Land East of Old London Road
Washington, West Sussex

Flood Risk Assessment and Drainage Strategy

For

James Williams

motion

Document Control Sheet

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James Williams

This document has been issued and amended as follows:

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Motion
84 North Street
Guildford
GU1 4AU
T 01483 531300
F 01483 531333
E info@motion.co.uk
W www.motion.co.uk

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1.0 Introduction

1.1 This Flood Risk Assessment (FRA) and Drainage Strategy has been produced by Motion on behalf of their client, James Williams. It supports the proposed development of four residential dwellings on the land east of Old London Road, Washington, West Sussex. A site location plan of the proposed development can be seen in Appendix A.

1.2 According to the Environment Agency's (EA's) Flood Map for Planning the site is located within Flood Zone 1. However, because the EA's NaFRA2 Risk of Flooding from Surface Water (RoFSW) mapping shows an area of surface water flood risk on the site boundary, an FRA has been produced that will review surface water flood risk, as well as flooding from other sources for completeness.

1.3 Although the development is minor in planning terms, it is a 'non-major' development in flood risk terms and, as such, a drainage strategy is also required to demonstrate how the development will manage and discharge surface water generated in all rainfall events up to and including the 1 in 100-year + 45% for climate change.

1.4 Therefore, in addition to the FRA, this report will also define how the development will manage its surface water and foul sewage so that the development does not increase flood risk in the area or to neighbouring properties/land.

- This FRA and drainage strategy follows the guidance set out in:
- West Sussex's Policy for the Management of Surface Water
- The National Planning Policy Framework (NPPF).
- The Planning Practice Guidance (PPG) to the National Planning Policy Framework.
- The CIRIA SuDS Manual 2015 (C753).
- The Environment Agency Rainfall Runoff Management for Developments.
- The Non-Statutory Technical Standards for SuDS (NSTSfS).

1.5 This FRA and drainage strategy report pertains only to the drainage strategy for the development. It does not provide details of how the site will be drained during the construction phase. This report is also not a drainage verification report, which can only be produced post-construction.

1.6 Similarly, this report does not provide information on how the drainage infrastructure will be protected during the construction phase of the project. The provision of this information is the responsibility of the appointed contractor.

2.0 Site Description

Table 2.1 – Site Summary

Site Name	Land East of Old London Road
Location	Washington, West Sussex, RH20 3BN
Grid Reference	TQ122138 (approximate centre of site)
Site Area	The red line boundary is 986m^2 (0.099 ha)
Development Type	The erection of 4no. three-bed dwellings Plans of the proposed development can be seen in Appendix B.
Flood Zone	Flood Zone 1
Surface Water Flood Risk	Low Risk (with High Risk on the site boundary)
Local Wastewater Authority	Southern Water
Local Planning Authority	Horsham District Council (HDC)
Lead Local Flood Authority	West Sussex County Council (WSCC)

Site Location and Description

2.1 The site is located in Washington, West Sussex and is on the east side of Old London Road and to the west of the A24 London Road. The site is accessed from Old London Road and is separated from the A24 London Road by a fence line, a watercourse, and a grassed verge/highways margin.

2.2 The site comprises an approximately rectangular undeveloped plot of land that is 0.099 ha.

2.3 There is a row of cottages (numbers 1 – 6 Montpelier Cottages) immediately to the south and the land to the north is currently undeveloped (see below) and contains an acoustic bund the runs north-south adjacent to the A24 London Road.

2.4 Several new developments exist on the western side of Old London Road following recent planning approvals:

- DC/20/0717 - 16 dwellings in Vineyards Close, approved in 2020
- DC/20/0660 - three new dwellings on the entrance to Montpelier Gardens, approved in 2020
- DC/18/1603 - five new dwellings on the former Highways depot, approved in 2018.

2.5 An outline application for a development (all matters reserved) of nine residential dwellings on the land immediately to the north of the site was permitted in May 2024 (DC/21/1689), which is yet to discharge conditions.

2.6 Therefore, the site is in a location where several small infill developments on brownfield and greenfield sites have been recently permitted by HDC.

Topography

2.7 The existing site layout in Appendix C shows the topography across the site with approximate contours. Levels are in metres Above Ordnance Datum (mAOD).

2.8 The highest levels are in the southwestern corner of the site on the Old London Road frontage, where levels are at 52.70 mAOD. The approximate fall of the site is west to east, with a small fall to the north, so that the northwestern corner of the site is 51.69 mAOD.

2.9 The lowest site levels are on the eastern site boundary, where levels are between 49.14 mAOD in the southeastern corner of the site and 48.56 mAOD in the northeastern corner.

2.10 The approximate gradient across the site is 1 in 12.

Geology

2.11 The 1:50,000 British Geological Survey (BGS) online Geoindex Mapping identifies that the site is underlain by a bedrock of Lower Greensand Group (Silty Sandstone) and a superficial geology of Head Deposits, which can be gravels, sands, silts and clays depending on location and depth as shown. See Figures 2.1 and 2.2, below:

Figure 2.1 – Superficial Geology

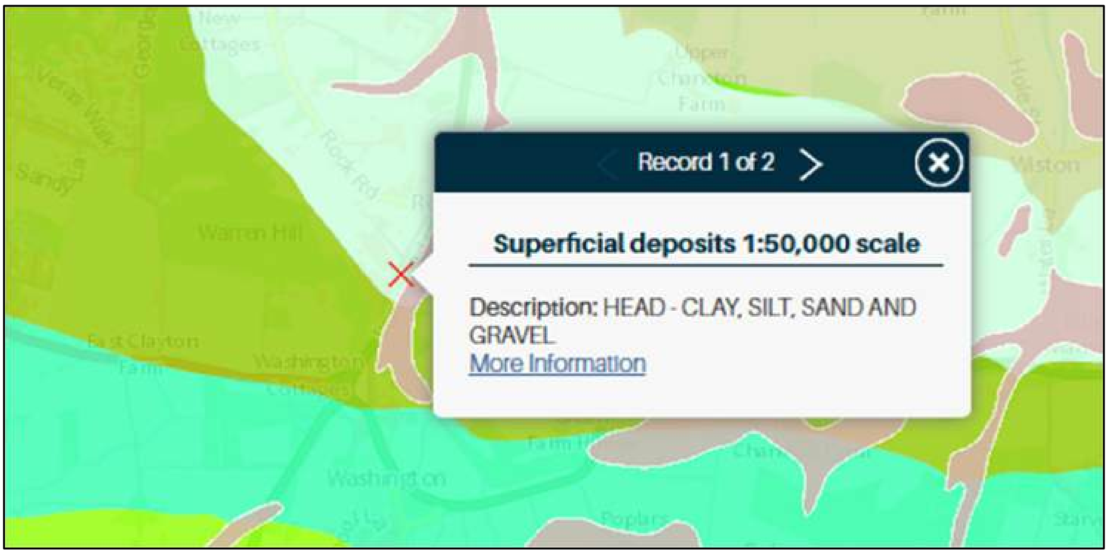
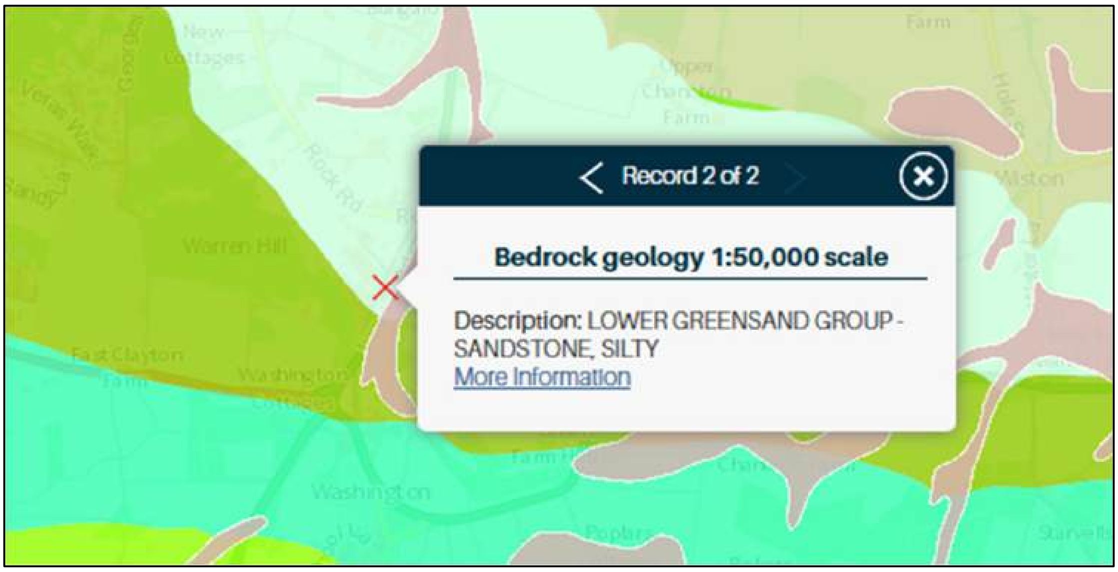


Figure 2.2 – Bedrock Geology



2.12 There are two BGS borehole records available from the location of the site (TQ11SW109 and TQ11SW110). These have been reviewed to provide more detail on the local geology and the relative depth of each geological horizon. These BGS boreholes can be seen in Appendix D.

2.13 They show that between ground level and 4.5m/4.7m below ground level (BGL) that the superficial geology is characterised by mottle orange/grey very fine sandy CLAY. This sits on top of firm to stiff dark grey fine to medium sandy CLAY to depths of 24.5mBGL/25.5mBGL.

2.14 Therefore, the site is underlain by predominantly clay-based geology to depth.

Infiltration Potential

2.15 No infiltration or soakage testing (to BRE365 or Building Regulations protocol or otherwise) has been carried out as part of the development proposals. This is based upon the evidence of the site-based BGS boreholes, which have clearly shown that the local geology is made up of clay, which would not support an infiltration-based drainage strategy. Infiltration rates in clay soils are typically in the order of 1×10^{-8} to 1×10^{-10} m/s, whereas the slowest infiltration rate that can realistically be used for an infiltration-based drainage strategy is 1×10^{-6} m/s. The site-based geological evidence supports the position that this would not be achievable on the land to the east of Old London Road.

2.16 It has been noted that in the outline application DC/21/1689 (with all matters reserved) that infiltration was proposed as a means of surface water discharge and an assumed infiltration rate of 3.7×10^{-5} m/s underpinned the drainage strategy, pending the results of site-specific soakage testing. This has been captured in Condition 5 of the decision notice, which requires "*a detailed surface water drainage scheme including a Surface Water Drainage Statement, based on sustainable drainage principles and an assessment of the hydrological and hydrogeological context of the development*…" to be submitted prior to commencement on site.

2.17 We have revisited application DC/21/1689 to see if detailed designs and information supporting an infiltration-based strategy have been submitted, but as of June 2025 this information has not yet been prepared. It is Motion's belief, however, that infiltration will not be able to support the drainage strategy for the site and this information will not be forthcoming. As such, the current application for the development on the land east of Old London Road will not follow the principles of DC/21/1689 and will not discharge surface water by infiltration.

Hydrogeology and Groundwater

2.18 Groundwater Source Protection Zones (SPZ's) are defined around groundwater abstraction sources such as wells, boreholes and springs that are used for public drinking water supply.

2.19 SPZ's show the risk of contamination to groundwater from any activities that might cause pollution in the area. The closer the activity to the source of abstraction, the greater the risk. The maps show three main zones; inner – Zone 1; outer – Zone 2 and; total catchment – Zone 3.

2.20 Defra's Magic Map was reviewed, and the site is not within in any SPZ's owing to the site's location in an area of Clay-based geology.

2.21 The bedrock geology is categorised as a Principal Aquifer in the location of the proposed development site. This means that they may provide a source of potable water, and water for business needs and that they may be an important source of water for rivers, lakes and wetlands.

2.22 The BGS Borehole logs in Appendix D show that groundwater is present at 11mBGL. After pumping 2,000 litres/hour for one hour the water level remained stable and ran clear, suggesting this is the ambient groundwater level in the area.

Hydrology

2.23 There is an ordinary watercourse on the site's eastern boundary. This ordinary watercourse flows northwards adjacent to the A24 London Road prior to being culverted under this dual carriageway and emerging on its eastern side. The downstream side of the culvert outfalls into a more significant ordinary watercourse that is shown on Google and OS Mapping, which continues to flow north on the eastern side of the A24. The watercourse is culverted under The Hollow and then flows northwards as an open channel alongside the access to Rock Business Park and is part of the upper River Adur catchment.

2.24 A plan of the flow of the ordinary watercourse and its connections is shown in Appendix E of this report, which demonstrates that the ordinary watercourse has ongoing connectivity.

Existing Drainage Regime

Surface Water

2.25 As an undeveloped site there is no formal drainage currently in place. Surface water from the site shed according to the natural gradients, which would allow surface water to flow towards the ordinary watercourse on the eastern boundary and become part of the wider hydraulic network.

2.26 As noted from the local geology, it is not expected that much surface water drains to ground via infiltration.

2.27 Southern Water's Asset Location Plans have been obtained, and these can be seen in Appendix F of this report.

2.28 There are no public surface water sewers in the area.

Foul Water

2.29 The Southern Water's Asset Location Plans in Appendix F show that there is an established public foul sewer network in Old London Road that flows from Montpelier Gardens then southwards towards the end of Old London Road, where the foul sewer connects with another public foul sewer before their combined flows are taken northwards in a public foul sewer under the A24 London Road.

2.30 A public foul spur to the sewer in Old London extends from 6 Montpelier Cottages into the site. Manhole node 2804 is within the site boundary and is in a location whereby it will be possible to connect the development's foul waste to it by gravity.

2.31 A review of the consultation with Southern Water and their response as part of DC/21/1689 showed that they approved a new connection to their network without reinforcement being required. Therefore, we expect that the same foul drainage system will have capacity for the foul flows from the proposed development. This is discussed further in Section 8.0 of this report.

Arboriculture

2.32 The proposed development plan in Appendix B does not have any arboricultural constraints and there are no RPZ's that would affect the layout or design of the drainage strategy.

3.0 Flood Risk Legislative and Policy Framework

3.1 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 Washington area, although HDC may preside over drainage matters on smaller sites.

3.2 LLFA's 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 local sources, such as surface water 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 updated EA Flood Map for Planning was released on 25th March 2025. This updated and new National Flood Risk Assessment (NaFRA2) uses both existing detailed local information and improved national data, includes the potential impact of climate change on flood risk, based on UK Climate Projections (UKCP18) and shows potential flood depths. This allows the Flood Map for Planning to provide much higher resolution maps that make it easier to see where there is risk.

3.4 The New NaFRA2 Flood Map for Planning remains split into 'Flood Zones', which demarcate the extent of flooding from rivers or the sea for different return periods.

3.5 Table 3.1, below, lists the flood zone categories and explains the flood risk probabilities they represent.

Table 3.1 – 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 tidal 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 tidal flooding. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain	This zone comprises land where water must flow or be stored in times of flood, which is typically the 1 in 30-year flood event or greater. Local planning authorities should identify in their SFRAs areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map, but may be distinguished in Product 4 information, for example)

Risk of Flooding from Surface Water (RoFSW) Outlines

3.6 The EA's Risk of Flooding from Surface Water (RoFSW) outlines were updated and refined in January 2025. The map uses improvements in data, technology and modelling and includes information and input from LLFAs, where this is available. This New National Model (NNM) for surface water represents a significant improvement over previous national-scale models with more targeted risk areas that tie in better with local land features and overall topography.

3.7 The new NAFRA2 Flood Map for Planning includes the updated RoFSW outlines, which show the extent of the 1 in 30-year (High), 1 in 100-year (Medium) and 1 in 1,000-year (Low) risk flood events.

The National Planning Policy Framework

3.8 The NPPF sets out the Government's national policies on different aspects of land use planning in England in relation to flood risk. The Planning Practice Guidance (PPG) 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 considered 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.

3.9 The process of directing development away from those areas where risks are highest is the Sequential Test. It covers all forms of flooding, and this is covered in Paragraphs 23 and 24 of the NPPF. Following the December 2024 update to the NPPF, Paragraph 175 was added that states that development can be appropriate on sites with flood risk

"*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 not be at risk of flooding from any source, now and in the future*".

3.10 This essentially means that if a sequential approach is applied within the site boundary, and areas of flood risk, now and in the future, are avoided, that flood risk should not prevent the development coming forward and that the Sequential Test is not required.

3.11 An FRA should identify and assess the risks of all forms of flooding and demonstrate how these flood risks will be managed so that a development remains safe throughout its lifetime, taking climate change into account.

3.12 Within each Flood Zone or surface water flood risk area, a key factor in determining planning applications for development is the flood risk vulnerability of a development. Table 2 of the PPG 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.

3.13 Within the different Flood Zones and Surface Water Flood Risk areas, each of the above development categories are considered appropriate or not permissible. The Technical Guidance to the NPPF lists these as:

Flood Zone 1 (Very Low Risk) / No Surface Water Flood Risk:

- All the development categories listed above are appropriate.

1 in 1,000-year Surface Water Flood (Low) Risk

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

Flood Zone 2 (Medium Risk) / 1 in 100-year Surface Water (Medium) Risk :

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

Flood Zone 3a (High Risk) / 1 in 30-year Surface Water (High) Risk:

- Water-compatible and less vulnerable development 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 must 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.

3.15 The proposed development will be reviewed against the Flood Zone in which it is located and an assessment will be made of the appropriateness of the proposed development, as per the advice within the PPG to the NPPF, and taking account of the proposed site layout for the development shown in Appendix B.

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 summarised in Table 6.1. The probability of any likely impacts is also assessed, where necessary.

Flooding from Rivers and the Sea

4.2 The Environment Agency's Flood Map for Planning (Appendix G) shows that the site is within Flood Zone 1.

4.3 Consequently, it can be summarised that the proposed development will not be within any fluvial flood risk areas and the residual fluvial flood risk to the site is zero.

Fluvial Flood Risk and the Appropriateness of the Development in this Location

4.4 Residential development is 'more vulnerable' according to the classifications in the NPPF.

4.5 The discussion above has shown that site and the proposed development is within Flood Zone 1.

4.6 Table 3 of the PPG to the NPPF (see below) states that 'more vulnerable' development is appropriate in Flood Zone 1, thus the proposed development is appropriate in this location and with the current and future level of flood risk.

Table 3 of the NPPF - Flood Risk Vulnerability and Flood Zone Compatibility

Flood Zones	Flood Risk Vulnerability Classification				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a †	Exception Test required †	✗	Exception Test required	✓	✓
Zone 3b *	Exception Test required *	✗	✗	✗	✓*

Key:

✓ Development is appropriate

✗ Development should not be permitted.

Surface Water Flooding

4.7 The EA's 2025 NaFRA2 Risk of Flooding from Surface Water (RoFSW) dataset for the site can be seen in the plans in Appendix H. It shows that the site is not at risk of surface water flooding, which includes all locations where dwellings, parking and above-ground structures are proposed. There is some surface water flood risk on the site's eastern boundary, along the line of the ordinary watercourse, but this is not within the site boundary and is far away from the developed part of the site.

4.8 Therefore, the site is not within a surface water flood risk area, and surface water does not preclude safe access and egress to the site. On that basis, the development is compliant with Paragraph 175 of the NPPF and surface water flood risk does not need to be considered further.

Groundwater Susceptibility

4.9 There are no flood risk maps for groundwater, as stated by the Environment Agency in their 2011 guidance note 'flooding from groundwater'. Mapping products currently available only show areas where the geological and hydrogeological conditions *may* combine to cause groundwater flooding, but they should not be considered as groundwater flood risk maps. They only show *susceptibility* to groundwater flooding.

4.10 There are several mapping products that depict areas that may be susceptible to groundwater flooding, but they are not comparable in detail to the risk maps developed for fluvial, tidal and surface water, such as those used by practitioners and risk management authorities to support planning decisions. The mapping does not show the likelihood of groundwater flooding occurring and can only be considered as a hazard, but not a risk-based dataset.

4.11 As such, the mapping products can be viewed as indicative at best and should only be used as a prompt to review site-based information to determine whether groundwater is a risk factor that should be considered. Indeed, the EA state that:

"*The susceptibility data should not be used on its own to make planning decisions at any scale and, in particular, should not be used to inform planning decisions at the site scale. The susceptibility data cannot be used on its own to indicate risk of groundwater flooding*."

4.12 To investigate groundwater flooding susceptibility this FRA has reviewed the information presented in HDC's 2020 Strategic Flood Risk Assessment (SFRA), which includes the Areas Susceptible to Groundwater Flooding (ASGWF) map and the Areas at Risk of Groundwater Flooding Map. These maps can be seen in Appendix I.

4.13 The location of Rusper has been circled in pink and, as can be seen on both SFRA maps, the development site is in an area of low to negligible risk of groundwater flooding. This is supported by the hydraulically unproductive geology encountered on site, within which groundwater would be largely immobile. This means that this form of flooding does not need to be considered further.

Flooding from Infrastructure Failure

4.14 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.

4.15 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.

4.16 With regards to the proposed development's drainage system and risk of failure, it will be designed to attenuate the 1 in 100-year + 45% rainfall event. A drainage management and maintenance plan will also be provided, which will prescribe how the onsite drainage infrastructure should be looked after so that it works at optimum capacity. This will ensure that residual flood risks to the site from its internal drainage systems will be minimised.

Flooding from Artificial sources

4.17 The EA provides a map showing the maximum potential flood extent should all reservoirs with a capacity of greater than 25,000 cubic metres fail and release the water they hold.

4.18 The map shows that the development site would not experience flooding in this scenario, or be near to an areas that would be affected.

4.19 There are no canals in the local area to create flood risk either.

Historic Flooding

4.20 There are no records that this study has been able to source through the HDC SFRA that the site or local area has ever experienced flooding.

5.0 Future Flood Risk & Climate Change

5.1 The NPPF and the supporting Planning Practice 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

5.2 The dwellings are within Flood Zone 1 and vertically above the ordinary watercourse on the eastern boundary of the site, thus would not be at fluvial flood risk in the future.

Peak Rainfall Intensity and Climate Change

5.1 Washington is within the Adur and Ouse Management Catchment. The peak rainfall climate change allowances for this catchment are as follows in Table 5.1, below:

Table 5.1 – Climate Change Predictions for the Mole 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%

5.2 For a residential development, which could have a lifespan of 100 years or more, the 2070's epoch should be used and the NPPF advises that for developments with a lifetime beyond 2100, flood risk assessments should assess the upper end allowances for both the 1% and 3.3% annual exceedance probability events.

5.3 Therefore, for the proposed development on the land east of London Road, Washington, the climate change increase predictions that should be applied to the hydraulic modelling and the drainage strategy are 40% for the 1 in 30-year rainfall event and 45% for the 1 in 100-year rainfall event.

5.4 The site is not currently at risk of surface water flooding, and the only area of indicated surface water flood risk is on the alignment of the ordinary watercourse on the site's eastern boundary. Any increase in this source flood risk has already been covered by the discussion of future fluvial flood risk, above.

5.5 The proposed surface water drainage strategy will be designed to attenuate and sustainably discharge surface water from the 1 in 100-year + 45% rainfall event. This means that the development will manage all surface water generated on site in the design storm, inclusive of climate change, and future surface water flood risk does not need to be considered further.

6.0 Summary of Residual Flood Risk

6.1 The flood risks, from all sources, that are associated with the land east of London Road, Washington, and the proposed development, have been discussed in the previous section of this report. This has been done in the context of the site's location and its geo-environmental characteristics. Current, future and residual flood risks have been assessed. Table 6.1, below, summarises the residual flood risks facing the proposed development.

Table 6.1: Summary of Flood Risk

Flood Source	Risk Level				Comment
	High	Medium	Low	Very Low	
Fluvial				X	The development is not at risk of fluvial flooding, presently or in the future.
Tidal				X	The site is not in an area of tidal flood risk.
Groundwater				X	The HDC SFRA places the development site in an area at low to negligible risk of groundwater flooding
Surface Water				X	The site is not at risk of surface water flooding and the proposed drainage strategy will manage surface water on site up to and including the 1 in 100-year + 45 rainfall event.
Canals				X	The site is not in proximity to any canals.
Reservoirs				X	The site is not in proximity to or downstream of any reservoirs.
Infrastructure Failure				X	The development's drainage infrastructure will be designed to attenuate the 1 in 100-year + 45% rainfall event. A drainage management and maintenance plan will also be provided, which will ensure that residual flood risks to the site from its internal drainage systems will be minimised.
Increase due to Climate Change				X	Climate change increases do not increase flood risk, from any source, in a way that will impact the proposed development or make it inappropriate in this location.

7.0 Surface Water Drainage Strategy

Sustainable Drainage Overview

7.1 Current planning policy and Environment Agency guidance requires developments to employ SuDS (Sustainable Drainage Systems) techniques wherever feasible. Careful design of SuDS features can ensure that a development's surface water drainage closely reflects the natural hydrology of the pre-developed site.

7.2 The key benefits of SuDS are as follows:

- Improving water quality over a conventional piped system by removing pollutants from diffuse pollutant sources (e.g., roads);
- Improving amenity through the provision of open green space;
- Improving biodiversity through increased areas for wildlife habitat; and
- Enabling a natural drainage regime that recharges groundwater (where possible).

7.3 SuDS provide a flexible approach to drainage, with a wide range of components from soakaways to large-scale basins or ponds. The individual techniques should be used where possible in a management train that mimics the natural pre-developed pattern of drainage.

Site Areas

7.4 The site areas to undergo development are as follows in Table 7.1.

Table 7.1 – Site Areas

Land Cover Type / Site Area Types	Area (ha)
Total site area (excluding open SuDS features)	0.099
Total impermeable areas in the development	0.041
Total permeable areas in the development	0.058

Greenfield Runoff Rate

7.5 The QMED Rural value for the site's developed and impermeable areas of 0.041 ha has been calculated. This is in Appendix J. The QMED Rural runoff rate for the development is 0.2 l/s.

7.6 While the QMED Rural runoff rate usually sets the target runoff rate on larger development sites, this is not possible on small infill sites such as that of the land east of London Road, Washington. This is because small sites inevitably have a QMED greenfield runoff rate that is a fraction of a litre per second. It is not sustainable to try and achieve such low discharge rates. Firstly, few mainstream products are available that provide such extreme flow control. Secondly, very low flow rate controls have very small apertures and this increases the blockage risk significantly, which in turn results in poor system performance and potential flooding on site (and off site). This can be tackled through maintenance, to an extent, but such frequent maintenance would be needed that cannot be realistically provided.

7.7 Therefore, the most sustainable and resilient approach to limited discharge drainage strategy is to raise the discharge rate to a level that employs flow control structures with lessened blockage risk but still low discharge rates.

7.8 This is the approach of this drainage strategy. The maximum discharge rate from the development will be a maximum 1.6 litres/second in all rainfall events, up to and including the 1 in 100-year + 45% storm. While greater than the QMED greenfield runoff rate, it is the minimum practicable discharge rate and represents long-term sustainability and resilience.

Drainage Strategy Overview

7.9 The drainage strategy for the proposed development has been developed through the acknowledgement of the geo-environmental, topographical and infrastructure constraints that affect the site, as well as WSCC's SuDS guidance.

7.10 As discussed in Section 2 of this report, infiltration has been presumed as unviable in the due to the local geology, which is described through on-site boreholes as being sandy/silty CLAY to depth.

7.11 There are no public surface water sewers within the site or within Old London Road. This is shown on Southern Water's Asset Location Plans in Appendix F.

7.12 There is an ordinary watercourse with proven ongoing connectivity to the wider hydraulic network on the site's eastern and topographically lowest site boundary. This represents a sustainable outfall for the developments surface water that can be reached by gravity, and the site has riparian access to. As discussed above, it is proposed to discharge surface water from the development at a maximum rate of just 1.6 l/s for all storms, up to an including the 1 in 100-year + 45% rainfall event.

7.13 The drainage strategy for the development will use SuDS and a combination attenuation features. The following description of the proposed drainage strategy should be read in conjunction with the drainage strategy layout in Appendix K of this report.

7.14 The drainage strategy and the layout of attenuation and drainage infrastructure is heavily dictated by the topography, as well as easements and stand off distances to existing property. This must be borne in mind the regulatory review of the drainage strategy.

7.15 The site's topography and falls from west to east mean that open SuDS are not suitable. They would not be able to offer useful attenuation and would result in excessive excavation on their upslope sides to meet the natural gradient of the land. Additionally, the land within this small development will predominantly be within private land ownership and it is not suitable to provide site-serving open SuDS within private land spaces.

7.16 With the above in mind, the driveways of each of the four proposed dwellings will be constructed from System C (Tanked) Permeable Paviours. The permeable paviours will attenuate surface water falling on the driveway areas, as well as the roof areas that face west.

7.17 Each driveway and permeable paviour section will be linked and flow will be restricted within each permeable paviour section to maximise attenuation within them. The overall movement of water will be to the north, following the topography.

7.18 The last permeable paviour section will drain eastwards and be piped under the slab of the northern-most residential dwelling. Access chambers will be provided both up and downstream of the pipe so that full maintenance access, if needed, can be gained. However, because the pipe flow will be 100% filtered water from the permeable paviours, the likelihood of blockage will be negligible and a need for maintenance is not anticipated. Where the pipe passes through the foundations and stem walls, lintels and rocker pipes will be used to negate the risk of pipe damage or separation.

7.19 Rainwater from the eastern-facing roof areas and the patios will be directed to and attenuated within geocellular tanks positioned below each area of patio. As with the permeable paving, flow from each geocellular tank with be restricted to maximise attenuation and each geocellular tank will be linked. Flow will be directed northwards to meet the outflow from the permeable paviours and the outflow from both of the attenuation areas (permeable paving and geocellular tanks) will be restricted using a hydrobrake so that the overall surface water discharge from the site never exceeds 1.6 l/s.

7.20 The residual, post-hydrobrake surface water discharge from the development will be directed to the ordinary watercourse on the site's eastern boundary.

7.21 Regarding ordinary watercourse consent for the discharge, WSCC's Application for Ordinary Watercourse Land Drainage Consent: Guidance Notes [1b] states that under the Land Drainage Act 1991, you only need consent if you want to construct a culvert or other structure that may affect the flow within any ordinary watercourse.

7.22 The typical structures that qualify under this statement are shown in Appendix L.

7.23 As shown in Appendix L, where pipes and headwalls are within the bank profile and do not protrude, they are unlikely to require consent because they do not affect flow within the watercourse.

7.24 With regards to the outfall design, because the outflow from the drainage system is very low flow (no more than 1.6 l/s) and the drainage ditch is a small-scale hydraulic feature, it is proposed to build an informal headwall structure within the profile of the bank using concrete sandbags. This will be sensitive to the location (as opposed to a pre-cast concrete headwall structure) and will be simple to construct. It is proposed to build the headwall in accordance with WSCC's approved standard details for 'Headwall Detail for pipe sizes up to 600mm diam. (Concrete Bagwork)' which is in WSCC drawing S278/38/23 Rev A.

7.25 On this basis, ordinary watercourse consent will not be needed, and it is not necessary to provide consent of the proposed outfall at this time.

7.26 The drainage strategy as outlined above has been modelled in MicroDrainage's Network module and designed to attenuate the significant surface water inputs generated by the impermeable areas, climate change, urban creep, and the factors of safety applied by the LLFA. These are noted below.

7.27 The MicroDrainage Network hydraulic modelling has shown that the drainage strategy can accommodate all rainfall events up to and including the 1 in 100-year + 45% storm without flooding, while never discharging at greater than 1.6 l/s for all storms. The MicroDrainage Network hydraulic modelling outputs can be found in Appendix M of this report.

Design Criteria

7.28 The drainage strategy has been designed in accordance with the design criteria outlined in West Sussex County Council's LLFA Policy for the Management of Surface Water[1]. This ensures that the current drainage strategy accords with local policy requirements (as well as those of the NPPF). In brief, this includes:

- Using FEH Annual Maximum Catchment data rather than FSR data. It should be noted that FEH 2022 has been used, although in the results it is labelled as 2013 because of MicroDrainage's limited labelling capacity. This is a known issue with MicroDrainage and does not mean that FEH 2022 has not been used or that MicroDrainage is incompatible with FEH 2022 data.
- Using a runoff coefficient (CV) value of 1.0 in all hydraulic modelling (for both summer and winter storms, both of which have been assessed in the model) and Simulation Criteria.
- Reducing the MADD Factor (which assumes $10m^3$ of pipe storage per hectare) to zero.

[1] https://www.horsham.gov.uk/__data/assets/pdf_file/0019/65017/West-Sussex-Surface-Water-Management-Policy.pdf

- Urban Creep at a rate of 5 has been considered and included in the parts of the site to which it applies (see below). 5% is the appropriate level of urban creep based upon the development density per hectare.
- The full suite of rainfall events has been used (up to the 5,760-minute storm, which is maximum allowable when using FEH 2022 data).
- The maximum rainfall intensity has been raised to 550mm/hr to ensure that the full hydrograph is included in the hydraulic calculations.

Urban Creep

7.29 Development results in the conversion of permeable surfaces to impermeable over time (e.g. surfacing of front gardens to provide additional parking spaces, extensions to existing buildings, creation of large patio areas, etc).

7.30 It is arguable that the development cannot extend impermeable areas northwards because between the dwellings and the road is already 100% impermeable, and that the areas to the south of the dwellings already contains patios, which would be very difficult to extend because of the topography.

7.31 Nevertheless, urban creep has been considered to comply with local standards.

7.32 WSCC state in their Policy for the Management of Surface Water that urban creep should be assessed on a site-by-site basis but is limited to residential development only. This mean that the allowances set out in Table 7.2, below, must be applied to the impermeable area within the property curtilage only.

Table 7.2: Urban Creep Allowances (from Table 5.2 of WSCC's Policy for the Management of Surface Water)

Residential development density (Dwellings per hectare)	Change allowance (% of impermeable area)
≤25	10
30	8
35	6
45	4
≥50	2
Flats & Apartments	0

7.33 The development density has been measured. The site area is 0.099ha and four dwellings in this space represents a dwelling density of 40 dwellings per hectare. As per the information in Table 7.2, an urban creep allowance of 5% should be used.

7.34 The pipe numbers within the hydraulic model and how urban creep of 5% can be applied is shown in Table 7.3 on the next page. MicroDrainage can only express areas to three decimal places, thus where areas and uplifts are less than 0.001 hectares ($10m^2$) they cannot be recorded in MicroDrainage.

Table 7.3 – Uplift in Impermeable Areas for Urban Creep (Three Decimal Places)

Pipe Number	Total Area	Private Areas	5% of Private Areas	Private Areas Plus 5%	Total for Node inc. Urban Creep
1.001	0.006	0.006	0.000	0.006	0.006
1.002	0.006	0.006	0.000	0.006	0.006
1.003	0.006	0.006	0.000	0.006	0.006
1.004	0.007	0.007	0.000	0.007	0.007
2.001	0.004	0.003	0.000	0.003	0.004
2.002	0.004	0.003	0.000	0.003	0.004
2.003	0.004	0.003	0.000	0.003	0.004
1.005	0.004	0.003	0.000	0.003	0.004
	Total:	0.41 ha		Total:	0.41 ha

7.35 As can be seen, the uplift in areas due to 5% urban creep are so small that they cannot be noted or modelled in MicroDrainage. As such, the effects of urban creep can be deemed negligible on the hydraulic model and do not need to be considered further.

The Drainage Hierarchy

7.36 The NPPF states that opportunities to reduce overall flood risk should be sought and achieved through sustainable development and careful drainage design. This can be achieved through the layout and form of development, including green infrastructure and the appropriate application of sustainable drainage systems (SuDS). SuDS are designed to control surface water runoff close to where it falls and mimic natural drainage as closely as possible. They provide opportunities to:

- Reduce the causes and impacts of flooding;
- Remove pollutants from urban run-off at source;
- Combine water management with green space with benefits for amenity, recreation and biodiversity.

7.37 To deliver SuDS benefits and ensure that a development reduces overall flood risk, there is an established hierarchy of surface water drainage methods that should be considered. The most preferable and sustainable are at the top and the least preferable and least sustainable at the bottom.

7.38 The drainage hierarchy is a sequential check that intends to ensure that all practical and reasonable measures are taken to manage surface water as high up the hierarchy (with ‘1’ being the highest) as possible, and that the amount of surface water managed at the bottom of the hierarchy is minimised. The Planning Practice Guidance to the National Planning Policy Framework (NPPF) states that “*Generally, the aim should be to discharge surface run off as high up the following hierarchy of drainage options as reasonably practicable*”.

7.39 The drainage hierarchy presented in the NPPF presents only four tiers of drainage options. This has been expanded on and adopted by others and now can be viewed as the following:

1. Store rainwater for later use
2. Use infiltration techniques, such as porous surfaces in non-clay areas
3. Attenuate rainwater in ponds or open water features for gradual release
4. Attenuate rainwater by storing in tanks or sealed water features for gradual release

5. Discharge rainwater direct to a watercourse
6. Discharge rainwater to a surface water sewer/drain
7. Discharge rainwater to the combined sewer
8. Discharge rainwater to the foul sewer

7.40 Developers should not choose the method that is the most convenient or represents the lowest cost. LPA's, LLFA's and Water Authorities may enforce the surface water drainage hierarchy and demand that the highest practicable tier of the hierarchy is used.

7.41 The first two tiers of the drainage hierarchy ensure that surface water is retained within the site boundary and does not increase flood risk to others. This is always the most preferable method of surface water management.

7.42 The next six tiers of the hierarchy provide regional control, but with decreasing levels of pollution removal and reduced potential for amenity and habitat creation.

7.43 Within the lower six tiers of the drainage hierarchy, there must be some form of flow restriction, so that off-site surface water discharge is reduced, as much as is reasonably practicable. This requires on-site storage facilities, which may include ponds, swales, subsurface storage tanks and System C (non-infiltration) permeable paviours with flow control devices. Again, methods that provide the most potential for amenity and pollution removal should be favoured.

7.44 With regards to the proposed development on the land east of Old London Road, the tiers of the drainage hierarchy that have been achieved are outlined in Table 7.4, below:

Table 7.4 - Compliance with the Drainage Hierarchy

Tier	Discharge Method	Used?	Notes
1	Store rainwater for later use	ü	Water Butts are to be used for the residential dwellings.
2	Use infiltration techniques	û	Infiltration is not likely to be viable.
3	Attenuate rainwater in ponds or open water features	û	Open water features are not appropriate on this small, steeply sloping site.
4	Attenuate rainwater by storing in tanks or sealed water features	ü	The subbase of the permeable paviours and geocellular tanks provide tanked attenuation.
5	Discharge rainwater direct to a watercourse	ü	Surface water will discharge to the ordinary watercourse on the site's eastern boundary.
6	Discharge rainwater to a surface water sewer/drain	û	This tier of the drainage hierarchy is not available/required.
7	Discharge rainwater to the combined sewer	û	This tier of the drainage hierarchy is not required.
8	Discharge rainwater to the foul sewer	û	This tier of the drainage hierarchy is not required.

Summary

7.45 The drainage strategy uses the 1st, 4th and 5th tiers of the drainage hierarchy, which are the highest available and site-suitable methods of surface water management and discharge.

MicroDrainage Hydraulic Modelling

7.46 The drainage strategy outlined above has been designed in MicroDrainage's Network hydraulic modelling module. This has used FEH 2022 data as the basis for the surface water inputs to the hydraulic model and has used the latest climate change predictions for the Adur and Ouse Management Catchment to ensure that the development will be safe for its lifetime (100+ years).

7.47 The results of the MicroDrainage hydraulic modelling for the proposed development can be seen in Appendix M.

7.48 The results of the hydraulic modelling show that the drainage strategy as outlined above can attenuate and discharge all surface water generated in the 1 in 100-year + 45% rainfall event without flooding.

7.49 The maximum half drain time of the system is 364 minutes, which is less than the 1,440-minute (24-hour) requirement for this metric.

7.50 As necessitated by the LLFA's local requirements, a CV of 1 has been used for all impermeable areas, which are also assessed as being 100% impermeable. The MADD factor has also been set to zero and a suitable Factor of Safety has been added to the design structures. In combination with the full climate change increases that have been added to the hydraulic modelling for the 1 in 10-year (40%), 1 in 30-year (40%) and 1 in 100-year rainfall events (45%), this means that the proposed drainage strategy has taken a fully precautionary approach to surface water runoff and modelling.

8.0 Foul Water Drainage

8.1 Southern Water's Asset Location Plans in Appendix F show that there is that there is an established public foul sewer network in Old London and a public foul spur to the sewer in Old London extends from 6 Montpelier Cottages into the development site. Manhole node 2804 is within the site boundary and is in a location whereby it will be possible to connect the development's foul waste to it by gravity.

8.2 The peak foul flow rate from the proposed development has been calculated based on Southern Water's foul sewerage modelling criteria. In summary, the calculation is based on the foul flow element, plus an allowance for misconnected surface water. While this is unlikely, it provides a precautionary approach.

8.3 Based on Southern Water's foul sewerage modelling criteria, the calculated design foul flow from the proposed development is 0.03 l/s.

The ability to make a connection to the public foul sewer within the site, along with the capacity of the existing foul sewer, and any required network reinforcement, will be explored with Southern Water at the appropriate project juncture. As stated in Section 2, a review of the consultation with Southern Water and their response as part of DC/21/1689 showed that they approved a new connection to their network without reinforcement being required. We believe this will also be the case for the current development noting the minimal foul flows that will issue from the development.

8.4 All Water and Sewerage Companies (WaSC's) have a legal obligation under Section 94 of the Water Industry Act 1991 (the Act) to provide developers with the right to connect to a public sewer regardless of capacity issues. This, in conjunction with Section 91(1) of the Act effectively means that Southern Water cannot object and the LPA cannot refuse to grant planning permission on the grounds of insufficient capacity or that no improvement works are planned for an area. The case precedent for this is a Supreme Court decision in Barratt Homes vs Welsh Water, in which the court held that the developer has an absolute right to connect to the existing sewer, whether or not it overloads the system. It ruled that the specific wording of the legislation allows for this right to be exercised, at no cost to the developer, apart from the normal connection charges.

8.5 Where local sewerage infrastructure constraints are identified, network reinforcements are delivered by the WaSC through New Infrastructure Charges on developers. For non-strategic sites, the WaSC company have a maximum of 24 months to deliver sewerage improvements from the date of 'a firm commitment to the development', which is the date of outline or full planning consent.

9.0 Surface Water Runoff Quality

9.1 The NPPF states that development should not have a detrimental impact on the environment, including the water environment. The technical guidance to the NPPF provides further advice on the benefits of ensuring runoff quality is to an appropriate standard.

9.2 The CIRIA SuDS Manual provides guidance on the treatment of surface water runoff. With regards to the proposed development, Table 4.3 of the CIRIA SuDS Manual rates the pollution hazard from roof water runoff as 'very low'. The only requirement for roof water runoff is the removal of gross solids and sediments, which would be achieved using catchpits and silt traps upstream of the permeable surfacing and throughout the drainage network.

9.3 With regards to the driveways, Table 4.3 of the CIRIA SuDS Manual rates the pollution hazard from residential car parking and low traffic roads as 'low'. To mitigate a 'low' pollution hazard, the CIRIA SuDS Manual recommends using a simple index approach in line with Section 26.7.1. This is discussed, below.

9.4 Table 26.2 of the CIRIA SuDS Manual provides pollution hazard indices for different land use classifications. The land use classification that requires consideration for low traffic roads and parking areas is in Table 9.1 below.

Table 9.1 - Excerpt from Table 26.2 of CIRIA SuDS Manual

Land Use	Pollution Hazard Level	Total Suspended Solids (TSS)	Metals	Hydro-Carbons
Individual property driveways, residential car parks, low traffic roads (e.g. cul-de-sacs, homezones and general access roads) with less than 300 traffic movements per day.	Low	0.5	0.4	0.4

9.5 To deliver adequate pollution treatment and mitigation, the CIRIA SuDS Manual recommends using a SuDS component that has a total pollution mitigation index (for each contaminant type) that equals or exceeds the pollution hazard index (for each contaminant type).

9.6 Table 26.3 of the CIRIA SuDS Manual provides indicative SuDS mitigation indices for each SuDS type when discharging to surface waters. Table 9.2, below, which is an excerpt from Table 26.3, shows the mitigation index for permeable paviours.

Table 9.2 - Pollution Mitigation Indices for Permeable Pavements

Type of pollution removal component	Total Suspended Solids (TSS)	Metals	Hydro-Carbons
Permeable Pavements	0.7	0.6	0.7

9.7 The mitigation indices for permeable pavements exceed those of the highest pollution hazard index figures from Table 9.1, which means that all pollution hazards will be completely mitigated.

10.0 Residual Risk

10.1 Whilst the drainage strategy for the development has been designed to attenuate surface water from the 1 in 100-year plus 40% rainfall event, there could be a small residual risk of flooding due to blockage or failure or poor performance of on-site infrastructure. Therefore, appropriate and regular maintenance of the drainage infrastructure should be undertaken by the site management company or their agents.

10.2 To assist with this process, a Drainage Management and Maintenance Plan has been prepared, which sets out the principles for the long-term management and maintenance of the proposed surface water drainage system on the development. The Drainage Management and Maintenance Plan can be seen in Appendix N.

10.3 The purpose of this document is to ensure that those responsible for site maintenance have a robust inspection and maintenance plan going forwards. This will help ensure the optimum operation of the surface water drainage system and that it will be regularly maintained for the lifetime of the development. This will contribute to reducing the risk of surface water flooding both on- and off-site.

11.0 Exceedance Events

11.1 Exceedance events are those greater than the design rainfall event (i.e., greater than the 1 in 100-year rainfall event plus 40% for climate change).

11.2 Any rainfall events greater than the design rainfall event may cause flooding due to them ‘exceeding’ the capacity of the drainage system. In this situation it is imperative to check whether flooding would occur and, if so, whether it needs to be contained on site. Exceedance flows should not ingress into any properties on site and should not cause nuisance to any neighbouring sites or buildings.

11.3 The topography of the site falls to the east. This means that any exceedance flows would move in this direction. The permeable pavioured surface has an elevated level of surface roughness that would inhibit surface water runoff to an extent, but because the property frontages potentially result in a blockage to exceedance flows and heavy rainfall, it is proposed to install additional drainage channels at the front and back of the driveways to capture additional rainfall. We also advise that HB2 upstand kerbs are installed at the back of the driveways so that there is a barrier to exceedance flows.

11.4 We also recommend that the threshold to the site is slightly elevated above the road margin so that surface water from the public highway does not enter the site.

11.5 The above resilient design means that surface water flood risk during exceedance flows will be of minimal concern to the proposed development and overland flow as a result of exceedance events would be minimal. To show where exceedance flows would go, a high-level plan has been produced and can be seen in Appendix O.

12.0 Summary and Conclusion

12.1 This FRA and Drainage Strategy has been produced by Motion on behalf of their client, James Williams. It supports the proposed development of four residential dwellings on the land east of Old London Road, Washington, West Sussex.

12.2 The Environment Agency's Flood Map for Planning shows that the proposed development is entirely within Flood Zone 1. Therefore, the site is at very low risk of flooding from rivers.

12.3 The 2025 RoFSW mapping shows that the site is not at risk of surface water flooding, which includes all locations where dwellings, parking and above-ground structures are proposed. There is some surface water flood risk on the site's eastern boundary, along the line of the ordinary watercourse, but this is not within the site boundary and is far away from the developed part of the site.

12.4 The site is at low risk from other forms of 'local' flood risk (groundwater, infrastructure, canals, reservoirs).

12.5 The drainage strategy for the proposed development has been produced to use the highest available tiers of the drainage hierarchy. It will use SuDS features and attenuation to provide source control and pollution mitigation, while discharging at the lowest practicable rate to the ordinary watercourse on the site's eastern boundary. This will be achieved by gravity, and the site has riparian and prescriptive rights to discharge to this watercourse, which has proven ongoing connectivity to the wider hydraulic network.

12.6 The maximum surface water discharge rate from the site's impermeable, positively drained areas will be 1.6 l/s for all storms, up to and including the 1 in 100-year + 45% rainfall event. The drainage strategy has been hydraulically modelled in MicroDrainage's Network module and has shown that it can attenuate the 1 in 100-year + 45% rainfall event without flooding, with an inclusion for all factors of safety and technical design criteria specified by WSCC as the LLFA.

12.7 A drainage management and maintenance plan has been produced that shows how the proposed drainage system will be maintained in perpetuity.

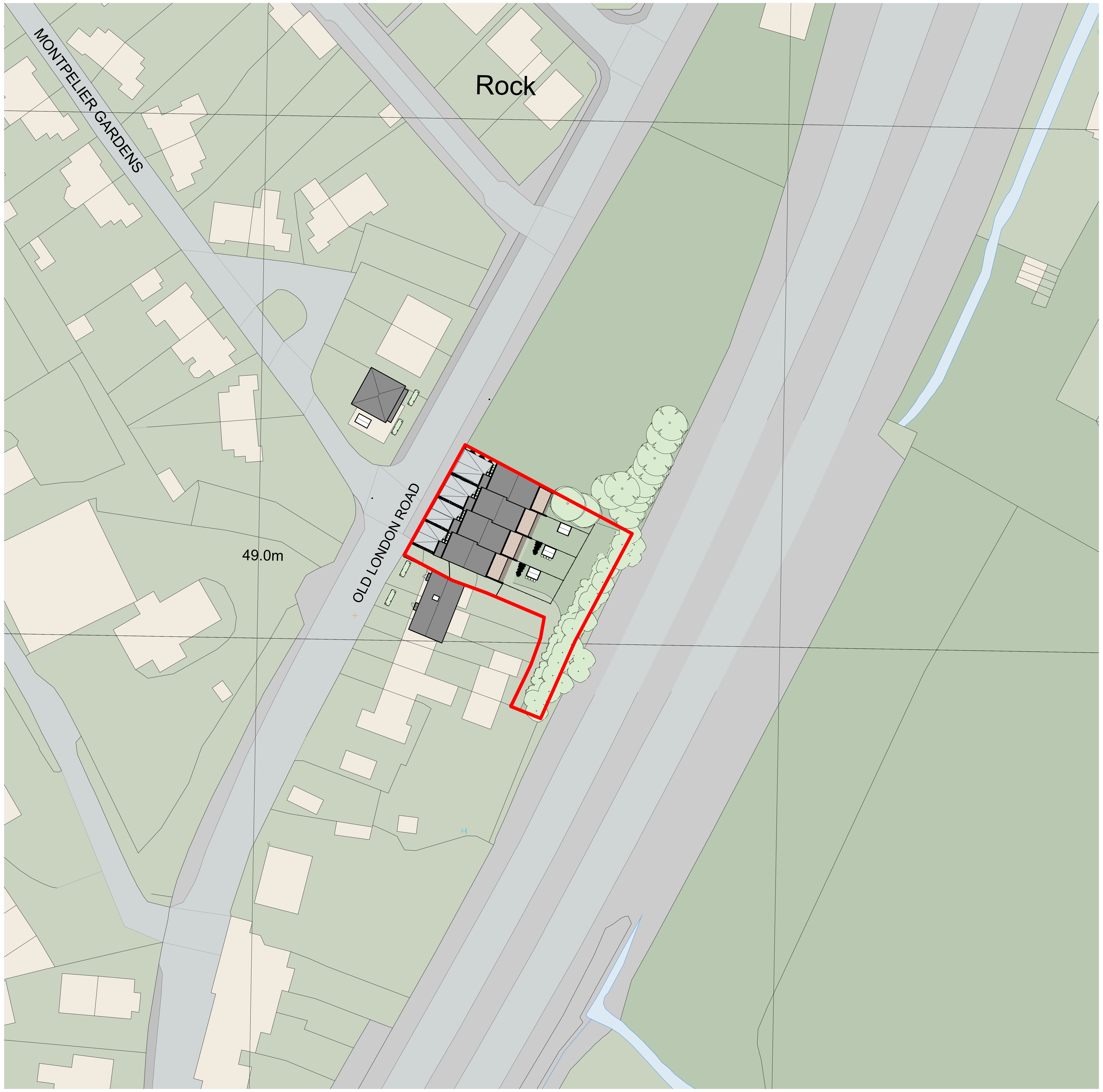
12.8 Exceedance flows have been considered and an exceedance plan produced.

12.9 There is a public foul sewer and manhole within the site boundary, and it is proposed to connect the development's foul waste to this. Based on Southern Water's foul sewerage modelling criteria, the calculated design foul flow from the proposed development is 0.03 l/s and we believe that the existing foul drainage network has capacity for the proposed development. This is on the basis that the development has minimal foul flows and that application DC/21/1689 had a new connection approved by Southern Water without reinforcement being required.

12.10 In conclusion, this drainage strategy has shown that the proposed development is at a very low residual risk of flooding, and this makes it appropriate in this location. Similarly, the drainage strategy has shown that the development can manage its surface water, in all storm events, via the most sustainable forms available in this location. Therefore, flood risk and surface water management should not form an impediment to the progress of this application.

Appendix A

Site Location Plan

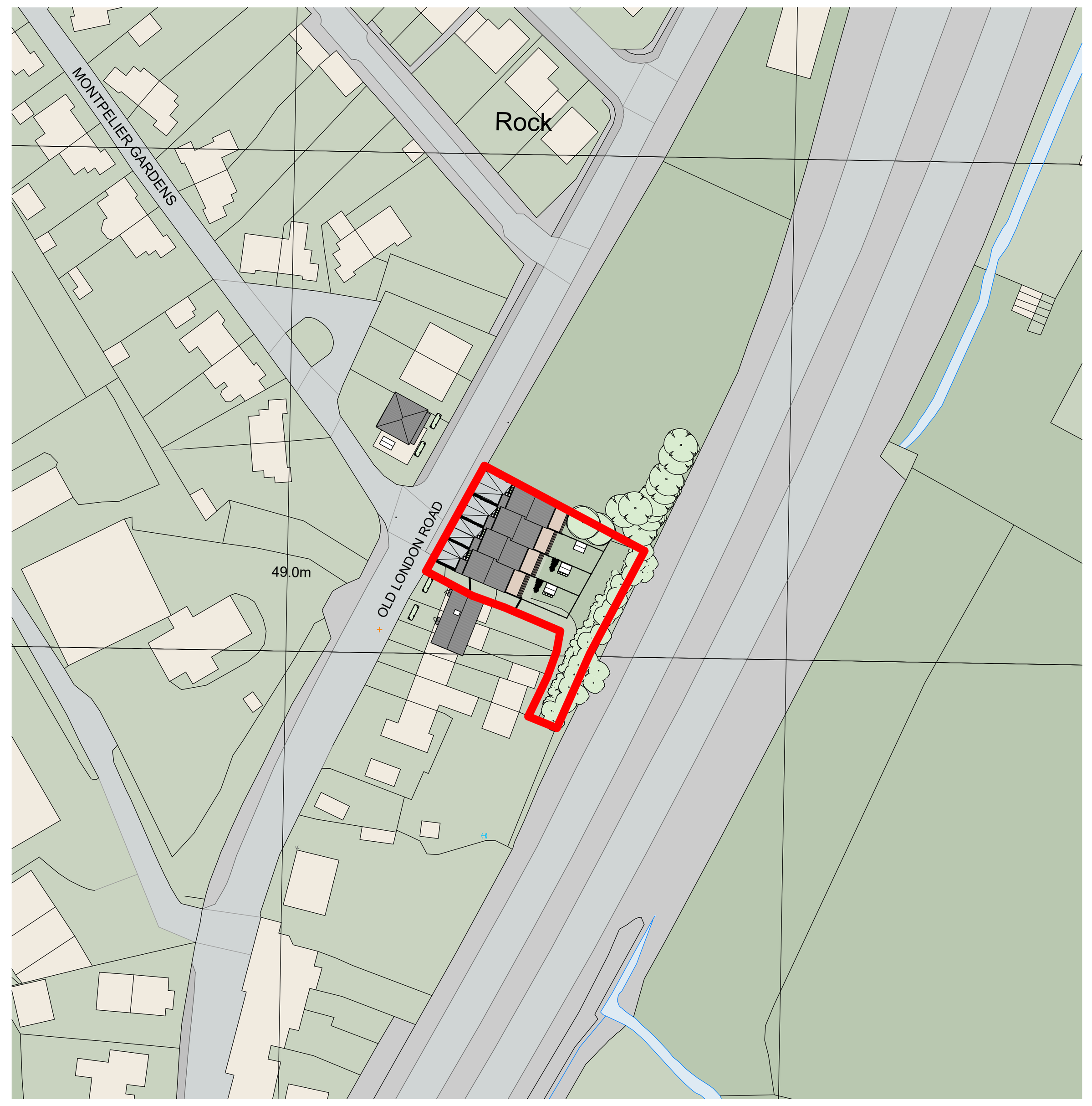


Proposed Site Plan

1 : 500

0m 10m 20m 30m 40m 50m

VISUAL SCALE 1:500 @ A1



Proposed Location Plan

1 : 1250

0m 25m 50m 75m 100m 125m

VISUAL SCALE 1:1250 @ A1

Notes:

2. WORK TO FIGURED DIMENSIONS ONLY.

3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S, SERVICE ENGINEER'S AND ARCHEVOLVE AND SPECIFICATIONS.

Revision Number	Revision Description	Issued by	Revision Date
Rev_A	Planning Issue	AP	29/05/25

DATE:	STATUS:	SHEET SIZE:
09/03/25	PLANNING ISSUE	A1

SCALE:	DRAWN:	CHECKED:
As indicated	AP	

SITE ADDRESS:
Land East of MG

DRAWING: New Build

TITLE: Proposed Site and Location Plan

PROJECT NO: LEMG

DRAWING NO: ARC/088/25/11

REVISION: Rev_A

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Appendix B

Proposed Development Layout and Elevations

Plot 1 (GIA)	
Name	Area
First Floor - Plot 1	45 m²
Ground Floor - Plot 1	49 m²
Grand total: 2	94 m²

Plot 2 (GIA)	
Name	Area
First Floor - Plot 2	45 m²
Ground Floor - Plot 2	49 m²
Grand total: 2	94 m²

Plot 3 (GIA)	
Name	Area
First Floor - Plot 3	45 m²
Ground Floor - Plot 3	49 m²
Grand total: 2	95 m²

Plot 4 (GIA)	
Name	Area
First Floor - Plot 4	46 m²
Ground Floor - Plot 4	50 m²
Grand total: 2	95 m²

Notes:

2. WORK TO FIGURED DIMENSIONS ONLY.

3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S, SERVICE ENGINEER'S AND ARCHEVOLVE AND SPECIFICATIONS.

240 Litres Refuse Bin
240 Litres Recyeling Bin

2.5m x 2.0m Shed for Bikes

2.5m x 5.0m parking Spaces
2 Bays Per Property

Revision Number	Revision Description	Issued by	Revision Date
Rev_A	Planning Issue	AP	29/05/25

DATE: 09/03/25
STATUS: PLANNING ISSUE
SHEET SIZE: A1

SCALE: As indicated
DRAWN: AP
CHECKED:

SITE ADDRESS: Land East of MG

REVISION: Rev_A

DRAWING NO: ARC/088/25/07

PROJECT NO: LEMG

DRAWING: New Build

TITLE: Proposed Site Plan

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East Elevation
1 : 100

North Elevation
1 : 100

0m 2m 4m 6m 8m 10m
VISUAL SCALE 1:100 @ A1

Notes:

2. WORK TO FIGURED DIMENSIONS ONLY.

3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S, SERVICE ENGINEER'S AND ARCHEVOLVE AND SPECIFICATIONS.

Revision Number	Revision Description	Issued by	Revision Date
Rev_A	Planning Issue	AP	29/05/25

DATE: 09/03/25
STATUS: PLANNING ISSUE
SHEET SIZE: A1

SCALE: 1 : 100
DRAWN: AP
CHECKED:

SITE ADDRESS:
Land East of MG

DRAWING: New Build

TITLE: Proposed Elevations 1 of 2

PROJECT NO: LEMG

DRAWING NO: ARC/088/25/08

REVISION: Rev_A

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West Elevation
1 : 100

South Elevation
1 : 100

0m 2m 4m 6m 8m 10m
VISUAL SCALE 1:100 @ A1

Notes:

2. WORK TO FIGURED DIMENSIONS ONLY.

3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S, SERVICE ENGINEER'S AND ARCHEVOLVE AND SPECIFICATIONS.

Revision Number	Revision Description	Issued by	Revision Date
Rev_A	Planning Issue	AP	29/05/25

DATE:	STATUS:	SHEET SIZE:
09/03/25	PLANNING ISSUE	A1

SCALE:	DRAWN:	CHECKED:
1 : 100	AP	

SITE ADDRESS:
Land East of MG

DRAWING: New Build

TITLE: Proposed Elevations 2 of 2

PROJECT NO: LEMG

DRAWING NO: ARC/088/25/09

REVISION: Rev_A

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Section A-A

1 : 100

Section B-B

1 : 100

0m 1m 2m 3m 4m 5m

VISUAL SCALE 1:50 @ A1

Notes:

2. WORK TO FIGURED DIMENSIONS ONLY.

3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S, SERVICE ENGINEER'S AND ARCHEVOLVE AND SPECIFICATIONS.

Revision Number	Revision Description	Issued by	Revision Date
Rev_A	Planning Issue	AP	29/05/25

DATE:	STATUS:	SHEET SIZE:
09/03/25	PLANNING ISSUE	A1

SCALE:	DRAWN:	CHECKED:
1 : 100	AP	

SITE ADDRESS:

Land East of MG

REVISION: Rev_A

DRAWING NO: ARC/088/25/10

PROJECT NO: LEMG

DRAWING: New Build

TITLE: Proposed Sections

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Appendix C

Site Topography