

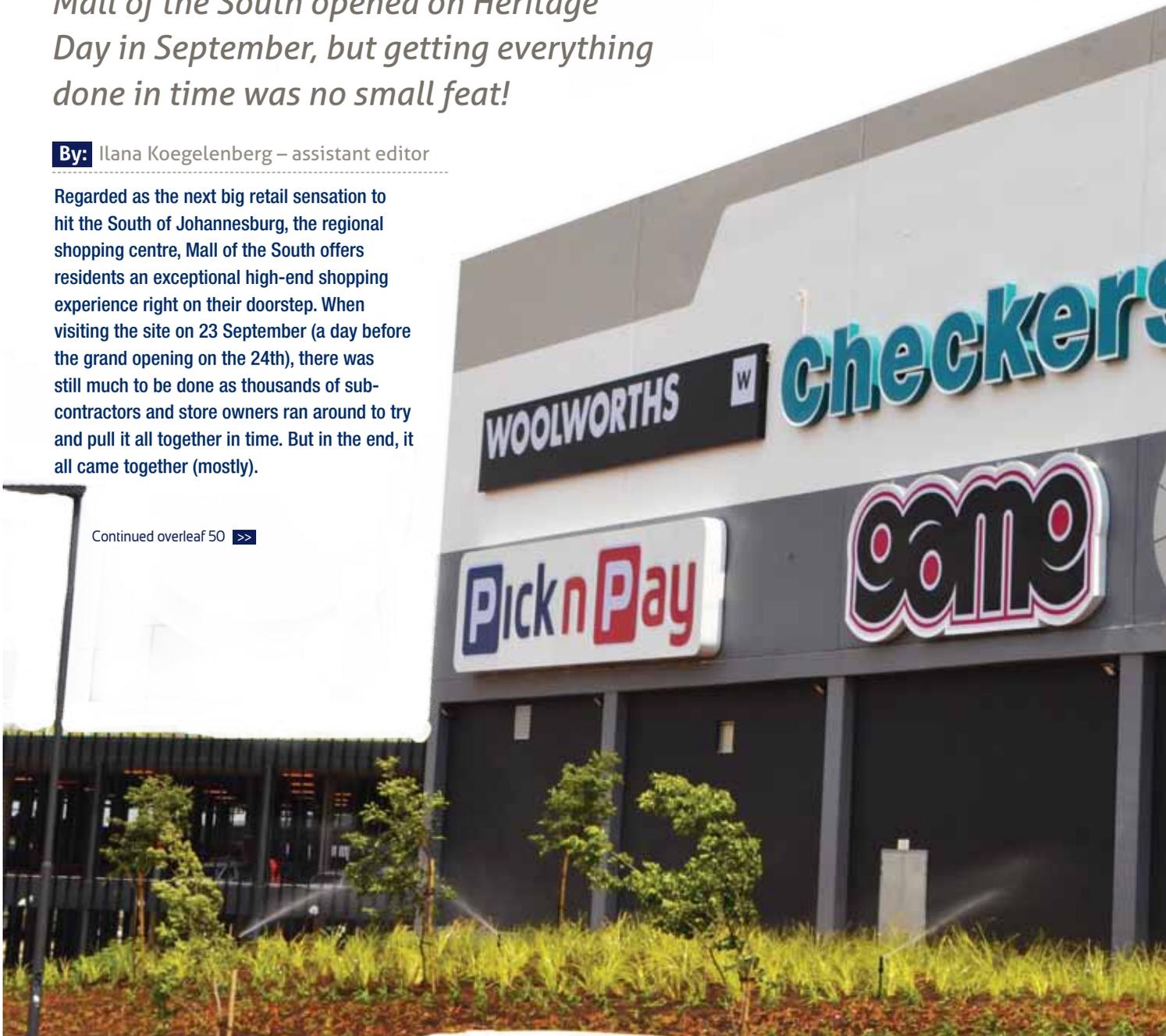
Mall of the South – a tailor-made design

Mall of the South opened on Heritage Day in September, but getting everything done in time was no small feat!

By: Ilana Koegelenberg – assistant editor

Regarded as the next big retail sensation to hit the South of Johannesburg, the regional shopping centre, Mall of the South offers residents an exceptional high-end shopping experience right on their doorstep. When visiting the site on 23 September (a day before the grand opening on the 24th), there was still much to be done as thousands of sub-contractors and store owners ran around to try and pull it all together in time. But in the end, it all came together (mostly).

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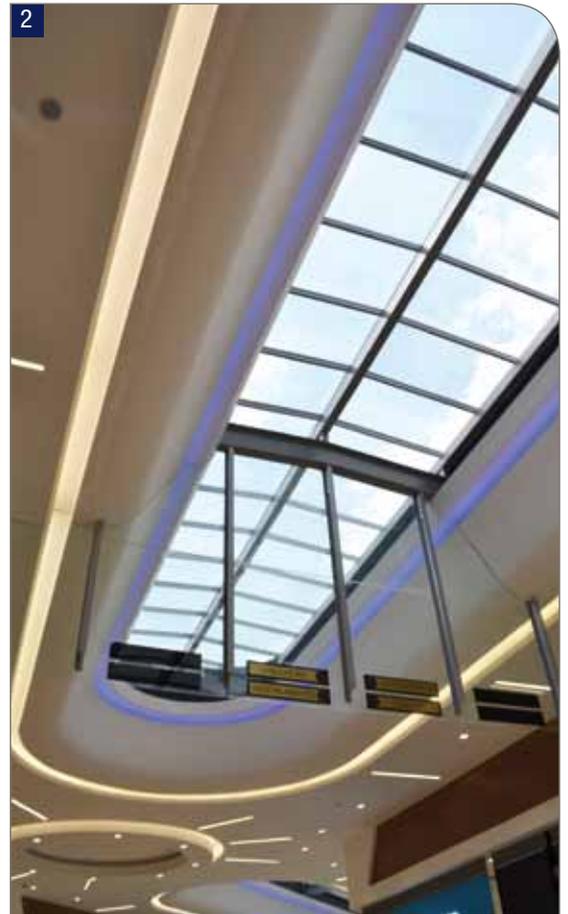
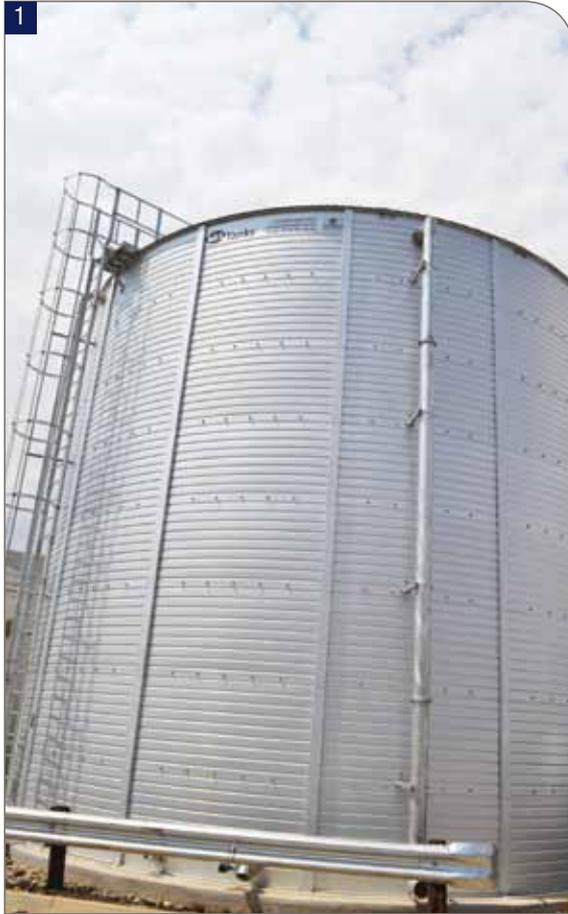




#PROMISINGPROJECTS



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1. *The onsite tanks are split 60-40 between for fire and potable water use.*
2. *Inside Mall of the South.*
3. *Heat pumps were installed where possible.*
4. *The booster pump set for the water tanks.*



Situated on the corner of Swartkoppies Road and Kliprivier Drive in the affluent suburb of Aspen Hills, the Mall of the South offers an initial 65 000m² of shopping pleasure through the provision of top-notch retailers including Pick n Pay, Checkers, Game, Edgars, Clicks and much more.

Lawrence Benatar of Benatar Consulting started designing options for this project about three years ago. The actual project started about 18 months ago in the beginning of 2014. As Benatar is Cape Town-based, this project was undertaken as a joint venture with Green Planet Engineering Services with managing director, Lesley Padayachee keeping an eye on things on site. Sub-contractor Douglas Ramsden was also enlisted to take care of things on site and help with the testing and commissioning.

STORE DESIGN

Currently the shopping centre comprises about 168 stores. Each store has a dedicated sink with a 1/10 sub-stack to allow for future toilet connections if needed.

Each shop is also fitted out with a water metre that is connected to an electronic censoring system. It logs every 10ℓ. Each month, the client will get a spreadsheet with the water readings to allow them to bill each tenant separately.

DRAINAGE

There are two main drainage systems as to allow for a separate drainage system for the restaurants only. This system then leads to five central grease traps to ensure that the main drainage system is protected.

Drainage is only provided on the two sides and the front of the mall – nothing in the back. This meant that the drainage from the back had to be taken through the building, which also proved quite a challenge. In the beginning, the design did include a line in the back as well but once the team got to site, they realised there was a lot of rock in the back and it would be too expensive to blast to be able to put in pipes.

So to allow for the drainage from the back, the sewers had to be quite deep – 3,5m to be exact. That's why the team had to make extra sure that the piping was installed correctly as getting in afterwards to fix leaks or bursts, would prove a problem.

WATER STORAGE

In terms of water storage, a two-day supply is provided in case the municipal lines are temporarily out of action. Initially there was a separate tank for potable water, but to keep costs down, this tank was combined with the fire tank. The first half of the tank (60%) is dedicated to fire, with 40% for potable water. These tanks (there are two, large, modular tanks at the back of the shopping centre), have a special lining inside that is suitable for potable water. Thus the tank is contamination proof and complies with all relevant regulation.

WET back up booster pumps are also provided.

HOT WATER GENERATION

The team tried to stick to the SANS 10400 XA regulations for renewable hot water generation as far as possible. They provided heat pumps for the shower vicinities and some of the tenants where possible.

However, it was too much of a challenge to try to put in more heat pumps for all the restaurants as well. The problem is that there aren't many places in a mall where you can install a heat pump as it works best outside in the ambient temperature. It was much easier to put in a normal hot water supply.

Benatar also looked at the possibility of a central heating system. This would enable the use of heat recovery of the chillers and other HVAC equipment. But for this type of installation, for a shopping mall, it's just not viable. With the restaurants being spread out in the mall, the long piping required to feed each tenant would lead to significant heat losses.

Kwikot geysers were thus provided where hot water is required with instant heaters for certain shops.

1. The drainage piping in the basement.
2. One of the grease traps in the basement.
3. Each shop is equipped with at least a basin and a water meter.

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1. The cisterns inside the duct.
2. Concealed induct cisterns were used throughout.
3. The electronic taps in the bathrooms run onto sloping vanities.

ADVANCED CONTROL

One tenant, the British H&M store, also requested more control and monitoring of its system. Thanks to a solenoid valve, the water automatically shuts off when the manager uses his key to shut off the lights upon leaving. This eliminates the risk of a leak/burst.

In addition to that, if there is secondary problems, they've also installed the bigger, 40mℓ size Aquatrip system to function as a leak detection system. Benatar noted that this kind of failsafe will soon be regulation in all future projects as there is a new law coming out.

BATHROOMS AND VANITIES

For the public bathrooms, an extensive design was done to house the electronics and the boxes under the vanity. This means it's easily accessible to clean and repair. Benatar did a lot of design development on the vanity to make sure the tap is easily removable for maintenance purposes and all electronics are easily accessible.

The basins are all sloping vanities, equipped with electronic taps throughout.

The toilets have induct Geberit concealed cisterns. The system is completely pneumatic and everything is out of sight and accessible in the duct. This was specified instead of the Flush Master as to achieve the right flow rates, noise level and the fact that it required less piping.

The urinals are Cobra infrared controlled urinals.

CHALLENGES

One of the greatest challenges on this job was dealing with multiple tenants – and last minute changes because

of this. Often a shop had to be resized to accommodate the tenant after the basin and piping had already been installed.

Then there was the challenge of double level shops. There are always challenges of services running through other people's areas below in installations like this, especially when there are big supermarkets on top of line shops. That's why Benatar specified HDPE because it's butt-welded and chances of a pipe bursting or leaking is considerably less than if it was another material like PVC.

Shopping centres are incredibly difficult projects as the tenants' requirements differ so much, even at a later stage to accommodate the tenants.

A GOOD TEAM

The design integration went fantastically well on this project, said Benatar. There were ample space to put in the systems. "There were a few clashes but generally it was really good," he said. "It was one of the best teams I've worked with and there were very little clashes and interference by the contractors."

MATERIAL SELECTION

Was important to choose the right pipe material for a shopping centre to avoid burst and leaks as far as possible. That's why the team used Valsir HDPE pipes for the drainage. It was also important that the pipes be SABS-approved. "I can't be seen to specify systems that are non-compliant," explained Benatar.

For the water supply, originally copper and Geberit Mepla was specified but that was later changed to Mepla and galvanised as this was a cheaper option. **PA**

LIST OF PROFESSIONALS

	Name of company	
Developer	Zenprop	
Architect	Vivid Architects	
Project manager	WT McClatchey Associates	
Consulting engineer	Wet services: Lawrence Benatar Green Planet	
Contractors	Main building: Aveng Grinaker-LTA Wet services: B&T Plumbing	
Product suppliers	Product	Supplier
	Drainage pipes	Valsir
	Mepla piping and cisterns	Geberit
	Heat pumps and geysers	Kwikot
	Instant heaters	Franke
	Leak detection	Aquatrip
	Electronic taps and urinals	Cobra
	Booster pumps	WET
	Tanks	SBS



The infrared urinals in the public bathrooms.

One of the greatest challenges on this job was dealing with multiple tenants – and last minute changes because of this.



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