

## **MEDIA RELEASE**

### **Educating Singaporeans to be savvy in green buildings**

*- BCA's Green Building Exhibition to give a glimpse into "green" homes and "green" professions*

*- Launched by BCA, Green Building Exhibition gives the public an overview of Singapore's "green" efforts in the built environment*

**Singapore, 10 December 2009** – Green buildings are gaining in popularity as countries worldwide explore ways to reduce their carbon emissions. For Singapore, thanks to the Building and Construction Authority's (BCA) green building masterplans, we have a significant policy tool to help our nation lower energy consumption, create green jobs and support environmental protection, all at the same time.

2. So far, the green building movement has been industry-driven and significant progress has been made to get the building industry on board. Hence, BCA is taking the green building movement a step further to reach out to consumers to help them better understand what a green building or a green home actually means. To empower consumers to make intelligent, informed decisions on green buildings, BCA started its first roving public exhibition today to inspire Singaporeans with the message that everyone plays an important part in the green building movement.

3. For the first time, Singaporeans will get a feel of how the model "green" home of the future looks like, an overview of the green building movement and a better appreciation of how the built environment is gearing up towards a "green" Singapore by 2030 – all in one exhibition.

4. The Green Building Exhibition was launched today at City Square Mall by BCA and officially opened by the Senior Minister of State for National Development and Education Ms Grace Fu.

5. Another highlight of the exhibition is the faces behind green buildings. It provides insight into the careers of "green" building professionals along the whole value chain. An estimated 18,000 to 20,000 of these professionals will need to be trained to achieve the target of 80% of green buildings in Singapore by 2030.

6. The Exhibition also features the use of advanced technology such as the 3D Building Information Modelling, which allows “green” building professionals to design, build and manage buildings seamlessly, as well as analyse building energy needs and consumption to improve the buildings’ energy efficiency. To facilitate the development of “green” buildings in Singapore, BCA will be introducing an electronic platform for the industry to submit building plans based on Building Information Modelling from January 2010.

7. Commenting on the rise in demand for “green” building professionals, BCA Chief Executive Officer Dr John Keung said, “Through this Exhibition, we want to emphasize the attractiveness of green building careers. It is indeed a meaningful career path for youths to consider as firstly, they will be involved in the worthy cause of mitigating climate change and secondly, they will be working with advanced technologies to produce creative solutions to achieve environmental sustainability. Furthermore, with more countries in the world making a commitment to environmental sustainability, such “green” building expertise will also be in demand regionally and internationally.

8. “We hope that this Exhibition will challenge our youths’ traditional perceptions about the built environment and encourage them to join us in ‘greening’ the built environment in Singapore, the region and the world,” Dr Keung added.

9. The launch of the Green Building Exhibition marks the start of BCA’s two-year public outreach and engagement programme on Singapore “green” efforts in the built environment. It is a roving exhibition that will be held at malls and other public areas across Singapore. The competitions and activities held in conjunction with the Exhibition aim to inspire younger generation of Singaporeans to take up the challenge of “greening” our buildings and homes by pursuing a “green” building career.

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### **About the Building and Construction Authority (BCA)**

The Building and Construction Authority (BCA) of Singapore champions the development of an excellent built environment for Singapore.

At BCA, our mission is to shape a safe, high quality, sustainable and friendly built environment, as these are four key elements where BCA has a significant influence. In doing so, we aim to differentiate Singapore’s built environment from those of other cities and contribute to a better quality of life for everyone in

Singapore. Hence, our vision is to have "the best built environment for Singapore, our distinctive global city".

Together with our education and research hub, the BCA Academy of the Built Environment, BCA works closely with its industry partners to develop skills and expertise that help shape the best built environment for Singapore.

Please visit [www.bca.gov.sg](http://www.bca.gov.sg) for more information.

### **About the 2<sup>nd</sup> Green Building Masterplan**

In support of the Inter-Ministerial Committee on Sustainable Development and BCA's mission, BCA has formulated the 2nd Green Building Masterplan. It is a roadmap that sets out specific initiatives to achieve a truly sustainable built environment in Singapore by 2030.

Following the successful implementation of the 1st GB Masterplan – formulated in 2006 to spearhead the delivery of Green Buildings with emphasis on new buildings and those undergoing major retrofitting, the 2nd Green Building Masterplan focuses on existing buildings. With the large existing building stock consuming a third of our national end-use electricity, BCA's 2nd Green Building Masterplan places special emphasis on 'greening' existing buildings.

The 2nd Green Building Masterplan is available on the BCA website ([www.bca.gov.sg](http://www.bca.gov.sg)).

## **Factsheet: Features of a “green” home that are shown in the Green Building Exhibition**

### **Home design and orientation**

- Features that maximise natural ventilation in our homes reduce the need for artificial means of cooling. This reduces power consumption from the use of air-conditioners and lowers utility bills.
- For toilets, natural ventilation will remove the need for mechanical fans.
- Homes designed and built with windows facing the north and south are well-ventilated as they allow natural flow of air from the prevailing winds in Singapore, which typically blow from the North to the South.
- This north-south orientation also cuts out the amount of heat from the sun, reducing the need for air-conditioners to keep the home cool.
- Homes with true cross ventilation design feature allow unobstructed air flow between its windows or vents on opposite sides. This can cool the living space without the need for air-conditioners.

### **Sun-shades**

- Good sun-shading devices provide shade and reduce heat from the direct sunlight.
- Deep balconies can also offer shade from the sun.

### **Glass**

- Using glass of a certain [thickness] on windows allows enough sunlight into the home interior and minimises electricity needed for daytime natural interior lighting.
- Glass with low emissivity coating cuts down the heat from sunlight entering the home. With the glass' good thermal and noise insulation properties, room is kept cool without the need for air-conditioners.

### **Lighting**

- Lamps and lighting consume a fair amount of energy in our homes. Using compact fluorescent lamps (instead of an incandescent light bulbs or halogen lamps) can save up to \$15 per bulb every year.

### **Energy-efficient appliances**

- Using energy-efficient electrical appliances – such as air-conditioners – with high ratings under the Singapore Energy Labelling Scheme, reduces overall power consumption in homes. This can lead to lower utility bills.
- For refrigerators, buying one with the highest energy-efficient rating can offer up to \$90 per year in utility savings. They are not only energy-efficient, but also cost-efficient.
- Gas heaters are more energy-efficient than electrical heaters.

### **Water-efficient appliances**

- Using appliances – such as washing machines – and fittings that come with high ratings under the Water Efficiency Labelling Scheme, reduces overall water consumption in homes. This can result in lower utility bills.
- Installing an integrated basin / cistern pedestal system in bathrooms and toilets reduces water consumption, which leads to utility savings.

### **Walls**

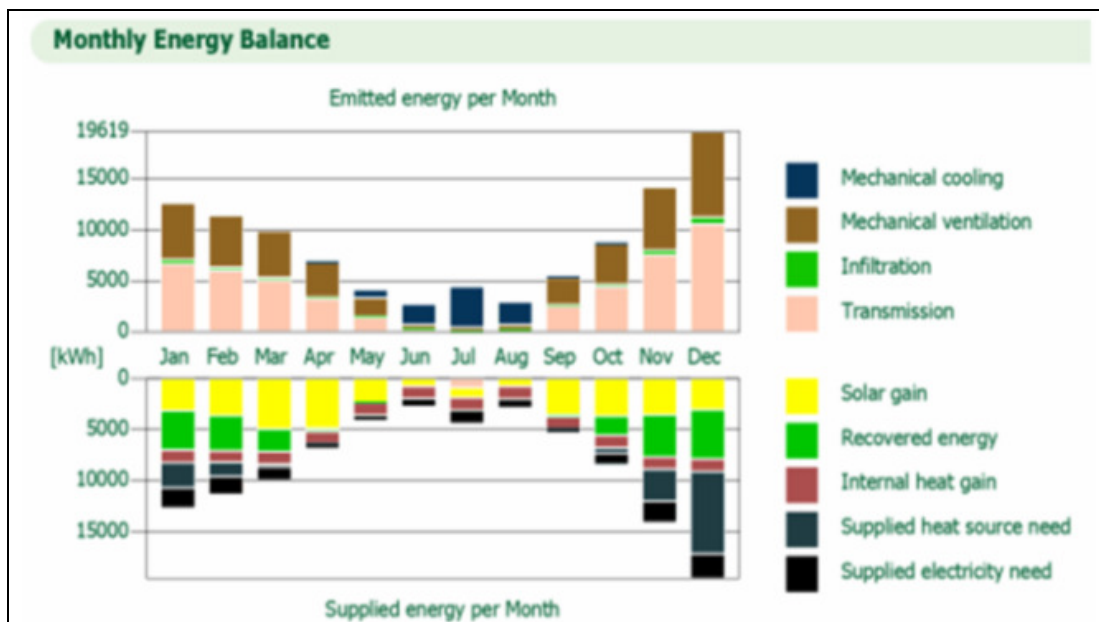
- Using paints that contain low volatile organic compounds (VOC) is more environmentally friendly as they release less harmful compounds and are less harmful to our bodies.
- Dry internal partition walls offers better insulation from noise and heat. They are also resistant to fire and damp conditions.

## Factsheet: Building Information Modelling (BIM)

Using information technology and computer design, the Building Information Modelling allows building professionals to develop building plans from the conventional two-dimensional drawings to computer-generated three-dimensional models.

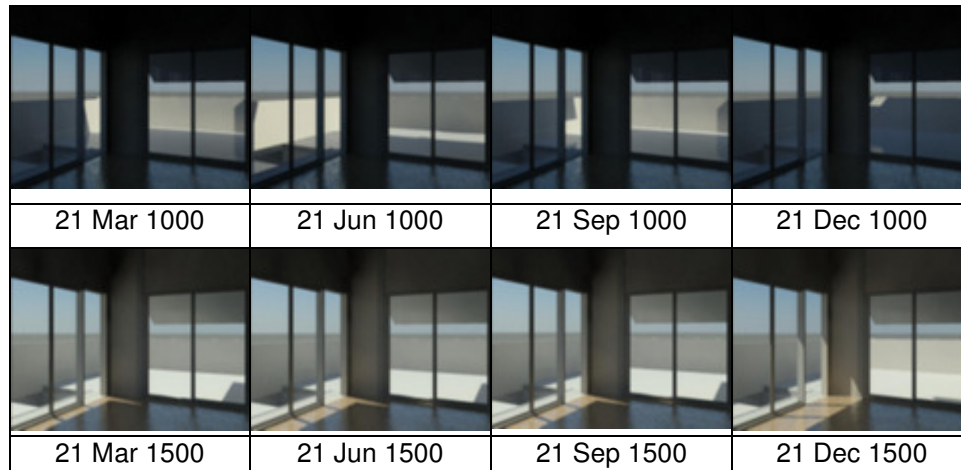
As Singapore's built environment gears towards becoming more environmentally friendly and sustainable, the Building Information Modelling facilitates the design of sustainable buildings. For professionals familiar with the technology, it offers them a platform – a modeling software with a wide spectrum of features – to develop, analyse and even test creative “green” concepts, solutions or features for buildings.

For instance, designers are able to perform energy data analysis (see example below) and to determine how “green” their virtual building models are. From here, they can explore ways to improve the building's energy consumption.



*Building Information Modelling allows professionals to perform energy data analysis*

Another feature of the Building Information Modelling is how it can simulate the amount of daylight during different times of the day, month and year. This allows architects, engineers and builders to experiment with different sun-shading features that can be integrated into a building's design.



*Building Information Modelling can simulate the amount of daylight during different times of the day, month and year*

Using the Building Information Modelling, designers can explain the concepts behind their designs using the three-dimensional models of buildings instead of two-dimensional drawings. It also allows them to create alternative designs that can be customised according to their clients' needs and preferences.



*Models of buildings generated using Building Information Modelling helps in visualising the size and complexity of buildings*

Building Information Modelling technology helps people – be it laypersons or professionals – to visualise and appreciate the size and complexity of a building. For professionals, it offers tools to help designers and contractors anticipate design problems during the early stages of a project, minimising unnecessary work during the construction phase. The finish product (building) is always almost identical to the design.



*The three-dimensional model – developed using Building Information Modelling – closely resembles the completed actual building.*

To encourage more in the building industry to adopt this technology, BCA introduced a pilot project for the electronic submission of building plans – developed using Building Information Modelling technology. More than 10 architecture sites were involved in this pilot, and their live projects were submitted to various regulatory agencies, including BCA.

The feedback from both the industry and various agencies was positive. With the success of the pilot project, the various agencies are now ready to receive and process architectural submissions – created using Building Information Modelling – from the industry starting January 2010.





*Some of the architectural submissions – created using Building Information Modelling – received during the pilot phase.*