Lidsey Impact Assessment Statement for Land at #2 Downview Road

Land at #2 Downview Road
Off Burndell Road
Yapton
ARUNDEL
BN18 0HS

PROPOSED WORKS :

Sub division of existing plot and build new a 4-unit block within a single terraced configuration, and associated works.

GEOLOGY :

The British Geological Survey maps the area with the Superficial of “River Terrace Deposits” of fluvial origin, consisting of Sand, silt and clay, overlying bedrock of the “Lewes Nodular Chalk et seq” of shallow marine origin.

FLOOD RISK :

Gov.uk Flood Detail Information

Information from Gov.uk details flood risk as follows :

The site lies in Flood Zone 1, detailed as having a low probability of flooding from rivers and the sea.
A very small section of the garden to the northwest corner, details the Annual Likelihood of Flooding from surface water flooding, to be in a 1 in 100 year return (1% AEP).
The Yearly Chance of Surface Water Flooding is Very Low staying at Very Low between 2040 to 2060.
The Yearly Chance of Rivers and Sea Flooding is Very Low staying at Very Low between 2036 to 2069.
Flooding from Groundwater is assessed as -- ‘this location is outside of a groundwater flood alert area’.
Additionally the risk of Flooding from Reservoirs has a classification of ‘Unlikely in this Area’.

Lidsey Surface Water Management Plan 3.0 (SWMP)

Although the site is an area which is subject to the Lidsey Surface Water Management Plan, the site itself does not actually lie within any of the prescribed Local Flood Risk Zones LFRZ_001 to LFRZ_027. This informs that the site does not lie within any of the indicated Flood Risk areas for a 1 in 100 year storm event or within any of the indicated Flood Hazard areas, again for a 1 in 100 year storm event, as detailed by the Lidsey Surface Water Management Plan.

From consultation with the applicants there appears to be NO historical areas of localised flooding or ponding after heavy rainfall, within the existing site area of #2 Downview Road.

SURFACE WATER DRAINAGE CONSIDERATIONS

The site is in a vulnerable area where drainage must be carefully considered.

The site does not lie in an area designated by any Classification as Source Protection Zones or Drinking Water Protected Areas / Safeguard Zones.

Groundwater levels along the coastal plain tend to be high, sometimes perched on less permeable soil strata and may be tidally influenced especially when close to the coast or tidally influenced watercourses.

Since the site is 1.8 miles (directly) from the coastline, groundwater levels are not expected to be influenced by any Tidal Effects.

Investigations from other / previous planning applications close by, within the local area, indicate that Groundwater levels tend to be typically around 1600mm to 2000mm Below Ground Level (BGL) within the wet winter months during maximum rainfall events. It is recognised, however that actual soil conditions do vary considerably across all of the coastal plain with the consequential large variance of local (possibly perched) groundwater levels.

It should be noted that no local groundwater level data within WSCC or Arun DC boreholes is currently available.

Guidance from the CIRIA Sustainable Drainage System SuDS Manual C753 from 2015 details Freeboard (being specified as the amount of Un-Saturated Soils), of 1 metre minimum, as the distance below the base of an infiltration structure, to the expected highest or actual peak recorded groundwater levels.

Here at the site, given a typical infiltration structure of height ~400mm and a typical cover of ~400mm, an infiltration design is likely to meet the SuDs Manual guidance as regards the Freeboard.

Should the minimum Freeboard of 1 metre not be achievable then any intermediate (depths of 800mm to 1000mm) Soil Infiltration (Percolation) Testing, which would normally be carried following the Arun DC drainage guidance, will not be required, however very shallow testing, ~500mm may be relevant.

Water Quality Treatment is not a major issue here since the proposed new building discharge flows consist of clean roof-water areas with no contamination and the other main infiltration area, is the self draining extended driveway and parking areas which will take intermittent, single property, light vehicle traffic as opposed to a continual flow of traffic associated with roads.

Any designs must replicate the natural drainage catchments of the site with all surface water designs draining via gravity to any corresponding points of discharge.

The surface water drainage design should promote and increase (wherever possible) biodiversity and amenity benefits.

Any SuDS and source control solutions for a surface water disposal strategy, should follow “the hierarchy of preference for different types of sustainable surface water drainage disposal systems” as set out in Approved Document H of the Building Regulations, and the recommendations of the SuDs Manual. These being :-

1. Rainwater reuse where possible.
2. Complete discharge into the ground (infiltration).
3. Hybrid infiltration and restricted discharge to an appropriate water body or surface water sewer.
4. Restricted discharge to an appropriate water body.
5. Restricted discharge to a surface water sewer (public / private).
6. Restricted discharge to a combined sewer

Note a water body may be defined as a river, watercourse, ditch, culverted watercourse, reservoir, wetland or the sea.

In general options 1) & 2) above are always the preferred solution and options 3) to 6) above are only to be considered after rigorous groundwater monitoring and soil infiltration testing has discounted option 2) as unviable.

It should be noted that surface water disposal into the Foul Water Sewer System is not supported within the SUDs Manual and as such, here, no disposal of surface water by this method will be recommended, especially with the site being within the Lidsey Catchment Area.

The only exception to the disposal of surface water into the foul drainage system is where Southern Water specifically designate the sewer to be a ‘Combined System’ which is not the case here.

FOUL WATER DISCHARGE

It is anticipated that all the foul waste water flows from the proposed new development will almost certainly discharge into one of the two foul inspection chambers, identified within the site, serving that of the main host building of #2 Downview Road. The exact chamber into which the connection will be made will be determined at detailed design stage by the respective allowable pipe gradients and invert levels. In the absence of a suitable onsite connection point, then the connection will be made into the identified Inspection Chamber of the 175mm diameter, vitreous clay, Public Foul Water Sewer within the informal entrance driveway to the site. From available mapping the depth to the invert level of this chamber, of 1780mm, should allow suitable pipe gradients and invert levels across the site. In the absence of an overall suitable connection point, then the fallback position is the direct connection into the Public Foul Water Sewer in the highway Burndell Road. In any event either option will require formal written approval from Southern Water.

(RC 29-11-2025 version 1)

Mate Geo-Technic Services

REFERENCES

Lidsey Surface Water Management Plan 3.0 (October 2014) at
https://www.arun.gov.uk/lidsey-waste-water-treatment-catchment-area

Building Regulations Part H.

CIRIA SuDS Manual 2015 at
www.ciria.org

Supplementary guidance notes regarding surface water drainage at
https://www.arun.gov.uk/surfacewater

Designer checklists at
https://www.arun.gov.uk/designer-checklists

Ordinary Watercourse Land Drainage Consent at
https://www.arun.gov.uk/land-drainage-consent