



Strategic Housing Development – Building Lifecycle Report

Montip Horizon Limited

Jacob's Island, Mahon, Cork

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Introduction

The following Building Lifecycle Report has been prepared in relation to the proposed Strategic Housing Development at Jacobs Island, Mahon, Cork. The proposed development consists of a mixed use residential and retail development with ancillary crèche, landscaping, road improvement and site development works to include 413 no. apartments contained in 6 blocks ranging in height from 6 to 25 storeys.

Design Approach

The proposed development has been designed to capture the efficiencies made possible by the 2018 Apartment Design Guidelines, aimed at improving the viability of apartment development across the country. The design approach seeks to maximize the nett: gross efficiency of the buildings through maximising the number of apartments for the minimum amount of common area. This essentially will result in a greater number of people contributing to the costs of running a smaller area.

In addition, the design approach seeks to generate better efficiency from lift and stair cores. Traditionally in apartment developments, a lift and stair core served 3 - 4 units (largely driven by high requirements for dual aspect units – as high as 85%, depending on local authority) The new apartment design guidelines allow for dual aspect ratios of between 33-50%. This enables more apartments to be served from an individual core – up to a maximum of 12. The need to maximize the number of units served by one lift is offset by the need to provide a good level of service (adequate waiting times etc), which is generally influenced by the height of individual buildings. The proposed development includes between 8-12 units around the lift and stair cores.

Lifecycle costs are also determined by the durability and maintenance requirements of materials. This applies across all elements of the building, internally, externally, as well as basements, landscaped areas. As the applicants intend to build and hold the development for rental (retaining the flexibility of being able to break up for sale), there is an emphasis on the quality and durability of materials used. The requirements of the developer are in effect aligned with those of future residents in this regard. Low maintenance cladding materials such as brick, self-finished render, and precast concrete are proposed to minimize the impact of façade maintenance. Balconies are designed to be capable of fabrication off-site, resulting in higher standard of finish, reducing damage during construction and improved durability.

The proposed scheme represents a significant increase in density from the previously permitted developments on the site. This is particularly relevant in Jacob's Island as there is a significant quantity of open space provided within the scheme owing to its waterside setting. The proposed development includes 413 No. units, nearly a threefold increase in the number of units over the existing permitted buildings, in broadly the same footprint. This will have a tangible impact in diluting the cost per unit of the upkeep of the external landscaped areas.

Energy

The proposed development includes a number of passive and active design measures aimed at promoting energy conservation and reducing CO2 emissions with resultant savings in terms of energy costs for future residents. An Energy Statement has been prepared by EDC and is enclosed with the application. The statement outlines the various energy strategy measures that will be undertaken as

part of the proposed development. Construction materials will be selected to limit heat loss, while the scheme has been designed to promote solar gain and passive solar shading resulting in residential units that will achieve a BER of A3 minimum. The buildings will maximise natural daylight to reduce lighting costs. Heating of Blocks 3,4,7,8 and 9 will be provided for by a Combined Heat and Power district heating system which will allow for efficiencies of scale. There will be an option of supplementing with PV panels at a later time if required. Heat interface units in each apartment will provide for hot water requirements as needed, while the entire district heating system will be controlled by a Building Management System to ensure optimum operation. Block 10 is to be serviced by Air Source Heat Pumps and PV panels resulting in lifetime heating costs that will be comparatively much lower than traditional systems.

The various measures included with the proposed development will ensure that lifetime costs arising from energy needs will be minimised. In addition, it will be possible to further supplement the scheme with additional PV capacity in future as needs arise.

Car Parking

Evolving transport patterns are seeing a reduction in the reliance on cars for travel to and from home, and this is starting to impact positively on the extent of parking provision in sustainable, well-connected locations such as Jacob's Island. Up to now, each apartment would have had its own parking space as well as 1 visitor space for every 4 units. The proposed development includes



409 No. car spaces, which is less than one space per unit. This is a 25% reduction on the provision in earlier phases and will help reduce the costs of operating the scheme. To offset the need for parking the development will be served by 2-4 shared car club vehicles to be provided by GoCar Car Sharing Ltd. We refer to the enclosed letter from GoCar outlining the benefits of this facility. GoCar estimate that each shared vehicle has the effect of replacing up to 20 privately owned cars. The competitive subscription and usage costs for GoCar will mean that future residents of the scheme who do not wish to own a private car will stand to benefit financially in terms of not having to pay motor tax, insurance and fuel costs. There is plenty of scope of expansion of this facility should there be a sufficient level of demand for same. We expect that many future occupants of the scheme will be workers from the many employers in the local Mahon Area who will be able to commute to work either on foot or bicycle and will have an infrequent requirement for private car transport.

Conclusions

In summary the lifecycle costs of the proposed residential development will be competitive when compared to standard apartment schemes for the following reasons.

- The proposed density of the scheme is almost three times what was originally permitted at this location. A higher density of units will result in a reduced management cost per unit in terms of the upkeep of landscaped communal open space and internal communal areas within the blocks.
- The design of the scheme, while complying fully with the 2018 Apartment Guidelines has sought to minimise the amount of unnecessary internal communal areas that would result in an additional lifecycle maintenance cost.
- The proposed apartments will be designed to at least an A3 BER standard. Passive design measures will ensure maximum benefits from solar gain and natural daylight, while CHP and district heating with PV solar will ensure heating costs will be kept to a minimum.
- The quantum of parking proposed with the scheme is significantly below the maximum allowable based on City Development Plan standards and equates to less than 1 space per unit. This will result in a reduced overhead in terms of maintenance of car parking areas.
- The provision of GoCar shared vehicles as part of the scheme will afford future residents the option of foregoing private car ownership and the associated costs of same.