TO	Manchester City Council Planning & Building Control	DATE	24 January 2024
FROM	Andy James Principal Engineer	CC	Mike Newman Rory O'Connor Lydia Connell Greg Dickson
PLANNING REF	114585/FO/2016		
FILE REF	3251-ROC-ZZ-XX-RP-C-CND23		

SUBJECT **114585/FO/2016 – Manchester New Square, Princess Street – Condition 23(b)**

Condition 23(b) - Within three months of the date of this permission a management and maintenance drainage plan for Buildings 1, 2 and 3, which shall be for the lifetime of the development, shall be submitted to and approved in writing by the City Council, Local Planning Authority. The plan shall include the arrangements for adoption by any public body or statutory undertaker, or any other arrangements to secure the operation of the sustainable drainage scheme throughout its lifetime. The approved scheme shall be implemented within one month of approval and then be kept in place for the lifetime of the development.

Drainage Scheme Overview

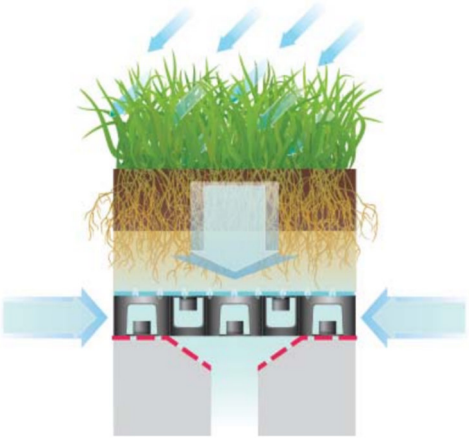
The proposed drainage system for the development adopts a traditional drainage approach due to the constraints of the site which limit the application of SuDS techniques. The entire site footprint is covered by a four-storey basement, as such it is not possible to discharge via infiltration and there is limited space outside of this footprint to introduce any green SuDS solutions such as ponds and swales etc.

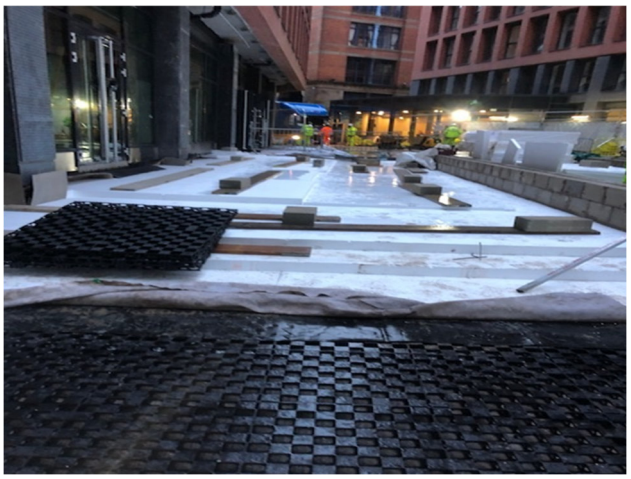
An external courtyard is present in the centre of the development at ground floor level but as this sits directly over the basement, drainage options including SuDS solutions are extremely limited.

The drainage proposals for the development therefore generally comprise rainwater outlets/ downpipes, drainage channels/ slots and gullies which drain the roofs and areas of external hardstanding before dropping to basement level and discharging via a single outfall to the public combined sewer network in Princess Street (RoC drawing 3251-BX-DR01).

As agreed with the LLFA and United Utilities, surface water discharge from the site only needs to be limited by way a maximum pipe size which corresponds to the size of pipe historically connected to the public sewer network. There are no formal flow controls such as orifice plates or hydrobrake devices installed with the site drainage system.

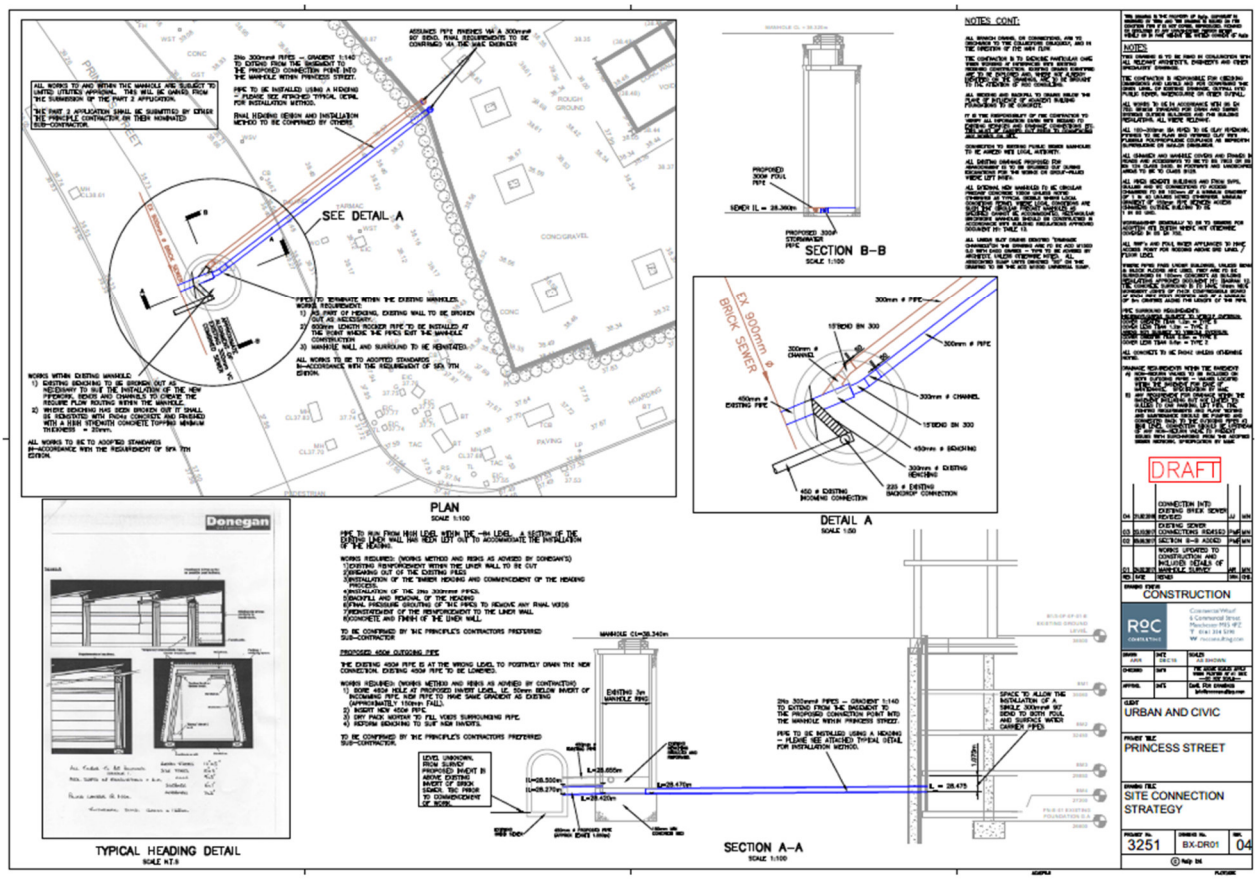
As a result of the restriction imposed by the outgoing pipe diameter a small amount of attenuation is required. This is provided by way of a shallow geocellular system beneath the external ground floor courtyard. The images below provide an illustrative cross section and evidence of the system being installed at the development.





Foul drainage from the development is dealt with in a similar manner. All waste connections serving the various appliances within the development are taken to basement level and discharge to the same public combined sewer.

Despite the site comprising a four-storey basement, the connection to the public combined sewer network has been made by gravity, as illustrated on RoC drawing 3251-BX-DR01 below.



To mitigate against potential flood risk to the development from surcharged sewers, the on-site drainage system is provided with non-return valves.

Drainage Management & Maintenance Plan

Maintenance is a necessary and important consideration for drainage systems to ensure that all elements operate effectively for their lifetime. If systems are properly monitored and maintained, any deterioration in performance can often be managed out.

Effective maintenance helps to ensure that the drainage system continues to function as it was intended and keeps hydraulic capacity and pollutant removal efficiency at design levels.

Given the constraints of the site, the vast majority of the proposed drainage is beneath the building footprint and therefore will remain in private ownership and the responsibility of the developer/ managing agent. The only elements that are the responsibility of United Utilities will be the final manhole in Princess Street and outgoing connection to the combined sewer, as illustrated in drawing BX-DR01. This was subject to a S106 application which was submitted to and accepted by United Utilities.

The following table sets out typical maintenance requirements for the various drainage features across the site.

Drainage Feature		Action Required	Typical Frequency
Gully's & Channels	Occasional Maintenance	Inspect cover and frame for any defects, repair and replace as necessary.	Quarterly
		Inspect channels for the build-up of silt and debris. Removal of silt and debris by means of vacuum suction and or jetting/ rodding.	
		Inspect sumps and outgoing pipework for the build-up of silt and debris. Removal of silt and debris by means of vacuum suction and or jetting/ rodding.	
Manholes/ Catchpits	Occasional Maintenance	Inspect chamber cover and frame for any defects, repair and replace as necessary. Inspect chamber interior and incoming/ outgoing pipes for the build-up of silt and debris. Removal of silt and debris by means of vacuum suction and or jetting/ rodding. Ensure manhole access steps/ ladders are secured and inspect for corrosion.	Quarterly
Geocellular Attenuation	Regular Maintenance	The Aquadrain geocellular units installed beneath the external courtyard is a closed system and does not have any maintenance requirements. This should continue to operate without any intervention for the life of the proposed development.	
	Occasional Maintenance		
Non-return valves	Occasional Maintenance	Normally, little maintenance of these is required. However, it is generally recommended that each unit should be inspected for debris or blockages and that the valve flap opens freely and has not become caught or dislodged.	6 monthly