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**PROJECT: No 2, BALLYROAN LODGE,**

**PROJECT NO. 21.277**

**DOCUMENT TITLE: FURTHER INFORMATION REQUEST REPORT**

**DOCUMENT NO: 21.277– RP – 01**

<b>Issue</b>	<b>Date</b>	<b>Description</b>	<b>Orig.</b>	<b>PE</b>	<b>PD</b>	<b>Issue Check</b>
P1	10/09/2021	Further Information Request	DK	LMC	VB	
P2	05/11/2021	Clarification of Further Information Request	LMC	LMC	VB	

**NO 2, BALLYROAN LODGE,  
BALLYROAN, DUBLIN 16**

barrett mahony

## 1. INTRODUCTION

Barrett Mahony Consulting Engineers Ltd. have been appointed by Brian Hutchinson to prepare a flood risk assessment for works to the site located at No.2 Ballyroan Lodge, Ballyroan, Dublin 16.

The site is bounded in two parts since the property is separated by a public entrance way. The site is situated between adjacent dwellings, Ballyboden Rd and Owendoher River. Site access is by entry through a two-way narrow road that functions as access and egress.

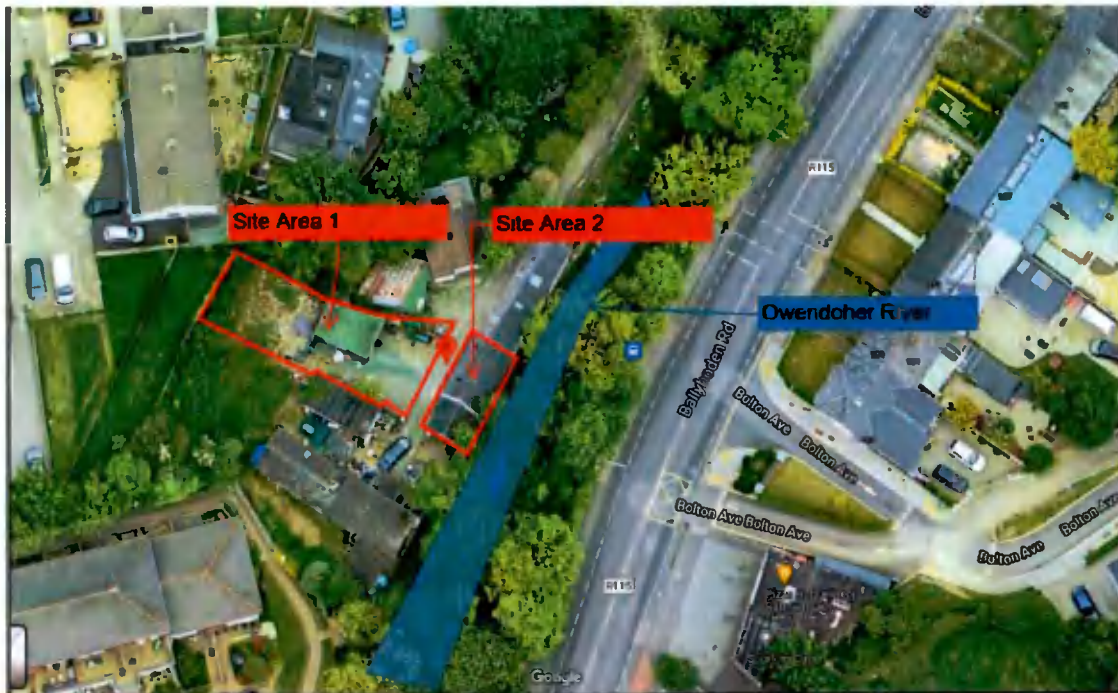


Figure 1: SITE LOCATION

### SCOPE OF THIS REPORT

This scope of this report is to respond to the civil engineering aspect requested in the Further Information request on Planning Ref SD21b/0296

This report should be read in conjunction with the Flood Risk Assessment Report, along with the drawings submitted with the Planning Application:

## 2. FURTHER INFORMATION REQUEST

- "The applicant has shown the surface water runoff from the proposed development to be connected into the foul water drainage network. This is not acceptable as foul and surface water drainage systems must be designed to discharge to separate pipe networks. The applicant is requested to submit a revised surface and foul water drainage layout drawing for the proposed development clearly showing that the foul and surface water drainage systems are discharging to separate pipe networks and to investigate the potential to incorporate a soakaway on site to separate the surface and foul water drainage systems. The applicant is required to submit a report showing site specific soil percolation test results and design calculations for a proposed soakaway in accordance with BRE Digest 365 – Soakaway Design"***

**BMCE:** The Foul and Surface water layouts has been revised and the surface water will be connected to a discharge manhole, before connecting into the combined foul network. There is no existing surface water infrastructure in the access road. The surface water will be collected

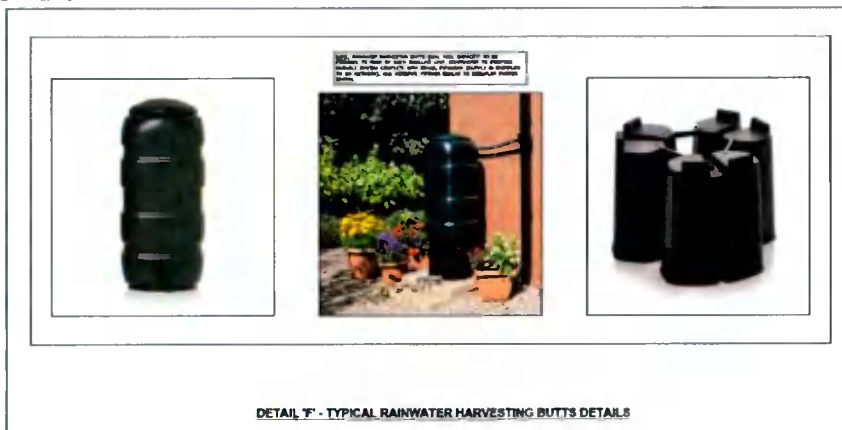
separately and be connected to a discharge manhole, before connecting to the combined sewer. The discharge manhole will be installed to cater for the future installation of a surface water network. The surface water can then be connected to the public network if the council upgrades the network in the laneway.

- 2. "The applicant is requested to submit a revised drawing showing plan & cross-sectional views, dimensions, and location of a proposed soakaway. Any proposed soakaway shall be located fully within the curtilage of the property and shall be:**
- (i) At least 5m from any building, public sewer, road boundary or structure.**
  - (ii) Generally, not within 3m of the boundary of the adjoining property.**
  - (iii) Not in such a position that the ground below foundations is likely to be adversely affected.**
  - (iv) 10m from any sewage treatment percolation area and from any watercourse / floodplain."**

**BMCE:** The small, congested site does not allow a soakaway installation to be installed without breaching the BRE Digest 365 – Soakaway Design parameters listed above (i) and (ii). A soakaway has been deemed not feasible or possible for the proposed site.

- 3. "The applicant is requested to submit details of water butts as part of SuDS (Sustainable drainage systems) measures for the proposed development."**

**BMCE:** Details of water butts below: Refer to Architect drawing for location.



- 4. "Given the proximity of the site and proposed extension to the Owendoher River the applicant is requested to submit a drawing showing the location of the proposed development site in relation to adjacent flood zones identified within OPW's (Office of Public Works) CFRAM maps. The applicant is requested to outline details of the measures and design features to prevent/mitigate the risk of flooding to the proposed development and to adjoining lands. Finished floor levels should be above the closest known 1 in 100 year river flood level data point with appropriate freeboard."**

**BMCE:** The floor levels proposed will have a 250mm freeboard above the 1 in 100 year flood level. The 1 in 100 year flood level has been calculated as 66.0m. The 1 in 100 year flood level does not breach the Owendoher River and the site is not located in the flood path. Please refer to the 1% AED CFRAM map attached to this document. The proposed floor level for the extension will be set to 66.25m and will be at the same level as the existing floor of the building. The proposed ground floor will be fitted with water resilient finishes and all electrical sockets will be lifted from the ground. It is to note that the proposed development is not changing the footprint of the existing building. Please refer to the CFRAM maps and drainage drawings attached to this letter.

## CLARIFICATION ON FURTHER INFORMATION REQUEST

### 1a) Surface Water

*The applicant has still proposed to discharge surface water run off from the proposed development to the foul water drainage network. The applicant is requested to investigate other methods of separating surface water and foul water drainage networks on site. If it is not possible to incorporate a soakaway on site, then the applicant is requested to investigate the possibility of discharging all existing and proposed surface water run-off on site to the Owendoher river. All surface water run off to the Owendoher River must be attenuated to greenfield run off rates. The applicant is requested to submit a revised drainage layout and design report demonstrating how this is achieved. Submit details of proposed outfall and include a non-return valve on same. There should be adequate freeboard between the outfall invert level and the 1 in 100 year river water level.*

It is now proposed to separate the surface water drainage from the foul network for the proposed extension. Refer to BMCE drawing 21.277-C1000 for drainage layout. The proposed extension roof will be fitted with a blue roof to provide both interception and attenuation storage.

#### Proposed Extension

##### **Attenuation Volume**

Area of Proposed Roof =  $17.7\text{m}^2$

Attenuation Volume Provided =  $65\text{mm}/\text{m}^2$

Total Attenuated Volume Provided =  $1.15\text{m}^3$

Peak Intensity =  $346.811\text{ mm/hr}$  (100 year + 20% Climate Change 15 minute Summer Event)

Reduction factor on Roof to determine equivalent Hardstanding Layout of Roof = 0.7

Total Attenuation Volume Required =  $17.7\text{m}^2 \times 0.7 \times (346.811\text{mm/hr} \times 0.25\text{hr}) = 1.074\text{m}^3$

Attenuated Volume Provided > Required.

##### **Interception Volume**

Refer to Detail B –  $10\text{litres}/\text{m}^2$  interception storage will be required

#### Existing Garage

The existing garage will be retrofitted with a green roof providing interception storage. Attenuation will be provided in the outfall manhole which will be fitted with a hydro brake which will limit the discharge to 2 l/s to the Owendoher River. It is not possible to maintain a suitable freeboard between the 1 in 100 yr flood level so the drainage line under the ground floor of the house will be fitted with a non-return valve. This will be installed on the laneway side to allow maintenance.

##### **Attenuation Volume**

Area of Proposed Roof =  $26\text{m}^2$

Peak Intensity =  $346.811\text{ mm/hr}$  (100 year + 20% Climate Change 15 minute Summer Event)

Reduction factor on Roof to determine equivalent Hardstanding Layout of Roof = 0.7

Total Attenuation Volume Required =  $26\text{m}^2 \times 0.7 \times (346.811\text{mm/hr} \times 0.25\text{hr}) = 1.578\text{m}^3$

Manhole Size =  $1.2 \times 1.2 \times 1.2 = 1.73\text{m}^3$

Attenuated Volume Provided > Required.

##### **Interception Volume**

Refer to Detail A –  $10\text{litres}/\text{m}^2$  interception storage will be required



**b) Foul Water**

*The applicant has shown the surface water run off from the proposed development to be connected into the foul water drainage network. This is not acceptable as foul and surface water drainage systems must be designed to discharge to separate pipe networks. The applicant is requested to submit a revised surface and foul water drainage layout drawing for the proposed development clearly showing that the foul and surface water are discharging to separate pipe networks. If separation of surface water and foul water drainage systems is not feasible on the site and all alternatives have been considered, such as infiltration soakaway systems, then the applicant is requested to submit a Letter of Agreement from Irish Water to the planning authority which clearly states that Irish Water are in agreement with the applicant's proposal to connect surface water drainage from the proposed development into the existing foul water drainage network.*

Refer to BMCE Drawing 21.277-C1000 for details and response above.