SUDS REPORT FOR STUDIO 1A, STUDIO 2A, STUDIO 3A, AND FLAT 4 AT 10-12 LIND ROAD SUTTON SM1 4PH

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APPENDICES

1. INTRODUCTION

1.1 Appointment

Nimbus Engineering have been appointed to provide an outline solution on the management of Surface Water run-off and to ensure that there is no risk of flooding caused by the proposed retention of 4 flats, with a proposed new lower ground floor.

1.2 Objectives

This report will provide information on a suitable Sustainable Urban Drainage System (SuDS) in order to reduce the surface water run off leaving the site and show that the proposed development will not increase Flood Risk at the site or elsewhere.

1.3 Limitations

The general limitations of this report are:

- A number of data and information sources have been used to prepare this report. Whilst Nimbus Engineering believes them to be trustworthy, Nimbus Engineering is unable to guarantee the accuracy of data and information that has been provided by others;

- This report has been prepared using the best data and information that was available at the time of writing. There is the potential for further information or data to become available, leading to changes in the conclusions drawn by this report, for which Nimbus Engineering cannot be held responsible.

2. GEOLOGY OF THE AREA

According to the British Geological Survey, there was no information on superficial deposits at the site, as shown in Figure 1, below. The bedrock in the area part of the Lewes Nodular Chalk Formation, as shown in Figure 2, below.

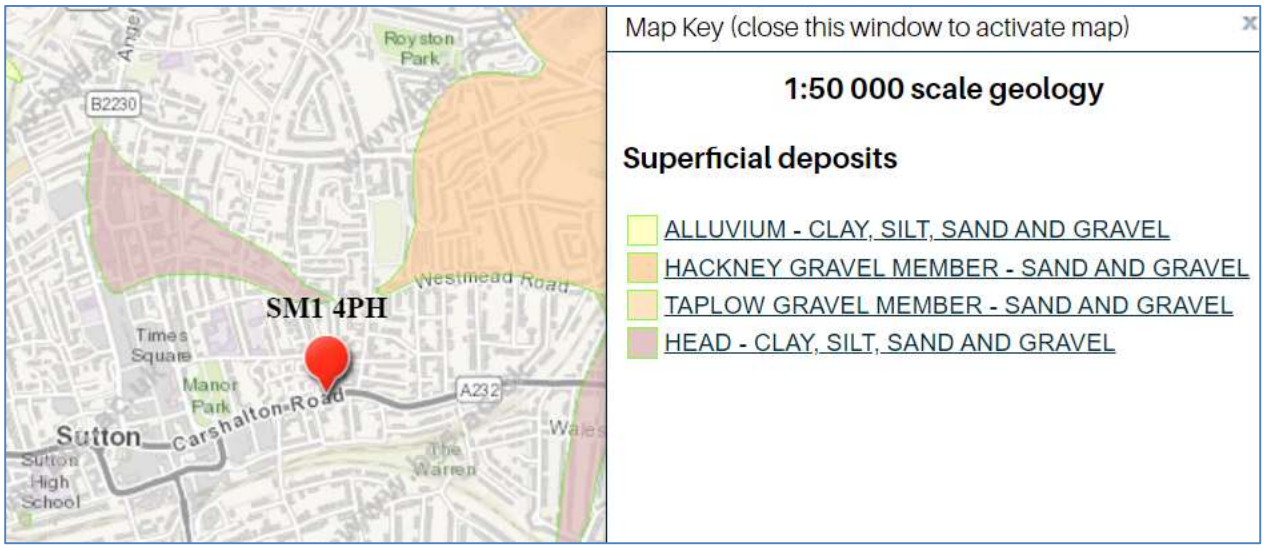

Figure 1- Superficial Deposits at the site. (Source: British Geological Society Website (Contains British Geological Survey materials © URKI [2023]. Base mapping is provided by ESRI)).

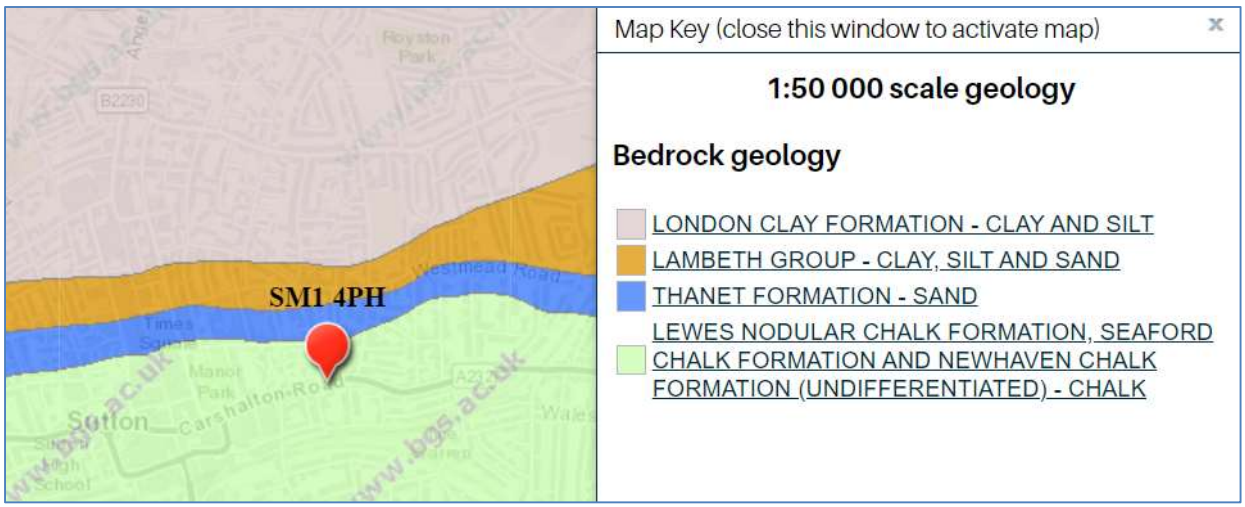

Figure 2 – Bedrock at the site. (Source: British Geological Society Website (Contains British Geological Survey materials © URKI [2022]. Base mapping is provided by ESRI)).

Historic boreholes within the vicinity of the site were not consulted due to the size of the site. There is not enough space to allow the required five metre between the point of infiltration and nearby foundations. There is space available for SuDS on adjacent land which is owned by the client, however there is still no space for a soakaway due to the five metre rule.

3. SUSTAINABLE URBAN DRAINAGE SYSTEMS

The proposed basement will have the same area as the ground floor above it, therefore there will be no increase in surface water run off as a result of the proposals.

Surface water arising from a developed site should, as far as is practicable, be managed in a sustainable manner to mimic the surface water flows arising from the site prior to the proposed development, while reducing the flood risk to the site itself and elsewhere, taking climate change into account.

Reducing the rate of surface water discharge from urban sites is one of the most effective ways of reducing and managing flood risk.

Traditional piped surface water systems work by removing surface water from our developments as quickly as possible, however this can cause various adverse impacts:

- Increased downstream flooding, and sudden rises in flow rates and water levels in local water courses.

- Reduction in groundwater levels and dry weather flows in watercourses.

- Reduce amenity and adversely affect biodiversity due to the surface water run-off containing contaminants such as oil, organic matter and toxic materials.

SuDS are defined as a sequence of management principles and control structures designed to drain surface water in a more sustainable fashion than conventional piped drainage techniques. SuDS should utilise the natural landscape of an area which as well as slowing down the rate of runoff provides a number of environmental, ecological and social benefits.

These include:

- Protection and enhancement of water quality. As well as providing on-site attenuation, SuDS treat the water, resulting in an improved quality of water leaving the site. This is achieved when the water passes through fine soils and the roots of specially selected plants. Pollutants washed off the hard landscaping by rainfall will be safely removed before the water reaches the natural receiving water course.

- A sympathetic approach to the environmental setting by providing opportunities to create habitats for flora and fauna in urban watercourses and open spaces.

- Meeting the amenity and social needs of the local community and residents in the creation of attractive green spaces.

The various types of SuDS include:

Permeable paving	
Soakaways;	
Swales and basins;	
Bioretention/ rain gardens;	
Green roofs and rainwater re-use;	

Preferably a combination of these techniques should be used as part of the surface water management train, and it is important for all stakeholders, such as developers, architects, landscape architects and engineers to work in order to determine a feasible solution.

4. PROPOSED SOLUTION

Due to the proposals for this site consisting of a basement floor, below and existing ground floor level, consisting of the same area. There will be no increase in surface water run off as a result of this development, and this is confirmed by surface water run off calculations provided in Appendix B. Also, no attenuation will be required.

However, In order to ensure that the SuDS management train is followed, one raingarden wall mounted rainwater harvesting tank will be provided at the basement level.

5. TIMESCALE AND MAINTENANCE OF WORKS

All drainage works will be completed prior to first occupation and there will be no adoption of any of the drainage works within the site, the homeowner will be responsible in overseeing the long-term maintenance of all the SuDS system.

- Gullies should be cleaned every 3 months in order to ensure that there are no blockages.

Maintenance schedule	Required action	Typical Frequency
Regular maintenance	Inspection of the tank for debris and sediment build-up, inlets/outlets/withdraw devices, overflow areas, pumps, filters	Annually (and following poor performance)
	Cleaning of tank, inlets, outlets, gutters. Withdrawal devices and roof drain filters of silts and other debris	Annually (and following poor performance)
Occasional maintenance	Cleaning and/ or replacement of any filters	Three monthly (or as required)
Remedial actions	Repair of overflow erosion damage or damage to tank	As required
	Pump repairs	As required

Table 1: Operation and maintenance requirement for RWH systems.

6. CONCLUSIONS

The purpose of this report and associated drawings, is to satisfy the local planning authority that the surface water run off from the proposed development is dealt with through Sustainable Urban Drainage Systems.

The proposed lower ground floor is below an existing ground floor, and there will be no increase in impermeable area, there is also no available space for any attenuation, therefore we have proposed one wall mounted rainwater harvesting tank.

APPENDIX A – DRAWINGS