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NEWS & VIEWS

A roof overhang over the north-facing windows of the I-CAT office block shades the building during summer and partially during winter



Sustainable Campus

Pretoria building contractors, J.C. van der Linde & Venter Projects, has completed a multi-million rand contract for the construction of new 'green' corporate offices and a warehouse for I-CAT Environmental Solutions.

The new sustainable I-CAT campus, in the N4 Gateway Park in Pretoria, was designed by Earthworld Architects and Interiors.

The architects concentrated on maximum sustainability in the design of the campus. For example: a rainwater harvesting system, incorporating a 50 000 litres reservoir, sunk beneath part of the structural pergola-covered courtyard outside the main building. The reservoir will collect all the rainwater from the combined roof area, which covers almost 1 500 square metres. This water will be filtered and reused to flush toilets and for landscaping purposes.

The contractors had to install solar water heaters that convert solar radiation into thermal energy, and solar powered heat pumps as part of Earthworld's focus on sustainability.

Earthworld Architects and Interiors' Rudie Botha says, "In summer, the building is ventilated nocturnally and during the early hours of the morning, which allows the temperature inside to drop. When heat builds up inside later in the day, the windows at the top of the building automatically open to allow hot built-up air to escape. Interior temperature is furthermore controlled by an automatic air conditioning system, driven by solar power.

"On the north-facing windows, a roof overhang shades the building completely during summer and partially during winter. Vertical fins on the east-facing windows deflect early morning radiation during the summer and the afternoon sun on south facing windows. The use of



windows on the facebrick façade, which faces east and west, was restricted: also for thermal reasons.

"The new I-CAT campus incorporates a solar photovoltaic system on the roof of the office building to generate electricity, making the complex largely independent of the national electricity grid."

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