

102 RIVONIA

Sandton, Johannesburg, South Africa
(4 Star Green Building with CO2 reduced materials)

PROJECT TYPE: High-end green building office block

CLIENT:
Eris Property Group

PROJECT DURATION:
22 Months

PROJECT DESCRIPTION:
Construct 2 towers with atrium space and transecting bridge. Install façade, with convex / concave curves, from unitised performance glass with a light tint, in a double glaze rotated at 30 degrees, to control natural light into open office. Meet a green building 4 Star Office v1 rating.

CONTROLS / SOLUTIONS:
Among several elements designed to collectively achieve a 4 Star green rating, the team focussed on:

- External glass modelled with the HVAC system, primary focus on maintaining thermal comfort.
- All paint, adhesives, sealants and carpeting have low VOC (Volatile Organic Compounds) content to mitigate the impact of internal pollutants.
- No geysers — instead heat pumps.
- Electricity consumption metered to items that use 100 kVA and over, assisting monitoring. The metering capability provides accurate information for reporting purposes and draws attention to areas where user behaviour needs to be altered. The target was less than 2 watts per metre square per 100 lux.
- Water usage was also metred as part of the Building Management System, which allows for early leak detection and any other anomalous use.
- Sanitation fittings — including low flow taps and showers and dual flush toilets. A cubic metre storm water attenuation facility feeds to storage tanks, in turn supplies necessary water to flush toilets and urinals.
- Construction materials carefully chosen to reduce embodied carbon in the building, e.g. reducing the cement content of the concrete by replacing it with fly ash or slagment. A 25% fly ash replacement reduced the carbon dioxide (CO₂) content to 0.62 kg of CO₂ per kilogram.
- Rebar steel with a high recycled content was used in favour of virgin steel, which has 2.75 kg of CO₂ per kg, compared to the 0.43 kg of CO₂ per kilogram of recycled steel.

The project was awarded a 4-Star Green Star – Office v1 rating by the Green Building Council of South Africa.

