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CIVIL & STRUCTURAL

CIVIL ENGINEERING INFRASTRUCTURE AND FLOOD RISK ASSESSMENT REPORT FOR

PROPOSED STRATEGIC HOUSING DEVELOPMENT AT,

FRASCATI CENTRE, FRASCATI ROAD, BLACKROCK, CO. DUBLIN

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DOCUMENT LEAD SHEET

PAGE 1 OF 19

PROJECT: **RESIDENTIAL DEVELOPMENT AT FRASCATI SHOPPING CENTRE, BLACKROCK, CO. DUBLIN**

PROJECT NO. **19.248**

DOCUMENT TITLE: **CIVIL ENGINEERING INFRASTRUCTURE AND FLOOD RISK ASSESSMENT REPORT**

DOCUMENT NO: **19.248 – IR – 02**

Issue	Date	Description	Orig.	PE	PD	Issue Check
01	25/02/20	ISSUED FOR PLANNING	R.M.	T.U.	J.C.	
02	19/08/20	ISSUED FOR PLANNING	R.M.	T.U.	J.C.	

CIVIL ENGINEERING INFRASTRUCTURE & FLOOD RISK ASSESSMENT REPORT FOR

PROPOSED STRATEGIC HOUSING DEVELOPMENT (ALTERATIONS TO PHASE 1 RESIDENTIAL AND PROPOSED PHASE 2 RESIDENTIAL DEVELOPMENT) AT,

FRASCATI CENTRE, FRASCATI ROAD, BLACKROCK, CO. DUBLIN (FORMERLY KNOWN AS FRASCATI SHOPPING CENTRE).

barrett mahony

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1.0 INTRODUCTION

1.1 General Description

Barrett Mahony Consulting Engineers (BMCE) have been commissioned to prepare an Infrastructure Report for the Proposed Strategic Housing Development (Alterations to Phase 1 Residential and Proposed Phase 2 Residential Development) at Frascati Centre, Frascati Road, Blackrock, Co. Dublin (formerly known as Frascati Shopping Centre).

The proposal relates to alterations to the Phase 1 permission for 45 no. apartments (Reg. Ref.: D17A/0950 & ABP Ref.: 300745-18), from second to fourth floor level of the rejuvenated Frascati Centre. The proposed development also includes the provision of 57 no. additional apartments, as an extension of the Phase 1 permission, located above the existing / permitted podium car park to the north west of the center, as a Phase 2 residential development. The subject application therefore relates to a total of 102 no. residential units.

The construction has already begun on site for the Phase 1 development and the alterations to the planning application (Reg. Ref.: D17A/0950 & ABP Ref.: 300745-18), are purely related to non-structural items (apartment layout, external wall finishes etc.)

The proposed residential development will be built on top of the existing buildings. During the design and construction of the Frascati Centre, (which BMCE were involved in), allowances were made for the future residential development. These allowances were made in the structural frame and in building services including drainage and watermain. This new residential development will not alter the overall existing building footprint, except for a small escape stair in the corner of the car park building.

The site is bounded by Frascati Road, a busy National Primary Route (N31) responsible for linking Dun Laoghaire to the rest of the national roads network. There are public footpaths along the site boundary.

North east of the site, on the opposite side of Frascati Road, there is Blackrock Shopping Centre and Blackrock village. Blackrock Park is located to the north of the site. Residential properties form the remainder of the adjacent properties on all other sides.

The Priory Stream watercourse crosses the site. This flows from Frascati Park into a 2500mm rectangular box culvert (built in 2017 as part of the Frascati Shopping Centre Rejuvenation Project) which passes under the existing two-level car park building. The stream then re-surfaces at the Lisalea Apartment Complex before continuing under the N31 and on to Blackrock Park before discharging into Dublin Bay.

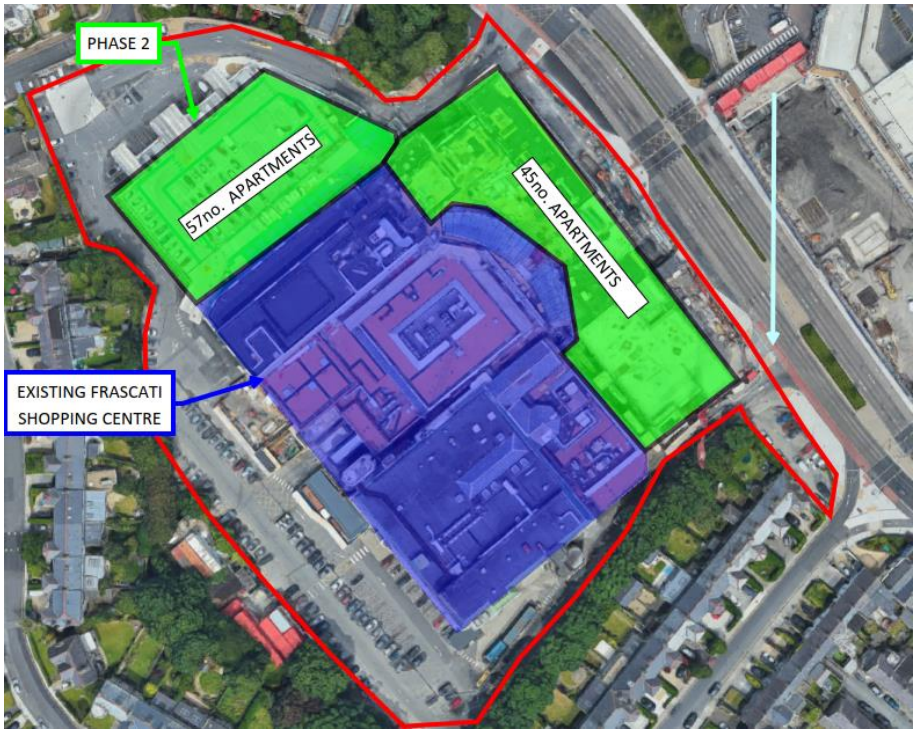

Figure 1 – Proposed Alterations to Phase 1

Figure 1.2 – Site Location

1.2 Scope of this Report

This report describes the proposed civil engineering infrastructure for the development and how it connects to the public infrastructure serving the area.

Foul and surface water drainage, water supply, flood risk and traffic engineering aspects are addressed. This report should be read in conjunction with the following drawings submitted with the planning application.

- 19248-C-1000 – Foul Drainage Layout
- 19248-C-1001 – Surface Water Drainage Layout

- 19248-C-1002 – Watermain Layout

1.3 Pre-planning Discussion

The SW drainage drawings were issued to Dún Laoghaire Rathdown County Council for their review and comments, prior to the draft submission to An Bord Pleanála.

A tripartite meeting occurred on the 5th June 2020 with representatives from the design team, An Bord Pleanála and Dún Laoghaire Rathdown County Council present. At this meeting it was requested that green roofs be incorporated into the Phase 1 development. The existing roofs of the phase 1 development are predominantly populated by plant and therefore green roofs are not applicable here. To comply with the request however, an additional 145m² of extensive green roof has been included on the eastern boundary of the development, this adds to the already proposed 540m² of intensive green roof in the form of the winter garden podium area to the south of the Phase 1 apartments.

1.4 Irish Water

A Pre-Connection Enquiry (PCE) was submitted to Irish Water on the 13th September 2019 to determine the feasibility of connecting to the public water and drainage infrastructure. A response to the PCE was received on the 10th of October 2019 and Irish Water confirmed a connection is feasible. Refer to Appendix II for the Confirmation of Feasibility Letter.

On the 24th of June 2020, in accordance with Irish Water guidelines a Statement of Design Acceptance was sought. A letter was received from Irish Water on the 11th of August 2020 confirming Design Acceptance. Refer to Appendix II for the Letter of Design Acceptance.

All drainage will be constructed as per the proposals within the above documents and all drainage works will be carried out per the most recent Irish Water Standard Details.

2.0 SURFACE WATER DRAINAGE SYSTEM

2.1 Introduction

This chapter will follow the guidelines set out in Greater Dublin Strategic Drainage Study (GDSDS) and the CIRIA 2015 SuDS Manual.

The aim of any SuDS strategy is to ensure that a new development does not negatively affect the surrounding watercourse's, existing surface water networks and groundwater systems. This SuDS strategy will aim to achieve this by using a variety of SuDS measures within the site. These measures typically include water interception, water treatment and water attenuation.

2.2 Existing Surface Water Infrastructure

The Priory Stream flows from Frascati Park into a 2000mm wide rectangular box culvert (built in 2017 as part of the Frascati Shopping Centre Rejuvenation Project) which passes under the existing two-level car park building. It flows through the adjacent grounds of the Lisalea apartments and across under the Frascati Road into Blackrock Park where it is tidal. The Priory Stream outfalls to Dublin Bay in the rear of the park. Surface water from the existing development discharges into the Priory Stream at three locations as shown on the relevant Barrett Mahony drawings. Figure 2.1 below shows the Priory Stream route across the site.

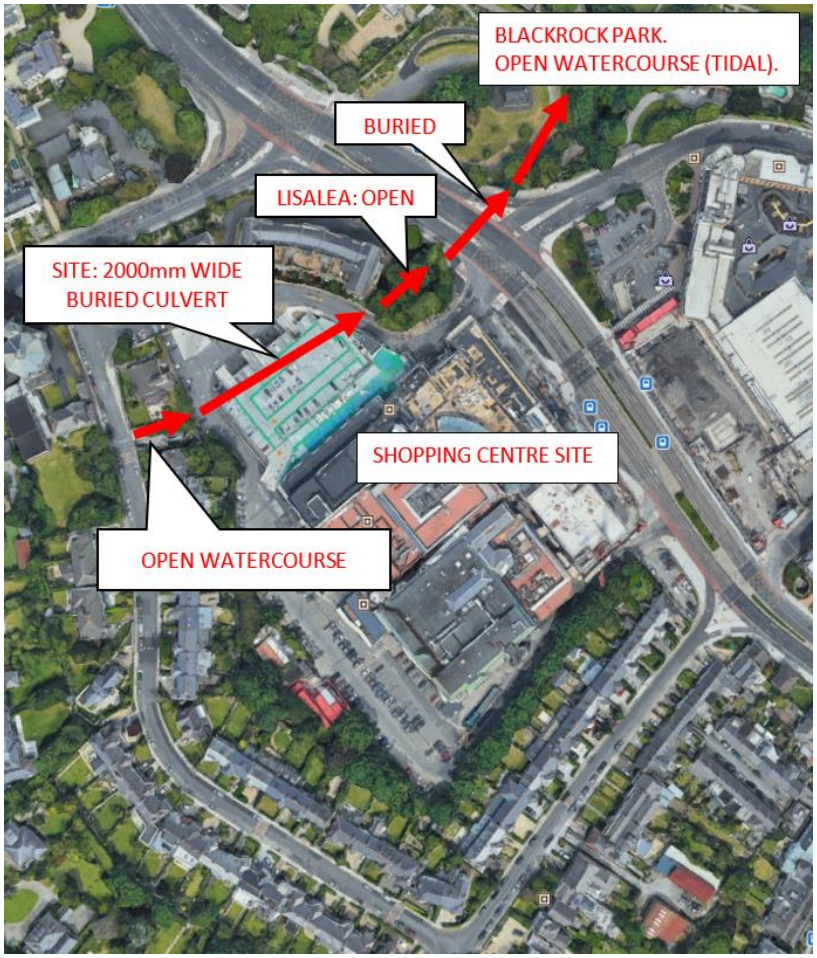

Figure 2.1 - Aerial Photo of the site showing the buried and open sections of the watercourse

2.3 Proposed Surface Water Infrastructure

The proposed new residential development will be constructed on top of the existing Frascati Centre; therefore, the new development has limited options for applicable SuDS measures. Rainwater from the new development will discharge into the existing surface water drainage system and via existing petrol interceptors at each discharge point into the Priory Stream. An existing rainwater harvesting tank also takes flow from the roofs on the western half of the site. This new development will not increase the overall surface area of the site but will introduce new SuDS measures and therefore will ultimately have a net positive outcome.

There will no significant works undertaken at ground level as part of the new residential development and all SuDS measures must be contained with the building envelope, namely on the roof. It is proposed to use extensive and intensive green roofs.

The site has been broken down into 2no. catchments (A & B respectively). Catchment A, to the North, has 45no. apartments and approx. 510m² of intensive green roof (landscaped courtyard) with 145m² of extensive green roof (sedum roof). Catchment B, to the west over the existing car park, has 57no. apartments, approx. 763m² of extensive green roof (sedum roof) and approx. 1,185m² of intensive green roof (landscaped courtyard).

2.3.1 Green Roof – Extensive:

Extensive roofs have low substrate depths and therefore low loadings on the building structure, they are lightweight and have a low cost to maintain. These systems cover a roof area with

hardy, slow growing, drought resistance, low maintenance plants and vegetation, such as sedums. The planting usually matures slowly, with the long-term biodiverse benefits being the sought-after results. These roofs are typically only accessed for maintenance and are usually comprised of between 20mm – 150mm overall total depth.

Extensive green roofs, approx. 765m², will be provided above the residential units in Catchment B and approx. 145m² will be provided along the eastern perimeter of Catchment A.

2.3.2 Green Roof – Intensive

Intensive green roofs are designed to sustain more complex landscaped environments that can provide high amenity and biodiverse benefits. They are planted with a range of plants, including grasses, shrubs, trees and may also include water features, as well as hard landscape paved areas. They are designed to be accessible and normally require regular maintenance.

3no. landscaped intensive green roof areas will be provided as part of the residential development in the form of 2no. podiums and a roof terrace, (approx. 510m² in Catchment A and approx. 1,185m² in Catchment B). These landscaped areas have been designed for residential usage and will be heavily trafficked by the residents within the development. The use of intensive of green roofs will also allow the planting of large shrubs, small trees and small water features within the proposed location. These features will provide amenities for the residents, promote the growth of biodiversity and provide interception and treatment storage at source.

2.4 Attenuation Storage

The surface water system for the residential development will feed directly into the newly culverted Priory Stream, due to the immediate proximity of the development to the Priory Stream sea outfall, attenuation design is not required.

2.5 Interception Storage

The GDSDs requires that Interception storage, where provided, should ensure that at a minimum the first 5mm and preferably the first 10mm of rainfall is intercepted on site and does not directly pass to the receiving watercourse.

Table 2.1 below highlights the proposed interception storage on the site. As there is no existing interception storage, there is an increase of interception storage on the site of 31.31m³.

Table 2.1 – Interception Storage

	Catchment	Area (m^2)	Interception Storage Provided (m^3)
Intensive Green Roof with an interception storage tray 12 l/m²	A	510	6.12
Extensive Green Roof with an interception storage tray 12 l/m²	B	145	1.74
Intensive Green Roof with an interception storage tray 12 l/m²	B	1,187	14.25
Extensive Green Roof with an interception storage tray 12 l/m²	B	765	9.2
Total			**31.31**

2.6 Compliance with the Principles of SuDS

2.6.1 Compliance with the principles of the GDSDS

The proposed residential development has been designed in accordance with the principles of Sustainable Drainage Systems (SuDS) as embodied in the recommendations of the Greater

Dublin Strategic Drainage Study (GDSDS). The GDSDS addresses the issue of sustainability by requiring designs to comply with a set of drainage criteria which aim to minimize the impact of urbanization by replicating the run-off characteristics of the greenfield site.

Table 6.3 in the GDSDS manual summarises the design criteria that a new development should be designed too. As per the GDSDS, the application of these design criteria should be applied to all site, but with an intelligent approach, should the site be draining to an estuary or to the coast (which is the case for this proposed development).

1. River Water Quality Protection
2. River Regime Protection
3. Level of Service (flooding) for the Site.
4. River Flooding Protection

The requirements of SuDS are typically addressed by provision of the following:

- Interception storage
- Treatment storage (commonly addressed in interception storage)
- Attenuation storage
- Long term storage (not applicable if growth factors are not applied to Qbar when designing attenuation storage)

2.6.2 Compliance with the principles of the CIRIA C573 SuDS Manual

The C573 SuDS Manual explains that the primary function of SuDS measures is to protect watercourses from any impact due to the new development. However, SuDS can also improve the quality of life in a new development and urban spaces by making them more vibrant, visually attractive, sustainable and more resilient to change.

There are four main categories of benefits that can be achieved by SuDS:
1. Water Quantity (mitigate flood risk & protect natural water cycle)
2. Water Quality (manage the quality of the runoff to prevent pollution)
3. Amenity (create and sustain better places for people)
4. Biodiversity (create and sustain better places for nature)

2.7 GSDS Compliance

2.7.1 River Water Quality Protection

Run-off from natural greenfield areas contributes very little pollution and sediment to rivers and for most rainfall events direct run-off from greenfield sites to rivers does not take place as rainfall percolates into the ground. By contrast, urban run-off, when drained by pipe systems, results in run-off from virtually every rainfall event with high levels of pollution, particularly in the first phase of run-off, with little rainfall percolating to the ground.

The run-off from the proposed residential development (and existing development) discharges into the culverted Priory Stream, which discharges nearby into the sea. River quality protection is addressed in the new development by green roofs.

2.7.2 River Regime Protection

Rural run-off to rivers, when it occurs, is slow. To try and replicate this, urban runoff must be heavily constrained. Unrestrained runoff causes high velocities and erosion, affecting the morphology of the channel and the flora and fauna in the river.

The green roofs proposed protect the Priory Stream river regime by providing interception storage and reducing the flow rates into the Priory Stream.

2.7.3 Level of Service Flooding

The GDSDS requires that no flooding should occur on site for storms up to and including the 1 in 30-year event. The pipe network and the attenuation storage volumes should, therefore, be checked for such storms to ensure that no site flooding occurs although partial surcharging of the system is allowed if it does not threaten to flood.

The roof areas in the development discharge into the Priory Stream. No new hardstanding areas have been created on site. The drainage system is unchanged and incorporates upgrades from recent shopping centre rejuvenation works designed for storms up to 1 in 100 years and climate change without flooding.

2.7.4 River Flood Protection

River flooding has serious consequences for affected properties further downstream. Flooding in rivers is exacerbated by urban runoff, particularly in catchments with a high degree of urbanisation.

There is no downstream properties or floodplains which will be affected by river flooding and therefore river flood protection is deemed to not be required.

2.8 SuDS CIRIA Pillars of Design

2.8.1 Water Quantity

The “Water Quantity” design objective is to ensure that the surface water runoff from a developed site does not have a detrimental impact on people, property or the environment, it is important to control.

The surface runoff quantity will not have a detrimental effect on people, property or the environment due to the culverted Priory Stream and its proximity to the Irish Sea, green roofs, etc.

2.8.2 Water Quality

The “Water Quality” design object seeks to ensure the surface water runoff from the site does not compromise the groundwater or surrounding water courses relating to the site.

The surface water runoff from the site discharges to the Priory Stream close to its sea outfall and does infiltrate into the ground and will not have any effect on the groundwater. Water quality for the site is improved by SuDS measures (green roofs). Petrol interceptors are located at each discharge point into the Priory Stream.

2.8.3 Amenity

The "Amenity" design objective aims to deliver attractive, pleasant, useful and above all liveable urban environments. SuDS measures should be designed to replicate the existing natural environment and blend in with the urban development.

There will be 2no. landscaped areas for the residents of the proposed new development to avail of. These intensive landscape areas will be designed to promote nature, with planting being used within the landscaped areas. The extensive sedum green roof will also have a positive natural habitat benefit. These are significant improvements on the current shopping centre roof and car park deck.

2.9 DLRCC Response

In response to the DLRCC Drainage Planning Departments comments on the 30th March 2020 to the pre-applicant submission, we have provided a response below to the 2no. items raised.

2.9.1 Green Roof 60% Coverage

DLRCC have requested that the proposed green roof extents are in accordance with the council policy of minimum coverage being 60%.

This new development has a total site area of 7,500m² and a total proposed new roof coverage of 4,180m². The green roofs that have been proposed are a combination of extensive and intensive green roofs. Refer to DWG-19248-C1001 submitted as part of this application for further details.

Phase 1:	
Intensive Green Roofs *(Winter Garden)*	= 510m²
Extensive Green Roofs	= 145m²
Phase 2:	
Intensive Green Roofs *(Courtyard & Roof Terrace)*	= 1,187m²
Extensive Green Roofs	= 763m²
Total m² coverage:	= 2,605m²
Total Roof Coverage %: *(2700/4180)*	= **62%**

2.9.2 Drawing Compatibility

All drawings have been coordinated prior to submission.

2.10 SuDS Conclusion

This section of the report has discussed the various SuDS measures which can be applied to the site and then selected them based on the site layout.

The chosen SuDS measures are the most effective measures which can be applied as part of the proposed residential development. These measures will have an overall positive affect on the Frascati Centre.

3.0 FOUL DRAINAGE SYSTEM

3.1 Existing Foul Sewer Infrastructure

There is an existing 825mm diameter trunk foul sewer running alongside the eastern edge of the site along Frascati Road. The existing site foul drainage system is connected to this at the south-eastern corner of the site and adjacent Lisalea apartments via a 150 drain which crosses Lisalea and connects to the sewer.

3.2 Proposed Foul Drainage System

It is proposed to connect the new residential foul system into the existing foul system which serves the retail development and existing shopping centre, and which was sized to allow for the new apartment development overhead. The new residential area is divided into 2no. catchments, A & B. Catchment A has 45no. apartments and Catchment B consists of 57no. new apartments.

The flow tables below are calculated using Irish Water flow rates of 150 l/hd/person per day for residential use and the I.W. recommended occupancy rate of 2.7 per unit.

3.3 Foul Water Flow Calculations

The foul effluent from the proposed dwellings is calculated as per the Irish Water Code of Practice for Wastewater Infrastructure (Dec. 2017) assuming dry weather flow of 150 l/head/day plus a 10% infiltration rate and using the Irish Water assumed average occupancy of 2.7 persons/unit.

3.3.1.1 Catchment A: 45no. Apartments Over the Shopping Centre

No. of Units = 45

No. of Occupants = 45 x 2.7 = 121.5

Daily Flow = No. of Occupants x Dry Weather Flow

Daily Flow = 121.5 x 150 x 1.1 = 20,048 l/day

$$\text{Average Flow} = \frac{\text{Daily Flow}}{\text{Flow Duration}} = \frac{20{,}048 \text{ l/day}}{24 \times 60 \times 60} = \mathbf{0.232 \text{ l/s}}$$

Peak Flow = Average Flow x 6

Peak Flow = 0.232 l/s x 6 = **1.392 l/s**

3.3.1.2 Catchment B:

No. of Units = 57

No. of Occupants = 57 x 2.7 = 153.9

Daily Flow = No. of Occupants x Dry Weather Flow

Daily Flow = 153.9 x 150 x 1.1 = 25,394 l/day

$$\text{Average Flow} = \frac{\text{Daily Flow}}{\text{Flow Duration}} = \frac{25{,}394 \text{ l/day}}{24 \times 60 \times 60} = \mathbf{0.294 \text{ l/s}}$$

Peak Flow = Average Flow x 6

Peak Flow = 0.294 l/s x 6 = **1.763 l/s**

3.3.1.3 Total

Peak Flow = **3.156 l/s**

Average Flow = **0.526 l/s**

4.0 WATER SUPPLY

4.1 Existing Water Supply Infrastructure

The existing site has a 100mm diameter ring main connecting out to a 150mm diameter public water main on the west of the Frascati Road. The short connection out to the public main is also 100 mm diameter. This 150mm diameter public main in turn connects nearby to a 400mm diameter public watermain which runs parallel to it.

4.2 Proposed Water Supply System

It is proposed to connect the new residential water supply system into the existing water supply system which serves the retail development and existing shopping centre. The new residential area is divided into 2no. catchments, A & B. Catchment A has 45no. apartments and Catchment B consists of 57no. new apartments. It is proposed that the short connection out to the public water main on the Frascati road will be upgraded from 100 Ø to 150 Ø and will be metered separately from the commercial development (shopping centre).

4.3 Water Supply Demand Calculations

The water demand for the proposed development has been calculated using the guidelines given in the Irish Water Code of Practice for Water Infrastructure (Dec. 17) Section 3.7.2 assuming a per-capita consumption of 150 l/head/day and using the Irish Water assumed average occupancy of 2.7 persons/unit. The average day/peak week demand is taken as 1.25 times the average daily domestic demand. The peak demand factor is taken as 5 times the average day/peak week demand.

4.3.1.1 Catchment A:

No. of Units = 45

No. of Occupants = 45 x 2.7 = 121.5

Avg. Daily Demand = No. of Occupants x Allowance per head

Avg. Daily Demand = 121.5 x 150 = 18,225 l/day

$$\text{Average Flow} = \frac{\text{Daily Flow}}{\text{Flow Duration}} \times 1.25 = \frac{18{,}225 \text{ l/day}}{24 \times 60 \times 60} \times 1.25 = \mathbf{0.264 \text{ l/s}}$$

Peak Demand = Average Flow x 5

Peak Demand = 0.264 l/s x 5 = **1.318 l/s**

4.3.1.2 Catchment B:

No. of Units = 57

No. of Occupants = 57 x 2.7 = 153.9

Avg. Daily Demand = No. of Occupants x Allowance per head

Avg. Daily Demand = 153.9 x 150 = 23,085 l/day

$$\text{Average Flow} = \frac{\text{Daily Flow}}{\text{Flow Duration}} \times 1.25 = \frac{23{,}085 \text{ l/day}}{24 \times 60 \times 60} \times 1.25 = \mathbf{0.334 \text{ l/s}}$$

Peak Demand = Average Flow x 5

Peak Demand = 0.334 l/s x 5 = **1.670 l/s**

4.3.1.3 Total:

Peak Demand = **2.988 l/s**

Average Flow = **0.598 l/s**

5.0 SITE FLOOD RISK ASSESSMENT

A detailed flood risk assessment was carried out for the development as part of the granted main planning permission for the whole site (DLRCC) reference D14A 0134. This previously submitted flood risk assessment provided information regarding flooding, these are briefly summarised below.

1. **Flood Levels & Floor Levels:**
   The maximum tidal flood level predicted per DCC guidelines is +13.50m, the finished ground floor level of the shopping centre is +16.885m. There is 3.385 metres in the difference.

2. **External Hardstanding:**
   The public road is at +16.010m which is 0.875m below the finished floor level of the shopping centre. The ground also falls away from the structure.

3. **Protection from overland flows:**
   There is a boundary wall which will prevent any overland flows.

4. **Culvert:**
   There is no record of flooding from the buried culvert. The existing culvert has been upgraded from a 1.8m diameter culvert to a 1.4 x 2.0m culvert.

Further to the original flood risk assessment, which deemed the site not at risk from flooding, the new proposed development will be built on top of the existing structure. This new development does not increase the overall footprint of the site and will therefore not increase the flood risk to the site or change the results of the previous assessment.

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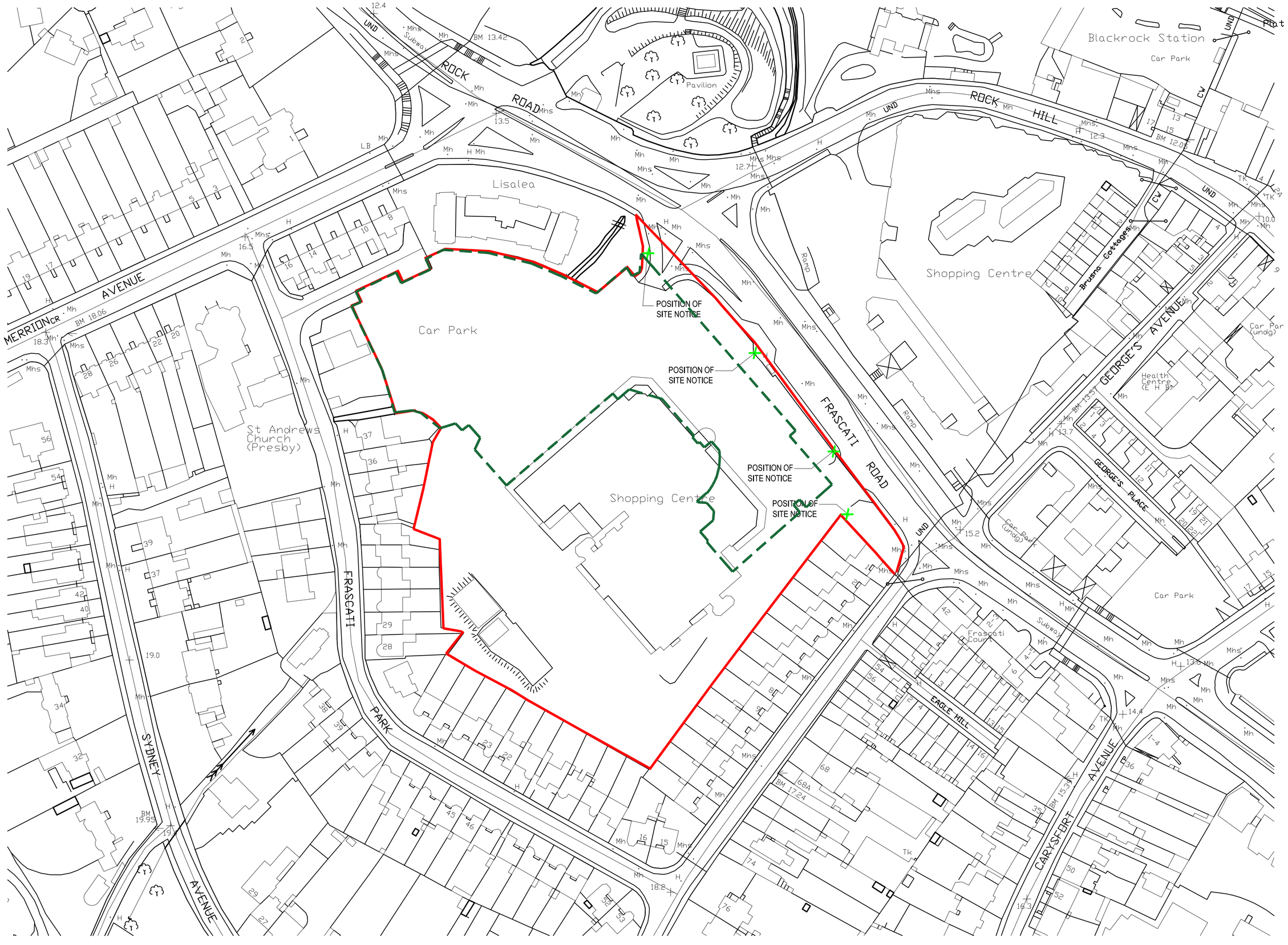
CONSULTING ENGINEERS
CIVIL & STRUCTURAL

APPENDIX 1

SITE LAYOUT PLAN



1 / 001 SITE LOCATION MAP
1:1000

ORIGINAL SHEET SIZE = A1

DO NOT SCALE FROM THIS DRAWING. USE FIGURED DIMENSIONS IN ALL CASES. VERIFY DIMENSIONS ON SITE AND REPORT ANY DISCREPANCIES TO THE ARCHITECTS IMMEDIATELY. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE ARCHITECTS SPECIFICATION. © THIS DRAWING IS COPYRIGHT AND MAY ONLY BE REPRODUCED WITH THE ARCHITECTS PERMISSION.

NOTES

N

Level Datum
Malin Head ☒ Poolbeg ☐ Assumed ☐

LEGEND

OUTLINE OF SITE TO WHICH APPLICATION RELATES
Area - 2.67 Ha

EXTENT OF PROPOSED PHASE 1 & PHASE 2 DEVELOPMENT

POSITION OF SITE NOTICE X

ORDNANCE SURVEY REFERENCE:
3300-17 | 3300-22
3300-23 | 3393-02
3393-03

NOTE :

REFER TO FLOOR PLANS, ELEVATIONS AND SECTIONS FOR DETAILS OF THE PROPOSED MODIFICATIONS TO PHASE 1 AND PHASE 2 PROPOSALS.

REV	DTE	DRN	ISSUE

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Reddy Architecture + Urbanism
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PLANNING APPLICATION

JOB
FRASCATI CENTRE
BLACKROCK, CO. DUBLIN
SHD RESIDENTIAL PROPOSAL

CLIENT
IMRF II FRASCATI LIMITED PARTNERSHIP / DAVY IMRF II GP LIMITED

DRAWING
SITE LOCATION MAP

DATE	AUG 2020	SCALE	1:1000@ A1
DRN.	CC	CHECKED	GA

JOB NO.	DWG NO.	REVISION
P19-202D	001-8	

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CONSULTING ENGINEERS
CIVIL & STRUCTURAL

APPENDIX 2

IRISH WATER CONFIRMATION OF FEASABILITY

Uisce Éireann
Bosca OP 6000
Baile Átha Cliath 1
Éire

Irish Water
PO Box 6000
Dublin 1
Ireland

T: +353 1 89 25000
F: +353 1 89 25001
www.water.ie

Your Ref: ABP-306989-20
Our Ref: CDS19006747

An Bord Pleanála,
64 Marlborough Street,
Dublin 1

8th May 2020

Dear Sir/ Madam,

Re: Strategic Housing Development – Alterations to Phase 1 permission of 45 no. apartments of previous permitted Reg.Ref:D17A/0950 and ABP-300745-19 to provide a total of 105 no. apartments and associated site works. Frascati Centre, Frascati Road, Blackrock, Co. Dublin.

Irish Water has received notification of IMRF II Frascati Limited Partnership request to enter into consultations under Section 5 of the Planning and Development (Housing) and Residential Tenancies Act 2016 in respect of the above mentioned proposed development.

Irish Water has issued a confirmation of feasibility for this development for 105 residential units subject to the following.

Irish Water can confirm the feasibility of connections for water and waste water. However please note there are Irish Water assets within and in close proximity of the site boundaries, therefore;

- Prior to any works commencing the developer will be required to survey the site to determine the exact location of the pipes. Any trial investigations should be carried out with the agreement and in the presence of the local authority inspector.

- Any structures or works over or in close proximity to Irish Water infrastructure that will inhibit access for maintenance or endanger structural or functional integrity of the infrastructure are not permitted.

- Separation distances between Irish Water infrastructure and proposed structures, other services, trees etc. must be in accordance with the Irish Water Codes of Practice and Standard Details.

- Detailed design proposals indicating the location of Irish Water infrastructure will be required to be submitted to IW prior to statement of design acceptance being issued.

Queries relating to the observations above should be sent to planning@water.ie

_____

Maria O'Dwyer
Connections and Developer Services Manager

Ryan Mulvaney
Barrett Mahony Con Eng
Sandwith House
52-54 Lower Sandwith Street
Dublin
Dublin
D02WR26

11 August 2020

Uisce Éireann
Bosca OP 448
Oifig Sheachadta na
Cathrach Theas
Cathair Chorcaí

Irish Water
PO Box 448,
South City
Delivery Office,
Cork City.

www.water.ie

Re: Design Submission for Frascati Shopping Centre, Frascati Road (N31), Co. Dublin (the "Development")
(the "Design Submission") / Connection Reference No: CDS19006747

Dear Ryan Mulvaney,

Many thanks for your recent Design Submission.

We have reviewed your proposal for the connection(s) at the Development. Based on the information provided, which included the documents outlined in Appendix A to this letter, Irish Water has no objection to your proposals.

This letter does not constitute an offer, in whole or in part, to provide a connection to any Irish Water infrastructure. Before you can connect to our network you must sign a connection agreement with Irish Water. This can be applied for by completing the connection application form 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 (CRU)(https://www.cru.ie/document_group/irish-waters-water-charges-plan-2018/).

You the Customer (including any designers/contractors or other related parties appointed by you) is entirely responsible for the design and construction of all water and/or wastewater infrastructure within the Development which is necessary to facilitate connection(s) from the boundary of the Development to Irish Water's network(s) (the "**Self-Lay Works**"), as reflected in your Design Submission. Acceptance of the Design Submission by Irish Water does not, in any way, render Irish Water liable for any elements of the design and/or construction of the Self-Lay Works.

If you have any further questions, please contact your Irish Water representative:
Name: James O'Sullivan
Phone: 022 52269
Email: jameosull@water.ie

Yours sincerely,

Maria O'Dwyer

Connections and Developer Services

Appendix A

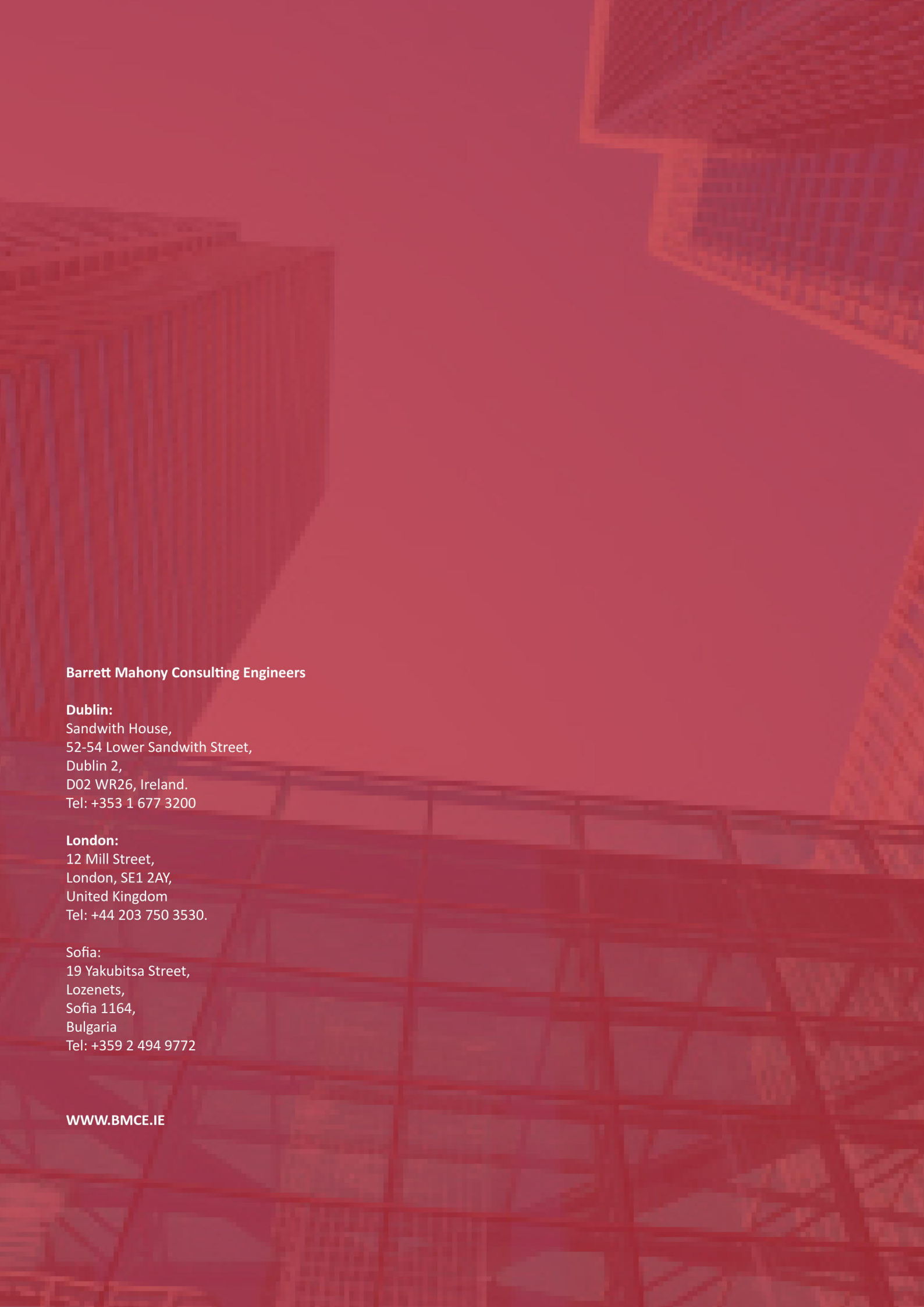
Document Title & Revision

- 19248 – C1000 – PL2
- 19248 – C1002 – PL3
- 19248 – C1004 – PL2

The infrastructure outlined in the above drawings is not being vested to Irish Water and will remain the responsibility of the customer.

For further information, visit ***www.water.ie/connections***

Notwithstanding any matters listed above, the Customer (including any appointed designers/contractors, etc.) is entirely responsible for the design and construction of the Self-Lay Works. Acceptance of the Design Submission by Irish Water will not, in any way, render Irish Water liable for any elements of the design and/or construction of the Self-Lay Works.



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