

ATHY MODEL SCHOOL INNOVATION HUB – DRAINAGE STRATEGY

Existing Foul and Storm Drainage:

Irish Water records show a 300mm diameter foul sewer along Geraldine Road to the west of the site and flows in a southwestern direction. There is also a 225mm diameter foul sewer along the N78 to the south of the site and flows in a western direction. These combine at the junction of the N78 and Geraldine Road and continue to flow in a southwestern direction in a 300mm combined sewer. There are no records of a public storm sewer in the vicinity of the site.

The existing site comprises a combined drainage network. Both foul and storm runoff discharge to the public foul sewer on the N78 to the south of the site. A CCTV and topographical survey was carried out on the existing drainage network on the site. The CCTV survey revealed several defects, including damaged pipes, blockages and tree root damage. The CCTV survey had to be abandoned in several locations due to the damage.

Proposed Foul and Storm Drainage:

It is proposed to provide a completely new separate foul and storm drainage network to serve the proposed site. These will flow by gravity to the southwest boundary of the site where they will combine and flow by gravity to the public sewer on the N78. A blank connection will be provided to the last storm manhole for future connection to public storm sewer if constructed. Refer to Drawing No. 4028-WD-100 for proposed foul and storm drainage.

For the storm run-off, it is proposed to provide permeable pavement to all roads and parking areas. Excess run-off from paved areas and roofed areas will flow by gravity to the southwest of the site before combining with the foul drain. Run-off from the car park to the south of the site will be collected separately and will pass through a Class 1 Bypass Petrol Interceptor.

Discharge of the storm system will be restricted to 2 litres/sec. An underground attenuation system is proposed to store excess run-off for storm events up to 1 in 100 year storm. This is designed with a 20% global warming factor.

The tank proposed comprises a 'StormTech parabolic structure and will be fitted with an isolator row. The Isolator Row is a row of StormTech chambers that is completely encased in geotextile filter fabric and acts as a sediment trap. This provides a "floor" to the row that will allow water to pass, but will trap sediment and debris. A strip of non-woven geotextile is wrapped over the top of the chambers for the entire length of the row, separating the chambers from the cover stone, providing further filtration as the row fills. Small storm events and the first flush of larger storms (which carry the most debris) are directed into the Isolator Row first via a weir plate in the access structure or through elevation differences in the manifolds. Only when the Isolator Row fills does the water build enough of a head to top the weir plate, or reach the manifold invert to the standard rows. This overflow option provides a way to fill the system quickly during large storm events.