
70 Elsworthy Road, London,
NW3 3BP

**Below Ground Drainage /
SUDS Assessment**

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Document Control

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1.0 Introduction

The existing site includes two residential buildings, a main-two storey detached property towards to the north of the site, and a smaller two-storey mews building towards the south of the site. The site also includes areas of existing hardstanding and landscaping.

The proposed works involve the demolition of the existing main building, and the construction of a new three-storey property in its place. The smaller mews building is to be retained and refurbished as part of the proposals.

Proposals also include the construction of a basement beneath the footprint of the main building, which will extend below the front garden and be linked to the retained mews building.

2.0 Existing Below Ground Drainage Network

- Public sewer records have been obtained from Thames Water, records indicate that the offsite sewer network is combined (combined surface and foul water networks).
- According to records, there is an existing 940x635mm combined public sewer in Elsworthy Road and a 1372x914mm combined sewer in Avenue Road.
- The existing onsite surface and foul water connections are currently unknown and need to be investigated via a CCTV drainage survey to confirm their condition, location, levels and sizes. It is currently assumed that existing drainage on site is separated.

3.0 Existing Hardstanding Areas / Surface Water Runoff

- The sites existing impermeable area is equal to approximately 965m². Based on a rainfall intensity of 50mm/hr, the existing surface water run-off rate from site has been calculated as 13.4l/s.

4.0 Flood Risk

- Environment Agency flood maps indicate that the site is located within Flood Zone 1 (Low Risk) and as the site area is less than 1 Hectare, a Flood Risk Assessment in accordance with the National Planning Policy Framework (NPPF) is not normally required.

5.0 Site Conditions / SUDS Assessment

- A site investigation was conducted by GEA (Ref: J15143), which found the site to be underlain by London Clay. On this basis infiltration rates are deemed to be poor, and as outlined in the GEA report, soakaways will not be a feasible method of surface water disposal.
- Due to site constraints, there is no option to attenuate rainwater in larger open water features such as ponds or swales.
- As noted above, infiltration and attenuation in open water features is not viable. The subsequent method of surface water disposal, as outlined in the London Plan hierarchy (Policy 5.13), is to attenuate water within sealed devices i.e. attenuation crates/tanks. As noted in section 6.0, impermeable areas are reducing as part of the proposals; however the London Plan states that all new developments should aim to achieve greenfield rates where practicable.

6.0 Proposed Below Ground Drainage Network

Refer to EW drawing D/001 for the proposed preliminary below ground drainage strategy. Proposals are in line with the above SUDS assessment and are summarised below. Note that proposals will be subject to the results of a CCTV drainage survey.

Basement Level

- Basement level drainage will be routed to a submersible packaged pumping station. All surface water and foul water from ground level and above is to drain via gravity (at high-level if necessary), only foul drainage from lower levels should be pumped.
- Pumps at basement level are to incorporate non-return valves to protect against public sewer surcharge.







Ground Floor Level

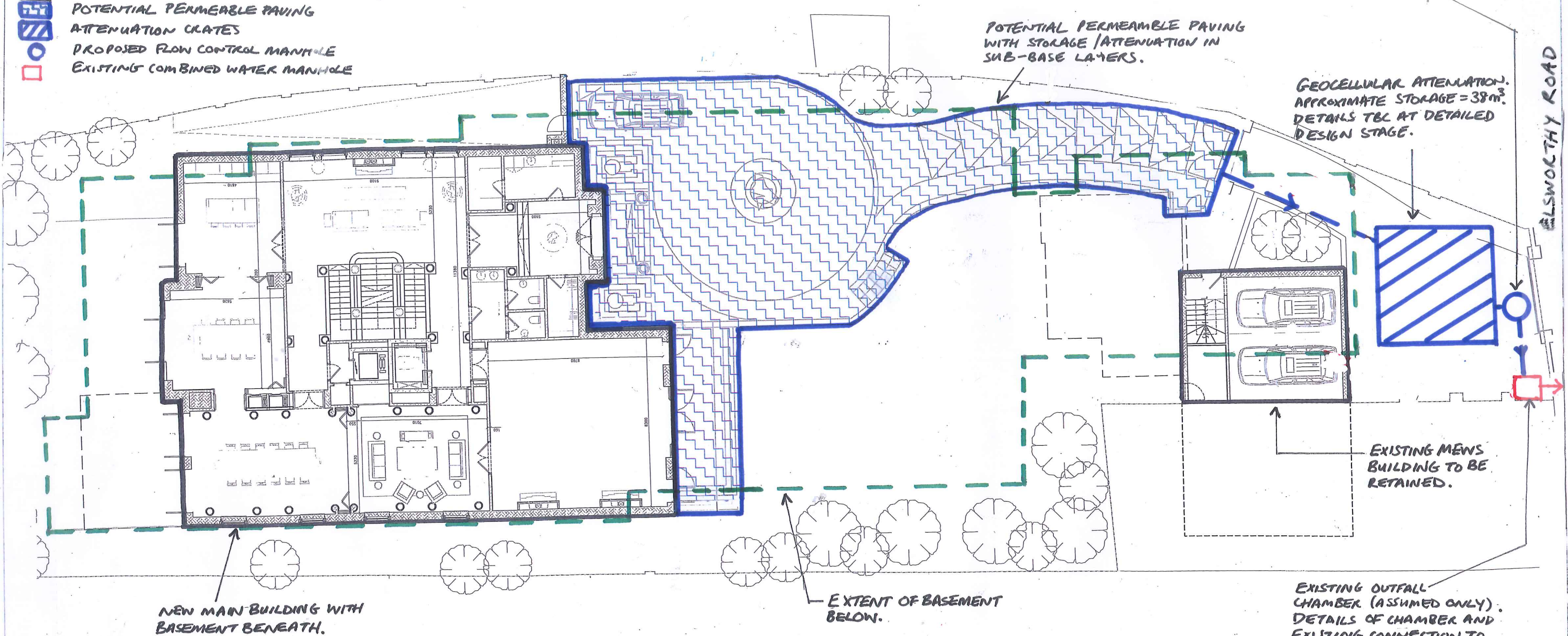
- It is assumed that the majority of the existing drainage network will be abandoned /removed as part of the works. If possible, the existing outfall chamber and connection to the sewer should be retained.
- The current proposals indicate approximately 950m² of impermeable area on site. (15m² less than existing). Surface water run-off from site will therefore be reducing as part of the development. Rates should be restricted however, with the aim to achieve greenfield run-off.
- Surface water from site is to be restricted to a maximum rate of 5l/s. This restriction in flow complies with the London Plan and also reduces the risk of blockages within the network (which is typically associated with restricting to rates below this value). Based on the current proposals, approximately 38m³ of storage will be required.
- The type of attenuation measures introduced will need to be reviewed as part of the detailed design process, but it is assumed that storage will be in the form of geocellular crates, with flow restricted by a vortex flow control device. There may also be an option to incorporate permeable paving across new hardstanding areas, with storage being utilised within sub-base layers.



NOTE: THE SITE INVESTIGATION REPORT INDICATES THAT EXISTING GROUND IS UNDERLAIN BY LONDON CLAY. THEREFORE INFILTRATION WILL NOT BE A FEASIBLE METHOD OF SURFACE WATER DISPOSAL.

VORTEX FLOW CONTROL DEVICE. TO LIMIT FLOW TO 5L/S. DETAILS TBC.

- KEY**
-  BASEMENT EXTENTS
 -  BUILDING
 -  POTENTIAL PERMEABLE PAVING
 -  ATTENUATION CRATES
 -  PROPOSED FLOW CONTROL MANHOLE
 -  EXISTING COMBINED WATER MANHOLE



NOTE: DRAINAGE AT BASEMENT LEVEL IS TO BE ROUTED TO SUBMERSIBLE PACKAGED PUMPING STATIONS AND PUMPED, VIA RISING MAIN, TO A PROPOSED GRAVIM NETWORK. NOTE THAT ONLY BASEMENT LEVEL FOUL WATER SHOULD DRAIN TO PUMPS. ALL SURFACE WATER SHOULD DRAIN VIA GRAVITY (AT HIGH LEVEL), AS WELL AS FOUL DRAINAGE AT GROUND LEVEL AND ABOVE.

NOTE: PROPOSALS SHOWN ARE SUBJECT TO THE RESULTS OF A CCTV DRAINAGE SURVEY.

This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
Do not scale from this drawing.

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rev	date	by	chk	description

drawing title
BELOW GROUND DRAINAGE STRATEGY GROUND FLOOR

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