Technical NOTE

BDP.

Civil ENGINEERING

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SUBJECT **Proposed Surface Water Drainage Strategy**

INTRODUCTION

The purpose of this technical note is to provide a summary of the proposed surface water drainage strategy for the proposed Gordon Street Green Walls & Canopy works which is part of the UCL Bicentennial scheme.

EXISTING SITE DESCIRPTION AND DRAINAGE

At present the existing drainage is unknown within the lightwells of the UCL demise. It is assumed currently the drainage discharges to manholes within the lightwell prior to discharge to the sewer. A utilities survey and CCTV survey has been commissioned to confirm the presence and condition of any drainage infrastructure within this area.
Applying the Modified Rational Method, the existing peak run-off from the site can be calculated from the formula:

$$Q = 3.61 \times Cv \times A \times i \text{ (litres/sec)}$$

Where:
Cv is the volumetric runoff coefficient, (assumed to be 1 based on 100% run-off)
A is the catchment area in hectares (0.404ha, assuming hard landscaping only)
i is the peak rainfall intensity in mm/hr (52mm/hr)

Based on the modified rational method, the existing surface water discharge rate from the site into the public sewer network is 7.6l/s.

PROPOSED DRAINAGE STRATEGY

Considering the existing site constraints, the strategy will be based upon minimising the impact on the existing drainage and retaining as much as possible of the existing infrastructure. The canopy is proposed to incorporate a green and blue roof. The green roof will provide biodiversity and amenity value to the scheme, and the blue roof will attenuate surface water above ground and allow to rate of surface water discharge into the public sewer to be reduced. The current proposal is based on restricting the discharge rate to 2l/s. This represents a betterment of almost 75% compared to the pre development unrestricted scenario. A GPR survey has been commissioned in order to identify any drainage within Gordon Street which would provide a suitable location for below ground connections from the downpipes from the greenwall and canopy. Should the proposed connection be to a public sewer, a pre development application should be made to Thames Water to confirm capacity within the sewer network.

RISK & UNKNOWNS

The risk relating to the drainage which has been identified during the scheme are as follows. These areas will be addressed during the ongoing stages of the design with the goal of minimising or removing them:

Existing drainage:

A CCTV drainage survey was carried out to identify and assess the condition of all existing drainage within the front lightwell of the Christopher Ingold Building. Where drainage runs cross this boundary, the survey should be extended sufficiently to establish the origin and end of the specific drainage runs. The survey must establish:

- Location, level, size and condition of all existing building connections to the external below ground drainage system including all stacks, gullies, interceptor traps etc.
- Routing of the external drainage network.
- All existing connections from the site to the public sewer(s).
- All internal and external drainage manholes and inspection chambers, including confirmation of the location, depth from cover to invert level, size of chamber and pipe sized of all branches.

A survey scope document capturing the above has been produced and issued to the surveyor. The survey has identified numerous drainage runs within the survey area, however some of the surveyed runs were blocked and required cleaning to allow the survey to be completed and the existing drainage network to operate effectively.

Proposed connections:

A GPR survey has been commissioned and is being undertaken at the time of writing this note. The aim of this survey is to identify all the below ground services located under Gordon Street, with the aim of identifying suitable locations for connection to existing drainage from the greenwall and canopy. Should the proposed connection be to a public sewer, a pre development application should be made to Thames Water to confirm there is capacity to accept the proposed surface water flows.

CONCLUSION

The introduction of the blue and green roof to the canopy will provide a significant betterment to the existing scenario in terms of reducing surface water discharge from the site. A GPR survey has been undertaken to identify below ground drainage within Gordon Street, and once the results of the survey have been received the locations of the below ground connections from the greenwall and canopy will be confirmed.