

New DC will take 4 000 trucks off South African roads



Massdiscounters, the operating division of Massmart that runs Game and DionWired stores, is expanding its distribution network. The retail chain built two new distribution centres (DCs) over the past three years, including a 19 500m² facility in Cape Town in 2008 and a 70 000m² DC in Gauteng in 2010. Now construction is underway on another new DC in KwaZulu-Natal. This facility will service all 26 Game stores in the region, helping reduce the number of trucks on the road by 4 000. This will reduce the number of delivery trips from 345 000 to just 10 000 per year.

Environmentally responsible DCs

The site for the new KZN DC under construction was chosen for its prime location within the store network. Found in Riverhorse Valley outside of Durban, trucks driving to and from the DC will soon be travelling the shortest possible distance when delivering goods to stores. This helps reduce fuel consumption and minimise carbon emissions linked to logistics at Massdiscounters.

Even before construction began, the site was prepped in a way that allowed the developers to reuse soil scraped off during the ground-levelling process. This reduced the requirement for new soil to be brought to the site. For the structure itself, the

building materials that are being used are also being selected with environmental responsibility in mind. For example, biodegradable piping has been used in place of traditional plastic piping and only non-painted metal surfaces have been incorporated in the building. On the floors, developers have opted for hardwearing carpets made from recycled materials.

Saving water

Once the building is up and running, environmental responsibility will play a big role in how the DC functions daily. In the truck wash bay area, rainwater that has been harvested from the building's gutter system will be reused to clean vehicles.

This water is filtered each time before it is reused to remove dust and grime, making a six-month reusable supply available for keeping trucks clean.

For the inside facilities, water efficient fittings have been used. Urinals and toilets will use significantly less water per flush than conventional flushing units. Likewise the showers and taps will be emitting lower volumes of water per minute in comparison to standard fittings.

In the landscaping areas outside, vegetation has been selected based on low water requirements and the plants that fill these green spots will blend in naturally with the vegetation indigenous to the area.

Saving electricity

The KZN DC will not only be water efficient, it'll be energy efficient too. Energy saving light bulbs will be used and motion-sensing light fittings will only be activated when each area is in use. This same motion-sensing technology will be used with the air-conditioning systems to reduce unnecessary electricity usage. New technology in the forklift battery bay allows for better management of the battery charging cycle and will result in a 30% reduction in the electricity required to keep forklifts operational.

Where are savings being made?

- Water efficient fittings in the kitchens and bathrooms reduce water consumption by 41%.
- Toilets in the new DC flush with 40% less water than standard toilets.
- A 52% reduction in water usage is achieved in the truck wash bay thanks to rainwater harvesting.
- By making use of natural lighting, the requirement for electrical lighting is reduced by 50%.
- By using an energy reclaim unit, the electrical requirement for air-conditioning is reduced by approximately 15%.

Preserving light and heat

The building is designed to make use of natural light and reduce the amount of heating and cooling needed to maintain temperatures inside the DC. A heat reduction covering was used on all the glass panel windows to reduce the electrical light and air-conditioning requirements within the building. The building will also be making use of the available natural light by incorporating polycarbonate sheeting in the roof monitors and vertical cladding. This means that 74.5% of the floor will be lit by natural light for more than 80% of the day.

The insulation materials incorporated in the DC were specifically chosen by developers for their ability to regulate interior temperatures. This means a reduction in air-conditioning and heating requirements regardless of the season. An energy reclaim unit will further lower the cost of air-conditioning. The air, which has already been circulated throughout the building, will be used to pre-condition the incoming air. This means pre-cooling of Durban's hot air in summer and pre-heating of winter air.

John Hart, systems and supply chain director at Massdiscounters, says: "The completion of this facility signifies the culmination of the distribution network as envisaged in our supply chain strategy. The facility, due to

Some useful terminology

Polycarbonate sheeting:

Polycarbonate is a thermoplastic polymer that can be moulded into tubes, rods and sheeting. It is impact resistant, allows penetration of visible light and has better light transmission characteristics than many kinds of glass.

Energy reclaim unit:

This unit exchanges the energy contained in normally exhausted building air and uses it to treat (pre-condition) the incoming outdoor air.

On-grade doors:

A dispatch or receiving door that is level with the DC floor. This means that motorised handling equipment can drive out to meet and service side-loaded trucks delivering goods to the DC.

open in July 2012, incorporates learnings from previous projects to maximise sustainability and further the organisation's efforts in greening our supply chain. We have worked closely with construction partners in creating a world-class facility that services the needs of the businesses while at the same time addressing the sustainability of the community". ■

Statistics for the new KZN DC

Total usable yard and warehouse space: 85 500m²

Total warehouse space: 46 230m²

Total office space: 5 500m²

Number of receiving doors: 18

Number of on-grade doors: 7

Number of dispatch doors: 32

Number of stores being serviced through the DC: 26