



LOHAN & DONNELLY

Consulting Engineers

13 Gardiner Place, Mountjoy Square, Dublin 1. T: 01 8787770
W: www.lohan-donnelly.com E: info@lohan-donnelly.com

**Planning Department,
Fingal County Council,
Mantua,
Swords,
Co. Dublin**

Our Ref: 19182

Date: 31/03/2020

Re: Application for Planning Permission for Main Drainage for the Proposed Development at Church Road, Lusk, Co. Dublin.

Dear Sir/Madam,

In relation to the above project, please find the enclosed drawings and calculations detailing the proposed drainage arrangements, a summary of which are outlined below.

General

The existing site is a brownfield site, there is an existing building on the current site which is going to be demolished. The proposed development consist of 5 No. social residential apartments.

Foul Sewer:

Refer to drawing No. 19182_C01. The foul sewage generated from the new apartments will flow via gravity to and discharge to the public sewer on Church road. Foul sewerage to flow via 100mm FW pipe at a fall of 1 in 60 to outfall manhole. 150mm service connection pipe from outfall manhole to fall at 1 in 100 and backdrop connect to existing manhole

The proposed development will generate a DWF (Dry Weather Flow) of 0.03125 l/s with a 6DWF of 0.1875 l/s. A 100mm pipe at a fall of 1 in 60 has a flow capacity of 7.2 l/ and a flow velocity of 0.92 m/s. A 150mm pipe at a fall of 1 in 100 has a flow capacity of 16.5 l/s and a flow velocity of 0.93 m/s. Therefore the pipes sizes are satisfactory in both flow capacity and flow velocity.

Surface Water Sewer:

Refer to drawing No. 19182_C01. Surface water from the site is to be attenuated to 2 l/s. Surface water to be attenuated via a hydro-brake. Storage volume to be provided via stone fill with 30% void ratio. The stone fill is to be located under the proposed car park which has a permeable asphalt surface.

Attenuation is sized for the 1 in 100 year storm event and a 20% increase in storage volume to allow for climate change. 535 m2 impermeable surface requires a storage volume of 13.98m3 with a controlled flow rate of 2.0 l/s. An area of 141.77m2 (area of the car park) containing 450mm depth of stone fill (30% voids) provides a storage volume of 19.14m3.

Calculations quantifying the volume of surface water attenuation required are enclosed.

Water:

Refer to drawing No. 19182_C02. New 100mm HDPE watermain to serve the proposed development. Watermain layout designed to Irish Water Code of practice. One hydrant added, all new dwellings within a 46m radius of this hydrant.

Irish Water:

Irish Water Pre-Connection Enquiry feedback is attached. Irish Water state that subject to a valid connection agreement being put in place, the proposed connection to the Irish Water network(s) can be facilitated.

Yours sincerely,



Peter O Connor B.ENG

for Lohan & Donnelly Consulting Engineers

Encl. Issue Sheet_31-03-2020
Site Plan – Drainage Plan [Dwg No. 19182-C01_Rev.P1]
Site Plan – Watermain Plan [Dwg No. 19182-C02_Rev.P1]
Drainage Details – Manhole Details [Dwg No. 19182-C03_Rev.P1]
Watermain – Watermain Details [Dwg No. 19182-C04_Rev.P1]
19182_FRA_Rev.P1 (Flood Risk Assessment)
Design Calculations (Surface Water Attenuation Volumes)
Irish Water Pre-Connection Enquiry Feedback



Project: Church Road Lusk

Job No: 19182

Page No: 1

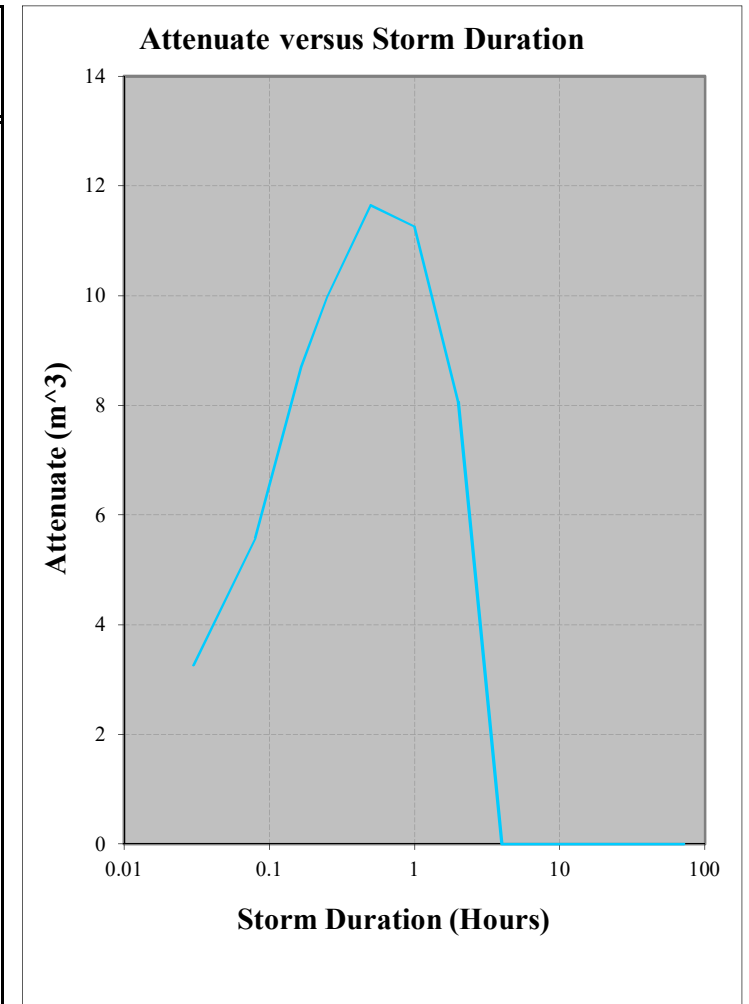
Date: 31/03/2020

Calc'd by: POC

Checked by:

Roof Area: 535 m² Paved Area: 0 m² Other: 0 m² Equivalent
I. Factor: 1.00 I. Factor: 1.00 I. Factor: 1 Impermeable Area: 535 m² Attenuated Flow Rate: 2 l/s

| Storm Duration (Hours) | Rainfall (mm) | Total Surface Water (m ³) | Allowable Discharge (m ³) | Attenuate (m ³) |
|---------------------------|------------------|---|---|--------------------------------|
| 0.03 | 6.50 | 3.48 | 0.216 | 3.26 |
| 0.08 | 11.50 | 6.15 | 0.576 | 5.58 |
| 0.166 | 18.50 | 9.90 | 1.1952 | 8.70 |
| 0.25 | 22.00 | 11.77 | 1.8 | 9.97 |
| 0.50 | 28.50 | 15.25 | 3.6 | 11.65 |
| 1.00 | 34.50 | 18.46 | 7.2 | 11.26 |
| 2.00 | 42.00 | 22.47 | 14.4 | 8.07 |
| 4.00 | 50.50 | 27.02 | 28.8 | 0 |
| 6.00 | 59.50 | 31.83 | 43.2 | 0 |
| 12.00 | 72.00 | 38.52 | 86.4 | 0 |
| 24.00 | 87.00 | 46.55 | 172.8 | 0 |
| 48.00 | 101.00 | 54.04 | 345.6 | 0 |
| 72.00 | 111.00 | 59.39 | 518.4 | 0 |



Maximum Volume of Attenuate: 11.65 m³ Climate Change Factor: 1.2 Required Attenuation Volume = 13.977 m³

Note: This spreadsheet calculates the Volume of Attenuate based on a Return Period of: 100 years.

Peter O'Connor
Lohan & Donnelly
13 Gardiner Place
Dublin 2

4 February 2020

Dear Peter O'Connor,

**Re: Connection Reference No CDS20000735 pre-connection enquiry -
Subject to contract | Contract denied**

Connection for Multi/Mixed Use Development of 5 unit(s) at Church Road, Lusk, Co. Dublin

Irish Water has reviewed your pre-connection enquiry in relation to a water and wastewater connection at Church Road, Lusk, Co. Dublin.

Based upon the details that you have provided with your pre-connection enquiry and on the capacity currently available in the network(s), as assessed by Irish Water, we wish to advise you that, subject to a valid connection agreement being put in place, your proposed connection to the Irish Water network(s) can be facilitated.

Water:

New connection to the existing network is feasible without upgrade.

This Confirmation of Feasibility to connect to the Irish Water infrastructure also does not extend to your fire flow requirements. Please note that Irish Water cannot guarantee a flow rate to meet fire flow requirements and in order to guarantee a flow to meet the Fire Authority requirements, you may need to provide adequate fire storage capacity within your development.

In order to determine the potential flow that could be delivered during normal operational conditions, an onsite assessment of the existing network is required.

Wastewater:

New connection to the existing network is feasible without upgrade.

All infrastructure should be designed and installed in accordance with the Irish Water Codes of Practice and Standard Details. A design proposal for the water and/or wastewater infrastructure should be submitted to Irish Water for assessment. Prior to submitting your planning application, you are required to submit these detailed design proposals to Irish Water for review.

You are advised that this correspondence does not constitute an offer in whole or in part to provide a connection to any Irish Water infrastructure and is provided subject to a connection agreement being signed at a later date.

A connection agreement can be applied for by completing the connection application form available at **www.water.ie/connections**. Irish Water's current charges for water and wastewater connections are set out in the Water Charges Plan as approved by the Commission for Regulation of Utilities.

If you have any further questions, please contact Deirdre Ryan from the design team on 022 54620 or email deiryan@water.ie. For further information, visit www.water.ie/connections.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'M. O'Dwyer'.

Maria O'Dwyer

Connections and Developer Services