
Water Services, Wastewater Services & Surface Water Management

ABP / MCC / Irish Water Consultation Summary

Dunshaughlin East SHD

Doc No. WS-01 Rev A (07/12/18)

Prepared by:



Introduction:

The following document outlines a summary of the engineering design consultation process for water services, wastewater services and surface water treatment and disposal.

The proposed surface water management system is based on GSDS guidelines and Meath County Council (MCC) Requirements. The design has developed throughout the consultation period with MCC and An Bord Pleanála (ABP)

The proposed wastewater disposal system is design in accordance with Irish Water Code of practice for Water Infrastructure (Dec 2016) and Irish Water Code of practice for Wastewater Infrastructure.

MCC & ABP Consultation History:

- Formal Section 247 Pre-application meeting with MCC – 7th February 2018
- ABP Pre-App – 13th April 2018
- Board’s Opinion received - 27th April 2018
- First pre-app with MCC following revisions to scheme - 30th July 2018
- Second pre-app with MCC following revisions to scheme - 31st august 2018

Key items raised by ABP & MCC during consultations

Inspectors Report on Recommended Opinion ABP-301099-19

5. Surface Water Management and Risk of Flooding

“Further consideration of documents as they relate to surface and storm water management for the site. This further consideration should have regard to the requirements of the Council in respect of surface water treatment and disposal as set out in section 8.5 of the Planning Authority’s opinion. Any surface water management proposals should be considered in tandem with any Flood Risk Assessment, which should in turn accord with the requirements of ‘The Planning System and Flood Risk Management Guidelines’ (including the associated ‘Technical Appendices’). Further consideration of these issues may require an amendment to the documents and/or design proposals submitted.”

Design Team Response:

Joseph O’Reilly Consulting Engineers engaged JBA Consulting, who are reputable flood modellers and carry out strategic flood risk models for local authorities countrywide, to carry out the modelling of the entire drainage proposal including all incoming flows to the site, flows generated within the site and right through the downstream channel for ca. 2km and simulating them in Microdrainage. The assessment determined the peak flood levels downstream of the site at the relevant outfall locations. Joseph O’Reilly Consulting Engineers Stormwater Design Proposal’s outfall flow rates from the development are set based on the greenfield runoff rates which limits the outfall from the development to mimic the pre-development flow conditions. As a result there will be no increase of flooding downstream caused by development and this is predicted up to the 100 year flood flows. This is in line with best practice drainage design guidance per Meath Co Co, GSDS and SUDS guidance.

To integrate both the site drainage to the catchment flood levels, the proposed outfall flows were checked against the peak flood level in the downstream channel in JBA's modelling, which determined that the downstream catchment will take the flow from the site and will not cause any flooding within the proposed development or further upstream in the catchment.

JBA have completed the modelling & simulating of the proposed storm networks on the final drainage design – Refer to document 2018s900

5.4 All existing watercourses that traverse the site including any proposal to culvert/re-route existing drains should be identified on a site plan

Design Team Response;

A site plan indicating all existing watercourses can be found in the accompanying application documents, drawing number J18-01-019-A. Details of the proposed culvert can be found in drainage drawing J18-01-012-A & J18-01-013-A.

Planning Authority Opinion (28/03/2018)

8.5 Water Services ,Wastewater Services and Water Treatment and Disposal.

Water and Wastewater Connection

The applicant proposes to connect to the public water supply and public sewer network. An Bord Pleanala is advised to consult with Irish Water in relation to the proposed Strategic Housing Development in relation to the proposed Strategic Housing Development

1. A copy of the Pre-connection Enquiry (3522128496) has been submitted to Irish Water who has indicated that subject to a valid connection agreement being put in place and specific conditions, the proposed connection to Irish Water can be facilitated. Irish Water has indicated in its letter that there is adequate capacity in the wastewater network and the wastewater treatment plant. Adequate water treatment capacity has also been indicated.
2. The attention of An Bord Pleanala is drawn to the request from Irish Water, who has sought the applicant to determine if any break in the watermain occurs along the R-147 and that this work is to be funded by the applicant.

Design Team Response;

1. A Statement of Design Acceptance letter was received from Irish Water on the 07/11/2018. This is located in Appendix D of document WS-02 "Water, Wastewater Services & Surface water Management Design Report"
2. With regards the query about "determining if any break in the watermain occurs along the R-147 and that this work is to be funded by the applicant", Irish Water have confirmed by email that the work required for this upgrade will be resolved as part of the connection agreement with Irish Water. Refer to Appendix E of document WS-02 "Water, Wastewater Services & Surface water Management Design Report"

Surface Water Treatment & Disposal

Meath County Council considers that the design for the development as proposed broadly meets the requirements of Meath County Council with respect to the orderly collection, treatment and disposal of

surface water. Should planning permission be granted, it is recommended that the following conditions are applied:

1. All work shall comply fully with the Greater Dublin Strategic Drainage Study (GSDSDS) Regional Drainage Policies Volume 2, for New Developments.
2. Permeable paving shall only be incorporated into privately owned car parking spaces.
3. The applicant shall provide a non-return valve on proposed discharge Outfall No.2. Prior to construction the applicant shall submit details for the non-return valve which shall be acceptable to MCC Water Services Engineer
4. Prior to commencing construction the applicant shall submit results of the ground water level monitoring at each of the proposed attenuation sites. The water table level shall be clearly indicated relative to the proposed attenuation system invert level and appropriate measures implemented to ensure the attenuation system does not become inundated with ground water. The proposed attenuation system shall be acceptable to the MCC Water Services Engineer.

Design Team Response:

1. All surface water drainage design shall comply fully with the Greater Dublin Strategic Drainage Study (GSDSDS) Regional Drainage Policies Volume 2, for New Developments.
2. Permeable paving omitted from public car park spaces and shown in privately owned car parking spaces only.
3. The applicant shall install a non-return valve on the proposed discharge Outfall No.2. Prior to construction the applicant shall submit details for the non-return valve which shall be acceptable to MCC Water Services Engineer
4. Following consultation with MCC and reviewing initial results from the ground water level monitoring process it was concluded that a fully sealed attenuation system was required due to high ground water levels. With regards this the preferred attenuation system of MCC was underground concrete tanks.

8.11 Flood Risk Assessment and Management

“PFRA mapping does indicate that there is a risk of pluvial flooding on the site. This may be due to local topography and soil type and surface water drainage systems on the site should take cognisance of this issue and mitigate potential flooding.”

Design Team Response:

Joseph O’Reilly Consulting Engineers stormwater drainage design incorporates all flows within the site catchment, based on topography, soil type and surface water drainage systems. As a check to prevent flooding, JBA consulting engineering’s model has then tested the full stormwater drainage design up to the 100 yr flood flows with no flooding predicted within the development. Refer to Hydrocare Environmental Ltd Flood Risk Assessment Report.

“OPW Flood Hazard mapping also indicates that the site is in ‘benefitting lands’ and although this does not directly indicate a definite flood risk, this fact should be taken into account in any flood risk analysis; reference should be made to same in the Site Specific Flood Risk Assessment and any compensatory measures to be taken in the development should be stated.”

Design Team Response:

Refer to Hydrocare Environmental Ltd Flood Risk Assessment Report which has been updated to include details of the 'benefitting lands'. Information on benefitting lands has been provided by Shane Hayes, OPW.

"It is mentioned in the report that any drains that discharge into the subject site will be diverted to an external ditch drain or culverted within the site. There should be an appropriate analysis to quantify critical flood flows to ensure that there is sufficient capacity in any receiving drains to cater for such loading/ additional loading and so as not to increase risk of flooding on the site or on any other site."

"It is referred to in the report that 'visual inspection of the receiving ditch suggests that it has the hydraulic capacity to receive and convey the predicted runoff volumes at outfall locations and to allow for full discharge of all attenuated storm water'. The applicant should provide appropriate analysis to demonstrate that such receiving drains have the required capacity in critical flow scenarios and that the flows through such drains as a result of the proposed development do not increase the risk of flooding on the site or at any other location."

Design Team Response:

Joseph O'Reilly Consulting Engineers stormwater drainage design incorporates all flows within the site catchment, based on topography, soil type and surface water drainage systems. As a check to prevent flooding, JBA consulting engineering's model has then tested the full stormwater drainage design up to the 100 yr flood flows with no flooding predicted within the development. Refer to Hydrocare Environmental Ltd Flood Risk Assessment Report. This is outlined in more detail above and within the Flood Risk Assessment Report.

Irish Water Design Acceptance Process Summary:

- 22/10/2018 Water and Wastewater design issued to Irish Water
- 25/10/2018 Comments Received from Irish Water
- 01/11/2018 revised proposal issued to Irish Water incorporating comments.
- 07/11/2018 Design Acceptance letter received from Irish Water