infiltration Test Results in Accordance with BRE Digest 365:2016

Project Name:		Devises Road, Hilperton					Project ID:		4117			
Client:		Redcliffe Homes										
Hole ID:		TP02B		Test Date:		08/12/2025		Logged:	EC	Checked:	JA	
Test 1						Length (m) 1.20 Width (m) 0.30 Soakaway Dimensions: Test 1 - Depth (m) 1.40						
Time (mins)	Depth (m)											
0	0.77											
1	0.77											
2	0.77								Test 1			
3	0.77					Depth to water at start of test (m)			0.77			
4	0.77					Depth to water at end of test (m)			0.77			
5	0.77					Total head drop (m)			0.00			
10	0.77					Depth to water at 75% level (m)			0.93			
20	0.77					Depth to water at 50% level (m)			1.09			
30	0.75					Depth to water at 25% level (m)			1.24			
60	0.72											
120	0.70					Base area of pit (m ²)			0.36			
180	0.68					Computed Internal Surface Area A _{p50} (m ²)			1.31			
						Effective Storage Volume V _{p75-25} (m ³)			0.11			
						Elapsed time at 75% level (mins)						
						Elapsed time at 25% level (mins)						
						Total discharge during test			0%			
						50% discharge in 24 Hours						
						Soil infiltration rate <i>f</i> (m/s)						
						Design soil infiltration rate <i>f</i> (m/s)			n/a (Insufficient infiltration)			



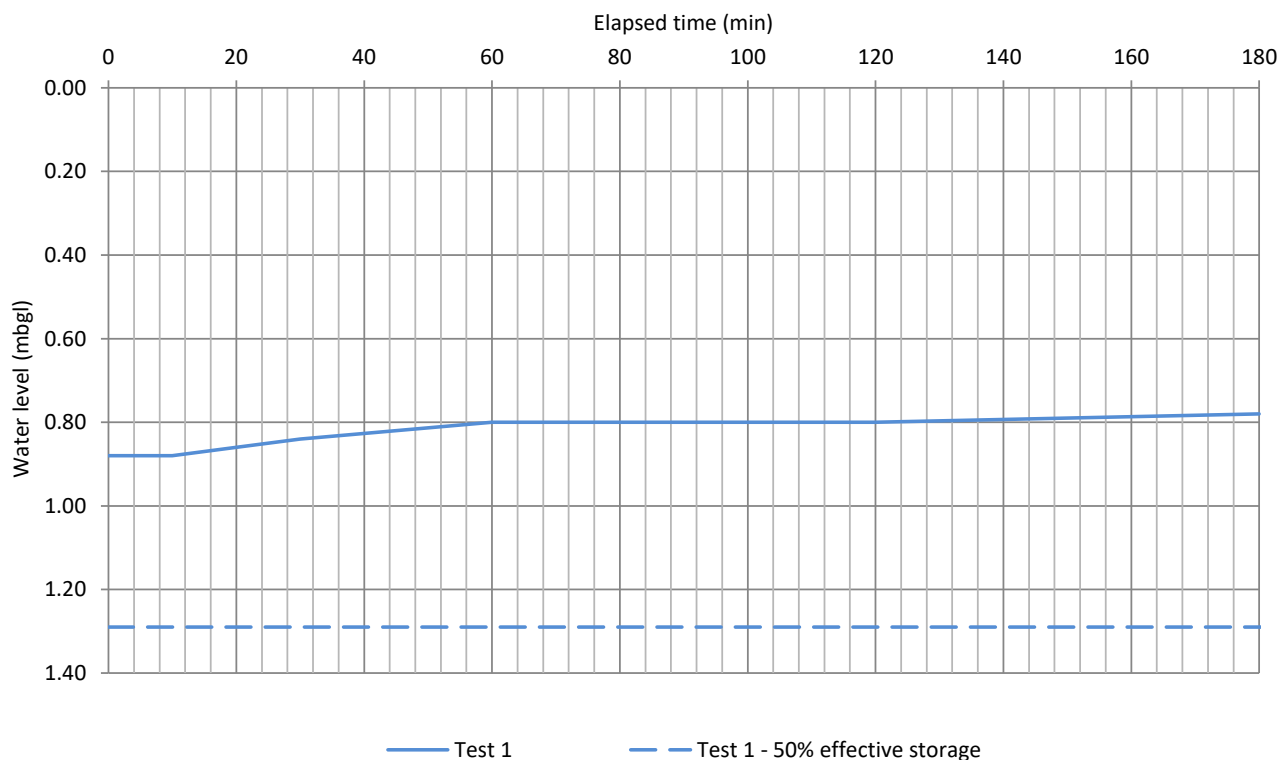
Remarks:

Rise in water level during test.



Infiltration Test Results in Accordance with BRE Digest 365:2016

Project Name: Devises Road, Hilperton						Project ID: 4117			
Client: Redcliffe Homes									
Hole ID: TP03A		Test Date: 08/12/2025		Logged: EC		Checked: JA			
Test 1						Length (m)		1.50	
Time (mins)	Depth (m)					Width (m)		0.30	
						Soakaway Dimensions: Test 1 - Depth (m)		1.70	
0	0.88					Test 1			
1	0.88					Depth to water at start of test (m)		0.88	
2	0.88					Depth to water at end of test (m)		0.88	
3	0.88					Total head drop (m)		0.00	
4	0.88					Depth to water at 75% level (m)		1.09	
5	0.88					Depth to water at 50% level (m)		1.29	
10	0.88					Depth to water at 25% level (m)		1.50	
20	0.86								
30	0.84								
60	0.80								
120	0.80					Base area of pit (m ²)		0.45	
180	0.78					Computed Internal Surface Area A _{p50} (m ²)		1.93	
						Effective Storage Volume V _{p75-25} (m ³)		0.18	
						Elapsed time at 75% level (mins)			
						Elapsed time at 25% level (mins)			
						Total discharge during test		0%	
						50% discharge in 24 Hours			
						Soil infiltration rate <i>f</i> (m/s)			
						Design soil infiltration rate <i>f</i> (m/s)		n/a (Insufficient infiltration)	



Remarks:

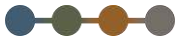
Rise in water level during test.



The graph displays the water level in megabarcals (mbgl) over an 180-minute period. The y-axis is inverted, with 0.00 at the top and 1.20 at the bottom. Two data series are plotted: 'Test 1' (solid blue line) and 'Test 1 - 50% effective storage' (dashed blue line). 'Test 1' starts at approximately 0.78 mbgl, peaks at 0.75 mbgl at 10 minutes, dips to 0.82 mbgl at 20 minutes, and then gradually rises to 0.78 mbgl by 180 minutes. 'Test 1 - 50% effective storage' remains constant at approximately 1.13 mbgl throughout the entire duration.

Elapsed time (min)	Test 1 (mbgl)	Test 1 - 50% effective storage (mbgl)
0	0.78	1.13
10	0.75	1.13
20	0.82	1.13
40	0.80	1.13
60	0.79	1.13
80	0.78	1.13
100	0.78	1.13
120	0.78	1.13
140	0.78	1.13
160	0.78	1.13
180	0.78	1.13

Remarks: Rise in water level during test and sidewall instability.
--



Appendix D – Sewer Records

Response to: Developer email: mwinter@redcliffehomes.co.uk			
Planning Ref:		Our Ref: ST85NE/ 458	Our Email: planning.liaison@wessexwater.co.uk
Proposal:	100 dwellings- phase 1 only v2		
Location:	Devizes Road, Hilperton, Wiltshire	DATE	05/11/2025

Thank you for your pre-development enquiry. Extracts from our records showing the approximate location of our apparatus within the vicinity of the site are attached.

We have reviewed documents submitted in support of the enquiry. We have following comments to make:

Existing Services

The following Wessex Water Assets are located within the proposed site boundary: -

- 200mm diameter distribution Trunk main – along northwest boundary.

In accordance with Wessex Water Policy, there must be no buildings within a minimum of 5m either side of the public distribution Trunk main and no tree planting within a minimum of 6m.

This includes no surface water attenuation features and associated earthworks in the easement strip, changes in ground levels resulting in additional loading or excavation can lead to instability in the pressurised pipe which is carrying large volumes of water. The water main must not run through enclosed private rear gardens, it must be within a 6m (3m either side) open access easement strip or roads.

Wessex Water require unrestricted access to maintain and repair our apparatus.

A map showing all known Wessex Water Assets within the area of the proposed site is attached at the bottom of this response. Additional maps can be obtained from our website Mapping enquiries (wessexwater.co.uk)

Foul Sewerage – Point of Discharge

Wessex Water will accommodate domestic type foul flows in the public foul sewer with connections made on a size for size basis, Developers fund the cost of connecting to the nearest 'size for size' sewer and Wessex Water will manage the sewer network to accommodate foul flows from granted development. We fund this through our infrastructure charging arrangements.

The nearest suitable size for size point of discharge is the 150mm in the A361 Devizes Road. Connection could be made via FWMH 1201 Ref: ST88591201 CL.62.854

The point of connection to the public foul network is by application and agreement and Wessex Water will accommodate domestic type foul flows in the public foul sewer with connections made on a 'size for size' basis, Developers fund the cost of connecting to the nearest 'size for size' foul sewer and Wessex Water will manage the foul sewer network to accommodate foul flows from granted development. We fund this through our infrastructure charging arrangements.

Separated systems of drainage are required: Wessex Water will not accept surface water or land drainage flows to the public foul sewer and treatment works, either directly or indirectly.

Surface Water Drainage (rainwater falling onto, and running off, impermeable surfaces)

Surface water must be disposed of via the SuDS Hierarchy which is subject to Building Regulations and NPPF.

No surface water runoff, land drainage or ground water will be accepted into a public sewer that carries sewerage, either directly or indirectly.

The National Planning Policy Framework (NPPF) mandates that Sustainable Drainage Systems (SuDS) must be incorporated into new developments to manage surface water runoff, mitigate flood risks, and provide additional benefits, including enhanced water quality and green spaces.

In line with the drainage hierarchy outlined in Approved Document H of the Building Regulations, Planning Practice Guidance, and the necessity to address water scarcity, all surface water runoff should aim to be discharged as high up the following hierarchy as feasible:

- Rainwater reuse through harvesting or greywater recycling

- An adequate soakaway or other infiltration system
- A hybrid solution involving infiltration and discharge to a surface water body
- Discharge directly to a surface water body (e.g., an ordinary watercourse)
- Discharge to a surface water sewer, highway drain, or other drainage system

Wessex Water statement on surface water discharge can be accessed via the following link: : [wwds-dev063p-rainwater-drainage-policy.pdf](https://www.wessexwater.co.uk/dev063p-rainwater-drainage-policy.pdf)

Note: To utilise a lesser priority final destination, appropriate evidence shall be provided that demonstrates all higher priority final destinations have been utilised to the maximum extent practicable. Higher cost alone shall not be a reason to utilise lower priority final destinations.

Review of the Mapping for the area indicates that that the adjacent site is an area with good infiltration potential.

Drainage Strategy to be agreed with the LLFA.

Adoption

Wessex Water can adopt SuDS features as part of a surface water sewer network, SuDS schemes will be required to have full S104 technical approval and full planning approval before construction work begins. All drainage design requirements for the site (discharge rates, attenuation, climate change etc.) must be agreed, in consultation with the Local Planning Authority / Lead Local Flood Authority, prior to the submission of a formal S104 application. Adoption is by agreement with Wessex Water. More detailed information and guidance for adoptable standards can be found on our Developer Services Web Pages Sector guidance on sewerage and water adoption agreements ([wessexwater.co.uk](https://www.wessexwater.co.uk))

Water Supply

Wessex Water will provide a point of connection for new water mains to be laid into the development site, either through a Section 41 agreement or a self-lay arrangement.

There is an 8" distribution main located in Devizes Road from which a suitable point of connection could be made.

Developers may connect to our water network on a size for size basis at their cost and Wessex Water will undertake any network reinforcement that may be required to accommodate granted development, this is funded through our infrastructure charging arrangements.

Upon grant of planning Wessex Water will undertake a modelling exercise to determine the impact on our network and manage any necessary improvements.

For more details and guidance for applying to connect to our networks please see our website: <https://www.wessexwater.co.uk/services/building-and-developing/building-multiple-properties-or-largedevlopments>

New Appointments and Variations (NAVs)

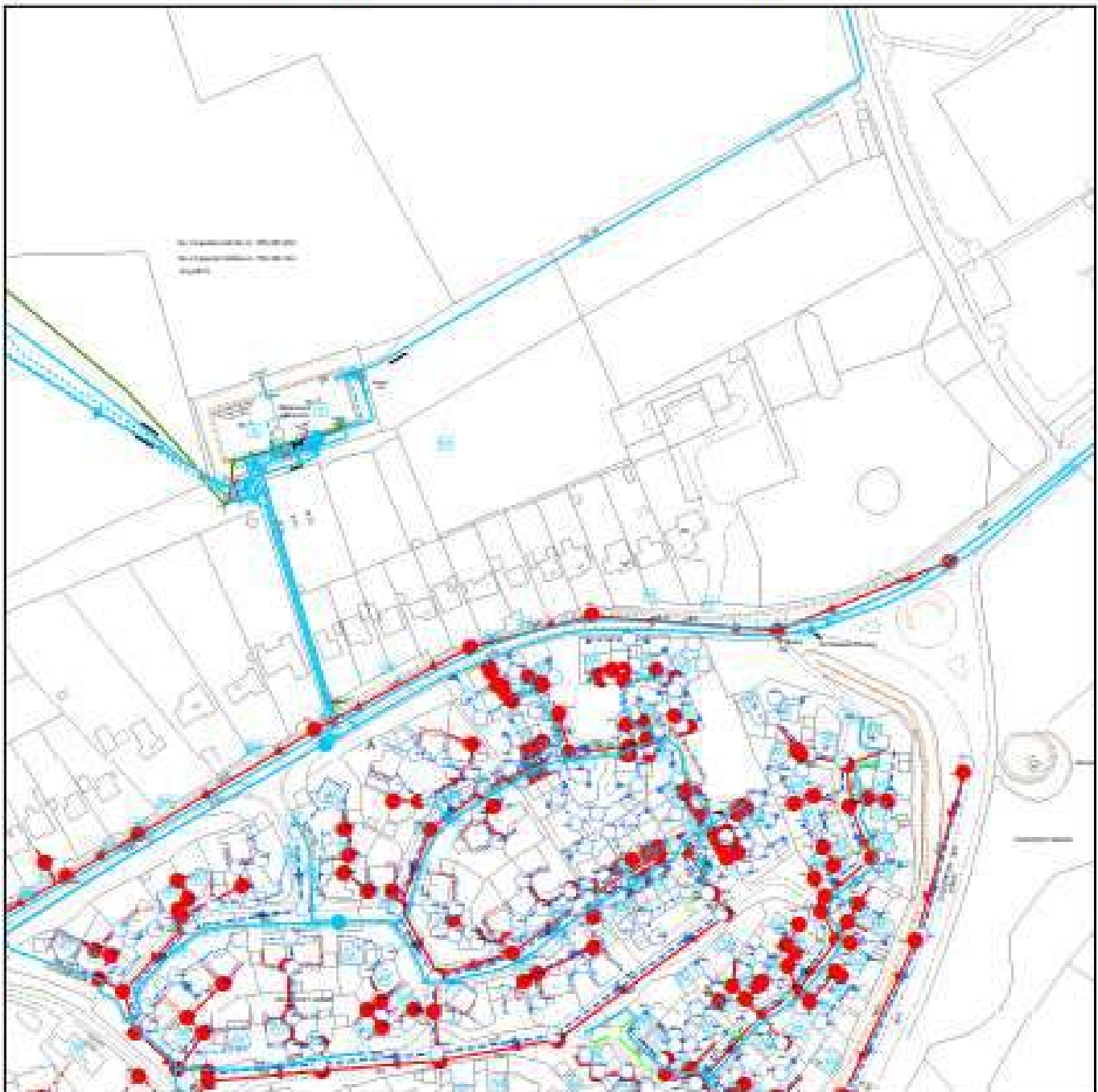
The NAV Market enables developers to choose their water or sewerage undertaker for a specific geographic area. For developers wishing to consider an alternative supplier or seeking further information, a full list of appointees and further guidance can be found on the Developing a new site ([wessexwater.co.uk](https://www.wessexwater.co.uk)) and Ofwat website.

If you are making a NAV enquiry, there is a Wessex Water dedicated wholesale team that deal with NAV enquiries. Full details are on our website including guidance notes, our policy and contact details <https://developerservices.wessexwater.co.uk/new-appointments-and-variations>

I trust that you will find the mapping and initial comments of use.

Note: These comments are based upon known circumstances prevailing at the time of writing. A review of the contents of this email is required where 18 months or more have elapsed since issue or in the light of significant changes likely to impact upon the response (e.g. changes in development numbers or phasing). Please email review requests to planning.liaison@wessexwater.co.uk

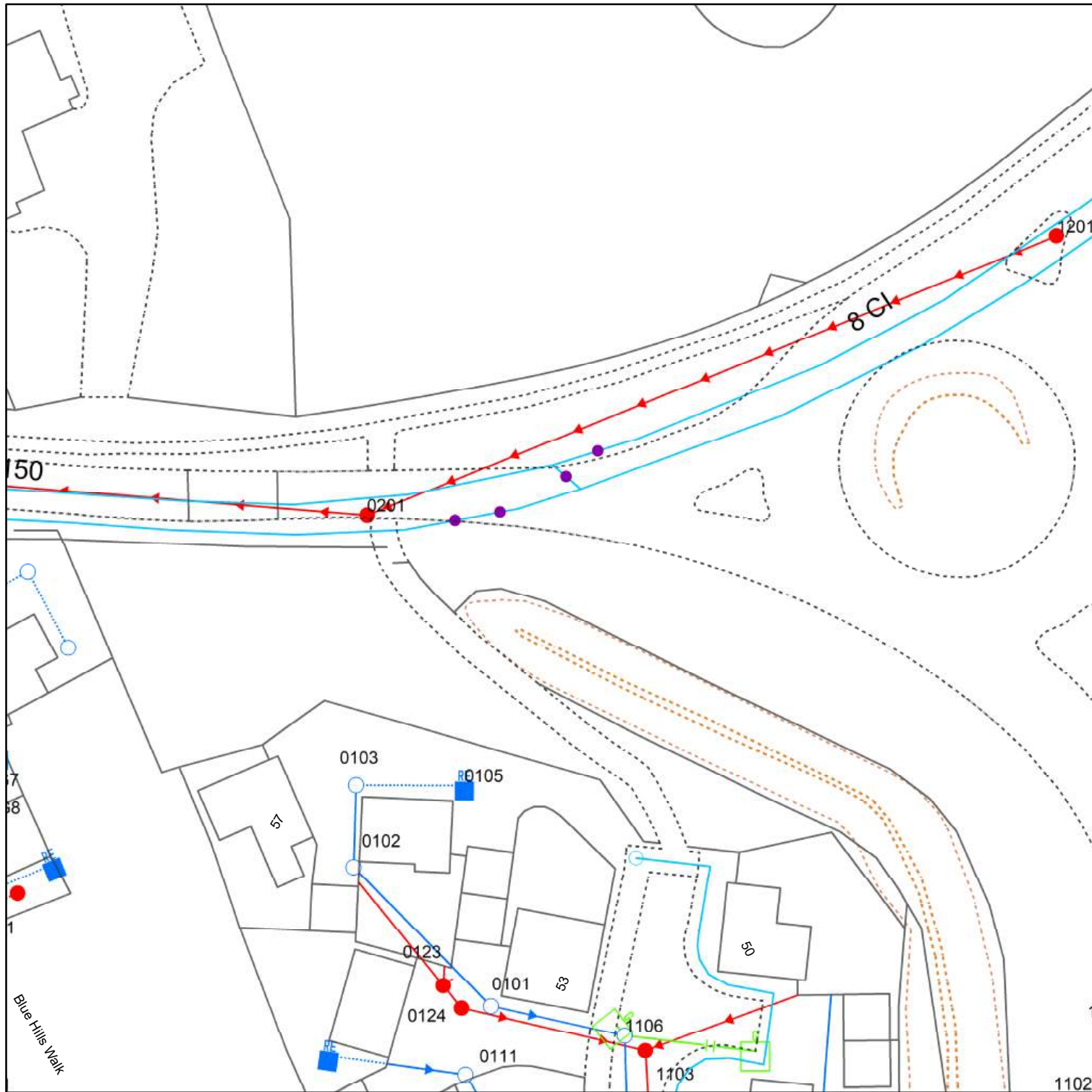
ST85NE/ 458 Devizes Rd, Hilperton



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Wessex Water Network Map



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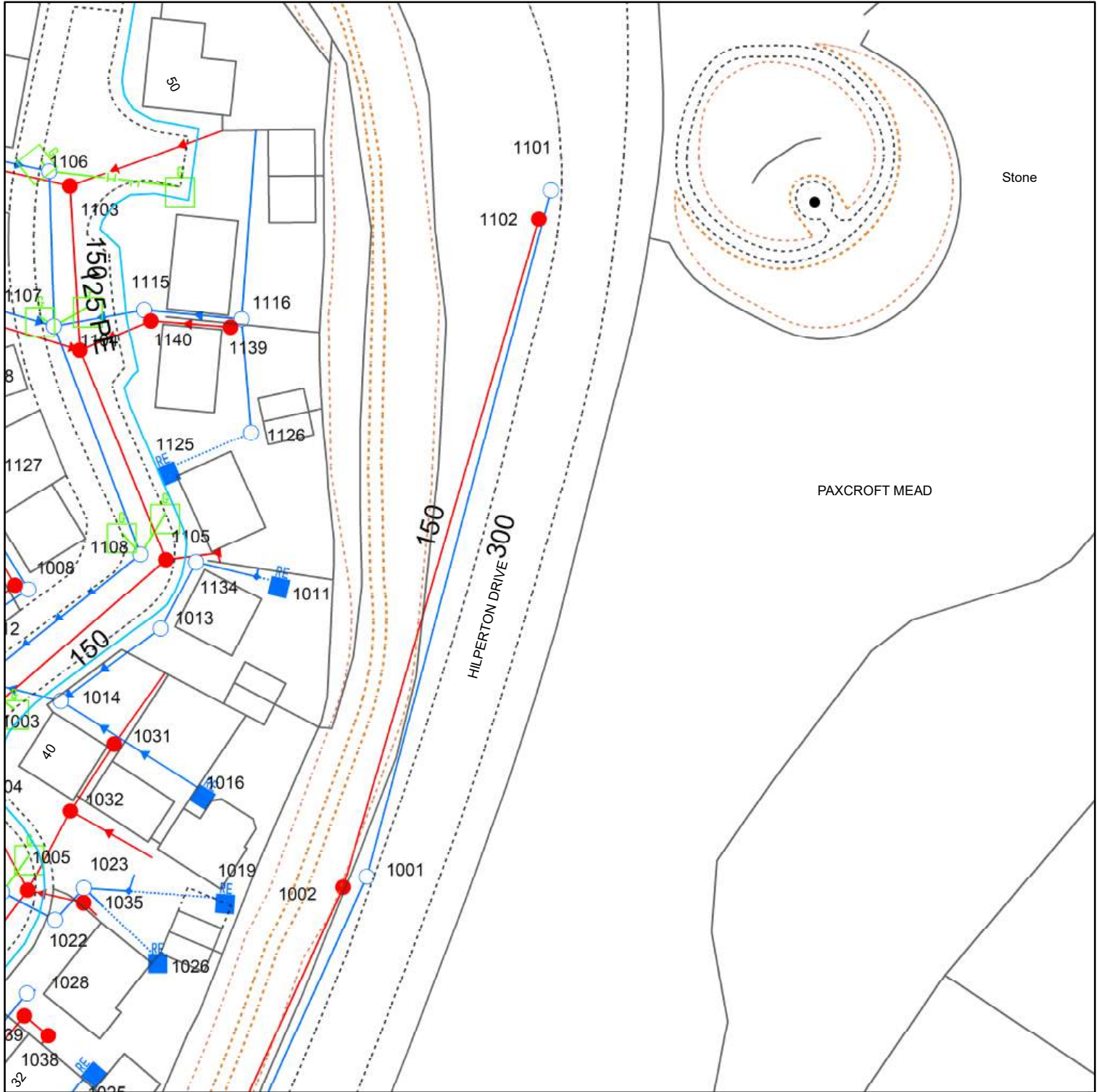
WATER MAINS		SEWERS		STRATEGIC		PUBLIC		PRIVATE		SECTION 104		OTHER WESSEX PIPES		NON-WESSEX / UNKNOWN	
	Distribution		Foul		Surface								Rising Mains		Private Rising Mains
	Washout		Surface		Combined								Effluent Disposal		Culverted Watercourse
	Raw Water		Abandoned										Overflow		Highway Drain
	Abandoned												Syphon		Use Unknown
	Private														Status Unknown
Colours generally indicate the use of the sewer/drain (i.e Red - Foul, Dark Blue - Surface, Magenta - Combined/Dual Use, Light Green - Highway Drain, Mid Green - Overflow).															
Some styles of line and symbol are shown on the key in sample/typical colours.															
FITTINGS		STRUCTURES													
	Hydrant		Manhole - Foul		Pumping Station - Surface										
	Other		Manhole - Surface		Pumping Stn - Foul/Combined										
			Manhole - Combined		Gully										
			Inlet		Vent Column										
			Outfall		Rodding Eye										
			Lamphole		Catchpit										
			Bifurcation - Foul		Flushing Chamber										
			Bifurcation - Surface		Soakaway										
			Bifurcation - Combined		Non Return Valve										
			Combined Sewage Overflow		Air Valve										
					Hatch Box										
					Washout										
												OTHER STRUCTURES			Chamber
													Attenuation Tank		Tunnel
													Storage Tank		Interceptor

Information in this map is provided for identification purposes only. No warranty as to accuracy is given or implied. The precise route of pipe work may not exactly match that shown. Wessex Water does not accept liability for inaccuracies. Sewers and lateral drains adopted by Wessex Water under the Water Industry (Schemes for Adoption of Private Sewers) Regulations 2011 are to be plotted over time and may not yet be shown. In carrying out any works, you accept liability for the cost of any repairs to Wessex Water apparatus damaged as a result of your works. You are advised to commence excavations using hand tools only. Mechanical digging equipment should not be used until pipe work has been precisely located. If you are considering any form of building works and pipe work is shown within the boundary of your property or a property to be purchased (or very close by) a surveyor should plot its exact position prior to commencing works or purchase. If you are proposing to build over or near Wessex Water's apparatus you should contact the Developer Services Team, tel: 01225 526633 or e-mail: developer.enquiries@wessexwater.co.uk to discuss your proposals. Details of assets within Wessex Water's land ownership are unavailable through this service.

Date: 05/07/2021
Centre: 388101, 159202
Scale: 1:625
(when printed at A4 size)



Wessex Water Network Map



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WATER MAINS		SEWERS		STRATEGIC		PUBLIC		PRIVATE		SECTION 104		OTHER WESSEX PIPES		NON-WESSEX / UNKNOWN			
	Distribution		Foul										Rising Mains		Private Rising Mains		
	Washout		Surface										EDM Effluent Disposal		Culverted Watercourse		
	Raw Water		Combined										Overflow		Highway Drain		
	Abandoned		Abandoned										Syphon		Use Unknown		
	Private														Status Unknown		
FITTINGS		STRUCTURES										OTHER STRUCTURES					
	Hydrant		Manhole - Foul		Pumping Station - Surface								Attenuation Tank		Chamber		
	Other		Manhole - Surface		Pumping Stn - Foul/Combined								Storage Tank		Tunnel		
			Manhole - Combined		Gully										Interceptor		
			Inlet		Vent Column												
			Outfall		Rodding Eye												
			Lamphole		Catchpit												
			Bifurcation - Foul		Flushing Chamber												
			Bifurcation - Surface		Soakaway												
			Bifurcation - Combined		Non Return Valve												
			Combined Sewage Overflow		Air Valve		Hatch Box		Washout								
 YTL GROUP																	

Information in this map is provided for identification purposes only. No warranty as to accuracy is given or implied. The precise route of pipe work may not exactly match that shown. Wessex Water does not accept liability for inaccuracies. Sewers and lateral drains adopted by Wessex Water under the Water Industry (Schemes for Adoption of Private Sewers) Regulations 2011 are to be plotted over time and may not yet be shown. In carrying out any works, you accept liability for the cost of any repairs to Wessex Water apparatus damaged as a result of your works. You are advised to commence excavations using hand tools only. Mechanical digging equipment should not be used until pipe work has been precisely located. If you are considering any form of building works and pipe work is shown within the boundary of your property or a property to be purchased (or very close by) a surveyor should plot its exact position prior to commencing works or purchase. If you are proposing to build over or near Wessex Water's apparatus you should contact the Developer Services Team, tel: 01225 526633 or e-mail: developer.enquiries@wessexwater.co.uk to discuss your proposals. Details of assets within Wessex Water's land ownership are unavailable through this service.

OTHER STRUCTURES

	Attenuation Tank		Chamber
	Storage Tank		Tunnel
			Interceptor

Wessex Water
YTL GROUP



Date: 05/07/2021
Centre: 388167, 159103
Scale: 1:625
(when printed at A4 size)



Dan Groves

From: Stella Davies <stella.davies@wessexwater.co.uk>
Sent: 02 February 2026 11:00
To: Dan Groves
Subject: RE: Devizes Road, Hilperton, Wiltshire - 100No units scheme ref. ST85NE/ 458

Hi Dan as you will know public surface water sewers are usually designed to 1 in 30 as such a maximum rate we would accept to public surface water sewers would be 7.26l/s.

I hope that this clarifies.

Note: These comments are based upon known circumstances prevailing at the time of writing. A review of the contents of this email is required where 18 months or more have elapsed since issue or in the light of significant changes likely to impact upon the response (e.g. changes in development numbers or phasing). Please email review requests to planning.liaison@wessexwater.co.uk

Best Regards,

Stella Davies

Senior Planning Liaison Engineer

Mobile: 07353116326

Phone:0122510078



Wessex Water
YTL GROUP

Wessex Water

Operations Centre, Claverton Down, Bath BA2 7WW

Web ytl.com | wessexwater.co.uk



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This email is being sent to you on behalf of Wessex Water Limited, a company registered in England and Wales with number 02366633. Its registered office is Wessex Water Operations Centre, Claverton Down Road, Claverton Down, Bath, BA2 7WW.

From: Dan Groves <Dan.Groves@rappor.co.uk>

Sent: 02 February 2026 10:38

To: Stella Davies <stella.davies@wessexwater.co.uk>

Subject: RE: Devizes Road, Hilperton, Wiltshire - 100No units scheme ref. ST85NE/ 458

Good morning Stella,

Hope you had a good weekend.

Thank you for your response.

Please see attached FEH greenfield runoff estimate. As per LLFA guidance, a betterment of 30% has been applied to the greenfield runoff rates.

Return Period (Yrs)	Runoff Rate (l/s/ha)	Runoff Rate with 30% Betterment (l/s/ha)
1	2.4	1.68
30	5.9	4.13
100	7.4	5.18
QBAR	3.0	2.10

Table 5.1 Greenfield Runoff Rates

The approximate site impermeable area has been calculated at 1.76ha, therefore providing limiting rates of 2.95l/s, 7.26l/s and 9.1l/s for the 1-year, 30-year, and 100-year event.

We are proposing to discharge via a complex control at the variable rates.

If you require anything further, please let me know.

Many thanks,

Dan Groves

Principal Civil Engineer

CEng MICE

m 07389 888651

rappor

Infrastructure / civil engineering • Landscape planning

t 01179 055 171 • w rappor.co.uk

a 33 Colston Avenue, Bristol, BS1 4UA

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From: Stella Davies <stella.davies@wessexwater.co.uk>
Sent: 02 February 2026 10:20
To: Dan Groves <Dan.Groves@rappor.co.uk>
Subject: RE: Devizes Road, Hilperton, Wiltshire - 100No units scheme ref. ST85NE/ 458

Thank you for the email and a call.

Please note that as you are proposing to discharge to Wessex Water asset discharge rates are regulated by us and capacity in our network and not LLFA.

Please submit predevelopment rates and proposed rates as per below request for our further consideration.

Note: These comments are based upon known circumstances prevailing at the time of writing. A review of the contents of this email is required where 18 months or more have elapsed since issue or in the light of significant changes likely to impact upon the response (e.g. changes in development numbers or phasing). Please email review requests to planning.liaison@wessexwater.co.uk

Best Regards,

Stella Davies
Senior Planning Liaison Engineer
Mobile: 07353116326
Phone:0122510078



Wessex Water
Operations Centre, Claverton Down, Bath BA2 7WW

Web ytl.com | wessexwater.co.uk



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This email is being sent to you on behalf of Wessex Water Limited, a company registered in England and Wales with number 02366633. Its registered office is Wessex Water Operations Centre, Claverton Down Road, Claverton Down, Bath, BA2 7WW.

From: Dan Groves <Dan.Groves@rappor.co.uk>
Sent: 29 January 2026 13:32
To: Stella Davies <stella.davies@wessexwater.co.uk>
Subject: RE: Devizes Road, Hilperton, Wiltshire - 100No units scheme ref. ST85NE/ 458



Appendix E – Greenfield Runoff Calculation

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Project details

Date	16/12/2025
Calculated by	DG
Reference	Hilperton
Model version	2.2.2

Location

Site name	Hilperton
Site location	



Site easting (British National Grid)	388125
Site northing (British National Grid)	159298

Site details

Total site area (ha)	1	ha
----------------------	--------------------------------	----

Greenfield runoff

Method

Method	FEH statistical (2025)
--------	------------------------

FEH statistical (2025)

	<u>My value</u>	<u>Map value</u>
SAAR9120 (mm)	749	mm
BFIHOST19scaled	0.535	
QMed-QBar conversion	1.075	☒ 1.075
QMed (l/s)	2.8	l/s
QBar (FEH statistical 2025) (l/s)	3	l/s

Growth curve factors

	<u>My value</u>	<u>Map value</u>
Hydrological region	8	☒ 8
1 year growth factor	0.78	
2 year growth factor	0.93	
10 year growth factor	1.49	
30 year growth factor	1.95	
100 year growth factor	2.43	
200 year growth factor	2.78	

Results

Method	FEH statistical (2025)	
Flow rate 1 year (l/s)	2.4	l/s
Flow rate 2 year (l/s)	2.8	l/s
Flow rate 10 years (l/s)	4.5	l/s
Flow rate 30 years (l/s)	5.9	l/s
Flow rate 100 years (l/s)	7.4	l/s
Flow rate 200 years (l/s)	8.4	l/s

Please note runoff estimation is subject to significant uncertainty. Results are therefore normally reported to only 1 decimal place. Where 2 decimal places are provided, this does not indicate accuracy to this level, it has been adopted to prevent ‘zero’ figures from being reported. Outputs less than 0.01 l/s are reported as 0.01 l/s.

Disclaimer

This report was produced using the Greenfield runoff rate estimation tool (2.2.2) developed by HR Wallingford and available at uksuds.com (<https://www.uksuds.com/>). The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at uksuds.com/terms-conditions (<https://www.uksuds.com/terms-conditions>). The outputs from this tool have been used to estimate Greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, Centre for Ecology and Hydrology, Wallingford Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.



Appendix F – Attenuation Requirement Calculation

Cotswold Transport Planning				Page 1	
CTP House, Knapp Road Cheltenham Gloucestershire, GL50 3QQ		Hilperton Phase 1 Storage Requirements			
Date 03/02/2026 10:01 File Storage Estimate v2.SRCX		Designed by DG Checked by JB			
Innovyze		Source Control 2020.1.3			
<u>Summary of Results for 100 year Return Period (+45%)</u>					
Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Summer	0.357	0.357	2.9	378.5	O K
30 min Summer	0.469	0.469	2.9	496.7	O K
60 min Summer	0.583	0.583	2.9	618.1	O K
120 min Summer	0.702	0.702	2.9	743.6	Flood Risk
180 min Summer	0.775	0.775	4.7	821.9	Flood Risk
240 min Summer	0.827	0.827	5.4	876.9	Flood Risk
360 min Summer	0.897	0.897	6.2	951.3	Flood Risk
480 min Summer	0.940	0.940	6.6	996.3	Flood Risk
600 min Summer	0.965	0.965	6.8	1023.2	Flood Risk
720 min Summer	0.980	0.980	7.0	1038.5	Flood Risk
960 min Summer	0.988	0.988	7.0	1046.8	Flood Risk
1440 min Summer	0.974	0.974	6.9	1032.5	Flood Risk
2160 min Summer	0.941	0.941	6.6	997.8	Flood Risk
2880 min Summer	0.908	0.908	6.3	962.2	Flood Risk
4320 min Summer	0.845	0.845	5.6	896.2	Flood Risk
5760 min Summer	0.799	0.799	5.0	846.6	Flood Risk
7200 min Summer	0.768	0.768	4.6	813.7	Flood Risk
8640 min Summer	0.747	0.747	4.1	791.3	Flood Risk
10080 min Summer	0.730	0.730	3.6	774.2	Flood Risk
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	
15 min Summer	152.237	0.0	243.3	19	
30 min Summer	100.140	0.0	245.7	34	
60 min Summer	62.575	0.0	479.6	64	
120 min Summer	37.935	0.0	457.8	124	
180 min Summer	28.298	0.0	476.6	184	
240 min Summer	22.966	0.0	504.7	242	
360 min Summer	17.067	0.0	553.4	362	
480 min Summer	13.765	0.0	590.9	482	
600 min Summer	11.606	0.0	619.7	602	
720 min Summer	10.070	0.0	642.1	720	
960 min Summer	8.003	0.0	673.7	960	
1440 min Summer	5.713	0.0	704.5	1182	
2160 min Summer	4.018	0.0	1170.1	1556	
2880 min Summer	3.116	0.0	1136.4	1964	
4320 min Summer	2.168	0.0	1028.2	2812	
5760 min Summer	1.680	0.0	1595.8	3688	
7200 min Summer	1.392	0.0	1636.3	4536	
8640 min Summer	1.200	0.0	1617.1	5440	
10080 min Summer	1.064	0.0	1515.0	6352	
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Cotswold Transport Planning				Page 2	
CTP House, Knapp Road Cheltenham Gloucestershire, GL50 3QQ		Hilperton Phase 1 Storage Requirements			
Date 03/02/2026 10:01 File Storage Estimate v2.SRCX		Designed by DG Checked by JB			
Innovyze		Source Control 2020.1.3			
<u>Summary of Results for 100 year Return Period (+45%)</u>					
Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Winter	0.357	0.357	2.9	378.4	O K
30 min Winter	0.469	0.469	2.9	496.7	O K
60 min Winter	0.583	0.583	2.9	618.0	O K
120 min Winter	0.701	0.701	2.9	743.6	Flood Risk
180 min Winter	0.776	0.776	4.7	822.1	Flood Risk
240 min Winter	0.828	0.828	5.4	878.0	Flood Risk
360 min Winter	0.900	0.900	6.2	953.9	Flood Risk
480 min Winter	0.944	0.944	6.7	1000.7	Flood Risk
600 min Winter	0.971	0.971	6.9	1029.5	Flood Risk
720 min Winter	0.988	0.988	7.0	1046.9	Flood Risk
960 min Winter	1.000	1.000	7.1	1059.8	Flood Risk
1440 min Winter	0.983	0.983	7.0	1042.3	Flood Risk
2160 min Winter	0.949	0.949	6.7	1005.8	Flood Risk
2880 min Winter	0.911	0.911	6.3	965.4	Flood Risk
4320 min Winter	0.839	0.839	5.6	889.8	Flood Risk
5760 min Winter	0.786	0.786	4.9	832.8	Flood Risk
7200 min Winter	0.751	0.751	4.2	796.0	Flood Risk
8640 min Winter	0.725	0.725	3.4	768.0	Flood Risk
10080 min Winter	0.697	0.697	2.9	738.9	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	
15 min Winter	152.237	0.0	243.3	19	
30 min Winter	100.140	0.0	245.7	34	
60 min Winter	62.575	0.0	479.7	64	
120 min Winter	37.935	0.0	458.0	122	
180 min Winter	28.298	0.0	476.7	180	
240 min Winter	22.966	0.0	504.6	240	
360 min Winter	17.067	0.0	552.9	356	
480 min Winter	13.765	0.0	590.0	472	
600 min Winter	11.606	0.0	618.5	586	
720 min Winter	10.070	0.0	640.8	700	
960 min Winter	8.003	0.0	672.0	920	
1440 min Winter	5.713	0.0	702.2	1298	
2160 min Winter	4.018	0.0	1166.1	1640	
2880 min Winter	3.116	0.0	1131.8	2104	
4320 min Winter	2.168	0.0	1027.9	3024	
5760 min Winter	1.680	0.0	1595.7	3928	
7200 min Winter	1.392	0.0	1635.1	4896	
8640 min Winter	1.200	0.0	1603.3	5960	
10080 min Winter	1.064	0.0	1497.0	7064	
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Cotswold Transport Planning		Page 4
CTP House, Knapp Road Cheltenham Gloucestershire, GL50 3QQ	Hilperton Phase 1 Storage Requirements	
Date 03/02/2026 10:01 File Storage Estimate v2.SRCX	Designed by DG Checked by JB	
Innovyze Source Control 2020.1.3		

Model Details

Storage is Online Cover Level (m) 1.000

Tank or Pond Structure

Invert Level (m) 0.000

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	1060.0	1.000	1060.0

Complex Outflow Control

Hydro-Brake® Optimum

Unit Reference MD-SHE-0081-2900-1000-2900

Design Head (m) 1.000

Design Flow (l/s) 2.9

Flush-Flo™ Calculated

Objective Minimise upstream storage

Application Surface

Sump Available Yes

Diameter (mm) 81

Invert Level (m) 0.000

Minimum Outlet Pipe Diameter (mm) 100

Suggested Manhole Diameter (mm) 1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.000	2.9	Kick-Flo®	0.623	2.3
Flush-Flo™	0.299	2.9	Mean Flow over Head Range	-	2.5

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	2.4	1.200	3.2	3.000	4.8	7.000	7.2
0.200	2.8	1.400	3.4	3.500	5.2	7.500	7.4
0.300	2.9	1.600	3.6	4.000	5.5	8.000	7.7
0.400	2.9	1.800	3.8	4.500	5.8	8.500	7.9
0.500	2.7	2.000	4.0	5.000	6.1	9.000	8.1
0.600	2.4	2.200	4.2	5.500	6.4	9.500	8.3
0.800	2.6	2.400	4.3	6.000	6.7		
1.000	2.9	2.600	4.5	6.500	6.9		

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Cotswold Transport Planning		Page 5
CTP House, Knapp Road Cheltenham Gloucestershire, GL50 3QQ	Hilperton Phase 1 Storage Requirements	
Date 03/02/2026 10:01 File Storage Estimate v2.SRCX	Designed by DG Checked by JB	
Innovyze		
Source Control 2020.1.3		
Orifice Diameter (m) 0.061 Discharge Coefficient 0.600 Invert Level (m) 0.671		
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Appendix G – Indicative Drainage Strategy



Notes:

1. Do not scale from this drawing. All dimensions are in metres, unless stated otherwise.
2. This drawing is based on the Architect's layout by Thrive Architects, drawing number REDC251029 CMP-01 F dated July 2026.
3. Ordnance Survey, (c) Crown Copyright 2025. All rights reserved. Licence number AC0000808122.
4. Drawing to be read in conjunction with all other drawings. Any discrepancies are to be reported to the engineer 5 working days in advance of undertaking any work.
5. Work to be undertaken in accordance with the Wiltshire Council Specification.

Key:

- Site Boundary
- Existing Public (WW) Surface Water Sewer
- Existing Public (WW) Foul Water Sewer
- Proposed Surface Water Sewer and Manhole
- Proposed Surface Water Headwall
- Proposed Foul Water Sewer and Manhole



P02	03/08/26	Revised Following Layout Update	DG	JB
P01	30/01/26	First Issue	DG	JB
Rev	Date	Details	By	Chkd

rappor



CLIENT: Redcliffe Homes Ltd

PROJECT: Land off Devizes Road, Hilperton

TITLE: Drainage Strategy

SCALE @ A1:	DATE:	DRAWN:	CHECKED:	APPROVED:
1:500	29/01/2026	DG	JB	JB

STATUS: PLANNING

DRAWING NO:	REVISION:
220460-RAP-XX-XX-DR-C-3100	P02

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