

GOLDTHORPE HOUSING PROJECT PHASE 2 & 3
GOLDTHORPE, BARNSELY
FLOOD RISK ASSESMENT & DRAINAGE STRATEGY
BARNSELY MBC
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DEVELOPMENT AT COOPERATIVE STREET/VICTORIA STREET, GOLDTHORPE, BARNSELY

DRAINAGE STRATEGY

THE SITE:

The proposed works include new build housing and public realm works. For the purpose of this document, it is assumed that the public realm works will only require minor drainage works (gully repositioning etc.)

The new build site is located off Cooperative Street and Victoria Street, Goldthorpe, Barnsley and occupies an area of approximately 0.27 hectares. It is currently terraced housing with demolition and site clearance to be carried out shortly.

The topography falls at an approximate gradient of 1:20 from north east to south west.

A location plan is shown in Appendix A

A copy of the topographical survey is shown in Appendix B

PROPOSED DEVELOPMENT:

Barnsley MBC are seeking to develop the site with 9 dwellings.

A site layout plan is shown in Appendix C

FLOOD ZONE LOCATION:

The Environment Agency flood map shows the site lies within flood zone 1. The site has therefore a “low probability” of flooding, where the annual risk of fluvial flooding is less than 0.1%.

A copy of the Environment Agency flood zone information can be seen in Appendix D.

OTHER SOURCES OF FLOODING:

Reservoirs – There are no reservoirs within the vicinity of the site.

Surface Water – The information held on the Environment Agency website confirms the site is not at risk of surface water flooding.

Public Sewers – There are no known flooding issues with public sewers within the vicinity of the site.

Groundwater – Flooding from groundwater is most common in areas where the underlying bed rock is chalk, but it can also happen in locations with sand and gravel in low lying areas. The risk of groundwater flooding at this site is very low.

DRAINAGE CONSIDERATIONS:

A copy of the Yorkshire Water pre development enquiry and public sewer map can be seen in Appendix E.

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

EXISTING PUBLIC SEWERS

There are surface water and combined public sewers within the boundary of the proposed development that will require formal closure under Section 116 of the Water Industry Act.

Any sewers to remain will be provided with an appropriate deed of easement.

A copy of the public sewer record can be seen in Appendix E.

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 systems
2. Watercourses
3. Public sewer

Infiltration based systems: Infiltration testing has not been carried out on this site, but testing on the adjacent Phase 1 was unsuccessful.

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

Public Sewer: There are public surface water and combined sewers within the vicinity of the proposed development.

FOUL WATER

There are public combined sewers within the vicinity of the proposed development.

DRAINAGE PROPOSALS:

SURFACE WATER

Infiltration methods of drainage will not be an option due to the cohesive nature of the underlying soils.

The existing terraced housing is currently drained to the public surface water/combined sewers within the adjacent roads. The basis of good surface water design is to reduce existing run off rates where possible. It has been agreed with Yorkshire Water to reduce the existing run off rates by 30%. The existing run off areas, calculations and approval to the proposed discharge rates from Yorkshire Water can be seen in Appendix F.

An attenuation tank and flow control manhole will be required for each area. It is proposed to utilise cellular “crates” for attenuation due to their ease of construction and versatility.

The attenuation tanks should be sized to cater for the 1:100+40% climate change event. Attenuation requirements are shown on the drainage strategy plan with calculations within Appendix G.

Future maintenance of the surface water drainage system will be by Barnsley MBC.

FOUL

A foul connection can be made to the 225mm diameter combined sewer within Cooperative Street.

Onsite foul drainage will be maintained by Barnsley MBC.

A drainage strategy drawing can be seen in Appendix H.