

PAC/SHD/108/21 – Response to DLR Drainage Planning report

Dear Sir/Madam

This forms part of a response to the pre-planning comments Ref. Pac/SHD/108/21, regarding the proposed development at Blackglen Road, Sandyford, Dublin 18.

In this document O'Connor Sutton Cronin (OCSC) have addressed items pertaining to Drainage Planning Report Date: 26th November 2021 (Appendix B), other items have been addressed by various other members of the design team.

SURFACE WATER DRAINAGE

1)

It is unclear from the information provided what overall area has been used to calculate the discharge rate and attenuation volume for the site. The applicant has also not included Site investigation results to justify the Soil Type chosen in their calculations. The applicant also appears to have used a SAAR value lower than expected for this site. It should be noted that Microdrainage has default Cv values of 0.84 for Winter and 0.75 for Summer. These should be amended to a value of 1.0. Maintaining the default Cv values reduces the run-off in simulations of rainfall events, giving inaccurate simulation results which may lead to undersizing of the drainage system and attenuation storage.

The applicant is requested to resubmit their surface water drainage calculations explicitly stating the total contributing area, using Cv values of 1.0, and using site specific or local data, such as SAAR, Soil Type, Rainfall Return Period Table (available from MET Eireann), rainfall intensity and other hydrological parameters. The applicant must clearly state and justify all inputs used in Microdrainage and agree these with Drainage Planning. The applicant should note that Qbar is calculated for the NET area drained not the GROSS area of the site (i.e. red line boundary), any landscaped areas that will not contribute to the surface water system should be excluded from discharge and attenuation volume calculations.

Response

Calculation have been amended as follows: Cv value of 1.0 used in calculations, Rainfall Return Period Tables and SAAR values requested from MET Eireann and used in calculations. Site investigation report included as Appendix to the Engineering Services Report. NET area drained used in calculations of the discharge rate and attenuation volumes. (Ref. Doc: Z040-OCSC-XX-XX-RP-C-0005)

2)

The applicant appears to have divided the site into a number of surface water catchments. The applicant is requested to identify on a colour coded drawing the various sub-catchments and the elements of interception, storage, conveyance and flow control for each. The applicant should also comment on how the catchments interact as the discharge from some does not appear to be correct

Response

A Storm water catchment zone plan drawing (Ref. Doc. Z040-OCSC-XX-XX-DR-C-0505-S4-P02) has been produced identifying various sub-catchments and the elements of interception, storage, conveyance and flow control for each.

3)

The applicant is requested to submit the complete Site Investigation Report and results, including Infiltration tests, and a plan showing the trial pits/soakaway test locations across the site. The report should address instances where groundwater, if any, was encountered during testing and its impact.

Response

Full Site Investigation Report has been included in Appendix I of the Engineering services Report. (Ref. Doc: Z040-OCSC-XX-XX-RP-C-0005-S4-P06)

4)

The applicant is requested to resubmit long-sections of the surface water drainage system, clearly labelling existing/proposed ground levels, cover levels, invert levels, pipe gradients and pipe diameters.

Response

Long-sections provided showing proposed ground levels, cover levels, invert levels, pipe gradients and pipe diameters, attenuation systems and separations to other utilities. (Ref. Doc: Z040-OCSC-XX-XX-DR-C-0510-S4-P04)

5)

The applicant has not provided interception/treatment for the entire site via soft SuDS measures. The applicant is requested to review their design to utilise significantly more soft SuDS measure in lieu of the piped and tanked surface water drainage system proposed. The applicant is requested to show the options being proposed for interception and treatment for each catchment, via soft SuDS measures, with contributing areas on a drawing together with an accompanying text and tabular submission showing the calculations, to demonstrate that the entire site is in compliance with GDSDS requirements. The applicant should note that over-provision in one location does not compensate for under provision elsewhere. It should be noted that attenuation systems and petrol interceptors are not considered adequate forms of treatment.

Response

Interception/treatment for the entire site via soft SuDS measures has been provided. Refer to subsection 3.4.2.8 of the Engineering Services Report (Ref. Doc: Z040-

OCSC-XX-XX-RP-C-0005) as well as to the Storm water catchment zone plan drawing (**Ref. Doc. Z040-OCSC-XX-XX-DR-C-0505-S4-P02**)

6)

If the applicant proposes SuDS measures that incorporate the use of infiltration, the applicant is requested to provide details of each SuDS measure and confirm whether it will be lined/tanked or not. If lined/tanked systems are to be used, then the applicant will be requested to explain the rationale behind this. If unlined systems are to be used then the applicant is requested to demonstrate on a drawing that all infiltration SuDS proposals, including the attenuation system, have a 5m separation distance from building foundations and 3m separation from site boundaries.

Response

All separation distances have been clearly noted on the proposed Drainage layout (**Ref. Doc. Z040-OCSC-XX-XX-DR-C-0500-S4-P06**). All infiltration SuDS proposals have minimum 5m separation distances. It's noted on the drawing if the attenuation are to be lined or not.

7)

The applicant is requested to submit supporting standard details, including cross-sections and long-sections, and commentary that demonstrates that all proposed SuDS measures have been designed in accordance with the recommendations of CIRIA C753 (The SuDS manual).

Response

Storm Water standard details have been provided and designed in accordance with CIRIA C753 SuDS Manual. Refer to drawings Z040-OCSC-XX-XX-DR-C-0520 to Z040-OCSC-XX-XX-DR-C-0527.

8)

As standard, the applicant is requested to demonstrate by calculation and by representation on a drawing that the proposed green roof extents are in accordance with the Council's Green Roof Policy such that the minimum coverage requirement of 60% is achieved. The applicant shall also provide details of maintenance access to the green roofs and should note that, in the absence of a stairwell type access to the roof, provision should be made for alternative maintenance and access arrangements such as external mobile access that will be centrally managed. A detailed cross section of the proposed buildup of the green roof should be provided, including dimensions. The applicant should comment on the compatibility of the green roof with PV panels if they are to be incorporated into the design.

Response

To be addressed by the architect

9)

As standard, the applicant is requested to provide a penstock in the flow control device chambers and ensure that each flow control device provided does not have a bypass door. The applicant shall also clarify whether a silt trap is being provided in each flow control device chamber and if not to make provision for same.

Response

A penstock is provided in the flow control device chambers as well as a 600mm deep silt trap prior to each flow control, refer to Storm Water Standard Details drawings sheet 3 & 4 (Ref. Doc: Z040-OCSC-XX-XX-DR-C-0522-S4-P03 & Z040-OCSC-XX-XX-DR-C-0523-S4-P03).

10)

As standard, the applicant is requested to provide fully dimensioned plans and sections of the attenuation storage systems. All relevant inlet and outlet levels, dimensioned clearances between other utilities, and actual depths of cover to the tank shall be provided. The applicant shall include confirmation from the chosen manufacturer of the storage systems that the specific model chosen, with the depth of cover being provided, has the required load bearing capacity to support the loading that may imposed upon it.

Response

Fully dimensioned section drawing of the primary attenuation (bioretention area) provided. (Ref. Doc: Z040-OCSC-XX-XX-DR-C-0510-S4-P04). Standard detail of underground attenuations shown are provided on the standard details drawings. Depths to covers, inlet and outlet levels as well as clearance between other utilities has been shown on the proposed surface long-section drawing (Ref. Doc: Z040-OCSC-XX-XX-DR-C-0510-S4-P04)

11)

As standard, the applicant is requested to confirm that a utilities clash check has been carried out ensuring all utilities' vertical and horizontal separation distances can be provided throughout the scheme. The applicant should demonstrate this with cross-sections at critical locations such as junctions, site thresholds and connection points to public utilities. Minimum separation distances shall be in accordance with applicable Codes of Practice

Response

A utilities clash has been carried out and minimum separation distances have been adhered to, refer to surface and wastewater long-section drawings for details (Ref. Doc: Z040-OCSC-XX-XX-DR-C-0510-S4-P04 & Z040-OCSC-XX-XX-DR-C-0515-S4-P05)

12)

As standard, the applicant shall ensure that other disciplines' drawings, including landscape drawings, are compatible with engineering drawings

Response

All disciplines drawings are compatible with engineering drawings.

13)

A Stormwater Audit will be requested for this application. In accordance with the Stormwater Audit policy, the audit shall be forwarded to DLRCC prior to lodging the planning application. All recommendations shall be complied with, unless agreed in writing otherwise with DLRCC.

Response

A storm water audit has been completed by JBA Consulting and added as an appendix to the Engineering services report. (Ref. Doc: Z040-OCSC-XX-XX-RP-C-0005)

SITE SPECIFIC FLOOD RISK ASSESSMENT

A Site Specific Flood Risk Assessment has been provided, **(Ref. Doc: Z040-OCSC-XX-XX-RP-C-0006-S4-P01)**

Yours sincerely

MARKO KOMSO
For O'Connor Sutton Cronin