NEWSOME AVENUE, WOMBWELL, BARNSLEY

DRAINAGE STRATEGY

PREMIER CONSTRUCTION

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DEVELOPMENT AT NEWSOME AVENUE, WOMBWELL

DRAINAGE STRATEGY

THE SITE:

The site is located off Newsome Avenue, Wombwell and occupies an area of approximately 0.40 hectares. The site is a former Youth club, the topography falls from the south west (72.90m AOD) to the north east (63.90m AOD.) The site is bounded by Newsome Avenue to the south, existing housing to the west, and a recently built apartment complex to the east. The area to the north of the site is a redundant parcel of land that is to be redeveloped (subject to planning consent.)

A location plan is shown in Appendix A

A Topographical survey is shown in Appendix B

PROPOSED DEVELOPMENT:

Premier Construction are seeking to develop the site with 14 residential properties and associated infrastructure.

A site layout plan is shown in Appendix C

DRAINAGE CONSIDERATIONS:

A copy of the public sewer record is included within Appendix D

There is 300mm diameter surface water and a 225mm diameter public combined sewer which crosses the proposed development. These should be considered within the layout and an appropriate easement allowed for.

Onsite drainage will be designed with separate systems for foul and surface water.

SURFACE WATER

Current best practise requires that a hierarchical approach to surface water disposal is undertaken. These being in order of preference:-

1. Infiltration based or Sustainable drainage systems
2. Watercourses
3. Public sewer

Infiltration based systems: Infiltration testing in line with BRE Digest 365 has been carried out by Eastwood and Partners and confirms that infiltration methods of drainage will be feasible.

Infiltration test results can be seen in Appendix E

SUDS systems:

SUDS systems are designed to mitigate the impact of development on receiving watercourses or sewers by mimicking pre development conditions as far as possible. New development should not worsen flooding downstream and should attempt to improve flooding wherever practical.

Sustainable Drainage can take many forms dependant on site use, ground conditions and topography. In terms of the hierarchy of sustainable options, infiltration based systems should be considered in the first instance i.e. soakaways/infiltration/swales/basins/rain gardens etc. The use of infiltration systems will be subject to the infiltration characteristics of the natural ground below the site. In areas with cohesive sub soils it is unlikely that sufficient percolation can be provided to allow the implementation of infiltration techniques. It has been confirmed that soils below this site are suitable for infiltration.

The use of swales is not viable on this development due to the lack of suitable verge areas adjacent to the Highway, site topography and potential conflict with utility crossings.

The use of ponds and basins tend to be more viable for larger developments where there are significant areas of open space. A pond/basin would not be practical on this development due to the lack of public open space, site configuration and topography.

Watercourses: There are no known watercourses in the immediate vicinity of the site.

Public Sewer: A public surface water sewer exists to the east of the site within the grounds of the apartment complex. If a connection to this was proposed, the landowner's permission would be required or alternatively, a sewer requisition could be requested from Yorkshire Water.

FOUL WATER

The public combined sewer crossing through the site is at a level which would not allow a gravity connection from the whole development.

Public combined/foul sewers exist within third party land to the east and west of the site. The landowner's permission would be required to gain access to make a connection to these or alternatively, a sewer requisition could be requested from Yorkshire Water under Section 98 of the Water Industry Act 1991.

It is proposed that all foul drainage would remain private and therefore a Section 104 agreement will not be required.

DRAINAGE PROPOSALS:

SURFACE WATER

It is proposed that all surface water from the development is disposed of by Infiltration. Suitable soakaways should be designed to comply with BRE Digest 365.

Domestic soakaways should be located a minimum of 5m from buildings. A proprietary cellular system would be favoured, as the void ratio is very high. Given the layout of the development it will be necessary to utilise larger shared soakaways where necessary to accommodate plots where a 5m stand off distance cannot be achieved. The deeds for each property should ensure they have a right to discharge to a soakaway in perpetuity and the maintenance of such is shared between all connected plots.

Highway soakaways should be located outside the adoptable Highway footprint but in areas that can be readily accessed and maintained by the Highway Authority. It is proposed to have the Highway soakaways adopted by means of a Section 38 agreement and the payment of a commuted sum for future maintenance.

All surface water run off should pass through a silt trap prior to discharging to a soakaway to prevent future maintenance issues.

A soakaway strategy drawing showing proposed soakaway positions and impermeable areas draining to each can be found in Appendix F.

FOUL WATER

It is proposed to connect all foul water to one of the public foul/combined sewers located within third party land to the east or west. The landowner's permission will be required and an application under Section 106 of the Water Industry Act 1991 will need to be submitted to Yorkshire Water for approval.