Project:	**27 Dale Street, Manchester**	Reference:	1059_007_Maintenance_Strategy
Project No:	1059	Revision:	002
Prepared By:	EZ	Date Issued:	17.11.21

Design Features	
Item:	
Surface Water Drainage Network	Gravity drainage network. All pipes are connected soffit to soffit. On-Line attenuation structure consisting of 2100mm diameter manhole with flow control device and 2No. 450mm diameter Weholite pipework. Peak discharge is limited by a flow control device, Hydro-brake Optimum or similar approved. Hydro-brake to restrict discharge rate from the proposed development to 5l/s during a 1 in 100 year storm with 30% allowance for climate change (cc). The top water level in control chamber has been calculated at 47.124m during the worst case 1 in 100 year storm + 30%CC. Top water level during a 30 year storm has been calculated at 46.834m. The cover of the control chamber is set at 47.500m. The chamber will be fitted with an alarm connected to the management suite which will activate when the water level reaches 47.200m. In the event of a serious blockage restricting flow through the control, the water in the chamber will rise during normal weather conditions and activate the alarm. Roof gutters to be fitted with mesh protection to prevent leaves entering the surface water network.
Foul Water Drainage Network	All gravity drainage pipes are connected soffit to soffit and designed with sufficient gradient to achieve "self-cleansing velocity". Drainage below the basement slab discharges into a package pumping station. Foul water is pumped to an inspection chamber below the ground floor slab where it then discharges into a combined chamber and ultimately discharges into the combined sewer in Bunsen Street. Pumping station will have two pumps operating in a duty-standby mode, with a failsafe switching arrangement so that if one pump fails, the other will run continuously until the pump is replaced and the switching re-set. A pump failure will trigger an audible and visual alarm to alert the building maintenance team to call out the engineer to service, repair or replace the pump. Rails will be provided in the pumping chamber to allow easy removal and replacement of the pumps. In the event of both pumps failing, the foul water storage tank has been sized to store 24 hours of effluent, approximately 12m³. A sensor will set off an audible and visual alarm if flows above the normal peak rate are detected in the tank.

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Maintenance		
Element:	Proposed Action:	Frequency:
SW and Foul drainage system (whole)	Lift all covers and check system for level and volume of debris remaining in the system once the flood waters have subsided. Should a significant level of debris be found, the entire system should be jetted and cleaned with all debris being removed.	Annually/ As necessary **Immediately following significant storm event/ Flood**
Storm Water Attenuation	CCTV survey. Access can be achieved via the nearest manhole or by the dedicated polystorm access vertical shaft, as per manufacturer's recommendation. Remove all debris from catchments surfaces. A system of regular inspections should be established to prevent siltation of the system which, if allowed to develop, would reduce effectiveness.	**Immediately following significant storm event/** 1st year/ As necessary Monthly Bi-annually/ **Immediately following significant storm event**
Hydrobrake Chamber	Due to anticipated sandy silt deposits, inspection should be carried out by the onsite maintenance team by lifting the covers and checking for silt and debris.	Monthly
Hydrobrake Chamber	Observing the safety rules for the entering a confined space, enter and inspect chamber/hydrobrake device plate and remove all debris.	**Immediately following significant storm event/ Flood**
Hydrobrake Chamber	Pump out any excess water, observing the safety rules for entering a confined space, enter and inspect chamber/ hydrobrake and remove all debris.	Annually
Submersible pumps in foul pumping chamber	Pumps to be inspected as recommended by manufacturer. Refer to manufacturer's installation and operating instruction for list of points to be checked.	Annually

S106 Application Part 1 & Part 2 has been submitted and approved by United Utilities.