

THAMES QUARTER - READING

Foul & Surface Water Drainage Strategy



Surface Water Drainage System

The proposed surface water drainage system will collate surface water runoff from all roofs and external hard paved surfaces and discharge the same via 500mm deep catchpits into below ground cellular storage systems. The development will provide landscape terraces on levels 10, 11 and 12 as an integral part of the SUDS drainage system.

Surface water run-off from the external pedestrian paved area will be directed toward the landscaped areas where possible with perforated pipes being provided within the soil matrix to discharge any surplus surface water runoff.

The surface water storage systems have been designed to accommodate the flows derived for all storm events up to and including the 1 in 100 year event, plus an additional 40% to cater for climatic change with no surface flooding. As such a total storage volume of 280 cubic metres will be provided at ground floor level. (Refer to attached Microdrainage Calculations).

Any exceedance flow would discharge onto the adjacent highway and as such would not pose a flood risk to the development threshold level.

The forward flow into the 900mm diameter surface water public sewer at Manhole Ref Node 8854 will be restricted to 5 litres/second. This will provide a significant reduction in flow and hence significant betterment when compared to the existing arrangement where surface water flows from the existing car parking facility are currently unregulated and discharge freely into the public sewer. Considering a flat rate of rainfall of 50mm/hour and based on an impermeable area of 0.37 Hectares would result in an existing flow rate of 51 litres/second into the existing public sewer network. As such there would be a significant reduction in flow entering the public sewer system from the proposed development footprint.

Outflow from the attenuation tank will be controlled by way of a vortex flow control device situated within a chamber located immediately downstream of the proposed storage facility.

The final manhole, referenced as FMH 1.0, will be fitted with a Naylor 'Smart Sponge' filter to address any water quality issues by removing hydrocarbons, silt and heavy metals prior to final discharge into the 900mm diameter surface water sewer at Manhole Ref Node 8854. As such the current drainage proposal will address both quantity and quality of the final surface water discharge into the receiving sewer.

Foul Drainage

Foul drainage from the development will utilise a section of the existing foul pumping main subject to a review of its condition. The foul pumping main currently outfalls into the 225mm diameter foul public sewer at Node Ref 8901 situated within King's Meadow Road.

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A new foul pumping station will be provided which will operate on a pump duty/standby arrangement. In addition an interlinking tank will be constructed to provide sufficient volume to cater for 24 hour storage of foul flows in the event of a total mechanical or electrical failure of the pumping facility. The foul pump station will be fitted with a high level visual and audible alarm to warn of pump failure.

Construction Method Statement

Details of the construction method statement are included in Watkin Jones Construction & Environmental Management Method Statement, submitted in relation to PC 18.