

Client: PARSIS LTD

Project: PROPOSED SANTA SABINA RESIDENTIAL DEVELOPMENT
GREENFIELD ROAD, DUBLIN 13

Title: DESCRIPTION OF THE PROPOSED UTILITIES & ENERGY

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1 INTRODUCTION

We Parsis Ltd, intend to apply to An Bord Pleána for permission for a strategic housing development at the site that formerly formed part of Santa Sabina Dominican College & Convent Complex, Greenfield Road, Sutton, Dublin 13. St. Dominic's Convent Santa Sabina, located to the east of the application site, is a protected structure.

The proposed Santa Sabina, Greenfield Road, Dublin 13, development consists of:

- Provision of 2 additional storeys to Block A-B1 and alterations/redesign to the 3 permitted storeys below to provide a five storey building containing 42 no. apartments (consisting of 9 no. 1 beds, 29 no. 2 beds and 4 no. 3 beds), and including associated alterations to the courtyard communal amenity space.
- Provision of 2 additional storeys to Block C1 and alterations to the 3 permitted floors below to provide a five-storey building containing 28 no. apartments (consisting of 28 no. 2 beds).
- Replacement of Block D, comprising 10 no. two and three storey semi-detached houses, with 3 no. three storey apartment buildings (Block D1, D2 and D3) containing 32 no. apartments (consisting of 6 no. 1 beds, 21 no. 2 beds and 5 no. 3 beds).
- The alterations to Block A-B1 and C1 include associated alterations to the basement under these blocks, primarily relating to the omission of core and associated alterations to plant, waste storage, car and cycle parking provision.
- The proposed alterations include the provision of balconies / terraces to external elevations of Block A-B1, C1, D1, D2 and D3
- An ESB substation and Switchroom building and bin collection point are proposed in place of three permitted car parking spaces adjoining the western boundary of the site
- The Proposal includes alterations to the permitted car and cycle parking at basement and ground level, resulting in the provision of a total of 168 no. car parking and 270 no. bicycle spaces.
- The proposed development includes associated ancillary site development works.

The utility infrastructure to serve the proposed Greenfield Road development will be tied into the existing service provider network systems in place along Greenfield Road. It is envisaged services will enter the development at the site entrance.

The site services drawing (refer to dwg P030-PMEP-00-00-DR-ME-01) is provisional only and is subject to approval/discussion with each utility provider.

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

2 ELECTRICITY

Provision for 2No 125mm red HV duct's will be provided for ESB services to be brought from Greenfield Road through the site entrance and terminate in the ESB sub-station within the proposed development. It is envisaged that 1No ESB sub station will be sufficient to serve the development. The sub-station will be centrally located to the surrounding areas to limit ESB runs. A 125mm ESB duct will be provided from the sub-station to the ESB mini-pillars and cabinets, and to each of the apartment blocks. (refer to dwg P030-PMEP-00-00-DR-ME-01) ESB Services to the houses will be from a local mini-pillar (1 no mini-pillar serves up to 10No houses).

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 ground floor core areas.

3 EIR

Provision for 1No 110mm EIR duct will be provided to allow for EIR services to be brought from Greenfield Road through the site entrance and distributed within the proposed development. EIR services comprise of JB4 chambers and ducting as indicated (refer to dwg P030-PMEP-00-00-DR-ME-01). All chambers will be suitably traffic rated for the area in which they are being installed.

An EIR cabinet will be provided within each apartment block and EIR services will be brought into the basement and terminated within the EIR distribution unit and distributed to each apartment from these locations (refer to dwg P030-PMEP-00-00-DR-ME-01).

4 VIRGIN MEDIA

Provision for 1No 110mm VM PVC duct will be provided to allow for VM services to be brought from Greenfield Road through the site entrance and 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 50mm VM duct will be provided from the nearest chamber to the home

Virgin Media cabinets will be provided for each apartment block and services will be distributed to each apartment from this location (refer to dwg P030-PMEP-00-00-DR-ME-01).

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 switch 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 (P030-PMEP-00-00-DR-E-01 & P030-PMEP-00-00-Dr-E-02).

6 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.

6.1 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 installation.
- Minimal maintenance required.
- Reduced environmental impact as minimal equipment disposal over life cycle.
- Full fresh air intake resulting in healthier indoor environment.

6.2 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.

6.3 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.

6.4 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.

6.5 ELEMENTAL U- VALVES 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 a 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 of Part L.

6.6 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 the dwelling. This can result in cost saving in regard to the overall energy consumption within the dwelling.

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

6.7 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 Santa Sabina 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.

6.8 ECAR CHARGING POINTS

Within the Santa Sabina development the provision of Ecar charging points are being considered.

- Apartments – Ducting / containment will be provided from a separately metered distribution board to all Ecar charging car park spaces. This will allow the management company the option to install Ecar charging points within the basement carpark to cater for Ecar demands of the residents.

6.9 PART L COMPLIANCE

The proposed development will fully comply with part L of the building regulations, and be fully NZEB compliant.

6.10 CONCLUSION

Based on the initial review, there is sufficient utility infrastructure in the area for the proposed Santa Sabina Development.

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