

TN01 – Additional Flood Risk Assessment & Outline Drainage Strategy



84 North Street
Guildford
Surrey
GU1 4AU

Site: Land To R/O 99 Leylands Road, Burgess Hill, RH15 8AA
Prepared by: Chris Gray
Approved by: Jason Morgans
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Tel: 01483 531300
<http://www.motion.co.uk>

1.0 Introduction

- 1.1 This technical note has been produced by Motion on behalf of Watling. It supports the proposed demolition of an existing garage and shed and erection of a 2no. bedroom dwelling with associated landscaping, parking for two cars and erection of a new shed.
- 1.2 The Existing and Proposed Site Plans are included in **Appendix A**. The Site Location Plan is in **Appendix B**.
- 1.3 This Additional Flood Risk Assessment & Outline Drainage Strategy follows the guidance set out in:
- National Planning Policy Framework (NPPF)
 - Planning Practice Guidance (PPG) to the National Planning Policy Framework
 - CIRIA SuDS Manual 2015 (CIRIA C753)
 - Non-Statutory Technical Standards for SuDS (NSTS)
 - Mid Sussex District Council's Flood Risk and Drainage for Planning guidance¹
 - Mid Sussex District Council's SuDs guidance²

¹ <https://www.midsussex.gov.uk/planning-building/flood-risk-and-drainage-for-planning/>

² <https://www.midsussex.gov.uk/environment-net-zero/sustainable-drainage-systems-suds/>

2.0 Site

Table 2.1 – Site Summary

Site Name	Land To R/O 99 Leylands Road
Location	Burgess Hill, RH15 8AA
Grid Reference	531548, 119876
Site Area	Approximately 400m ²
Development Type	Proposed demolition of an existing garage and shed and erection of a 2no. bedroom dwelling with associated landscaping, parking for two cars and erection of a new shed
Flood Zone	Flood Zone 1
Flood Risk Vulnerability Classification	More Vulnerable
Surface Water Flood Risk	Predominantly very low risk, with low risk surface water flood extents which interact with the proposed rear garden, dwelling and eastern boundary; and a comparatively small area of high risk surface water flood extent which interacts with garden ground along the northern site boundary.
Local Water Authority	Southern Water
Local Planning Authority	Mid Sussex District Council (MSDC)
Lead Local Flood Authority	West Sussex County Council (WSCC)

Site Location and Description

- 2.1 The Existing and Proposed Site Plans are included in **Appendix A**.
- 2.2 The site forms part of 99 Leylands Road, which is situated in the north of Burgess Hill.
- 2.3 The OS 1:2,500 1948-1973 map available to view on the National Library of Scotland Side by Side Georeferenced Maps Viewer Website³ shows 99 Leylands Road, but not Millbank Road to the south (from where the proposed development site will be accessed).

Geology

- 2.4 British Geological Survey (BGS) mapping⁴ indicates that the geology at the site is Weald Clay Formation - Mudstone bedrock.

Hydrogeology

- 2.5 The Soil Infiltration Test Report in **Appendix C** states '2No. exploratory pits were hand dug at 99 Leyland Road, Burgess Hill, West Sussex, RH15 8AA in the rear garden on 25th May, Saturday . This confirmed the existence of silty clay. Upon reaching 1.2m depth, water was observed seeping into both excavated pits. When

³ <https://maps.nls.uk/geo/explore/side-by-side/#zoom=17.6&lat=50.96330&lon=-0.12877&layers=258&right=ESRIWorld>

⁴ <https://www.bgs.ac.uk/map-viewers/geoindex-onshore/>

300mm of water was added, the level increased 20mm within 30 minutes, indicating no soakage and the impracticality of an infiltration device’.

Hydrology

- 2.6 The EA Statutory Main River Map⁵ shows that the nearest Main River is approximately 0.8km southeast of the site.

Topography

- 2.7 With reference to the Topographical Survey in **Appendix B**, the site appear to slope from south southeast to north northwest at a gradient of around 1 in 11.

⁵ <https://www.arcgis.com/apps/webappviewer/index.html?id=17cd53dfc524433980cc333726a56386>

3.0 Flood Risk Legislative and Policy Framework

Flood and Water Management Act

- 3.1 The Flood and Water Management Act 2010 (FWMA) received Royal Assent on 8th April 2010. The Act was introduced to enforce some of the key proposals set out within UK Government flood and water strategies along with UK Government's response to the Sir Michael Pitt's Review of the summer 2007 floods.
- 3.2 LLFA's, including WSCC, have a responsibility under the FWMA to develop, maintain, apply and monitor the application of a strategy for local flood risk in their area. Local flood risk is defined as flood risk arising from surface run-off, groundwater and ordinary watercourses (i.e. non main rivers). The EA plays a role in managing the watercourses designated as 'main rivers'.

The Environment Agency Flood Map for Planning

- 3.3 The EA's Flood Map for Planning gives an indicative prediction of areas at risk of fluvial and tidal flooding. The mapping is an amalgamation of modelled flood levels and historical flood event outlines.
- 3.4 The Flood Map is split into 'Flood Zones', which demarcate the extent of flooding from rivers or the sea for different return periods. The Flood Map for Planning shows the extent of the natural floodplain if there were no defences or other man-made structures. They do not provide a definitive picture of where flooding would occur; rather, they provide an indicative prediction of areas at risk.
- 3.5 Table 4.1, below, lists the flood zone categories and explains the flood risk probabilities they represent.

Table 4.1 – Flood Zone Categories

Flood Zone	Definition
Zone 1 Low Probability	Land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map – all land outside Zones 2 and 3)
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain	This zone comprises land where water has to flow or be stored in times of flood. This is generally delineated as land having a 1 in 30 or greater annual probability of flooding. Local planning authorities should identify in their SFRAs areas of functional floodplain and its boundaries accordingly, in agreement with the EA. (Not separately distinguished from Zone 3a on the Flood Map)

New National Flood Risk Assessment (NaFRA) and National Coastal Erosion Risk Map (NCERM)

- 3.6 On 25 March 2025 the EA updated their Flood map for planning service which displays flood zones. The flood zones have been updated using the new NaFRA data. For the first time the EA will be displaying surface water risk and adding new information to show how climate change may affect the extent of flood risk from rivers and the sea in the future. The improved service is intended to assist planners and developers when making decisions about the location and design of new development, and making it easier to produce FRAs.

- 3.7 The new NaFRA provides a single picture of current and future flood risk from rivers, the sea and surface water for England. It also:
- ▶ uses the best available data both from the Environment Agency and local authorities
 - ▶ includes the potential impact of climate change on flood risk
 - ▶ uses much higher resolution maps that make it easier to see where there is risk
 - ▶ provides new data on depth of flooding, allowing people to understand the potential flood hazard they could face
- 3.8 The new NCERM provides the most up to date national picture of current and future coastal erosion risk for England. The EA has worked with local authorities, who supplied local data and verified outputs. It also:
- ▶ uses the best available evidence from the National Network of Regional Coastal Monitoring Programmes
 - ▶ includes climate change impacts on coastal erosion risk, and allowances for sea level rise
 - ▶ includes new information on areas of land instability at the coast caused by rainfall and rising groundwater levels which can contribute to cliff erosion and landslides
 - ▶ makes erosion information more accessible to coastal managers, planners and the public by providing clearer online visualisations

The National Planning Policy Framework

- 3.9 The NPPF sets out the Government's national policies on different aspects of land use planning in England in relation to flood risk. The Technical Guidance to the NPPF provides further information on the policies set out in the NPPF. It encourages development to take place in areas of lower flood risk wherever possible and stresses the importance of preventing increases in flood risk off-site to the wider catchment area. This includes ensuring that flood risk is taken into account at all stages of the planning process, avoiding inappropriate development in areas at risk of flooding and directing development away from those areas where risks are highest.
- 3.10 A site-specific FRA is required for proposals of 1ha or greater in Flood Zone 1, all proposals for development in Flood Zones 2 and 3, or in an area within Flood Zone 1 that has critical drainage problems (as notified to the local planning authority by the EA). The FRA should identify and assess the risks of all forms of flooding to and from the development and demonstrate how these flood risks will be managed so that the development remains safe throughout its lifetime, taking climate change into account.
- 3.11 Within each Flood Zone, a key factor in determining planning applications for development is the flood risk vulnerability of a development. Table 2 of the Technical Guidance to the NPPF categorises different development types according to their vulnerability to flooding. These categories are:
- ▶ Essential infrastructure;
 - ▶ Highly vulnerable development;
 - ▶ More vulnerable development;
 - ▶ Less vulnerable development, and;
 - ▶ Water-compatible development.
- 3.12 The proposed use of the site is classified as 'Essential infrastructure' development.

- 3.13 Within the different Flood Zones each of the above development categories are considered appropriate or not permissible. The Technical Guidance to the NPPF lists these as:

Flood Zone 1:

- ▶ All the development categories listed above are appropriate.

Flood Zone 2:

- ▶ Water-compatible, less vulnerable development, more vulnerable development and essential infrastructure is appropriate in this zone.

Flood Zone 3a:

- ▶ Water-compatible, less vulnerable development and essential infrastructure is appropriate in this zone. Highly vulnerable development should not be permitted in this zone.

Flood Zone 3b:

- ▶ Only water-compatible development and essential infrastructure that has to be there should be permitted in this zone.

- 3.14 The above information sets out the basis by which developments must be assessed in terms of flood risk. Later in this report the proposed development will be reviewed against the Flood Zone in which it is located. This will inform the appropriateness of the proposed reconstruction, as per the advice within the Technical Guidance to the NPPF.

Lead Local Flood Authority

- 3.15 As of April 2015, the LLFA became a statutory consultee on all major planning applications. The LLFA is required to assess planning applications in respect of surface water drainage and sustainable drainage systems. WSCC is the LLFA for the Buckinghamshire Area. The LLFA has been engaged during the pre-application process.

4.0 Current Flood Risk

- 4.1 Flooding can arise from a variety or combination of sources. These may be natural or artificial and may be affected by climate change. These are discussed, below, in the following two sections and are summarised in Table 5.1, which is in Chapter 5.

Flooding from Rivers and the Sea

- 4.2 The Environment Agency (EA) Flood Map for Planning in **Appendix D** shows that the site is in Flood Zone 1. This means in any year the site has a less than 1 in 1000 (0.1%) chance of flooding from rivers or the sea.
- 4.3 There will be no increased risk of flooding from rivers or the sea on site post development.

Surface Water Flooding

- 4.4 Surface water, or pluvial flooding, results from rainfall-generated overland flow, where rainwater has not yet reached a watercourse or sewer and where the local drainage systems become overwhelmed. Pluvial flooding often occurs during short, very intense storms, but can also occur during longer periods of rainfall when the ground is already saturated, or where land has low permeability due to development.
- 4.5 In these conditions surface water can build up where the topography allows it to converge or pond. Where it gathers it will travel down prevailing gradients. Pluvial flooding then occurs at locations where significant surface water flow paths converge, at localised low points and/or due to overland obstructions. In urban areas pluvial flooding often occurs where the built environment channels overland flow routes (down roads that are bounded by kerbs, for example) or where there are obstacles to the natural overland flow routes. Boundary walls and buildings are often the main causes and, hence, the likelihood of pluvial flooding to impact property and built-up areas.
- 4.6 Pluvial flooding is exacerbated in many cases by the mistreatment or failure of the below ground infrastructure (including partial or full blockages of gullies and/or within the combined sewers and the accumulation of fats, oils and greases within the sewer networks).
- 4.7 The Risk of Flooding from Surface Water - Climate Change 1 Dataset published by the EA (Last updated: 28 January 2025) has been downloaded and is included in the Proposed Drainage Strategy in **Appendix F**. This dataset shows the overall risk, rather than the risk associated with a specific event or scenario, and includes the 'Central' climate change allowance for the 2050s epoch (2040-2060) for the risk of flooding from surface water.
- 4.8 With reference to the EA's Risk of Flooding from Surface Water (RoFSW) map in **Appendix D**, the site is predominantly located in the very low surface water flood risk category (less than 1 in 1,000 chance of flooding each year). However, there are low risk surface water flood extents which interact with the proposed rear garden, dwelling and eastern boundary (i.e. between 1 in 1000 and 1 in 100 chance of flooding each year); and a comparatively small area of high risk surface water flood extent which interacts with proposed garden ground along the northern site boundary (i.e. greater than 1 in 30 chance of flooding each year).
- 4.9 The EA RoFSW Depth of Flooding Maps in **Appendix D** shows the yearly chance of surface water flooding and the yearly chance of surface water flooding between 2040 and 2060 up to 20cm at the site is very low (i.e. less than 1 in 1000 chance each year).
- 4.10 Surface water flooding will not be a constraint to the proposed development as the yearly chance of surface water flooding up to 20cm at the site is very low; the low risk surface water flood extent which interacts with the proposed rear garden and dwelling will be dealt with through the site's surface water drainage strategy; and it is a requirement of this FRA that site levels will be unchanged from existing.
- 4.11 As the proposed development will manage surface water in line with appropriate guidance, there will be a low risk of surface water flooding to the proposed development on site and no increased risk of surface water flooding off site.

- 4.12 Therefore, surface water is not prohibitive to the development.

Groundwater Flooding

- 4.13 The risk of groundwater flooding is dependent on local geological and hydrogeological conditions at any given time. Groundwater levels rise during wet winter months and fall again in the summer when rainfall is low and extractions are higher. In very wet winters, rising groundwater levels can reactivate flow in ephemeral streams that only flow for part of the year or even lead to the flooding of normally dry land.
- 4.14 The **Hydrogeology** information in Section 2.0 indicates low permeability ground conditions.
- 4.15 It is concluded that due to the low permeability ground conditions, groundwater is likely to be of limited volume, and the likelihood of groundwater flooding is low.

Flooding from Infrastructure Failure

- 4.16 Sewer flooding can occur when the capacity of the infrastructure is exceeded by excessive flows, or because of a reduction in capacity due to collapse, siltation, 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.
- 4.17 Typically, sewer systems are constructed to accommodate rainstorms with a 30-year return period or less, depending on their age. Consequently, rainstorm events greater than 1 in 30-years would be expected to result in surcharging of some parts of the sewer system. In fact, due to most gullies being poorly maintained and often partially blocked with silt, leaves and other debris, their capacity is often estimated to be closer to the 1 in 10-year storm.
- 4.18 It is noted with reference to the Existing Site Plan in **Appendix A** that two road gullies are located at the end of Millbank Road, close to the existing vehicle access to the site.
- 4.19 The CCTV survey report and Southern Water Sewer Map in **Appendix C** show that there is a 150mm diameter surface water pipe that flows north northwest across the site before connecting to a 225mm diameter surface water pipe that flows east northeast adjacent to Leylands Road. It is currently interpreted that the aforementioned surface water pipes are part of the highway drainage network.
- 4.20 The absence of identified inlets to surface water pipe in the CCTV survey report indicate that the two road gullies located at the end of Millbank Road do not connect to this system.
- 4.21 The CCTV survey report and Southern Water Sewer Map in **Appendix C** also confirm that there is a 150mm diameter public foul water sewer that flows north northwest across the site before connecting to a 300mm diameter public foul water sewer that flows east northeast under Leylands Road.
- 4.22 In the event of Millbank Road gully flooding, it is envisaged flood water will collect and flow in a similar way to what is indicated in the EA RoFSW mapping, therefore the requirements to manage surface water flooding are also considered to be applicable to flooding from infrastructure failure i.e. it is a requirement of this FRA that site levels will be unchanged from existing.
- 4.23 In the event of surface water pipe or public foul water sewer flooding, the site levels are such that any flooding associated with the existing on site manholes would be routed away from the proposed dwelling location as existing.
- 4.24 With regards to the new drainage infrastructure required for the development, it is a requirement of this FRA that the last private foul and surface inspection chambers are fitted with dual flap non-return valves or similar to prevent backflow from overloaded drainage/sewer systems.
- 4.25 Therefore, with reference to the Surface water flooding assessment, it is concluded that there will be a low risk of flooding from infrastructure failure to the proposed development on site and no increased risk of flooding from infrastructure failure off site.

Flooding from Artificial sources

- 4.26 The EA Maximum extent of flooding from reservoirs map in **Appendix D** indicates that the site is not in an area at risk of reservoir flooding.

Historic Flood Risk

- 4.27 Appendix C of the Mid Sussex District Council, Strategic Flood Risk Assessment Level 1, June 2015 states 'The Worlds End area of Burgess Hill (north east part of the town) suffers from localised flooding problems resulting from overland flow and surcharging sewers during periods of heavy rainfall. Any FRA in this locality will need to consider these issues and demonstrate that this problem will not be exacerbated, and where possible reduced or resolved. Further information on this issue can be gained from the District Council's Drainage Team. Throughout the town surface water drainage will need to be carefully considered for any development work and as part of any FRA, if undertaken'.
- 4.28 The proposed development site is not located in the Worlds End area, and please see the Outline Surface Water Drainage Strategy section of this technical note for how the proposed surface water drainage will be attenuated to the 2 year return period greenfield runoff rate (QMED) for up to the 1 in 100-year + 45% critical rainfall event.

Future Flood Risk & Climate Change

- 4.29 The NPPF and the supporting Technical Guidance document sets out how flood risk should be considered over the lifetime of a development. This requires an increase in flood risk due to climate change to be taken into account. Both peak river flows and rainfall intensity should be assessed.

Peak River Flows

- 4.30 Please see Sections 4.2-4.3.

Peak Rainfall Intensity and Climate Change

- 4.31 As of May 2022, the NPPF's climate change rainfall increase predictions for developments was updated and is to be used with immediate effect. Whereas previous climate change parameters for rainfall increases used set values (20% or 40%) across the UK depending on the probable lifetime of a development, the latest climate change advice is determined by which catchment the development is within and every river catchment in the UK has different climate change rainfall increase predictions.
- 4.32 This is because the southeast of England tends to see heavier, stormier rainfall than the northwest, which tends to see longer rainfall events with less intensity. This, in combination with the prevailing geo-environmental characteristics of each catchment, has determined the climate change increases that are to be used.
- 4.33 The other major change to the 2022 climate change rainfall predictions is that climate change increases should also be applied to the 1 in 30-year rainfall event, whereas previously it was only applied to the 1 in 100-year event. As such, the hydraulic modelling for the proposed development will also apply a climate change increase to the 1 in 30-year rainfall event.

- 4.34 The site lies within the Adur and Ouse Management Catchment⁶. The peak rainfall climate change allowances are as follows in Table 4.1, below:

Table 4.1 – Climate Change Predictions for Adur and Ouse Management Catchment

1 in 30-year Rainfall Event	Central Allowance	Upper End Allowance
2050's epoch	20%	35%
2070's epoch	20%	40%
1 in 100-year Rainfall Event	Central Allowance	Upper End Allowance
2050's epoch	20%	45%
2070's epoch	25%	45%

- 4.35 For a residential development, which could have a lifespan of up to 100 years, the 2070's epoch should be used and the NPPF advises that for developments with a lifetime beyond 2100, FRAs should assess the upper end allowances for both the 1% and 3.3% annual exceedance probability events.
- 4.36 Therefore, for the proposed development site, the climate change increase predictions that should be applied to the hydraulic model are 40% for the 1 in 30-year rainfall event and 45% for the 1 in 100-year event.
- 4.37 The site is currently in an area predominantly of very low surface water flood risk and, as such, with the climate change increase predictions outlined above, it is likely that surface water flood risk will increase on the site, therefore all hard landscaping areas will be constructed as pervious. Additionally, the drainage strategy for the development will take the latest climate change predictions into account so that the surface water generated in the 1 in 100-year + 45% rainfall event will be attenuated on site and will not cause flooding locally or to neighbouring areas.

Residual Flood Risk

- 4.38 It is important to recognise that flood risk can never be fully mitigated and there will always be a residual risk of flooding. The residual risk is associated with several potential risk factors, including (but not limited to):
- ▶ A flood event that exceeds that for which the local flood defences or local drainage system has been designed to withstand.
 - ▶ A residual danger posed to property and life because of flood defence failure through overtopping or structural collapse.
 - ▶ General uncertainties inherent in the prediction of flooding.
- 4.39 Modelling of flood events is not an exact science. Therefore, there is an inherent uncertainty in the prediction of flood levels and extents used in the assessment of flood risk. EA's Flood Map for Planning is largely based upon detailed modelling within the area. However, other mapping products require numerous assumptions to be made. Whilst they all provide a good depiction of flood risk for specific modelled conditions, all modelling requires the making of core assumptions and these might not occur in the open and dynamic environment of a flood event. Also, the EA's Flood Map for Planning and other flood modelling is updated regularly. Interested

⁶ <https://environment.data.gov.uk/hydrology/climate-change-allowances/rainfall>

parties are recommended to keep abreast of this so that a significant change or increase in flood risk can be determined.

The Sequential and Exception Tests

- 4.40 The NPPF specifies that 'The sequential test should be used in areas known to be at risk now or in the future from any form of flooding, except in situations where a site-specific flood risk assessment demonstrates that no built development within the site boundary, including access or escape routes, land raising or other potentially vulnerable elements, would be located on an area that would be at risk of flooding from any source, now and in the future (having regard to potential changes in flood risk)'.
- 4.41 On the basis the FRA indicates the site lies within Flood Zone 1 - i.e. land assessed as having less than a 0.1 per cent (1 in 1000) chance of river flooding occurring each year as defined in Government Guidance on Flood risk and coastal change⁷ - and the FRA indicates a low risk of flooding from all sources both now and in the future, sequential and exception tests are indicated not be required for the proposed development.

⁷ <https://www.gov.uk/guidance/flood-risk-and-coastal-change>

5.0 Flood Risk Summary

5.1 The previous section has discussed flood risk for the site from all sources and with an inclusion for climate change. Table 5.1 summarises the flood risks to the development.

Table 5.1: Summary of Flood Risk

Flood Source	Risk Level				Comment
	High	Medium	Low	Very Low	
Fluvial				X	Flood Zone 1
Tidal				X	Tidal Flood Zone 1
Groundwater			X		It is concluded that due to the low permeability ground conditions, groundwater is likely to be of limited volume, and the likelihood of groundwater flooding is low.
Surface Water			X		Surface water flooding will not be a constraint to the proposed development as the yearly chance of surface water flooding up to 20cm at the site is very low; the low risk surface water flood extent which interacts with the proposed rear garden and dwelling will be dealt with through the site's surface water drainage strategy; and it is a requirement of this FRA that site levels will be unchanged from existing.
Canals				X	There are no canals in the vicinity.
Reservoirs				X	Site is not in an area at risk of reservoir flooding.
Infrastructure Failure			X		In the event of Millbank Road gully flooding, it is envisaged flood water will collect and flow in a similar way to what is indicated in the EA RoFSW mapping, therefore the requirements to manage surface water flooding are also considered to be applicable to flooding from infrastructure failure i.e. it is a requirement of this FRA that site levels will be unchanged from existing. In the event of surface water pipe or public foul water sewer flooding, the site levels are such that any flooding

					associated with the existing on site manholes would be routed away from the proposed dwelling location as existing. With regards to the new drainage infrastructure required for the development, it is a requirement of this FRA that the last private foul and surface inspection chambers are fitted with dual flap non-return valves or similar to prevent backflow from overloaded drainage/sewer systems.
Increase due to Climate Change			X		Increased peak rainfall intensities⁸ are expected to affect surface water flood risk and infrastructure. This has been taken into account in the proposed drainage strategy.

- 5.2 It is a requirement of this FRA that site levels will be unchanged from existing.
- 5.3 With regards to the new drainage infrastructure required for the development, it is a requirement of this FRA that the last private foul and surface inspection chambers are fitted with dual flap non-return valves or similar to prevent backflow from overloaded drainage/sewer systems.
- 5.4 On the basis the FRA indicates the site lies within Flood Zone 1 - i.e. land assessed as having less than a 0.1 per cent (1 in 1000) chance of river flooding occurring each year as defined in Government Guidance on Flood risk and coastal change⁹ - and the FRA indicates a low risk of flooding from all sources both now and in the future, flood risk should not form an impediment to the proposed development.

⁸ <https://environment.data.gov.uk/hydrology/climate-change-allowances/rainfall>

⁹ <https://www.gov.uk/guidance/flood-risk-and-coastal-change>

6.0 Outline Surface Water Drainage Strategy

- 6.1 The FEH QMED Method has been used to derive a 2 year return period greenfield runoff rate (QMED) value of 0.34 l/s i.e. $9 / 0.590 \times 0.022 = 0.34$. The Greenfield Runoff Calculation and Outline Drainage Strategy Plan are included in **Appendix E**.
- 6.2 It is noted that the Southern Water letter referenced DSA000033043 and dated 19 April 2024 for Planning Application DM/24/0578 in **Appendix C** states:
- 'In situations where surface water is being considered for discharge to our network, we require the below hierarchy for surface water to be followed which is reflected in part H3 of the Building Regulations. Whilst reuse does not strictly form part of this hierarchy, Southern Water would encourage the consideration of reuse for new developments.
- Reuse
 - Infiltration
 - Watercourse
 - Storm Sewer
 - Combined Sewer.'
- 6.3 With reference to the CCTV DRAINAGE SURVEY - EXISTING LAYOUT in **Appendix C**, it is noted that there is a 150mm diameter surface water pipe that flows north northwest across the site before connecting to a 225mm diameter surface water pipe that flows east northeast adjacent to Leylands Road. It is currently interpreted that the aforementioned surface water pipes are part of the highway drainage network. Subject to permission from WSCC Highways, it is proposed to discharge surface water runoff from the impermeable area introduced by the development to the existing onsite surface water pipe at the QMED rate of 0.4 l/s for up to the 1 in 100-year + 45% critical rainfall event. The Outline Drainage Strategy Plan is shown in **Appendix E**.
- 6.4 On the basis more attenuation storage is required than what can be provided by the Type C no infiltration permeable paving, it will be necessary for geocellular attenuation storage. The design features of the geocellular attenuation storage are as follows:
- ▶ Dimensions: 3.5 x 10.0 x 0.40m (L x W x D) suitable for minimum 300mm cover
 - ▶ Completely wrapped in an Impermeable Separating Geomembrane
 - ▶ Heavy Duty Permeable Separating Geotextile wrapped on all sides to protect the geomembrane
 - ▶ Granular backfill material or as-dug backfill to meet assumptions made by the detailed designer (Figure 21.4 of the CIRIA SuDS Manual) at the sides
 - ▶ 'Sand blinding / bedding layer' (Figure 21.4 of the CIRIA SuDS Manual) at the base
- 6.5 CIRIA C753 provides guidance on the treatment of surface water runoff. Table 4.3 rates the pollution hazard from residential roofs as 'very low' and the removal of gross solids and sediments will be achieved through the use of a silt trap and filter prior to discharge to the rainwater harvesting systems. Table 4.3 rates the pollution hazard from residential car parks as 'low', and reference to the Simple Index Approach (SIA) in Tables 26.2-26.4 indicates that the pervious pavement coarse graded aggregate (CGA) sub base will provide sufficient mitigation for discharges to surface water.
- 6.6 Exceedance events are those in excess of the design rainfall event (i.e., greater than the 1 in 100-year + 45% critical rainfall event). The likelihood of exceedance flows causing any flooding on site or to neighbouring properties is considered to be low on the basis the proposed Type C no infiltration permeable paving and geocellular attenuation storage will provide storage in excess of the 1 in 100-year + 45% critical rainfall event.

7.0 Outline Foul Water Drainage Strategy

- 7.1 The CCTV survey report and Southern Water Sewer Map in **Appendix C** show that the nearest public foul water sewer manhole (5802) is on site. This manhole is also shown on the Outline Drainage Strategy Plan in **Appendix E**.
- 7.2 It can be assumed foul waste from the site can drain by gravity to public foul water sewer manhole 5802. The exact details of the foul connection will be ascertained at the detailed design stage.
- 7.3 The peak foul flow rate from the proposed development has been based on the following assumptions as dictated by Sewerage Sector Guidance Appendix C, Approved Version 2.1, 25 May 2021:
- ▶ 0.05 litres per second per dwelling
 - ▶ $0.05 \times 1 \text{ dwelling} = 0.05 \text{ l/s}$
- 7.4 The calculated peak foul flow rate from the site is 0.05 l/s, and a sewer connection application will need submitted to Southern Water once planning permission is granted.

8.0 Existing Sewers on Site

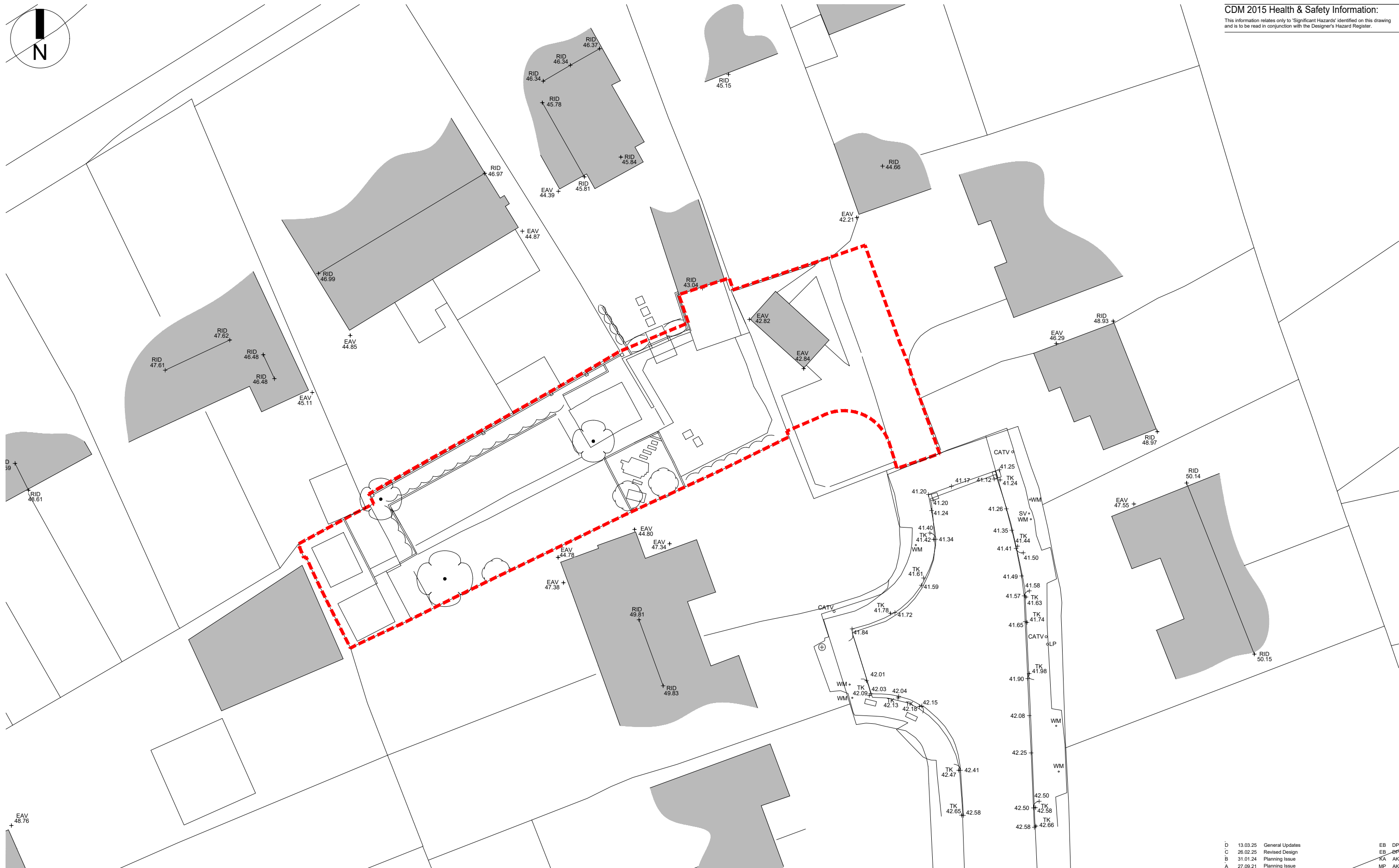
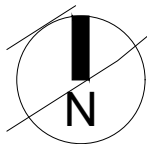
- 8.1 The proposed building in the Proposed Site Plan in **Appendix A** is located approximately 3m from the public foul water sewer. With reference to the Sewer Easement Protocol Flow Diagram in **Appendix C**, on the basis the public foul water sewer diameter is less than 300mm and the depth is less than 3.0m, this is considered acceptable.
- 8.2 A private lateral drain that connects to the public foul water sewer will pass closer to the proposed building than 2m. However, on the basis this drain is a 100mm diameter pipe which carries wastewater away from a single neighbouring property to the public foul water sewer, diverting this lateral drain around the proposed building as part of the development is considered acceptable.
- 8.3 The exact details of the private lateral drain diversion will be ascertained at the detailed design stage.

9.0 Summary and Conclusion

- 9.1 This technical note has been produced by Motion on behalf of Watling. It supports the proposed demolition of an existing garage and shed and erection of a 2no. bedroom dwelling with associated landscaping, parking for two cars and erection of a new shed.
- 9.2 It is a requirement of this FRA that site levels will be unchanged from existing.
- 9.3 With regards to the new drainage infrastructure required for the development, it is a requirement of this FRA that the last private foul and surface inspection chambers are fitted with dual flap non-return valves or similar to prevent backflow from overloaded drainage/sewer systems.
- 9.4 On the basis the FRA indicates the site lies within Flood Zone 1 - i.e. land assessed as having less than a 0.1 per cent (1 in 1000) chance of river flooding occurring each year as defined in Government Guidance on Flood risk and coastal change - and the FRA indicates a low risk of flooding from all sources both now and in the future, flood risk should not form an impediment to the proposed development.
- 9.5 With reference to the CCTV DRAINAGE SURVEY - EXISTING LAYOUT in **Appendix C**, it is noted that there is a 150mm diameter surface water pipe that flows north northwest across the site before connecting to a 225mm diameter surface water pipe that flows east northeast adjacent to Leylands Road. It is currently interpreted that the aforementioned surface water pipes are part of the highway drainage network. Subject to permission from WSCC Highways, it is proposed to discharge surface water runoff from the impermeable area introduced by the development to the existing onsite surface water pipe at the QMED rate of 0.4 l/s for up to the 1 in 100-year + 45% critical rainfall event. The Outline Drainage Strategy Plan is shown in **Appendix E**.
- 9.6 On the basis more attenuation storage is required than what can be provided by the Type C no infiltration permeable paving, it will be necessary for geocellular attenuation storage.
- 9.7 The likelihood of exceedance flows causing any flooding on site or to neighbouring properties is considered to be low on the basis the proposed Type C no infiltration permeable paving and geocellular attenuation storage will provide storage in excess of the 1 in 100-year + 45% critical rainfall event.
- 9.8 The CCTV survey report and Southern Water Sewer Map in **Appendix C** show that the nearest public foul water sewer manhole (5802) is on site. This manhole is also shown on the Outline Drainage Strategy Plan in **Appendix E**.
- 9.9 It can be assumed foul waste from the site can drain by gravity to public foul water sewer manhole 5802. The exact details of the foul connection will be ascertained at the detailed design stage.
- 9.10 The proposed building in the Proposed Site Plan in **Appendix A** is located approximately 3m from the public foul water sewer. With reference to the Sewer Easement Protocol Flow Diagram in **Appendix C**, on the basis the public foul water sewer diameter is less than 300mm and the depth is less than 3.0m, this is considered acceptable.
- 9.11 A private lateral drain that connects to the public foul water sewer will pass closer to the proposed building than 2m. However, on the basis this drain is a 100mm diameter pipe which carries wastewater away from a single neighbouring property to the public foul water sewer, diverting this lateral drain around the proposed building as part of the development is considered acceptable.
- 9.12 The exact details of the private lateral drain diversion will be ascertained at the detailed design stage.
- 9.13 Therefore, flood risk should not form an impediment to the proposed development and the surface water drainage system shows no flooding in excess of the 1 in 100-year + 45% cc critical rainfall event. As such, flood risk and surface water management should not form an impediment to the progress of the planning application for this development.

Appendix A

Existing and Proposed Site Plans



Client's Name
Wating

Job Title
Land at Millbank, Burgess Hill

Drawing Title
Existing Site Plan

Scale
1:250 @ A3
metres 2 4 6 8 10

Drawn
MP

Checked
AK

Date
09.09.21

Job No
7113

Drawing No
PL-03

Rev
D

Status
APPROVAL

Rev	Date	Revision Details	Dr	Ch
D	13.03.25	General Updates	EB	DP
C	26.02.25	Revised Design	EB	DP
B	31.01.24	Planning Issue	KA	AK
A	27.09.21	Planning Issue	MP	AK

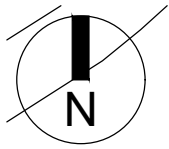


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www.ecearchitecture.com

London: 76 Great Suffolk Street
London, SE1 0BL
T 0207 928 2773 E london@ecearchitecture.com

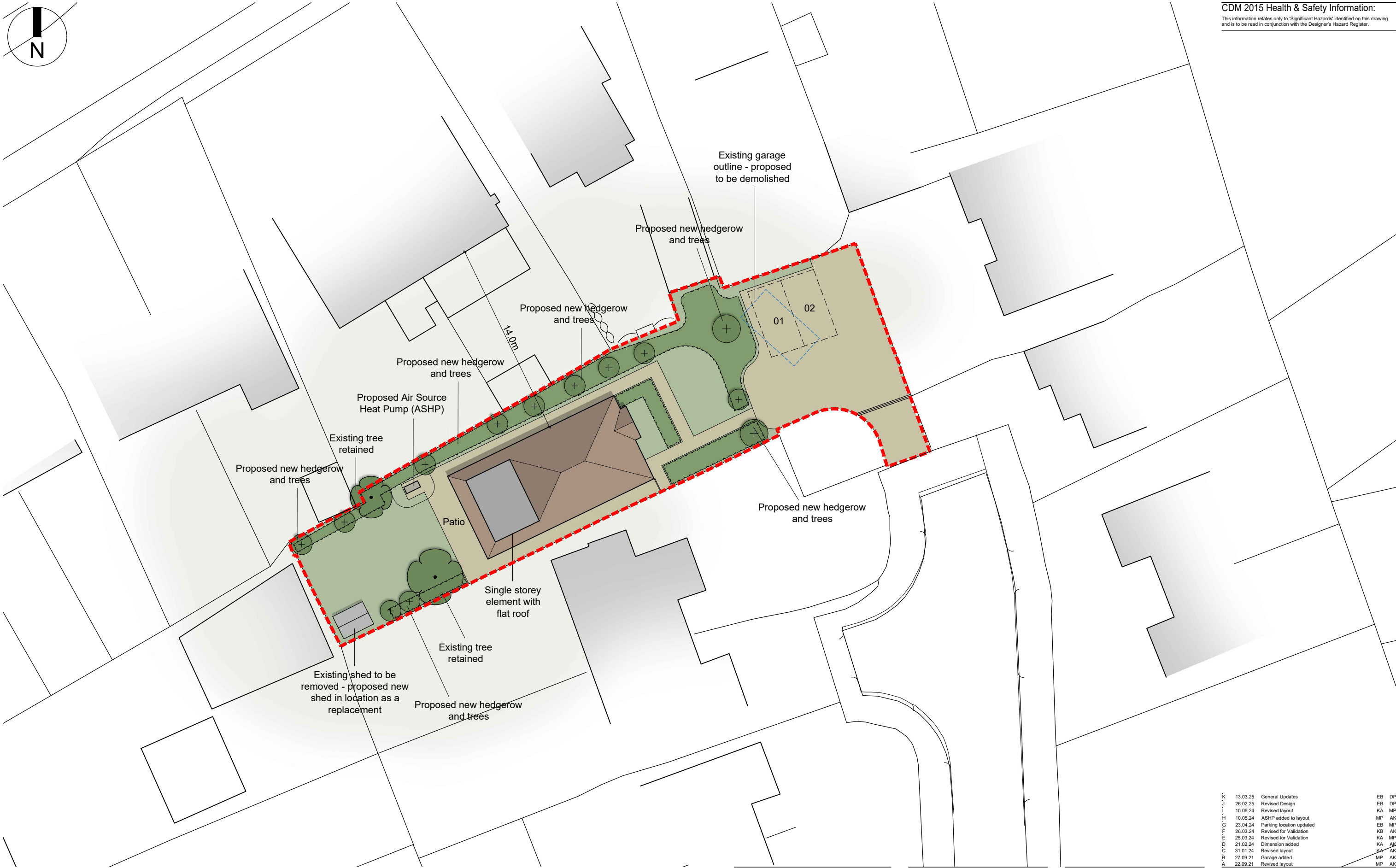
Sussex: Brooklyn Chambers, 11 Going Road
Worthing, West Sussex, BN12 4AP
T 01903 248777 E sussex@ecearchitecture.com

Bristol: Westworks, Colston Tower
Colston Street, Bristol, BS1 4XE
T 0117 214 1101 E bristol@ecearchitecture.com



CDM 2015 Health & Safety Information:

This information relates only to 'Significant Hazards' identified on this drawing and is to be read in conjunction with the Designer's Hazard Register.



Client's Name
Watling

Drawing Title
Proposed Site Plan

Drawn
MP
Checked
AK
Date
09.09.21

Job Title
Land at Millbank, Burgess Hill

Scale
1:250 @ A3
metres 2 4 6 8 10

Job No
7113
Drawing No
PL-04
Rev
K

Status

APPROVAL

K	13.03.25	General Updates	EB	DP
J	26.02.25	Revised Design	EB	DP
I	10.06.24	Revised layout	KA	MP
H	10.05.24	ASHP added to layout	MP	AK
G	23.04.24	Parking location updated	EB	MP
F	26.03.24	Revised for Validation	KA	MP
E	25.03.24	Revised for Validation	KA	MP
D	21.02.24	Dimension added	KA	AK
C	31.01.24	Revised layout	KA	AK
B	27.09.21	Garage added	MP	AK
A	22.09.21	Revised layout	MP	AK

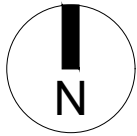


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www.ecearchitecture.com

London: 76 Great Suffolk Street
London, SE1 0BL
T 0207 928 2773 E london@ecearchitecture.com
Sussex: Brooklyn Chambers, 11 Going Road
Worthing, West Sussex, BN12 4AP
T 01903 248777 E sussex@ecearchitecture.com
Bristol: Westworks, Colston Tower
Colston Street, Bristol, BS1 4XE
T 0117 214 1101 E bristol@eceworks.com

Appendix B

Site Location Plan and Topographical Survey



CDM 2015 Health & Safety Information:

This information relates only to 'Significant Hazards' identified on this drawing and is to be read in conjunction with the Designer's Hazard Register.

Site Boundary



Client's Name
Wating

Drawing Title
Site Location Plan

Job Title
Land at Millbank, Burgess Hill

Scale
1:1250 @ A3
metres 10 20 30 40 50

Drawn
MP

Checked
AK

Date
10.09.21

Job No
7113

Drawing No
PL-01

Rev
C

Status

APPROVAL

C	13.03.25	General Updates	EB	DP
B	31.01.24	Planning Issue	KA	AK
A	27.09.21	Planning Issue	MP	AK

Rev	Date	Revision Details	Dr	Ch
-----	------	------------------	----	----



London: 76 Great Suffolk Street
London, SE1 0BL
T 0207 928 2773 E london@ecearchitecture.com
Sussex: Brooklyn Chambers, 11 Going Road
Worthing, West Sussex, BN12 4AP
T 01903 248777 E sussex@ecearchitecture.com
Bristol: Westworks, Colston Tower
Colston Street, Bristol, BS1 4XE
T 0117 214 1101 E bristol@ecwestworks.com
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531500E
531520E
531540E
531560E
531580E
531600E

119900N

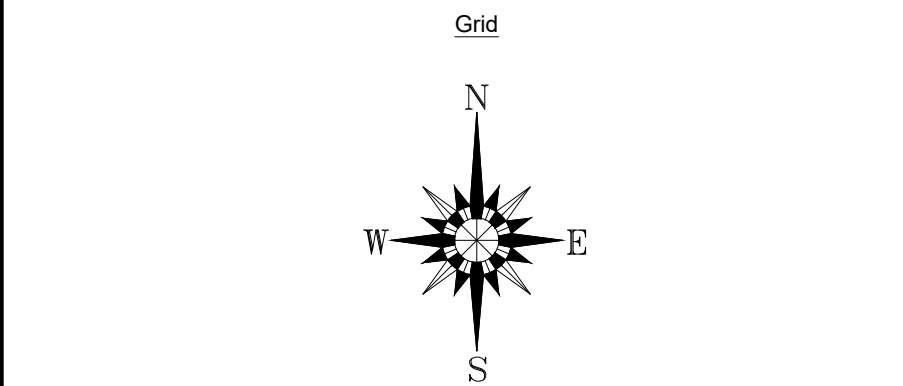
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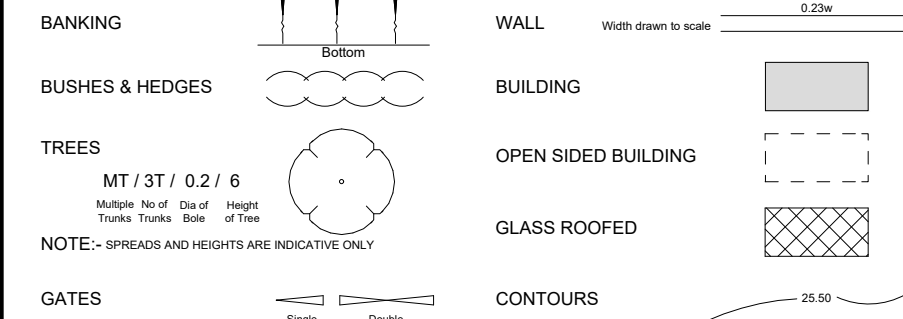
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531600E

119820N



LEGEND



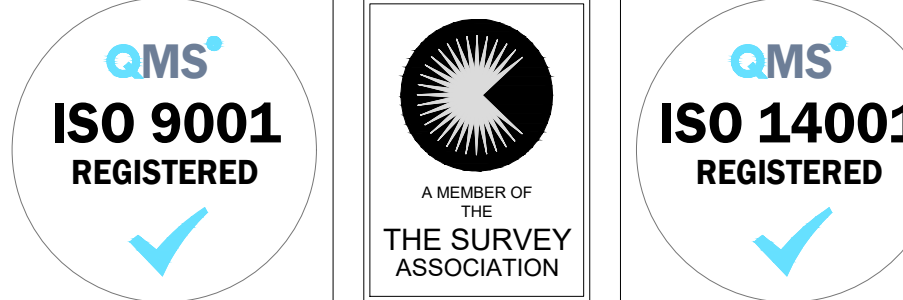
ABBREVIATIONS (WHERE APPLICABLE)

ARCH HEAD HEIGHT	AHH	MARKER	MKR
ARCH HEAD LEVEL	AHL	MONITORING WELL	MW
ARCH SPRINGER HEIGHT	ASH	NOTICE BOARD	NB
ARCH SPRINGER LEVEL	ASL	NAME PLATE	NP
AIR VALVE	AV	OVERHEAD WIRES	OHW
BED LEVEL	BL	PARKING METER	PM
BELISHA BEACON	BB	RIIDGE LEVEL	RI
BOLLARD	B	ROOF LEVEL	RL
BRITISH TELECOM BOX	BTB	ROAD SIGN	RS
BRITISH TELECOM MANHOLE	BTMH	RODDING EYE	RE
BRICKWORK	BKWK	RETAINING WALL	RTW
BUS STOP	BS	RAIN WATER PIPE	RWP
CABLE TV	CATV	SLUICE VALVE	SV
COVER LEVEL	CL	STOP COCK	SC
CABLE MARKER	CM	SOFFIT LEVEL	SOF
COLUMN	Col	STRUCTURAL SLAB LEVEL	SSL
CONCRETE POST	CP	TREE STUMP	ST
EAVES LEVEL	EAV	SOIL AND VENT PIPE	SUP
ELECTRICAL COVER	ELEC	THRESHOLD LEVEL	THL
ELECTRICITY CONTROL BOX	ECB	TELEGRAPH POLE	TP
ELECTRICITY POLE	EP	TELEPHONE CALL BOX	TCB
EARTH ROD	ER	TOP OF KERB	TK
FLOWER BED	FB	TURNSTILE	TS
FINISHED FLOOR LEVEL	FFL	TRAFFIC LIGHT	TL
FIRE HYDRANT	FH	TOP OF WALL	TW
FLOOR LEVEL	FL	UNABLE TO LIFT	UTL
FLAG STAFF	FS	UNABLE TO SURVEY	UTS
GAS PIPE	GP	VENT PIPE	VP
GAS VALVE	GV	WATER METER	WM
GULLY	G	WATER LEVEL	WL
GATE STOP	GS	WASH OUT	WO
INSPECTION COVER	IC	WASTE PIPE	WP
INVERT LEVEL	IL	WATER TANK	WT
LAMP POST	LP	WATER VALVE	WV

FENCES

BARBED WIRE FENCE	BWF	LARCH LAP FENCE	LLF
CORRUGATED IRON FENCE	CIF	METAL RAILING FENCE	MRF
CLOSE BOARD FENCE	CBF	POST AND CHAIN FENCE	PCF
CHAIN LINK FENCE	CLF	PICKET FENCE	PIF
CHESTNUT PALING FENCE	CPF	POST AND RAIL FENCE	PRF
FENCE POST	FPO	POST AND WIRE FENCE	PWF
INTERWOVEN FENCE	IWF	STEEL PALISADE SECURITY FENCE	SPSF
IRON RAILING FENCE	IRF	TUBULAR STEEL RAIL FENCE	TSRF

REV.	NOTES	DWN	DATE
A	---	---	---



Notes:
Grid and levels relate to OS GPS Active Network.
Sheet is North orientated unless stated.

Maltby Surveys Ltd

2 QUEENS ROAD
HAYWARDS HEATH
WEST SUSSEX
RH16 1EB
Tel: 01444 416246
Fax: 01444 417697
E-Mail: mls@maltbysurveys.com
WebSite: http://www.maltbysurveys.com

SURVEYED	JS	CLIENT
DRAWN	JS	WILLIAMS BUILDERS OF SUSSEX
CHECKED	RM	
		SCALE
		1/200 (A1 Sheet)

99 Leylands Road, Burgess Hill RH15 8AA

TOPOGRAPHICAL SURVEY

Job No	Rev	Drawing Number
21/209		21/209/100
Date : July 2021		

Appendix C

Soil Infiltration Test Report, CCTV Survey Report and Southern Water Letter, Sewer Map and Sewer Easement Protocol Flow Diagram

Soil Infiltration Test

May 2024

Location: 99 Leyland Road, Burgess Hill, West Sussex, RH15 8AA
Client: of Remmus Designer Homes Ltd & Motion Consultants Ltd
Project ID: C380
Report Date: 05.06.24
Report Issue: 05.06.24
Rev. 1

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A2 Terms of Reference	3
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Test pit location	4
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C. Infiltration Test 2

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A. INTRODUCTION

A.1 OVERVIEW

Clever Works LTD was commissioned by Motion Consultants LTD acting as a principal on behalf of Remmus Designer Homes Ltd to undertake 2x soakaway tests to determine the permeability of the ground. The tests were to be required in accordance with BRE Digest 365 and the results were to be included in this document.

The development property is located at addresses 99 Leyland Road, Burgess Hill, West Sussex, RH15 8AA. To prepare the soakaway test, Clever Works have reviewed the available documents, including specifications, feasibility reports, site surveys and the initial proposals for the property extension with other relevant information.

2No. exploratory pits were hand dug at 99 Leyland Road, Burgess Hill, West Sussex, RH15 8AA in the rear garden on 25th May, Saturday . This confirmed the existence of silty clay. Upon reaching 1.2m depth, water was observed seeping into both excavated pits. When 300mm of water was added, the level increased 20mm within 30 minutes, indicating no soakage and the impracticality of an infiltration device.

A.2 TERMS OF REFERENCE

This report has been produced on behalf of Motion Consultants LTD and no responsibility is accepted to any third party for all or any part. This report should not be relied upon or transferred to any other parties without the express written authorization of Clever Works Ltd. If any unauthorised third party comes into possession of this report, they rely on it at their own risk and the authors owe them no duty of care or skill.

A3. NATURE OF THE PROPOSED SCHEME

The proposals are to construct a new development.

A.4 SITE LOCATION

The approximate location of the site is shown on Figure 1 – Site Location Map

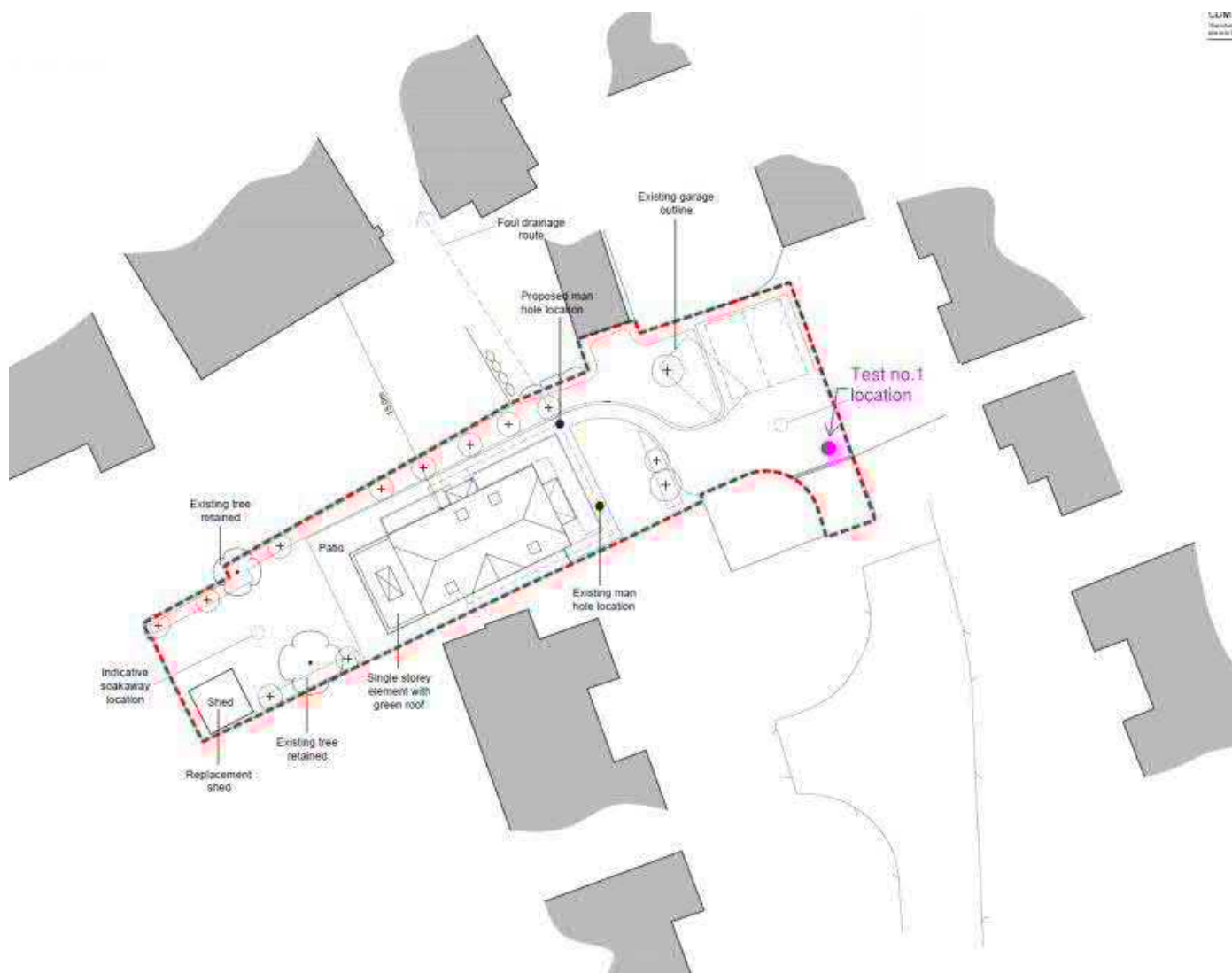


B. INFILTRATION TEST 1

TEST PIT NO.1 – DIMENSIONS TABLE 1

Site:	99 Leyland Road, Burgess Hill, West Sussex, RH15 8AA
Date:	25/05/24
Soakaway test location:	SHOWN IN APPENDIX A
Trench length (1 to 3 m long):	1.00m
Trench width (0.3 to 1 m wide):	0.70m
Trench depth (from ground level)	1.20m
Initial height of water column	0.023m after 36 minutes
Test conducted by:	MA & MZ

TEST PIT NO.1 – LOCATION



TEST PIT NO.1 – SOIL INFILTRATION RATE

To calculate the soil infiltration rate, the time taken for the water level to fall from 75% to 25% of the effective storage depth of the pit is calculated.

$$\text{Soil infiltration rate, } f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

Where:

V_{p75-25} = the effective storage volume of water in the trial pit between 75% and 25% effective depth

a_{p50} = the internal surface area of the trial pit up to 50% effective depth and including the base

t_{p75-25} = the time for the water level to fall from 75% to 25% effective depth

For the design of any SUDS, it would be prudent to use the lowest, most conservative, infiltration rate. Soakaway drainage, if incorporated, should be designed in accordance with BRE Special Digest 365 – Soakaway Design.

Infiltration Rate (m/sec)	
Test 1	6.39×10^{-4}
Test 2	5.45×10^{-4}
Test 3	4.89×10^{-4}

Once excavated, the pit was then filled with water, raising the water column in the pit from 0 to 300mm. The time and depth of water was then recorded at regular intervals to measure the rate of infiltration. These results are shown in the table below.

The results would normally be presented below. However, on this occasion, due to the water level rising 23mm within 36 minutes in the trial pit, it was not possible to record relevant data to be fed into the formula.

The soil infiltration rate resulting would not have been mathematically correct due to t_{p75-25} (the time for the water level to fall from 75% to 25%) being negative as the water column was rising.

TABLE 2

Time	Invert from ground level	Water column	Change in water column
10:59	978 mm	0	initial
12:35	955 mm	+23 mm	rise

TEST PIT NO.1 – PHOTOGRAPHS

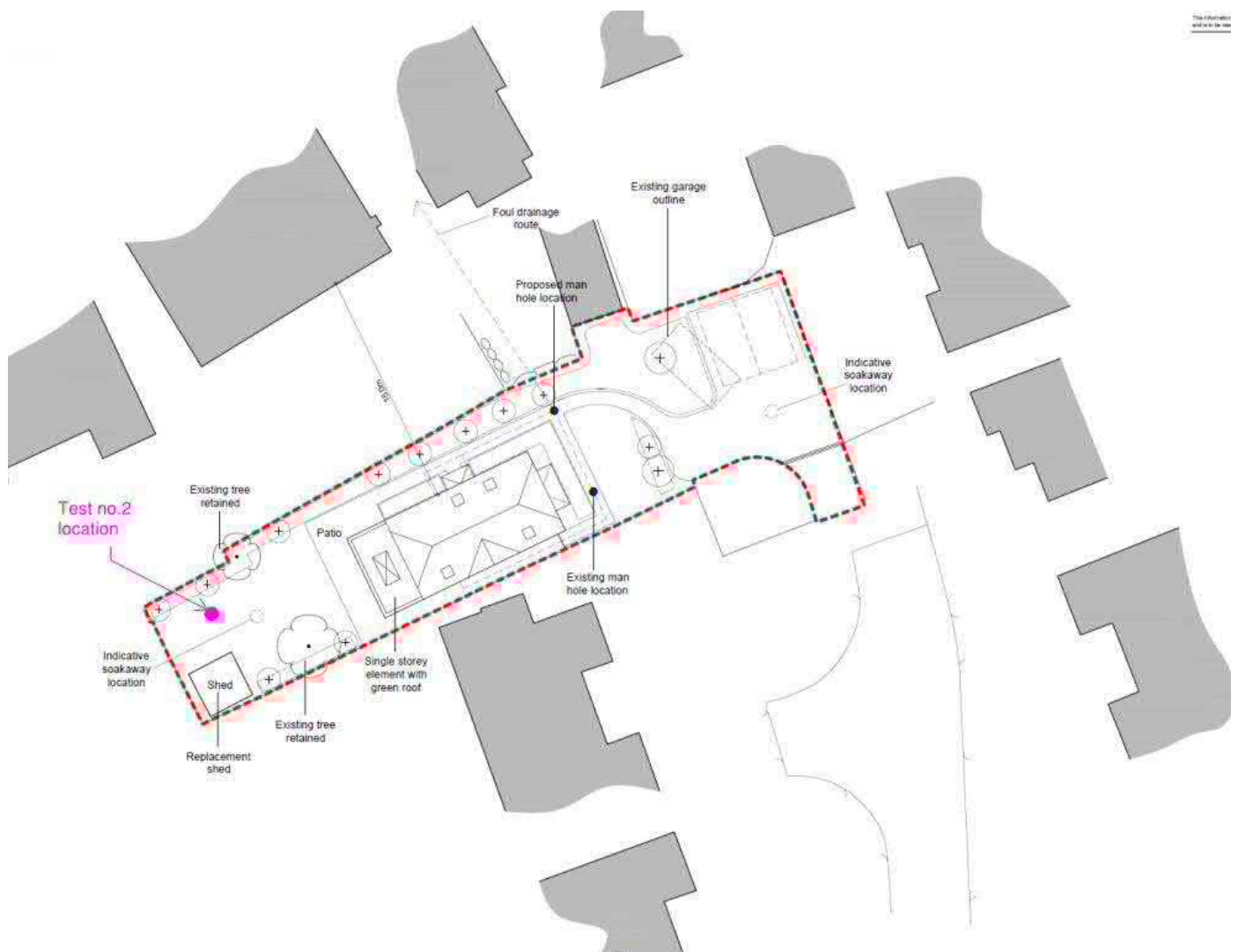


C. INFILTRATION TEST 2

TEST PIT NO.2 – DIMENSIONS TABLE 3

Site:	99 Leyland Road, Burgess Hill, West Sussex, RH15 8AA
Date:	25/05/24
Soakaway test location:	SHOWN IN APPENDIX A
Trench length (1 to 3 m long):	1.00m
Trench width (0.3 to 1 m wide):	0.70m
Trench depth (from ground level)	1.20m
Initial height of water column	0.023m after 41 minutes
Test conducted by:	MA & MZ

TEST PIT NO.2 – LOCATION



TEST PIT NO.2 – SOIL INFILTRATION RATE

To calculate the soil infiltration rate, the time taken for the water level to fall from 75% to 25% of the effective storage depth of the pit is calculated.

$$\text{Soil infiltration rate, } f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

Where:

V_{p75-25} = the effective storage volume of water in the trial pit between 75% and 25% effective depth

a_{p50} = the internal surface area of the trial pit up to 50% effective depth and including the base

t_{p75-25} = the time for the water level to fall from 75% to 25% effective depth

For the design of any SUDS, it would be prudent to use the lowest, most conservative, infiltration rate. Soakaway drainage, if incorporated, should be designed in accordance with BRE Special Digest 365 – Soakaway Design.

Infiltration Rate (m/sec)	
Test 1	6.39×10^{-4}
Test 2	5.45×10^{-4}
Test 3	4.89×10^{-4}

Once excavated, the pit was then filled with water, raising the water column in the pit from 0 to 300mm. The time and depth of water was then recorded at regular intervals to measure the rate of infiltration. These results are shown in the table below.

The results would normally be presented below. However, on this occasion, due to the water level rising 23mm within 41 minutes in the trial pit, it was not possible to record relevant data to be fed into the formula.

The soil infiltration rate resulting would not have been mathematically correct due to t_{p75-25} (the time for the water level to fall from 75% to 25%) being negative as the water column was rising.

TABLE 4

Time	Invert from ground level	Water column	Change in water column
11:55	861	0	initial
12:36	838	+23 mm	rise

TEST PIT NO.3 – PHOTOGRAPH



01932 544 095

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Drainage Surveys | Drainage Design | Drainage Mapping | Drainage Repairs
Site Topographical Surveys | Boreholes | Trial pits | Opening-up Work

DECISIONS ARE ONLY AS GOOD AS THE DATA BEHIND THEM

Produced by



CCTV DRAINAGE REPORT

Project Ref:	380
Project Status:	Complete
Date of works:	05/06/2024
Revision Number:	Rev 1
Inspection Standard:	MSSC5
Address 1	99 Leyland Rd
Town or City:	Burgess Hill
County:	West Sussex
Post Code:	RH15 8AA

Table of Contents

Project Name	CWKS380 050624
Project Number	380
Project Date	05/06/2024

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Project Summary

Project Name CWKS380 050624
Project Number 380
Project Date 05/06/2024

Section	Upstream Node	Downstream Node	Pipe profile	Material	Use	Length
1	MH01	CP01	Circular 150mm	PF	S	39.50 m
DRB Grade	Pipe is in an acceptable structural condition (grade A).					
Hydrauliccondition	Serviceable - Flowing adequately					
Issues identified:	Believed to public pitch fibre sewer.					
Action required:	Inform LWA					
Cost:						
2	SPUR1	MH01	Circular 150mm	PF	S	3.60 m
DRB Grade	Pipe is not in an acceptable condition. (grade C).					
Hydrauliccondition	Not serviceable, not flowing adequately, flow impeded or leaking.					
Issues identified:	Deformed/Survey abandoned					
Action required:	Survey abandoned due to deformity. Cannot progress through. Inform LWA					
Cost:						
3	SPUR2	MH01	Circular 100mm	PF	S	1.20 m
DRB Grade	Pipe is not in an acceptable condition. (grade C).					
Hydrauliccondition	Not serviceable, not flowing adequately, flow impeded or leaking.					
Issues identified:	Deformed/Survey abandoned					
Action required:	Survey abandoned due to deformity. Cannot progress through. Inform LWA					
Cost:						
4	MH00	MH01	Circular 150mm	PF	S	15.50 m
DRB Grade	Pipe is not in an acceptable condition. (grade C).					
Hydrauliccondition	Not serviceable, not flowing adequately, flow impeded or leaking.					
Issues identified:	Believed to public pitch fibre sewer.					
Action required:	Requires cleaning. Inform LWA					
Cost:						
5	MH5801	MH02/5802	Circular 150mm	PF	F	16.00 m
DRB Grade	Pipe is not in an acceptable condition. (grade C).					
Hydrauliccondition	Not serviceable, not flowing adequately, flow impeded or leaking.					
Issues identified:	Public pitch fibre sewer.					
Action required:	Inform LWA					
Cost:						
6	SPUR1	MH02/5802	Circular 150mm	PF	F	1.81 m
DRB Grade	Pipe is not in an acceptable condition. (grade C).					
Hydrauliccondition	Not serviceable, not flowing adequately, flow impeded or leaking.					
Issues identified:	Deformed/Survey abandoned					
Action required:	Survey abandoned due to deformity. Cannot progress through. Inform LWA					
Cost:						
7	SPUR2/5804	MH02/5802	Circular 100mm	MX	F	15.50 m
DRB Grade	Pipe is in an acceptable structural condition (grade A).					
Hydrauliccondition	Serviceable - Flowing adequately					
Issues identified:	Lined pitch Fibre serving property no.35					
Action required:	Inform LWA					
Cost:						

Project Summary

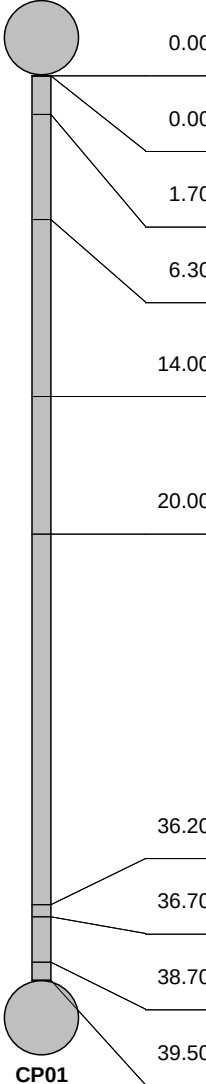
Project Name	CWKS380 050624
Project Number	380
Project Date	05/06/2024

Section	Upstream Node	Downstream Node	Pipe profile	Material	Use	Length
8	MH02/5802	MH03/5803	Circular 150mm	PF	F	17.20 m
DRB Grade	Pipe is not in an acceptable condition. (grade C).					
Hydrauliccondition	Not serviceable, not flowing adequately, flow impeded or leaking.					
Issues identified:	Public pitch fibre sewer.					
Action required:	Inform LWA					
Cost:						
9	MH03/5803	MH05/5902	Circular 150mm	PF	F	19.50 m
DRB Grade	Pipe is in an acceptable structural condition (grade A).					
Hydrauliccondition	Serviceable - Flowing adequately					
Issues identified:	Public pitch fibre sewer.					
Action required:	Inform LWA					
Cost:						
10	MH05/5902	SEWER	Circular 150mm	VC	F	6.00 m
DRB Grade	Pipe is in an acceptable structural condition (grade A).					
Hydrauliccondition	Serviceable - Flowing adequately					
Issues identified:	Public Sewer					
Action required:	None					
Cost:						
						Total: 135.81 m

Section 1 : MH01 D/S CP01

Project Name	CWKS380 050624
Project Number	380
Project Date	05/06/2024

Section 1	Inspection 1	Scope of works: Routine inspection	Project no. 380	Standard MSSC5	Ownership	UID MH01X
Operator MA		Vehicle	Camera	Temperature C	Pre Cleaned No	Weather No rain or snow
Town or Village:	Burgess Hill		Inspection Direction:	Downstream	Upstream node:	MH01
Road:	99 Layland Rd		Usage:	Surface water	U/S node depth:	1.19 m
County:	West Sussex		Total Length:	39.50 m	Downstream node:	CP01
Post Code:	RH15 8AA				D/S node depth:	
Surface Defects:	No surface defects observed			Pipe Internal dia.:	150 / 0mm	
Lining Type:	None			Pipe Material:	Pitch Fibre	
Pipe Lined:	None			Pipe Shape:	Circular	
Overall condition	Major defects & insufficient arching support					
Comments: (surveyor)	Believed to public pitch fibre sewer.					
Repair: (surveyor)	Inform LWA / Confirm if adopted					

Scale:	1:330	Position [m]	Code	Observation	Grade																																								
Depth: 1.19 MH01  <table><tr><td>0.00</td><td>MH</td><td>Start manhole, MH01</td><td></td></tr><tr><td>0.00</td><td>WL</td><td>Water level, 0% of the height</td><td>A</td></tr><tr><td>1.70</td><td>D</td><td>Deformed drain or sewer, 15%</td><td>C</td></tr><tr><td>6.30</td><td>D</td><td>Deformed drain or sewer, 15%</td><td>C</td></tr><tr><td>14.00</td><td>D</td><td>Deformed drain or sewer, 15%</td><td>C</td></tr><tr><td>20.00</td><td>D</td><td>Deformed drain or sewer, 10%</td><td>C</td></tr><tr><td>36.20</td><td>MC</td><td>Pipe material changes, to vitrified clay</td><td>A</td></tr><tr><td>36.70</td><td>JN</td><td>Junction at 6 o'clock, diameter: 150mm: Drop shaft</td><td>A</td></tr><tr><td>38.70</td><td>LRF</td><td>Line deviates right, full</td><td></td></tr><tr><td>39.50</td><td>CPF</td><td>Finish catchpit, CP, the pipe is flowing fine: Pitch fibre. Assumed unadopted.</td><td></td></tr></table>						0.00	MH	Start manhole, MH01		0.00	WL	Water level, 0% of the height	A	1.70	D	Deformed drain or sewer, 15%	C	6.30	D	Deformed drain or sewer, 15%	C	14.00	D	Deformed drain or sewer, 15%	C	20.00	D	Deformed drain or sewer, 10%	C	36.20	MC	Pipe material changes, to vitrified clay	A	36.70	JN	Junction at 6 o'clock, diameter: 150mm: Drop shaft	A	38.70	LRF	Line deviates right, full		39.50	CPF	Finish catchpit, CP, the pipe is flowing fine: Pitch fibre. Assumed unadopted.	
0.00	MH	Start manhole, MH01																																											
0.00	WL	Water level, 0% of the height	A																																										
1.70	D	Deformed drain or sewer, 15%	C																																										
6.30	D	Deformed drain or sewer, 15%	C																																										
14.00	D	Deformed drain or sewer, 15%	C																																										
20.00	D	Deformed drain or sewer, 10%	C																																										
36.20	MC	Pipe material changes, to vitrified clay	A																																										
36.70	JN	Junction at 6 o'clock, diameter: 150mm: Drop shaft	A																																										
38.70	LRF	Line deviates right, full																																											
39.50	CPF	Finish catchpit, CP, the pipe is flowing fine: Pitch fibre. Assumed unadopted.																																											
					MH - 0.00 m																																								
					D - 1.70 m																																								
					D - 6.30 m																																								
					D - 14.00 m																																								
					D - 20.00 m																																								

Section 1 : MH01 D/S CP01

Project Name	CWKS380 050624
Project Number	380
Project Date	05/06/2024

Section 1	Inspection 1	Scope of works: Routine inspection	Project no. 380	Standard MSSC5	Ownership	UID MH01X
Operator MA		Vehicle	Camera	Temperature C	Pre Cleaned No	Weather No rain or snow



MC - 36.20 m



JN - 36.70 m



LRF - 38.70 m



CPF - 39.50 m

Structural Defects

Miscellaneous

Service & Operational

Construction Features

Pipe condition: Grade C

Service Condition: Serviceable

Section 1 : MH01 D/S CP01

Project Name	CWKS380 050624
Project Number	380
Project Date	05/06/2024



00:00:00, 0.00 m
Start manhole, MH01



00:00:14, 1.70 m
Deformed drain or sewer, 15%



00:00:46, 6.30 m
Deformed drain or sewer, 15%



00:01:37, 14.00 m
Deformed drain or sewer, 15%

Section 1 : MH01 D/S CP01

Project Name	CWKS380 050624
Project Number	380
Project Date	05/06/2024



00:02:10, 20.00 m
Deformed drain or sewer, 10%



00:03:55, 36.20 m
Pipe material changes, to vitrified clay



00:04:38, 36.70 m
Junction at 6 o'clock, diameter: 150mm, Drop shaft



00:06:57, 38.70 m
Line deviates right, full

Section 1 : MH01 D/S CP01

Project Name	CWKS380 050624
Project Number	380
Project Date	05/06/2024



00:07:28, 39.50 m
Finish catchpit, CP, the pipe is flowing fine, Pitch fibre.
Assumed unadopted.

Section 2 : MH01 U/S Spur1

Project Name CWKS380 050624
Project Number 380
Project Date 05/06/2024

Section 2	Inspection 1	Scope of works: Routine inspection	Project no. 380	Standard MSSC5	Ownership	UID Spur1X
Operator MA		Vehicle	Camera	Temperature C	Pre Cleaned No	Weather No rain or snow
Town or Village:	Burgess Hill		Inspection Direction:	Upstream	Upstream node:	Spur1
Road:	99 Layland Rd		Usage:	Surface water	U/S node depth:	
County:	West Sussex		Total Length:	3.60 m	Downstream node:	MH01
Post Code:	RH15 8AA				D/S node depth:	1.19 m
Surface Defects:	No surface defects observed			Pipe Internal dia.:	150 / 0mm	
Lining Type:	None			Pipe Material:	Pitch Fibre	
Pipe Lined:	None			Pipe Shape:	Circular	
Overall condition		Major defects & insufficient arching support				
Comments: (surveyor)		Deformed/Survey abandoned				
Repair: (surveyor)		Required				

Scale: 1:50 Position [m] Code Observation Grade

Depth: 1.19
MH01



0.00

MH

Start manhole, MH01

0.00

WL

Water level, 0% of the height

A



MH - 0.00 m

0.20

LLF

Line deviates left, full

0.40

D

Deformed drain or sewer, 20%

C



WL - 0.00 m

2.10

D

Deformed drain or sewer, 50%

C



D - 0.40 m

3.60

SA

Survey abandoned, the pipe is failing to discharge:
Survey abandoned due to deformitie. Cannot
progress through.

A



D - 2.10 m



SA - 3.60 m

Structural Defects

Miscellaneous

Service & Operational

Construction Features

Pipe condition: Grade C

Service Condition: Not Serviceable



00:00:00, 0.00 m
Start manhole, MH01



00:00:18, 0.00 m
Water level, 0% of the height



00:00:51, 0.40 m
Deformed drain or sewer, 20%



00:01:03, 2.10 m
Deformed drain or sewer, 50%



00:01:17, 3.60 m
Survey abandoned, the pipe is failing to discharge, Survey
abandoned due to deformitie. Cannot progress through.

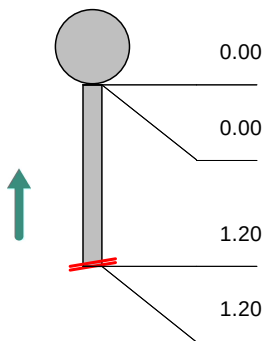
Section 3 : MH01 U/S Spur2

Project Name CWKS380 050624
Project Number 380
Project Date 05/06/2024

Section 3	Inspection 1	Scope of works: Routine inspection	Project no. 380	Standard MSSC5	Ownership	UID Spur2X
Operator MA		Vehicle	Camera	Temperature C	Pre Cleaned No	Weather No rain or snow
Town or Village:	Burgess Hill		Inspection Direction:	Upstream	Upstream node: Spur2	
Road:	99 Layland Rd		Usage:	Surface water	U/S node depth:	
County:	West Sussex		Total Length:	1.20 m	Downstream node: MH01	
Post Code:	RH15 8AA				D/S node depth: 1.19 m	
Surface Defects:	No surface defects observed			Pipe Internal dia.:	100 / 0mm	
Lining Type:	None			Pipe Material:	Pitch Fibre	
Pipe Lined:	None			Pipe Shape:	Circular	
Overall condition		Major defects & insufficient arching support				
Comments: (surveyor)		Deformed/Survey abandoned				
Repair: (surveyor)		Required				

Scale: 1:50 Position [m] Code Observation Grade

Depth: 1.19
MH01



D - 1.20 m

MH	Start manhole, MH01	
WL	Water level, 0% of the height	A
D	Deformed drain or sewer, 50%	C
SA	Survey abandoned, the pipe is failing to discharge: Survey abandoned due to deformitie. Cannot progress through.	A



MH - 0.00 m



WL - 0.00 m

Structural Defects

Miscellaneous

Service & Operational

Construction Features

Pipe condition: Grade C

Service Condition: Not Serviceable

Section 3 : MH01 U/S Spur2

Project Name	CWKS380 050624
Project Number	380
Project Date	05/06/2024



00:00:00, 0.00 m
Start manhole, MH01



00:00:13, 0.00 m
Water level, 0% of the height



00:00:29, 1.20 m
Deformed drain or sewer, 50%

Section 4 : MH01 U/S MH00

Project Name CWKS380 050624
Project Number 380
Project Date 05/06/2024

Section 4	Inspection 1	Scope of works: Routine inspection	Project no. 380	Standard MSSC5	Ownership	UID MH00X
Operator MA		Vehicle	Camera	Temperature C	Pre Cleaned No	Weather No rain or snow
Town or Village:	Burgess Hill		Inspection Direction:	Upstream	Upstream node:	MH00
Road:	99 Layland Rd		Usage:	Surface water	U/S node depth:	
County:	West Sussex		Total Length:	15.50 m	Downstream node:	MH01
Post Code:	RH15 8AA				D/S node depth:	1.19 m
Surface Defects:	No surface defects observed			Pipe Internal dia.:	150 / 0mm	
Lining Type:	None			Pipe Material:	Pitch Fibre	
Pipe Lined:	None			Pipe Shape:	Circular	
Overall condition		Major defects & insufficient arching support				
Comments: (surveyor)		Believed to public pitch fibre sewer.				
Repair: (surveyor)		Inform LWA / Confirm if adopted				

Scale: 1:130	Position [m]	Code	Observation	Grade	
Depth: 1.19 MH01  0.00 0.00 1.90 4.40 6.40 11.30 13.50 15.40 15.50 MH00 Depth:					
	0.00	MH	Start manhole, MH01		 MH - 0.00 m
	0.00	WL	Water level, 0% of the height	A	
	1.90	D	Deformed drain or sewer, 15%	C	 WL - 0.00 m
	4.40	D	Deformed drain or sewer, 5%	C	
	6.40	D	Deformed drain or sewer, 60%	C	 D - 1.90 m
	11.30	D	Deformed drain or sewer, 15%	C	 D - 4.40 m
	13.50	D	Deformed drain or sewer, 15%	C	
	15.40	OB	Other obstacles, 100% area loss: Manhole rendering and brickwork blocking channel	B	 D - 6.40 m
	15.50	BRF	Finish connection without manhole, MH00, the pipe is failing to discharge: Requires cleaning		

Section 4 : MH01 U/S MH00

Project Name

CWKS380 050624

Project Number

380

Project Date

05/06/2024

Section 4	Inspection 1	Scope of works: Routine inspection	Project no. 380	Standard MSSC5	Ownership	UID MH00X
Operator MA		Vehicle	Camera	Temperature C	Pre Cleaned No	Weather No rain or snow
 D - 11.30 m  D - 13.50 m  OB - 15.40 m						
Structural Defects Miscellaneous Service & Operational Construction Features						
Pipe condition: Grade C				Service Condition: Not Serviceable		



00:00:00, 0.00 m
Start manhole, MH01



00:00:23, 0.00 m
Water level, 0% of the height



00:01:45, 1.90 m
Deformed drain or sewer, 15%



00:01:55, 4.40 m
Deformed drain or sewer, 5%



00:02:05, 6.40 m
Deformed drain or sewer, 60%



00:02:24, 11.30 m
Deformed drain or sewer, 15%



00:02:34, 13.50 m
Deformed drain or sewer, 15%



00:03:09, 15.40 m
Other obstacles, 100% area loss, Manhole rendering and brickwork blocking channel

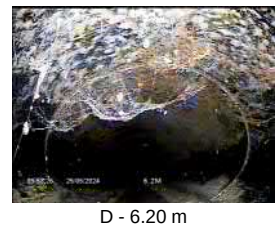
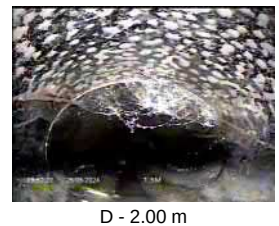
Section 5 : MH5801 D/S MH02/5802

Project Name CWKS380 050624
Project Number 380
Project Date 05/06/2024

Section 5	Inspection 1	Scope of works: Routine inspection	Project no. 380	Standard MSSC5	Ownership	UID MH5801X
Operator MA		Vehicle	Camera	Temperature C	Pre Cleaned No	Weather No rain or snow
Town or Village:	Burgess Hill		Inspection Direction:	Downstream	Upstream node:	MH5801
Road:	99 Layland Rd		Usage:	Foul	U/S node depth:	
County:	West Sussex		Total Length:	16.00 m	Downstream node:	MH02/5802
Post Code:	RH15 8AA				D/S node depth:	1.21 m
Surface Defects:	None			Pipe Internal dia.:	150 / 0mm	
Lining Type:	None			Pipe Material:	Pitch Fibre	
Pipe Lined:	None			Pipe Shape:	Circular	
Overall condition	Major defects & insufficient arching support					

Comments: (surveyor) Public pitch fibre sewer.
Repair: (surveyor) Inform LWA of condition.

Scale: 1:134	Position [m]	Code	Observation	Grade
Depth: MH5801				
	0.00	MH	Start manhole, MH5801	
	0.00	WL	Water level, 5% of the height: In use	A
	2.00	D	Deformed drain or sewer, 15%	C
	4.20	D	Deformed drain or sewer, 15%	C
	6.20	D	Deformed drain or sewer, 10%	C
	8.20	D	Deformed drain or sewer, 10%	C
	15.40	MC	Pipe material changes, to vitrified clay	A
	15.50	FL	Longitudinal fracture at 9 o'clock	B
	15.50	FL	Longitudinal fracture at 3 o'clock	B
	16.00	MHF	Finish manhole, MH02, the pipe is failing to discharge	
MH02/5802 Depth: 1.21				



Section 5 : MH5801 D/S MH02/5802

Project Name CWKS380 050624
Project Number 380
Project Date 05/06/2024

Section 5	Inspection 1	Scope of works: Routine inspection	Project no. 380	Standard MSSC5	Ownership	UID MH5801X
Operator MA		Vehicle	Camera	Temperature C	Pre Cleaned No	Weather No rain or snow



MC - 15.40 m



MHF - 16.00 m

Structural Defects

Miscellaneous

Service & Operational

Construction Features

Pipe condition: Grade C

Service Condition: Not Serviceable



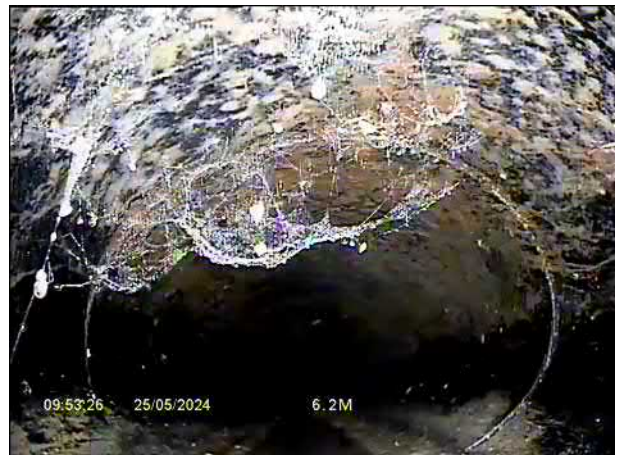
00:00:00, 0.00 m
Start manhole, MH5801



00:00:34, 2.00 m
Deformed drain or sewer, 15%



00:01:04, 4.20 m
Deformed drain or sewer, 15%



00:01:33, 6.20 m
Deformed drain or sewer, 10%



00:01:51, 8.20 m
Deformed drain or sewer, 10%



00:03:29, 15.40 m
Pipe material changes, to vitrified clay



00:03:42, 16.00 m
Finish manhole, MH02, the pipe is failing to discharge

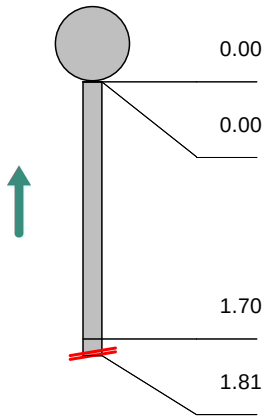
Section 6 : MH02/5802 U/S Spur1

Project Name CWKS380 050624
Project Number 380
Project Date 05/06/2024

Section 6	Inspection 1	Scope of works: Routine inspection	Project no. 380	Standard MSSC5	Ownership	UID Spur1S	
Operator MA		Vehicle	Camera	Temperature C	Pre Cleaned No	Weather No rain or snow	
Town or Village:		Burgess Hill	Inspection Direction:		Upstream	Upstream node:	Spur1
Road:		99 Layland Rd	Usage:		Foul	U/S node depth:	
County:		West Sussex	Total Length:		1.81 m	Downstream node:	MH02/5802
Post Code:		RH15 8AA				D/S node depth:	1.21 m
Surface Defects:				None	Pipe Internal dia.:	150 / 0mm	
Lining Type:				None	Pipe Material:	Pitch Fibre	
Pipe Lined:				None	Pipe Shape:	Circular	
Overall condition		Major defects & insufficient arching support					
Comments: (surveyor)		Deformed/Survey abandoned					
Repair: (surveyor)		Required					

Scale: 1:50 Position [m] Code Observation Grade

Depth: 1.21
MH02/5802



MH Start manhole, MH02

WL Water level, 0% of the height

D Deformed drain or sewer, 50%

SA Survey abandoned, the pipe is failing to discharge:
Survey abandoned due to deformatie. Cannot
progress through.

A

C

A



MH - 0.00 m



D - 1.70 m

Structural Defects

Miscellaneous

Service & Operational

Construction Features

Pipe condition: Grade C

Service Condition: Not Serviceable

Section 6 : MH02/5802 U/S Spur1

Project Name	CWKS380 050624
Project Number	380
Project Date	05/06/2024



00:00:00, 0.00 m
Start manhole, MH02

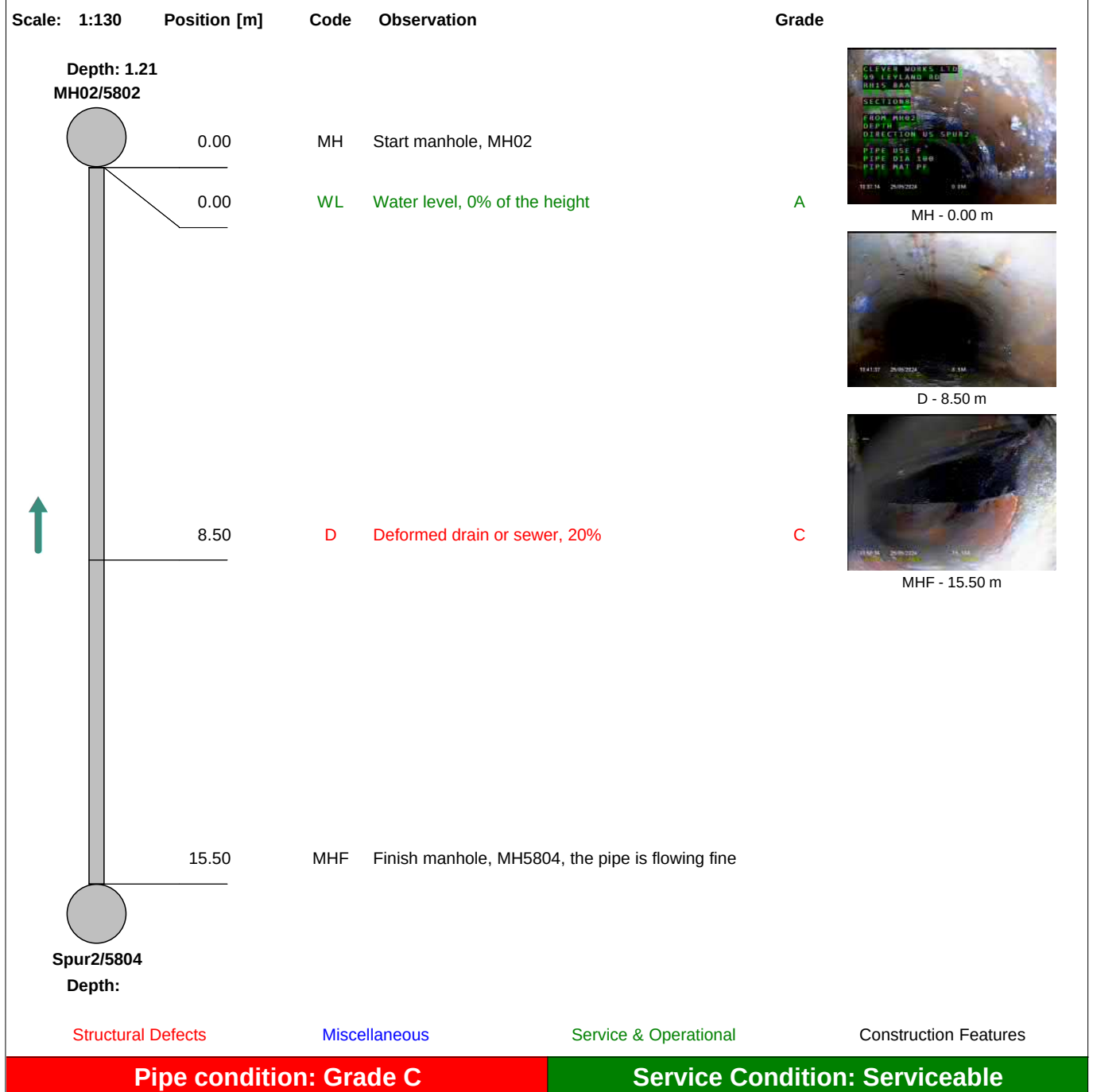


00:00:26, 1.70 m
Deformed drain or sewer, 50%

Section 7 : MH02/5802 U/S

Project Name CWKS380 050624
Project Number 380
Project Date 05/06/2024

Section 7	Inspection 1	Scope of works: Routine inspection	Project no. 380	Standard MSSC5	Ownership	UID Spur2/5804U	
Operator MA		Vehicle	Camera	Temperature C	Pre Cleaned No	Weather No rain or snow	
Town or Village:		Burgess Hill	Inspection Direction:		Upstream	Upstream node:	Spur2/5804
Road:		99 Layland Rd	Usage:		Foul	U/S node depth:	
County:		West Sussex	Total Length:		15.50 m	Downstream node:	MH02/5802
Post Code:		RH15 8AA				D/S node depth:	1.21 m
Surface Defects:				Pipe Internal dia.:	100 / 0mm		
Lining Type:				Pipe Material:	Mixed Material		
Pipe Lined:				Pipe Shape:	Circular		
Overall condition		Major defects & insufficient arching support					
Comments: (surveyor)		Lined pitch Fibre serving property no.35					
Repair: (surveyor)		Monitor					





00:00:00, 0.00 m
Start manhole, MH02



00:03:05, 8.50 m
Deformed drain or sewer, 20%



00:09:57, 15.50 m
Finish manhole, MH5804, the pipe is flowing fine

Section 8 : MH02/5802 D/S

Project Name	CWKS380 050624
Project Number	380
Project Date	05/06/2024

Section 8	Inspection 1	Scope of works: Routine inspection	Project no. 380	Standard MSSC5	Ownership	UID MH02/5802X
Operator MA		Vehicle	Camera	Temperature C	Pre Cleaned No	Weather No rain or snow
Town or Village:		Burgess Hill	Inspection Direction: Downstream		Upstream node:	MH02/5802
Road:		99 Layland Rd	Usage: Foul		U/S node depth:	1.21 m
County:		West Sussex	Total Length: 17.20 m		Downstream node:	MH03/5803
Post Code:		RH15 8AA			D/S node depth:	
Surface Defects: No surface defects observed				Pipe Internal dia.:	150 / 0mm	
Lining Type: None				Pipe Material:	Pitch Fibre	
Pipe Lined: None				Pipe Shape:	Circular	
Overall condition		Major defects & insufficient arching support				
Comments: (surveyor)		Public pitch fibre sewer.				
Repair: (surveyor)		Inform LWA of condition.				

Scale: 1:144	Position [m]	Code	Observation	Grade
Depth: 1.21 MH02/5802				
	0.00	MH	Start manhole, MH02/5802	
	0.00	WL	Water level, 5% of the height: In use	A
	0.50	D	Deformed drain or sewer, 15%	C
	3.30	D	Deformed drain or sewer, 25%	C
	5.50	D	Deformed drain or sewer, 15%	C
	8.00	D	Deformed drain or sewer, 15%	C
	12.20	D	Deformed drain or sewer, 25%	C
	16.40	REM	General remark: Unknown	A
	17.20	MHF	Finish manhole, MH03/5803, the pipe is flowing fine	
MH03/5803 Depth:				
MH - 0.00 m				
D - 0.50 m				
D - 3.30 m				
D - 5.50 m				
D - 8.00 m				

Section 8 : MH02/5802 D/S

Project Name	CWKS380 050624
Project Number	380
Project Date	05/06/2024

Section 8	Inspection 1	Scope of works: Routine inspection	Project no. 380	Standard MSSC5	Ownership	UID MH02/5802X
Operator MA		Vehicle	Camera	Temperature C	Pre Cleaned No	Weather No rain or snow



D - 12.20 m



REM - 16.40 m



MHF - 17.20 m

Structural Defects

Miscellaneous

Service & Operational

Construction Features

Pipe condition: Grade C

Service Condition: Not Serviceable

Section 8 : MH02/5802 D/S

Project Name	CWKS380 050624
Project Number	380
Project Date	05/06/2024



00:00:00, 0.00 m
Start manhole, MH02/5802



00:00:12, 0.50 m
Deformed drain or sewer, 15%



00:00:33, 3.30 m
Deformed drain or sewer, 25%



00:00:51, 5.50 m
Deformed drain or sewer, 15%



00:01:03, 8.00 m
Deformed drain or sewer, 15%



00:01:35, 12.20 m
Deformed drain or sewer, 25%



00:01:58, 16.40 m
General remark, Unknown



00:02:09, 17.20 m
Finish manhole, MH03/5803, the pipe is flowing fine

Section 9 : MH03/5803 D/S

Project Name CWKS380 050624
Project Number 380
Project Date 05/06/2024

Section 9	Inspection 1	Scope of works: Routine inspection	Project no. 380	Standard MSSC5	Ownership	UID MH03/5803X	
Operator MA		Vehicle	Camera	Temperature Above freezing	Pre Cleaned No	Weather No rain or snow	
Town or Village:		Burgess Hill	Inspection Direction:		Downstream	Upstream node:	MH03/5803
Road:		99 Layland Rd	Usage:		Foul	U/S node depth:	
County:		West Sussex	Total Length:		19.50 m	Downstream node:	MH05/5902
Post Code:		RH15 8AA				D/S node depth:	
Surface Defects:				No surface defects observed		Pipe Internal dia.:	150 / 0mm
Lining Type:				None		Pipe Material:	Pitch Fibre
Pipe Lined:				None		Pipe Shape:	Circular
Overall condition		Structurally sound with no leakage evident					

Comments: (surveyor) Public pitch fibre sewer.
Repair: (surveyor) Inform LWA of condition.

Scale: 1:163	Position [m]	Code	Observation	Grade
Depth: MH03/5803 0.00 0.00 4.40 17.60 18.10 19.50 Depth: MH05/5902 MH WL REM MC JN MHF Start manhole, MH03/5803 Water level, 0% of the height General remark: Manhole 04 Pipe material changes, to vitrified clay Junction at 6 o'clock, diameter: 150mm: Drop shaft Finish manhole, MH05/5902, the pipe is flowing fine				
MH - 0.00 m REM - 4.40 m MC - 17.60 m JN - 18.10 m MHF - 19.50 m				
Structural Defects Miscellaneous Service & Operational Construction Features				

Pipe condition: Grade A

Service Condition: Serviceable

Section 9 : MH03/5803 D/S

Project Name	CWKS380 050624
Project Number	380
Project Date	05/06/2024



00:00:00, 0.00 m
Start manhole, MH03/5803



00:00:21, 4.40 m
General remark, Manhole 04



00:01:21, 17.60 m
Pipe material changes, to vitrified clay



00:01:24, 18.10 m
Junction at 6 o'clock, diameter: 150mm, Drop shaft

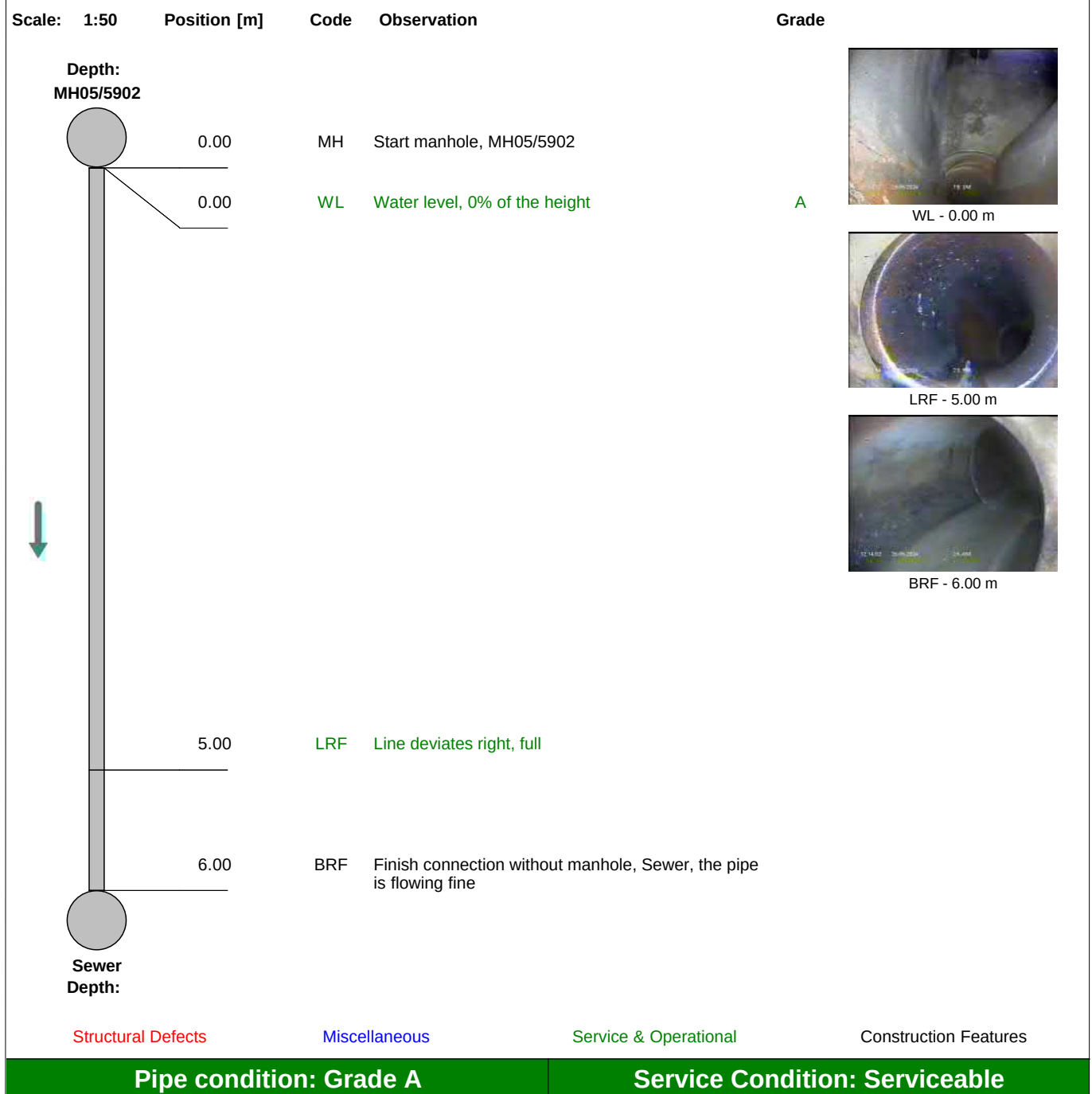


00:01:39, 19.50 m
Finish manhole, MH05/5902, the pipe is flowing fine

Section 10 : MH05/5902 D/S Sewer

Project Name CWKS380 050624
Project Number 380
Project Date 05/06/2024

Section 10	Inspection 1	Scope of works: Routine inspection	Project no. 380	Standard MSSC5	Ownership	UID MH05/5902X	
Operator MA		Vehicle	Camera	Temperature Above freezing	Pre Cleaned No	Weather No rain or snow	
Town or Village:		Burgess Hill	Inspection Direction:		Downstream	Upstream node:	MH05/5902
Road:		99 Layland Rd	Usage:		Foul	U/S node depth:	
County:		West Sussex	Total Length:		6.00 m	Downstream node: Sewer	
Post Code:		RH15 8AA				D/S node depth:	
Surface Defects:				No surface defects observed		Pipe Internal dia.:	150 / 0mm
Lining Type:				None		Pipe Material:	Vitrified Clay
Pipe Lined:				None		Pipe Shape:	Circular
Overall condition		Structurally sound with no leakage evident					
Comments: (surveyor)		Public Sewer					
Repair: (surveyor)		Inform LWA of condition.					





00:02:06, 0.00 m
Water level, 0% of the height



00:02:43, 5.00 m
Line deviates right, full



00:02:51, 6.00 m
Finish connection without manhole, Sewer, the pipe is flowing fine

01932 544 095

hello@clever-works.co.uk

Clever Works Ltd is a limited company specialising in drainage and site investigation
Registered #13947390 in England and Wales.

Drainage Surveys | Drainage Design | Drainage Mapping | Drainage Repairs
Site Topographical Surveys | Boreholes | Trial pits | Opening-up Work

DECISIONS ARE ONLY AS GOOD AS THE DATA BEHIND THEM



Environment Directorate
Mid Sussex District Council
Council Offices
Oaklands Road
Haywards Heath
West Sussex
RH16 1SS

Your ref
DM/24/0578

Our ref
DSA000033043

Date
19 April 2024

Contact
Tel 0330 303 0119

Dear Sir/Madam,

Proposal: Demolition of existing garage and shed and erection of a 2no. bedroom dwelling with associated landscaping, parking for two cars and erection of a new shed.

Site: DM/24/0578: - Land to R/O 99 Leylands Road, Burgess Hill, RH15 8AA.

Thank you for your letter dated 02 April 2024.

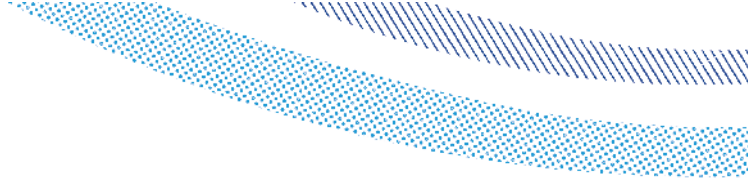
Following the review of the submitted documents, we have the below comments for the Planning consultation.

Protection of Public Apparatus

Please see the attached extract from Southern Water records showing the approximate position of our existing public foul sewers within the development site. The exact position of the public assets must be determined on site by the applicant in consultation with Southern Water before the layout of the proposed development is finalised.

- The 150 mm diameter gravity sewer requires a clearance of 3 metres on either side of the gravity sewer to protect it from construction works and to allow for future maintenance access.
- No development or tree planting should be carried out within 3 metres of the external edge of the public gravity sewer without consent from Southern Water.
- No soakaways, swales, ponds, watercourses or any other surface water retaining or conveying features should be located within 5 metres of public or adoptable gravity sewers.
- All existing infrastructure should be protected during the course of construction works.

Please refer to: southernwater.co.uk/media/3011/stand-off-distances.pdf



We have restrictions on the proposed tree planting adjacent to Southern Water sewers, rising mains or water mains and any such proposed assets in the vicinity of existing planting. Reference should be made to Southern Water's publication "A Guide to Tree Planting near water Mains and Sewers" (southernwater.co.uk/media/3027/ds-tree-planting-guide.pdf) and the Sewerage Sector Guidance (water.org.uk/sewerage-sector-guidance-approved-documents/) with regards to any landscaping proposals and our restrictions and maintenance of tree planting adjacent to sewers, rising mains and water mains.

It is possible that a sewer now deemed to be public could be crossing the development site. Therefore, should any sewer be found during construction works, an investigation of the sewer will be required to ascertain its ownership before any further works commence on site.

In order to protect public sewers, Southern Water requests that if consent is granted, the following condition is attached to the planning permission; The developer must agree with Southern Water, prior to commencement of the development, the measures to be taken to protect the public sewers.

Foul and Surface Water Drainage

Southern Water requires a formal application for a connection to the public foul sewer to be made by the applicant or developer.

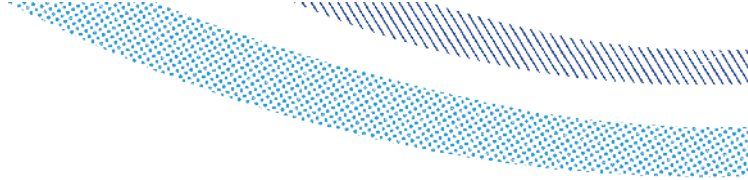
To make an application visit Southern Water's Get Connected service: developerservices.southernwater.co.uk and please read our New Connections Charging Arrangements documents which are available on our website via the following link: southernwater.co.uk/developing-building/connection-charging-arrangements

In situations where surface water is being considered for discharge to our network, we require the below hierarchy for surface water to be followed which is reflected in part H3 of the Building Regulations. Whilst reuse does not strictly form part of this hierarchy, Southern Water would encourage the consideration of reuse for new developments.

- Reuse
- Infiltration
- Watercourse
- Storm Sewer
- Combined Sewer

Guidance on Building Regulations is here:
gov.uk/government/publications/drainage-and-waste-disposal-approved-document-h

The Council's Building Control officers or technical staff should be asked to comment on the adequacy of soakaways to dispose of surface water from the proposed development.



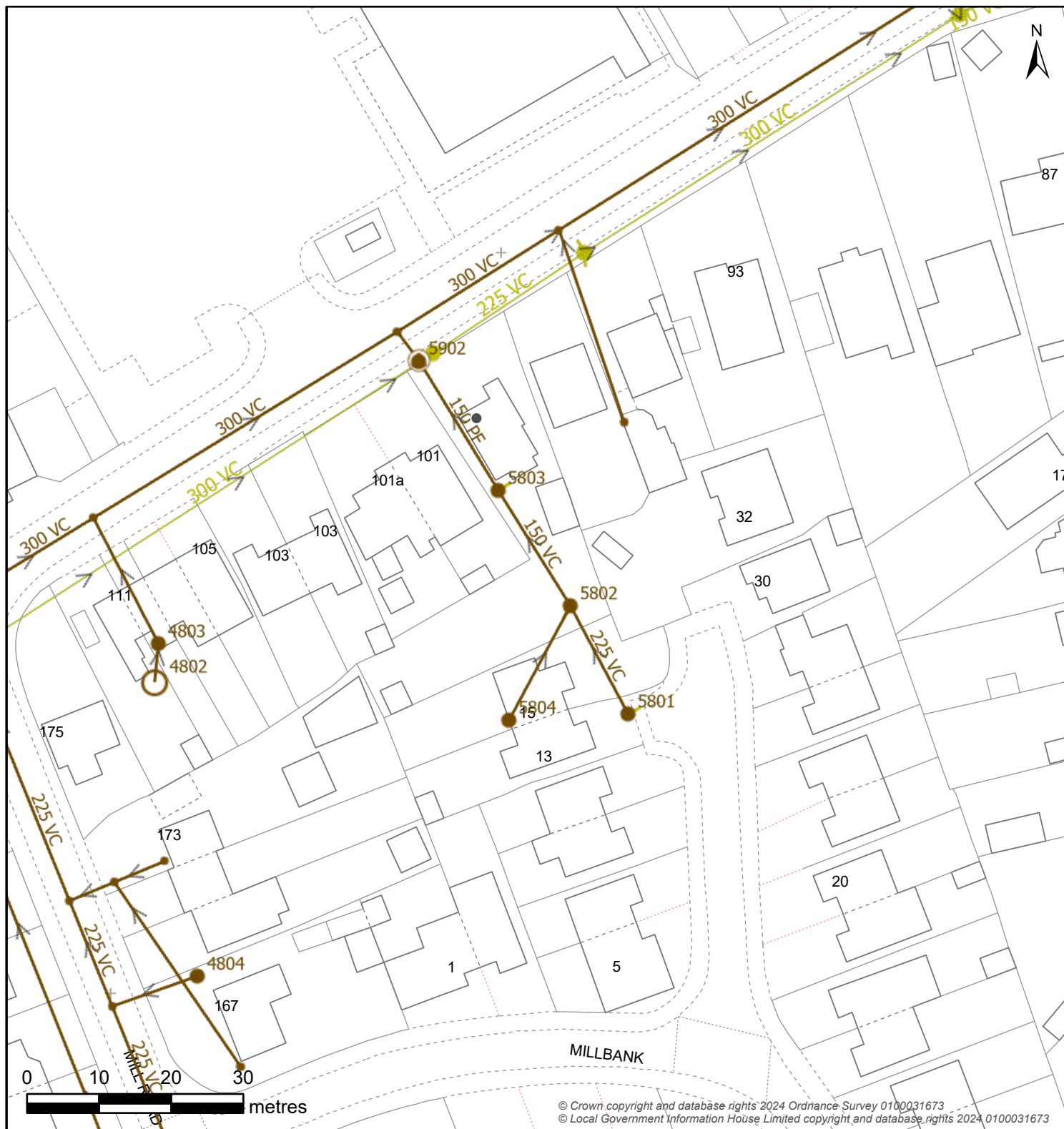
For further advice, please contact Southern Water, Southern House, Yeoman Road, Worthing, West Sussex, BN13 3NX (Tel: 0330 303 0119).

Website: southernwater.co.uk or by email at: SouthernWaterPlanning@southernwater.co.uk

Yours faithfully,

Future Growth Planning Team
Developer Services

southernwater.co.uk/developing-building/planning-your-development



Controllable Valve			Flow Control			Inlet-Outfall	
Manhole							
BIF Bifurcation	Cascade	CP Catchpit	HOP Head Of Public Sewer	IC Interceptor Chamber	Manhole	S Soakaway	WO Washout
Outfall Headworks		Overflow Chamber		Pipe Bridge		Pumping Station	
	CSO Combined Sewer	Overflow	EMO Emergency Overflow			Micro Pumping Station	Pumping Station
Sewer Level Monitor		Storage		Treatment Works		Weir	
	Storm Tank						Wastewater Site
Wastewater Pipe				Wastewater Use		Developer Services	

Map Title: SW Print

Printed By: Sanjay.Boregowda

Date Printed: 16/04/2024

Map Scale: 750

The information provided is believed to be correct but is provided on an 'as is' basis and without any warranty or condition express or implied, statutory or otherwise as to its quality or fitness for purpose. Actual positions of assets should always be determined on site.



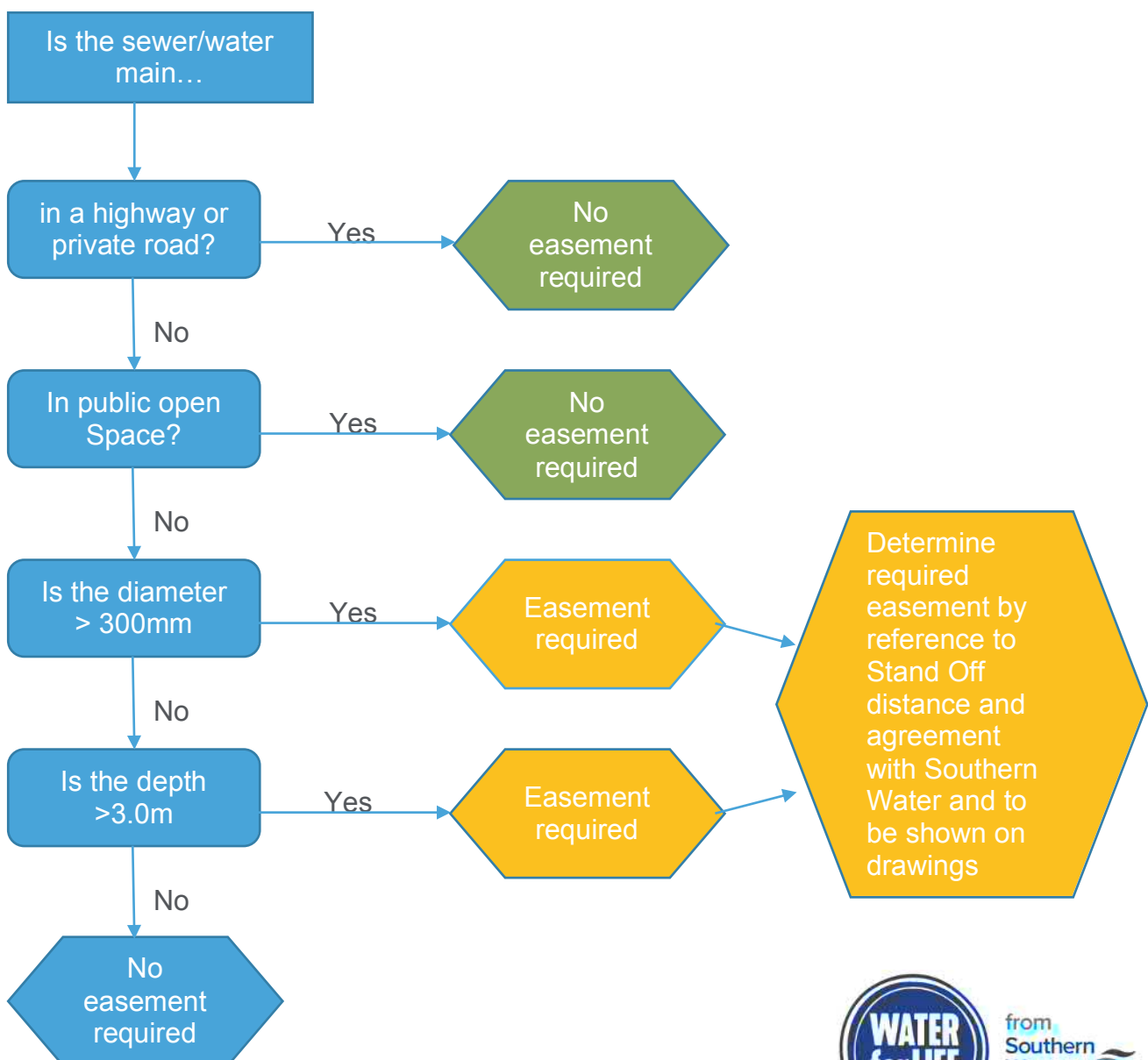


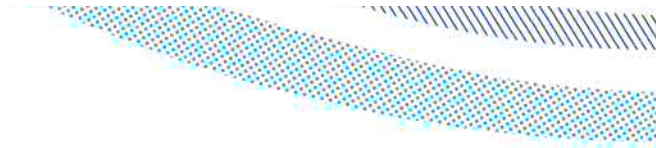
Developer Services Easements

V1.1 1st August 2017

Southern Water Standard Easements – Not covering existing easements shown on our GIS records or multiple pipes. The positions of pipes and easements shown on our records are believed to be correct to the best of our knowledge. However, the actual positions may differ and in order to prevent damage to our apparatus, it will be necessary to determine and verify the actual position. This should be carried out in consultation with Southern Water as we cannot accept responsibility in the event of inaccuracy. New easements will be based on stand-off distances and determined as follows:

Sewer and Water Mains Easement Protocol Flow Diagram





Southern Water Formal Easement Protocol

Our requirement for formal easements in third party land is that they should be taken in the following situations:

They are required over whole pipeline lengths (e.g. from manhole to manhole).

i.e. It is not necessary to take easements over small irregular parcels of land that fall within the stand-off distance. See Stand-off Document.

All fresh water mains which are greater than or equal to 300mm nominal bore.

All fresh water mains which are greater than 3 metres in depth to invert.

All sewerage rising mains which are greater than 300mm in diameter.

All sewerage rising mains which are greater than 3 metres in depth to invert.

All gravity sewers which are greater than 300mm in diameter.

All gravity sewers which are greater than 3 metres in depth to invert.

Where the apparatus crosses land with mineral extraction rights.

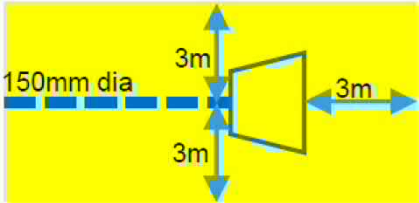
Where rights to discharge are required for example surface water sewers. To be shown as 3m around a headwall.

Crown Estate land.

Ministry of Defence Sites.

Network Rail land.

Section 104 Colouring

Key	Colour	Example
Site Boundary	Green	
Foul Sewers	Brown	
Surface Water Sewers	Blue	
Easement	Yellow	

Appendix D

EA Flood Map for Planning, Risk of Flood from Surface Water (RoFSW) Extent and
Depth and Maximum Extent of Flooding from Reservoirs Maps

Flood map for planning

Your reference
1rhbu3 2405082

Location (easting/northing)
531556/119883

Created
27 March 2025 10:54

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

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

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

Notes

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

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

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

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2025 AC0000807064. <https://flood-map-for-planning.service.gov.uk/os-terms>



Flood map for planning

Your reference
1rhbu3 2405082

Location (easting/northing)
531556/119883

Scale
1:2,500

Created
27 Mar 2025 10:54

-  Selected area
-  Flood zone 3
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Water storage area



0 20 40 60m

Surface Water Flood Risk (Extent)





Surface water map

Yearly chance of flooding

- ☐ Extent
- ☐ Depth

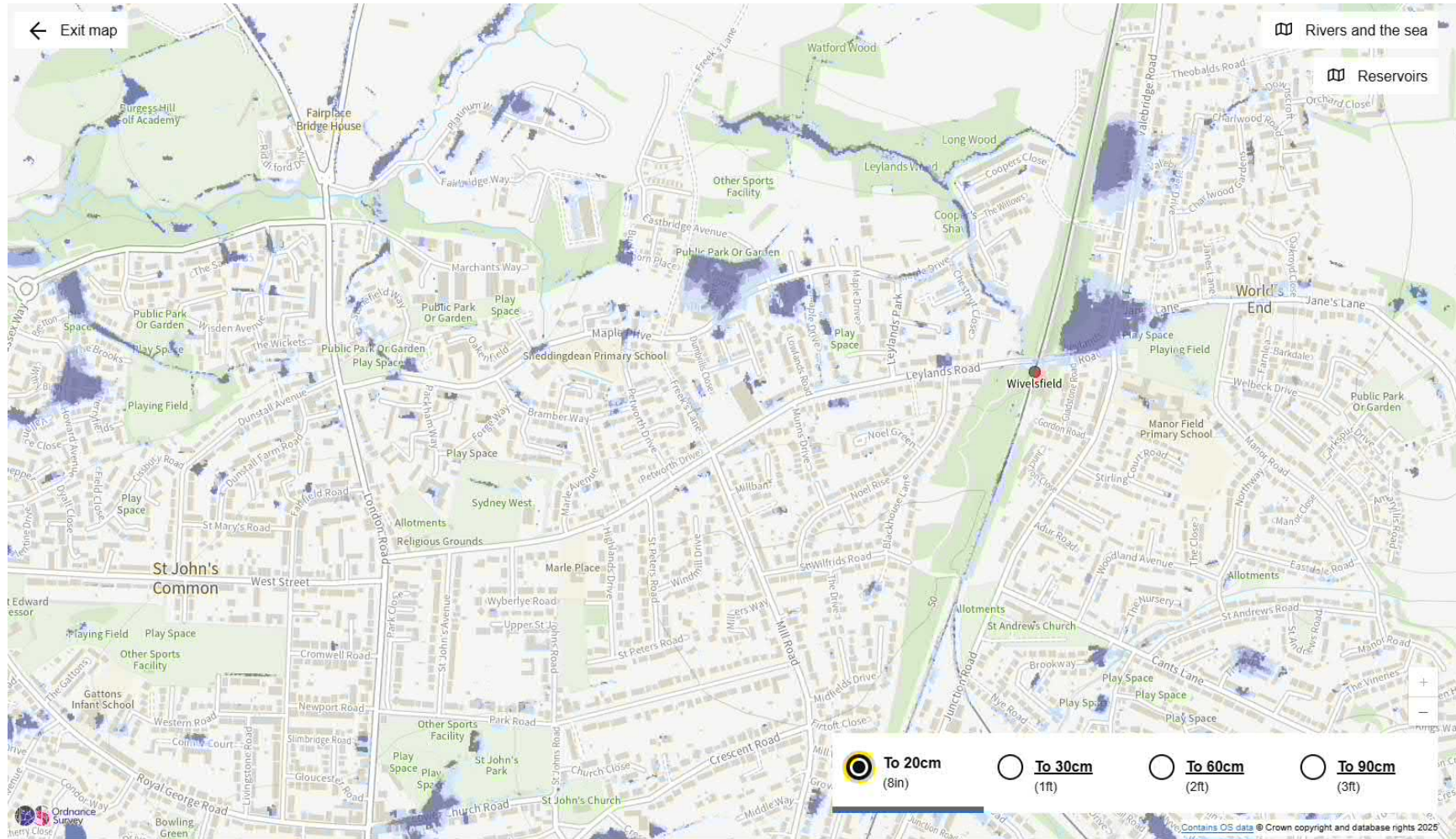
Yearly chance of flooding between 2040 and 2060

- ☒ Extent
 - High chance
More than 3.3% chance each year
 - Medium chance
Between 1% and 3.3% chance each year
 - Low chance
Between 0.1% and 1% chance each year
- ☐ Depth

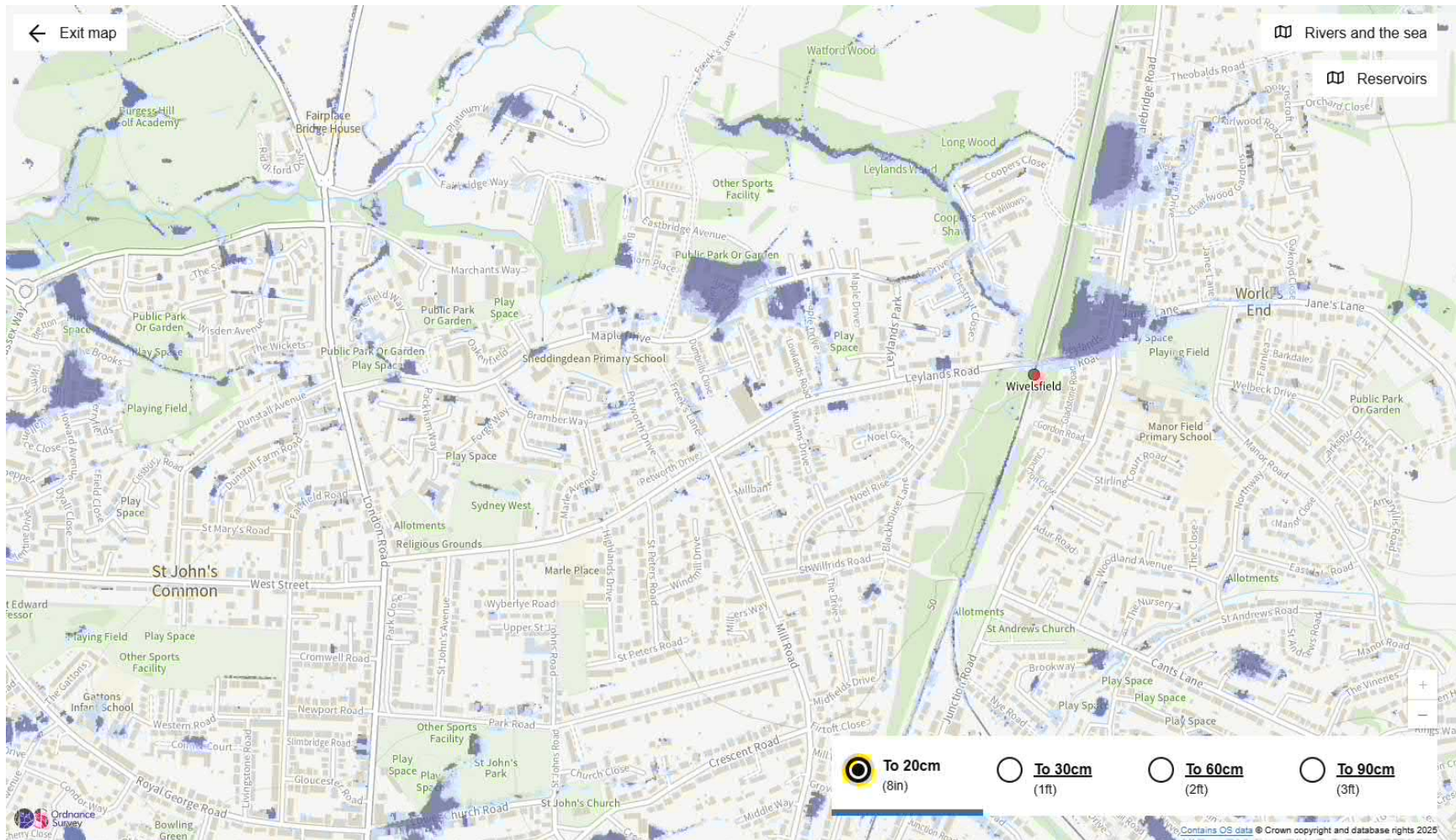
Map details

- ☒ Show flooding

Surface Water Flood Risk (Depth)



Surface Water Flood Risk (Depth)



Reservoir Flooding



Reservoirs map

- Extent**
- When river levels are normal
 - When there is also flooding from rivers

Map details

- ☒ Show flooding

Appendix E

Greenfield Runoff Calculation, Outline Drainage Strategy and Indicative MicroDrainage
Source Control Calculations

Motion		Page 1												
84 North Street Guildford Surrey GU1 4AU														
Date 12/06/2024 12:09 File 1RHBU3 2405082 FEH QMED ...	Designed by commonuser Checked by													
Causeway														
Source Control 2020.1.3														
<u>FEH Mean Annual Flood</u> Input <table><tr><td>QMED Method</td><td>2008 URBEXT (2000)</td><td>0.4576</td></tr><tr><td>Site Location GB 531100 120250 TQ 31100 20250</td><td>SPRHOST</td><td>49.060</td></tr><tr><td>Area (ha)</td><td>0.590</td><td>BFIHOST 0.233</td></tr><tr><td>SAAR (mm)</td><td>817</td><td>FARL 1.000</td></tr></table> Results QMED Rural (l/s) 9.0 QMED Urban (l/s) 12.6			QMED Method	2008 URBEXT (2000)	0.4576	Site Location GB 531100 120250 TQ 31100 20250	SPRHOST	49.060	Area (ha)	0.590	BFIHOST 0.233	SAAR (mm)	817	FARL 1.000
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Site Location GB 531100 120250 TQ 31100 20250	SPRHOST	49.060												
Area (ha)	0.590	BFIHOST 0.233												
SAAR (mm)	817	FARL 1.000												
©1982-2020 Innovyze														



CL Approx 41.400m AOD
IL Approx 39.700m AOD

CL Approx 41.000m AOD
IL Approx 39.700m AOD

CL Approx 40.850m AOD
IL Approx 39.650m AOD

CL Approx 40.400m AOD
IL Approx 39.550m AOD

Ex Surface Water MH
CL 40.640m AOD
IL 39.450m AOD

- any work commences. All dimensions are in metres unless **Notes** otherwise.
- Any discrepancies shall be reported to the engineer immediately, so that clarification can be sought prior to the commencement of works.
 - This drawing shall be read in conjunction with all other relevant engineering details, drawings and specification.
 - The contractor is to keep a record of any variations made on site, including the relocation of sewers or drains, for their "as built" drawings to be prepared upon project completion.
 - All works to adopted systems are to be carried out in accordance with Sewerage Sector Guidance Appendix C, Approved Version 2.1, 25 May 2021. All works to private drainage systems are to be in accordance with the Building Regulations Approved Document Part "H" 2015 edition.
 - 900mm min cover to be provided for private pipes laid beneath agricultural land and public open space unless not practicable. 1200mm min cover to be provided for highways with unrestricted access to vehicles with a gross vehicle weight in excess of 7.5 tonnes unless not practicable. Where unachievable, shallow private drains may require protection using ductile iron pipe, concrete surround or concrete slabs bridging the trench, subject to the NHBC inspector's requirements.
 - All pipes shall be laid soffit to soffit with outgoing pipes unless otherwise stated.
 - Manholes situated within areas accessible to motor vehicles are to be fitted with suitable strength covers and frames. Please refer to the manhole schedule for guidance on this.
 - This drawing has been based upon survey information supplied by Maltby Surveys Ltd and Motion cannot guarantee the accuracy of the data provided.
 - Adjacent areas of hardstanding will comply with building regulations and divert water away from the buildings.
 - The top surface of the pervious pavement should finish at least 150mm below any adjoining DPC level. Advice should always be sought from the manufacturer.
 - The Drainage Strategy is based on preliminary levels and is subject to detailed design.
 - The location of all private rainwater pipes are to be confirmed with the architect details prior to commencement of works.

Legend

- Site Boundary
- Type C No Infiltration Pervious Pavement
- New Surface Water Gravity Pipe - Ø150mm unless otherwise stated
- Proposed Surface Water Catchpit Manhole - Ø600mm unless otherwise stated
- Indicative Existing Foul Water Gravity Sewer
- Indicative Existing Surface Water Gravity Pipe
- Existing Foul or Surface Water Manhole
- New Ø1200mm HydroBrake Flow Control Chamber - 0.4 l/s for the 100 year + 45% climate change critical flow rate
- New Geocellular Attenuation Storage - 3.5x10.0x0.4m suitable for minimum 300mm cover
- New Surface Water Inspection Chamber (last chamber before Existing Foul Water Gravity Sewer fitted with dual flap non-return valve or similar)
- New Foul Water Inspection Chamber (last chamber before Existing Foul Water Gravity Sewer fitted with dual flap non-return valve or similar)
- New Foul Water Gravity Pipe
- EA Risk of Flooding from Surface Water - Climate Change 1 - shows the overall risk, rather than the risk associated with a specific event or scenario - includes the 'Central' climate change allowance for the 2050s epoch (2040-2060) for risk of flooding from surface water - Last Updated 28 January 2025)

D	Fourth Issue	ST	CG	JM	27/03/2025
C	Third Issue	HH	CG	JM	25/06/2024
B	Second Issue	HH	CG	JM	14/06/2024
A	First Issue	HH	CG	JM	13/06/2024
Rev.	Description	Drm	Chk	App	Date

Drawing Status:

FOR PLANNING
NOT FOR CONSTRUCTION

motion

Guildford - Reading - London
www.motion.co.uk

Client:
Remmus Designer Homes Ltd

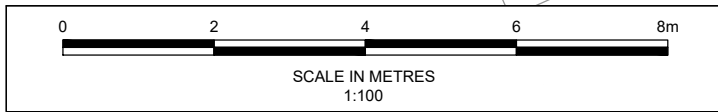
Project:
Land To R/O 99 Leylands Road, Burgess Hill

Title:
Outline Drainage Strategy

Scale: 1:100 (@ A1)

Drawing:
2405082-SK-02

Revision:
D



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Summary of Results for 100 year Return Period (+45%) Half Drain Time : 470 minutes. <table><thead><tr><th>Storm Event</th><th>Max Level (m)</th><th>Max Depth (m)</th><th>Max Infiltration (l/s)</th><th>Max Control (l/s)</th><th>Max E Outflow (l/s)</th><th>Max Volume (m³)</th><th>Status</th></tr></thead><tbody><tr><td>15 min Summer</td><td>39.862</td><td>0.162</td><td>0.0</td><td>0.2</td><td>0.2</td><td>5.4</td><td>O K</td></tr><tr><td>30 min Summer</td><td>39.918</td><td>0.218</td><td>0.0</td><td>0.2</td><td>0.2</td><td>7.3</td><td>O K</td></tr><tr><td>60 min Summer</td><td>39.975</td><td>0.275</td><td>0.0</td><td>0.2</td><td>0.2</td><td>9.1</td><td>O K</td></tr><tr><td>120 min Summer</td><td>40.014</td><td>0.314</td><td>0.0</td><td>0.2</td><td>0.2</td><td>10.4</td><td>O K</td></tr><tr><td>180 min Summer</td><td>40.031</td><td>0.331</td><td>0.0</td><td>0.2</td><td>0.2</td><td>11.0</td><td>O K</td></tr><tr><td>240 min Summer</td><td>40.037</td><td>0.337</td><td>0.0</td><td>0.3</td><td>0.3</td><td>11.2</td><td>O K</td></tr><tr><td>360 min Summer</td><td>40.037</td><td>0.337</td><td>0.0</td><td>0.3</td><td>0.3</td><td>11.2</td><td>O K</td></tr><tr><td>480 min Summer</td><td>40.029</td><td>0.329</td><td>0.0</td><td>0.2</td><td>0.2</td><td>11.0</td><td>O K</td></tr><tr><td>600 min Summer</td><td>40.023</td><td>0.323</td><td>0.0</td><td>0.2</td><td>0.2</td><td>10.7</td><td>O K</td></tr><tr><td>720 min Summer</td><td>40.017</td><td>0.317</td><td>0.0</td><td>0.2</td><td>0.2</td><td>10.5</td><td>O K</td></tr><tr><td>960 min Summer</td><td>40.005</td><td>0.305</td><td>0.0</td><td>0.2</td><td>0.2</td><td>10.1</td><td>O K</td></tr><tr><td>1440 min Summer</td><td>39.982</td><td>0.282</td><td>0.0</td><td>0.2</td><td>0.2</td><td>9.4</td><td>O K</td></tr><tr><td>2160 min Summer</td><td>39.946</td><td>0.246</td><td>0.0</td><td>0.2</td><td>0.2</td><td>8.2</td><td>O K</td></tr><tr><td>2880 min Summer</td><td>39.911</td><td>0.211</td><td>0.0</td><td>0.2</td><td>0.2</td><td>7.0</td><td>O K</td></tr><tr><td>4320 min Summer</td><td>39.836</td><td>0.136</td><td>0.0</td><td>0.2</td><td>0.2</td><td>4.5</td><td>O K</td></tr><tr><td>5760 min Summer</td><td>39.785</td><td>0.085</td><td>0.0</td><td>0.2</td><td>0.2</td><td>2.8</td><td>O K</td></tr><tr><td>15 min Winter</td><td>39.882</td><td>0.182</td><td>0.0</td><td>0.2</td><td>0.2</td><td>6.1</td><td>O K</td></tr><tr><td>30 min Winter</td><td>39.946</td><td>0.246</td><td>0.0</td><td>0.2</td><td>0.2</td><td>8.2</td><td>O K</td></tr><tr><td>60 min Winter</td><td>40.012</td><td>0.312</td><td>0.0</td><td>0.2</td><td>0.2</td><td>10.4</td><td>O K</td></tr><tr><td>120 min Winter</td><td>40.059</td><td>0.359</td><td>0.0</td><td>0.3</td><td>0.3</td><td>11.9</td><td>O K</td></tr><tr><td>180 min Winter</td><td>40.081</td><td>0.381</td><td>0.0</td><td>0.3</td><td>0.3</td><td>12.7</td><td>O K</td></tr><tr><td>240 min Winter</td><td>40.091</td><td>0.391</td><td>0.0</td><td>0.3</td><td>0.3</td><td>13.0</td><td>O K</td></tr><tr><td>360 min Winter</td><td>40.097</td><td>0.397</td><td>0.0</td><td>0.3</td><td>0.3</td><td>13.2</td><td>O K</td></tr><tr><td>480 min Winter</td><td>40.091</td><td>0.391</td><td>0.0</td><td>0.3</td><td>0.3</td><td>13.0</td><td>O K</td></tr><tr><td>600 min Winter</td><td>40.081</td><td>0.381</td><td>0.0</td><td>0.3</td><td>0.3</td><td>12.7</td><td>O K</td></tr><tr><td>720 min Winter</td><td>40.072</td><td>0.372</td><td>0.0</td><td>0.3</td><td>0.3</td><td>12.4</td><td>O K</td></tr><tr><td>960 min Winter</td><td>40.055</td><td>0.355</td><td>0.0</td><td>0.3</td><td>0.3</td><td>11.8</td><td>O K</td></tr><tr><td>1440 min Winter</td><td>40.019</td><td>0.319</td><td>0.0</td><td>0.2</td><td>0.2</td><td>10.6</td><td>O K</td></tr><tr><td>2160 min Winter</td><td>39.964</td><td>0.264</td><td>0.0</td><td>0.2</td><td>0.2</td><td>8.8</td><td>O K</td></tr><tr><td>2880 min Winter</td><td>39.907</td><td>0.207</td><td>0.0</td><td>0.2</td><td>0.2</td><td>6.9</td><td>O K</td></tr><tr><td>4320 min Winter</td><td>39.795</td><td>0.095</td><td>0.0</td><td>0.2</td><td>0.2</td><td>3.2</td><td>O K</td></tr><tr><td>5760 min Winter</td><td>39.735</td><td>0.035</td><td>0.0</td><td>0.2</td><td>0.2</td><td>1.1</td><td>O K</td></tr></tbody></table> <table><thead><tr><th>Storm Event</th><th>Rain (mm/hr)</th><th>Flooded Volume (m³)</th><th>Discharge Volume (m³)</th><th>Time-Peak (mins)</th></tr></thead><tbody><tr><td>15 min Summer</td><td>138.794</td><td>0.0</td><td>5.7</td><td>26</td></tr><tr><td>30 min Summer</td><td>94.453</td><td>0.0</td><td>7.8</td><td>40</td></tr><tr><td>60 min Summer</td><td>61.147</td><td>0.0</td><td>10.1</td><td>70</td></tr><tr><td>120 min Summer</td><td>37.026</td><td>0.0</td><td>12.2</td><td>126</td></tr><tr><td>180 min Summer</td><td>27.478</td><td>0.0</td><td>13.6</td><td>184</td></tr><tr><td>240 min Summer</td><td>22.210</td><td>0.0</td><td>14.6</td><td>244</td></tr><tr><td>360 min Summer</td><td>16.441</td><td>0.0</td><td>16.2</td><td>358</td></tr><tr><td>480 min Summer</td><td>13.273</td><td>0.0</td><td>17.5</td><td>412</td></tr><tr><td>600 min Summer</td><td>11.236</td><td>0.0</td><td>18.5</td><td>476</td></tr><tr><td>720 min Summer</td><td>9.802</td><td>0.0</td><td>19.4</td><td>540</td></tr><tr><td>960 min Summer</td><td>7.887</td><td>0.0</td><td>20.8</td><td>676</td></tr><tr><td>1440 min Summer</td><td>5.813</td><td>0.0</td><td>23.0</td><td>956</td></tr><tr><td>2160 min Summer</td><td>4.288</td><td>0.0</td><td>25.4</td><td>1368</td></tr><tr><td>2880 min Summer</td><td>3.459</td><td>0.0</td><td>27.4</td><td>1788</td></tr><tr><td>4320 min Summer</td><td>2.558</td><td>0.0</td><td>30.4</td><td>2508</td></tr><tr><td>5760 min Summer</td><td>2.075</td><td>0.0</td><td>32.8</td><td>3184</td></tr><tr><td>15 min Winter</td><td>138.794</td><td>0.0</td><td>6.4</td><td>26</td></tr><tr><td>30 min Winter</td><td>94.453</td><td>0.0</td><td>8.7</td><td>40</td></tr><tr><td>60 min Winter</td><td>61.147</td><td>0.0</td><td>11.3</td><td>68</td></tr><tr><td>120 min Winter</td><td>37.026</td><td>0.0</td><td>13.7</td><td>124</td></tr><tr><td>180 min Winter</td><td>27.478</td><td>0.0</td><td>15.2</td><td>182</td></tr><tr><td>240 min Winter</td><td>22.210</td><td>0.0</td><td>16.4</td><td>238</td></tr><tr><td>360 min Winter</td><td>16.441</td><td>0.0</td><td>18.2</td><td>350</td></tr><tr><td>480 min Winter</td><td>13.273</td><td>0.0</td><td>19.6</td><td>456</td></tr><tr><td>600 min Winter</td><td>11.236</td><td>0.0</td><td>20.8</td><td>500</td></tr><tr><td>720 min Winter</td><td>9.802</td><td>0.0</td><td>21.7</td><td>570</td></tr><tr><td>960 min Winter</td><td>7.887</td><td>0.0</td><td>23.3</td><td>724</td></tr><tr><td>1440 min Winter</td><td>5.813</td><td>0.0</td><td>25.8</td><td>1032</td></tr><tr><td>2160 min Winter</td><td>4.288</td><td>0.0</td><td>28.5</td><td>1480</td></tr><tr><td>2880 min Winter</td><td>3.459</td><td>0.0</td><td>30.7</td><td>1932</td></tr><tr><td>4320 min Winter</td><td>2.558</td><td>0.0</td><td>34.0</td><td>2596</td></tr><tr><td>5760 min Winter</td><td>2.075</td><td>0.0</td><td>36.8</td><td>3224</td></tr></tbody></table>				Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max E Outflow (l/s)	Max Volume (m³)	Status	15 min Summer	39.862	0.162	0.0	0.2	0.2	5.4	O K	30 min Summer	39.918	0.218	0.0	0.2	0.2	7.3	O K	60 min Summer	39.975	0.275	0.0	0.2	0.2	9.1	O K	120 min Summer	40.014	0.314	0.0	0.2	0.2	10.4	O K	180 min Summer	40.031	0.331	0.0	0.2	0.2	11.0	O K	240 min Summer	40.037	0.337	0.0	0.3	0.3	11.2	O K	360 min Summer	40.037	0.337	0.0	0.3	0.3	11.2	O K	480 min Summer	40.029	0.329	0.0	0.2	0.2	11.0	O K	600 min Summer	40.023	0.323	0.0	0.2	0.2	10.7	O K	720 min Summer	40.017	0.317	0.0	0.2	0.2	10.5	O K	960 min Summer	40.005	0.305	0.0	0.2	0.2	10.1	O K	1440 min Summer	39.982	0.282	0.0	0.2	0.2	9.4	O K	2160 min Summer	39.946	0.246	0.0	0.2	0.2	8.2	O K	2880 min Summer	39.911	0.211	0.0	0.2	0.2	7.0	O K	4320 min Summer	39.836	0.136	0.0	0.2	0.2	4.5	O K	5760 min Summer	39.785	0.085	0.0	0.2	0.2	2.8	O K	15 min Winter	39.882	0.182	0.0	0.2	0.2	6.1	O K	30 min Winter	39.946	0.246	0.0	0.2	0.2	8.2	O K	60 min Winter	40.012	0.312	0.0	0.2	0.2	10.4	O K	120 min Winter	40.059	0.359	0.0	0.3	0.3	11.9	O K	180 min Winter	40.081	0.381	0.0	0.3	0.3	12.7	O K	240 min Winter	40.091	0.391	0.0	0.3	0.3	13.0	O K	360 min Winter	40.097	0.397	0.0	0.3	0.3	13.2	O K	480 min Winter	40.091	0.391	0.0	0.3	0.3	13.0	O K	600 min Winter	40.081	0.381	0.0	0.3	0.3	12.7	O K	720 min Winter	40.072	0.372	0.0	0.3	0.3	12.4	O K	960 min Winter	40.055	0.355	0.0	0.3	0.3	11.8	O K	1440 min Winter	40.019	0.319	0.0	0.2	0.2	10.6	O K	2160 min Winter	39.964	0.264	0.0	0.2	0.2	8.8	O K	2880 min Winter	39.907	0.207	0.0	0.2	0.2	6.9	O K	4320 min Winter	39.795	0.095	0.0	0.2	0.2	3.2	O K	5760 min Winter	39.735	0.035	0.0	0.2	0.2	1.1	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	15 min Summer	138.794	0.0	5.7	26	30 min Summer	94.453	0.0	7.8	40	60 min Summer	61.147	0.0	10.1	70	120 min Summer	37.026	0.0	12.2	126	180 min Summer	27.478	0.0	13.6	184	240 min Summer	22.210	0.0	14.6	244	360 min Summer	16.441	0.0	16.2	358	480 min Summer	13.273	0.0	17.5	412	600 min Summer	11.236	0.0	18.5	476	720 min Summer	9.802	0.0	19.4	540	960 min Summer	7.887	0.0	20.8	676	1440 min Summer	5.813	0.0	23.0	956	2160 min Summer	4.288	0.0	25.4	1368	2880 min Summer	3.459	0.0	27.4	1788	4320 min Summer	2.558	0.0	30.4	2508	5760 min Summer	2.075	0.0	32.8	3184	15 min Winter	138.794	0.0	6.4	26	30 min Winter	94.453	0.0	8.7	40	60 min Winter	61.147	0.0	11.3	68	120 min Winter	37.026	0.0	13.7	124	180 min Winter	27.478	0.0	15.2	182	240 min Winter	22.210	0.0	16.4	238	360 min Winter	16.441	0.0	18.2	350	480 min Winter	13.273	0.0	19.6	456	600 min Winter	11.236	0.0	20.8	500	720 min Winter	9.802	0.0	21.7	570	960 min Winter	7.887	0.0	23.3	724	1440 min Winter	5.813	0.0	25.8	1032	2160 min Winter	4.288	0.0	28.5	1480	2880 min Winter	3.459	0.0	30.7	1932	4320 min Winter	2.558	0.0	34.0	2596	5760 min Winter	2.075	0.0	36.8	3224
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max E Outflow (l/s)	Max Volume (m³)	Status																																																																																																																																																																																																																																																																																																																																																																																																																																									
15 min Summer	39.862	0.162	0.0	0.2	0.2	5.4	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
30 min Summer	39.918	0.218	0.0	0.2	0.2	7.3	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
60 min Summer	39.975	0.275	0.0	0.2	0.2	9.1	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
120 min Summer	40.014	0.314	0.0	0.2	0.2	10.4	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
180 min Summer	40.031	0.331	0.0	0.2	0.2	11.0	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
240 min Summer	40.037	0.337	0.0	0.3	0.3	11.2	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
360 min Summer	40.037	0.337	0.0	0.3	0.3	11.2	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
480 min Summer	40.029	0.329	0.0	0.2	0.2	11.0	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
600 min Summer	40.023	0.323	0.0	0.2	0.2	10.7	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
720 min Summer	40.017	0.317	0.0	0.2	0.2	10.5	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
960 min Summer	40.005	0.305	0.0	0.2	0.2	10.1	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
1440 min Summer	39.982	0.282	0.0	0.2	0.2	9.4	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
2160 min Summer	39.946	0.246	0.0	0.2	0.2	8.2	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
2880 min Summer	39.911	0.211	0.0	0.2	0.2	7.0	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
4320 min Summer	39.836	0.136	0.0	0.2	0.2	4.5	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
5760 min Summer	39.785	0.085	0.0	0.2	0.2	2.8	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
15 min Winter	39.882	0.182	0.0	0.2	0.2	6.1	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
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60 min Winter	40.012	0.312	0.0	0.2	0.2	10.4	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
120 min Winter	40.059	0.359	0.0	0.3	0.3	11.9	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
180 min Winter	40.081	0.381	0.0	0.3	0.3	12.7	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
240 min Winter	40.091	0.391	0.0	0.3	0.3	13.0	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
360 min Winter	40.097	0.397	0.0	0.3	0.3	13.2	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
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720 min Winter	40.072	0.372	0.0	0.3	0.3	12.4	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
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1440 min Winter	40.019	0.319	0.0	0.2	0.2	10.6	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
2160 min Winter	39.964	0.264	0.0	0.2	0.2	8.8	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
2880 min Winter	39.907	0.207	0.0	0.2	0.2	6.9	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
4320 min Winter	39.795	0.095	0.0	0.2	0.2	3.2	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
5760 min Winter	39.735	0.035	0.0	0.2	0.2	1.1	O K																																																																																																																																																																																																																																																																																																																																																																																																																																									
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)																																																																																																																																																																																																																																																																																																																																																																																																																																												
15 min Summer	138.794	0.0	5.7	26																																																																																																																																																																																																																																																																																																																																																																																																																																												
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120 min Summer	37.026	0.0	12.2	126																																																																																																																																																																																																																																																																																																																																																																																																																																												
180 min Summer	27.478	0.0	13.6	184																																																																																																																																																																																																																																																																																																																																																																																																																																												
240 min Summer	22.210	0.0	14.6	244																																																																																																																																																																																																																																																																																																																																																																																																																																												
360 min Summer	16.441	0.0	16.2	358																																																																																																																																																																																																																																																																																																																																																																																																																																												
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600 min Summer	11.236	0.0	18.5	476																																																																																																																																																																																																																																																																																																																																																																																																																																												
720 min Summer	9.802	0.0	19.4	540																																																																																																																																																																																																																																																																																																																																																																																																																																												
960 min Summer	7.887	0.0	20.8	676																																																																																																																																																																																																																																																																																																																																																																																																																																												
1440 min Summer	5.813	0.0	23.0	956																																																																																																																																																																																																																																																																																																																																																																																																																																												
2160 min Summer	4.288	0.0	25.4	1368																																																																																																																																																																																																																																																																																																																																																																																																																																												
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5760 min Summer	2.075	0.0	32.8	3184																																																																																																																																																																																																																																																																																																																																																																																																																																												
15 min Winter	138.794	0.0	6.4	26																																																																																																																																																																																																																																																																																																																																																																																																																																												
30 min Winter	94.453	0.0	8.7	40																																																																																																																																																																																																																																																																																																																																																																																																																																												
60 min Winter	61.147	0.0	11.3	68																																																																																																																																																																																																																																																																																																																																																																																																																																												
120 min Winter	37.026	0.0	13.7	124																																																																																																																																																																																																																																																																																																																																																																																																																																												
180 min Winter	27.478	0.0	15.2	182																																																																																																																																																																																																																																																																																																																																																																																																																																												
240 min Winter	22.210	0.0	16.4	238																																																																																																																																																																																																																																																																																																																																																																																																																																												
360 min Winter	16.441	0.0	18.2	350																																																																																																																																																																																																																																																																																																																																																																																																																																												
480 min Winter	13.273	0.0	19.6	456																																																																																																																																																																																																																																																																																																																																																																																																																																												
600 min Winter	11.236	0.0	20.8	500																																																																																																																																																																																																																																																																																																																																																																																																																																												
720 min Winter	9.802	0.0	21.7	570																																																																																																																																																																																																																																																																																																																																																																																																																																												
960 min Winter	7.887	0.0	23.3	724																																																																																																																																																																																																																																																																																																																																																																																																																																												
1440 min Winter	5.813	0.0	25.8	1032																																																																																																																																																																																																																																																																																																																																																																																																																																												
2160 min Winter	4.288	0.0	28.5	1480																																																																																																																																																																																																																																																																																																																																																																																																																																												
2880 min Winter	3.459	0.0	30.7	1932																																																																																																																																																																																																																																																																																																																																																																																																																																												
4320 min Winter	2.558	0.0	34.0	2596																																																																																																																																																																																																																																																																																																																																																																																																																																												
5760 min Winter	2.075	0.0	36.8	3224																																																																																																																																																																																																																																																																																																																																																																																																																																												
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Motion		Page 2
84 North Street Guildford Surrey GU1 4AU		
Date 27/03/2025 15:14	Designed by Chris Gray	
File 100Y + 45CC FEH 2404055 2703202...	Checked by Jason Morgans	
Innovyze	Source Control 2020.1.3	

Rainfall Details

Rainfall Model	FEH	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
FEH Rainfall Version	2013	Cv (Winter)	0.840
Site Location	GB 531100 120250 TQ 31100 20250	Shortest Storm (mins)	15
Data Type	Catchment	Longest Storm (mins)	5760
Summer Storms	Yes	Climate Change %	+45

Time Area Diagram

Total Area (ha) 0.022

Time (mins)			Time (mins)			Time (mins)		
From:	To:	Area (ha)	From:	To:	Area (ha)	From:	To:	Area (ha)
0	4	0.007	4	8	0.007	8	12	0.007

Motion		Page 3
84 North Street Guildford Surrey GU1 4AU		
Date 27/03/2025 15:14	Designed by Chris Gray	
File 100Y + 45CC FEH 2404055 2703202...	Checked by Jason Morgans	
Innovyze	Source Control 2020.1.3	

Model Details

Storage is Online Cover Level (m) 40.850

Cellular Storage Structure

Invert Level (m) 39.700 Infiltration Coefficient Side (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Base (m/hr) 0.00000 Safety Factor 2.0

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	35.0	35.0	0.400	35.0	45.8	0.401	0.0	45.8

Hydro-Brake® Optimum Outflow Control

Unit Reference MD-SHE-0028-4000-1150-4000 Sump Available Yes
Design Head (m) 1.150 Diameter (mm) 28
Design Flow (l/s) 0.4 Invert Level (m) 39.650
Flush-Flo™ Calculated Minimum Outlet Pipe Diameter (mm) 75
Objective Minimise upstream storage Suggested Manhole Diameter (mm) 1200
Application Surface

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.150	0.4	Kick-Flo®	0.246	0.2
Flush-Flo™	0.120	0.2	Mean Flow over Head Range	-	0.3

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)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	0.2	0.600	0.3	1.600	0.5	2.600	0.6	5.000	0.8	7.500	0.9
0.200	0.2	0.800	0.3	1.800	0.5	3.000	0.6	5.500	0.8	8.000	0.9
0.300	0.2	1.000	0.4	2.000	0.5	3.500	0.6	6.000	0.8	8.500	1.0
0.400	0.3	1.200	0.4	2.200	0.5	4.000	0.7	6.500	0.9	9.000	1.0
0.500	0.3	1.400	0.4	2.400	0.5	4.500	0.7	7.000	0.9	9.500	1.0