

Setia City Mall

The Nation's First Green Mall



Pioneering a revolutionary transformation in the Malaysian retail landscape

Nestled in the award-winning Setia Alam township, Setia City Mall is Malaysia's first Green Building Index (GBI) and Singapore's BCA Green Mark rated shopping mall. Situated in Setia City, the township's integrated commercial hub, Setia City Mall also emerged winner in the retail category in FIABCI Malaysian Property Award 2013 for its exemplary eco-friendly features.

Jointly developed by Malaysia's leading property developer, S P Setia and one of the world's foremost property and infrastructure solution providers, Lend Lease, Setia City Mall is the groundbreaking lifestyle retail destination in the country to demonstrate an environmentally sustainable model in its overall development, operations and management.

The Design Concept

During the design stage, a comprehensive research on the best practices and in-depth case studies were conducted to act as the firm launch pad to develop simulation and computer software modelling which were geared towards meeting key sustainability requirements.

IGEN Consultants undertook studies that involved daylight harvesting research, indoor air quality optimisation, glazing material comparison, identification of humidity sensors for air handling unit (AHUs), motor efficiency for fan coil units (FCUs) as well as usage of bi-folding versus double doors for gl-fresco F&B outlets.

These studies revolved around the typical attributes of a mall to identify effective methods to improve a retail space that is bound to receive an abundance of shoppers. Main aspects such as energy efficiency, thermal comfort, enhanced safety and security design as well as water efficiency were taken into serious consideration as these are the essential elements of a shopping mall.

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ENERGY EFFICIENCY

Managing energy is one of the fundamental aspects in sustainability; hence, important steps were taken into consideration in terms of energy efficiency at Setia City Mall. Installation of low-e glazing and roofing material with high-Solar Reflectance Index (SRI) helps in reducing heat gain from the sun.

Each level of the parking lots is also naturally lit with T5 compact fluorescent light fittings complete with electronic ballast and lux sensor. Apart from that, to complement the employment of daylight source and efficiency of artificial lighting, the ceiling and columns of the parking lots are painted white to optimise their reflective luminosity.

There are also lux sensors installed at common areas such as main entrances, corridors, public corridor and back of house. To further save energy, the sensor will automatically switch off the lights when the lighting level goes above 50 lux. As for minimising energy consumption, High Coefficient of Performance (COP) chillers and high efficiency fans, motors and pumps are also utilised. Besides that, all escalators, travelators and lifts go into crawl speed or sleep mode when not in use to save energy.

THERMAL COMFORT

By fully understanding the local climate, research was also conducted to ensure a balanced thermal comfort to enhance shoppers' experience at Setia City Mall. It is pertinent to note that there's a general tendency for Malaysians to consider shopping malls as a place of cooling shelter during hot weather and thus, the assimilation of natural sunlight and indoor temperature was conceptualised to achieve a balanced thermal comfort.

Thermal comfort meters are installed to predict and maintain the temperature within reasonable levels during the design of Heating, Ventilation and Air-Conditioning (HVAC) systems. To complement this feature, low window-to-wall ratios (30%) and well-designed air-conditioning with efficient distribution systems are also installed allowing the building to achieve optimal thermal comfort levels.

ENHANCED SAFETY AND SECURITY DESIGN

In addition to sustainability features, safety and security measures were also integrated in the overall planning as it is inevitable that Setia City Mall serves as a regular recreational destination for its patrons. The mall offers an all-in-one experience for shopping, dining, entertainment and park life.

Therefore, safety measures such as non-slip tile finishes and low volatile organic compound (VOC) paint, carpets and timber originating from sustainable sources were used during the construction. The use of asbestos and lead-based construction material was also banned due to its non-environmental friendly components.

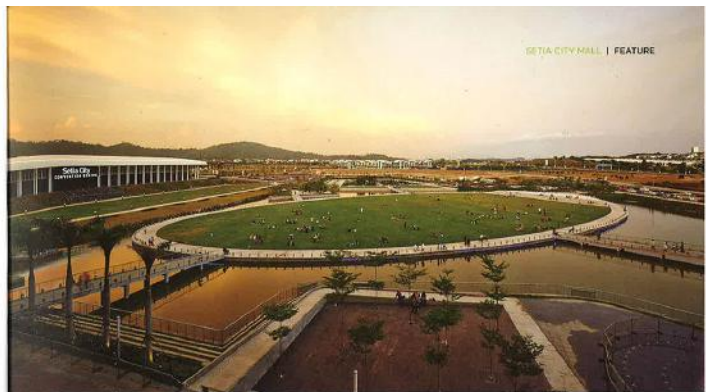
Other safety measures include well lit parking lots with clear line of sight, ATMs located in highly visible areas, safety enhanced children's playground, higher balustrades for all atrium voids as well as additional safety buttons and alarms in strategically identified places to allow customers to call for assistance in cases of emergency.



WATER EFFICIENCY

A custom designed rainwater harvesting system is employed to collect water for landscape irrigation thus significantly reducing the use of potable water. One-third of the mall's roof acts as a water catchment plane and drains the rainwater into collection tanks via a siphonic drain pipe system.

Another innovation is the condensate recovery system that collects water from all AHUs and FCUs cooling towers. For most cooling towers, the amount of water removed and replaced is highly dependent on the level of minerals but the condensate water has virtually no minerals (TDS level of 0 to 25). By recycling the condensate water, this allows the cooling tower to dump water less often, resulting in long term savings.



Construction Stage

Blasted rocks from the site were recycled to form the pond edges to create the man-made lake that surrounds the oval lawn adjacent to the mall.

During the construction stage, the types of materials used were given high priority as it is an important aspect of the end product.

The construction materials used included:

- Use of CSR ALC (Autoclaved Light Weighted Concrete) Block Wall for superior thermal insulation to reduce heat gain for the external walls.
- Roof installation using pre-fabricated metal trusses to provide consistency and to achieve construction efficiency.
- Pre-cast beams and hollow core slabs were employed, resulting in fast, easy and precise installation to save time and labour. It also aids in reducing the air pollution and the finishing is often neat and of superior quality.
- A concrete batching plant was situated next to the construction site for greater efficiency and to reduce carbon emissions from transportation activities.

CONTROL OF EARTHWORK, EROSION AND WATER QUALITY

During development, excavated earth was re-used on site to help reduce fuel required to transport excess earth to another site. Blasted rocks from the site were recycled to form the pond edges to create the man-made lake that surrounds the oval lawn adjacent to the mall.

Rain water and construction water was recycled and a silt pond was built to collect all surface water run off; this aided in keeping exposed earth wet to prevent air pollution and to clean roads as well as lorries before leaving the construction site.

A noteworthy technological innovation was the use of Geotextile sheets to layer the ground of the lake surrounding the Oval Lawn. This prevented soil from seeping into and polluting the lake, ensuring a clear visage.



FEATURE | SETIA CITY MALL

Operations & Management

Officially opened in the month June 2012, Setia City Mall presented a well-leased status of 98% on opening day with the balance 2% leased within the subsequent six months. Currently it is 100% leased and operates on an array of sustainable benchmarks.

The average indoor air temperature is set at 24°C +/- 1°C with a relative humidity of 50% to 65% at air speeds lower than 0.2m/s. This is applicable in all air-conditioned areas and regulated based on CO₂ level below 900ppm for better air quality within the Mall.

Although green specifications added to the upfront cost, they led to operational savings in the long run

WASTE MANAGEMENT

Setia City Mall adopted an integrated waste management initiative to divert as much waste from sanitary landfills as possible. This involves the continuous engagement with tenants and visitors to the mall to reduce reuse and recycle the waste generated daily. On each level and strategic point of the mall, there are dual stream waste bins fitted for customers' convenience to segregate waste.

A full time waste management consultant is also engaged to provide consultation to tenants interested to contribute towards sustainable initiatives such as waste segregation and recycling.



Currently, Setia City Mall has a 12% to 15% recycling rate but the goal is to eventually reach the 30% to 50% target, which is on par with malls in developed countries.

GREEN LEASE

Setia City Mall's Green Lease is in place for adoption by tenants to encourage and educate them on the importance of installing energy efficient lighting and equipment as the maximum power density is limited to 35W/m² for the Retail and F&B (Dining) Areas; and 85W/m² for the Food & Beverage (Kitchen) Area.

The mall management faced resistance from tenants initially as this measure was a first for any shopping mall in Malaysia and was seen as bold and untested.

However, with continuous assistance, guidance and impartation of knowledge to retailers on the tenets of the Green Lease, tenants eventually turned around as they understood that although these green specifications added to the upfront cost, they led to operational savings in the long run.



SETIA CITY MALL | FEATURE

The Heart of a Green Community

Besides all the efforts in minimising its ecological footprint, community engagement bears equal importance at Setia City Mall.

Right from the start, engagement with the relevant authorities, local community leaders and residents in the surrounding vicinity were cemented to gauge their interest and understanding of the mall's identity as a sustainable retail development.

Collaboration with industry peers also took place to establish a GBI benchmark to develop a rating tool for shopping malls in Malaysia.

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Apart from that, Setia City Mall also actively supports local universities in their academic research to provide internship placement in the retail industry. During the development stage and currently, study tours are often conducted for university students to help them understand the importance of safety and sustainability in the work place and how academic theories can be applied in the commercial world. The "Love Green, Begin" campaign carried out by the mall management promotes "Sustainability Tours" to the public to create awareness among the community and industry peers to inculcate awareness on how each of us plays an integral part to make the Earth a greener place.

SETIA CITY MALL

Key Green Features & Initiatives

- Energy-efficient compact fluorescent lights
- Intelligent lighting controls via the building management system
- Roofing material with high solar reflectance index value
- High coefficient of performance chillers and high efficiency fans, motors and pumps installed to minimise energy consumption
- Low-emission glazing to reduce heat
- Low window to wall ratio (30%) and well-designed air-conditioning and distribution system for optimal thermal comfort levels
- Installation of thermal comfort to predict and maintain the temperature
- All air handling units are equipped with high efficiency motors and high performance fans with total combined efficiency averaging 65%
- Standby speed escalators and travelators
- Bio waste composting bin to convert organic waste into revitalised soil
- Waste recycling centre
- Rain water collection tank for irrigation
- Condensation water collection tank
- Building smoke spill system to perform indoor air flushing
- Natural ventilation in the car park
- Priority parking for green vehicles
- Bicycle friendly mall with ample parking stands
- Highly efficient air conditioning system on the roof top
- Landlord and tenants to meet Green Lease conditions with the assistance of Lend Lease sustainability guidance and tools
- Sustainability tours to educate and share the mall's sustainability features with tenants, shoppers, professionals, the youth and the public 🌱



- 01 High Efficiency Chillers
- 02 Naturally Ventilated Car Parks
- 03 Recycling Centre
- 04 Rainwater Harvesting Tanks
- 05 Condensate Water Recovery Tanks