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ALEXANDER FORBES ACHIEVES A DUAL RATING

In April 2014, 115 West Street in Sandton achieved a 4-Star Green Star SA Office As Built v1 rating – a recognition of "best practice". It is the cherry on the cake for the building, which has received numerous awards since its completion in 2012. The same year its design was received a 4-Star rating.

WORDS FEMKE VAN ZANDVOORT
PHOTOGRAPHS CHRISTOPH HOFFMANN





The building consists of eight floors, with Y-shaped bridges suspended from the roof.

NUTSHELL

Location • 115 West Street, Sandton
Area • 100 000m² (37 500m² rentable)
Capacity • 2500 employees
Cost (estimate) • R900 million
Construction start • Feb 2011
Construction completed • Sept 2012
4 Star Green Star SA Office Design v1 rating achieved • August 2012
4 Star Green Star SA Office As Built v1 rating achieved • April 2014

Alexander Forbes signature Sandton office building, achieved 48 points for its design rating and it took roughly five months to work towards submission for the As Built rating with a final scoring of 47 points. Obtaining Green Star SA status was a requirement from the tenant, Alexander Forbes, as they specifically wanted their office to be a sustainable building.

The building consists of eight office floors and six underground parking levels, and is conveniently situated across the road from the Gautrain's Sandton station. Features that stand out are the zinc-clad scallops for shading, full size trees in the atrium and Y-shape bridges suspended from the roof. The design also includes a lot of natural light, energy-efficient lighting, high-speed lifts, grey water recycling, and passive heating and cooling systems.

A CONTRACTOR'S PERSPECTIVE

The Alexander Forbes project was a joint venture between WBHO and Tiber Bonvec Construction. Where the architect and Green Star SA Accredited Professional play a major role in attaining a Green Star SA Design rating process, in the As Built process the contractor has a more prominent role.

Gideon van den Berg, green building coordinator at WBHO, has been involved in all the WBHO's green buildings projects. Alexander Forbes is their third project to achieve a Green Star SA As Built rating. Their biggest challenge was to ensure all the correct products and materials were sourced and used by the relevant subcontractors. They then had to enforce the Green Star SA requirements without impacting production on site.

Education was a challenge on its own. Van den Berg explains: "Many of the sub-contractors and some of our own employees had not worked on a Green Star SA rated building before Alexander Forbes as it was still relatively new in the industry. So we had to continuously make sure that we kept the relevant subcontractors up to speed with the requirements and we assisted them with implementing them."

Site management played a big role in this, and together with the Green Star SA AP from Tiber,



Nomasonto Tshehla, they were able to manage this process without affecting the project. "It is an everyday challenge," says Tshehla, "to either work productively or sustainably as it often goes against each other from a contractor's perspective."

"We had to check our subcontractors every day (to see) if they were actually using the green (and sometimes more expensive) products we told them to use," she says.

The contractors for this project developed a spreadsheet with a breakdown of all Green Star SA credits, and which subcontractors would be affected by the requirements of these credits. It's a useful tool that Tshehla now uses on other projects.

The main scoring item from the contractor's perspective was MAN-7 Waste Management. This entailed diverting 70% of the waste generated on site from landfill. The project was completed with a total of 77% of waste being diverted from landfill, scoring the maximum three points for this credit.

FROM DESIGN TO BUILT

When one compares the Design rating process to the As Built rating process, the fundamental differences are in reporting. Peta Brom from PJ Carew Consulting and sustainability consultant on

the project explains: "For a Design rating we rely on Architectural Workstage 4b documentation; the specifications and tender drawings and documentation, whereas for As Built, we have to submit As Built drawings, contractor audits and commissioning records, which are all produced after practical completion and in some instances after occupation."

In this way, it may not even be possible to achieve an As Built rating until many months after a building has been occupied because the building services are not set to work before this.

As in any project process, there have been a few complications in implementing the design. For example, in one area the low-VOC wallpaper



The building made huge strides in terms of energy savings, thanks mainly to a timing system applied to the basement energy fans.

adhesive started sliding off the substrate and an alternative non-compliant adhesive was used in order to meet performance requirements. The area where this happened was not significant enough to lose the VOC point associated with adhesives.

However, it did result in a change in reporting and in the compliant areas. Had this impacted a larger area, they would have lost a point. Brom continues: "Sadly our wet services engineer, Scott Ramsden, passed away during the construction programme and this also complicated the reporting and commissioning of some of the wet-services aspects."

There were also some point improvements, compared to the Design rating. The number of points for mass transport increased from four to five as a taxi survey was commissioned.

ENERGY REDUCTION

Interestingly, the project achieved two extra points for overall building energy reduction in the As Built submission. Etienne Terblanche of PJ Carew Consulting explains that the increase in the number of points claimed is due to two factors.

"In general, for Design ratings we need to use

SUSTAINABILITY FEATURES

- North-west facing
- Double-glazing in most areas
- Shading of direct sunlight
- Daylight maximisation
- Grey water recycling
- Preferential parking bays for fuel-efficient vehicles, bicycle bays
- Passive heating and cooling systems

conservative assumptions with regards to the energy consumption of the various HVAC equipment considered, whereas for the As Built submission we have access to measured consumption, which is more accurate (and less conservative). Although this had a relatively small impact," he says.

A bigger impact on the awarding of the two extra energy credits was the time schedule applied to the basement extraction fans. "In commissioning, the basement fans were connected to timers and controlled to operate at lower levels when less motor vehicle traffic is expected," says Terblanche. "This resulted in massive energy savings, which accounted for the majority of the additional savings made in the As Built energy modelling."

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OPTING OUT: BUILDING TUNING

In the end, the only credit they opted not to pursue for As Built was Building Tuning. Credits for building tuning aim to "encourage and recognise commissioning initiatives that ensure optimum occupant comfort and energy efficient services performance throughout the year". Brom explains their decision: "Although the documentation requirements for this appear to be quite straightforward, in that we have to submit signed building tuning contracts, the contractor excluded it from the main tender bid as a qualifier and contracts with the services sub-contractors had to be individually negotiated. These negotiations are ongoing and we opted to submit before the conclusion thereof, meaning that we forfeited the points associated with this credit."

LEARNING FOR FUTURE PROJECTS

This has been a great point of learning from green building consultants' side as the bulk of the contractor's work is done upon practical completion. The building tuning and maintenance, however, continue for a year after beneficial occupation. It therefore does not seem to make sense for them to be involved for the period after practical completion.

For all future projects, PJ Carew Consulting has now written a clause into their tender documentation that compels the main contractor to facilitate the sub-contractor appointment.

SOURCEBOOK

Tenant • Alexander Forbes • 011 269 0000 • www.alexanderforbes.co.za
Architects • Paragon Architects • 011 4823781 • www.paragon.co.za
Main contractors (joint venture) • WBHO • 011 321 7200 • www.wbho.co.za • Tiber Bonvec Construction • 011 430 7700 • www.tiber.co.za
Owner • Zenprop Property Holdings • 011 217 7700 • www.zenprop.co.za
Green building consultant • PJ Carew Consulting • 021 426 4050 • www.pjc.co.za
Project managers • Capex projects • 011 792 4260 • www.capex.co.za
Quantity surveyor • Schoombie Hartmann Quantity Surveyors • 011 795 3556 • www.sh.co.za
Space planners and interior architects • Paragon Interface • 011 482 3793 • www.paragoninterface.co.za
Structural engineer • Sotiris Consulting Engineers • 012 991 0516 • www.sotiris.co.za
Mechanical engineer • Adaptive Resource Engineers • 012 349 2620 • www.adapres.com
Electrical engineer • Quad Africa Consulting • 011 455 1865 • www.quadafrica.co.za
Fire consultant • TWCE • Trevor Williams Consulting Engineers • 012 665 1138 • www.twce.co.za
Landscape architect • Insite Landscape Architects and Environmental Consultants • 012 667 2780 • www.insitegroup.co.za
Tenant coordinator • Baseline Project Management • 011 467 2490
Acoustic consultants • Subsonic Designs • 011 312 2644 • www.acousticconsultants.co.za
Steel supplier • Rheinzink • 021 671 2600 • www.rheinzink.co.za

These include, as addendums, the draft contracts for the sub-contractors to tender on.

"There is a lot of value to the building owner and users in implementing building tuning and commissioning, and we are convinced it is key to ensuring the building will perform optimally in terms of its design," says Brom.

"The building owner has committed to delivering a green building, but it is only through proper commissioning of the building services and tuning it to varying occupancy, climatic and usage patterns that the true value of the infrastructure is realised for the operational life of the building," he says. "So whilst in this instance it is not something that we have claimed points for doing, we still believe it is worth pursuing implementation."



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