

DRAINAGE PROPOSALS

Client: Newett Homes
Site: Land South of New Smithy Avenue
Thurlstone
Planning Authority: Barnsley MBC

Introduction:

The landowner is proposing to develop a site currently occupied by green fields. The site benefits from outline planning permission for up to 21 dwellings (*Ref: 2017/0088, 04 July 2018*) and the applicant is submitting a reserved matters application pursuant to this consent. A full planning application is also submitted for the development of 9 additional dwellings on the site. This Drainage Statement is submitted in support of both applications. The developed area of the site covers 0.95ha. This statement gives a brief summary for the drainage proposals for the proposed development.

Surface Water Drainage:

Surface water disposal is considered in accordance with the preferred drainage hierarchy in Building Regulations Part H 2002 and Planning Practice Guidance "Reducing the causes and impacts of flooding", paragraph 080, with disposal via SUDS methods the first option, followed by disposal to the watercourse and, finally disposal to the public sewer.

The site currently does not appear to be positively drained. It is assumed that surface water flows either over-ground or below-ground to the south east towards High Bank following the natural contours of the land.

An intrusive ground investigation has been carried out and confirms that infiltration SuDS such as soakaways are viable on the site due to the presence of shallow sandstone.

Also at:- Principle House, 121-123 Fleet Road, Fleet, Hampshire, GU51 3PD Tel: 01252 360580 Fax: 01252 360581

Directors: **P Richardson** BSc, CEng, MICE, MStructE **S D Preston** BEng, CEng, FICE, FStructE **N J Baines** BSc, CEng, MICE, MCIWEM
S R Ellis BEng, CEng, MStructE, AMICE **K R Pursall** BEng, CEng, MStructE
C A Topliss BSc, CEng, CSci, CGeol, SiLC, AMICE, FGS **S J English** BEng, CEng, MStructE **A R Priest** BEng
Senior Associates: **K Newsome** BSc, CEng, MICE, MStructE **S J Mitchell** BSc, MSc, CEng, MEI, MCIBSE, MASHRAE **A Allison** BEng
M Young MA, CEng, MICE, MStructE **C A Wood** BSc, CEng, MStructE, AMICE
Associates: **K Edwards** MSc, FGS **A J Kerslake** BEng **A G Marshall** BEng, CEng, MStructE **C Hodge** EngTech, TMICE **P A Harrison** BEng, CEng, MStructE
M P Chappell BEng, IEng, AMStructE **P H Halberstadt** MEng, ACGI, CEng, MICE **M Dyson** BSc(Hons.) CEng, MStructE
Consultants: **J M Wood** BSc, CEng, MICE, FStructE **M J Yates** BSc(Eng), ACGI, CEng, MICE, FStructE

Surface water discharge will be to soakaways. The Highway Drainage system will be offered for adoption by Barnsley Metropolitan Borough Council.

Design rate for infiltration systems for the majority of the site has been taken as 680×10^{-6} (2.448 m/s) which is the lowest recorded in four out of the five results. The lower rate recorded in SA4 was due to localised variation in strata and it is suggested further targeted testing is carried out and local design rate adjusted in this area if necessary. A copy of the test results is appended.

The final disposal strategy for surface water run-off requires detailed consideration and approval during the design phase of the project. Barnsley Metropolitan Borough Council will need to be consulted in respect of the proposals. The final design will need the approval of the relevant statutory bodies but will broadly follow these principles:-

- The principal disposal route is to soakaways. Soakaways will typically be designed for 1 in 100 year storm event with allowance for climate change.
- Soakaways serving adoptable highways would be offered for adoption by Barnsley MBC. Private plot soakaways would remain the responsibility of the plot owners.
- The type and size of SuDS used would be specified at detailed design but may consist of ring soakaways, cellular soakaways, permeable paving, trench soakaways or a combination of these.

Adopted highway drainage has been split into three catchments with soakaways serving areas measuring between 370m² and 820m². Infiltration has only been considered through the sides and a safety factor of two applied. The sizes of these soakaways range from 1.8m to 2.4m diameter with depths between 2.45m – 2.90m

Dwellings are to be served by individual or shared soakaways serving areas measuring between 200m² and 300m². These are currently sized using cellular type soakaways although this shall be confirmed depending upon developer preference. Infiltration has only been considered through the sides and a safety factor of two applied.

Flood Routing:

It is normal planning requirements that flows from site be contained within the development boundary for rainfall events up to 1 in 100 years with an allowance for climate change. It is proposed that this shall be achieved by providing flood flow routes to the lower lying south-eastern boundary.

Road levels and cross falls shall be designed to allow overland flows to pass freely to these areas.

Plot levels adjacent low points shall be set higher than the surrounding areas to provide protection from any overland flows.

Foul Water Drainage:

Foul discharge is to the existing 150mm diameter public combined sewer to the north of the site in New Smithy Avenue. A gravity connection can be achieved for the foul water outfall route and has been discussed in principle with BMBC Highways and Yorkshire Water due to the shallow depth. Any lower lying plots which cannot achieve a gravity connection would be served either by a private package pumping station or via an alternative sewer easement through White House Farm.
