JV TIERNEY & CO
MECHANICAL ELECTRICAL & SUSTAINABLE ENGINEERS

Sustainability Report

TALLAGHT APARTMENTS

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PLANNING REPORT:

Sustainability Report

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1. Introduction

The scheme has been designed to maximise amenity and energy efficiency through climate sensitive design that takes account of orientation and typography and retention of existing site features wherever possible.

The strategy to sustainable design for the proposed apartment development at Belgard Square North, Tallaght, Co. Dublin will be to use robust, passive, cost effective measures to create a high-quality living environment within the planned spaces. The development provides an opportunity to create environmentally sound and energy efficient residential complex 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 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).

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.
- The desire to provide energy efficient apartment development to demonstrate energy awareness and efficiency of use.

2. Sustainability Strategy Approach

In developing the vision for the Sustainable Strategy for the overall development, the incorporation of sustainable strategies into the project deliverables will encourage 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 will seek to ensure that the residential development will meet the principles of the Government's 'National Climate Change Policy' 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 (CO2) emissions thus demonstrating the Client's commitment to Climate Change and Climate Mitigation strategies. As an example of these strategies, the implementation of a district heating solution will be developed in line with South Dublin County Council Climate Change policies, where waste heat from a data centre will be boosted utilizing heat exchanger to generate low temperature hot water for distribution throughout the development.

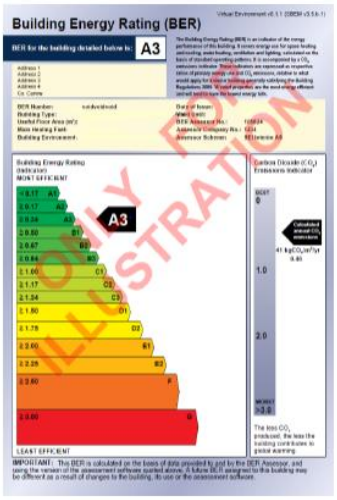
The sustainable strategy will seek to incorporate appropriate and effective economic and environmental measures. In this respect, consideration will be given to the following:

- Development of a flexible design to enhance each spaces longevity.
- Targeting natural daylight factors that meet CIBSE recommendations. Good natural daylight creates a positive living environment and contributes to the well-being of the residents. The provision of high-performance glazing on the elevations which maximises the use of natural daylight will enhance the visual comfort of the occupants. The high-performance glazing will also ensure that the thermal performance of the residential complex is not compromised, while allowing the Residents to enjoy the benefit of the glazed views.

- Façade studies in conjunction with the Architect using computer modelling techniques to maximise the daylight factors, ventilation and solar benefits specific to the proposed South Dublin site.
- 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.

Residential Energy Rating Targets

- The target for the development is to achieve an **"A" Building Energy Rating (BER)** for the Residential Development. This will demonstrate that the complex has been designed to ensure energy efficiency and provide the owner with a degree of certainty over their energy and carbon footprint.



- Maximising the use of passive design measures by improving the façade using high performing window elements, use of enhanced fabric u-values in excess of Part L coupled with the delivery of an enhanced air permeability rate. These measures are critical to improving and meeting the low carbon and energy efficiency targets outlined above.

- The design of energy efficient M&E systems and plant that are high efficiency and registered on the SEAI Triple E register of products – District Heating, Lighting (LED efficiency), PV Panels, etc. that will minimise the consumption of energy and maximise the air quality within the residents space:
- Efficient use of natural light to offset the use of artificial light.
- Use of high efficiency light fittings, LED lights, etc. for dimming, presence/ absence detection.
- Lighting Management Plan that uses automatic presence/absence detection in the Landlord spaces.
- Use of renewable technologies such as the District Heating scheme and the possible use of Solar PV, to meet the requirements of Part L of the Building Regulations. The development will thus be based on optimum technical and economic considerations, which will off-set primary energy consumption and reduce the carbon footprint.
- During design and construction phases, environmental assessment methodology will be used by the design team to ensure that the residential complex is developed holistically.
- 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 (low water WC cisterns, push spray taps).
- Whole life cycle approach to the selection of materials used in the development with specific regard to the impact on the carbon footprint.

The additional investment required to deliver a sustainable and energy efficient design will add long term value for the development's owners and residents alike. These benefits will require less energy, less services and therefore less resources to operate than is required for existing developments and will make the buildings more energy and environmentally efficient and will ensure that they are more sustainable apartment developments into the future.

This Report was prepared by:

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