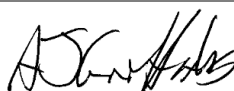




45 The Broadway, Haywards Heath, RH16 3AS  
Drainage Strategy

| Revision | Status               | Description | Issued by | Checked      | Date       |
|----------|----------------------|-------------|-----------|--------------|------------|
| P01      | S2 – For Information | First issue | R White   | C Blagbrough | 04/08/2025 |
|          |                      |             |           |              |            |
|          |                      |             |           |              |            |

| Prepared by: | Signed:                                                                            | Date       |
|--------------|------------------------------------------------------------------------------------|------------|
| R White      |  | 04/08/2025 |

| Approved by: | Signed:                                                                            | Date       |
|--------------|------------------------------------------------------------------------------------|------------|
| A Griffiths  |  | 04/08/2025 |



45 THE BROADWAY, HAYWARDS HEATH, RH16 3AS

QED Structures Ltd

■ Hove ■ London ■ Watford ■ Leeds ■ Manchester ■ Barcelona

Head Office: 7 Hove Manor Parade, Hove Street, Hove, East Sussex, BN3 2DF

T: +44 (0) 1273 033680 E: [info@qedstructures.co.uk](mailto:info@qedstructures.co.uk)

[www.qedstructures.co.uk](http://www.qedstructures.co.uk)

## TABLE OF CONTENTS

|   |                                       |    |
|---|---------------------------------------|----|
| 1 | Drainage Strategy.....                | 4  |
| 2 | Appendix A – Maintenance manual ..... | 7  |
| 3 | APPENDIX B – Drainage Layout.....     | 9  |
| 4 | APPENDIX C – Details.....             | 10 |
| 5 | APPENDIX D – Calculations .....       | 11 |

| 1 Drainage Strategy                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                             |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Item                                     | Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Reference /comment                                                                          |
| <b>Method of Foul Water Discharge</b>    | Foul water flows are to drain to the existing foul water connection, noted as 3.8m deep in the site CCTV survey.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | The existing connection remains to serve the new flats                                      |
| <b>Foul Water Discharge Volumes</b>      | <p>British Water "Flows and load 4" estimates the flows per person to be 150 litres/person/day (higher than the water usage in a new dwelling of 125 litres/person/day required by Building Regulations Part G.</p> <p>For groups of small 1 and 2-bedroom flats, allow 3 people for a flat with 1 bedroom and 4 people for a flat with 2 bedrooms. So, for 4 one-bedroom flats and 5 two-bedroom flats:</p> <p><math>(1 \times 3) + (3 \times 4) = 15</math> People</p> <p>15 domestic residents can be expected to generate a flow of 2,250 litres per day at 150 l per person (British Water Flows and Loads 4)</p> <p>Building regulation requires 110 litres per person per day, reducing this to 1,650 l/day</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                             |
| <b>Method of Surface Water Discharge</b> | <p>The surface water drainage design proposed for the new dwellings is to follow the drainage hierarchy to ensure the site reflects the natural flows from the site as closely as possible:</p> <ol style="list-style-type: none"> <li>1. Rainwater reuse<br/>Water butts are provided where landscaping is likely to need irrigation. Internal rainwater recycling is being utilised where practical. However, this cannot be the only surface water solution, as we cannot guarantee that harvested water will be reused.</li> <li>2. Infiltration<br/>There is no space further than &gt;5m from a habitable dwelling, as required by the Soil investigation (see appendix B).</li> <li>3. Discharge to Surface Water or a Watercourse<br/>There are no watercourses close to the site</li> <li>4. Discharge to a Surface Water sewer or a Highway Drain –<br/>Existing surface water connections to the foul system will be broken out, and redirected to the surface water system at a reduced rate of 1l/s (as close as is practical to a greenfield rate).</li> <li>5. Discharge to a Combined Sewer<br/>There are no combined sewers within the locality</li> <li>6. Discharge to a Foul Sewer<br/>Connections to the foul are being removed as part of the works.</li> </ol> <p>Surface water falling onto the roof and hardstanding areas are to be drained to a new flow control chamber in the site entrance.</p> <p>Flows will be conveyed via a piped network and restricted to 1.0 l/s by a 20mm orifice plate flow control. Both attenuation tanks and permeable surfaces will be utilised for storage.</p> | The new connection will be subject to S106 and S104 connection consent from Southern Water. |

Our Ref: [Keywords]  
 Date: [Publish Date]

Page 5 of 11

|                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                    |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
|                                        | The on-site system will be privately maintained by the freehold owners or their representatives in accordance with the guidance to the rear of this document.                                                                                                                                                                                                                                                                                                                                                                                   |                                                    |
| <b>Local Ground Conditions</b>         | A Site Investigation Report (Ref: LS8293, Dated 26TH FEBRUARY 2025) has been undertaken on site by Land Science and found the site to be underlain by made ground to depth. This is unsuitable for infiltration, as it could impact the stability of the building and surroundings.                                                                                                                                                                                                                                                             |                                                    |
| <b>Infiltration Rate</b>               | No infiltration testing has been carried out, as there is insufficient space greater than 5m from the building.                                                                                                                                                                                                                                                                                                                                                                                                                                 | Infiltration was not used for this design.         |
| <b>Surface Water Calculations</b>      | <p>The surface water drainage system has been designed for a 1 in 100-year event, plus an allowance of 40% for climate change.</p> <p>Impermeable areas have had an additional 10% added for urban creep in line with Ciria C753.</p> <p>Contributing Areas</p> <p>Roof Areas = 160 m<sup>2</sup></p> <p>Footpath Area = 120 m<sup>2</sup></p> <p>Total Area = 280 m<sup>2</sup></p> <p>Urban creep not applied due to a 100% impermeable area.</p>                                                                                             | The total impermeable are for the site is 0.028 ha |
| <b>Ground Water</b>                    | The site investigation report confirmed that the natural water table was not encountered during the intrusive works.                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                    |
| <b>Water Quality</b>                   | <p>Where flows from site are exclusively from pedestrian surfaces and roofs. Silt traps will provide sufficient improvements to the water quality in line with guidance in CIRIA C753.</p> <p>The oparking area should be permeable paving to allow sufficient treatment.</p>                                                                                                                                                                                                                                                                   |                                                    |
| <b>Exceedance Flows</b>                | <p>It is proposed that finished floor levels will be raised 150mm above the average ground level to mitigate against the risk of any surface water flooding.</p> <p>Exceedance flows will match the existing flow at a surface level towards the rear.</p> <p>The proposed surface water drainage measures will be designed to contain the peak storm event that can be expected for a 1 in 100-year situation. A 40% allowance has already been applied to the site to account for future climate change, making onsite flooding unlikely.</p> |                                                    |
| <b>Fluvial Flood Risk/ Environment</b> | The Environment Agency flood map for the development site suggests that the site wholly falls within Flood zone 1, which is                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                    |

|                             |                                                                                                                                                                                                                                                                                                                                    |                                                                 |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| <b>Agency Flood Mapping</b> | defined as land assessed as having a less than 1 in 1000 annual probability of river flooding in any one year.<br><br>The surface water flooding maps indicate a medium risk of floodign predevelopment. However the attenuation provided for events up to and including the 1 in 100 year plus climate chance reduce this to low. |                                                                 |
| <b>SuDS Maintenance</b>     | During construction, the SuDS systems will be maintained by the contractor. Upon sale of the last plot, the SuDS drainage system inclusive of paving, bio retention and silt traps are to be maintained by the owner of the freehold or their appointed representative(s).                                                         | Refer to Appendix A for the suggested SuDS Maintenance schedule |
| <b>Other</b>                |                                                                                                                                                                                                                                                                                                                                    |                                                                 |

Table 1 Drainage Strategy

## 2 Appendix A – Maintenance manual

| Item                             | Required Maintenance                                                                                                                                                                                   | Frequency                                                                           |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>Pipe and chambers</b>         | CCTV camera survey, flush, descale, repair as necessary                                                                                                                                                | 5 Years or upon poor performance                                                    |
| <b>Rainwater gardens</b>         | Litter and debris removal.                                                                                                                                                                             | Monthly (or as required).                                                           |
|                                  | Grass cutting – to retain grass height within specified design range.                                                                                                                                  | Monthly (during growing season), or as required.                                    |
|                                  | Manage other vegetation and remove nuisance plants.                                                                                                                                                    | Monthly (at start, then as required).                                               |
|                                  | Check for poor vegetation growth due to lack of sunlight or dropping of leaf litter and cut back adjacent vegetation where possible.                                                                   | Annually.                                                                           |
|                                  | Re-seed areas of poor vegetation growth. Alter plant types to better suit conditions, if required.                                                                                                     | Annually, or if bare soil is exposed over 10 % or more of the swale treatment area. |
|                                  | Repair erosion or other damage by re-turfing or reseeding.                                                                                                                                             | As required.                                                                        |
|                                  | Re-level uneven surfaces and reinstate design levels.                                                                                                                                                  | As required.                                                                        |
|                                  | Scarify and spike topsoil layer to improve infiltration performance, break up silt deposits and prevent compaction of the soil surface.                                                                | As required.                                                                        |
|                                  | Remove build-up of sediment on upstream gravel trench, flow spreader or at top of filter strip.                                                                                                        | As required.                                                                        |
|                                  | Remove and dispose of oils or petrol residues using safe standard practices.                                                                                                                           | As required.                                                                        |
|                                  | Inspect inlets, outlets and overflows for blockages, and clear if required.                                                                                                                            | Monthly.                                                                            |
|                                  | Inspect infiltration surfaces for ponding, compaction, silt accumulation. Record areas where water is ponding for > 48 hours.                                                                          | Monthly, or when required.                                                          |
|                                  | Inspect inlets and facility surface for silt accumulation. Establish appropriate silt removal frequencies                                                                                              | Half yearly.                                                                        |
| <b>Silt traps and catchpits</b>  | Inspect and identify any areas that are not operating correctly. If required, take remedial action.                                                                                                    | Monthly for 3 months, then six monthly                                              |
|                                  | Debris removal from catchment surface (where may cause risks to performance)                                                                                                                           | Monthly                                                                             |
|                                  | Inspection of silt traps and catch pits to assess silt accumulation                                                                                                                                    | Monthly (and after large storms)                                                    |
|                                  | Removal of accumulated silt from silt trap and catch pit sumps                                                                                                                                         | Annually, or as required                                                            |
|                                  | Repair/rehabilitation of inlets, outlet, overflows and vents                                                                                                                                           | As required                                                                         |
|                                  | Inspect/check all inlets, outlets, and overflows to ensure that they are in good condition and operating as designed                                                                                   | Annually and after large storms                                                     |
| <b>Attenuation Storage Tanks</b> | Inspect and identify any areas that are not operating correctly. If required, take remedial action                                                                                                     | Monthly for 3 months, then annually                                                 |
|                                  | Remove debris from the catchment surface (where it may cause risks to performance)                                                                                                                     | Monthly                                                                             |
|                                  | For systems where rainfall infiltrates into the tank from above, check surface of filter for blockage by sediment, algae or other matter; remove and replace surface infiltration medium as necessary. | Annually                                                                            |
|                                  | Remove sediment from pre-treatment structures and/or internal forebays                                                                                                                                 | Annually, or as required                                                            |
|                                  | Repair/rehabilitate inlets, outlet, overflows and vents                                                                                                                                                | As required                                                                         |

|                                          |                                                                                                                                                                                                               |                                        |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
|                                          | Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed                                                                                    | Annually                               |
|                                          | Survey inside of tank for sediment build-up and remove if necessary                                                                                                                                           | Every 5 years or as required           |
| <b>Flow control chambers and devices</b> | Inspect and identify any areas that are not operating correctly. If required, take remedial action.                                                                                                           | Monthly for 3 months, then six monthly |
|                                          | Debris removal from catchment surface (where may cause risks to performance)                                                                                                                                  | Monthly                                |
|                                          | Inspection of flow control chamber to assess if system is draining down correctly and that the orifice or flow control device is not blocked. Assess if there are any silt accumulations in the chamber sump. | Monthly (and after large storms)       |
|                                          | Removal of accumulated silt from silt trap and catchpit sumps                                                                                                                                                 | Annually, or as required               |
|                                          | Repair/rehabilitation of inlets, outlet, overflows and vents                                                                                                                                                  | As required                            |
|                                          | Inspect/check all inlets, outlets, and overflows to ensure that they are in good condition and operating as designed                                                                                          | Annually and after large storms        |

Table 2 SuDS Maintenance



NOTES

- This drawing shall be read in conjunction with the civil engineering specification, and all relevant Architect's and Engineers drawings.
- This document must not be altered, reproduced or distributed without prior written consent of the originator.
- Do not scale from this document - use figured dimensions only. All dimensions must be checked on site prior to commencement of any related works.
- Contractor to provide and have an approved method statement prior to works.
- All setting out to be in accordance with the Architects drawings. Any discrepancies between QED Structures and the Architects drawings to be referred to the Architect before proceeding. Dimensions must not be scaled.
- All levels are in metres above ordnance datum.
- The Contractor is to comply full with CDM regulations in the course of constructing the works.
- At the commencement of the works, the Contractor is to carry out trial pits and liaise with utility companies in order to establish the exact position of all existing utility plant in the vicinity of the works and take adequate precautions for their protection.
- The Contractor is to refer to Health and Safety Executive Note 47 - Avoiding Danger from Underground Services' and Document G56 - Avoiding Danger from Overhead Electric Lines'.
- Works on or adjacent to existing public highway will be executed in accordance with the Traffic Safety Code for Road Works and Traffic Signs Manual: Chapter 8.
- The Contractor will ascertain the CBR value of the subgrade in order to determine the required sub-base / capping thickness. Prior to laying any material, the subgrade must be inspected and any soft spots removed and filled with 622 capping material.
- Prior to the construction of any drainage works, the Contractor is to confirm the invert levels of existing manholes, drains and sewers. Any variations from the designed levels shown on the drawings must be reported to the Drainage Engineer in advance of construction works commencing. All new sewers and drains are to be laid in sequence starting from the outfall location.
- All drainage to be installed in accordance with relevant Building Regulation documents and current Sewage Sector Guidance. Connections to public sewers are to be agreed and inspected by the Water Authority.
- All drain and sewer pipes are Ø100mm and laid soffit to soffit, unless shown otherwise.
- Invert to base of soil stock bends to be 450mm below lowest branch connection for up to three storey buildings; for buildings up to five storeys, the invert to the base of soil stock bends should not be less than 750mm. All foul and surface water drainage stacks are to have above ground rodding access. Refer to above ground drainage layout(s) by others.
- All below ground connections are to match above ground outlet size, minimum Ø100mm. SVPs are to project 100mm above finished floor level.
- All internal manholes and inspection chambers to have double sealed recessed covers to suit floor finishes as defined by the Architect.
- All external covers in non-asphalt areas are to have recessed covers to suit the paving material.
- A CCTV survey and report in WINCAN format for all new drainage will be required prior to 'as built' drawing being issued.
- The Contractor is responsible for the traffic safety and management associated with the construction of the works. Works will not commence on the existing highway until their traffic management proposals have been agreed with Highway Authority.
- Where the works involve the obstruction of a footway, the Contractor will provide an alternative safe footway properly signed, guarded and lit.
- Where one-way traffic is unavoidable, traffic will be controlled by a proper system of vehicle-actuated traffic signals or manual stop / go signs and during the hours of darkness, by a proper system of vehicle-actuated traffic signals, all to the approval of Highway Authority.
- 65mm Minimum thickness tactile paving, coloured buff will be incorporated at all pedestrian crossings in accordance with the Department for Transport and Regions document 'Guidance on the Use of Tactile Paving Surfaces.' (DER No. 1998)
- All signs and road markings will be in accordance with the 'Traffic Signs Regulations and General Directions 2016'. (TSRGD 2016)
- At excavation and backfilling work in the existing highway to be in accordance with the provisions of the New Street Works Act 1991 or that specified on the working drawings.
- All highways works to be carried out in accordance with Highway Authority's highway standards, to the satisfaction of the Highway Authority Section 278 Inspector and in accordance with the Specification for Highway Works.
- Gullies, gully connections, drains, manholes, catch pit, soakaways, headwalls and other drainage structures intended to convey only highway water are to be constructed in accordance with the specification of Highway Authority and to the satisfaction of the Highway Inspector.
- Where existing junctions and accesses are to remain in operation within the works during the construction process, the Contractor will ensure that access to these units remains available at all times.
- Highways in the vicinity of the works must be kept free from mud, debris and dust falling from vehicles or wheels of vehicles connected with the works. Where the deposits of debris and mud are unavoidable, warning signs must be displayed whilst work is in progress and affected carriageways / footways must be regularly cleaned.

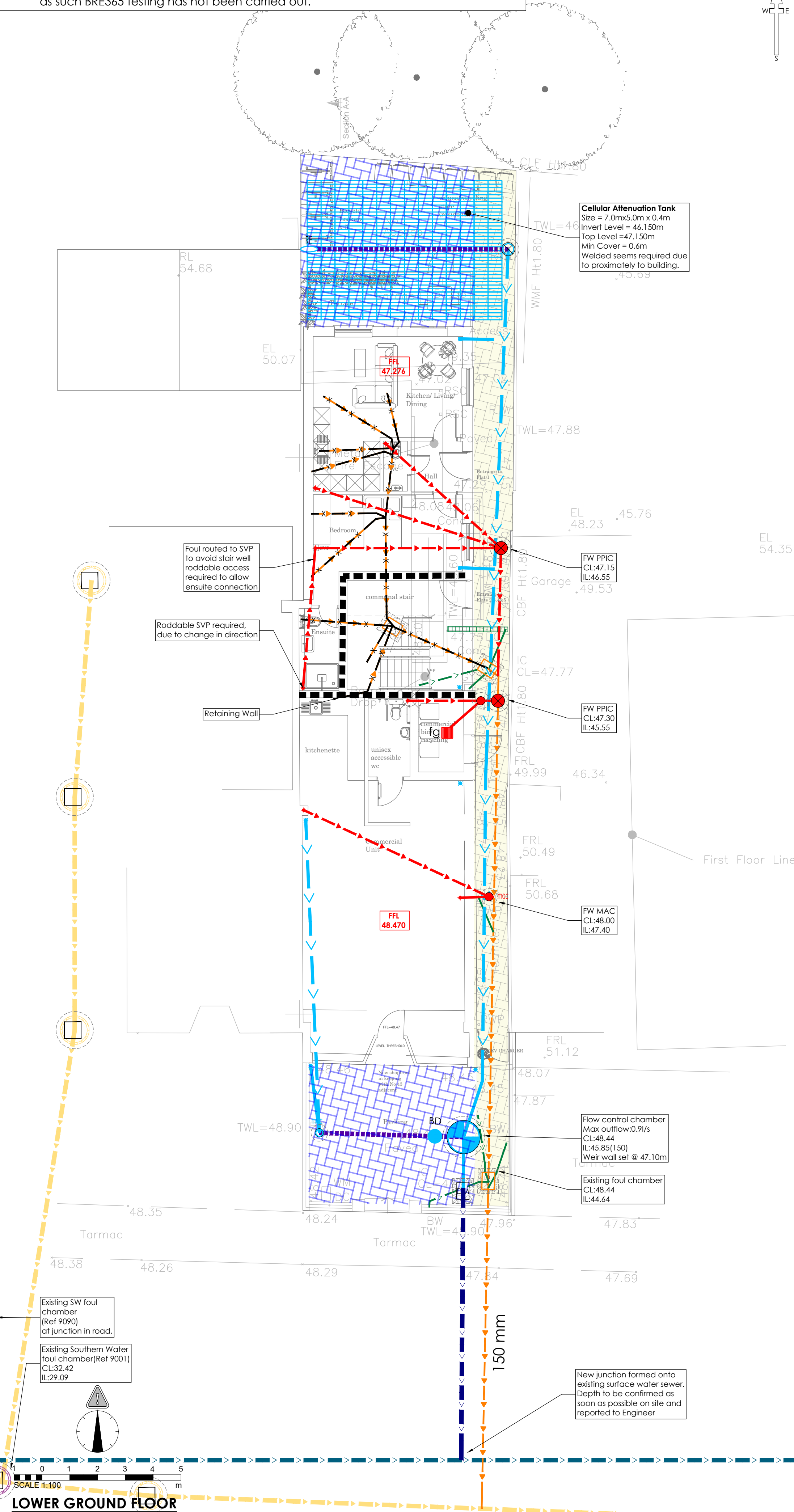
Source:

- Topographical survey by ? Drawing No. ? dated ?
- Architect's layout by ? Drawing No. ? dated ?

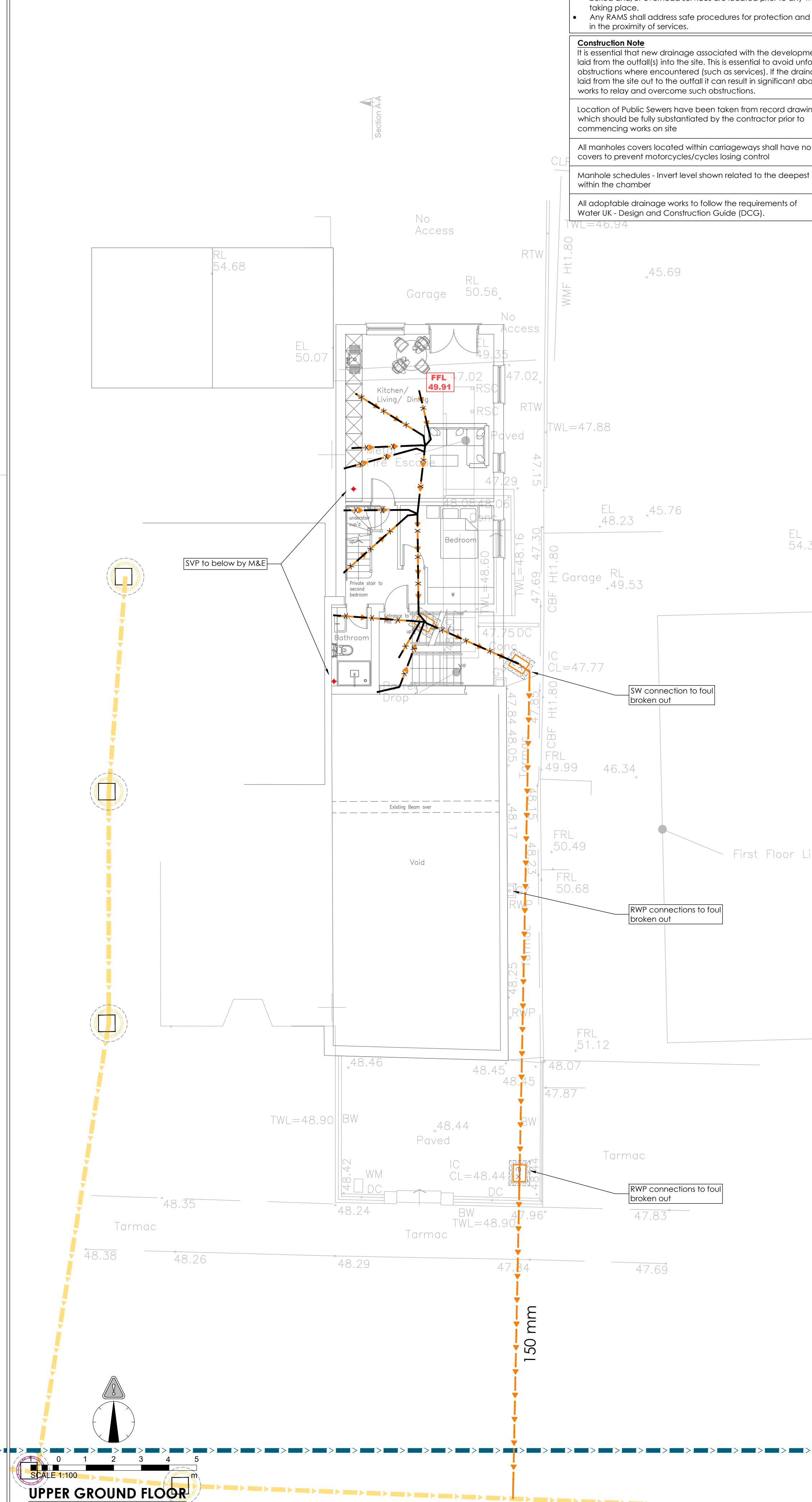


DESIGNER NOTE

Surface Water system designed for a 1 in 100 year event plus an allowance of 40% for climate change and a Cv value of 1.0 has been used for the calculations. There is insufficient space greater than 5m from the building to allow infiltration, and as such BRE365 testing has not been carried out.



LOWER GROUND FLOOR



UPPER GROUND FLOOR

BURIED UTILITIES RISK NOTE

- Buried utilities are present on and in the vicinity of the site.
- The Contractor must satisfy themselves that they have seen utility returns for the area and that appropriate Risk Assessment Method Statement (RAMS) are in place and implemented to ensure that buried and/or overhead services are located prior to any works taking place.
- Any RAMS shall address safe procedures for protection and working in the proximity of services.

Construction Note

It is essential that new drainage associated with the development is laid from the outfall(s) into the site. This is essential to avoid unforeseen obstructions where encountered (such as services). If the drainage is laid from the site out to the outfall it can result in significant obtrusive works to relay and overcome such obstructions.

Location of Public Sewers have been taken from record drawings which should be fully substantiated by the contractor prior to commencing works on site

All manholes covers located within carriageways shall have no slip covers to prevent motorcycles/cycles losing control

All adoptable drainage works to follow the requirements of Water UK - Design and Construction Guide (DCG).

- DISCLAIMER NOTES:
- THIS DOCUMENT IS COPYRIGHT OF QED STRUCTURES AND MUST BE TREATED AS CONFIDENTIAL.
  - THIS DOCUMENT MUST NOT BE ALTERED, REPRODUCED OR DISTRIBUTED WITHOUT PRIOR WRITTEN CONSENT OF QED STRUCTURES. QED STRUCTURES ACCEPTS NO RESPONSIBILITY FOR ANY DISCREPANCIES ARISING AS A RESULT OF THE ORIGINAL INFORMATION BEING ALTERED BY OTHERS.
  - QED STRUCTURES ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF BACKGROUND INFORMATION PRODUCED BY THIRD PARTIES - THIS MUST BE TREATED AS INDICATIVE ONLY.
  - THE DOCUMENT STATUS 'INFORMATION' OR 'PRELIMINARY' INDICATES THAT THE DRAWING IS FOR REFERENCE PURPOSES ONLY. QED STRUCTURES ACCEPTS NO RESPONSIBILITY FOR THE COMPLETENESS OF INFORMATION UNDER THIS STATUS.
  - THE DOCUMENTS STATUS 'RECORD' OR 'AS-BUILT' HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, QED STRUCTURES ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF THIS 'RECORD' OR 'AS-BUILT' DOCUMENT OF ANY ERRORS OR OMISSIONS THAT MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT OF INCORRECT INFORMATION PROVIDED TO QED STRUCTURES. THOSE RELYING ON 'AS-BUILT' INFORMATION ARE ADVISED TO OBTAIN INDEPENDENT REIFICATION OF ITS ACCURACY.
  - THIS DRAWING IS NOT TO BE SCALED. WORK FROM GIVEN DIMENSIONS ONLY.
  - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, SERVICE ENGINEERS, SPECIALISTS, QED STRUCTURES DRAWINGS, SPECIFICATIONS AND BILL OF QUANTITIES.
  - ANY DISCREPANCIES OR VARIATIONS ARE TO BE REPORTED IMMEDIATELY TO QED STRUCTURES FOR CLARIFICATION BEFORE THE AFFECTED WORK COMMENCES.
  - ALL DIMENSIONS ARE TO BE CHECKED ON SITE. ANY DISCREPANCIES RE TO BE REPORTED IMMEDIATELY TO QED STRUCTURES FOR CLARIFICATION BEFORE THE AFFECTED WORK COMMENCES.
  - THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY WORKS AND FOR THE STABILITY OF THE WORKS IN PROGRESS

Drainage Key

| Sewers                                      |  |  |
|---------------------------------------------|--|--|
| Foul water drain (private/non adoptable)    |  |  |
| Surface water drain (private/non adoptable) |  |  |
| Surface water sewer (Adoptable)             |  |  |
| Existing foul water sewer (Adopted)         |  |  |
| Existing surface water sewer (Adopted)      |  |  |
| Redundant sewer                             |  |  |
| Redundant sewer                             |  |  |

Chamber Key

| FW/SW                                               |  |  |
|-----------------------------------------------------|--|--|
| Mini access chamber (mac) - 300mmØ                  |  |  |
| PPIC - 475mmØ*                                      |  |  |
| Adoptable demarcation manhole within 1m of boundary |  |  |
| Manhole Depth: 1.25m to 1.5m* Depth: 1.53m to 3.0m* |  |  |

\* General note  
(Refer to standard details & longitudinal sections for chamber sizes. Size may need to increase dependant on number of incoming pipes/size of incoming pipes)

|     |  |                                                       |
|-----|--|-------------------------------------------------------|
| RE  |  | Surface water rodding eye                             |
|     |  | Rain water down pipe (roddable access)                |
|     |  | Soil vent pipe/soil stack                             |
|     |  | Silt Trap (ST) with removable silt bucket             |
| fg  |  | Floor gully (trapped)                                 |
|     |  | Cellular storage (refer to drawing for sizes)         |
|     |  | Impermeable barrier to stop lateral movement of water |
| FFL |  | Finished Floor Level (FFL)                            |

|  |                                         |
|--|-----------------------------------------|
|  | Block paving - permeable                |
|  | Block paving - standard (non-permeable) |

Retaining wall

|     |                        |          |    |     |
|-----|------------------------|----------|----|-----|
| P01 | Issued for information | 01.08.25 | AA | RJW |
| REV | DESCRIPTION            | DATE     | BY | APP |



CONSULTING CIVIL AND  
STRUCTURAL ENGINEERS  
TEL +44 (0) 1273 033690

QED PROJECT No.  
25-300

CLIENT  
Hammer It Homes Properties Ltd

PROJECT  
45 The Broadway  
Haywards Heath  
RH16 3AS

TITLE  
Drainage Design

|             |                 |                   |                    |
|-------------|-----------------|-------------------|--------------------|
| DRAWN<br>NJ | ENGINEER<br>RJW | CHECKED BY<br>AJG | APPROVED BY<br>MBD |
|-------------|-----------------|-------------------|--------------------|

DATE APPROVED 01.08.2025 SCALE @ A1 1:100

STATUS  
S2 - Suitable for Information

|                                          |                 |
|------------------------------------------|-----------------|
| DRAWING<br>No. 25300-QED-ZZ-00-DR-C-1000 | REVISION<br>P01 |
|------------------------------------------|-----------------|







Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 170 minutes.

| Storm Event      | Max Level (m) | Max Depth (m) | Max Infiltration (1/s) | Max Control (1/s) | Max Σ Outflow (1/s) | Max Volume (m³) | Status     |
|------------------|---------------|---------------|------------------------|-------------------|---------------------|-----------------|------------|
| 15 min Summer    | 46.423        | 0.273         | 0.0                    | 0.6               | 0.6                 | 9.1             | O K        |
| 30 min Summer    | 46.498        | 0.348         | 0.0                    | 0.7               | 0.7                 | 11.6            | O K        |
| 60 min Summer    | 46.564        | 0.414         | 0.0                    | 0.7               | 0.7                 | 13.7            | O K        |
| 120 min Summer   | 46.939        | 0.789         | 0.0                    | 0.9               | 0.9                 | 14.7            | Flood Risk |
| 180 min Summer   | 46.847        | 0.697         | 0.0                    | 0.8               | 0.8                 | 14.6            | O K        |
| 240 min Summer   | 46.611        | 0.461         | 0.0                    | 0.7               | 0.7                 | 14.3            | O K        |
| 360 min Summer   | 46.556        | 0.406         | 0.0                    | 0.7               | 0.7                 | 13.5            | O K        |
| 480 min Summer   | 46.535        | 0.385         | 0.0                    | 0.7               | 0.7                 | 12.8            | O K        |
| 600 min Summer   | 46.515        | 0.365         | 0.0                    | 0.7               | 0.7                 | 12.1            | O K        |
| 720 min Summer   | 46.497        | 0.347         | 0.0                    | 0.7               | 0.7                 | 11.5            | O K        |
| 960 min Summer   | 46.462        | 0.312         | 0.0                    | 0.6               | 0.6                 | 10.4            | O K        |
| 1440 min Summer  | 46.401        | 0.251         | 0.0                    | 0.6               | 0.6                 | 8.3             | O K        |
| 2160 min Summer  | 46.325        | 0.175         | 0.0                    | 0.6               | 0.6                 | 5.8             | O K        |
| 2880 min Summer  | 46.268        | 0.118         | 0.0                    | 0.5               | 0.5                 | 3.9             | O K        |
| 4320 min Summer  | 46.193        | 0.043         | 0.0                    | 0.5               | 0.5                 | 1.4             | O K        |
| 5760 min Summer  | 46.156        | 0.006         | 0.0                    | 0.5               | 0.5                 | 0.2             | O K        |
| 7200 min Summer  | 46.150        | 0.000         | 0.0                    | 0.4               | 0.4                 | 0.0             | O K        |
| 8640 min Summer  | 46.150        | 0.000         | 0.0                    | 0.3               | 0.3                 | 0.0             | O K        |
| 10080 min Summer | 46.150        | 0.000         | 0.0                    | 0.3               | 0.3                 | 0.0             | O K        |
| 15 min Winter    | 46.423        | 0.273         | 0.0                    | 0.6               | 0.6                 | 9.1             | O K        |
| 30 min Winter    | 46.499        | 0.349         | 0.0                    | 0.7               | 0.7                 | 11.6            | O K        |
| 60 min Winter    | 46.566        | 0.416         | 0.0                    | 0.7               | 0.7                 | 13.8            | O K        |
| 120 min Winter   | 47.064        | 0.914         | 0.0                    | 0.9               | 0.9                 | 14.8            | Flood Risk |
| 180 min Winter   | 46.922        | 0.772         | 0.0                    | 0.9               | 0.9                 | 14.7            | Flood Risk |
| 240 min Winter   | 46.670        | 0.520         | 0.0                    | 0.8               | 0.8                 | 14.4            | O K        |
| 360 min Winter   | 46.556        | 0.406         | 0.0                    | 0.7               | 0.7                 | 13.5            | O K        |

| Storm Event      | Rain (mm/hr) | Flooded Volume (m³) | Discharge Volume (m³) | Time-Peak (mins) |
|------------------|--------------|---------------------|-----------------------|------------------|
| 15 min Summer    | 138.153      | 0.0                 | 9.7                   | 18               |
| 30 min Summer    | 90.705       | 0.0                 | 12.7                  | 33               |
| 60 min Summer    | 56.713       | 0.0                 | 15.8                  | 62               |
| 120 min Summer   | 34.246       | 0.0                 | 19.2                  | 120              |
| 180 min Summer   | 25.149       | 0.0                 | 21.1                  | 152              |
| 240 min Summer   | 20.078       | 0.0                 | 22.5                  | 192              |
| 360 min Summer   | 14.585       | 0.0                 | 24.5                  | 258              |
| 480 min Summer   | 11.622       | 0.0                 | 26.0                  | 328              |
| 600 min Summer   | 9.738        | 0.0                 | 27.2                  | 398              |
| 720 min Summer   | 8.424        | 0.0                 | 28.3                  | 464              |
| 960 min Summer   | 6.697        | 0.0                 | 30.0                  | 600              |
| 1440 min Summer  | 4.839        | 0.0                 | 32.5                  | 866              |
| 2160 min Summer  | 3.490        | 0.0                 | 35.2                  | 1236             |
| 2880 min Summer  | 2.766        | 0.0                 | 37.2                  | 1612             |
| 4320 min Summer  | 1.989        | 0.0                 | 40.1                  | 2292             |
| 5760 min Summer  | 1.573        | 0.0                 | 42.3                  | 2944             |
| 7200 min Summer  | 1.311        | 0.0                 | 44.0                  | 0                |
| 8640 min Summer  | 1.129        | 0.0                 | 45.5                  | 0                |
| 10080 min Summer | 0.994        | 0.0                 | 46.8                  | 0                |
| 15 min Winter    | 138.153      | 0.0                 | 9.7                   | 18               |
| 30 min Winter    | 90.705       | 0.0                 | 12.7                  | 32               |
| 60 min Winter    | 56.713       | 0.0                 | 15.9                  | 60               |
| 120 min Winter   | 34.246       | 0.0                 | 19.2                  | 116              |
| 180 min Winter   | 25.149       | 0.0                 | 21.1                  | 164              |
| 240 min Winter   | 20.078       | 0.0                 | 22.5                  | 194              |
| 360 min Winter   | 14.585       | 0.0                 | 24.5                  | 272              |

|                                                             |                                      |                                                                                    |
|-------------------------------------------------------------|--------------------------------------|------------------------------------------------------------------------------------|
| Infrastruct CS Ltd                                          |                                      | Page 2                                                                             |
| The Stables<br>High Cogges, Witney<br>Oxfordshire, OX29 6UN | Crate Attenuation<br>45 The Broadway |  |
| Date 30/07/2025                                             | Designed by RJW                      |                                                                                    |
| File 6593-45BR-MD-1in100 Calcs.SRCX                         | Checked by                           |                                                                                    |
| Innovyze                                                    | Source Control 2020.1.3              |                                                                                    |

Summary of Results for 100 year Return Period (+40%)

| Storm<br>Event   | Max<br>Level<br>(m) | Max<br>Depth<br>(m) | Max<br>Infiltration<br>(l/s) | Max<br>Control<br>(l/s) | Max<br>E Outflow<br>(l/s) | Max<br>Volume<br>(m³) | Status |
|------------------|---------------------|---------------------|------------------------------|-------------------------|---------------------------|-----------------------|--------|
| 480 min Winter   | 46.526              | 0.376               | 0.0                          | 0.7                     | 0.7                       | 12.5                  | O K    |
| 600 min Winter   | 46.499              | 0.349               | 0.0                          | 0.7                     | 0.7                       | 11.6                  | O K    |
| 720 min Winter   | 46.473              | 0.323               | 0.0                          | 0.7                     | 0.7                       | 10.8                  | O K    |
| 960 min Winter   | 46.424              | 0.274               | 0.0                          | 0.6                     | 0.6                       | 9.1                   | O K    |
| 1440 min Winter  | 46.340              | 0.190               | 0.0                          | 0.6                     | 0.6                       | 6.3                   | O K    |
| 2160 min Winter  | 46.247              | 0.097               | 0.0                          | 0.5                     | 0.5                       | 3.2                   | O K    |
| 2880 min Winter  | 46.184              | 0.034               | 0.0                          | 0.5                     | 0.5                       | 1.1                   | O K    |
| 4320 min Winter  | 46.150              | 0.000               | 0.0                          | 0.4                     | 0.4                       | 0.0                   | O K    |
| 5760 min Winter  | 46.150              | 0.000               | 0.0                          | 0.3                     | 0.3                       | 0.0                   | O K    |
| 7200 min Winter  | 46.150              | 0.000               | 0.0                          | 0.3                     | 0.3                       | 0.0                   | O K    |
| 8640 min Winter  | 46.150              | 0.000               | 0.0                          | 0.2                     | 0.2                       | 0.0                   | O K    |
| 10080 min Winter | 46.150              | 0.000               | 0.0                          | 0.2                     | 0.2                       | 0.0                   | O K    |

| Storm<br>Event   | Rain<br>(mm/hr) | Flooded<br>Volume<br>(m³) | Discharge<br>Volume<br>(m³) | Time-Peak<br>(mins) |
|------------------|-----------------|---------------------------|-----------------------------|---------------------|
| 480 min Winter   | 11.622          | 0.0                       | 26.0                        | 350                 |
| 600 min Winter   | 9.738           | 0.0                       | 27.2                        | 424                 |
| 720 min Winter   | 8.424           | 0.0                       | 28.3                        | 498                 |
| 960 min Winter   | 6.697           | 0.0                       | 30.0                        | 638                 |
| 1440 min Winter  | 4.839           | 0.0                       | 32.5                        | 908                 |
| 2160 min Winter  | 3.490           | 0.0                       | 35.2                        | 1276                |
| 2880 min Winter  | 2.766           | 0.0                       | 37.2                        | 1612                |
| 4320 min Winter  | 1.989           | 0.0                       | 40.1                        | 0                   |
| 5760 min Winter  | 1.573           | 0.0                       | 42.3                        | 0                   |
| 7200 min Winter  | 1.311           | 0.0                       | 44.0                        | 0                   |
| 8640 min Winter  | 1.129           | 0.0                       | 45.5                        | 0                   |
| 10080 min Winter | 0.994           | 0.0                       | 46.8                        | 0                   |

Rainfall Details

|                       |                   |                       |       |
|-----------------------|-------------------|-----------------------|-------|
| Rainfall Model        | FSR               | Winter Storms         | Yes   |
| Return Period (years) | 100               | Cv (Summer)           | 1.000 |
| Region                | England and Wales | Cv (Winter)           | 1.000 |
| M5-60 (mm)            | 20.000            | Shortest Storm (mins) | 15    |
| Ratio R               | 0.400             | Longest Storm (mins)  | 10080 |
| Summer Storms         | Yes               | Climate Change %      | +40   |

Time Area Diagram

Total Area (ha) 0.028

| Time (mins) |     | Area  |
|-------------|-----|-------|
| From:       | To: | (ha)  |
| 0           | 4   | 0.028 |

Model Details

Storage is Online Cover Level (m) 47.150

Cellular Storage Structure

Invert Level (m) 46.150 Safety Factor 2.0  
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95  
Infiltration Coefficient Side (m/hr) 0.00000

| Depth (m) | Area (m²) | Inf. Area (m²) | Depth (m) | Area (m²) | Inf. Area (m²) | Depth (m) | Area (m²) | Inf. Area (m²) |
|-----------|-----------|----------------|-----------|-----------|----------------|-----------|-----------|----------------|
| 0.000     | 35.0      | 35.0           | 0.400     | 35.0      | 44.6           | 0.500     | 0.0       | 44.6           |

Orifice Outflow Control

Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 45.850