

BY LAURA DURHAM



Store design:

Where shoppers and green meet

Refocusing on the shopper

Every shopper is on a specific mission when they enter your store – whether it be a month-end bulk buy, top-up purchases for the meal that evening or an event- or special occasion-oriented shopping spree. Learning why it is your customers come to your store (and perhaps why others don't) is the first step to fashioning the elements of design to work together to create the best shopping environment that they are looking for. For example, Pick n Pay Louis Botha has situated itself as a convenience store for the passers-by and residents in the area. Its opening hours – 7.30am to 7pm – makes it the perfect pop in before and after work and the communal queuing system makes paying hardly a chore.

"But when a store has no focus, the customer gets overwhelmed by too much sensory 'noise' and they become store-blind," says Ralf Tiedt of DIA. Design therefore needs to complement the business strategy and, of course, meet the budget available.

The premise of good design is twofold, says Nina Degger, design consultant at Storeworks. "The first and most important is the space planning – a functional, user

Customers are the reason for the supermarket business as Sam Walton, founder of Walmart so aptly put it, "a customer is not an interruption of our work. He is the sole purpose of it." Incorporating customers' needs in store design should therefore be common practice. Of course, the practicalities and functionality of all the elements – lighting, displays, refrigeration and energy management are also integral pieces of the final picture but without a happy customer with a full trolley, it's an empty one. So engage with your customers, your staff and experts to create a store masterpiece.

friendly flow, which invites the customer to browse the store thoroughly, and not necessarily head for a specific destination, thus creating impulse sales," she says. Broadacres Superspar, for example, is a very browsable store and the meandering layout encourages a relaxed shopping experience and allows the wide range of novelty and regular products to stand out as the hero. The in-store coffee shop, Conversations, adds to this lifestyle experience.

The other aspect of good design, according to Degger, is the design and specifications of the units themselves, whether it be shelving, racking or purpose built units, each has to fulfil a specific function, the most important of which is to display the product effectively.

"Store design works with the senses – sound, smell, sight. Our job is to manipulate the customer by analysing and customising the store to be the best for its specific location and shopper missions," says Tiedt. Peter Arnold, Pick n Pay's acting merchandise director agrees completely. "We regularly engage with customers to learn more about their shopping experience. Careful consideration is given to these needs when deciding on how to ►

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plan store layouts." For Pick n Pay, their fresh food offering is the focal point of each store. "All the areas in our stores are designed for our customers to easily access the areas which are most frequented," Arnold adds. Pick n Pay Hyper in Faerie Glen, Pretoria has the fresh department down to a tee after its revamp last year, with wide displays of brightly lit fruit and vegetables centring the store.



Natural wooden finishes and wide open displays are part of Pick n Pay's strategy to focus on their fresh departments.

"But design is just the icing. Retailers need to look at the foundation principles first and make sure the house keeping is in order before they decide on a complete revamp," says Tiedt. Simple matters like equipment maintenance, taking pride in the existing facilities and a positive attitude amongst staff are all part of these supermarket fundamentals. A revamp can be a huge financial burden so it is vital that money is spent in the right places where the greatest return will be yielded. For example, it is all very well creating a modern and inviting home meal replacement (HMR) department, but if unskilled staff are serving tasteless and unappealing meals, your customers will turn up their noses and you won't have achieved any sales growth at all.

Deficiencies in design

While some design deficiencies might be visible to even customers' untrained eyes – trailing cords, exposed plug points, ill-fitting cabinet doors – many of the more serious issues are entrenched in the very construction of the store.

There are a number of typical deficiencies ranging from lighting (not utilising daylight or case scheduling control) to refrigeration and heating – and the waste of energy as a result of some of these decisions is simply too huge to ignore.

"Tight buildings with proper construction and properly engineered HVAC (heating, ventilation and air conditioning) and refrigeration systems can save on average 30% on utility bills if properly designed, commissioned, maintained, and monitored to sustain savings," says Rob Key, business development manager for retail solutions in South Africa for Emerson Climate Technologies. He points out a number of typical deficiencies in terms of general store design:

- Failure to use demand controlled ventilation to capture substantial energy savings
- Failure to use low flow cleaning nozzles in prep areas



Pick n Pay on Nicol's use of natural lighting is energy efficient, as well as creates a relaxed and warm shopping environment for customers.

- Use of flimsy plastic doors (non-gasketed) between back of house warehouse and sales floor
- No building energy management systems, resulting in poor control of all systems
- Failure to capture water savings by not using water efficient fixtures (waterless urinals), ultra low flush water closets, and 0.25 gpm faucets
- Poor leaky construction around windows and doors
- Using single pane glass for fenestration
- Use of inefficient refrigeration systems (non-engineered)
- Failure to implement demand controlled exhaust on kitchen hood systems
- Failure to use heat reclaim for domestic water heating, radiant floor heating, or if appropriate, HVAC heating

In terms of refrigeration, nearly 15 to 20% energy savings can be achieved over a poorly designed store if certain equipment, processes and practices are put in place. These include: Ensuring all HVAC and refrigeration systems are operating as intended; implementing condenser fan strategies to properly follow ambient temperatures to avoid wasted fan energy; schedule defrosts and use of anti-sweat control.

Where to begin

"The onus is on the retailer to be clear and concise about what he or she is hoping to achieve from their store design, and communicate this to their designer/shopfitter. In this manner the design will suit the retailers specific set of circumstances/budget and guide the designer as to which finishes and specifications are most effective in the setting," says Storeworks' Nina Degger. Providing a cost budget at the outset also makes the design process that much easier.

A store can be designed on a relatively low budget by eliminating elaborate perimeter treatment such as bulkheads. "Focal features, graphics and accent lighting ►

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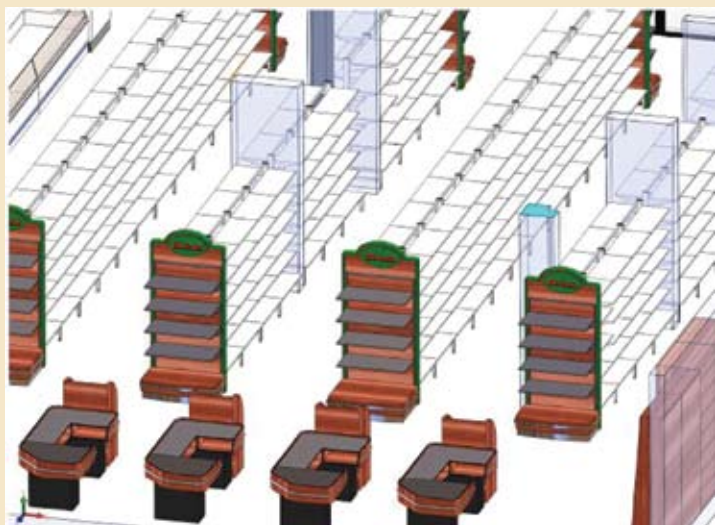
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can add a good feel to the store, allowing the retailer to channel funds into quality fixtures and fittings which are a long-term investment," she says. Retailers should be aware that décor trends change quickly so over capitalising on the latest whim is not a good long-term investment at all.

That being said, retailers should not be afraid to "push the envelope from time to time", says Ralf Tiedt. Without forgetting that the store should be "pretty but practical". Experimenting with layout is one way to do this. For example, create focal points, or mini destination points throughout your store like Fruit & Veg City's Food Lover's Market concept, which been designed with this in mind. The natural progression navigates customers through the store at a leisurely pace, with each department having enough novelty to draw them in but not too much so as to distract them completely from the rest of the store. Glen Acres Superspar actually took this navigation point further by creating a round store – ten years ago! Thinking out of the box literally led to an interesting shopping experience but ultimately practicalities (wasted space) led to it returning to box format during its revamp earlier this year.

The right light

There are a number of factors that retailers need to take into consideration when deciding on a lighting strategy for their store. Examining price, environmental friendliness and existing fittings are all part of the decision but ultimately, the function of the lighting is the most important. There is no point spending a lot of money buying expensive fittings and bulbs only to discover that it fails to light up your fresh produce display, or realising that the light colour you decided on has made your freshly baked bread look grey and stale. The days when your only lighting choice was limited to classic but short-lived incandescent lamps or economical but much too bulky fluorescent lamps or brilliant but much too expensive halogen lamps are long since gone. But before you get overwhelmed by the choice on the market today, get in touch with a lighting expert to better ensure that your lighting meets all your store and budget requirements at the end of the day.

Lighting the way

Lighting creates mood and if done correctly will enhance the ambiance and draw the customer into your store," says Mark Greenhill, technical manager at Osram. Lighting has a lot of power – power that is too often neglected. Retailers are always trying to boost basket size, whether it be through a pricing strategy, customer loyalty programme or promotions campaign. But stop for a minute and consider how simple and cost-effective (in the long-run) it would be to fix up the lighting. Numerous studies have shown that more people will stop and look at well-lit shop windows and displays than poorly lit ones. The right lighting attracts customers and puts them in the right mood to buy. Light can emphasise a particular department or display, make colours stand out, or simply create a feel-good atmosphere, which stimulates customers to shop more than initially planned. "Modern lighting that promotes sales turns store interiors into 'stage sets' and products into 'objects of desire'," says Greenhill.

"Since lighting accounts for close to 20% of a store's energy consumption, it is important to balance lighting requirements with operational lighting costs," says Pick n Pay's Peter Arnold.



Create destination points, like Woodlands Food Lover's Market's sushi bar in the centre of the store to keep customers enthralled throughout their shopping trip.

"To this end we are constantly evaluating new lighting technology. We have made strides in both our ambient and accent lighting, specifying products that are increasingly energy efficient," he adds. Even just incorporating natural lighting elements into your store is a way to reduce energy costs, as well as create a comfortable store environment, which Pick n Pay on Nicol does so well.

Technical matters

Today it is possible to save enormous amounts of electricity with energy-saving lamps that look like ordinary light bulbs and are also compatible with classic fittings. "Modern fluorescent lamps have become more compact but they are now even brighter, kinder to the environment and also offer better colour rendering. Additionally, the new mains voltage

halogen lamps can be operated on normal power supplies without the need for transformers," explains Greenhill.

Also, lighting can be flexible according to changing requirements and controlled via a centralised system. For example, different lighting scenarios can be set up by combining specific groups of lamps. White and coloured, white and cool light can be combined to achieve lighting moods suitable for specific tasks or times of day. Light can be controlled statically or dynamically.

According to Greenhill, fluorescent lamps generate more than 70% of all the artificial light in the world but consume only 50% of the energy needed for lighting. Fluorescent lamps last between eight and 40 times as long as ordinary light bulbs and need up to 90% less electricity for the same brightness, depending on type. They are therefore the best possible option for economical lighting. In addition to luminous efficacy and efficiency, the light colour or colour temperature and colour rendering are the most important criteria to consider when choosing the right light fluorescent lamp. "Fluorescent lamps with light colour 76 are the perfect light source ▶



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for making food look really appetising. Their specially matched spectrum makes meat, sausages, bread, cakes and other foods look fresh and appealing without disguising poor produce," he says.

LED lighting is highly efficient and has a long life expectancy. Economies of scale make them more cost effective

Weighing up LED lighting

Light-emitting diode (LED) lighting has also become a popular choice in recent years due to its longer lifespan and lower power consumption. "LED lighting has become known for its highly efficient and long life expectancy. Additionally, recent economies of scale have made LEDs more cost effective," says Cornel Neethling, industrial engineer at LED Lighting SA.



White or coloured light is used very effectively for coves, or behind displays to define and highlight shop areas or displays. LEDs, being a single point light source are ideal for spot lighting for shop fronts and displays.

David Earle, national marketing and sales manager at Just Refrigeration lists some of the advantages of switching to LED:

- Low power consumption – LEDs use significantly less power than traditional light sources
- Long life – 50 000 hours
- High lumen/watt ratio – 70 to 100 lumens per watt
- Low maintenance cost
- Solid state light sources – LEDs do not burn a filament or a gas
- No mercury
- Dynamic colour control
- No UV emission
- Low heat emission – little heat is radiated towards occupants and objects
- Directional light source
- Safe – low voltage operation

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Earle says that Just Refrigeration has changed to LED lighting in all their units because of the numerous reasons listed above. There are also a number of shopfitting applications for LEDs, including:

- **Light boxes** – slimmer light boxes can be used, wasting fewer materials.
- **Shelf lighting** – LEDs can be better shaped, creating more even illumination fitted into the shelves out of sight, just above the merchandise.
- **Halo illumination** – white or coloured light is used very effectively for coves, or behind displays to define and highlight shop areas or displays.
- **Spot lighting** – LEDs, being a single point light source are ideal for spot lighting for shop fronts and displays. A large range of lenses can be used to precisely focus the light.
- **Colour changing** – versatile controls makes LEDs perfect for this type of application to keep the look and feel in a store dynamic and interesting.
- **edge lighting** – narrow LED strips can be fitted to the edge of glass or Perspex to seamlessly illuminate the actual shelves or backing panels, creating eye catching effects.

- **Retail store signage** – flexible LED strips or nodules work well with smaller shop front signs.
- **Ground lighting** – the extremely long life span and robustness of LEDs means they can be fitted into the ground to direct and channel traffic through the store.

A high quality fitting should be chosen so the fixture lasts as long as the LEDs (10 to 20 years)

He emphasises that a high quality LED product still needs to be fitted correctly, "since the quality of illumination is judged on the radiance of light, the colour of light and how well it can be integrated into existing architecture, as well as lighting control systems." A high quality fitting should therefore be chosen so the fixture lasts as long as the LEDs (10 to 20 years). Also, the fitting of high power LED light sources should form an integral part of the

thermal control for the LED because the better the fitting, the better the thermal control.

According to Neethling, future trends for LEDs are to take over the down lighting world. "An additional feature that can be integrated with new LEDs are lighting controls. These controls are key to creating lighting solutions that make the maximum difference in terms of reducing energy consumption," he says.

The initial cost of LEDs is often seen as a major hurdle in using this technology. "But a basic break even analysis will show that LEDs will surpass general lighting costs within two years. LEDs not only use much less electricity, they are also solid state luminaires that are not susceptible to vibration and have a rated lifetime in excess of 50 000 hours with minimal or no maintenance throughout," says Neethling.

Green revolution

Embracing the green revolution is about more than changing a few light bulbs and putting up a recycling bin in front of your store. For Pick n Pay, their flagship store – Pick n Pay on Nicol which opened last year – epitomises this. "It successfully combines

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a natural design, offering aesthetic ambience, energy efficiency and responsible use of natural resources. This one-of-a-kind store underscores Pick n Pay's ongoing commitment to sustainability and reducing, not only its own environmental impact, but also that of its customers," says Arnold.


The use of heat-dissipating glass, covered with timber louvers to allow for thermal control, as well as skylights which diffuse natural light during the day reduces the demand on the energy grid for up to 80% of the day. "A 100 kilowatt photovoltaic system provides alternate energy to reduce the store's reliance on the grid. This PV system can generate anywhere from 8% to 25% of the store's energy requirement depending on the store's load at any given point in time," he explains.

A further 17% reduction on energy demand is achieved through an intelligent refrigeration system. The air-conditioning system has an ice storage facility, building ice at night when the energy tariffs are lower and then using the ice during the day to cool the store. The store's hot water is



Creating a store that your customers enjoy visiting and one that caters for their every need – whether it be dietary preference or shopping mission – is part of the sales battle won.

generated by using heat reclaimed from the refrigeration system to heat water. Water conservation has also been integrated into the design. "With over 6 000m² of roofing covering the complex, rainwater harvesting has been implemented with a total storage capacity of 420 kilolitres to be used in

irrigating the gardens and supply water needed to operate the evaporative cooling system of the fridges. Projections on the amount of rainwater achievable through the height of summer estimate an annual saving of 30% of the usual water demand equating to 7 500 kilolitres," says Arnold. 



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