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28 March 2018

Eckersley O'Callaghan Ltd 9th Floor 236 Gray's Inn Road London WC1X 8HB

For the attention of Mr D Walters

Dear Sirs

97a HAVERSTOCK HILL, LONDON NW3 4RN

The tracking and CCTV survey of the existing underground drainage system was carried out on the 21 March 2018 and the findings were as follows.

1. Survey Information

For details of individual sections of drain see survey notes (1 - 13), CCTV survey footage, survey photographs and record drawing 4935/1.

The purpose of the survey was to fully establish the layout and condition of the existing site drainage system and locate and trace the route of the sewer running from the adjacent site (Stanbury Court).

2. Description of System

The existing drainage system serving the premises is combined and collects the foul and surface water discharge from the roof and upper floors of the property before discharging to a TWA sewer in Steele's Mews North via a 150dia vitrified clay outfall. This outfall has been structurally lined at some point (see record drawing and survey notes).

There is no interceptor trap installed in the outfall manhole (MH1) to separate the site drainage from the public sewer.

Pipework surveyed is vitrified clay with traditional spigot and socket joints. There are also some sections installed in cast iron and uPVC.

Manholes are brick construction, internally rendered with clay channels and have medium duty, single seal cast iron access covers.

A further TWA sewer runs from the adjacent building (Stanbury Court) and under the driveway of Steele's Studios and then in turn discharges to the TWA sewer in Haverstock Hill (see record drawing for dimensions and setting out information). The sewer runs beneath the boundary wall to Stanbury Court, between the tree and sub-station. Due to electrical interference from the sub-station we were unable to electronically track the sewer location. However the changes of direction were physically measured, as indicated to provide a reasonable accurate location.

3. Summary

The drainage system generally appeared to be in a fair condition and suitable for re-use once the remedial works have been carried out.

Some open/displaced joints were identified which is typical for traditionally jointed clay pipework.

High levels of root ingress was noted on a number of sections of pipework. These will need HP water jet cleaning/root removal and structurally lined to ensure the system is free flowing.

4. Recommendations

These recommendations are based on the existing drainage system and should be incorporated as part of any proposed building alterations or refurbishment.

- a. All retained drainage to be HP water jet cleaned and root ingress removed to establish a clear and free flowing condition. The cleaning works should include all traps, gullies and channels.
- b. Any defective sections to be replaced or structurally lined accordingly. Particular attention to be given to the sections with root ingress previously mentioned.
- c. All redundant sections of drain to be plugged and sealed with a lean mix concrete and trowelled smooth at manholes. A spare branch connection in MH1 and MH5 to be retained for future basement pump rising main.
- d. The whole of the drainage system to be HV water jet cleaned and CCTV surveyed on completion of the project and prior to handover.

Should you require further information or costs for our recommended remedial works then please contact the undersigned.

Yours faithfully

9 Sanger-Brown

James Sanger-Brown JPD Technical Services