Ashley Grange, Haigh Lane, Hoylandswaine – Drainage Statement

Proposed Surface Water Disposal

The proposed surface water drainage system should seek to meet the requirements of the NPPF. Additionally, the current Building Regulations now requires disposal of new development surface water run off to discharge by infiltration (to ground), to watercourse or to surface water sewer in that order of priority.

Sustainable Urban Drainage Systems (SUDS) should also be used wherever possible to mimic as far as practicable the natural run off regime, improve water quality, reduce run-off volume and attenuate peak flows. These should be designed in accordance with the current guidance, Ciria C753 'The SuDs Manual'.

A site investigation, consisting of a single trial pit and subsequent soakaway test, was recently carried out immediately adjacent to the proposed development. These investigations confirmed that ground conditions do not support the use of soakaways for the disposal of surface water run-off. The soils encountered within the trial pit were topsoil (0.30m) overlying firm to stiff grey mottled brown sandy friable clay proven to 1.05m. Underlying these cohesive clays were highly weathered interbedded siltstone and mudstone, which was recovered as slightly clayey gravels to a depth of 1.90m. In addition slight groundwater seepages were noted from 1.35m below existing ground level. No infiltration of water was observed in the trial pit over the extent of the test period.

Based on the above hierarchy, surface water run-off should be directed to the nearest available watercourse.

A small, un-named watercourse is present approximately 130m to the east of the site. This watercourse is within the applicants control and, therefore, surface water flows should be direct to this outfall. The topographical survey, and a study of the adjacent land, indicated that a gravity connection is achieveable.

Consent will be required from the Lead Local Flood Authority for any new connection made into this watercourse.

No existing formal drainage is understood to be present within the site. The existing barn structures are understood to discharge onto the adjacent land with flows following the site contours towards the adjacent watercourse.

Given the lack of an existing formal drainage connection, and in accordance with Local Authority requirements, all proposed development run-off should be restricted back to the existing greenfield run-off rates. However, given the relatively small impermeable area, restricting flows from the site back to a greenfield run-off rate of 5.0 l/sec would result in a very small outlet orifice and as such would be impractical and would result in frequent blockage and flooding. As a result, a restricted run-off rate of 3.5 l/sec has been selected which would require a 36mm outlet.

Flows from the proposed development should be restricted to 3.5 l/sec by an orifice flow control device with surface water attenuation provided below ground. This propopsed flow rate is subject to confirmation from Yorkshire Water and the Lead Local Flood Authority.

All proposed surface water systems should be designed to accommodate the worst case 1 in 30 year storm event without flooding. Furthermore, the worst case 1 in 100 year plus climate change storm event should also be retained on site in an area that will not cause flooding to any existing or proposed buildings. In accordance with the National Planning Policy Framework Technical Guidance, Table 5, a climate change uplift of 40% should be applied to all rainfall estimates.

Initial calculations have been undertaken which show approximately 11.5m^3 of storage will be required to accommodate the 1 in 100 year event including an allowance for climate change.

Proposed Foul Water Disposal

It is understood that there is no existing foul water connectivity from the site. However, an existing 225mm diameter public combined sewer is located within Haigh Lane to the east.

The pre-planning sewerage enquiry response from Yorkshire Water, confirms that a new connection into this public sewer is acceptable and should be made upstream of the existing manhole.

Foul water flows from the proposed development should, therefore, be discharged into the existing public combined sewer located within Haigh Lane to the east. Confirmation of the depth of the sewer has been provided and this indicates that a gravity connection is possible. As such, no restriction on flow rate is anticipated.