V&A's No. 1 Silo gets six green stars

The new No.1 Silo office building at the V&A Waterfront has been awarded a six-star Green Star SA rating by the Green Building Council of South Africa. The No. 1 Silo office is only the second building to be awarded a six-star Green rating in South Africa and the first in the Western Cape.

"Sustainable development and green operations are fundamental to the V&A Waterfront's overall development strategy," said David Green, CEO of the V&A Waterfront. "We have adopted a rigorous approach to green construction and sustainable design principles, and the efficient use of natural and energy resources," he said.

"The Green Building Council of South Africa extends our sincere congratulations to the V&A Waterfront as the building owners on No. 1 Silo for this outstanding achievement. A six-star Green Star SA rating signifies 'world leadership' and further affirms the Waterfront's bold leadership and continued commitment to environmental sustainability in the development of this iconic precinct.

First building in Cape Town

This exceptional accomplishment is pioneering in that it is the first six-star rating of commercial office space of this scale in South Africa and the first building to achieve this rating in the city of Cape Town. We also wish to acknowledge the insightful collaboration between the developer, tenant and professional team involved on this ground-breaking project," said Brian Wilkinson, CEO of the Green Building Council South Africa.

The No. 1 Silo development, one of Africa's most advanced intelligent buildings, is currently under construction at the V&A Waterfront, due for completion in June 2013. Through innovative design solutions, combined with proven technology, the building works with the environment rather than against. It speaks to a wide range of sustainability issues and adheres to the strictest global environmentally sustainable building principles and requirements. Some of the more unique green features are the use of seawater from the Atlantic Ocean, which will be used to reject waste heat from the cooling plant and allows for significant potable water savings and improves the overall energy efficiency of the building. Heat generated from the IT server room will feed the underfloor water-borne heating system to warm the reception area.

High-performance façade

Another key innovation of the building is the double-glazed double-skin high-performance façade that has a system of automatically controlled blinds between the internal double-glazed system and the external single-glazed skin, which will track the sun as it moves across the building. The high performance façade reduces solar heat gain while maximising the natural light penetration into the building. The blinds prevent further heat gain and also control the solar glare in the office space. The double-glazing prevents any radiant heat loss or gain to the office space. One of the benefits of this façade is to maximise views and natural light throughout the building.

The underfloor mechanical air-conditioning system addresses both energy efficiency and good indoor environmental quality. The system supplies cool fresh air from the raised floor, which then absorbs warmth as it rises and is extracted at ceiling level, thereby effectively preventing the build-up of pollutants.

The architectural vision and mechanical design of the building has ensured optimal indoor environmental quality for those working inside the building so as to promote health and wellbeing. Building users have access to striking external views, ample natural daylight and care has been taken to specify paints, wood products and carpets that contain no harmful compounds that could possibly be inhaled by tenants when working inside the building. Further to this, the building has been designed to also provide quality outdoor environments: a private roof garden, propagated with only endemic vegetation and overlooking the harbour and Cape Town city bowl, will provide a space for tenants to relax or work outdoors. A small herb garden will help to contribute to the daily food prepared in the buildings kitchen and composting units will in turn recycle organic waste generated in the kitchen.

Water efficiency

In addition to the low-flow water fittings that have been specified to promote water efficiency, a grey water system has also been installed to save potable water. Waste water from hand wash basins and showers will be collected and treated within the grey water system, and reused for flushing water in the toilets.

No. 1 Silo has been designed with efficient and environmental lighting in mind. Firstly, all fluorescent fittings have high-frequency ballasts (which are more energy efficient) and highly efficient fittings have been selected. In addition, an intelligent individual addressable lighting system, fitted with appropriate sensors, ensures that lights are on only when they need to be, and at the right light levels. Lastly, care has been taken to ensure that no night-time lighting is directed towards the night sky in order to reduce night light pollution, which is detrimental to fauna and flora that are sensitive to it.

No. 1 Silo will also promote the use of sustainable transport - not only is it located in close proximity of a MyCiti bus stop, but the building design includes a secure bike lock-up facility, with lockers and showers, for those cycling to work.

Sixty percent less concrete

From a materials perspective, the building has been constructed using 60% less concrete when compared to a building built according to business as usual. Further to this, the project has supported the use of FSC-certified timber, demonstrating that timber has been procured from environmentally sustainable and ethical sources.

The construction process has been underpinned by internationally recognised environmental management standards, ensuring that more than 70% of all waste generated on site is recycled. An innovative feature of the construction site was the use of green hoarding - approximately one-third of the site's hoarding is a green, living vertical wall, which contributes to the noise and dust suppression of a construction site and providing green spaces within the city centre for pedestrians.

"The building is equipped with an intelligent building management system to helps to maximise the benefit to the occupants of the various green technologies in the building and the opportunities presented by the high-performance facades," said Green.