

THE MEASURE A MALL

The latest extension of Menlyn Park Shopping
distinct retail opportunities, and sets a pioneer

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g Centre gives Tshwane residents and tenants
eering standard for green malls in South Africa.



Surrounded by leafy suburbs, Menlyn Park Shopping Centre has been a strategic destination of retail trade for Tshwane residents since it first opened in 1979. Since then, the four-level complex has undergone two renovations in response to strong retailer and shopper demand.

The latest completed extension is, however, its most significant as the centre achieved a 4-Star Green Star SA Retail Design rating from the Green Building Council of South Africa (GBCSA) – the first operational mall in South Africa to achieve this rating. The addition of 50 000m² also transforms it into the largest retail centre in Africa with a trading area of 170 000m². The pre-existing part of the centre, constituting up to 45%, is not green certified.

As Tshwane positions itself as the green capital of South Africa, Menlyn Park Shopping Centre has set the precedent for more environmentally conscious building and design of retail malls across the country – there are even plans to also apply for a Green Star SA As Built rating for phase one of the project. “This is a significant achievement for the South African retail sector as it opens the way for other centres to follow suit,” says Yovka Raytcheva-Schaap, Aurecon SA buildings unit associate, and Green Star SA accredited professional on the project.

The R2billion two-phase redevelopment was an intensely considered project long before construction began in 2014. With stars in mind and the use of the GBCSA’s Green Star Retail V1 rating tool, the focus was on the building’s environmental performance within eight main categories: management, indoor environmental quality, energy, transport, water, materials, land-use ecology and emissions.

Given the nature and size of the project, the certification process was time and detail intensive, which required a close working relationship with the GBCSA by all stakeholders on numerous aspects to ensure compliance to the targeted points of the retail centre rating tool. Although similar to the Green Star office rating system, the retail sector has lagged in using the tool for Green Star certification, which makes what Menlyn Shopping Centre has achieved particularly notable.

INTEGRATING GREEN CHANGE

The phase one extension included the addition of a food and entertainment court, fashion wing and grocery avenue, which is now being enhanced with phase two’s new retail section and some refurbishment of the stalwart original structure.

Bearing in mind that by their very nature, shopping malls are highly consumptive environments – and not just in terms of the merchandise being sold – any sustainability goals have to be introduced at design stage.

As much as it was intended for the design process to solidify as soon as documented, the design for the new extension had to remain in a state of flux throughout the construction phase. Changes, multiple tenant specifications, value engineering, service co-ordination, build ability and construction methodology all impact, altering the documentation and details that have been issued for construction. Embracing such challenges, developing the design intent, keeping with the original concept ideas and at the same time enhancing the end-user experience is what ultimately captures the essence of meaningful and thought-provoking architecture.

Aesthetics aside, Menlyn Park Shopping Centre owner Pareto's willingness to embrace sustainability permeated the project, starting with the selection of building materials for reduced impact on the environment and sourcing these within close proximity to the precinct, which lowered CO₂ emissions from transportation. Post-consumer

recycled reinforcing steel was specified along with timber sourced from responsibly managed forests. Mulch was made from wood offcuts and surplus building materials such as bricks were ground down for landscaping or fill.

Further significant construction and design undertakings were implemented: a 30% reduction in ordinary cement in concrete with the addition of fly ash; more than 70% of the pre- and post-construction waste repurposed; and notably, the introduction of preferential parking for alternative transport modes.

The holding company considered it fortunate to have had Murray & Roberts as the main contractor and indicated that with its extensive experience with green developments and construction, no particular problems arose in phase two. However, the same was not the case in the first phase, with sub-contractors that required some education and insight into the green

NUTSHELL

Location • Corner Atterbury road and Lois avenue, Menlo Park, Pretoria

Date of commencement of project • April 2014

Date of completion • November 2016

Total project cost • R2billion

Total GLA • 170 000m²

Phase 1:

The conversion of the old events area to the new food and entertainment court

The reconfiguration of the old food court to the new fashion wing

The new grocery avenue

Phase 2:

Construction of the additional new retail area and the refurbishment of the existing centre



The quality of fresh air at Menlyn Park Shopping Centre exceeds the SABS regulatory fresh air requirements by 150%, which, aside from health benefits, also safeguards against indoor air pollution.

SUSTAINABILITY FEATURES

- Post-consumer recycled reinforcing steel
- Ordinary cement in concrete was reduced by 30% through substitution with fly ash
- Dedicated cyclist parking bays and showers
- Potable water consumption reduced by 70%
- Preferential parking for fuel-efficient vehicles
- Timber from responsibly managed forests
- 70% of waste from pre-construction and construction reused or recycled
- Mulch produced from wood offcuts
- Surplus building materials used for landscaping or fill
- Rainwater harvesting
- Low flow sanitary fittings
- Major water uses metered
- Exceeds minimum regulatory fresh air requirements by 150%
- Use of low (or no VOC) paints, sealants and adhesives
- Energy consumption reduced by 50%
- Installation of an energy-efficient heating, ventilating and air-conditioning (HVAC) system
- Thermostatically controlled variable air volume dampers
- Proficient lighting and time controls
- Waste and recycling management plan (WRMP)
- Goal is to recycle 57% of waste generated

process. While this affected the expected application for Green Star rating for phase one, the experience will help put other businesses on the map as they gain the experience for green project knowledge.

MANAGEMENT ENHANCEMENTS

While some may argue that by their very nature, shopping malls cannot be sustainable given their focus on consumerism, a strong focus on waste must be an imperative, and not just in the present but for the future too. The centre has made a commitment to reduce, recycle and rethink waste, and this requires Menlyn Park Shopping Centre to move away from traditional solutions to a greener approach that looks at the prevention of waste as well as minimising waste as a by-product of production.

A waste and recycling management plan (WRMP) has been introduced to manage the collection, storage, treatment and disposal of all waste and meet a 57% recycling goal, which will ultimately result in diverting up to 80% of waste away from landfill. This also impacts shop tenancy, where an agreement requires compliance with the centre's waste philosophy, and is particularly pertinent to those revamping their outlets.

Water efficiency has also been given priority, as has air quality and lighting. In limiting municipal water consumption, the introduction of a rainwater harvesting system, low-flow sanitary fittings, and metering of the major water uses for continuous monitoring have been fitted. Further, potable water consumption in the phased section was also reduced by some 70% in comparison to a conventional building of this type.

With more feet entering the building given the addition of 200 shops to the existing 300, comfort of people is a further imperative and even though shoppers may not realise it, the quality of fresh air at the Menlyn Park Shopping Centre exceeds the South African Bureau of Standards (SABS) regulatory fresh air requirements by 150%, which, aside from health benefits, also means additional safeguarding against any indoor air pollution.

As with many green solutions, energy efficiency is crucial – particularly on a project of this size – and with an energy consumption requirement reduction of 50%, as stipulated by SANS204, the installation of an energy-efficient heating, ventilating and air-conditioning (HVAC) system was required. Even with chilled water air-handling units running at 100% full, there is a massive reduction in the building's energy usage, and in conjunction with occupancy and time-controlled lighting through an integrated building management system, the contribution to lower greenhouse-gas emissions ensured compliance to the Green Star energy category.

Large fans and chilled water pumps make use of



Through a waste management plan, the goal is to recycle 57% of waste generated.



variable speed drives, which allow only the optimum quantity of air and water to be delivered. In addition, thermostatically controlled variable air volume dampers deliver only the necessary quantity of air required based on heat load, which prevents over-supply of air into the shops.

While most new developments that have a green focus will comply with minimum requirements such as those mentioned for Green Star, particularly in the construction phase, the end user (in this case the shopper) might be impressed but the impact may have no real on-going cognitive relevance; that is unless the effect is obvious and tangible. Menlyn Park Shopping Centre advances the green mall concept by directly addressing the needs of the local community and shoppers.

Charles Starbuck, facilities manager of Menlyn Park Shopping Centre, has experience running the existing part of the centre. He says it's easier to focus on how green technology would enhance the new build. It became very apparent that building green still needed to focus on functionality and reliability to maintain the future upkeep of the development for the next 10 to 15 years.

"Implementing sustainability initiatives, however, requires huge capital injection, especially where it is a retrofit. As a result it is a difficult and expensive choice to make, and its success requires us to continuously educate tenants and the public about the sustainable efforts we introduce."

While it may have been working to budget, fortunately Pareto did see the value of a facilities managers' input and included the facilities team early in the original design phase. Starbuck says such knowledge, gained from day-to-day involvement

and experience, guides the implementation of green facility interventions and provides valuable advice on cost-effectiveness of such interventions.

THE RIPPLE EFFECT

"All our sustainability expectations are being met, particularly as the new facilities are easier to maintain and manage, and will not impact on the overall customer experience. The fact that they are also cost-effective is a bonus," Starbuck says.

"We also wanted to reward our customers and tenants for using alternative transport and incentivise people to be part of our low-carbon-emission philosophy."

One of the best endorsements of the Green Star efforts comes from existing and new tenants gradually introducing and implementing their own green initiatives as they revamp or design their stores. The Menlyn Park Shopping Centre has also included some imperatives that must be complied with in terms of tenancy agreements, such as the previously mentioned waste handling during store upgrades.

In considering the longevity and continued popularity of the Menlyn Park Shopping Centre, Pareto is fostering awareness about how a shopping precinct can become a vehicle for environmental protection and a foundation for greener retail experiences. 🌱

SOURCEBOOK

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