

Drainage Statement

Hollington Youth Hub, 1 Wishing Tree Road North, Hastings, TN38 9LL



Issued For Planning Submission	30/09/24
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Project: 1907

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1.0 Introduction

Hollington Youth Hub is located at 1 Wishing Tree Road North, Hastings, TN38 9LL. East Sussex County Council have stated the existing facility would benefit from investment to reconfigure the internal space to allow the building to be used more effectively and by more users. They thought there was some flexibility to extend the footprint of the building, extend upstairs space and to create a small exterior space with seating and planting. Hollington currently lacks any community spaces like this, which are well equipped and would act as a community hub.

Following initial design development, the scope of works was refined to construction of three single-storey extensions with internal alterations at ground floor level only. See Appendix A for the existing site plans and Appendix B for the proposed site plans.

This drainage strategy covers foul and surface water drainage proposals and has been prepared to support a planning submission for Hollington Youth Hub.

The Lead Local Flood Authority confirmed their no objection stance at pre-planning submission stage. See Appendix I for correspondence with the LLFA.

Southern Water have confirmed that there is adequate capacity in the existing local combined sewerage network to accommodate a foul and surface flow of 4.3l/s. See Appendix J for Southern Water response letter.

This drainage statement has been prepared with reference to the technical guidance provided by The SuDS Manual.

The SuDS Manual, along with national and local planning policy and guidance, is now used by the UK's scrutinizing authorities to check the design of simple drainage schemes e.g. a domestic extension, to significant developments such as housing estates, towns, and highway schemes.

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2.0 Site Information

2.1 Source Protection Zone

Magic Map (opposite) indicates that Hollington Youth Centre is not within Source Protection Zone (SPZ) I, II or III.

Cobalt-blue is SPZ III approximately 3.5km to the West of the site. The site is indicated by the red dot.



2.2 Geology

The British Geological Survey indicates that the site sits over Wadhurst Clay formation – Mudstone with no superficial deposits. The blue circle indicates the site location in the centre of the figure.



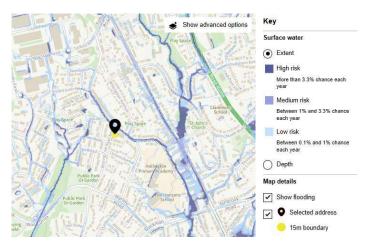
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2.3 Flood Risk

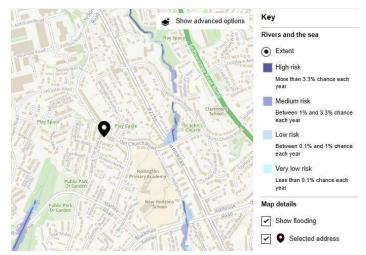
Pluvial Flooding

The extract from Environment Agency flood mapping opposite indicates the extent of pluvial flooding. The site is marked in the center of the map, with a key to the colouring next to the figure. The site sits in an area with a very low risk of pluvial flooding.



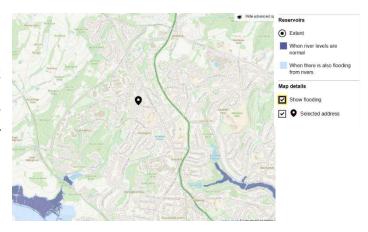
Fluvial Flooding

The figure from Environmental Agency flood mapping opposite shows the extent of fluvial flooding. The site is marked in the center of the map. The Environment Agency website confirms that the site sits in flood zone 1 and at very low risk of flooding from rivers or the sea.



Flooding from Reservoirs

The figure from Environmental Agency opposite shows the extent of flooding from groundwater and reservoirs. The site is at very low risk of flooding from groundwater and reservoirs.



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3.0 Surface Water Drainage

3.1 Existing Surface Water Drainage

The drainage survey by WinCan dated 10/06/24 indicates that existing surface water drainage combines with foul drainage and discharges to Southern Water's combined sewer at two separate locations east of the site. Refer to Appendix E for the drain survey and Appendix D for Southern Water's Asset Plan.

3.2 Surface Water Management Options

The obligation in The SuDS manual is to design drainage to minimize flooding both on and off the site and each proposal must follow a hierarchy for dealing with, and managing surface water as follows:

Table 1: SuDS Hierarchy

Hierarchy	Strategy	Comments
1	Retain on site. The most preferred option	Due to the risks involved with children being around deep water, and limited space, retaining water on site, i.e. a pond, would not be possible for this specific project.
2	Infiltrate to the ground	The BGS indicates that the ground conditions are clay which would likely be unsuitable for discharging surface water by infiltration. A Borehole Falling Head Permeability Test to BS 5930 was conducted by AVZ GeoEng Ltd on 19/09/24 – see Appendix K. This test was carried out in 5m deep borehole cased to 3mbgl and response zone of 2m using falling head test method. As indicated by a desk study of the geology, the head only reduced for 310mm in 3 hours suggesting extremely limited infiltration rates. Restrictions on the position of soakaways from boundary lines and buildings means there are no areas within the site for a soakaway which complies with the restrictions.
3	Discharge to a watercourse	There is no watercourse in close proximity to the site. The nearest water course is about 250m south-west of the site through third party land.
4	Discharge to a stormwater sewer	The nearest stormwater sewer is a Southern Water Surface Water Sewer about 40m south-west of the site. It is very unlikely a connection could be made due to the number of existing utilities between the site and the stormwater sewer.
5	Discharge to a combined sewer	There is a Southern Water combined sewer close to the site. The drain survey indicates that all existing drainage is connected to the combined sewer. This would be the most preferred option.
6	Discharge to a foul sewer. The least preferred option	Unlikely to be accepted due to the viability of option above.

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3.3 Proposed Surface Water Drainage

Using the SuDS hierarchy at item 3.2 above and a study of available information, the proposed method of dealing with surface water will be attenuation and discharge via a gravity-based system to Southern Water's combined sewer via a new connection to an existing chamber in Old Church Road. See Appendix C, drawing 1907-401 for proposed surface water drainage runs and their connection to Southern Water's sewer network. The proposal also avoids reusing drainage under the Community Centre.

Table 2 below shows existing and proposed impermeable areas for Hollington Youth Hub. The proposed development will increase the impermeable area by approximately $43m^2$ from $925m^2$ to $968m^2$.

The proposal is to provide a betterment to the runoff by managing approx. 20% of the total impermeable area. Table 2 shows a breakdown of existing and proposed hard standing and roof areas.

To deliver a net improvement to Southern Water's sewer network it is proposed to provide attenuation chambers for at least 200m² of surface water runoff. Due to site restrictions, there is no room to provide any additional attenuation capacity.

A bioretention system (rain garden) is proposed as it would increase biodiversity as opposed to water butts. The rain garden will allow water from a downpipe to pond temporarily on the surface before filtering through vegetation and underlying soils before reaching a perforated pipe connected to the drainage system. Acting like a natural attenuation chamber, this will further reduce the rate of surface water discharge from the site. The rain garden will be fitted with an overflow gully in case the capacity of the rain garden is exceeded. See Appendix C, drawing 1907-401 for the proposed rain garden area.

Table 2: Existing and Proposed Site Areas

	Existing	Proposed	
Hollington Youth Hub	Approximate Area (≈m²)	Approximate Area (≈m²)	
Total Site Area	1090		
Roof Area	470	670	
Impermeable Area (Eg. Tarmac paths, hard landscaping, Excluding Roof)	455	298	
Total Impermeable Area	925	968	

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3.4 Attenuation Chamber Sizing

The attenuation chamber volume has been calculated in accordance with CIRCA SuDS Manual, for a 1:100year storm event + 45% Climate Change Factor (CCF), and an impermeable catchment of 200m². The required volume of the attenuation chamber is 16.8m³ and the volume provided using Polypipe crates will be 18.2m³ (nominally 4m x 4m x 1.2m deep). See Appendix F for calculations and Appendix G for typical crate details.

The greenfield runoff rate for the 200m² catchment is calculated at 0.8l/s. Refer to Appendix H for design rainfall calculation. As the greenfield runoff rate is less than the recommended minimum discharge rate of 2l/s for attenuation systems using a hydro brake, 2l/s will be adopted to reduce the risk of blockages and therefore the risk of onsite flooding. The hydro brake will be fitted with an overflow to reduce the risk of flooding.

A Southern Water pre-planning enquiry was lodged with details of this proposal. Southern Water confirmed acceptance in principle to the proposal. See Appendix J for Southern Water response letter.

4.0 Foul Drainage

4.1 Existing Foul Water Drainage

The drainage survey indicates that the existing foul drainage combines with surface water and connects to Southern Water's combined sewer at two separate locations east of the site, through the adjacent Community Centre site. Refer to Appendix E for the drain survey and Appendix D for Southern Water's Asset Plan. Southern Water's asset plan also shows a foul water sewer south of the site with an unknown diameter, which then connects to the combined sewer further downstream between combined water sewer manhole references 2801 & 2804.

4.2 Proposed Foul Water Drainage

It is proposed that foul water drainage is a gravity-based system with two new connections to Southern Water's sewer network. One to the foul water sewer south of the site and another to the combined sewer in Old Church Road at existing manhole reference 2802. The two new connections reroute foul water so it will no longer run through the adjacent site and under the Community Centre. This will be subject to confirming the foul sewer position and levels to the south by CCTV survey. Drawing 1907-401, Appendix C, shows details of the foul drainage runs and their connection to Southern Waters sewer network.

A Southern Water pre-planning enquiry was lodged with details of this proposal. Southern Water confirmed acceptance in principle to the proposal. See Appendix J for Southern Water response letter.



5.0 Maintenance Plan

5.1 Drainage Maintenance Plan

The following table identifies various drainage features and their maintenance.

Item	Frequency	Responsibility
Buried Pipework Jet-wash foul and surface water pipe runs	Every 10yrs	Freeholder
Catchpit Lift chamber lid and remove build-up of silt and debris if loss of sump depth is greater than 50%	Annually	Freeholder
Gutters, RWP and Gullies Remove debris and check traps and remove silt as necessary	Annually	Freeholder
Litter Remove litter around and from drainage features such as gullies and the rain garden.	Monthly	Freeholder
Plant management Trim overhanging branches and remove growth or weeds or self-seeded plants around drainage features such as gutters, rainwater pipes and gullies etc.	Annually	Freeholder
Attenuation Chamber Check condition of attenuation chamber with CCTV survey. Surveyor to advise on condition and any remedial work, if required.	Every 10yrs	Freeholder
Rain Garden Inspect infiltration surfaces for silting and ponding, record de-watering time of the rain garden to determine if remedial action is required.	Every 10yrs	Freeholder
Rain Garden - Planting Replace any plants, to maintain planting density.	As Required	Freeholder



6.0 Glossary of Terms and Abbreviations

Term	Definition
AP	See Return Period
Aquifer	A subsurface zone or formation of rock or solid containing a body of water
Attenuation	Temporary storage and release of storm water at a pre-determined rate to a watercourse or sewer system.
BGS	British Geological Survey
Blue Roof	A roof construction that stores water for controlled release or re-use
Catchpit	A chamber with a sump to trap sediment and debris which allows water to flow through
CBR	California Bearing Ratio. Used as measure of ground bearing capacity. 2% or less is considered to be weak strata such as soft clay; anything over 30% is considered to be competent ground
CIRIA	Construction Industry Research and Information Association
Combined sewer	An underground pipe that conveys both foul and stormwater
Flood Risk Assessment (FRA)	An assessment of the risk of flooding on a development or caused by the development
Flood Defences	Structures designed to protect land, people and property from tidal and fluvial (river) flooding.
Flooding Fluvial	When the capacity of a watercourse is exceeded, causing flooding beyond the banks of the watercourse.
Flooding Pluvial	Overland flows which develop during a storm event when the capacity of the drainage system is exceeded
Flooding from Sea	Occurs when strong winds create large waves which breach natural or man-made coastal protection structures. Coastal flooding is usually more extreme when linked to a low-pressure system as a low-pressure system can raise sea levels by up to 1m leading to increased wave height.
Flood Zone Map	Environment Agency mapping which covers England and provides the general extent of Flooding in Zones 1, 2, and 3.
Flood Zone 1	Defined by the Environment Agency (EA) as Low Probability of flooding, having a less than 0.1% annual probability from river or sea flooding
Flood Zone 2	Defined by the EA as Medium Probability. Land having between a 1.0% and 0.1% annual probability of river flooding; or land having between a 0.5% and 0.1% annual probability of sea flooding.
Flood Zone 3	Defined by the EA as High Probability. Land having 1.0% or greater annual probability of river flooding; or Land having 0.5% or greater annual probability of flooding by sea.
Freeboard	Difference between water level and flood defence or flood mitigation device.
Green Roof	A roof with plants growing on its surface which promotes biodiversity, a degree of retention and evapotranspiration
Ground Water Flooding	When ground water rises to the surface or above the surface, causing damage to infrastructure such as basements and other sub-surface structures.



Hydrobrake	Device to manage discharge rates of stormwater from a development			
Infiltration	Passage of surface water into the ground			
Main River	Defined by the Environment Agency on the Main River map and relate to rivers where the EA has jurisdiction			
mbgl	Metres below ground level			
Major Development	Comprise: a) Winning and working of minerals or the use of land for mineral-working deposits b) Waste development c) Provision of 10 or more dwellinghouses or fewer, if the development site has an area of 0.5 hectares or more d) Provision of a building or buildings where the floor space is 1,000 square metres or more e) Development on a site having an area of 1 hectare or more.			
Minor Development	 Comprise: a) Extensions to industrial or commercial or leisure facilities that do not increase floorspace not more than 250 square metres. b) Alterations that do not increase the size of buildings such as a change to the appearance of a building. c) Householder development within the curtilage of the dwelling such as extensions or loft conversion or ancillary buildings but, excludes a proposed development that would create a separate dwelling within the curtilage of the existing dwelling sub-division into flats 			
os	Ordnance Survey			
Ordinary Watercourse	A watercourse which does not form part of a Main River. Works usually require consent from either the Lead Local Flood Authority and the Internal Drainage Board.			
Q _{BAR}	The arithmetic mean, annual maximum flood.			
Rain Garden	Also referred to as bioretention; a planted device or depression that allows water to pond temporarily before percolating into the ground or drainage system. Layers of sand and gravel provide treatment potential and can improve water quality.			
Return Period	An estimate of the likelihood of a particular event occurring. For example, a 100-year storm refers to a storm that occurs on average once every 100 years. In other words, its annual probability of exceedance is 1% i.e., 1 in 100			
Riparian	Relating to the banks of a natural watercourse			
Soakaway	A subsurface structure into which water is conveyed and is designed to promote infiltration			
SSSI	Site of special scientific interest			
SPZ	Source Protection Zone. Areas where ground waters are used for human consumption and are protected from risk of pollution,			
SuDS	Sustainable Drainage System. A combination or individual elements of a drainage system designed to convey, store, or treat surface water to minimize long term detrimental impacts from developments.			
Swale	A shallow vegetated channel designed to convey, treat, and occasionally store surface water. Swales may also permit infiltration			
Urban Creep	Increase in impermeable areas within a development site over time. Examples of this are extensions to dwellings, paving over gardens or soft landscaping areas and the addition of new roads and buildings. Urban creep gives rise to increased volumes and rates of surface water runoff.			

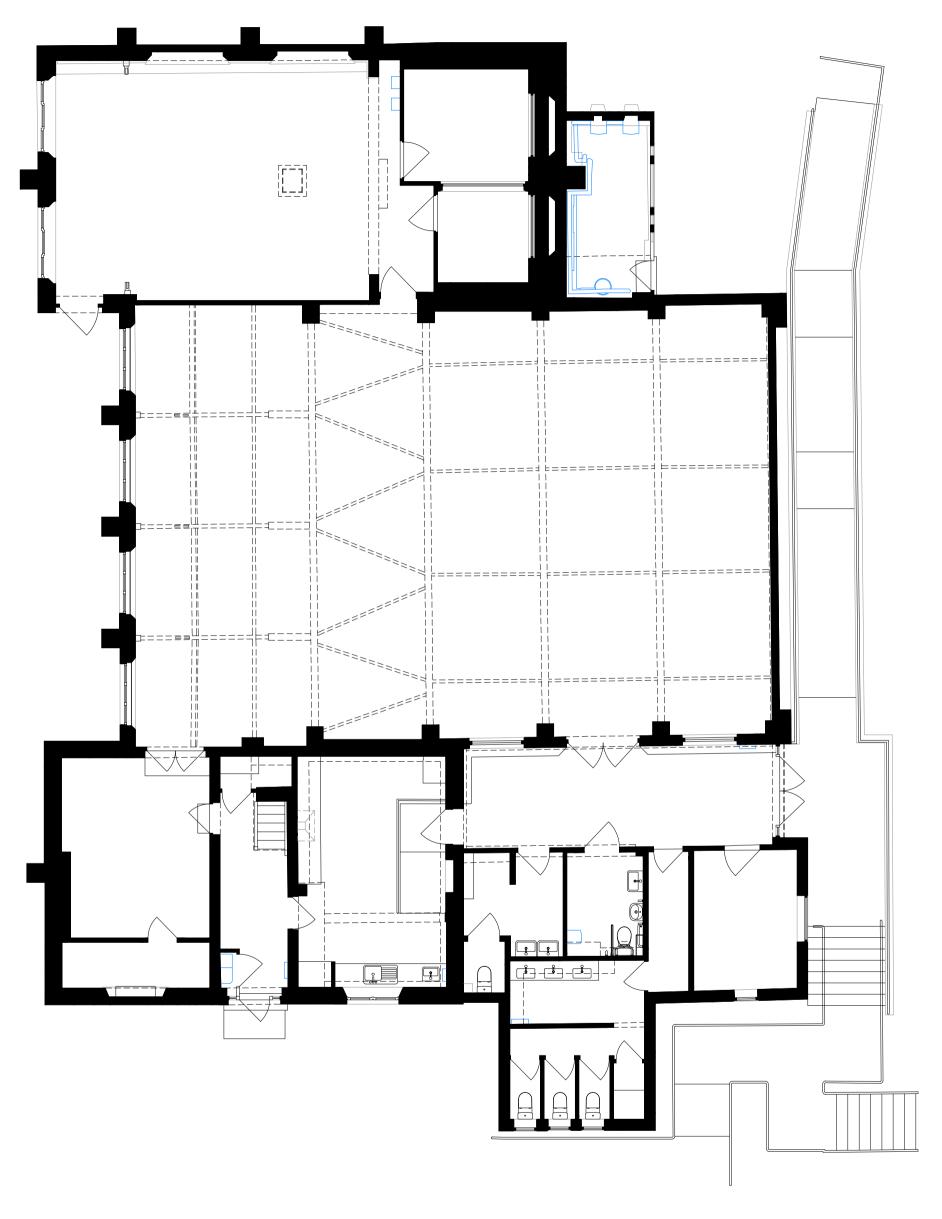
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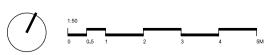
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Appendix A (Existing Site)







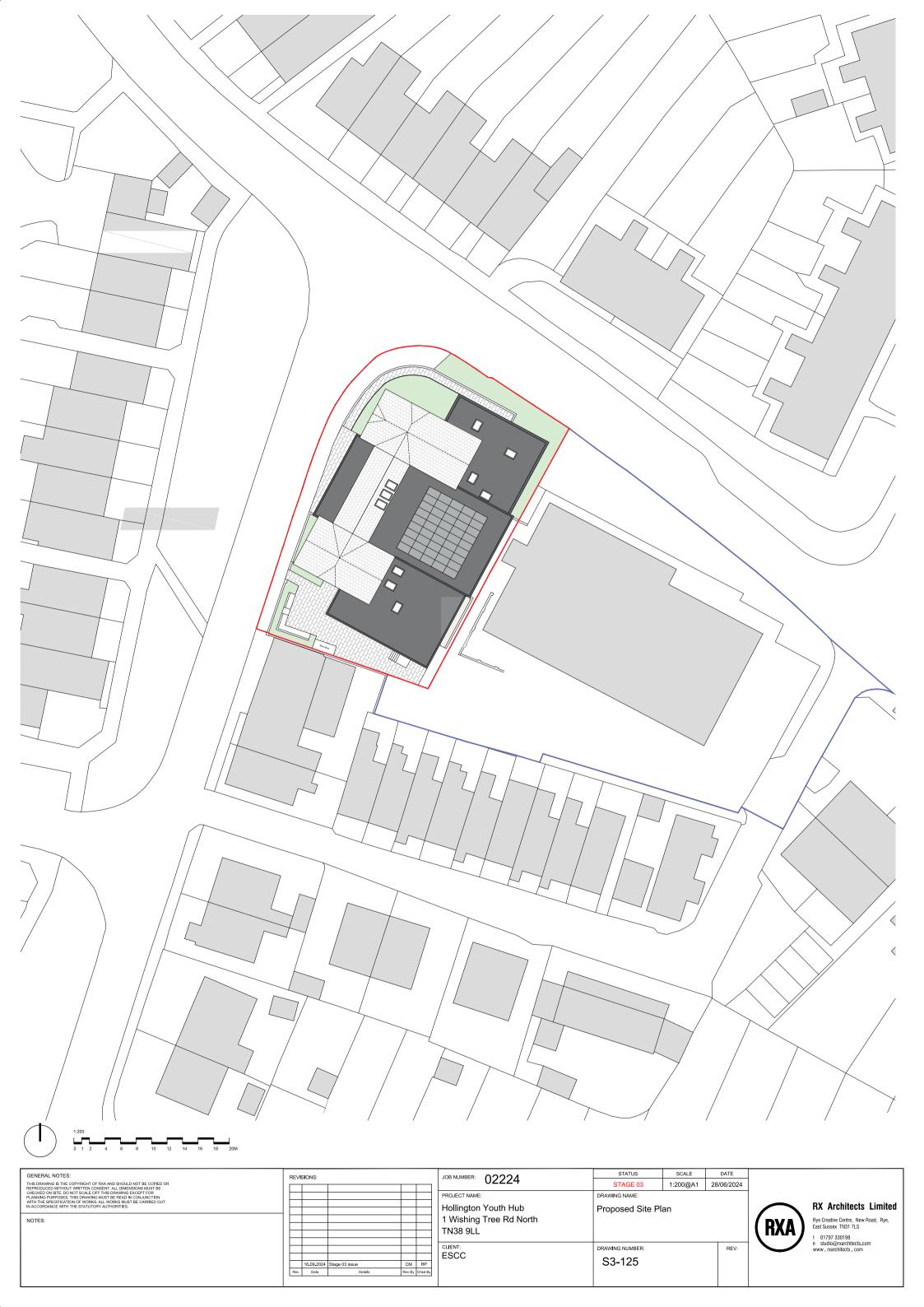
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THIS DRAWING IS THE COPYRIGHT OF RXA AND SHOULD NOT BE COPIED OR REPRODUCED WITHOUT WRITTEN COMESTIT ALL DIMENSIONS MUST BE REPORTED FOR THE PROPERTY OF THE P					PROJECT NAME: Hollington Youth Hub 1 Wishing Tree Rd North TN38 9LL	STAGE 03 1:50 @ A1 25/06/2024 DRAWING NAME: GF Demolition Plan		RX Architects Limited Rye Creative Centre, New Road, Rye, East Sussex TN31 7LS		
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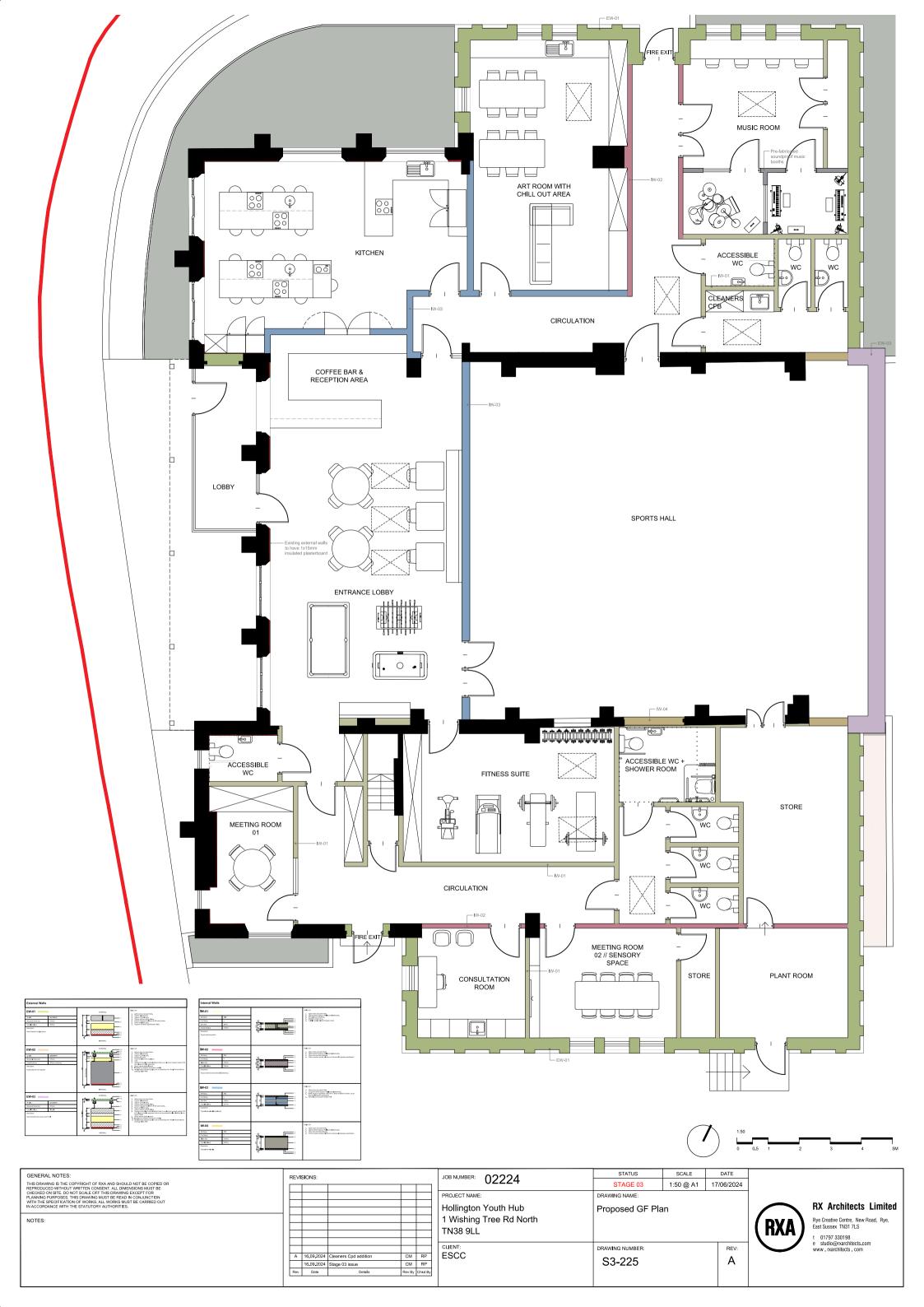
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Appendix B (Proposed Site)



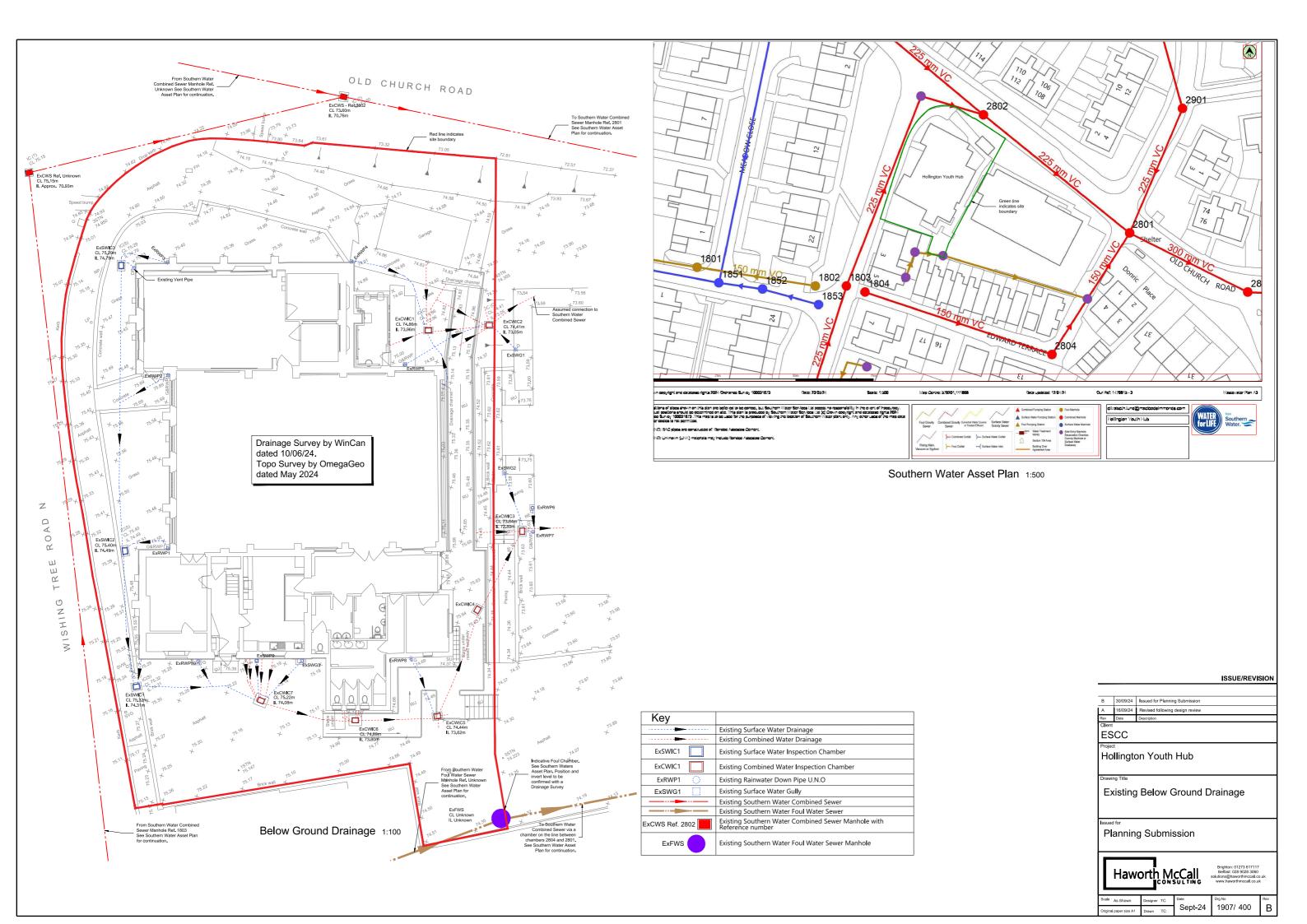


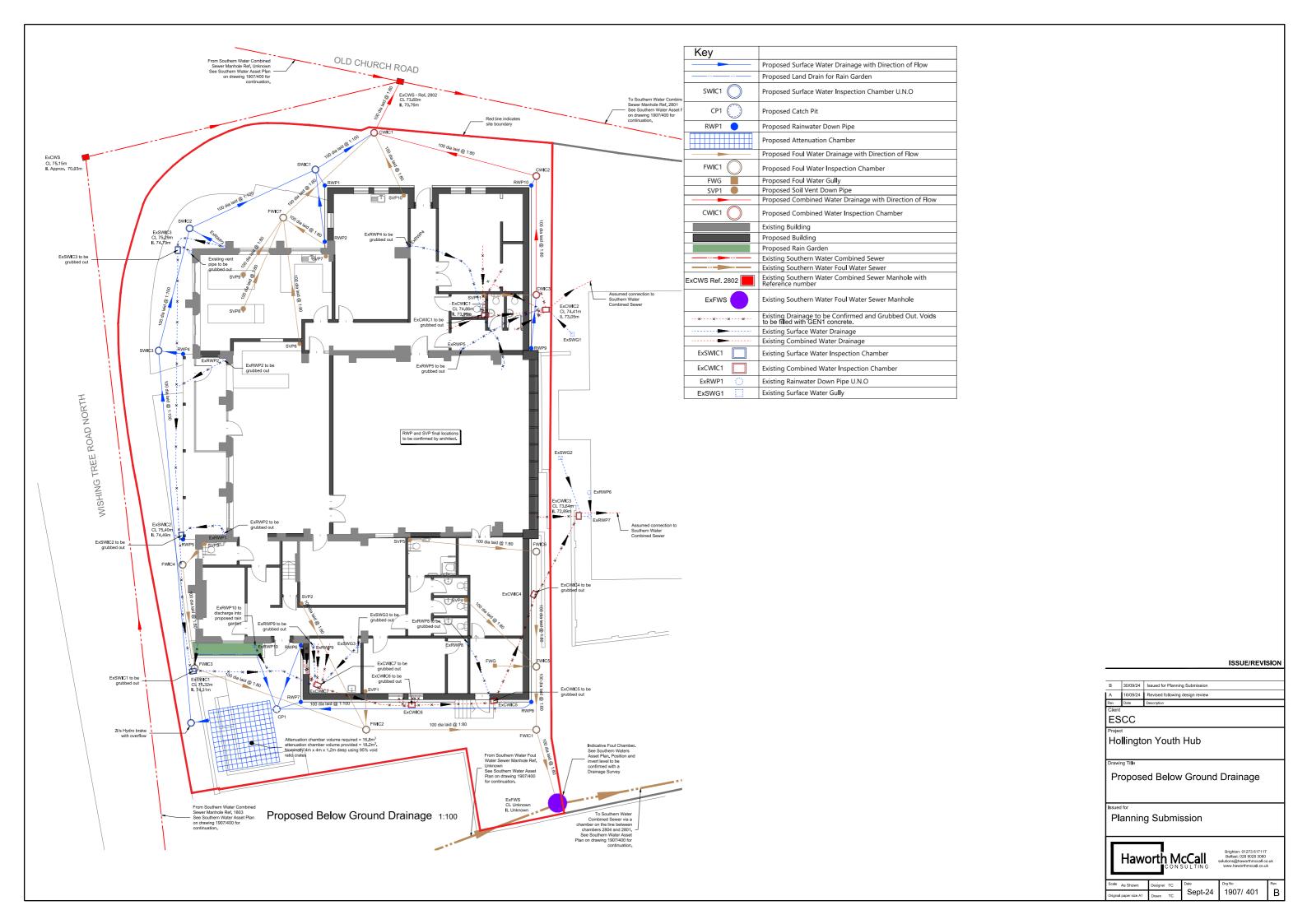
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Appendix C (Drainage Strategy)



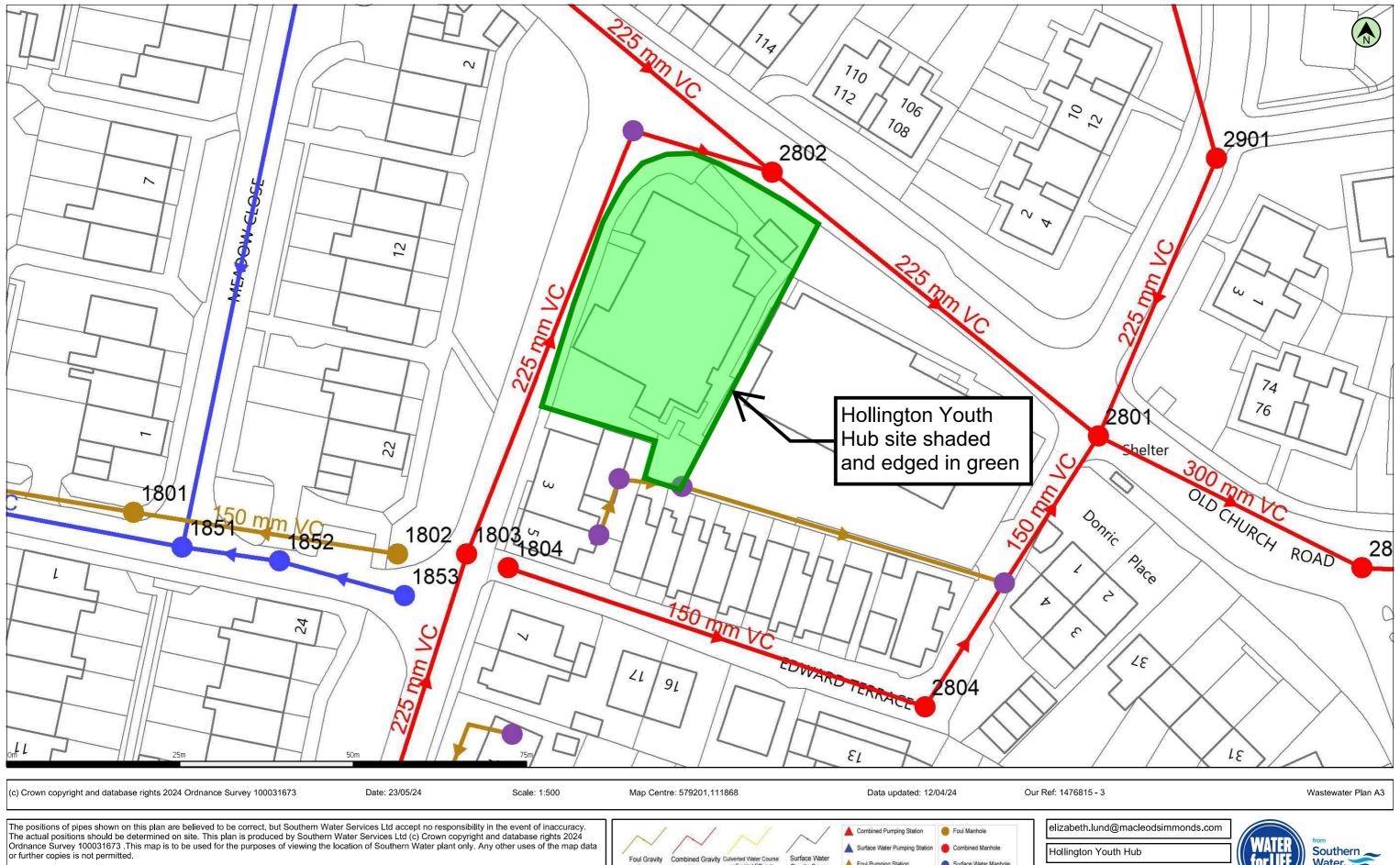


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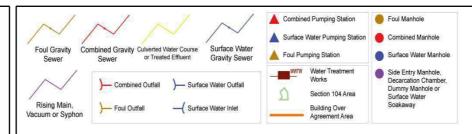


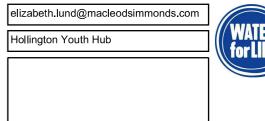
Appendix D (Southern Water Asset Plan)



WARNING: BAC pipes are constructed of Bonded Asbestos Cement.

WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement.







Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert
1803	С	74.79	71.46	
1804	С	74.88	73.48	
2801	С	69.98	67.57	
2802	С	73.58	70.76	
2803	С	67.07	64.40	
2804	С	70.00	68.78	
2901	С	71.48	70.11	
1801	F	73.44	71.22	
1802	F	74.94	73.10	
1851	S	73.72	71.65	
1852	S	74.26	71.97	
1853	s	74.63	73.06	

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Inver

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert

Project: 1907

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Appendix E (Drainage Survey)



Unit 5 Hoath Business Centre Hoath Lane Gillingham Kent ME8 OBF

Project Description: Drainage survey

Project: Hollington Youth Hub, 1 Wishing Tree Road,

Hastings, St Leonards-on-sea, TN38 9LL

Project Number: 2414962

Client: Consult Construct

Project Date: 10/06/2024

Revision: 0

Inspection Standard: MSCC5 Sewers & Drainage GB (SRM5 Scoring)

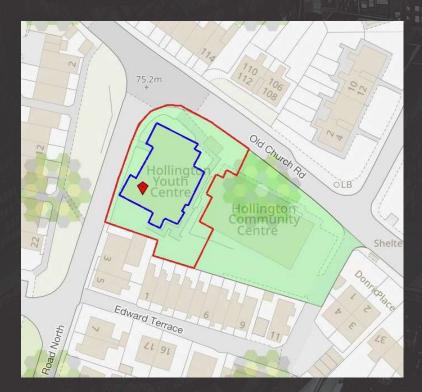
















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Section: 3; IC2 > IC3 (IC2X)	10
Section: 4; IC3 > IC4 (IC3X)	14
Section: 5; IC4 > IC5 (IC4X)	16
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Section: 7; IC6 > IC7 (IC6X)	22
Section: 8; IC7 > Unknown1 (IC7X)	25
Section: 9; IC8 > IC9 (IC8X)	29
Section: 10; IC9 > Unknown2 (IC9X)	31



Project Information

Project Name	Project Number	Project Date
Hollington Youth Hub, 1 Wishing Tree Road, Hastings	2414962	10/06/2024

Project Summary

IC1AX, IC1X, IC2X all had blockages and we were not able to survey the full length of the pipe runs. It is recommended that these be cleaned and re-surveyed.

No access IC6 as it was inside a locked void under the stairs to the main entrance and the occupants didn't have the key. It is recommended that this be surveyed.

IC7X & IC9X both drained away from the area. IC7X contains multiple bends which we were jot able to get the camera around. It is still possible to locate the end of this pipe if it becomes necessary, but it wasn't attempted as it was out of area. IC9X contains a blockage due to a large build up of soil. It is recommended that this be cleared and resurveyed. It was not possible to locate its downstream connection due to the blockage. IC9X also contains a small crack where a root has worked its way into the pipe. This is likely to get worse now the root has made its way into the pipe. Recommend removal of the roots and consider lining the pipe to prevent further root ingress.

The system as a whole requires cleaning due to many build ups of soil and blockages. It is not currently draining effectively throughout.

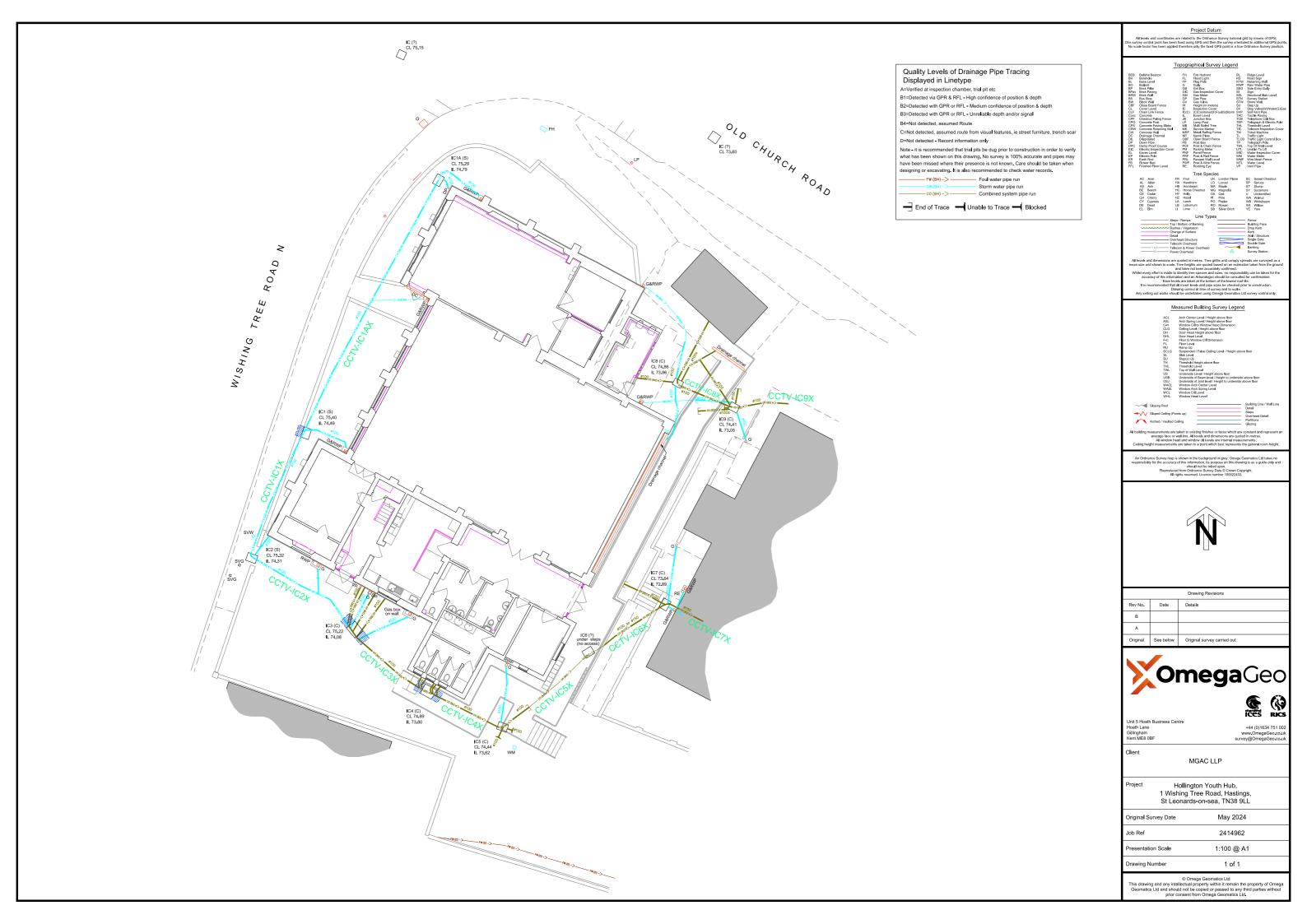
It is recommended that this survey be shared with a drainage engineer for further comment and recommendations.

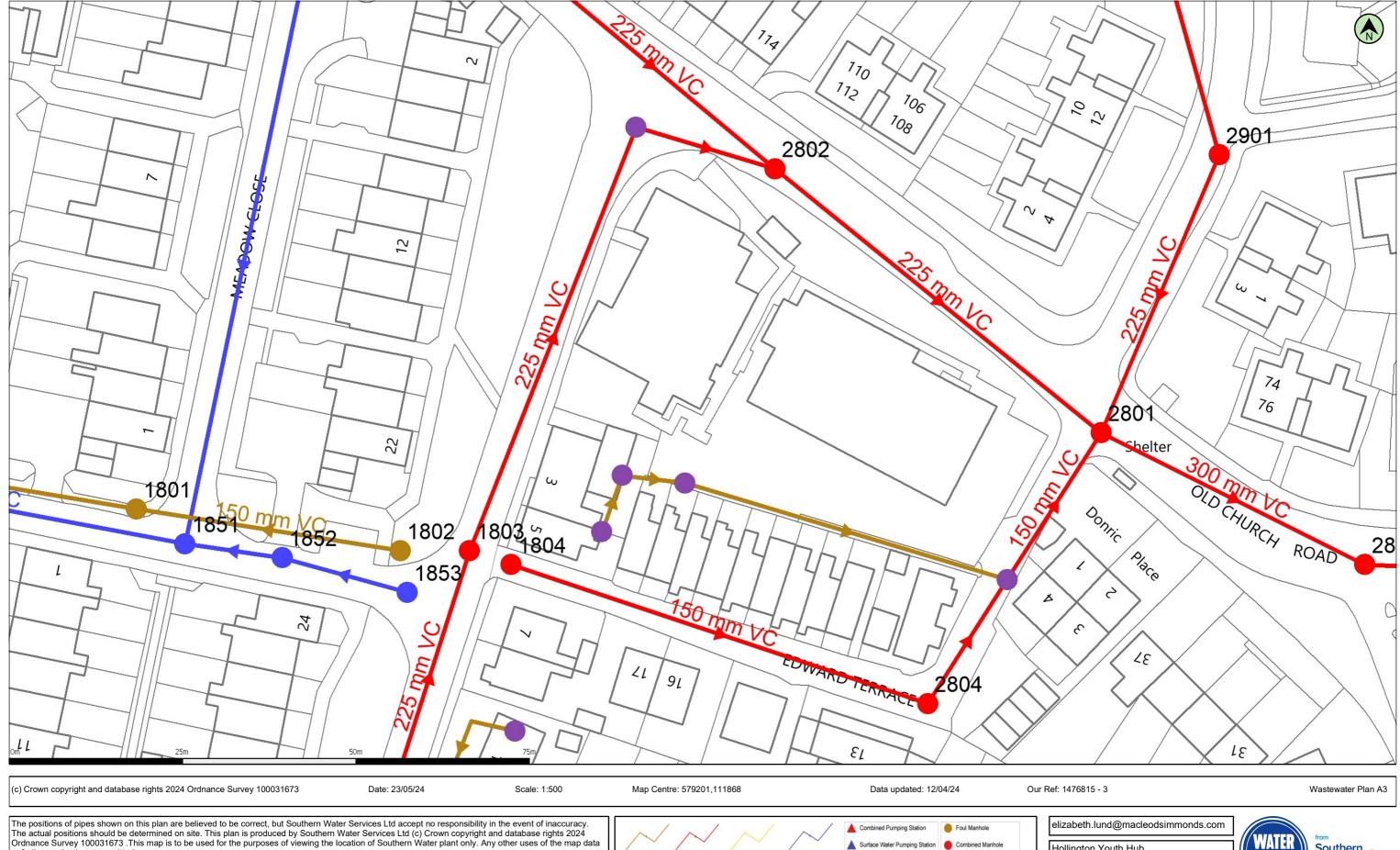


Project Information

Project Name	Project Number	Project Date
Hollington Youth Hub. 1 Wishing Tree Road, Hastings	2414962	10/06/2024

Project Notes
The purpose of this survey is to determine the condition of the main pipe sections between the various manholes and make comment on the general health of the system.

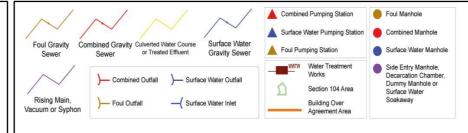


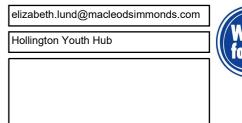


or further copies is not permitted.

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1000		7 1.00	70.00	
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Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert