

Client: STRAND COURT LIMITED

Project: PROPOSED RESIDENTIAL DEVELOPMENT at
CHURCHVIEW ROAD & CHURCH ROAD,
KILLINEY, CO. DUBLIN

Title: DESCRIPTION OF THE PROPOSED UTILITIES &
ENERGY & SUSTAINABILITY REPORTS

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INTRODUCTION

We, Strand Court Limited, seek planning permission for a strategic housing development at Churchview Road and Church Road, Killiney, Co. Dublin. The site is located to the west of the Graduate Roundabout and Church Road, to the north of Fairhaven and Churchview Road, and to the east of an area of open space.

The proposed development (See Fig. 1 below) will consist of:

- The demolition of 3 no. existing dwellings known as Culgrenagh, Briar Hill, and Hayfield;
- The construction of 210 no. residential units (apartments) in 3 no. blocks (A, B and C) ranging in height from 3 to 7 storeys, including lower ground floor / basement level, incorporating 27 no. 1-bed units, 160 no. 2-bed units and 23 no. 3 bed units;
- Apartment Block C includes a childcare facility with a gross floor area of 203 sq.m, with an adjacent external play area, and Apartment Block B includes a resident's amenity facility with a gross floor area of 130 sq.m;
- A total of 227 no. car parking spaces are proposed to be provided, including 186 no. spaces at basement/undercroft level and 41 no. surface car parking spaces, including parking for visitors and set-down parking for the childcare facility. The development provides a total of 348 no. cycle parking spaces (surface and basement level). Bin storage and plant areas are also provided at basement level.

The associated site development and infrastructural works will include upgrade of the existing access from Churchview Road, which also serves the Fairhaven development, and provision of an internal access road, associated upgrade works to Churchview Road, foul and surface water drainage, attenuation tanks, open space areas, hard and soft landscaping, 1no. electricity substation, boundary treatments and all ancillary works on a total site area of 1.59ha.

We have divided the report into two sections: Utility Infrastructure & Energy & Sustainability.



Fig. 1 Aerial View (Google Maps) of Existing Site located on the intersection between Churchview Road and Church Road

1 SECTION 1: UTILITY INFRASTRUCTURE

The utility infrastructure to serve the proposed Churchview Road Residential development will be tied into the existing service provider network systems along both Church Road and Churchview Road. The entrance to the proposed development is from an existing Road (Churchview Road) with additional pedestrian access onto Church Road. Utility providers have made provision by means of ducts to serve the development which are already in place. It is envisaged services will enter the development at the site entrance off Churchview Road and onto Church Road availing of existing services already in place.

The site services drawing (refer to dwg. P017-PMEP-00-00-DR-ME-01) is provisional only and is subject to approval/discussion with each utility provider. The site services drawing has been populated to include ESB, Gas, Virgin Media and EIR services and quantity indicated are an estimation based on previous experience with the various utility providers.

(Note: The description of utility services to the development as outlined below is subject to utility applications being completed and final design from each service provider issued).

1.1 GAS SUPPLY (GAS NETWORKS IRELAND)

There is an existing 180 PE-80, (4 bar) gas main opposite the proposed new site entrance onto Churchview Road.

A new connection shall be installed from the existing gas main to the site. High pressure gas mains will be brought into the development and terminate in a district regulating installation (DRI) unit. It is envisaged that 1 No district regulating installation (DRI) unit will be required, a provisional location has been selected (refer to dwg P017-PMEP-00-00-DR-ME-01).

From the DRI unit, low pressure gas main will be distributed throughout the development. The Apartment blocks will have centralised meter locations. These centralised meter locations shall be located in basement areas or at ground level within dedicated meter rooms.

In the event Natural Gas is selected as an energy source, Gas Networks Ireland have been contacted and an existing gas network map for the area surrounding the proposed development has been obtained and is attached.

1.2 ELECTRICITY (ESB NETWORKS)

ESB Networks have been contacted and an existing ESB network map for the area surrounding the proposed development has been obtained.

There is extensive underground ESB Networks infrastructure bounding the existing site.

A formal application cannot be made at this stage but will be made as soon as the planning permission is granted.

There is provision for a new connection off Church Road. Provision for 3 No 125mm red MV ducts has been provided at the North-East of the site with the use of the proposed increased Fire Tender Access (3.8 Mts. wide) route for installation of equipment and future maintenance access. An external Key-Box will provide access for both the Fire Brigade and ESB crews.

ESB services will be brought from this location and terminate in the ESB sub-station within the proposed development. It is envisaged that 1 No ESB sub station will be required to serve the development.

The sub-station will be located near Church Road to limit ESB runs. A 125mm ESB duct will be provided from the sub-station to the ESB mini-pillars and client meter cabinets.

A wayleave will be provided which will include a 3metre unrestricted access to the substation at all times. This will be discussed and agreed with ESB Networks during the application process.

An ESB cabinet will be provided at each apartment block to include an ESB cut-out point. Services will be ducted from the cabinet to centralised meter locations within the basement areas (refer to dwg P017-PMEP-00-00-DR-ME-01).

1.3 BROADBAND (EIR)

Eir have been contacted and an existing Eir map for the area surrounding the proposed development has been obtained.

There is existing Eir Networks infrastructure in the vicinity of the site. A formal application cannot be made at this stage but will be made as soon as the planning permission is granted.

The Eir infrastructure will allow for multiple broadband providers.

Provision for 2 No 100mm communication ducts shall be installed at the site entrance and will be distributed within the proposed development. EIR services will comprise of JB4 chambers and ducting as indicated (refer to dwg P017-PMEP-00-00-DR-ME-01). All chambers will be suitably traffic rated for the area in which they are being installed. A 36mm EIR duct will be provided from the nearest chamber to each Apartment block.

EIR cabinets will be provided within each apartment block and EIR services will be brought into the basement and terminate within the EIR distribution unit and distributed to each apartment from these locations (refer to dwg P017-PMEP-00-00-DR-ME-01).

1.4 BROADBAND/TV/TELEPHONE (VIRGIN MEDIA)

Virgin Media have been contacted and an existing map for the area surrounding the proposed development has been obtained.

There is existing Eir Networks infrastructure in the vicinity of the site. A formal application cannot be made at this stage but will be made as soon as the planning permission is granted.

Provision for 2 No 100mm communication ducts has been installed at the site entrance and will be distributed within the proposed development. VM services comprise of FW3 chambers, Node cabinets and ducting. Node cabinets are required to amplify the signal within the development. Each node pillar requires a 15amp LV supply.

All chambers will be suitably traffic rated for the area in which they are being installed. A 100mm VM duct will be provided from the nearest chamber to each Apartment Block.

Virgin Media cabinets will be provided for each apartment block with services distributed to each apartment from this location (refer to dwg P017-PMEP-00-00-DR-ME-01).

1.5 SITE LIGHTING

Each light fitting will be controlled via an individual Photoelectric Control Unit (PECU). All lamps selected will have a DALI ballast and as a result are dimmable. Dimming of the lamp will be controlled via an astronomical clock which is built into the circuit board of the luminaire. This clock is standard in all external light fittings and it determines when the lamp will be switched on/off, based on time and date. All lighting will be pre-set to dim by 30% post curfew to limit the amount of light pollution.

Refer to the site lighting layout and lux levels drawings are detailed on P017-PMEP-00-00-DR-E-01 & P017-PMEP-00-00-DR-E02.

Details are contained in a separate Site Lighting Report.

1.6 INCOMING WATER SERVICES (MAINS/FOUL/SURFACE)

In relation to incoming Water Services (Mains/Foul/Surface), please refer to DBFL Report Ref.: 180153_rep.002 for details.

2 SECTION 2: ENERGY & SUSTAINABILITY

This section outlines the proposed energy efficiency and sustainability objectives under consideration for the proposed residential development.

The options set out are all potentially viable options and it is envisaged that there is sufficient flexibility in the planning assessment to allow for one or more of these options to be implemented.

The sustainable options being investigated assist in achieving reduced overall energy consumption and usage within the buildings.

The development will also comply with Part L of the Building Regulations.

2.1 Condensing Boilers

Condensing boilers are being evaluated as they have a higher operating efficiency, than standard boilers which results in lower fuel consumption. The net result is lower greenhouse gas emissions per kilowatt of output to the environment.

2.2 Natural Ventilation

Natural ventilation is being evaluated as a ventilation strategy to minimise energy usage.

The main advantages of natural ventilation are:

- Low noise impact for occupants and adjacent units.
- Completely passive, therefore no energy required with associated installations.
- Minimal maintenance required.
- Reduced environmental impact as minimal equipment disposal over life cycle.
- Full fresh air intake resulting in healthier indoor environment.

2.3 Mechanical Ventilation Heat Recovery

Mechanical Ventilation Heat Recovery (MVHR) will be considered in order to provide ventilation with low energy usage. The MVHR reduces overall energy, and ensures a continuous fresh clean air supply.

2.4 Air to water Heat Pumps

An air to water heat pump is being considered to provide space heating and domestic hot water. An air source heat pump is a system which transfers heat from outside to inside a building. The air to water heat pump absorbs heat from outside air and releases it inside the building, via radiators, underfloor heating and/or domestic hot water supply.

2.5 Exhaust Air Heat Pumps

An exhaust air heat pump is being considered to provide mechanical ventilation, space heating and domestic hot water. An exhaust air heat pump (EAHP) extracts heat from the building and transfers the heat to the supply air, domestic hot water and/or space heating system (underfloor heating / radiators).

An exhaust air heat pump will extract heat from the buildings via a ventilation system. Air is drawn through ducts to the heat pump from the bathrooms, utility and kitchen areas. The heat from the exhaust air is then absorbed and used to heat domestic hot water and space heating.

The cold waste air is discharged to outside through another duct. The additional heat generated internally from lighting, people and domestic appliances is also utilised through heat recovery.

2.6 Elemental U-Values and Air Infiltration

Lower U-values and improved air tightness will minimise heat losses through the building fabric, reducing energy consumption and thus minimise carbon emissions to the environment. The U-values being evaluated will, at minimum, be in line with those required by the current regulatory requirements of the Technical Guidance Documents Part L, titled “*Conservation of Fuel and Energy Buildings other than Dwellings*”.

Thermal bridging at junctions between construction elements and at other locations will be minimised in accordance with Paragraphs 1.2.4.2 and 1.2.4.3 outlined in the Technical Guidance Documents Part L.

2.7 PV Solar Panels

PV solar panels offer the benefit of reducing fossil fuel consumption and carbon emissions to the environment and converts the electricity produced by the PV system (which is DC) into AC electricity.

The inverter converts the electricity generated from the PV Panels from DC to AC. Electricity is then brought from the inverted to the main circuit breaker or fuse board, which supplements the electrical demand within each Apartment. This can result in cost saving in regard to the overall energy consumption within the Apartments.

The panels are typically placed on the South facing side of the building for maximum heat gain

2.8 Combined Heat & Power

The use of Combined Heat and Power (CHP), is being evaluated as a potential source of energy for the apartments within the proposed Churchview Road Residential Development.

CHP is an energy efficient technology that generates electricity and captures the heat that would otherwise be wasted to provide useful thermal energy—such hot water—that can be used for space heating, and/or domestic hot water.

This technology is being considered to provide space heating and domestic hot water for the apartments.

2.9 ECAR Charging Points

Within the Churchview Road Development, the provision of ecar charging points are being considered.

Electrification of transport is vital to decarbonise society and reduce oil-dependency.

Ecar was established in 2010 by the ESB to support the changing infrastructure for electric vehicles across Ireland.

- Apartment blocks – Provision for the installation of fully functional electric vehicle charging points will be provided both externally and basement areas in the apartment blocks in conjunction with the management company. There shall be designated E-car charging car park spaces. A management company will maintain and operate the e-car functionality. Power supplies to the e-car chargers will be provided from a local landlord distribution board.

E-car chargers will be complete with the latest version of the open charge point protocol (OCPP) and will also support a user identification system such as radio frequency identification (RFID). The system will operate on a single charge point access card. A full re-charge can take from one to eight hours using a standard charge point.

3 CONCLUSION

Section 1: UTILITY INFRASTRUCTURE

Based on the initial review, there is sufficient utility infrastructure in the area for the proposed Churchview Road Residential Development.

Section 2: ENERGY & SUSTAINABILITY

The potential energy efficient options, detailed above are all being evaluated at present. The options listed above will be assessed and confirmed at detail design stage.