



National English Literary Museum adds to 5-star green rating

The National English Literary Museum was the first Public & Education (PEB) building in South Africa to achieve a 5-Star Green Star SA rating for its design in November 2013, and it can now add an impressive 5-Star Green Star SA PEB v1 As-Built rating to its list of achievements - a first for the Eastern Cape as well as South Africa.

The project, constructed by the Department of Public Works for the Department of Arts and Culture appointed Solid Green Consulting to undertake the Green Star certification process, while Intsika Architects were responsible for the design.

The Museum is situated on the outskirts of a built-up residential area in Grahamstown. The design brief called for the building to be a highly functional landmark that would fit the site context and building typology. Accordingly, the architecture takes a sensitive approach with massing and elements responding to the human scale.

The development enhances the area by introducing facilities such as a mini-theatre, outside amphitheatre, exhibition area, archives, library, and museum offices. The Museum is not fenced off, and provides park-like areas for the surrounding community to enjoy. Courtyards and balconies make for enjoyable outdoor

breakaway spaces for personnel; 80% of the occupied areas have views to the exterior.

The precinct is pedestrian friendly with walkways and bicycle routes. Shower and storage facilities for cyclists are available to encourage non-motorised commuting to the Museum. User health and wellbeing have been further considered by including large windows to the staircases with views of the surroundings, thereby encouraging occupants to use the stairs rather than the lift.

The building aims to reduce potable water consumption by more than 95% below benchmark, and water meters have been installed for all major water uses to monitor and facilitate management of water consumption. Storm water detention ponds were introduced to release storm water gradually and prevent the erosion of the related river system.

Rainwater is harvested from the roof area and used for irrigation, toilet and urinal flushing and xeriscaped landscaping was used to reduce the need for irrigation as the garden consists of indigenous plants that are endemic to the environment.

Annelide Sherratt from Solid Green explains that a Topsoil Management Plan (TMP) was implemented to guide the contractor

on separating all topsoil impacted during construction, in order to protect it from degradation, erosion, or mixing with fill or waste. This way, 75% of the original topsoil was retained on site.

Mechanical and electrical equipment was chosen for its low energy use, as well as introducing a building management system to actively control and optimise the effectiveness of building services.

Air-conditioned and mechanically assisted natural ventilation systems were specified to effectively deliver optimum air quality to each occupant throughout the occupied area. The air-conditioning system is a Variable Refrigerant Volume (VRV) system with heat recovery, which can provide cooling and heating simultaneously to different parts of the building. A heat-recovery system can transfer the heat extracted from those spaces requiring cooling to areas demanding heating, thus reducing energy requirements and operating costs. The project only utilised refrigerants and other gasses with zero ozone depletion potential that do not contribute to long-term damage to the Earth's ozone layer.

Natural lighting to interior spaces is optimised; artificial lights can be adjusted individually and occupancy sensors were installed to further reduce energy consumption. In

addition, energy-saving heat pumps have been installed at dedicated points of the building to supply hot water and heating systems.

A unique feature of the building is the archive section, which is located below the ground with a green roof that insulates the building, making air-conditioning unnecessary in these spaces. On the north and west facades of the building, gabion walls and natural stone cladding have been used as thermal massing to stabilise the indoor air temperature.

Green materials used include recycled rubber and bamboo flooring, low VOC paints, coconut mosaic wall cladding, and recycled plastic carpets. Where possible, materials were sourced locally, reused and recycled to minimise transport distances and fuel consumption.

From a social transformation perspective, local labour was used where available to provide the community with a sense of ownership and generate economic upliftment. In total, 205 local job opportunities were created during construction.

The National English Literary Museum not only provides a valuable cultural resource to the Eastern Cape, but is also an important learning resource for building users and visitors on the benefits of green building design, construction and operation.

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