Architectural Design Statement – Building Life Cycle Report

Project: Proposed Strategic Housing development (alterations to phase 1 residential and proposed phase 2 residential development) at the Frascati Centre, Frascati Road (N31), Blackrock, Co. Dublin (formerly known as Frascati Shopping Centre)

Applicant: IMRF II Frascati Limited Partnership / Davy IMRF II GP Limited

Date: 26th August 2020

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CONTENTS

- 1.0 INTRODUCTION
- 2.0 PROPOSED DEVELOPMENT ARCHITECTURAL DESIGN APPROACH
- 3.0 SECTION 01
- 3.1. Property Management of the Common Areas of the Development
- 3.2 Services Charge Budget
- 4.0 SECTION 02
- 4.1. Energy and Carbon Emissions
- 4.2. Materials
- 4.2.1. Buildings
- 4.2.2. Material Specification
- 4.3. Landscape
- 4.4. Waste Management
- 4.5. Health & Well Being
- 4.6. Management
- 4.7. Transport
- 5.0 APPENDICES:
 - Appendix A ITEMS INCLUDED IN A TYPICAL BIF
 - Appendix B Phases of the Life Cycle of BS7543; 2015
- Project: Proposed Strategic Housing development (alterations to phase 1 residential and proposed phase 2 residential development) at the Frascati Centre, Frascati Road (N31), Blackrock, Co. Dublin (formerly known as Frascati Shopping Centre)
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1.0 INTRODUCTION

The Sustainable Urban Housing; Design Standards for New Apartments – Guidelines for Planning Authorities were published in March 2018 (hereafter referred to as the Apartment Guidelines). The Apartment Guidelines introduced a requirement to include details on the management and maintenance of apartment schemes. This is set out in Section 6.11 to 6.14 – "Operation & Management of Apartment Developments", Specifically Section 6.13.

Section 6.13 of the Apartment Guidelines 2018 requires that apartment applications shall:

"include a building lifecycle report, which in turn includes an assessment of long term running and maintenance costs as they would apply on a per residential unit basis at the time of application"

"demonstrate what measures have been specifically considered by the proposer to effectively manage and reduce costs for the benefit of residents."

This Building Life Cycle Report document sets out to address the requirements of Section 6.13 of the Apartment Guidelines. The report is broken into two sections as follows:

Section 01:

An assessment of long term running and maintenance costs as they would apply on a per residential unit basis at the time of application.

Section 02:

Measures specifically considered by the proposer to effectively manage and reduce costs for the benefit of the residents.

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<image>

View of part of proposed development from Frascati Road



2.0 PROPOSED DEVELOPMENT

Building Life Cycle Report

This pre-application proposal relates to a development consisting of a total of **102 no.** residential apartment units and is considered to constitute a Strategic Housing Development.

The proposed development consists of two phases which includes the provision of 57 no. additional apartments over three to five levels, above the permitted podium car park, to the north west of the centre, as a Phase 2 residential development.

It is also proposed to make 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.

Please refer to John Spain Associates Planning Consultants report for a more detailed explanation of the proposals in the context of the Strategic Housing Development process.

The Phase 2 part of the proposal consists of 20 no. studios, 22 no. 1 beds and 15 no. 2 beds, over three to five levels, arranged around a central courtyard communal space, above the existing and permitted podium car park to the north west of the centre. Balconies are provided for the residential apartments into the courtyard and on the norther western and south eastern elevations.

The proposals also include associated material alterations to the 45no. apartments in the Phase 1 permission which can briefly be summarised as follows:

- Internal rationalisation of the permitted units, including changes in overall unit size and internal layouts, and associated external alterations including the provision of winter gardens to each permitted unit.
- Provision of a physical connection between Phase 1 and Phase 2 at second floor level.
- The refuse, car and cycle parking facilities permitted at lower ground floor level will be altered to cater for the additional residential units, including the introduction of a barrier control system.
- The main entrance to the Phase 1 residential scheme from Frascati Road will serve both the permitted and proposed units.
- A concierge facility room to serve the overall residential development is proposed at second floor level near the main core of Phase 1.
- Reduction in the area of the permitted communal terrace at second floor.
- The communal open space for Phase 1 and 2 will be accessible to all residents.
- Alterations to the cycle parking provision at lower ground floor and first floor level podium car park.

The proposal includes the allocation of 57no. car parking spaces at lower ground floor level and 192 no. bicycle parking spaces(incl. 20 no. retail parking) at lower ground level, 150 no. bicycle parking spaces at ground level for retails and 42 no. for residential units. The proposal includes alterations to existing surface car parking to provide additional landscaping and a bin store, and all associated ancillary site development works.

- Project: Proposed Strategic Housing development (alterations to phase 1 residential and proposed phase 2 residential development) at the Frascati Centre, Frascati Road (N31), Blackrock, Co. Dublin (formerly known as Frascati Shopping Centre)
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- The development takes guidance from relevant documentation including:
- Sustainable Urban Housing: Design Standards for New Apartments (2018)
- Urban Development and Building Heights Guidelines for Planning Authorities 2018
- Sustainable Residential Development in Urban Areas Guidelines for Planning Authorities (2009)

The vision is to create a new sustainable residential community and a high quality architectural design to meet the needs of the local community and to meet the increasing demand for quality housing.

The site context gives a unique opportunity to provide a much needed new residential amenity at this strategic location in the heart of Blackrock and in very close proximity to existing commercial facilities, public transport links, public parks and the coastline of Dublin Bay.



View of Phase 1 permitted residential development over the Frascati Centre with location of proposed phase 2 residential apartment scheme above the permitted podium car park to the north west of the centre.



AN ASSESSMENT OF LONG TERM RUNNING AND MAINTENANCE COSTS AS THEY WOULD APPLY ON A PER RESIDENTIAL UNIT BASIS AT THE TIME OF APPLICATION

3.1. Property Management of the Common Areas of the development

- A property management company will be engaged at an early stage of the development to ensure that all property management functions are dealt with for the development and that the running and maintenance costs of the common areas of the development are kept within the agreed Annual operational budget.
- The property management company will enter into a contract directly with the Owners Management Company (OMC) for the ongoing management of the built development.
- The Property Management Company also has the following responsibilities for the apartment development once constructed:
- Timely formation of an Owners Management Company (OMC) which will be a company limited by guarantee having no share capital. All future purchasers will be obliged to become members of this OMC.
- Preparation of annual service charge budget for the development common areas.
- Fair and equitable apportionment of the Annual operational charges in line with the Multi Units Development Act 2011 (MUD Act).
- Engagement of independent legal representation on behalf of the OMC in keeping with the MUD Act - including completion of Developer OMC Agreement and transfer of common areas.
- Transfer of documentation in line with Schedule 3 of the MUD Act.
- Project: Proposed Strategic Housing development (alterations to phase 1 residential and proposed phase 2 residential development) at the Frascati Centre, Frascati Road (N31), Blackrock, Co. Dublin (formerly known as Frascati Shopping Centre)
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- Estate Management.
- Third Party Contractors Procurement and management.
- OMC Reporting.
- Accounting Services.
- Corporate Services.
- Insurance Management.
- After Hours Services.
- Staff Administration.





AN ASSESSMENT OF LONG TERM RUNNING AND MAINTENANCE COSTS AS THEY WOULD APPLY ON A PER RESIDENTIAL UNIT BASIS AT THE TIME OF APPLICATION

3.2. Service Charge Budget

The property management company has a number of key responsibilities, primarily the compiling of the **service charge budget** for the development for agreement with the OMC. The **service charge budget** covers items such as cleaning, landscaping, refuse management, utility bills, insurance, maintenance of mechanical/electrical lifts/ life safety systems, security, property management fee, etc., to the development common areas in accordance with the Multi Unit Developments Act 2011 ("MUD" Act).

This **service charge budget** also includes an allowance for a **Sinking Fund** and this allowance is determined following the review of the Building Investment Fund (BIF) report prepared for the OMC.. The BIF report will identify those works which are necessary to maintain, repair, and enhance the premises over the 30-year life cycle period, as required by the Multi Unit Development Act 2011.

In line with the requirements of the MUD Act, the members of the OMC will determine and agree each year at a General Meeting of the members, the contribution to be made to the Sinking Fund, having regard to the BIF report produced.

A sample format of the typical BIF report is set out in Appendix A.

Note: the detail associated with each element heading i.e. specification and estimate of the costs to maintain / repair or replace, can only be determined after detailed design and the procurement/ construction of the development and therefore has not been included in this document.





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4.0 SECTION 02

MEASURE SPECIALLY CONSIDERED BY THE PROPOSED TO EFFECTIVELY MANAGE AND REDUCE COSTS FOR THE BENEFIT OF RESIDENTS

4.1. Energy Performance and Carbon Emissions

Refer also to the energy & services report prepared by Homan O'Brien Consultant Engineers as part of this application.

For the purpose of this development the following energy systems for heating and ventilating the apartments were analysed:

1. Traditional Gas Boilers (Decentralised)

2. Gas Boilers with Mechanical Ventilation Heat Recovery (MVHR) (Decentralised)

3. Air Source Heat Pumps (ASHP) (Decentralised)

4. Centralised ASHP with Decentralised Heat Interface Unit (HIU) and $\ensuremath{\mathsf{MVHR}}$

Based on the findings in this analysis including information provided by DEAP reports the selected energy strategy for this project was Option 4, Centralised air source heat pumps (contained within the basement plantroom) with a decentralised Heat Recovery Unit per apartment (for ventilation purposes) and a heat interface unit per apartment for heating and hot water generation. This option was deemed a viable strategy to meet NZEB targets and the requirements laid out in the Building Regulations Technical Guidance Document (TGD) Part L 2019, which sets out the methodology to demonstrate compliance.

The regulations are described including the requirement for reductions to primary energy and the inclusion of an element of renewable technology, set at 20%, in all new dwellings.

Suitable strategies to achieve this standard are described and assessed for the Frascati project.

The standards required to achieve compliance are also set out including building fabric, mechanical and electrical systems, and renewable technologies.

Finally, the utilities infrastructure to the surrounding areas was assessed and confirmed adequate for the proposed development.

In summary, to ensure NZEB Part L 2019 compliance, DEAP analysis demonstrated the following targets were met:

- Energy Performance Coefficient (EPC): 0.30 or lower
- (i.e. 70% reduction in Primary Energy against Part L 2005 benchmark)
- Carbon Performance Coefficient (CPC): 0.35 or lower
- Renewable Energy Ratio (RER): 0.20



Project: Proposed Strategic Housing development (alterations to phase 1 residential and proposed phase 2 residential development) at the Frascati Centre, Frascati Road (N31), Blackrock, Co. Dublin (formerly known as Frascati Shopping Centre)

The following building performance parameters/assumptions were used as a starting point for this analysis, they are categorised into Thermal Transmittance, Glazing Parameters, Air Permeability and Thermal Bridging respectively:

Thermal Transmittance (U-Values)

- External Walls: 0.18 W/m2K
- Roofs: 0.16 W/m2K
- Ground/ Exposed Floors: 0.18 W/m2K
- Windows: 1.4 W/m2K
- Doors: 1.4 W/m2K

Glazing Parameters

- Total Solar Heat Transmittance: 0.60
- Framing Factor: 0.70
- Overshadowing: Average

Air Permeability

• Air Leakage: 3.0 m3/hr.m2 @ 50 Pa

Thermal Bridging

Heat Transmission Coefficient: 0.08 W/m2

In accordance with Acceptable Construction Details (ACD's).

In terms of apartments or other terraced residential buildings, Part L allows that the compliance can be demonstrated based on the average of all dwellings for each of the parameters associated with Part L, namely Primary Energy (EPC), Carbon Emissions (CPC)

and Renewable Energy (RER). Therefore, for the purposes of analysis, all apartments were assessed to determine an average result for compliance. Renewable technologies can be utilised to achieve compliance and significantly reduce Primary Energy requirements (in addition to ensuring the renewable energy percentage is achieved).

For a typical apartment (notional 100m2) using a traditional decentralised gas boiler arrangement designed to ensure NZEB compliance, 4 no. (250W) PV panels would offset the excess energy within the gross consumption. This extent of renewable energy must be at least 20% of the overall Primary Energy (RER =0.20+). In order to reduce the PV requirements, other sources of renewable energy generation were examined.

Selected Renewable Technology - Air Source Heat Pumps (ASHP) Reduces Primary Energy associated with both Heating and Hot Water compared to gas

boilers. Can be implemented on either a centralised or decentralised basis.





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Summary for Part L Conformance (Applies to TGD L 2008/2011/2019 for new dwellings only)

BER Number		Building Regulations	2019 TGD L
BER Result	A2	Energy Value kWh/m ² /yr	46.24
CO ₂ emissions [kg/m ² /yr]	8.76		
EPC	0.261	EPC Pass/Fail	Pass
CPC	0.244	CPC Pass/Fail	Pass

Part L Conformance - Fabric

Conformity with Maximum avg U-value requirements	U-value [W/m ² K]	Pass/Fail	Conformity with Maximum U-value requirements	U-Value [W/m ² K]	Pass/Fail
Pitched roof insulated on ceiling	0.00	Pass	Roofs	0	Pass
Pitched roof insulated on slope	0	Pass	Walls	0	Pass
Flat Roof	0	Pass	Floors	0.18	Pass
Floors with no underfloor heat	0.18	Pass	External doors / windows / rooflights	1.40	Pass
Floors with underfloor heat	0.00	Pass			
Walls	0.00	Pass			
Percentage of opening areas [%]	23.23				
Average U value of openings	1.40	Pass			
Permeability test carried out	t and meets guideling	es in TGD L		0.15 P	ass

Image 1 - Centralised ASHP w/ Decentralised HIU + MVHR DEAP Report

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4.2 Materials

The practical implementation of the Design and Material principles has informed design of building facades, internal layouts and detailing of the proposed apartment buildings.

4.2.1 Buildings

The Buildings are designed in accordance with the Building Regulations, in particular Part D 'Materials and Workmanship', which includes all elements of the construction. The Design Principles and Specification are applied to both the apartment units, commercial spaces and the common parts of the building and specific measures taken include:

Measure Description	Benefit
Daylighting to circulation areas where possible	Avoids the requirement for continuous artificial lighting
Natural/Passive ventilation system to circulation areas	Avoids costly mechanical ventilation systems and associated maintenance and future replacement.
Assisted Natural Ventilation system to basement car park with limited extent of induction fans.	Avoids provision of fully mechanically ventilating the basement.
External paved and landscaped areas	All of these require low/minimal maintenance

Project: Proposed Strategic Housing development (alterations to phase 1 residential and proposed phase 2 residential development) at the Frascati Centre, Frascati Road (N31), Blackrock, Co. Dublin (formerly known as Frascati Shopping Centre)



4.2.2 Material Specification

Measure Description	Benefit
Consideration is given to the requirements of the Building Regulations and includes reference to BS 7543:2015, 'Guide to Durability of Buildings and Building elements, Products and Components', which provides guidance on the durability, design life and predicted service life of buildings and their parts.	Ensures that the long-term durability and maintenance of Materials is an integral part of the Design and Specification of the proposed development.
All common parts of the proposed Apartment buildings and, the durability and performance of these are designed and specified in accordance with Figure 4; Phases of the Life Cycle of BS7543; 2015. (Please see Appendix B for this figure). The common parts are designed to incorporate the guidance, best practice principles and mitigations of Annexes of BS 7543: 2015 including:	
 Annex A Climatic Agents affecting Durability Annex B Guidance on materials and durability Annex C Examples of UK material or component failures Annex D Design Life Data sheets 	
The proposed building finishes for phase 2 will match the high- quality finishes used in the permitted phase 1 residential scheme and as constructed to the existing shopping center facing Frascati Road including:	Requires minimal on-going maintenance.
 Reconstituted Stone Panels – light cream/white colour. Powder coated Aluminum framed glazed curtain walling, windows and doors(Image 02). Powder coated Aluminum spandrel panels(Image 04). Glazed balustrade guarding's to balconies and external walkways(Image 03). Exposed steel structure to external walkways with painted finish(Image 02) Special planting elements with stainless steel wiring and planters supporting soft landscape planting as per the Landscape Architect's details(Image 05). 	

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Image 01. - proposed building finishes



Image 02. - proposed building finishes



Image 03. - proposed building finishes



4.2.2 Material Specification



Image 05. - proposed building finishes



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<u>4.3 Landscape</u>

Measure	Description	Benefit
Site Layout & Landscape design	High quality landscaping with landscape, bicycles and pedestrians prioritized over car use. An increase in soft landscaping. Please refer to Landscape Report for further detail.	Natural attenuation, reduced surface water runoff from site and increased biodiversity.
Hard Landscape Materials	 Sustainable, robust, high quality materials, with high slip resistance to be used for paving Silver grey granite paving to shared surface pedestrian priority plaza located south west elevations. Exposed aggregate concrete paving to covered cycle parking spaces located along western side of shared surface plaza to Frascati Park boundary 	Required ongoing maintenance significantly reduced through use of robust materials installed with proven details.
Incidental Play elements	Durable and robust equipment to be used.	Robust materials and elements reduce the frequency of required repair and maintenance.
Sustainable drainage	Use of a 40mm deep combined drainage board/reservoir system across podium	Reduces the volume of irrigation required
Planting details	Proven trees staking details. Shrub, hedging, herbaceous and lawn installation	Correctly installed planting will develop into well established and robust soft landscape reducing future maintenance.
Green Roofs	Use of green roofs and traditional roof coverings with proven detailing to roof elements.	Attenuation reduces the burden on vulnerable rainwater goods, resulting in fewer elements that could require replacement or repair.

Project: Proposed Strategic Housing development (alterations to phase 1 residential and proposed phase 2 residential development) at the Frascati Centre, Frascati Road (N31), Blackrock, Co. Dublin (formerly known as Frascati Shopping Centre)



4.4 Waste Managemnent

Measure	Description	Benefit	Discipline	
Operational Waste Management Plan	This application will be accompanied by an Operational Waste Management Plan prepared by AWN Consulting	The report demonstrates how the scheme has been designed to comply with local, regional, and national waste legislation along with best practice	AWN	
Storage of Non- Recyclable Waste and Recyclable Household Waste	Inclusion of centralised waste storage areas, with enough space to accommodate a weekly collection of bins	Easily accessible by all residents, minimises potential littering of the scheme, reduce potential waste charges and not limit waste contractor selection	AWN	
	Domestic waste management strategy: General waste, mixed recyclable and organic bin distinction	Helps reduce potential waste charges and not limit waste contractor selection		
	Security restricted waste storage rooms	Reduce potential for fly tipping by residents and non-residents		
	Well signed waste storage rooms and bins	Help reduce potential cross contamination of waste and reduce waste charges.		
Composting	Organic waste bins to be provided in waste storage areas	Helps reduce potential waste charges	AWN	

Project: Proposed Strategic Housing development (alterations to phase 1 residential and proposed phase 2 residential development) at the Frascati Centre, Frascati Road (N31), Blackrock, Co. Dublin (formerly known as Frascati Shopping Centre)



4.5 Health & Well Being

The following are illustrations of how the health and well-being of future residents are considered.

Measure	Description	Benefit
Natural / Day Light	The design, layout and separation distances of the building blocks have been designed to optimize the ingress of natural daylight/ sunlight to the proposed dwellings to provide good levels of natural light.	Reduces reliance on artificial lighting thereby reducing running costs.
Accessibility	All units will comply with the requirements of Building regulations Parts M and K.	Reduces the level of adaptation, and associated costs, potentially necessitated by residents' future circumstances.
Security	 The scheme is designed to incorporate passive surveillance with the following security strategies likely to be adopted: CCTV monitoring details Car registration recognition at entrance gate Secure bicycle stands – covered by CCTV Controlled Access to individual circulation cores Controlled access between Public Spaces and Residents Communal Spaces Routine access fob audits Appropriately lit external spaces. 	Aids in reducing potential security/management costs. Enhances safety for residents and visitors.



(N31), Blackrock, Co. Dublin (formerly known as Frascati Shopping Centre)Client: IMRF II Frascati Limited Partnership / Davy IMRF II GP Limited

Proposed Strategic Housing development (alterations to phase 1 residential and proposed phase 2 residential development) at the Frascati Centre, Frascati Road

Project:

Natural Amenity	2no. Communal Courtyards at the rear of the Podium Level located between the 3 apartment blocks. High Quality Public Open Space to Southwest of site. Connections and green linkages with decking bridge	Facilitates community interaction, socialising and play – resulting in improved wellbeing. Proximity and use of external green spaces promotes a healthy lifestyle. External spaces being provided separately for residents (communal courtyards & private balcony's) and public (Quality Public open Space)
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Client: IMRF II Frascati Limited Partnership / Davy IMRF II GP Limited



4.6 Management

Consideration has been given to ensuring the residents have a clear understanding of the subject property.

Measure	Description	Benefit
Home User Guide	 Once a purchaser completes their sale, a homeowner box will be provided which will include: Homeowner manual – this will provide important information for the purchaser on details of their new property. It typically includes details of the property such as MPRN and GPRN, Information in relation to connect with utilities and communication providers, Contact details for all relevant suppliers and User Instructions for appliances and devices in the property. A Residents Pack prepared by the OMC which will typically provide information on contact details for the Managing agent, emergency contact information, transport links in the area and a clear set of rules and regulations. 	Residents are as informed as possible so that any issues can be addressed in a timely and efficient manner.

Project: Proposed Strategic Housing development (alterations to phase 1 residential and proposed phase 2 residential development) at the Frascati Centre, Frascati Road (N31), Blackrock, Co. Dublin (formerly known as Frascati Shopping Centre)

4.7 Transport

Refer also to the transportation report prepared by NRB as part of this application

Measure	Description	Benefit
Access to Public Transport (Bus Services)	Immediately beside the Frascati Road (N31) with additional bus stops and routes on Rock Hill Road, Carysfort Avenue and Mount Merrion Avenue, core radial bus route,within 5 minutes walking distance of high frequency (min 10minute peak hour frequency) bus services. The development is currently very well serviced by a number of frequent Dublin Bus services along with other services such as Bus Éireann and Aircoach. There are currently bus lanes on many of the approach roads to Blackrock. Real time information is available at the nearby Dublin Bus Stops, and information is available through the use of Bus Passenger Apps for Mobile Phones.	The available bus routes provide access to major employment and education destinations in Dublin City Centre and South Dublin. The frequencies of these bus routes also mean that bus travel as a mode of transport is a viable option for residents and visitors to the proposed development, thus decreasing reliance on the private car.
Permeable Connections	Provision and subsequent maintenance of dedicated pedestrian and cycle infrastructure within the proposed development and their connectivity with wider public pedestrian and cyclist infrastructure.	Thanks to spatial permeability the internal pedestrian and cycling network is well-connected to the surrounding area, presenting walking and cycling as viable and safe means of transport for both residents and visitors.
Bicycle Storage	Provision of high-quality secure bicycle parking facilities to serve residents and visitors.	Accommodates the uptake and increases the attractiveness of cycling as a viable and flexible alternative to private car use for a range of trip types.
Motorcycle Parking	The implementation of secure, attractive, best practice motorcycle parking facilities for residents.	Reduces the reliance on the private motor vehicle in parallel with reducing oil dependency.
Access to Public Transport (Dart)	Blackrock Dart Station and Train Station is within a 6-7min walking distance of the proposed residential development (0.55km)	The availability, proximity and ease of access to high quality public transport services contributes to reducing the reliance on the private motor vehicle for all journey types.

Project: Proposed Strategic Housing development (alterations to phase 1 residential and proposed phase 2 residential development) at the Frascati Centre, Frascati Road (N31), Blackrock, Co. Dublin (formerly known as Frascati Shopping Centre)



<u>4.7 Transport</u>

LUAS	Whilst LUAS does not extend to Blackrock, Dublin Bus and DART services link with the LUAS. The LUAS lines are now linked by the new LUAS Cross City Line. The LUAS Red Line connects Busarus Bus Depot with the mainline train stations at Heuston Station and train & DART at Connolly Station.	LUAS also provides an ideal mode of transport for residents arriving in the City Centre or possibly those who may wish to avail of park and ride services available at a number of LUAS stops on both the Green and Red lines. This allows connections to suburban and outer urban areas by way of Bus, DART and main- line rail.
Accessibility By Taxi	without any requirement for formal taxi ranks or dedicated taxi holding areas.	In terms of taxis, modern communication devices (e.g. 'Freenow' and 'Lynk') now allow taxis to be ordered on a demand-basis.
Facilities	parking bays within basement car parking.	increase the attractiveness of electric vehicles as an alternative to gasoline- powered vehicle, thus reducing emissions made by residents and visitors to the site.
Car Sharing	Provision of dedicated car parking bays to accommodate GoCar sharing services adjacent to the site along Frascati Center driveway.	Accommodates the uptake and increase the attractiveness of car sharing services as a viable and flexible alternative to private car use for a range of trip types.

Project: Proposed Strategic Housing development (alterations to phase 1 residential and proposed phase 2 residential development) at the Frascati Centre, Frascati Road (N31), Blackrock, Co. Dublin (formerly known as Frascati Shopping Centre)



ITEMS INCLUDED IN A TYPICAL BIF

The BIF table below illustrates what would be incorporated for the calculation of a Sinking Fund. It is based on Block D,E,F in the development which consists of 57 apartments over 5 floors.

	BUILDING INVESTMENT FUND (SINKING FUND) Santa Sabina – Block C1 (Specification to be finalized at detailed design stage)		
Ref	Element	Life Expectancy	Yearly estimate of costs year 1 to year 30
1.00	Roofs		
1.01	Replacement roof covering incl. insulation to main roofs	18	
1.02	Replacement parapet details	18	
1.03	Replace roof access hatches	25	
1.04	Specialist Roof Systems - Fall arrest	25	
2.00	Elevations		
2.01	Replace exit/ entrance doors	25	
2.02	Replace Rainwater goods	25	
2.03	Recoat powder coated Finishes to balconies	20	
2.04	Periodic replacement and overhauling of external fixings	5	
2.05	Replace Balcony floor finishes	25	
2.06	Replace Planter	25	
3.00	Stair cores & lobbies		

Project: Proposed Strategic Housing development (alterations to phase 1 residential and proposed phase 2 residential development) at the Frascati Centre, Frascati Road (N31), Blackrock, Co. Dublin (formerly known as Frascati Shopping Centre)



5.0 Appendix A(Continued):

3.01	Decorate Ceilings	7	
3.02	Decorate Walls	7	
3.03	Decorate Joinery	7	
3.04	Replace fire doors	25	
3.05	Replace carpets (stairwells & lobbies)	12	
3.06	Replace entrance mats	10	
3.07	Replace nosings	12	
3.08	Replace ceramic floors tiles	20	
3.09	Fixed Furniture & Equipment - Provisional Sum	18	
4.00	Basement Car Park		
4.01	Remove/ Replace ceiling insulation	25	
4.02	Repaint parking spaces & Numbering	7	
5.00	M&E Services		
5.01	General - Internal relamping	7	
5.02	Replace Internal light fittings	18	
5.03	Replace External light fittings (lights at entrance lobbies)	18	
5.04	Replace smoke detector heads	18	
5.05	Replace manual break glass units	18	
5.06	Replace Fire alarm panel	18	

Project: Proposed Strategic Housing development (alterations to phase 1 residential and proposed phase 2 residential development) at the Frascati Centre, Frascati Road (N31), Blackrock, Co. Dublin (formerly known as Frascati Shopping Centre)



- Client: IMRF II Frascati Limited Partnership / Davy IMRF II GP Limited
- Date: 26th August 2020

5.07	Replace lift car and controls	25	
5.08	Replace AOV's	25	
5.08	Replace security access control installation	15	
5.09	Sump pumps replacement	15	
5.10	External Mains Water connection	20	
5.12	Electrical Mains and Sub Mains distribution	20	
5.13	Emergency Lighting	20	
6.00	Exterior		
6.01	Entrance Gate - motor renewal	12	
6.02	Entrance Gate & pedestrian gate - redecoration	60	
6.03	External boundary treatments - Recoat powder coated Finishes to railings	60	
6.04	Replace cobbleblock areas	18	
6.05	15-year cutback & thinning of trees. Overhaul landscaping generally	20	
6.06	Replace CCTV provision	12	
6.07	External Handrails and balustrade	18	

Project: Proposed Strategic Housing development (alterations to phase 1 residential and proposed phase 2 residential development) at the Frascati Centre, Frascati Road (N31), Blackrock, Co. Dublin (formerly known as Frascati Shopping Centre)





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Client: IMRF II Frascati Limited Partnership / Davy IMRF II GP Limited

