

313@ Somerset Singapore

Project

Somerset Retail Centre

Owner

Lend Lease Asian Retail Investment Fund/
Lend Lease

Value

Approx. S\$200m

Assignment

Design & Construction (GMP)

Completion

December 2009



Somerset Central is designed and being built with social and environmental sustainability to meet or exceed objectives of the project's key stakeholders.

The project has implemented a number of key initiatives to address Sustainability objectives, such as:

- Solar Panels to harness the sun's energy to power up car-park lightings and barrier system during day-light hours. CO and CO₂ sensors to loading docks and carpark to control VSD fans.
- First commercial building in Singapore to use Sprinkler Tank for Thermal Energy Storage Bank. This will allow the building management to perform load shifting, load shaving and energy conservation.
- Waste heat recovery system to capture the heat rejected from the chiller, to heat up hot water to supply the entire mall's requirement. The tenants will save on capital cost to install electric heater and also the energy expenditure for electrical heating by purchasing the supply from the building management.
- Carbon footprint studies for the embodied and operational carbon of the development. This will be the first retail development in Singapore to have its carbon footprint assessed in detail. From the collected information, not only Somerset, but future projects will have a database to refer. This will allow considerations on embodied carbon of materials on future projects and operational carbon during the centre's life.
- Intelligent lighting control system, lighting controls via BMS and lighting sensors in atrium, top-level car-park to save energy during the day, motion sensors for staircases.
- Low-energy LED façade. High frequency ballasts for down-lights and T5 fluorescent lamps in lieu of T8.
- Mechanical Grease Extraction System. Self-cleaning, in-built mechanical cutter and pump for grease extraction minimizes access to grease pit and improves indoor air quality.
- Computational Fluid Dynamics (CFD) modelling to accurately measure the environmental impacts of the building. Solar studies and Energy modelling was carried out to ensure building is adequately shaded and the correct materials were chosen to address the exposure to solar loads on the building external.
- The long facades facing North-South incorporates high performance, "Low-E" double glazed system with insulated back panels to exposed areas to optimise HVAC loads as well as enhance occupant comfort
- HVAC system designed and load optimised in consideration of occupancy and via low flow design. Chilled water temperature delta of 7oC instead of conventional 5.5oC. Pump size is reduced and overall chilled water system efficiency is improved to generate energy savings.
- Gearless lift system coupled with AC VVVF drive uses less energy. Light-weight decorations and sleep mode are also implemented
- Energy Recovery Wheel is installed to capture the cooling energy from the exhaust air that is from the air-conditioned space. The energy is then transferred to pre-cool the fresh air going into the air-conditioning system.
- Extensive use of energy & water sub-metering for base building and tenants to closely monitor energy uses
- Water efficient tap fittings to highest practical level and efficiency throughout to reduce water consumption and water wastage.
- Collection of maximum code allowable rainwater for vertical greening in sky terrace and landscaping in discovery walk. Sky terraces and open public areas to improve social connectivity and public amenity.
- Usage of NEWater (Public Utilities' Recycled Water) for cooling towers and sprinkler make-up water.
- Extensive use of recycled materials, low VOC paint & low emissive materials to the project including reuse of carpet tiles and workstations from leasing office to centre management office.

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- Green Lease and Tenancy Collaboration. Tenant's provisions are specified in the Green Lease and there is a control on the energy usage (W/m²). Tenancy electronic calculator will be able to calculate the power and lighting requirements of the Tenants. Should the energy consumption be high, recommendations to reduce the energy usage will be provided.
- Priority parking for low emissions vehicles such as vehicles that runs on CNG or hybrid cars, and for parents with prams.
- The design provides seamless connection to Mass Rapid Transport (MRT). Direct access to the adjacent Mass Rail Transit (MRT) into the centre which promotes the use of public transport and lowers vehicle use.
- Automatic condenser tube cleaning device with innovative brush balls for cleaning of modern chiller condenser with enhanced tubes. The chiller efficiency will be maintained at levels throughout its lifespan resulting less potential energy loss in the future.
- Energy saving stand-by escalators to reduce energy consumption in lower peak times.
- Mechanical Grease Extraction System. Self-cleaning, in-built mechanical cutter and pump for grease extraction minimizes access to grease pit and improves indoor air quality.
- Design of a rooftop car-park to act as a natural heat shield into the centre.
- Social sustainability and community programs: Eco-Tours specific to the Somerset Building, Employment and Training initiatives, Youth and Education, Community Outreach, Fashion, Commuters, Health and Wellbeing.