JV TIERNEY & CO
MECHANICAL ELECTRICAL & SUSTAINABLE ENGINEERS

SUSTAINABILITY/ENERGY REPORT

PLANNING STAGE

BRADY'S PUBLIC HOUSE, OLD NAVAN ROAD, DUBLIN 15

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PLANNING REPORT

SUSTAINABILITY/ENERGY STATEMENT

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1. Introduction

Bartra Property (Castleknock) Limited intend to apply to An Bord Pleanála for permission for a strategic housing development at this 0.3,170 ha site at Brady's Public House, Old Navan Road, Dublin 15, D15 W3FW.

The development will principally consist of: the demolition of the existing part 1 to part 2 No. storey over partial basement public house and restaurant building (1,243 sq m) and the construction of a part 1 to part 5 No. storey over basement Build-to-Rent Shared Living Residential Development (6,549 sq m) comprising 210 No. bedspaces (182 No. single occupancy rooms, 4 No. accessible rooms and 12 No. double occupancy rooms).

The development also consists of the provision of communal living/kitchen/dining rooms at each floor level to serve the residents of each floor; communal resident amenity spaces for all residents including tv/cinema room at basement level, gymnasium and lounge/reception area at ground floor level, a library/study at third floor level and a private dining room at fourth floor level; external roof terrace at third floor level (78 sq m) facing north-east, north-west and south-west; external communal amenity courtyards at basement (170 sq m) and ground floor level (336 sq m); external amenity space at basement level accessed from the communal living/kitchen/dining room (30 sq m); balconies at third floor level facing north-east/north-west (14.35 sq m); resident facilities including launderette, linen store, accessible WC and bin store; 2 No. accesses to the public park along the north-eastern boundary; 2 No. car-share parking spaces; a lay-by and delivery bay; emergency gate access to the courtyard (north-west boundary); bicycle parking; boundary treatments; hard and soft landscaping; plant; PV panels; substation; switch room; generator; lighting; and all other associated site works above and below ground.

The strategy to sustainable design at the Brady's development site will be to use robust, passive, cost effective measures to create an efficient and healthy environment within the planned spaces. The development provides an opportunity to create environmentally sound and energy efficient community living building by using an integrated approach to design, planning, construction and operation.

Sustainable development promotes resource conservation of our limited natural resources. The design strategies employed will include a whole life cycle approach to management and planning of the

development, energy efficiency with specific focus on reducing the carbon footprint, improving the environmental quality of the building spaces, material selection and use, waste management, water management and conservation and enhancing the ecological value of the site.

The development is being designed to achieve an 'A Rating' BER (Building Energy Rating) for the community living building accommodation.
There are many significant drivers for sustainable design:-

- The increasing cost required to provide services such as energy and water.
- Stricter energy targets set under the Building Regulations now and into the future.
- Objective to take account of the impacts of climate change.
- The desire to provide energy efficient building development to demonstrate energy awareness and efficiency of use.
- Fingal County Development Plan 2017-2023, policies to reduce carbon emissions in line with Council objective En04.

2. Energy Strategy Approach

In developing the vision for the 'Sustainability/Energy Strategy' for the development, the incorporation of sustainable strategies into the project deliverables has encouraged the commitment to sustainable design at a very early stage with the Client and Design Team to ensure a 'best in class' development. This approach seeks to ensure that the development meets the principles of the Government's 'National Climate Change Policy', Fingal County Development Plan (2017-2023) energy objectives (including EN 09) with regard to Climate Change and Energy Efficiency and that it exceeds the requirements of the Building Regulations Part L and maximises the reduction in Carbon Dioxide (CO_2) emissions thus demonstrating the Client's commitment to Climate Change.

At the core of the design strategies two key elements have been incorporated into the design namely:

I. The building is designed to be compliant with the NZEB standard with due regard to the *DECLG 'Towards nearly Zero Energy Buildings in Ireland - Planning for 2020 and Beyond'* document.
II. The achievement of 'A Rated' BER's for the communal living accommodation.

thus, ensuring that the buildings will meet the requirements as set out by Fingal CC in their development plan.

The sustainable strategy will seek to incorporate appropriate and effective economic and environmental measures. In this respect, consideration will be given to the following:-

- Utilising the principles of Energy Efficient Design (EED) to minimise the energy usage during the operational phase of the building. The incorporation the EED principles including the provision for the use of 'Triple E' registered products from the SEAI database in the selection of equipment, by creating an IES energy model of the building during the design phase that will identify the energy users by type and allow targets to be set and this design data can then be directly linked to the operational phase of the buildings via the Building Management System. Using actual energy consumption feedback, the energy model can be used to assess different energy saving options.
- The design will incorporate energy efficiency across all elements of the project from:
  - Construction – Use of the principles of considerate construction to monitor and control energy, water, etc. use on site during the project.

- Commissioning - Baseline the energy and water consumption to set the appropriate targets for the operational phase using the extensive metering/ controls equipment designed to meet the principles of CIBSE (The Chartered Institution of Building Services Engineers) TM 39 – Building Energy Metering. Use of a Commissioning Manager to co-ordinate and ensure that all the energy related systems are installed and operate as per design.
- Operation – Confirmation that the principles of EED have been met.

- Maximising the use of passive design measures such as the building façade to take advantage of the site constraints/orientation, use of enhanced fabric u-values in excess of Part L 2017 with the delivery of an excellent air permeability rate.
- Targeting natural daylight factors that meet CIBSE recommendations. Good natural daylight creates a positive living environment and contributes to the well-being of the occupants. The provision of good glazing on the elevations will maximize the use of natural daylight that will enhance the visual comfort of the building occupants. The use of high-performance glazing will ensure that the thermal performance of the building is not compromised, while allowing the building occupants to enjoy the benefit of the glazed views.
- Façade studies in conjunction with the Architect using computer modelling techniques to maximise the daylight factors, natural ventilation and solar benefits specific to the site thus maximising the air quality and daylight within the building.
- Extend the sustainable approach from the Building to the Site throughout the construction and handover process.
- Reduce Reuse and Recycle throughout the design, construction and operational phases of the development to ensure that the project maximises the recycling and reuse of materials while reducing the quantum of waste diverted to landfill.
- Use of Dynamic Thermal and Energy Simulation techniques to confirm a low energy and carbon footprint design for the buildings. The design incorporates significant areas that will operate under natural ventilation principles and will be checked for compliance with Part L of the Building Regulations for the impact of overheating. Additionally, the spaces will also be checked for the impact of Climate Change using the 2020/2050 CIBSE accredited weather file and the spaces will be confirmed to meet the compliance criteria.
- Energy efficient M&E systems and plant- Heating Plant, LED Lighting, Triple E registered products, etc. that minimises the consumption of energy.
    - Efficient use of natural light to offset the use of artificial light.

- Use of High efficiency LED light fittings.
- High efficiency heating plant including a centralised plant space supported by Heat Pumps in conjunction with PV Panels to contribute to meeting the renewable energy requirements of the Part L Regulations.

- Use of renewable technologies such as PV Panels/Heat Pumps based on optimum technical and economic considerations which will off-set Primary Energy consumption and reduce the carbon footprint in line with the Fingal County Development Plan 2017-2023.
- Incorporation of the above design measures to maximise the building energy ratings (BER) to meet a target of an 'A Rating' for the building. This will demonstrate that the building has been designed to ensure energy efficiency and provide the user with a degree of certainty over their energy and carbon footprint.
- An integrated Water Management and Conservation Plan that incorporates the use of low water consumption equipment to ensure the minimal use of potable water, efficient sanitary appliances (e.g. low water WC cisterns & taps).
- Encouraging the use of public transport by using the principles of environmental assessment methodologies to reduce the reliance on cars and encourage a shift to more carbon lowering modes of transport. The Mobility Management Plan produced as part of this planning application will form the basis of a site-specific Travel Plan to be produced.
- Whole life cycle approach to the selection of materials used in the building with specific regard to the impact on the carbon footprint.
- During design and construction phases, using the environmental assessment methodologies principles to ensure that the buildings are developed holistically.

3. Conclusion

The additional investment required to deliver an energy efficient and climate change adaptive design in line with the Fingal County Development Plan 2017-2023 will add benefit to the sustainability of the Brady's community development and holistically forms part of an industry wide approach to reduce carbon consumption and emissions and to comply with regulations. These benefits ensure less energy, less services and therefore less resources are needed to operate and will make the buildings more energy and environmentally efficient and will ensure that it is a more sustainable development into the future.

This Report was prepared by:

Signed: 

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Rory Burke, Chartered Engineer
Director
J.V. Tierney & Co.

Date: 20-07-2020