Development at Rathfarnham Castle. Rathfarnham Dublin

Water Supply and Wastewater Management Plan & Flood Risk Assessment

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2332

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CORA Consulting Engineers
Behan House, 10 Mount St. Lower
Dublin D02HT71
Tel: 01- 6611100

E: info@cora.ie

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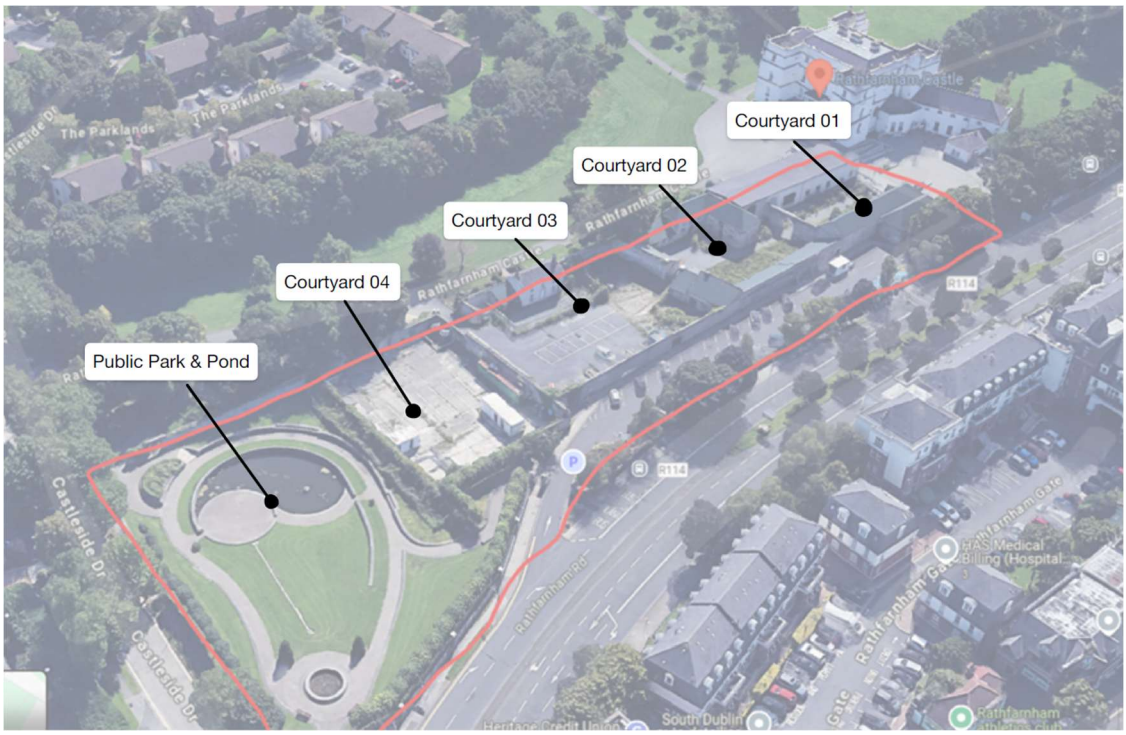
1 Introduction

1.1 General

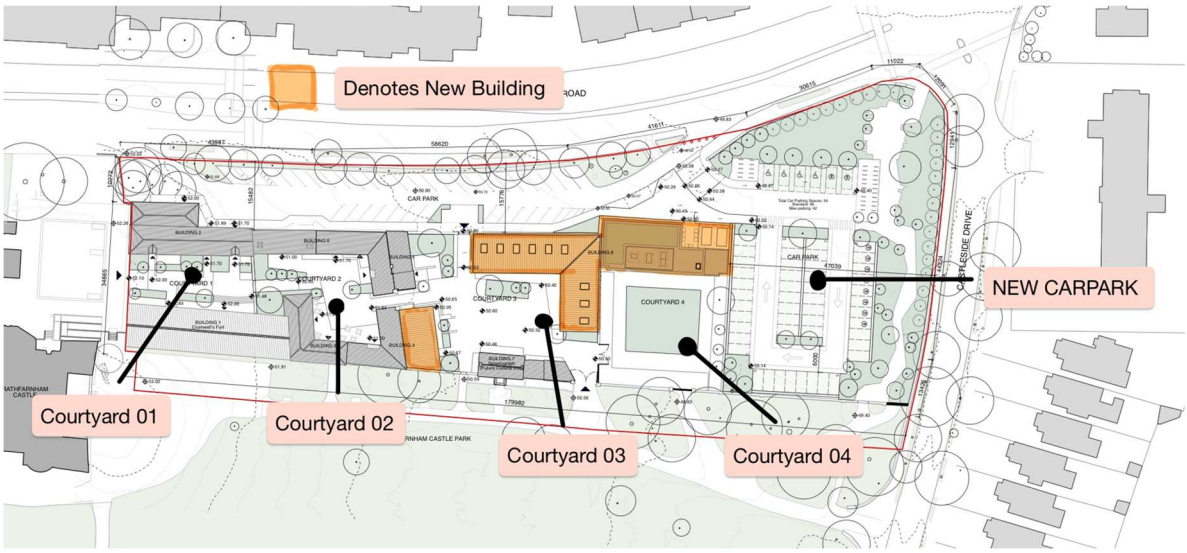
This report addresses the storm water management for the proposed development within the site adjacent to Rathfarnham Castle along Rathfarnham Road – The site is shown bounded by the red line in the diagram below.

The site consists of four existing courtyards with outbuildings and a public park with a small pond towards the north of the site – The proposed redevelopment broadly consists of the an internal refurbishment of the existing outbuildings and the construction of two new buildings in Courtyard 03 and a single building in Courtyard 04. The proposed usage of the buildings include a new café, retail areas, communal meeting spaces and a pizza parlour– Refer to the existing and proposed site layouts shown below. The existing park & pond is to be repurposed as a carpark. The existing paved courtyard areas are to be fully redeveloped to include significant soft landscaping.

There is an existing foul sewer located in courtyard 04 which connects to an Irish Water sewer on Castleside Drive. An existing watermain located to the east of the site. Both are visible on Irish Water record drawings and verified by a survey.



Existing Site Layout



Proposed Site Layout

1.2 Reference Publications used in the production of this Report

South Dublin County Development plan 2022-2028
Technical Guidance Documents – Part C and H
OPW National Flood Hazard Mapping
Irish Water Codes of Practice for Wastewater
Irish Water Codes of Practice for Water services.

2 Wastewater Discharge

The total wastewater discharge from the site is calculated using the Irish Water Codes of Practice for Waste Water. This includes discharge for general occupancy and the café.

Wastewater discharge from the new building is proposed via the existing foul sewer that connects to the Irish Water sewer on Castleside Drive

Details of the proposed foul drainage are detailed on CORA Drawing no. C0003

Wastewater discharge calculations are shown in Appendix A.

3 Water Supply

The water supply will be taken from the Uisce Éireann existing network located to the east of the side. Water demand calculations are shown in Appendix A. To comply with current Building Regulations a new fire hydrant is required

The water supply layout is shown on CORA drawing C0004.

4. Pre-Connection Enquiry to Uisce Éireann

A pre-connection enquiry for the development will be submitted to Uisce Éireann in conjunction with this planning application.

4 Flood Risk Assessment

See diagram below showing extract from SDCC showing flood maps. There is no record of flooding on the site and it is not located in a flood zone. Therefore, it can be said there is no flood risk on the site.

Extract from SDCC Flood Maps

Appendix A – Wastewater Calculations & Water Demand Calculations

Wastewater Discharge Calculations:

Toliets & Restrooms:

Wastewater Loading = 10 litres per person per day @ 600 persons per day

Discharge = 10 x 600 = 6000 litres

Food and Beverage Unit:

575 covers per day @ 15 litres per person per day

Discharge = 575 x 15 = 8625 litres per day

Total Discharge per day = 6000 + 8625 = 14625l per day

Dry weather flow (DWF) = 8625 + 6000 / (24x60x60) = 0.17l/s (DWF)

Peak discharge = 6 DWF Peak = 6 x 0.17 = 1.01 l/s

Water Demand Calculations:

Toliets & Restrooms:

Consumption = 10 litres per person per day @ 600 persons per day

Flow Rate per day = 10 x 600 = 6000 litres

Food and Beverage Unit:

575 covers per day @ 15 litres per person per day

Flow Rate per day = 8625 litres per day

Total Flow Rate = 8625 + 6000 = 14625 litres per day

Dry weather flow (DWF) = 14625 / (24x60x60) = 0.16l/s (DWF)

Average daily demand = 1.25 x 0.16l/s = 0.2l/s

Peak demand = 5 DWF Peak = 5 x 0.16 = 0.85 l/s