

# MERIDIAN

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CIVIL ENGINEERING CONSULTANCY

THE PADDOCK,  
HASSOCKS,  
BN6 9NA

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## FLOOD RISK ASSESSMENT SURFACE WATER AND FOUL WATER DRAINAGE STRATEGY

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AUGUST 2026

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Client : Westfield Investments Ltd

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## 1.0 INTRODUCTION

- 1.1 Meridian Civil Engineering Consultancy LTD (MCEC) has been instructed by Westfield Investments Ltd to prepare a site-specific Flood Risk Assessment (FRA) & SUDS Addendum for the redevelopment of The Paddock, Hassocks, BN6 9NA.
- 1.2 Planning consent has already been granted by Mid Sussex District Council for the subdivision and remodelling of existing dwelling, and construction of a new dwelling and can be viewed under planning ref: DM/21/2148.
- 1.3 It is understood the proposed development is for the erection of a third dwelling with associated access and parking in addition to the existing, remodelled dwelling and the new dwelling associated with the previously accepted planning application. The proposed Architects plans can be found in Appendix I.
- 1.4 The Environment Agency (EA) mapping for Flood Risk, shows the site redline boundary, as indicated on the proposed development plans, to encompass an area of Flood Zones 1, 2 and 3 (low, medium and High risk of fluvial or tidal flooding respectively). As the redline boundary encompasses areas of flood zones 2 and 3 the NPPF guidance states that planning applications should be accompanied by a Flood Risk Assessment (FRA).
- 1.5 The mapping shows the proposed development location to be within an area of 'Very Low' risk of flooding from surface water staying at a Very Low risk between 2040 and 2060. The EA state 'Very Low risk means that each year this area has a chance of flooding of less than 0.1%. Flooding from surface water is difficult to predict as rainfall location and volume are difficult to forecast. In addition, local features can greatly affect the chance and severity of flooding.'
- 1.6 Geology at the site is shown to be superficial deposits of River Terrace Deposits, 2 (adur) Sand and gravel over Weald Clay Formation Mudstone Sedimentary bedrock as published by the British Geological Survey online. As mentioned in the previously accepted scheme by GTA Consulting (Dated: September 2024, Ref: 13174) infiltration testing carried out on site "resulted in nil infiltration results as the trial pit failed to drain below the 25% empty mark." The test results can be found in Appendix V.
- 1.7 Details of the site and development proposals have been provided by the Client to clarify the scope of the proposed development and the existing site conditions.
- 1.8 MCEC have produced an updated drainage strategy to reflect the updated proposals on site. The updated strategy has been produced in accordance with the principles outlined in the previous strategy.
- 1.9 The increase in hardstanding area has resulted in an increase in required storage volume. According to causeway flow calculations, a total of 150m<sup>3</sup> of storage is required, this has been provided in the form of an unlined permeable subbase with a plan area of 495m<sup>2</sup> and a depth of 0.6m and an attenuation tank with a plan area of 150m<sup>2</sup> and a depth of 0.6m The updated drainage design has been included within Appendix III.
- 1.10 In accordance with the previous drainage strategy outflow rates from the development have been limited to 1l/s with a connection to the ditch network on site. Network calcs have been included in Appendix IV
- 1.11 This report has been produced broadly in accordance with the National Planning Policy Framework (NPPF), West Sussex County Council (WSCC) SUDS guidance and associated Local Planning Authority technical guidance and National SuDS Standards.

## 2.0 POLICY COMPLIANCE

2.1 The purpose of this assessment is to demonstrate that the development proposal outlined above can be satisfactorily accommodated without worsening flood risk for the area and without placing the development itself at risk of flooding, as per the:

- National Planning Policy Framework
- West Sussex LLFA Policy for the Management of Surface Water
- Mid Sussex District Council (MSDC) Strategic Flood Risk Assessment
- DEFRA Sustainable drainage systems: non-statutory technical standards
- Ciria SuDS Manual C753
- South Downs National Park – Water Cycle Study and Strategic Flood Risk Assessment (Level 1) – Scoping and Outline Report: 2015

## 3.0 SITE LOCATION

3.1 The Paddock, Hassocks, BN6 9NA is located just north of the town of Hassocks in West Sussex within the planning authority of Mid Sussex District Council. The site is located in a largely rural area being outside the main Hassocks conurbation. The slopes down from west to east to a watercourse that forms the eastern boundary of the plot.



Figure 1: Site location

- 3.2 The site is currently a single residential dwelling with associated garden area.
- 3.3 Planning consent has already been granted by Mid Sussex District Council for the subdivision and remodelling of existing dwelling, and construction of a new dwelling and can be viewed under planning ref: DM/21/2148.
- 3.4 It is understood the proposed development is for the erection of a third dwelling with associated access and parking in addition to the existing, remodelled dwelling and the new dwelling associated with the previously accepted planning application. The proposed Architects plans can be found in Appendix I.
- 3.5 The site redline boundary is approximately 4679sqm based on the architectural plan redline boundary. Levels range from 35.5m AOD on the west boundary to approximately 33.5m AOD on the east boundary. The existing property is located at approximately 35mAOD. The general

topography slopes towards a watercourse located on the eastern boundary. A plan showing site contours (taken from a previous wider scheme FRA) can be seen in Appendix I.

## 4.0 GEOLOGY AND INFILTRATION POTENTIAL

- 4.1 Geology at the site is shown to be superficial deposits of River Terrace Deposits, 2 (adur) Sand and gravel over Weald Clay Formation Mudstone Sedimentary bedrock as published by the British Geological Survey online. As mentioned in the previously accepted scheme by GTA Consulting (Dated: September 2024, Ref: 13174) infiltration testing carried out on site "resulted in nil infiltration results as the trial pit failed to drain below the 25% empty mark." The test results can be found in Appendix V.



Figure 2: BGS online mapping extract

- 4.2 The DEFRA magicmap resource online groundwater mapping indicates that the site is located within an area classified as 'Secondary A Aquifer', this is likely to be associated with the River Terrace Deposits, since the Weald Clay Formation are described as 'rocks with essentially no groundwater'. The Environment Agency online groundwater vulnerability map indicates that the site lies within an area which falls within the 'Minor Aquifer Low' groundwater vulnerability zone.
- 4.3 The DEFRA magicmap resource groundwater mapping indicates that the site is not within a Source Protection Zone (SPZ).

## 5.0 PROPOSED DEVELOPMENT

- 5.1 The site is currently a single residential dwelling with associated garden area.
- 5.2 Planning consent has already been granted by Mid Sussex District Council for the subdivision and remodelling of existing dwelling, and construction of a new dwelling and can be viewed under planning ref: DM/21/2148.
- 5.3 It is understood the proposed development is for the erection of a third dwelling with associated access and parking in addition to the existing, remodelled dwelling and the new dwelling associated with the previously accepted planning application. The proposed Architects plans can be found in Appendix I.
- 5.4 Based on the architectural plans provided the current approved planning permission extent of hardstanding is approximately 569sqm. The total area of hardstanding for the updated scheme,

including the 3 dwellings roof area and the access road and parking areas is approximately 1353sqm.

- 5.5 The client has proposed that any new external hard surface is laid as a permeable surface to reduce runoff generated by any additional external hard surface.

## 6.0 SEQUENTIAL TEST/EXCEPTION TEST

- 6.1 Under the NPPF, all new planning applications should undergo a Sequential Test. This test should be implemented by local planning authorities with a view to locating particularly vulnerable new developments (e.g. residential, hospitals, mobile homes etc.) outside of the floodplain.
- 6.2 The Environment Agency (EA) mapping for Flood Risk, shows the site redline boundary, as indicated on the proposed development plans, to encompass an area of Flood Zones 1, 2 and 3 (low, medium and High risk of fluvial or tidal flooding respectively). As the redline boundary encompasses areas of flood zones 2 and 3 the NPPF guidance states that planning applications should be accompanied by a Flood Risk Assessment (FRA).
- 6.3 It can be seen from the site layout that the proposed development is located within the area of the site shown within Flood Zone 1 on the EA Flood map for planning therefore has been sequentially located within the site.
- 6.4 The vulnerability classifications are set out in Annex 3 of the NPPF, and this identifies that the Development Proposals are classed as 'More Vulnerable' due to the residential nature of the development. The proposed development is classed as 'More Vulnerable' development due to the continues residential use, so it is considered that the NPPF vulnerability of the site will be unchanged post development.
- 6.5 The NPPF Sequential Test: Flood Risk Vulnerability and Flood Zone 'Compatibility' Table is reproduced below;

| 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 †               | X                       | Exception Test required | ✓               | ✓                |
| Zone 3b *   | Exception Test required *               | X                       | X                       | X               | ✓ *              |

Table 1 Flood Risk Vulnerability and Flood Zone 'Compatibility' Table as specified by NPPF.  
Please note: ✓ means Exception test is not required; x means the development should not be permitted.

- 6.6 Following the published NPPF guidelines, the proposed residential development means an exceptions test is not required to support development.

## 7.0 CLIMATE CHANGE ALLOWANCES

- 7.1 Making an allowance for climate change in the design of surface water drainage systems will help to minimise vulnerability and provide resilience to flooding and coastal change in the future. Climate Change allowances vary across the UK subject to catchment conditions and are based on climate change projections and different scenarios of carbon dioxide (CO<sub>2</sub>) emissions to the atmosphere.

### 1% annual exceedance rainfall event

#### Epoch

|       | Central allowance | Upper end allowance |
|-------|-------------------|---------------------|
| 2050s | 20%               | 45%                 |
| 2070s | 25%               | 45%                 |

\*Use '2050s' for development with a lifetime up to 2060 and use the 2070s epoch for development with a lifetime between 2061 and 2125.

Figure 3: Adur and Ouse Management Catchment peak rainfall allowances

- 7.2 Climate change allowances are defined by River Catchment peak rainfall allowances. The data published on the DEFRA database shows the site located within the Adur and Ouse Management Catchment and for this development (residential with a lifespan of 100yrs), in accordance with NPPF guidance, an upper end allowance of 45% should be applied to rainfall events as the climate change allowance within this region.

### Adur and Ouse Management Catchment peak river flow allowances



|       | Central | Higher | Upper |
|-------|---------|--------|-------|
| 2020s | 16%     | 23%    | 40%   |
| 2050s | 18%     | 28%    | 57%   |
| 2080s | 37%     | 55%    | 107%  |

Figure 4: Adur and Ouse Management Catchment peak river flow allowances

- 7.3 Peak river flow allowances show the anticipated changes to peak flow by management catchment. Management catchments are sub-catchments of river basin districts. The data published on the DEFRA database shows the site located within the Adur and Ouse Management Catchment and for this development (lifespan 100yrs), in accordance with NPPF guidance, a central allowance of 37% as the climate change allowance within this region.

## 8.0 SOURCES OF FLOODING

### 8.1 Tidal and Fluvial

- 8.1.1 The Environment Agency (EA) mapping for Flood Risk, shows the site redline boundary, as indicated on the proposed development plans, to encompass an area of Flood Zones 1, 2 and 3 (low, medium and High risk of fluvial or tidal flooding respectively), see figure 5. As the redline boundary encompasses areas of flood zones 2 and 3 the NPPF guidance states that planning applications should be accompanied by a Flood Risk Assessment (FRA).

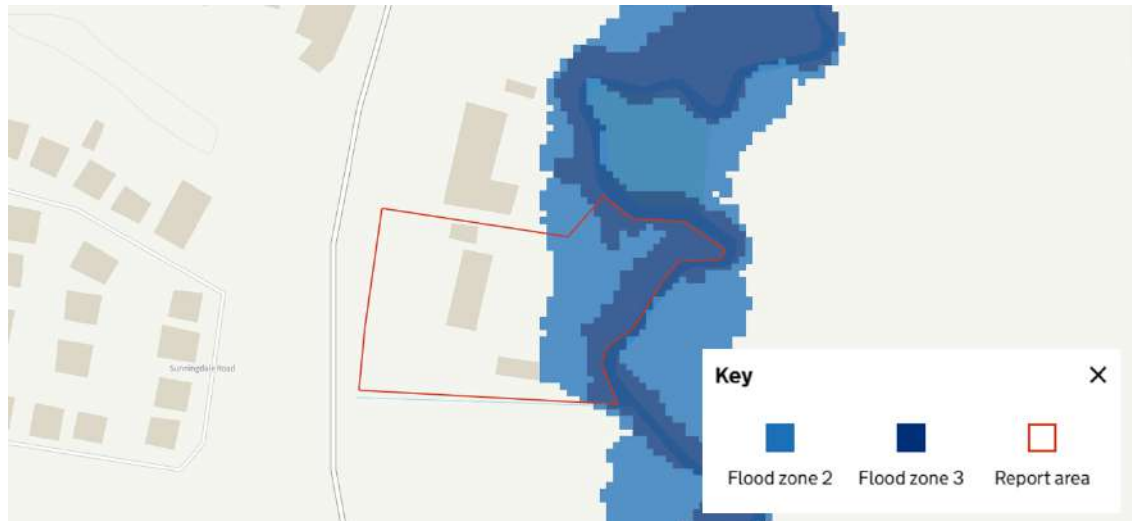


Figure 5: EA Flood map for planning extract

- 8.1.2 The Environment Agency (EA) mapping for Flood Risk (Figure 4), shows the actual location of the proposed development within the site to be located within Flood Zone 1 (low risk of fluvial or tidal flooding), see figure 6. Flood zone 1 is described as land having a less than 1 in 1,000 annual probability of river or sea flooding.

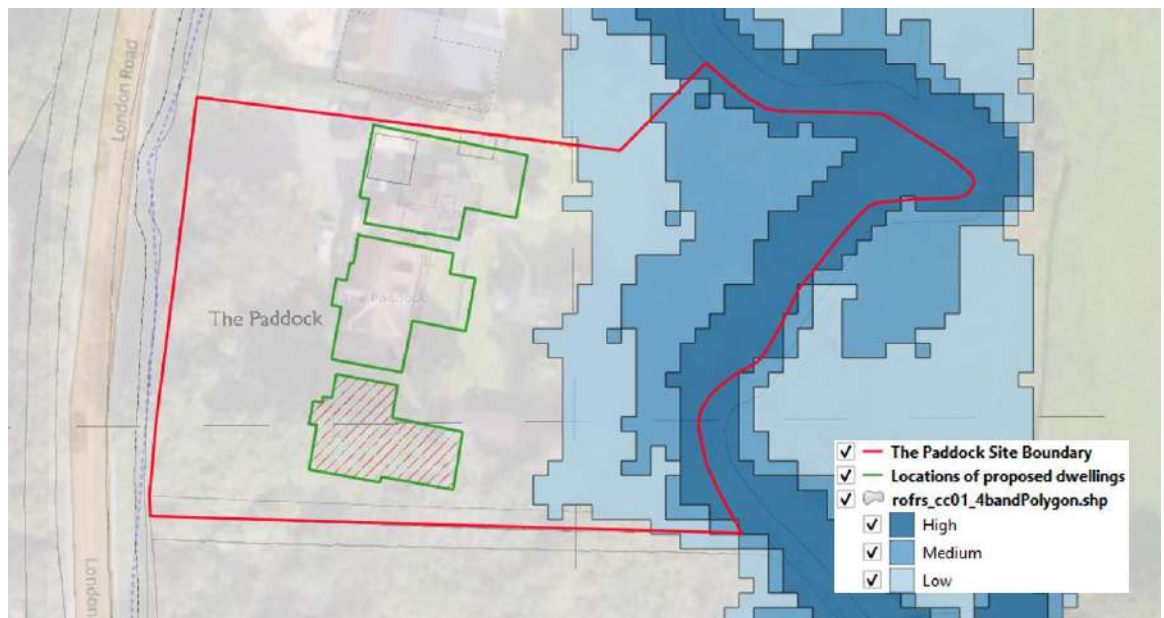


Figure 6: EA RoFRS Flood Extents map extract

- 8.1.3 As such, risk to the development site can be considered low based on the published EA data.

## 8.2 Surface Water (Pluvial)

8.2.1 The mapping shows the proposed development location to be within an area of 'Very Low' risk of flooding from surface water staying at a Very Low risk between 2040 and 2060. The EA state 'Very Low risk means that each year this area has a chance of flooding of less than 0.1%. Flooding from surface water is difficult to predict as rainfall location and volume are difficult to forecast. In addition, local features can greatly affect the chance and severity of flooding.'



Figure 7: EA Risk of Flooding from Surface Water map extract

8.2.2 MCEC have reviewed the the EA's Risk of Flooding from Surface Water (RoFSW) depth data in QGIS to better understand the risk of surface water flooding to the site. Figure 8 shows the proposed development to be outside the area of flood risk from surface water. As such, the risk of flooding from surface water to the proposed development could be considered to be very low.



Figure 8: EA RoFSW map extract

8.2.3 The Mid Sussex District Council SFRA interactive mapping also shows the site to be outside of surface water modelled extents.



Figure 9: Mid Sussex SFRA interactive map site outlined in red – Risk of Flooding from Surface Water+CC

### 8.3 Groundwater

8.3.1 The Mid Sussex District Council (MSDC) SFRA 1 – Section 3.5 Table 3 states that 0.049% of Total Area of the Mid Sussex district is likely to be affected by groundwater flooding. The SFRA also states:

*Large parts of the district are underlain by aquifers, particularly the chalk aquifers in the southern part of the district and the sandstone aquifers in the High Weald area of the district. Parts of the district where these aquifers lie are also low-lying. This includes part of the southern area of the district, particularly Hassocks, Hurstpierpoint and Sayers Common.*

*The District Council sought to obtain data on where flooding from high groundwater levels had occurred from Town and Parish Council's, the Environment Agency and the District Council's own Drainage Team. Only a limited number of historical flood records, where the cause had been documented as groundwater flooding, were obtained. It is possible that some of the records of flooding, where the cause was recorded as overland flow, may have been in part caused by water levels in the ground rising above surface elevations however it has not been possible to determine if this is the case with any certainty. Areas where the cause of flooding is known to be groundwater have been included within the SFRA mapping*

8.3.2 Given the above the MSDC SFRA generally considers ground water risk areas to be associated underlying aquifers. The Environment Agency online groundwater vulnerability map indicates that the site lies within an area which falls within the 'Minor Aquifer Low' groundwater vulnerability zone. Given the Weald Clay underlying can be considered generally of low permeability it is concluded therefore that the site is only likely to be exposed to a relatively low risk from groundwater flooding from the superficial River Terrace Deposits rather than from the Principal Aquifer.

8.3.3 The South Downs National Park (SDNP) Water Cycle Study 2015-Scoping and Outline Report includes mapping which shows the potential groundwater flooding type to be superficial as shown in figure 10.

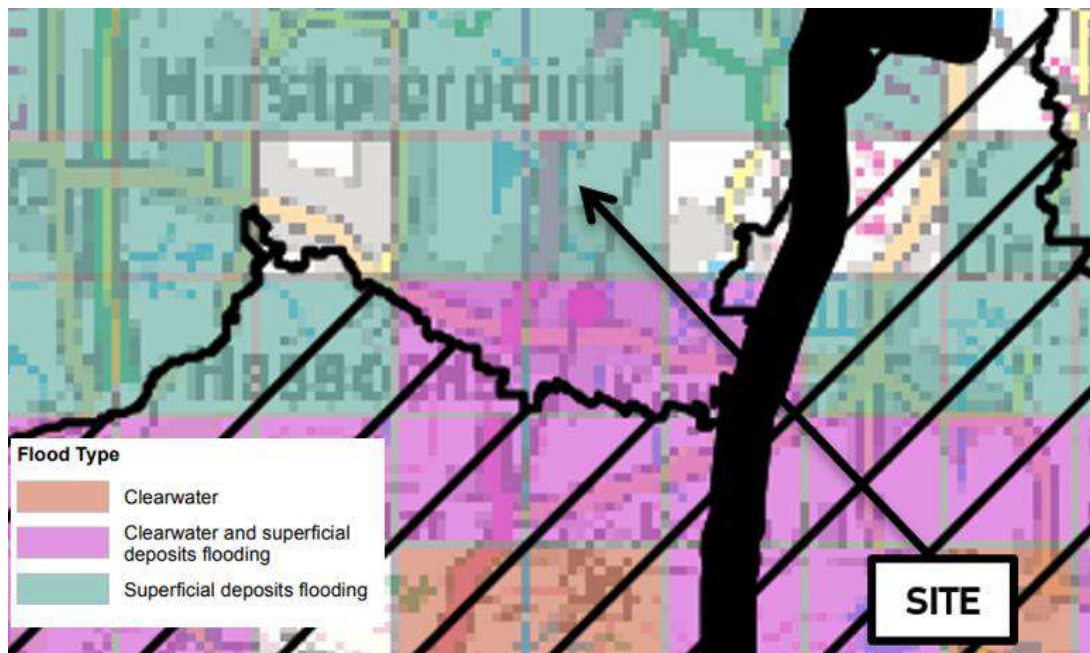


Figure10: SDNP Groundwater Flood Risk Type extract

8.3.4 The SDNP study also includes mapping that shows the likely percentage of properties that may be affected by flooding in a particular area as extracted in figure 11 below. This shows the site to be located within an area where 25-50% of properties may be affected.

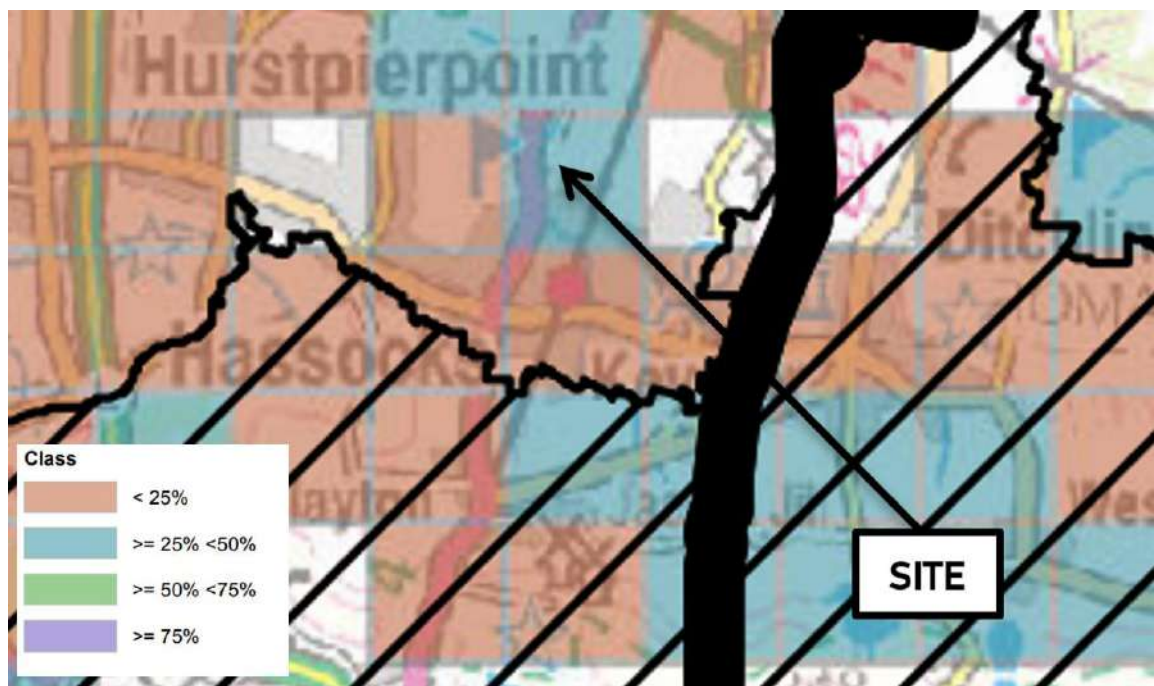


Figure 11: SDNP Groundwater flood risk percentage extract

8.3.5 Therefore, the risk to the undeveloped site from groundwater flooding can be considered to be low (as risk can be attributed to the superficial deposits only and given the slope of the site) and mitigation is not considered to be required. However, a ground investigation should be undertaken in order to inform ground conditions and groundwater levels.

## 8.4 Sewer

8.4.1 There are no surface water sewers present on or near the site. The nearest surface water sewer is close to Belmont Close to the south of the site. There are no public sewers indicated within the proposed development site boundary. Two sewers are indicated in and adjacent to London Road to the west of the site. It is assumed there is a foul sewer connection to the main drain in London Road.

8.4.2 Given there are no recorded sewer flooding incidents shown the risk of sewer flooding at the site can be considered to be low. However, it is recommended any new sewer connection at the site should be agreed with the local sewer provider, to ensure there is capacity in the network (to ensure no increased risk); and fitted with non-return valves to mitigate the risk of internal sewer flooding.

## 8.5 Historical Flooding

8.5.1 Mid Sussex District council have compiled a plan showing recorded historical flood events in the district. This shows a flood event recorded on the property directly north of the proposal site as extracted below. The type of flooding during this event is unknown at this time.



Figure 12: Mid Sussex District Historic Flood map extract

8.5.2 The Mid Sussex District Council SFRA interactive mapping shows the site to be outside of recorded historic flood events.

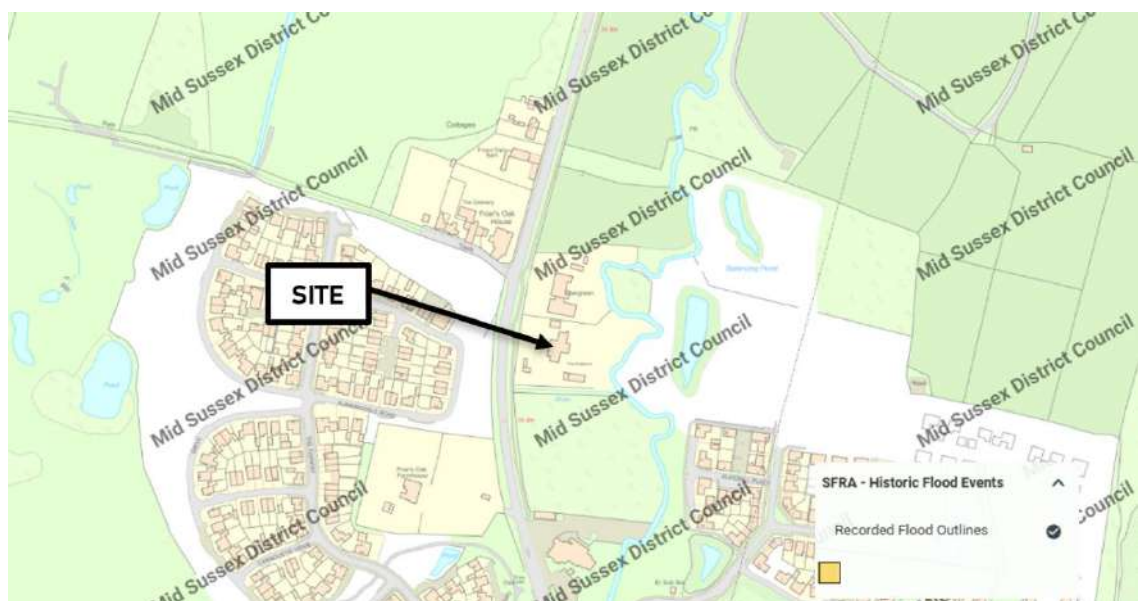


Figure 13: Mid Sussex SFRA interactive map – Historic flood events

## 8.6 Reservoir Flooding

8.6.1 The Mid Sussex District Council SFRA interactive mapping shows the site to be outside of reservoir modelled flood extents for the Dry Day and the Wet Day scenario.

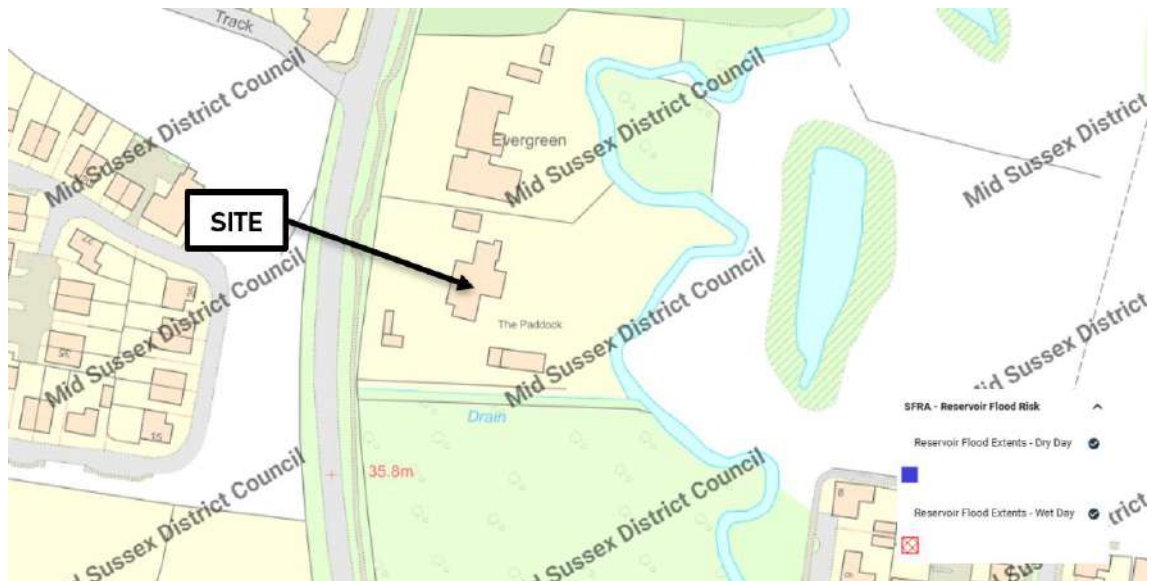


Figure 14: Mid Sussex SFRA interactive map – Reservoir flood risk

## 9.0 SUSTAINABLE URBAN DRAINAGE ASSESSMENT

- 9.1 A surface water drainage strategy was produced for the previous accepted planning application. This strategy proposed attenuation in the form of permeable paving with a subbase and a geocellular attenuation tank with a connection to the existing ditch network on site. The drainage strategy for the previous scheme can be found in Appendix II.
- 9.2 MCEC have produced an updated drainage strategy to reflect the updated proposals on site. The updated strategy has been produced in accordance with the principles outlined in the previous strategy.
- 9.3 The increase in hardstanding area has resulted in an increase in required storage volume. According to causeway flow calculations, a total of 150m<sup>3</sup> of storage is required, this has been provided in the form of an unlined permeable subbase with a plan area of 495m<sup>2</sup> and a depth of 0.6m and an attenuation tank with a plan area of 150m<sup>2</sup> and a depth of 0.6m. The updated drainage design has been included within Appendix III.
- 9.4 In accordance with the previous drainage strategy outflow rates from the development have been limited to 1l/s with a connection to the ditch network on site. Network calcs have been included in Appendix IV.

## 10.0 RESIDUAL RISKS

- 10.1 Residual risks will be limited to exceedance rainfall events causing overtopping of the designed drainage, blockage in underground drainage or reservoir breach.
- 10.2 It is recommended finished floor levels are sited a minimum of 150mm above external ground levels, where feasible, to protect properties from overland flows or potential ground water.
- 10.3 Ground levels should also be designed, where feasible, to drain runoff away from proposed buildings towards low risk areas.

## **11.0 FLOOD RISK MANAGEMENT MEASURES**

- 11.1 Given the development site is situated in a largely low flood risk area with only limited risk from ground water flood events the necessary flood mitigation measures are limited.
- 11.2 As stated previously it is recommended finished floor levels are sited a minimum of 150mm above external ground levels, where feasible, to protect properties from overland flows. Ground levels will also be designed, where feasible, to drain runoff away from proposed buildings towards low risk areas.
- 11.3 Surface water runoff should be managed on site to a rate as close as practical to greenfield runoff rates, in accordance with national guidance and local planning policy, to reduce flood risk to others as a result of development.
- 11.4 Non return valves should be placed on offsite drainage connections to reduce the likelihood of surcharged drains offsite affecting the site or on-site drainage.
- 11.5 All new external paving should be laid as a permeable surface to reduce the potential for increased runoff from the new paved areas affecting others downstream of the site.
- 11.6 It is proposed to provide water butts to the new dwelling to collect rain water for re-use in garden and amenity areas.

## **12.0 SCHEDULE OF MAINTENANCE**

- 12.1 All onsite SuDS and drainage systems will be privately maintained. A long-term maintenance regime should be agreed with the site owners before adoption.
- 12.2 In addition to a long-term maintenance regime, it is recommended that all drainage elements implemented on site should be inspected following the first rainfall event post-construction and monthly for the first quarter following construction.
- 12.3 The property owner will be responsible for the management and maintenance of SuDS devices.
- 12.4 Typical key suds components operation and maintenance activities are provided below.

| TYPICAL KEY SUDS COMPONENTS OPERATION AND MAINTENANCE ACITIVIES |                |                 |                 |                    |          |                     |                       |                 |                   |                      |              |             |                       |
|-----------------------------------------------------------------|----------------|-----------------|-----------------|--------------------|----------|---------------------|-----------------------|-----------------|-------------------|----------------------|--------------|-------------|-----------------------|
| Operation and Maintenance Activity                              | SuDS Component |                 |                 |                    |          |                     |                       |                 |                   |                      |              |             |                       |
|                                                                 | Pond           | Wetlands        | Detention Basin | Infiltration Basin | Soakaway | Infiltration Trench | Filter Drain          | Modular Storage | Pervious pavement | Swale/Bioretenention | Filter Strip | Green Roofs | Proprietary Treatment |
| <b>Regular Maintenance</b>                                      |                |                 |                 |                    |          |                     |                       |                 |                   |                      |              |             |                       |
| Inspection                                                      | ✓              | ✓               | ✓               | ✓                  | ✓        | ✓                   | ✓                     | ✓               | ✓                 | ✓                    | ✓            | ✓           | ✓                     |
| Litter/debris removal                                           | ✓              | ✓               | ✓               | ✓                  | -        | ✓                   | ✓                     | -               | ✓                 | ✓                    | ✓            | x           | -                     |
| Grass cutting                                                   | ✓              | ✓               | ✓               | ✓                  | -        | ✓                   | ✓                     | -               | -                 | ✓                    | ✓            | x           | x                     |
| Weed/invasive plant control                                     | -              | -               | -               | -                  | x        | -                   | -                     | x               | -                 | x                    | -            | ✓           | x                     |
| Shrub management                                                | -              | -               | -               | -                  | x        | x                   | x                     | x               | -                 | -                    | -            | x           | x                     |
| Shoreline vegetation management                                 | ✓              | ✓               | -               | x                  | x        | x                   | x                     | x               | x                 | x                    | x            | x           | x                     |
| Aquatic vegetation management                                   | ✓              | ✓               | -               | x                  | x        | x                   | x                     | x               | x                 | x                    | x            | x           | x                     |
| <b>Occasional Maintenance</b>                                   |                |                 |                 |                    |          |                     |                       |                 |                   |                      |              |             |                       |
| Sediment management                                             | ✓              | ✓               | ✓               | ✓                  | ✓        | ✓                   | ✓                     | ✓               | ✓                 | ✓                    | ✓            | ✓           | ✓                     |
| Vegetation replacement                                          | -              | -               | -               | -                  | x        | x                   | x                     | x               | x                 | -                    | -            | ✓           | x                     |
| Vacuum sweeping and brushing                                    | x              | x               | x               | x                  | x        | x                   | x                     | x               | ✓                 | x                    | x            | x           | x                     |
| <b>Remedial Maintenance</b>                                     |                |                 |                 |                    |          |                     |                       |                 |                   |                      |              |             |                       |
| Structure rehabilitation/repair                                 | -              | -               | -               | -                  | -        | -                   | -                     | -               | -                 | -                    | -            | -           | x                     |
| Infiltration surface reconditioning                             | x              | x               | x               | -                  | -        | -                   | -                     | x               | -                 | -                    | -            | x           | x                     |
| Key:                                                            |                |                 |                 |                    |          |                     |                       |                 |                   |                      |              |             |                       |
| Will be Required                                                |                | May be Required |                 |                    |          |                     | Not Normally Required |                 |                   |                      |              |             |                       |

Table 2: General Maintenance Requirements (Source: CIRIA SuDS Manual C753)

12.5 General maintenance of key SuDS components are provided below.

| PROPOSED SCHEDULE OF MAINTENANCE FOR BELOW GROUND DRAINAGE |                                                    |                                                    |                                                    |                                                                         |
|------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------|----------------------------------------------------|-------------------------------------------------------------------------|
| Item                                                       | Visual Inspection                                  | Cleanse / De-sludge                                | CCTV Survey                                        | Comments                                                                |
| Surface Water Drainage System (pipework, chambers etc.)    | 5 years                                            | 10 years                                           | 10 years                                           | Cleansing to be carried as necessary                                    |
| Foul Drainage System (pipework, chambers etc.)             | 5 years                                            | 10 years                                           | 10 years                                           | Cleansing to be carried as necessary                                    |
| Permeable Paving                                           | 1 year                                             | 'Swept' clean of debris every 2 years              | N/A                                                | Refer to manufacturer's guidance for long term maintenance requirements |
| Attenuation tank                                           | In line with selected manufacturer recommendations | In line with selected manufacturer recommendations | In line with selected manufacturer recommendations | In line with selected manufacturer recommendations                      |
| Hydrobrake                                                 | 6 months                                           | As required                                        | N/A                                                | Cleansing to be carried as necessary                                    |
| Catchpit                                                   | 1 year                                             | See Comments                                       | N/A                                                | Cleansing to be carried as necessary                                    |

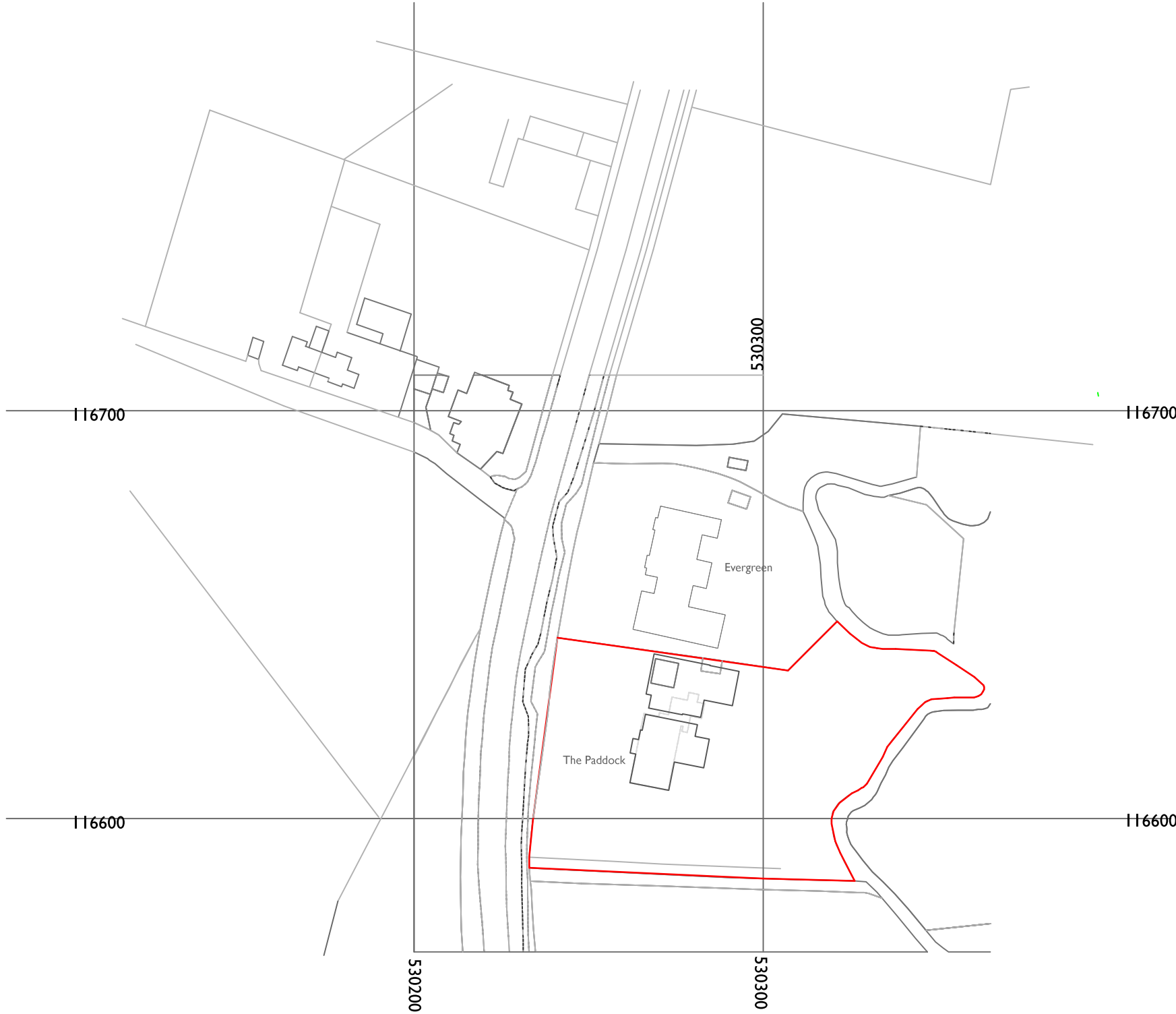
Table 3: Maintenance for Below Ground Drainage (Source: CIRIA SuDS Manual C753)

## 13.0 CONCLUSION

- 13.1 Meridian Civil Engineering Consultancy LTD (MCEC) has been instructed by Westfield Investments Ltd to prepare a site-specific Flood Risk Assessment (FRA) & SUDS Addendum for the redevelopment of The Paddock, Hassocks, BN6 9NA.
- 13.2 Planning consent has already been granted by Mid Sussex District Council for the subdivision and remodelling of existing dwelling, and construction of a new dwelling and can be viewed under planning ref: DM/21/2148.
- 13.3 It is understood the proposed development is for the erection of a third dwelling with associated access and parking in addition to the existing, remodelled dwelling and the new dwelling associated with the previously accepted planning application. The proposed Architects plans can be found in Appendix I
- 13.4 The Environment Agency (EA) mapping for Flood Risk, shows the site redline boundary, as indicated on the proposed development plans, to encompass an area of Flood Zones 1, 2 and 3 (low, medium and High risk of fluvial or tidal flooding respectively). As the redline boundary encompasses areas of flood zones 2 and 3 the NPPF guidance states that planning applications should be accompanied by a Flood Risk Assessment (FRA).
- 13.5 The mapping shows the proposed development location to be within an area of 'Very Low' risk of flooding from surface water staying at a Very Low risk between 2040 and 2060. The EA state 'Very Low risk means that each year this area has a chance of flooding of less than 0.1%. Flooding from surface water is difficult to predict as rainfall location and volume are difficult to forecast. In addition, local features can greatly affect the chance and severity of flooding.'
- 13.6 Geology at the site is shown to be superficial deposits of River Terrace Deposits, 2 (adur) Sand and gravel over Weald Clay Formation Mudstone Sedimentary bedrock as published by the British Geological Survey online. As mentioned in the previously accepted scheme by GTA Consulting (Dated: September 2024, Ref: 13174) infiltration testing carried out on site "resulted in nil infiltration results as the trial pit failed to drain below the 25% empty mark." The test results can be found in Appendix V.
- 13.7 Details of the site and development proposals have been provided by the Client to clarify the scope of the proposed development and the existing site conditions.
- 13.8 MCEC have produced an updated drainage strategy to reflect the updated proposals on site. The updated strategy has been produced in accordance with the principles outlined in the previous strategy.
- 13.9 The increase in hardstanding area has resulted in an increase in required storage volume. According to causeway flow calculations, a total of 150m<sup>3</sup> of storage is required, this has been provided in the form of an unlined permeable subbase with a plan area of 495m<sup>2</sup> and a depth of 0.6m and an attenuation tank with a plan area of 150m<sup>2</sup> and a depth of 0.6m. The updated drainage design has been included within Appendix III.
- 13.10 In accordance with the previous drainage strategy outflow rates from the development have been limited to 1l/s with a connection to the ditch network on site. Network calcs have been included in Appendix IV
- 13.11 This report has been produced broadly in accordance with the National Planning Policy Framework (NPPF), West Sussex County Council (WSSC) SUDS guidance and associated Local Planning Authority technical guidance and National SuDS Standards.

## APPENDIX I Architects plans Existing and Proposed

# The Paddock, London Road, Hassocks



Proposed site location plan



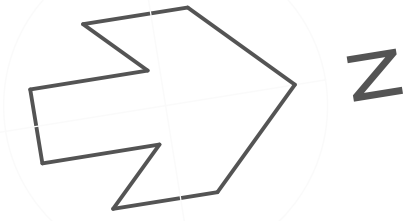
Proposed block plan



| 1. Dimensions and Levels                                                                                                                                                                                                                                                                                                                                                             |          |                  |                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------|---------------------------|
| Figured dimensions and levels should be verified by the Contractor on site before construction or manufacture and any discrepancies brought to the attention of the Architect. Dimensions should not be scaled.                                                                                                                                                                      |          |                  |                           |
| 2. Existing Building and Services                                                                                                                                                                                                                                                                                                                                                    |          |                  |                           |
| Where shown, existing buildings and services will not indicate condition. The Contractor shall therefore investigate and report to the Architect at the commencement of the works.                                                                                                                                                                                                   |          |                  |                           |
| 3. Copyright                                                                                                                                                                                                                                                                                                                                                                         |          |                  |                           |
| Copyright for all designs and drawings in full or part shall remain with the Flint Architecture in accordance with the Copyright Act, Designs and Patents Act 1988.                                                                                                                                                                                                                  |          |                  |                           |
| 4. Scope of Works                                                                                                                                                                                                                                                                                                                                                                    |          |                  |                           |
| Drawings are issued in accordance with and on the basis of the RIBA Conditions of Engagement and the JCT Form of Contract unless otherwise agreed in writing                                                                                                                                                                                                                         |          |                  |                           |
| 5. Statutory Requirements and Standards                                                                                                                                                                                                                                                                                                                                              |          |                  |                           |
| All work is to comply with the current Building Regulations and the requirements of the respective local authority. Workmanship and standards shall also comply with the current Codes of Practice and the relevant British Standards.                                                                                                                                               |          |                  |                           |
| 6. Drawing status                                                                                                                                                                                                                                                                                                                                                                    |          |                  |                           |
| Unless otherwise noted below this drawing is not to be used for construction purposes.                                                                                                                                                                                                                                                                                               |          |                  |                           |
| If indicated as feasibility this drawing is subject to a detailed site investigation, including ground conditions/ contaminants, drainage design and planning / density negotiations. The layout may be based upon an enlargement of an OS sheet or other small scale plans and its accuracy needs to be verified by survey. CDM regulations may not have not been fully considered. |          |                  |                           |
| Current status                                                                                                                                                                                                                                                                                                                                                                       |          | PLANNING.        |                           |
| Revisions                                                                                                                                                                                                                                                                                                                                                                            |          |                  |                           |
| rev                                                                                                                                                                                                                                                                                                                                                                                  | date     | comment          | drawn                     |
| A                                                                                                                                                                                                                                                                                                                                                                                    | June 21  | Dimensions added |                           |
| Client                                                                                                                                                                                                                                                                                                                                                                               |          |                  |                           |
| Mr Colin Bruce                                                                                                                                                                                                                                                                                                                                                                       |          |                  |                           |
| Project                                                                                                                                                                                                                                                                                                                                                                              |          |                  |                           |
| Proposed 3rd house<br>The Paddock, London Road, Hassocks                                                                                                                                                                                                                                                                                                                             |          |                  |                           |
| Drawing                                                                                                                                                                                                                                                                                                                                                                              |          |                  |                           |
| Site location and block plan                                                                                                                                                                                                                                                                                                                                                         |          |                  |                           |
| Drawn                                                                                                                                                                                                                                                                                                                                                                                |          | Date             | Scale                     |
| EP                                                                                                                                                                                                                                                                                                                                                                                   |          | 26/07/25         | 1:1250 @ A1<br>1:500 @ A1 |
| Job No.                                                                                                                                                                                                                                                                                                                                                                              | Drq. No. | Rev.             |                           |
| 2450                                                                                                                                                                                                                                                                                                                                                                                 | PL001    | A                |                           |
| FLINT ARCHITECTURE                                                                                                                                                                                                                                                                                                                                                                   |          |                  |                           |
| 12 Shepherds Close<br>Ringmer<br>Nr Lewes<br>East Sussex<br>BN8 5LU                                                                                                                                                                                                                                                                                                                  |          |                  |                           |
| tel. +44 (0) 1273 812106<br>mob. +44 (0) 7887 802227                                                                                                                                                                                                                                                                                                                                 |          |                  |                           |
| email. emma@flintarchitecture.co.uk                                                                                                                                                                                                                                                                                                                                                  |          |                  |                           |

# The Paddock, London Road, Hassocks

LONDON ROAD

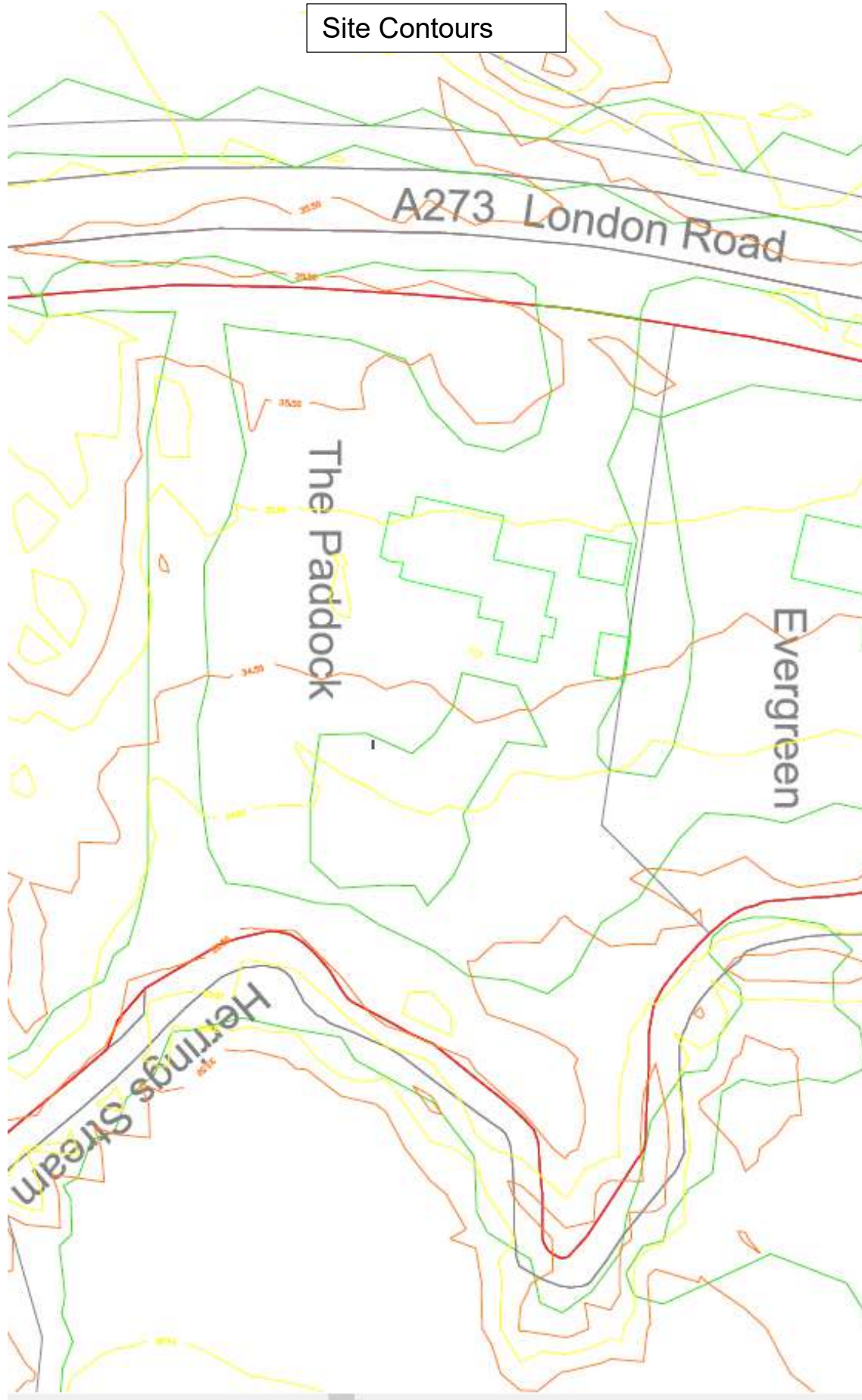


## Proposed site plan



|                                                                                                                                                                                                                                                                                                                                                                                     |                 |                   |       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------|-------|
| <b>Dimensions and Levels</b>                                                                                                                                                                                                                                                                                                                                                        |                 |                   |       |
| Figured dimensions and levels should be verified by the Contractor on site before construction or manufacture and any discrepancies brought to the attention of the Architect. Discrepancies should not be scaled.                                                                                                                                                                  |                 |                   |       |
| <b>2. Existing Building and Services</b>                                                                                                                                                                                                                                                                                                                                            |                 |                   |       |
| Where shown, existing buildings and services will not indicate condition. The Contractor shall therefore investigate and report to the Architect at the commencement of the works.                                                                                                                                                                                                  |                 |                   |       |
| <b>3. Copyright</b>                                                                                                                                                                                                                                                                                                                                                                 |                 |                   |       |
| Copyright for all designs and drawings in full or part shall remain with the Flint Architecture in accordance with the Copyright Act, Designs and Patents Act 1988.                                                                                                                                                                                                                 |                 |                   |       |
| <b>4. Scope of Works</b>                                                                                                                                                                                                                                                                                                                                                            |                 |                   |       |
| Drawings are issued in accordance with and on the basis of the RIBA Conditions of Engagement and the JCT Form of Contract unless otherwise agreed in writing                                                                                                                                                                                                                        |                 |                   |       |
| <b>5. Statutory Requirements and Standards</b>                                                                                                                                                                                                                                                                                                                                      |                 |                   |       |
| All work is to comply with the current Building Regulations and the requirements of the respective local authority. Workmanship and standards shall also comply with the current Codes of Practice and the relevant British Standards.                                                                                                                                              |                 |                   |       |
| <b>6. Drawing status</b>                                                                                                                                                                                                                                                                                                                                                            |                 |                   |       |
| Unless otherwise noted below this drawing is not to be used for construction purposes.                                                                                                                                                                                                                                                                                              |                 |                   |       |
| If indicated as feasibility this drawing is subject to a detailed site investigation, including ground conditions/contaminates, drainage design and planning / density negotiations. The layout may be based upon an enlargement of an OS sheet or other small scale plans and its accuracy needs to be verified by survey. CDM regulations may not have not been fully considered. |                 |                   |       |
| Current status                                                                                                                                                                                                                                                                                                                                                                      |                 | <b>PLANNING.</b>  |       |
| Revisions                                                                                                                                                                                                                                                                                                                                                                           |                 |                   |       |
| rev                                                                                                                                                                                                                                                                                                                                                                                 | date            | comment           | drawn |
|                                                                                                                                                                                                                                                                                                                                                                                     |                 |                   |       |
| Client                                                                                                                                                                                                                                                                                                                                                                              |                 |                   |       |
| <b>Mr Colin Brace</b>                                                                                                                                                                                                                                                                                                                                                               |                 |                   |       |
| Project                                                                                                                                                                                                                                                                                                                                                                             |                 |                   |       |
| <b>Proposed 3rd house</b><br><b>The Paddeck, London Road, Hassocks</b>                                                                                                                                                                                                                                                                                                              |                 |                   |       |
| Drawing                                                                                                                                                                                                                                                                                                                                                                             |                 |                   |       |
| <b>Proposed site plan</b>                                                                                                                                                                                                                                                                                                                                                           |                 |                   |       |
| Drawn                                                                                                                                                                                                                                                                                                                                                                               | Date            | Scale             |       |
| <b>EP</b>                                                                                                                                                                                                                                                                                                                                                                           | <b>16/05/25</b> | <b>1:200 @ A1</b> |       |
| Job No.                                                                                                                                                                                                                                                                                                                                                                             | Drg. No.        | Rev.              |       |
| <b>2450</b>                                                                                                                                                                                                                                                                                                                                                                         | <b>P1010</b>    |                   |       |
| <b>FLINT ARCHITECTURE</b>                                                                                                                                                                                                                                                                                                                                                           |                 |                   |       |
| 12 Shepherds Close<br>Ringmer<br>Nr Lewes<br>East Sussex<br>BN8 5LU                                                                                                                                                                                                                                                                                                                 |                 |                   |       |
| tel. +44 (0) 1273 812106<br>mob. +44 (0) 7887 802227                                                                                                                                                                                                                                                                                                                                |                 |                   |       |
| email. emma@flintarchitecture.co.uk                                                                                                                                                                                                                                                                                                                                                 |                 |                   |       |

Site Contours



## APPENDIX II Previous SuDS Strategy GTA Ltd

DESIGN NOTES

1. STORAGE DESIGN BASED ON 1 IN 100 YR STORM + 45%.
2. GREENFIELD QBAR = 6.31 l/s/ha. IMPERMEABLE AREAS MEASURED AS 0.083ha. TARGET RATE SET TO 1 l/s TO LIMIT RISKS OF BLOCKAGE.
3. DRAIN POINTS AND LOCATIONS TO BE CONFIRMED BY ARCHITECT. ALL FINISHED FLOOR LEVELS BASED ON ARCHITECT DRAWINGS.
4. CONTRACTOR TO ESTABLISH LOCATIONS OF ALL EXISTING SERVICES PRIOR TO COMMENCING.
5. EXISTING TREES TO BE PROTECTED WHERE EXCAVATIONS RUN CLOSE.
6. APPROVAL TO BE GAINED FROM THAMES WATER FOR NEW INDIRECT CONNECTIONS TO SEWERS.

#### ABBREVIATIONS

|         |                                                      |
|---------|------------------------------------------------------|
| D307.0  | DETAIL NUMBER - SEE DRAINAGE DETAIL SHEET            |
| FD      | FOUL DRAIN                                           |
| SWD     | SURFACE WATER DRAIN                                  |
| FWS     | ADOPTABLE FOUL WATER SEWER                           |
| SWS     | ADOPTABLE SURFACE WATER SEWER                        |
| MH      | MANHOLE                                              |
| IC      | INSPECTION CHAMBER                                   |
| SA      | SOAKAWAY                                             |
| FIC     | 450mm DIA. FOUL INSPECTION CHAMBER - D202.6          |
| SIC     | 450mm DIA. SURFACE WATER INSPECTION CHAMBER - D202.6 |
| FAC     | 300mm DIA. FOUL ACCESS CHAMBER - D202.18             |
| SAC     | 300mm DIA. SURFACE WATER ACCESS CHAMBER - D202.18    |
| CI      | CAST IRON                                            |
| VC      | VITRIFIED CLAY                                       |
| CONC    | CONCRETE                                             |
| PVC-U   | POLYVINYL CHLORIDE - UNPLASTICISED                   |
| G       | SMALL GULLY - D209.0                                 |
| YG      | YARD GULLY - D209.2                                  |
| RG      | ROAD GULLY - D208.1                                  |
| CPG     | CAR PARK GULLY - D208.2                              |
| DP      | BELOW GROUND DRAIN POINT                             |
| SVP     | SOIL VENT PIPE DROP                                  |
| SS      | STUB STACK OR DIRECT DRAIN CONNECTION                |
| RP      | EXTERNAL RODDING POINT - D213.1                      |
| DT      | SURFACE WATER DISTRIBUTION TANK                      |
| FFL     | FINISHED FLOOR LEVEL                                 |
| SSL     | STRUCTURAL SLAB LEVEL                                |
| GL      | GROUND LEVEL                                         |
| CL      | COVER LEVEL                                          |
| IL      | INVERT LEVEL                                         |
| SL      | SUMP LEVEL                                           |
| HL      | BASE LEVEL                                           |
| BD      | HIGH LEVEL                                           |
| BD      | BACKDROP                                             |
| CBS     | CONCRETE BED & SURROUND                              |
| CLASS S | GRANULAR BED & SURROUND                              |
| CLASS B | GRANULAR BED                                         |

#### SPECIFICATION NOTES

1. ALL DRAINAGE SHALL BE CONSTRUCTED AND COMMISSIONED IN ACCORDANCE WITH BS EN 295 & BS EN752, BUILDING REGULATIONS DOC. H AND ANY PARTICULAR REQUIREMENTS OF THE BUILDING CONTROL OFFICER.
2. DRAIN BEDDING IS TO BE PROVIDED AS D200.0, D200.1 AND D200.2 AS SHOWN ON THE DRAINAGE DETAILS SHEETS.
3. 'EFFECTIVE COVER' IS THE MINIMUM DEPTH OF COVER OVER THE PIPE CROWN AT ANY TIME DURING THE CONSTRUCTION PROCESS.
4. ALL CONCRETE PIPEWORK, MANHOLES AND FITTINGS SHALL BE TO BS 5911 (ALL RELEVANT PARTS). ALL CONCRETE PIPEWORK TO BE TO HIGH STRENGTH
5. WHERE CONNECTIONS ARE TO BE MADE TO EXISTING MANHOLES/SEWERS, INVERT LEVELS, PIPE SIZES & ORIENTATION SHALL BE CHECKED PRIOR TO THE COMMENCEMENT OF THE WORKS AND ANY VARIANCE REPORTED TO THE ENGINEER IMMEDIATELY. WORK TO COMMENCE AT DOWNSTREAM END WHEREVER POSSIBLE.
6. WHERE PIPELINES CROSS, EACH IS TO BE SURROUNDED WITH GRADE ST4 MASS CONCRETE FOR A DISTANCE NOT LESS THAN 1m CENTRED ON THE CROSSING POINT. LENGTH OF SURROUND TO BE EXTENDED AS NECESSARY TO WITHIN 150mm OF THE NEXT NEAREST FLEXIBLE JOINTS.
7. THE CONTRACTOR IS TO ENSURE THAT PROTECTIVE MEASURES ARE TAKEN TO ENSURE THAT DRAINAGE PIPEWORK AND FITTINGS ARE NOT DAMAGED BY SITE TRAFFIC PRIOR TO OVERSITE FILLING OPERATIONS BEING COMPLETED AROUND BUILDINGS.
8. ALL PRIVATE DRAINAGE PIPEWORK SHALL BE PVC-U. ALL ADOPTED DRAINAGE TO BE VC. ALL UNDERBUILDING DRAINS TO BE LAID AT A GRADIENT OF 1:40
9. WHERE DRAINS PASS THROUGH FOUNDATIONS OR CONNECT TO MANHOLES, FLEXIBLE PIPE JOINTS ARE TO PROVIDED WITHIN 150mm OF THE FACE OF THE STRUCTURE AND WITHIN A FURTHER 600mm TO FORM A ROCKER PIPE.
10. WHERE PIPES PASS THROUGH SCREEN WALLS, FOOTINGS OR RETAINING WALLS, LINTELS ARE TO BE PROVIDED.
11. WHERE PIPELINES PASS WITHIN 1m OF BUILDINGS OR WALLS THE FOUNDATIONS ARE TO BE TAKEN DOWN BELOW THE BOTTOM OF THE TRENCH
12. 450mm DIA. INSPECTION CHAMBERS (FIC/SIC) MAY BE USED:
  - WITH 350mm REDUCED OPENING WHERE THE DEPTH FROM COVER TO INVERT EXCEEDS 1000mm.
- 300mm DIA. POLYPROPYLENE ACCESS CHAMBERS (FAC/SAC) MAY BE USED
  - WHERE THE DEPTH FROM COVER TO INVERT DOES NOT EXCEED 600mm AND WHERE THE PIPE SIZE DOES NOT EXCEED 100mm DIA.
13. STEEL COVERS WITHIN PROPERTY BOUNDARIES SHALL BE:
  - (UNLESS NOTED ON DRAWING OR MANHOLE SCHEDULE)
  - ON PRIVATE DRIVEWAYS: FACTA GRADE B (BS EN ISO 1461: 1999)
  - ON PRIVATE PATHWAYS, VERGES OR ON GARDENS: FACTA GRADE A (BS EN ISO 1461: 1999)
- DUCTILE IRON COVERS OUTSIDE PROPERTY BOUNDARIES SHALL BE:
  - (UNLESS NOTED ON DRAWING OR MANHOLE SCHEDULE)
  - ON ACCESS ROADS AND CAR PARKS: GRADE D400 (BS EN 124:1994)
  - ON SHARED PATHWAYS, VERGES: GRADE A15 (BS EN 124:1994)
14. COVER LEVELS SHOWN 'CL' AND INVERT LEVELS SHOWN 'IL' ARE IN METRES ABOVE ORDNANCE DATUM.
15. ALL DRAINS TO BE 100mm DIAMETER UNLESS NOTED OTHERWISE
16. ALL DRAINS MARKED 'FWS' OR 'SWS' ARE PROPOSED ADOPTED SEWERS AND ARE TO BE CONSTRUCTED IN ACCORDANCE WITH 'SEWERAGE SECTOR GUIDANCE' (SSG)

#### GENERAL NOTES

1. The location, size, depth and identification of existing services that may be shown or referred to on this drawing have been assessed from non intrusive observations, record drawings or the file. The contractor shall safely carry out intrusive investigations, trial holes or soundings prior to commencing work to satisfy himself that it is safe to proceed and that the assessments are accurate. any discrepancies shall be notified to gta prior to works commencing.
2. Tender or billing drawings shall not be used for construction or the ordering of materials.
3. Do not scale. All dimensions and levels to be site confirmed.
4. This drawing shall be read in conjunction with all relevant architects, consultants drawings and specifications, together with H&S plan requirements.
5. Copyright : This drawing must not be copied, amended nor reproduced without the prior written agreement of gta.
6. All drawings specifications and recommendations made by gta are subject to Local Authority and other relevant Statutory Authorities approval. Any works or services made abortive due to the client proceeding prior to these approvals is considered wholly at the Clients risk. gta hold no responsibility for resulting abortive works or costs.

#### KEY

- Existing surface water drain
- Existing surface water drain
- Private surface water drain
- Private foul drain

FIC Foul Plastic Inspection Chamber - D202.6

SIC Surface Water Plastic Inspection Chamber - D202.6

SAC 300mm diameter Surface Water Access Chamber - D202.18

FAC 300mm diameter Foul Water Access Chamber - D202.18

SVP Foul drain point D307.0

RWP SW Drain point for RWP D203.5

Drainage channel

Private Yard gully

Rodding point

Distribution/collection tank in permeable paving sub-base

|                                                                                                                                                                                                                                                                                                       |             |                                      |     |            |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------------------------|-----|------------|--|
|                                                                                                                                                                                                                                                                                                       |             |                                      |     |            |  |
| P1                                                                                                                                                                                                                                                                                                    | FIRST ISSUE | 19.09.24                             | FV  | MR         |  |
| Rev                                                                                                                                                                                                                                                                                                   | Amendments  | Date                                 | Dsn | Chk        |  |
| Status                                                                                                                                                                                                                                                                                                |             | CONSTRUCTION                         |     |            |  |
| Client                                                                                                                                                                                                                                                                                                |             | COLIN BRACE                          |     |            |  |
| Architect                                                                                                                                                                                                                                                                                             |             | FLINT ARCHITECTURE                   |     |            |  |
| Project                                                                                                                                                                                                                                                                                               |             | THE PADDOCK<br>LONDON ROAD, HASSOCKS |     |            |  |
| Title                                                                                                                                                                                                                                                                                                 |             | DRAINAGE LAYOUT                      |     |            |  |
| Date                                                                                                                                                                                                                                                                                                  |             | SEPTEMBER 2024                       |     | Scale @ A1 |  |
|                                                                                                                                                                                                                                                                                                       |             |                                      |     | 1:200      |  |
| Clients Ref.                                                                                                                                                                                                                                                                                          |             | Project Ref.                         |     | 13174      |  |
| <div>Civils &amp; Transport</div> <div>Maple House, 192-198 London Road,<br/>Burgess Hill, West Sussex, RH15 9RD<br/>Tel 01444 871444    Web: <a href="http://www.gtacivils.co.uk">www.gtacivils.co.uk</a></div> |             |                                      |     |            |  |
| Drawing Number                                                                                                                                                                                                                                                                                        |             |                                      |     | Rev.       |  |
| 13174/1601                                                                                                                                                                                                                                                                                            |             |                                      |     | P1         |  |

## APPENDIX III Proposed Surface and Foul Water Layout

ExFWMH 2611  
CL: UNKNOWN  
IL: UNKNOWN

INFORMATION ASCERTAINED FROM DRAINAGE LAYOUT 13174/1601 SEPT 2024. EXACT LOCATION, COVER LEVEL AND INVERT LEVEL TO BE CONFIRMED PRIOR TO DETAILED DESIGN.

WATER AUTHORITY APPROVAL MAY BE REQUIRED FOR CONNECTION TO SOUTHERN WATER SEWER.

ExFWMH 2614  
CL: 35.43  
IL: UNKNOWN

INFORMATION ASCERTAINED FROM DRAINAGE LAYOUT 13174/1601 SEPT 2024. EXACT LOCATION, COVER LEVEL AND INVERT LEVEL TO BE CONFIRMED PRIOR TO DETAILED DESIGN.

WATER AUTHORITY APPROVAL MAY BE REQUIRED FOR CONNECTION TO SOUTHERN WATER SEWER.

ExFWIC 3 INTERCEPTOR  
CL: 35.79  
IL: 34.24

INFORMATION ASCERTAINED FROM DRAINAGE LAYOUT 13174/1601 SEPT 2024. EXACT LOCATION, COVER LEVEL AND INVERT LEVEL TO BE CONFIRMED PRIOR TO DETAILED DESIGN.

WATER AUTHORITY APPROVAL MAY BE REQUIRED FOR CONNECTION TO SOUTHERN WATER SEWER.

ExFWIC 2  
CL: 35.36  
IL: 34.56

INFORMATION ASCERTAINED FROM DRAINAGE LAYOUT 13174/1601 SEPT 2024. EXACT LOCATION, COVER LEVEL AND INVERT LEVEL TO BE CONFIRMED PRIOR TO DETAILED DESIGN.

WATER AUTHORITY APPROVAL MAY BE REQUIRED FOR CONNECTION TO SOUTHERN WATER SEWER.

ExFWIC 1  
CL: 35.06  
IL: UNKNOWN

INFORMATION ASCERTAINED FROM DRAINAGE LAYOUT 13174/1601 SEPT 2024. EXACT LOCATION, COVER LEVEL AND INVERT LEVEL TO BE CONFIRMED PRIOR TO DETAILED DESIGN.

WATER AUTHORITY APPROVAL MAY BE REQUIRED FOR CONNECTION TO SOUTHERN WATER SEWER.

ExFWIC 1B  
CL: 35.10  
IL: 34.85

INFORMATION ASCERTAINED FROM DRAINAGE LAYOUT 13174/1601 SEPT 2024. EXACT LOCATION, COVER LEVEL AND INVERT LEVEL TO BE CONFIRMED PRIOR TO DETAILED DESIGN.

WATER AUTHORITY APPROVAL MAY BE REQUIRED FOR CONNECTION TO SOUTHERN WATER SEWER.

GEOCELLULAR ATTENUATION TANK

TO PROVIDE STORAGE FOR ALL RAINFALL EVENTS UP TO AND INCLUDING THE 100 YEAR + CC EVENT

PLAN AREA: 150m<sup>2</sup>  
DEPTH: 0.6m  
VOID RATIO: 0.95  
VOLUME: 85.5m<sup>3</sup>  
VOLUME REQUIRED: 81.06m<sup>3</sup>  
COVER LEVEL: 35mAOD  
INVERT LEVEL: 34mAOD

LOCATION OF TANK AND TANK VENT LOCATION TBC

HYDROBRAKE MANHOLE TO REDUCE OUTFLOW RATE TO 11/s

HYDROBRAKE MODELLED IN LINE WITH APPROVED STRATEGY BY GTA CIVILS AND TRANSPORT FROM 09/2024

DESIGN DEPTH: 0.75m  
DESIGN FLOW: 11/s  
DIAMETER: 50mm  
HYDROBRAKE REFERENCE:  
CTL-SHE-0050-1000-0750-1000

ORIFICE PLATE MANHOLE TO REDUCE OUTFLOW RATE TO 11/s

ORIFICE PLATE MODELLED IN LINE WITH APPROVED STRATEGY BY GTA CIVILS AND TRANSPORT FROM 09/2024

MAXIMUM FLOW FROM PERMEABLE SUBBASE TO BE 31/s

#### DESIGN PHILOSOPHY

SURFACE WATER DRAINAGE DESIGN HAS BEEN PRODUCED IN ACCORDANCE WITH THE APPROVED STRATEGY BY GTA CONSULTING FOR THE PREVIOUSLY APPROVED TWO PLOT DEVELOPMENT.

FOUL WATER DRAINAGE DESIGN IS PROPOSED TO CONNECT TO EXISTING FW DRAIN THAT IS PROPOSED TO REMAIN. WATER AUTHORITY APPROVAL MAY BE REQUIRED FOR CONNECTION TO SOUTHERN WATER SEWER.

THE INCREASE IN HARDSTANDING AREA HAS RESULTED IN AN INCREASE IN REQUIRED STORAGE VOLUME. STORAGE IS TO BE PROVIDED BY PERMEABLE PAVING WITH A LINED SUBBASE. ACCORDING TO CAUSEWAY FLOW CALCULATIONS THE SUBBASE IS REQUIRED TO HAVE A DEPTH OF 0.55m TO PROVIDE ADEQUATE STORAGE. OUTFLOW FROM THE PERMEABLE SUBBASE IS TO BE LIMITED TO 31/s WITH A DOWNSTREAM CONNECTION TO THE NETWORK.

ADDITIONAL ATTENUATION IS TO BE PROVIDED BY AN ATTENUATION TANK IN THE REAR. ACCORDING TO CAUSEWAY FLOW CALCULATIONS 81m<sup>3</sup> OF STORAGE IS REQUIRED. OFFSITE OUTFLOW RATES ARE TO BE LIMITED TO 11/s IN ACCORDANCE WITH THE APPROVED STRATEGY.

IN LINE WITH THE APPROVED STRATEGY A CONNECTION TO THE DITCH ON SITE IS PROPOSED AS A MEANS OF DISCHARGING SURFACE WATER FLOWS. OUTFLOW IS TO BE LIMITED TO 11/s VIA A HYDROBRAKE WITH A 50mm DIAMETER APERTURE.

GREENFIELD RUNOFF RATES (l/s)

2 YEAR: 1.1  
30 YEAR: 2.9  
100 YEAR: 4.0

PROPOSED RUNOFF RATES (l/s)

2 YEAR: 0.9  
30 YEAR: 1.0  
100 YEAR: 1.0  
100 YEAR + CC: 1.0

- GENERAL
  - a. THIS DRAWING IS NOT TO BE SCALED, WORK TO FIGURED DIMENSIONS ONLY, CONFIRMED ON SITE.
  - b. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTURAL DRAWINGS, DETAILED SPECIFICATIONS WHERE APPLICABLE AND ALL ASSOCIATED DRAWINGS IN THIS SERIES.
  - c. ANY DISCREPANCY ON THIS DRAWING IS TO BE REPORTED IMMEDIATELY TO THE PARTNERSHIP FOR CLARIFICATION.
  - d. THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY WORKS AND FOR THE STABILITY OF THE WORKS IN PROGRESS.
  - e. CDM REGULATIONS 2015. ALL CURRENT DRAWINGS AND SPECIFICATIONS MUST BE READ IN CONJUNCTION WITH THE DESIGNER'S HAZARD RISK AND ENVIRONMENT ASSESSMENT RECORD. DESIGN HAS BEEN PRODUCED BASED ON INFORMATION PROVIDED BY THE CLIENT/PRINCIPLE DESIGNER AVAILABLE AT TIME OF ISSUE. CONTRACTOR TO REVIEW DRAWING AND SPECIFICATION IN CONTEXT WITH THE WIDER SITE AND SPECIFIC SITE INVESTIGATION, CONTAMINATION ASSESSMENT, ASBESTOS SURVEY, ENVIRONMENTAL SURVEY, UXO SURVEY AND ANY OTHER RELEVANT INFORMATION AND MANAGE RISKS RELATING TO THE WORKS OUTLINED IN THE DRAWINGS AND SPECIFICATION. PRINCIPLE CONTRACTOR TO MAKE DESIGNER AND CLIENT AWARE OF SITE SPECIFIC RISKS THAT MAY AFFECT THE DRAWING AND SPECIFICATION.
  - f. CDM REGULATIONS 2015. FOR GENERIC MAINTENANCE AND MANAGEMENT RISKS REFER TO CHAPTER 36 OF CDM 752 SUDS MANUAL. FOR PROPRIETARY SYSTEMS SEE MANUFACTURER'S MANAGEMENT AND MAINTENANCE DETAILS AND RISK ASSESSMENT WITH REGARDS TO MAINTENANCE OF PROPRIETARY SYSTEMS.
- CONSTRUCTION NOTE
  - a. THE MAIN CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF ALL TEMPORARY WORKS, AND IS ALSO RESPONSIBLE FOR THE SAFE MAINTENANCE AND STABILITY OF EXISTING BUILDINGS AT ALL TIMES.
  - b. THE MAIN CONTRACTOR IS RESPONSIBLE FOR ALL OCCURRENCES OF GROUND WATER DURING THE CONSTRUCTION PERIOD.
  - c. ANY INFORMATION GIVEN REGARDING EXISTING UNDERGROUND SERVICES IS GIVEN IN GOOD FAITH AFTER CONSULTATION WITH THE RELEVANT AUTHORITY, HOWEVER ACCURACY IS NOT CERTAIN. THE MAIN CONTRACTOR IS RESPONSIBLE FOR CHECKING ALL INFORMATION ON SITE PRIOR TO WORK COMMENCING AND TAKING DUE CARE AND ATTENTION WHILST UNDERTAKING THE WORKS.
  - d. THE CONTRACTOR MUST COMPLY WITH ALL CURRENT LEGISLATION RELATING TO HEALTH & SAFETY.
  - e. ALL PRODUCTS SPECIFIED SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS AND INSTRUCTIONS. IF THERE ARE DISCREPANCIES BETWEEN THAT INFORMATION AND THE DETAILS ON ANY MERIDIAN DRAWINGS, THE MANUFACTURERS INSTRUCTIONS MUST BE USED.
- BELOW GROUND DRAINAGE
  - a. UPVC-U PIPES TO BS 4660 - 2000 AND PLASTIC INSPECTION CHAMBERS AND FITTINGS TO BS EN 13598-1:2020. CLAY PIPES TO BS EN 295-1:2013. CONCRETE MANHOLE AND INSPECTION CHAMBERS TO BS EN 1917:2002
  - b. ALL ADAPTABLE DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH SEWERAGE SECTOR GUIDANCE App C - DESIGN AND CONSTRUCTION GUIDANCE AND THE RELEVANT COUNCIL DESIGN GUIDE.
  - c. ALL PRIVATE FOUL WATER SEWERS TO BE LAID AT 1 IN 40 AT THE HEAD OF PIPE RUNS AND 1 IN 80 ELSEWHERE UNLESS OTHERWISE STATED.
  - d. ALL PRIVATE FOUL SEWER PIPES TO BE 100mm DIAMETER FROM SOIL STACKS UNLESS OTHERWISE STATED ON THE DRAWING AND 150mm WHERE SERVING MORE THAN 9 PROPERTIES.
  - e. ALL PRIVATE SURFACE WATER SEWERS TO BE LAID AT 1 IN 100 UNLESS OTHERWISE STATED ON THE DRAWING.
  - f. ALL PRIVATE SURFACE WATER SEWER PIPES TO BE 100mm DIAMETER FROM DOWNPIPES OR SOIL STACKS DO NOT HAVE A DIRECT CONNECTION TO AN INSPECTION CHAMBER.
  - g. ALLOW FOR RODDING ACCESS ABOVE GROUND WHERE RAINWATER DOWNPIPES OR SOIL STACKS DO NOT HAVE A DIRECT CONNECTION TO AN INSPECTION CHAMBER.
  - h. EXISTING SEWER PIPE TO BE RE-USED TO BE SURVEYED AND LEVELED PRIOR TO COMMENCEMENT OF THE DRAINAGE WORKS AND REBURISHED IF NECESSARY.
  - i. CONNECTIONS TO AN ADOPTED SEWER ONLY TO BE MADE FOLLOWING APPROVAL FROM THE RELEVANT ADOPTING AUTHORITY.
  - j. ALL DRAINS, SEWER PIPES AND MANHOLES TO BE CLEANED AND TESTED FOR WATER TIGHTNESS ON COMPLETION OF CONSTRUCTION.
- MANHOLE COVERS AND FRAMES
  - a. MANHOLE COVERS TO BE CLASS D400 IN HIGHWAYS, CLASS B125 IN FOOTWAYS AND VERGES, CLASS A15 IN NON-TRAFFICKED AREAS.
  - b. MANHOLE COVER AND FRAME TO BE BEDDED AND SURROUNDED IN 1:3 MORTAR.

#### LEGEND

|  |                                                          |
|--|----------------------------------------------------------|
|  | PROPOSED SW PIPE RUN - DESIGNED BY MCEC                  |
|  | HEADWALL                                                 |
|  | PROPOSED SW RODDING EYE                                  |
|  | PROPOSED PERFORATED SW DRAIN                             |
|  | PROPOSED TYPE D SW INSPECTION CHAMBER                    |
|  | PROPOSED TYPE E SW INSPECTION CHAMBER                    |
|  | PERMEABLE PAVING - TANKED                                |
|  | GEOCELLULAR ATTENUATION - TANKED                         |
|  | CATCHPIT CHAMBER/MANHOLE                                 |
|  | PROPOSED ORIFICE PLATE MANHOLE                           |
|  | PROPOSED HYDROBRAKE MANHOLE                              |
|  | PROPOSED SW RAINWATER PIPE                               |
|  | PROPOSED SW BOTTLE GULLY                                 |
|  | DIFFUSER UNIT                                            |
|  | EXISTING PRIVATE INSPECTION CHAMBER / MANHOLE - RETAINED |
|  | EXISTING PRIVATE FW RUN - RETAINED                       |
|  | PROPOSED FW PIPE RUN                                     |
|  | PROPOSED TYPE D FW INSPECTION CHAMBER                    |
|  | PROPOSED TYPE E FW INSPECTION CHAMBER                    |

|                     |              |     |       |
|---------------------|--------------|-----|-------|
| REV:                | DESCRIPTION: | BY: | DATE: |
| STATUS: PRELIMINARY |              |     |       |

**MERIDIAN**  
CIVIL ENGINEERING CONSULTANCY

CLIENT: Westfield Investments Ltd

SITE: The Paddock, London Road  
Hassocks, BN6 9NA

TITLE: Proposed Surface and Foul Water  
Drainage Layout

|                       |                      |                   |          |
|-----------------------|----------------------|-------------------|----------|
| SCALE AT A1:<br>1:200 | DATE:<br>18/08/2026  | DRAWN:<br>GH / EM | CHECKED: |
| PROJECT NO:<br>MC0020 | DRAWING NO:<br>CIV01 | REVISION:         | P2       |

1:200 @ A1  
0 2m 4m 6m 8m 10m

## APPENDIX IV Calculations

Simulation Settings

|                      |          |                            |        |                         |   |
|----------------------|----------|----------------------------|--------|-------------------------|---|
| Rainfall Methodology | FEH-22   | Analysis Speed             | Normal | Starting Level (m)      |   |
| Rainfall Events      | Singular | Skip Steady State          | x      | Check Discharge Rate(s) | x |
| Summer CV            | 1.000    | Drain Down Time (mins)     | 1440   | Check Discharge Volume  | x |
| Winter CV            | 1.000    | Additional Storage (m³/ha) | 0.0    |                         |   |

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440 | 2160 | 2880

| Return Period<br>(years) | Climate Change<br>(CC %) | Additional Area<br>(A %) | Additional Flow<br>(Q %) | Return Period<br>(years) | Climate Change<br>(CC %) | Additional Area<br>(A %) | Additional Flow<br>(Q %) |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 2                        | 0                        | 10                       | 0                        | 100                      | 0                        | 10                       | 0                        |
| 30                       | 0                        | 10                       | 0                        | 100                      | 45                       | 10                       | 0                        |

### Design Settings

|                                      |        |                                    |               |
|--------------------------------------|--------|------------------------------------|---------------|
| Rainfall Methodology                 | FEH-22 | Minimum Velocity (m/s)             | 1.00          |
| Return Period (years)                | 100    | Connection Type                    | Level Soffits |
| Additional Flow (%)                  | 45     | Minimum Backdrop Height (m)        | 0.200         |
| CV                                   | 1.000  | Preferred Cover Depth (m)          | 1.200         |
| Time of Entry (mins)                 | 4.00   | Include Intermediate Ground        | ✓             |
| Maximum Time of Concentration (mins) | 30.00  | Enforce best practice design rules | ✓             |
| Maximum Rainfall (mm/hr)             | 50.0   |                                    |               |

### Nodes

| Name        | Area<br>(ha) | T of E<br>(mins) | Cover<br>Level<br>(m) | Diameter<br>(mm) | Easting<br>(m) | Northing<br>(m) | Depth<br>(m) | Invert<br>Level<br>(m) |
|-------------|--------------|------------------|-----------------------|------------------|----------------|-----------------|--------------|------------------------|
| 1           | 0.017        | 4.00             | 35.000                | 450              | 214.144        | -26.380         | 0.672        | 34.328                 |
| 2           | 0.017        | 4.00             | 35.000                | 600              | 204.415        | -48.806         | 0.600        | 34.400                 |
| 3           | 0.014        | 4.00             | 35.000                | 600              | 204.935        | -43.505         | 1.017        | 33.983                 |
| ATTENUATION |              |                  | 35.000                |                  | 211.716        | -44.854         | 1.236        | 33.764                 |
| 6           |              |                  | 34.200                | 600              | 219.529        | -63.957         | 0.602        | 33.598                 |
| CAR PARK    | 0.088        | 4.00             | 35.326                |                  | 189.098        | -43.699         | 0.726        | 34.600                 |
| 8           |              | 4.00             | 35.000                | 150              | 215.973        | -14.288         | 0.550        | 34.450                 |
| FC          |              |                  | 35.000                | 1200             | 209.911        | -56.450         | 1.314        | 33.686                 |

### Links

| Name  | US<br>Node  | DS<br>Node  | Length<br>(m) | ks (mm) /<br>n | US IL<br>(m) | DS IL<br>(m) | Fall<br>(m) | Slope<br>(1:X) | Dia<br>(mm) | T of C<br>(mins) | Rain<br>(mm/hr) |
|-------|-------------|-------------|---------------|----------------|--------------|--------------|-------------|----------------|-------------|------------------|-----------------|
| 1.000 | 8           | 1           | 12.230        | 0.600          | 34.450       | 34.328       | 0.122       | 100.0          | 150         | 4.20             | 50.0            |
| 1.001 | 1           | ATTENUATION | 18.633        | 0.600          | 34.328       | 33.889       | 0.439       | 42.4           | 100         | 4.46             | 50.0            |
| 2.000 | CAR PARK    | 3           | 15.838        | 0.600          | 34.600       | 33.983       | 0.617       | 25.7           | 225         | 4.10             | 50.0            |
| 3.000 | 2           | 3           | 5.326         | 0.600          | 34.400       | 34.108       | 0.292       | 18.2           | 100         | 4.05             | 50.0            |
| 2.001 | 3           | ATTENUATION | 6.914         | 0.600          | 33.983       | 33.937       | 0.046       | 150.0          | 225         | 4.21             | 50.0            |
| 1.002 | ATTENUATION | FC          | 11.736        | 0.600          | 33.764       | 33.686       | 0.078       | 150.0          | 225         | 4.65             | 50.0            |
| 1.003 | FC          | 6           | 12.201        | 0.600          | 33.686       | 33.598       | 0.088       | 138.6          | 225         | 4.83             | 50.0            |

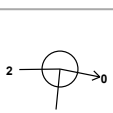
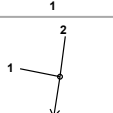
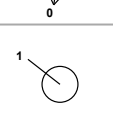
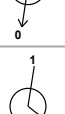
| Name  | Vel<br>(m/s) | Cap<br>(l/s) | Flow<br>(l/s) | US<br>Depth<br>(m) | DS<br>Depth<br>(m) | Σ Area<br>(ha) | Σ Add<br>Inflow<br>(l/s) | Pro<br>Depth<br>(mm) | Pro<br>Velocity<br>(m/s) |
|-------|--------------|--------------|---------------|--------------------|--------------------|----------------|--------------------------|----------------------|--------------------------|
| 1.000 | 1.005        | 17.8         | 0.0           | 0.400              | 0.522              | 0.000          | 0.0                      | 0                    | 0.000                    |
| 1.001 | 1.186        | 9.3          | 4.4           | 0.572              | 1.011              | 0.017          | 0.0                      | 49                   | 1.175                    |
| 2.000 | 2.592        | 103.1        | 23.1          | 0.501              | 0.792              | 0.088          | 0.0                      | 73                   | 2.107                    |
| 3.000 | 1.817        | 14.3         | 4.5           | 0.500              | 0.792              | 0.017          | 0.0                      | 39                   | 1.613                    |
| 2.001 | 1.065        | 42.3         | 31.1          | 0.792              | 0.838              | 0.119          | 0.0                      | 144                  | 1.161                    |
| 1.002 | 1.065        | 42.3         | 35.5          | 1.011              | 1.089              | 0.136          | 0.0                      | 159                  | 1.190                    |
| 1.003 | 1.108        | 44.1         | 35.5          | 1.089              | 0.377              | 0.136          | 0.0                      | 153                  | 1.229                    |

### Pipeline Schedule

| Link  | Length<br>(m) | Slope<br>(1:X) | Dia<br>(mm) | Link<br>Type | US CL<br>(m) | US IL<br>(m) | US Depth<br>(m) | DS CL<br>(m) | DS IL<br>(m) | DS Depth<br>(m) |
|-------|---------------|----------------|-------------|--------------|--------------|--------------|-----------------|--------------|--------------|-----------------|
| 1.000 | 12.230        | 100.0          | 150         | SW_Standard  | 35.000       | 34.450       | 0.400           | 35.000       | 34.328       | 0.522           |
| 1.001 | 18.633        | 42.4           | 100         | SW_600 cover | 35.000       | 34.328       | 0.572           | 35.000       | 33.889       | 1.011           |
| 2.000 | 15.838        | 25.7           | 225         | SW_Standard  | 35.326       | 34.600       | 0.501           | 35.000       | 33.983       | 0.792           |
| 3.000 | 5.326         | 18.2           | 100         | SW_Standard  | 35.000       | 34.400       | 0.500           | 35.000       | 34.108       | 0.792           |
| 2.001 | 6.914         | 150.0          | 225         | SW_600 cover | 35.000       | 33.983       | 0.792           | 35.000       | 33.937       | 0.838           |
| 1.002 | 11.736        | 150.0          | 225         | SW_Standard  | 35.000       | 33.764       | 1.011           | 35.000       | 33.686       | 1.089           |
| 1.003 | 12.201        | 138.6          | 225         | SW_Standard  | 35.000       | 33.686       | 1.089           | 34.200       | 33.598       | 0.377           |

| Link  | US<br>Node  | Dia<br>(mm) | Node<br>Type | MH<br>Type  | DS<br>Node  | Dia<br>(mm) | Node<br>Type | MH<br>Type  |
|-------|-------------|-------------|--------------|-------------|-------------|-------------|--------------|-------------|
| 1.000 | 8           | 150         | Manhole      | SW_RE       | 1           | 450         | Manhole      | SW_Standard |
| 1.001 | 1           | 450         | Manhole      | SW_Standard | ATTENUATION |             | Junction     |             |
| 2.000 | CAR PARK    |             | Junction     |             | 3           | 600         | Manhole      | SW_Standard |
| 3.000 | 2           | 600         | Manhole      | SW_Standard | 3           | 600         | Manhole      | SW_Standard |
| 2.001 | 3           | 600         | Manhole      | SW_Standard | ATTENUATION |             | Junction     |             |
| 1.002 | ATTENUATION |             | Junction     |             | FC          | 1200        | Manhole      | SW_HB       |
| 1.003 | FC          | 1200        | Manhole      | SW_HB       | 6           | 600         | Manhole      | SW_Standard |

### Manhole Schedule

| Node        | CL<br>(m) | Depth<br>(m) | Dia<br>(mm) | Node<br>Type | MH<br>Type  | Connections                                                                         | Link  | IL<br>(m) | Dia<br>(mm) | Link<br>Type |
|-------------|-----------|--------------|-------------|--------------|-------------|-------------------------------------------------------------------------------------|-------|-----------|-------------|--------------|
| 1           | 35.000    | 0.672        | 450         | Manhole      | SW_Standard |  | 1.000 | 34.328    | 150         | SW_Standard  |
| 2           | 35.000    | 0.600        | 600         | Manhole      | SW_Standard |  | 1.001 | 34.328    | 100         | SW_600 cover |
| 3           | 35.000    | 1.017        | 600         | Manhole      | SW_Standard |  | 3.000 | 34.400    | 100         | SW_Standard  |
| ATTENUATION | 35.000    | 1.236        |             | Junction     |             |  | 2.000 | 33.983    | 225         | SW_Standard  |
| 6           | 34.200    | 0.602        | 600         | Manhole      | SW_Standard |  | 2.001 | 33.937    | 225         | SW_600 cover |
| CAR PARK    | 35.326    | 0.726        |             | Junction     |             |  | 1.002 | 33.764    | 225         | SW_Standard  |
| 8           | 35.000    | 0.550        | 150         | Manhole      | SW_RE       |  | 1.003 | 33.598    | 225         | SW_Standard  |
| FC          | 35.000    | 1.314        | 1200        | Manhole      | SW_HB       |  | 1.000 | 34.450    | 150         | SW_Standard  |
|             |           |              |             |              |             |  | 1.002 | 33.686    | 225         | SW_Standard  |

### Node 5 Online Hydro-Brake® Control

|                          |       |                         |                                |
|--------------------------|-------|-------------------------|--------------------------------|
| Flap Valve               | x     | Objective               | (HE) Minimise upstream storage |
| Replaces Downstream Link | x     | Sump Available          | ✓                              |
| Invert Level (m)         | 0.000 | Product Number          | CTL-SHE-0050-1000-0750-1000    |
| Design Depth (m)         | 0.750 | Min Outlet Diameter (m) | 0.075                          |
| Design Flow (l/s)        | 1.0   | Min Node Diameter (mm)  | 1200                           |

### Node CAR PARK Online Orifice Control

|                          |        |                   |       |                       |       |
|--------------------------|--------|-------------------|-------|-----------------------|-------|
| Flap Valve               | x      | Design Depth (m)  | 0.300 | Discharge Coefficient | 0.600 |
| Replaces Downstream Link | x      | Design Flow (l/s) | 3.0   |                       |       |
| Invert Level (m)         | 34.600 | Diameter (m)      | 0.030 |                       |       |

### Node FC Online Hydro-Brake® Control

|                          |        |                         |                                |
|--------------------------|--------|-------------------------|--------------------------------|
| Flap Valve               | x      | Objective               | (HE) Minimise upstream storage |
| Replaces Downstream Link | x      | Sump Available          | ✓                              |
| Invert Level (m)         | 33.686 | Product Number          | CTL-SHE-0050-1000-0750-1000    |
| Design Depth (m)         | 0.750  | Min Outlet Diameter (m) | 0.075                          |
| Design Flow (l/s)        | 1.0    | Min Node Diameter (mm)  | 1200                           |

### Node ATTENUATION Depth/Area Storage Structure

|                             |         |               |      |                           |        |
|-----------------------------|---------|---------------|------|---------------------------|--------|
| Base Inf Coefficient (m/hr) | 0.00000 | Safety Factor | 2.0  | Invert Level (m)          | 33.764 |
| Side Inf Coefficient (m/hr) | 0.00000 | Porosity      | 0.95 | Time to half empty (mins) |        |

| Depth (m) | Area (m²) | Inf Area (m²) | Depth (m) | Area (m²) | Inf Area (m²) | Depth (m) | Area (m²) | Inf Area (m²) |
|-----------|-----------|---------------|-----------|-----------|---------------|-----------|-----------|---------------|
| 0.000     | 150.0     | 0.0           | 0.600     | 150.0     | 0.0           | 0.601     | 0.0       | 0.0           |

### Node CAR PARK Carpark Storage Structure

|                             |         |                           |        |               |        |
|-----------------------------|---------|---------------------------|--------|---------------|--------|
| Base Inf Coefficient (m/hr) | 0.00000 | Invert Level (m)          | 34.600 | Slope (1:X)   | 9999.0 |
| Side Inf Coefficient (m/hr) | 0.00000 | Time to half empty (mins) | 960    | Depth (m)     | 0.600  |
| Safety Factor               | 2.0     | Width (m)                 | 49.500 | Inf Depth (m) |        |
| Porosity                    | 0.30    | Length (m)                | 10.000 |               |        |

Results for 2 year +10% A Critical Storm Duration. Lowest mass balance: 99.56%

| Node Event        | US Node     | Peak (mins) | Level (m) | Depth (m) | Inflow (l/s) | Node Vol (m³) | Flood (m³) | Status |
|-------------------|-------------|-------------|-----------|-----------|--------------|---------------|------------|--------|
| 15 minute summer  | 1           | 10          | 34.374    | 0.046     | 3.9          | 0.0073        | 0.0000     | OK     |
| 15 minute summer  | 2           | 10          | 34.438    | 0.038     | 3.9          | 0.0108        | 0.0000     | OK     |
| 15 minute summer  | 3           | 10          | 34.048    | 0.065     | 7.2          | 0.0183        | 0.0000     | OK     |
| 720 minute summer | ATTENUATION | 615         | 33.840    | 0.076     | 3.4          | 10.8563       | 0.0000     | OK     |
| 480 minute summer | 6           | 456         | 33.621    | 0.023     | 0.9          | 0.0000        | 0.0000     | OK     |
| 720 minute summer | CAR PARK    | 480         | 34.743    | 0.143     | 3.0          | 21.1952       | 0.0000     | OK     |
| 15 minute summer  | 8           | 1           | 34.450    | 0.000     | 0.0          | 0.0000        | 0.0000     | OK     |
| 480 minute summer | FC          | 432         | 33.852    | 0.166     | 3.5          | 0.1878        | 0.0000     | OK     |

| Link Event<br>(Upstream Depth) | US Node     | Link  | DS Node     | Outflow (l/s) | Velocity (m/s) | Flow/Cap | Link Vol (m³) | Discharge Vol (m³) |
|--------------------------------|-------------|-------|-------------|---------------|----------------|----------|---------------|--------------------|
| 15 minute summer               | 1           | 1.001 | ATTENUATION | 3.9           | 1.126          | 0.418    | 0.0645        |                    |
| 15 minute summer               | 2           | 3.000 | 3           | 3.9           | 1.481          | 0.273    | 0.0140        |                    |
| 15 minute summer               | 3           | 2.001 | ATTENUATION | 7.2           | 0.783          | 0.170    | 0.0634        |                    |
| 720 minute summer              | ATTENUATION | 1.002 | FC          | 3.4           | 0.240          | 0.080    | 0.2477        |                    |
| 720 minute summer              | CAR PARK    | 2.000 | 3           | 0.7           | 0.498          | 0.007    | 0.0320        |                    |
| 15 minute summer               | 8           | 1.000 | 1           | 0.0           | 0.000          | 0.000    | 0.0278        |                    |
| 480 minute summer              | FC          | 1.003 | 6           | 0.9           | 0.447          | 0.021    | 0.0256        | 46.6               |

Results for 30 year +10% A Critical Storm Duration. Lowest mass balance: 99.70%

| Node Event                     | US Node     | Peak (mins) | Level (m)   | Depth (m)     | Inflow (l/s)   | Node Vol (m³) | Flood (m³)    | Status             |
|--------------------------------|-------------|-------------|-------------|---------------|----------------|---------------|---------------|--------------------|
| 15 minute summer               | 1           | 10          | 34.415      | 0.087         | 9.6            | 0.0138        | 0.0000        | OK                 |
| 15 minute summer               | 2           | 10          | 34.468      | 0.068         | 9.7            | 0.0194        | 0.0000        | OK                 |
| 15 minute summer               | 3           | 10          | 34.089      | 0.106         | 17.8           | 0.0301        | 0.0000        | OK                 |
| 960 minute summer              | ATTENUATION | 975         | 33.974      | 0.210         | 4.7            | 29.9293       | 0.0000        | OK                 |
| 240 minute summer              | 6           | 240         | 33.621      | 0.023         | 1.0            | 0.0000        | 0.0000        | OK                 |
| 600 minute summer              | CAR PARK    | 450         | 34.886      | 0.286         | 6.3            | 42.3251       | 0.0000        | SURCHARGED         |
| 15 minute summer               | 8           | 1           | 34.450      | 0.000         | 0.0            | 0.0000        | 0.0000        | OK                 |
| 960 minute summer              | FC          | 975         | 33.977      | 0.291         | 3.0            | 0.3296        | 0.0000        | SURCHARGED         |
| Link Event<br>(Upstream Depth) | US Node     | Link        | DS Node     | Outflow (l/s) | Velocity (m/s) | Flow/Cap      | Link Vol (m³) | Discharge Vol (m³) |
| 15 minute summer               | 1           | 1.001       | ATTENUATION | 9.5           | 1.335          | 1.024         | 0.1383        |                    |
| 15 minute summer               | 2           | 3.000       | 3           | 9.7           | 1.815          | 0.680         | 0.0284        |                    |
| 15 minute summer               | 3           | 2.001       | ATTENUATION | 17.8          | 0.998          | 0.421         | 0.1235        |                    |
| 960 minute summer              | ATTENUATION | 1.002       | FC          | 3.0           | 0.232          | 0.070         | 0.4599        |                    |
| 600 minute summer              | CAR PARK    | 2.000       | 3           | 1.0           | 0.577          | 0.009         | 0.0475        |                    |
| 15 minute summer               | 8           | 1.000       | 1           | 0.0           | 0.000          | 0.000         | 0.0648        |                    |
| 960 minute summer              | FC          | 1.003       | 6           | 1.0           | 0.451          | 0.022         | 0.0262        | 104.5              |

Results for 100 year +10% A Critical Storm Duration. Lowest mass balance: 99.64%

| Node Event                     | US Node     | Peak (mins) | Level (m)   | Depth (m)     | Inflow (l/s)   | Node Vol (m³) | Flood (m³)    | Status             |
|--------------------------------|-------------|-------------|-------------|---------------|----------------|---------------|---------------|--------------------|
| 15 minute summer               | 1           | 11          | 34.552      | 0.224         | 12.0           | 0.0357        | 0.0000        | SURCHARGED         |
| 15 minute summer               | 2           | 10          | 34.484      | 0.084         | 12.2           | 0.0239        | 0.0000        | OK                 |
| 15 minute summer               | 3           | 10          | 34.105      | 0.122         | 22.4           | 0.0345        | 0.0000        | OK                 |
| 2160 minute summer             | ATTENUATION | 2160        | 34.102      | 0.338         | 3.5            | 48.2209       | 0.0000        | SURCHARGED         |
| 240 minute summer              | 6           | 992         | 33.621      | 0.023         | 1.0            | 0.0000        | 0.0000        | OK                 |
| 720 minute summer              | CAR PARK    | 525         | 34.965      | 0.365         | 7.0            | 54.1816       | 0.0000        | SURCHARGED         |
| 15 minute summer               | 8           | 11          | 34.556      | 0.106         | 1.6            | 0.0019        | 0.0000        | OK                 |
| 2160 minute summer             | FC          | 2220        | 34.103      | 0.417         | 3.3            | 0.4718        | 0.0000        | SURCHARGED         |
| Link Event<br>(Upstream Depth) | US Node     | Link        | DS Node     | Outflow (l/s) | Velocity (m/s) | Flow/Cap      | Link Vol (m³) | Discharge Vol (m³) |
| 15 minute summer               | 1           | 1.001       | ATTENUATION | 10.2          | 1.313          | 1.098         | 0.1443        |                    |
| 15 minute summer               | 2           | 3.000       | 3           | 12.2          | 1.864          | 0.855         | 0.0347        |                    |
| 15 minute summer               | 3           | 2.001       | ATTENUATION | 22.4          | 1.056          | 0.529         | 0.1466        |                    |
| 2160 minute summer             | ATTENUATION | 1.002       | FC          | 3.3           | 0.206          | 0.078         | 0.4668        |                    |
| 720 minute summer              | CAR PARK    | 2.000       | 3           | 1.1           | 0.548          | 0.011         | 0.0818        |                    |
| 15 minute summer               | 8           | 1.000       | 1           | -1.6          | 0.110          | -0.092        | 0.1892        |                    |
| 2160 minute summer             | FC          | 1.003       | 6           | 1.0           | 0.451          | 0.022         | 0.0262        | 167.5              |

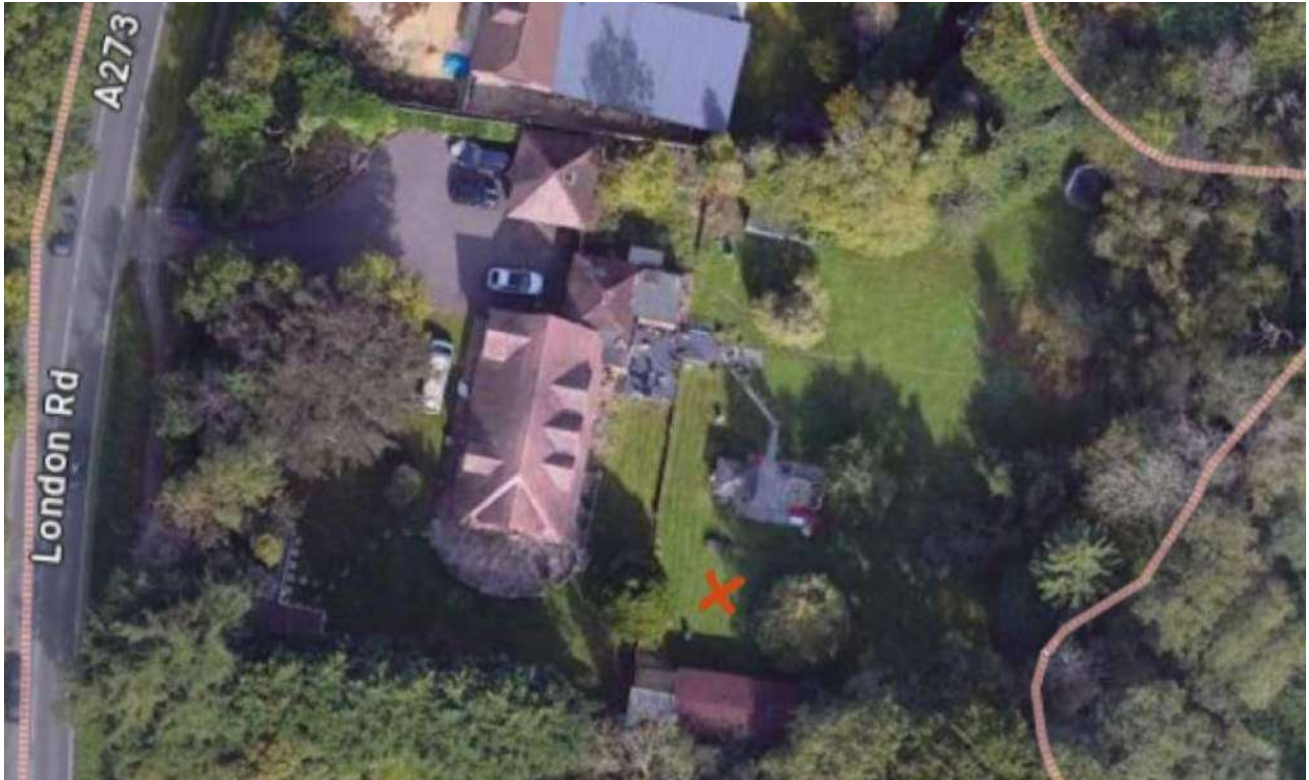
Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 99.74%

| Node Event                     | US Node     | Peak (mins) | Level (m)   | Depth (m)     | Inflow (l/s)   | Node Vol (m³) | Flood (m³)    | Status             |
|--------------------------------|-------------|-------------|-------------|---------------|----------------|---------------|---------------|--------------------|
| 15 minute summer               | 1           | 11          | 34.911      | 0.583         | 17.4           | 0.0927        | 0.0000        | FLOOD RISK         |
| 15 minute summer               | 2           | 10          | 34.741      | 0.341         | 17.6           | 0.0966        | 0.0000        | FLOOD RISK         |
| 2160 minute summer             | 3           | 2160        | 34.719      | 0.736         | 2.6            | 0.2084        | 0.0000        | FLOOD RISK         |
| 2160 minute summer             | ATTENUATION | 2160        | 34.719      | 0.955         | 3.4            | 85.5713       | 0.0000        | FLOOD RISK         |
| 2160 minute summer             | 6           | 2160        | 33.623      | 0.025         | 1.1            | 0.0000        | 0.0000        | OK                 |
| 960 minute summer              | CAR PARK    | 690         | 35.155      | 0.555         | 8.3            | 82.2941       | 0.0000        | FLOOD RISK         |
| 15 minute summer               | 8           | 11          | 34.914      | 0.464         | 3.7            | 0.0084        | 0.0000        | FLOOD RISK         |
| 2160 minute summer             | FC          | 2160        | 34.719      | 1.033         | 3.6            | 1.1686        | 0.0000        | FLOOD RISK         |
| Link Event<br>(Upstream Depth) | US Node     | Link        | DS Node     | Outflow (l/s) | Velocity (m/s) | Flow/Cap      | Link Vol (m³) | Discharge Vol (m³) |
| 15 minute summer               | 1           | 1.001       | ATTENUATION | 13.1          | 1.670          | 1.402         | 0.1443        |                    |
| 15 minute summer               | 2           | 3.000       | 3           | 16.7          | 2.130          | 1.168         | 0.0416        |                    |
| 2160 minute summer             | 3           | 2.001       | ATTENUATION | 2.6           | 0.581          | 0.062         | 0.2750        |                    |
| 2160 minute summer             | ATTENUATION | 1.002       | FC          | 3.6           | 0.223          | 0.085         | 0.4668        |                    |
| 960 minute summer              | CAR PARK    | 2.000       | 3           | 1.4           | 0.386          | 0.013         | 0.3268        |                    |
| 15 minute summer               | 8           | 1.000       | 1           | -3.7          | -0.213         | -0.211        | 0.2153        |                    |
| 2160 minute summer             | FC          | 1.003       | 6           | 1.1           | 0.474          | 0.026         | 0.0294        | 179.2              |

## APPENDIX V Infiltration Test Results

## Appendix C

### Infiltration Tests

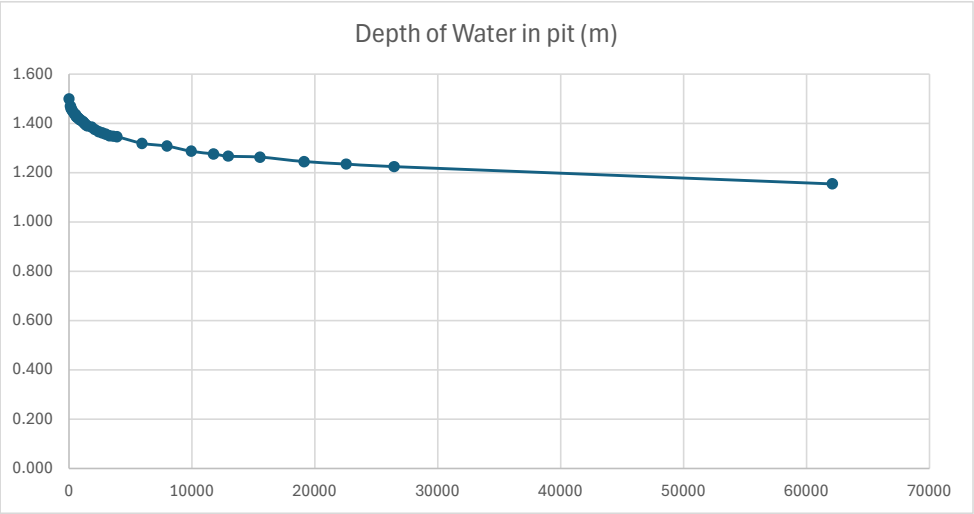




# Water Infiltration Test Sheet

Address: The Paddock, London Road, Hassocks, BN6 9NA  
Date: 27/08/2024

| TIME  | ELAPSED  | ELAPSED (sec) | Depth of water in pit (m)* |
|-------|----------|---------------|----------------------------|
| 14:04 | 0        | 0             | 1.500                      |
| 14:06 | 02:00    | 120           | 1.470                      |
| 14:07 | 03:00    | 180           | 1.460                      |
| 14:08 | 04:00    | 240           | 1.455                      |
| 14:09 | 05:00    | 300           | 1.450                      |
| 14:11 | 07:00    | 420           | 1.440                      |
| 14:13 | 09:00    | 540           | 1.436                      |
| 14:14 | 10:00    | 600           | 1.428                      |
| 14:15 | 11:00    | 660           | 1.426                      |
| 14:16 | 12:00    | 720           | 1.424                      |
| 14:17 | 13:00    | 780           | 1.420                      |
| 14:18 | 14:00    | 840           | 1.417                      |
| 14:19 | 15:00    | 900           | 1.414                      |
| 14:21 | 17:00    | 1020          | 1.411                      |
| 14:23 | 19:00    | 1140          | 1.408                      |
| 14:24 | 20:00    | 1200          | 1.403                      |
| 14:25 | 21:00    | 1260          | 1.400                      |
| 14:27 | 23:00    | 1380          | 1.394                      |
| 14:29 | 25:00    | 1500          | 1.391                      |
| 14:35 | 31:00    | 1860          | 1.385                      |
| 14:39 | 35:00    | 2100          | 1.375                      |
| 14:44 | 40:00    | 2400          | 1.367                      |
| 14:49 | 45:00    | 2700          | 1.361                      |
| 14:54 | 50:00    | 3000          | 1.356                      |
| 14:59 | 55:00    | 3300          | 1.350                      |
| 15:04 | 1:00:00  | 3600          | 1.348                      |
| 15:09 | 1:05:00  | 3900          | 1.346                      |
| 15:43 | 1:39:00  | 5940          | 1.319                      |
| 16:17 | 2:13:00  | 7980          | 1.308                      |
| 16:50 | 2:46:00  | 9960          | 1.287                      |
| 17:20 | 3:16:00  | 11760         | 1.276                      |
| 17:40 | 3:36:00  | 12960         | 1.267                      |
| 18:23 | 4:19:00  | 15540         | 1.263                      |
| 19:23 | 5:19:00  | 19140         | 1.245                      |
| 20:20 | 6:16:00  | 22560         | 1.235                      |
| 21:25 | 7:21:00  | 26460         | 1.225                      |
| 07:19 | 17:15:00 | 62100         | 1.155                      |



75% 1.125  
25% 0.375

## APPENDIX VI EA Letter 20/05/2026

Mid Sussex District Council -  
Development Control  
OAKLANDS ROAD, HAYWARDS  
HEATH, RH16 1SS

Reference: PA-0003770/01  
Customer reference: DM/26/0649  
20 May 2026

**Redevelopment of existing house to provide for 3 detached chalet height dwellings**

**THE PADDOCK LONDON ROAD HASSOCKS MID SUSSEX DISTRICT BN6 9NA**

Dear Planning Officer,

Thank you for contacting us. This is our response to your consultation DM/26/0649.

**Environment Agency position**

We have **no objection** to the proposed development.

**Advice to applicant**

Environmental permit

The Environmental Permitting (England and Wales) Regulations 2016 require a permit or exemption to be obtained for any activities which will take place:

- on or within 8 metres of a main river (16 metres if tidal)
- on or within 8 metres of a flood defence structure or culverted main river (16 metres if tidal)

For further guidance please visit <https://www.gov.uk/guidance/flood-risk-activities-environmental-permits> or contact our National Customer Contact Centre on 03708 506 506 (Monday to Friday, 8am to 6pm) or by emailing [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk).

The applicant should not assume that a permit will automatically be forthcoming once planning permission has been granted, and we advise them to consult with us at the earliest opportunity.

creating a better place  
for people and wildlife



If you have any questions regarding our response, please contact  
[planningssd@environment-agency.gov.uk](mailto:planningssd@environment-agency.gov.uk).

Yours sincerely,

John Fanning

Planning Advisor

[planningssd@environment-agency.gov.uk](mailto:planningssd@environment-agency.gov.uk)

Romsey Depot, The Gables, Canal Walk, Romsey, Hampshire, SO51 7LP

## APPENDIX VII Southern Water Records from GTA Civils & Transports Ltd's previous drainage statement

