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Structural Engineers
M&E Consultant
Quantity Surveyor
Project Manager
Main Contractor
Total Cost
Project Completion

Crosbie Property
 Scott Tallon Walker Architects
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 Bruce Shaw Partnership
 Bruce Shaw Project Management
 Michael McNamara & Co.
 € 250 Million
 Gibson Hotel, July 2010 /
 Point Village District Centre, September 2010
 B3
 Gibson Hotel - 75.372Kg CO₂/M²

Ber Ratings
Estimated Annual CO₂ Emissions

Point Village District Centre

The Point Village District Centre is a 100,000 sq.m. mixed-use development designed around Point Village Square: a new civic space for Dublin City. The District Centre contains a shopping centre; restaurants; bars; a multiplex cinema; office space and the Gibson Hotel, a 250 bed, 4-star hotel, all sitting over 1000 car parking spaces below ground. The sustainable qualities achieved have been outlined in the context of the three pillars of sustainability: Social, Economical and Environmental.

Social: The site, which was a highly contaminated brown field site in Dublin Docklands, was identified in the Local Area Plan as a 'district centre' to serve the neighbouring offices and residential developments, as a '*vibrant urban area*' with '*a wide range of building uses to achieve activity through an eighteen hour day*'. The diversity of uses within the District Centre, with bars, restaurants and The Gibson Hotel all facing Point Square creates a animated façade to the building, both at day and at night. The creation of a new public square for Dublin, with mature indigenous trees also provides a new amenity and gathering space for the area.

Economical: The delivery of the LUAS (Dublin's new light railway), with its terminus in Point Square, connects the city centre and Dublin's Port Tunnel connects Point Village to the Airport. The re-development of the O2 Theatre and the new Convention Centre Dublin nearby, ensures that the District Centre and The Gibson Hotel have good levels of foot fall to trade. The completion of Point Village District Centre provides a catalyst for future urban and social regeneration of this district of the Dublin Docklands.

Environmental: A 20% improvement on Building Regulations - Part L was targeted to ensure the future proofing of the development. A wide range of factors that affect the built form were considered including the orientation of the building, the external skin and the surrounding area of the development. The façades were considered in detail to maximize the energy from the sun (in the form of day lighting) while minimising the effects of overheating the building skin.

Energy Conservation Measures

Public areas, such as the hotel entrance atrium and the shopping mall, were identified as spaces that could be naturally ventilated, ensuring comfort and energy efficiency design. In the Hotel highly efficient electrically fan coil units provide fresh air to the hotel bedrooms, with hotel bedrooms all provided with openable doors to terraces or Romeo and Juliet balconies. Heat exchangers and variable speed controls are utilised on all ventilation systems, and energy efficient lighting and controls are used throughout. An integrated building energy management system also monitors any increases of energy (above benchmarks) and controls the system to minimise energy (such as boiler optimisation).

Water Conservation Measures

Rainwater is collected for the irrigation of the hotel courtyards and WC flushing for the public toilets in the shopping mall.



Gibson Hotel terrace



Gibson Hotel entrance



Landscaped courtyard at third floor



1-PUBLIC TRANSPORT LINKS

Point Square includes the Luas Terminus and links to a Quality Bus Corridor on East Wall Road.



2-BRISE SOLEIL

External shading is provided to the Gibson Hotel terrace.



3-EXTERNAL SOLAR SHADING

External shading, including fritted glass louvers to retail and restaurants facing the Point Square.



4-LANDSCAPED COURTYARDS

The courtyards provide an amenity for the Gibson Hotel at the 3rd floor. Landscaping is irrigated by rainwater harvested from the roof.



5-NATURALLY VENTILATED MALL

Rooflights provide daylighting and natural ventilation to the shopping mall.



Section through Point Village



1-NATURAL VENTILATION

The hotel atrium is naturally ventilated ensuring comfort and energy efficient design.



2-ROOF TERRACE

An external landscaped terrace provides an amenity for the hotel bedrooms.



3-GREEN WALL

A feature internal landscaped wall introduces internal landscaping and acts as an acoustic damper to the atrium.



4-EXTERNAL SHADING

The hotel atrium has external shading to the south facing glazing.



5-SEDUM GRASS ROOF

80% of the District Centre roof is covered with a sedum roof. Rainwater harvested from the roof is used for WC flushing and irrigation of the courtyards.



Cross sections through Gibson Hotel atrium

Accessibility for All

Dublin's new tram system, the LUAS, together with a new Quality Bus Corridor and parking for 1000 cars provides good access to the building and Point Square for all. As a major public building, the principles of inclusive design was a priority, an example of which was the 16m long span structure to provides column free car parking.

Adaptability

A 1.8m deep steel transfer structure was designed on the third floor between the shopping centre, and the hotel above. The steel structure allows the mezzanine floors to be hung in the retail spaces, without affecting the hotel above or car parking below and ensuring the retail units can easily adapted to the requirement of each tenant. The steel structure was designed as castellated steel beams to facilitate the installation of services as part of the fit-out.

Embodied Energy of the Building

The specification of major elements of the building were considered to target a reduction in embodied energy, and ensure that materials were responsibly sourced. A green sedum roof system, was selected to improve the local ecology. FSC timber was specified throughout the project, and GGBS was used in 50% of the in-situ concrete in line with Scott Tallon Walker's objectives outlined in their Environmental Management System ISO 14001:2004.

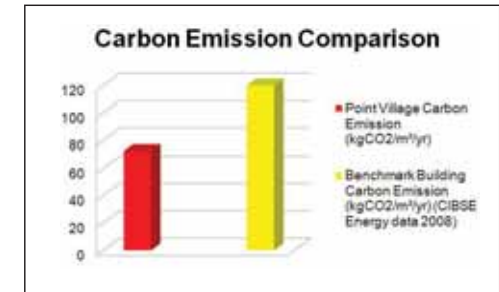
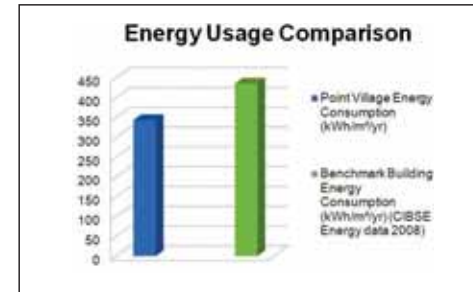
End of Life of Building

A structural steel frame was adopted to meet a fast track procurement strategy, with many of the building elements, such as the unitized façade system and bathroom pods, fabricated off-site. This method of construction facilitates the disassembly of the structural frame and façade elements, which can be more easily removed and recycled when compared to a traditional method of construction.

Grant Support under the SEAI Model Solution Investment Support Scheme

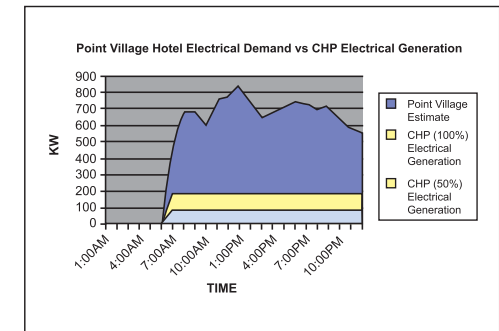
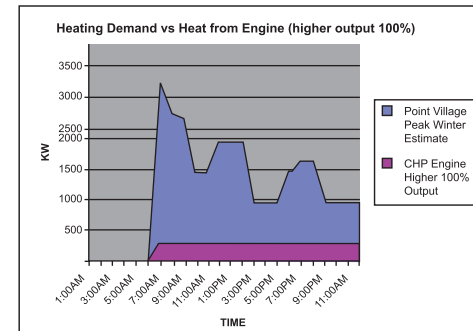
Support from Sustainable Energy Authority Ireland was granted to ensure the viability and implementation of a number of key elements including:

- Combined Heat and Power plant for the Gibson Hotel.
- Highly efficient VSD Pumps.
- Roof Lights, openable windows and controls to provide natural ventilation to the Shopping Mall.
- Energy Efficient Ballasts and Capacitors to Plant.
- Air Tightness to achieve 5m³/hr/m² when tested at a pressure of 50Pa.
- Solar control glazing.
- PIR Control to all back of house corridors , fire escapes plant rooms, WC's.



Benchmarking - Energy Performance and Carbon Dioxide emissions of the building.

The % saving from the bench mark hotel (CIBSE) is 425kWh/m². The resulting expected energy usage for the Gibson Hotel is 310kWh/m². This gives a 27% reduction on the bench mark standard.



The energy performance of the building and renewable energy contributions

A Combined Heat and Power generator (CHP) unit was incorporated into the energy centre design to provide electrical and hot water demand for the Hotel. With the installation of the CHP unit a saving in primary annual energy use of 86,845 kWh (5 kWh/m²) was achieved, which equates to a 10% saving in CO₂ emissions to 75.372kgCO₂/m²

Element	Part L 2006 Regulations	Point Village U-Values (% Reduction)
	W.m ² /K	W.m ² /K
Wall	0.27	0.22 (18.5%)
Floor	0.25	0.22 (12%)
Roof	0.22	0.2 (9%)
Glazing	2.2	1.75 (20.5%)

Improvements to the building fabric and insulation of the building

The project was designed in 2006 and a 20% improvement on Building Regulations-Part L was targeted to ensure the future proofing of the development.