BRIGHT PLAN CIVILS

Adur & Worthing Reference: AWDM/1449/22

5th October 2022
Our Ref: D2099

DRAINAGE CONSULTANT RESPONSE - OCTOBER 2022

Please find our consultant statement to supplement the additional information provided in response to the Adur & Worthing Councils comments, regarding surface water drainage for the proposed development at Old Shoreham Road, Southwick.

LOCAL PLANNING AUTHORITY COMMENTS AND CONSULTANT RESPONSES (IN RED)

Mr Derek Magee (derek.magee@adur-worthing.gov.uk) Technical Services - 14/09/2022

Address: Land Opposite 269 To 287 Old Shoreham Road Southwick West Sussex
Proposal: Approval of Details Reserved by Conditions: Cond 3 (Construction Management Plan); Cond 5 (Secure Cycle Parking); Cond 6 (Travel Plan); Cond 10 (External Lighting); Cond 12 (Foul Water Design); Cond 13 (Surface Water Design); Cond 14 (Surface Water Management); Cond 17 (Hard and Soft Landscaping); Cond 18 (Boundary Treatment); and Cond 23 (Waste Storage) of approved application AWDM/1032/21.

Comments:

Flood risk:

The development is not shown to be at risk from surface water flooding.

Surface Water Drainage:

We note that the development is on a brownfield site, policy requirements are clear that SuDS must still be provided. The hierarchy for sustainable drainage must be followed with infiltration fully investigated. Winter infiltration testing and winter groundwater monitoring must be undertaken, it is advised that the applicant discusses the extent of this monitoring with us at the earliest opportunity.

Winter infiltration testing and groundwater monitoring has been undertaken by Ashdown SI Ltd, further to the original infiltration test report produced in September 2020, a full geotechnical report consisting of further winter geotechnical testing across the site at varying depths was produced in January 2021, and groundwater monitoring results were provided following winter monitoring from November 2020 until May 2021.

Infiltration tests must be carried out in accordance with BRE 365, CIRIA R156 or a similar approved method and cater for the 1 in 10 year storm between the invert of the entry pipe to the soakaway, and the base of the structure.

Infiltration tests were undertaken in accordance with BRE 365, with three tests in each of the 4 no. trial pits undertaken to compliant fall in head, in addition to the preliminary test results previously provided.

Because the proposed drainage strategy uses a combination of permeable pavement and geocellular soakaways to both attenuate and infiltrate runoff, the design water levels are higher than the incoming pipe invert level for one of the geocellular storage features during the 1 in 10 year storm event. This does not impact

on the function of the drainage system as the permeable pavement is fully utilised to attenuate runoff up to the design event.

Whilst the geocellular storage tank could be pushed lower to allow for this provision, this is already set with a tank invert at 3.0mbgl and we would not suggest deepening the system unnecessarily here as there is sufficient capacity already.

It must also have provision to ensure that there is capacity in the system to contain below ground level the 1 in 100 year event plus 40% on stored volumes, as an allowance for climate change. Adequate freeboard must be provided between the base of the soakaway structure and the highest recorded annual groundwater level identified in that location.

Hydraulic calculations provided indicate the proposed drainage strategy has sufficient capacity for the design storm event, without exceedance.

Groundwater monitoring found that peak groundwater levels did not reach the groundwater monitoring boreholes throughout the monitoring period, measured up to 3.60 mbgl. This provides certainty that the proposed surface water drainage features remain sufficiently above peak groundwater levels.

If on-site infiltration is not possible, drainage via a restricted discharge to a suitable surface water sewer may be acceptable. Any discharge should be restricted to as close to 1 year greenfield runoff rates as achievable, with a minimum rate of 2l/s. We suggest that, at the earliest stage, the developer gives due consideration to the appropriate location and design of surface water drainage features to achieve necessary capacity, water quality (via the SuDS management/treatment train), as well as ease of ongoing maintenance.

Extensive soakage testing across the site demonstrates that infiltration features are viable in accordance with the proposed strategy.

Surface Water drainage features should also be designed in a manner that positively affects the amenity of the site. We Would like to remind the developer that, open features, such as swales, basins and ponds, when designed correctly, can satisfy all the above aspirations in addition to; being easier to maintain, having longer life spans and offering ecological advantages over subterranean features such as “plastic crates systems”.

Whilst it is agreed that open storage features can be preferable where viable, the proposed site layout and drainage strategy have been agreed at planning and the proposed detailed drainage, levels and surfacing design is to ensure that the drainage strategy can operate as proposed up to the design storm event and provide the necessary detail for discharge of conditions.

Adequate treatment of surface water must be ensured prior to discharge.

Treatment proposals to ensure adequate treatment of surface water are provided separately.