

ENVIRONMENTAL RESPONSIBILITY

SPH is committed to being a good corporate citizen that cares for the environment in which it operates in, and actively seeks to promote sustainable growth while achieving business excellence.

SPH's business operations comply with all applicable environmental, legal, health and safety requirements. It works closely with the Workplace Safety and Health Council, Singapore Civil Defence Force, Public Utilities Board, National Environment Agency, Building and Construction Authority, Energy Market Authority and other relevant authorities to ensure that it adopts the best practices for environment sustainability.

SPH is also constantly looking for ways to reduce the negative impact on the environment by lowering its carbon emissions and improving energy efficiency in its daily operations. A Green Steering Committee is established to review environmental objectives and shape the green culture in the Group.

CASE STUDY – SPH PRINT CENTRE WINS AT EENP AWARDS

SPH was recognised for its commitment and achievements in energy conservation at the Energy Efficiency National Partnership (EENP) Awards 2014 held at the Devan Nair Institute for Employment and Employability. This is the first time that SPH has won this award.

First launched in 2011, the EENP Awards is jointly organised by the National Environment Agency, Energy Market Authority and the Economic Development Board. The EENP Awards aims to foster a culture of sustained energy efficiency improvement in industry, especially among the major energy consuming industries. The EENP Awards also encourages companies to adopt a proactive approach towards energy management by identifying and sharing best practices.

Mr Wong Tat Choon, Assistant Vice-President at SPH's Production Division (Engineering), was named the Outstanding Energy Manager of the Year, under the SME category which he won for energy conservation work carried out at the SPH Print Centre. This award recognises outstanding Energy Managers (EMs) who have demonstrated leadership in driving energy efficiency improvements and promoting such initiatives within their organisations. He received the award from the event's Guest-of-Honour Dr Vivian Balakrishnan, Minister for Environment and Water Resources.

In his capacity as EM, Mr Wong has led the Print Centre energy team in conducting energy audits, identifying

energy-saving measures and implementing energy conservation projects since 2007. For example, his projects to streamline the Print Centre's Air Conditioning and Mechanical Ventilation (ACMV) equipment and processes and the introduction of energy-efficient LED lights and industrial fans have cut the centre's overall energy usage by up to 14 per cent between 2007 till the first half of 2014. This translates to about six GWh per year or close to \$1 million annually in utilities savings for the same period.

Together with the SPH Green Committee comprising representatives from different divisions, Mr Wong also organised the SPH Green Day to raise staff awareness on the importance of energy conservation through talks, a quiz and a song-and-skit.





Energy

The Production Division, which is based at SPH Print Centre, is continuing with efforts this year to conserve energy and to meet the new NEA Energy Act. It aims to reduce energy consumption by 5 per cent over the next 5 years (using 2013 total energy consumption as a baseline). Various energy efficiency works were carried out and the energy usage reduction is projected to be about 9 per cent for 2014.

The Production Division has submitted its first Energy Annual Report to NEA as required by the new Energy Act.

SPH registered to join the Energy Efficiency National Partnership (EENP), a voluntary partnership programme for companies that wish to be more energy efficient, and participated in the EENP Awards. One of the Production staff, Wong Tat Choon, Assistant Vice-President, Engineering, received the Outstanding Energy Manager of the Year 2014 for his energy conservation work (see case study on page 88).

At News Centre and Media Centre, SPH carries out environmental friendly practices to reduce energy wastage and conserve energy.

High consumption lightings in the buildings are progressively replaced by energy efficient ones such as LED and induction lights. Duty staff also conduct daily checks to turn off the office lighting after office hours.

The room temperature in the buildings are maintained at a comfortable level, and the operating hours for air-conditioning are reviewed regularly for optimal operating efficiency. Old chillers are overhauled periodically so that the performance of these chillers is at an optimum level.

Currently, a detailed energy audit is being conducted at News Centre and Media Centre by a certified energy service company to assess the feasibility of the energy-saving measures for implementation as well as to recommend areas for further energy improvement.

To date, the proposed energy-saving recommendations arising from the preliminary energy audit:

1. Replacing some of the old chillers with more efficient variable speed drive (VSD) chillers;
2. Replacing the old air handling units (AHU) to improve energy efficiency;
3. Installing motion sensors at low usage area to reduce operating hours and energy consumption.

SPH also meets up with its vendors regularly to be updated on new technologies which can be implemented to assist in reducing energy consumption.

The basement carpark area at SPH's flagship shopping mall Paragon is progressively fitted with carbon monoxide sensors to control ventilation fan speed, thereby enhancing the carpark air quality. The office tower toilets are also fitted with motion sensors which automatically dim the lights to about 50 per cent when they are not in use. All these will be completed by end of 2014. By mid-2015, the old chillers will also be replaced with energy efficient ones.

At The Clementi Mall, all carpark lights and void lights have been replaced with energy-saving LED lights.

The Seletar Mall, a joint venture development by SPH and United Engineers Limited, received a Gold in the BCA Green Mark Award from the Building and Construction Authority (BCA) in March this year for its best practices in green building technologies (see case study on page 91).

SPH's Information Technology Division recently implemented a new IT corporate network which uses 50 per cent less components, but offers superior performance and reliability and consumes less energy.

It has also embarked on consolidating its data servers and storages through virtualisation technology. To ensure the optimal operations of its IT systems, it installed the latest,

ENVIRONMENTAL RESPONSIBILITY

more efficient air-conditioning which uses ozone-friendly refrigerants. It purchased Energy Star compliant PCs and notebooks for staff use to replace older, less energy-efficient ones.

From these recent measures, its utility bill has dropped more than 30 per cent, resulting in savings of \$180,000 annually.

Water

The Production Division proactively monitors and reviews its water usage. Regular checks and maintenance on the water supply network are carried out to ensure that there are no water leakages. There are also periodic upgrading of fittings and facilities to ensure efficient water usage, such as installing sensor taps and automatic flush urinals, dual flush systems for toilets and thimbles in taps.

The water storage tanks are cleaned annually. There are proper security measures for the tanks, in compliance with PUB water supply regulations.

At News Centre and Media Centre, regular maintenance checks on the water supply installations are carried out to ensure zero water wastage caused by faulty fittings or damaged equipment. The meter readings of installations that consume large quantities of water such as cooling towers are recorded daily so that there are no undetected leaks or obstructions in water tanks. Common amenities such as toilets, pantries and garden taps have water efficient fittings and are adjusted to PUB recommended flow rates to reduce the overall water consumption in the buildings.

Other Green Efforts

SPH adheres to environmental recommendations made by the relevant regulatory bodies and authorities:

- a. All refrigerators in the pantry rooms are upgraded to energy-efficient models with NEA energy labels.

- b. Divisions and business units are encouraged to upgrade to LCD TVs with NEA energy labels.
- c. All copiers are energy efficient with Energy Star labels.
- d. Use of environmentally friendly fertilisers, pest sprays and soil treatment for landscaping at all three SPH premises.
- e. Lush planting of flora and fauna on the News Centre's roof top garden reduces heat and save air-conditioning costs.
- f. Auto dispensers for hand towels installed in all toilets help to reduce wastage and save water.
- g. Auto soap foam dispensers installed in all toilets help to reduce wastage and save water.
- h. Landscape irrigation system installed at the Media Centre's roof top garden result in cost savings from reduced water consumption and number of gardeners needed to maintain the garden.

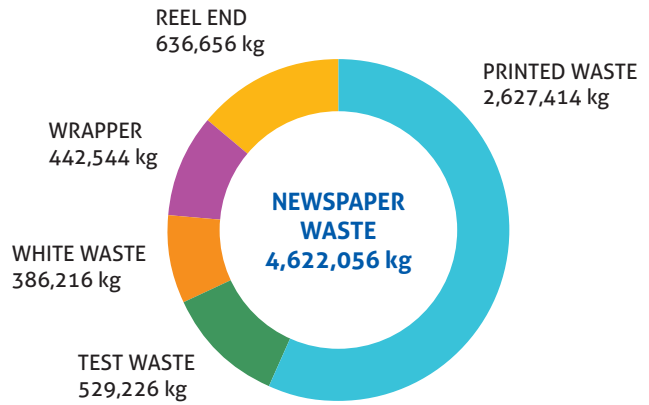
Reuse and Recycle

SPH adopts a group-wide "Reuse and Recycle" philosophy, where staff are reminded to use resources efficiently, save energy, reduce waste and practice recycling.

- a. Ongoing collection of furniture still in good condition for reuse in other divisions and subsidiaries.
- b. Ongoing collection and sale of disposed items such as PCs, furniture and electrical items.
- c. Ongoing collection and sale of empty drink cans.
- d. Ongoing collection and sale of toner and fax cartridges.
- e. Ongoing collection and sale of old carton boxes.
- f. Ongoing collection and sales of printed waste, office scrap and used hand towels.
- g. All office waste and newspapers are sorted at the refuse centres at all three locations. Those that have no recyclable value will be disposed into the rubbish compactor. Those with recyclable value will be placed at the Refuse Centre for packing, bundling and weighing before collection by the scrap contractor.

FY 2014 WASTE DISPOSAL (FOR MEDIA CENTRE AND PRINT CENTRE)

WASTE INK	27,770 kg
SOLVENT, DEVELOPER, CHEMICAL	34,590 kg
USED PLATES	296,610 kg



CASE STUDY – THE SELETAR MALL CLINCHES BCA GREEN MARK AWARD (GOLD)

The Seletar Mall, located at the junction of Sengkang West Avenue and Fernvale Road, is a four-storey mall, with five-basement levels (including three basement carparks). Occupying a gross floor area of 284,000 sq ft and net lettable area of 188,000 sq ft, it is over 90 per cent leased and will provide shopping, entertainment and enrichment choices for parents and children. The family-oriented shopping mall is scheduled to open end 2014.

Energy Efficiency

The façade of the mall is mostly solid wall which helps to reduce the area exposed to heat gain. The atrium day lighting design maximises the use of sunlight while reducing the need for artificial lighting during the day.

The mall has energy-efficient mechanical systems in place, such as mechanical ventilation with carbon monoxide (CO) sensors in carpark areas, energy-efficient air conditioning system, presence-detection system in toilets and staircases to lower lighting energy usage and variable speed escalators to reduce speed automatically when there is no usage.

With these systems in place, the mall is expected to cut its lighting power spending by 20 per cent, while maintaining proper lighting level.

Water Efficiency

The Seletar Mall uses water-efficient fittings with a minimum of three ticks certified under the Water Efficiency Labelling Scheme. The mall provides private meters to monitor the major water usage system, which allows for better control of water utilisation as well as assessing possible locations of leakage.

A rainwater harvesting tank is put in place to collect rainwater for landscape irrigation. The use of the cooling tower water treatment system reduces water consumption. There is also pipe work to cater for the use of NEWater in the building.

Environmental Protection

The mall promotes sustainable construction by using approved environmentally friendly products such as drainage cells, dry wall partitions, precast road kerbs and recycled formwork.

The greenery along the perimeter of the development at the first storey and the landscaping at the third and fourth storeys provides a cool environment for shoppers. Waste management and recycling initiatives are also in place.

The Seletar Mall is conveniently accessible via the Fernvale LRT station and bus stops, thereby encouraging the use of public transport. There are also 50 bicycle parking lots to promote the use of bicycles.

Indoor Environment Quality

The Seletar Mall has UV emitters installed within the premises for better indoor air quality and energy efficiency, which will aid in preventing the spread of infectious diseases in the mall.

Other Green Features

The Seletar Mall uses siphonic rainwater discharge system at its roof. It also provides carpark guiding system at its carparks.

The suburban mall also boasts several unique architectural features. The retail planning of the mall is based on a wide corridor organised around a voluminous atrium space. The shopping floors recede from the second to the fourth storeys in a terracing manner, creating an ambience of spaciousness and allowing a clear view of activities at the lower levels, and particularly, the main event space.

A large clerestory skylight perched above the atrium allows natural light to enter the mall, thereby ensuring a cheerful atmosphere throughout the day. Roof gardens outside the food court and the Cineplex offer an outdoor experience with views of lush landscape and greenery.

