3 DIFFERENT ZONES
3 DIFFERENT EXPERIENCES

Welcome to the ZEB @ BCA Academy—the first Zero Energy Building (ZEB) in South-east Asia remodelled from an existing building.

Converted from a three-storey former workshop, the ZEB @ BCA Academy houses offices, classrooms and a lecture theatre.

The ZEB @ BCA Academy is a zero energy building because the building produces enough energy to run itself. As a result, the building is able to produce energy to power the building.

In all, the building will save $84,000* a year in energy cost compared to a typical office in Singapore.

The building aims to achieve this through a combination of green building technology: clever building design that takes advantage of natural ventilation and lighting (this is called passive design), and the harnessing of solar energy.

*Based on an electricity tariff of $0.10 per kilowatt hour.

Why The ZEB @ BCA Academy?

The ZEB @ BCA Academy has a very important role to play in accelerating the proving of Singapore’s DARE environment.

This building demonstrates how an existing building can be remodelled with green building technologies to achieve energy efficiency and sustainability. The building also acts as a testing ground for various new innovations in green building technologies before they are tested and adapted by the building industry.

Just imagine. The ZEB @ BCA Academy could be what the future looks like!

THE ISLAND’S FIRST RETROFITTED ZERO ENERGY BUILDING

WELCOME TO A TOUR OF SINGAPORE’S GREENEST BUILDING

ZEB @ BCA ACADEMY

250 Braddell Road Singapore 579700

The tour for the ZEB is by appointment only.

For enquiries on guided tours:
Tel (65) 8246 9930
E bca_gallery@bca.gov.sg


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In partnership with:

Zero Energy Building Data Standard

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THE

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IN

SINGAPORE
ZONE #1 VISITOR CENTRE

In this interactive zone, you’ll get hands-on experience of the exciting building design strategies and technological innovation that make this zero energy building work.

Highlights in this zone:

• Shading devices: Discover how strategically placed shading contraptions can shield the building from the sun while ensuring natural lighting throughout the interior of the building.

• Living walls: See how plants placed vertically on the walls of this building can shade the walls from the sun and lower indoor temperatures.

• Mirror windows. Try out this device made up of highly reflective mirrors to understand how it can bring sunlight indoors. There a light through the ducts from the zone 2 solar energy panorama.

Other features:

• Charge your phone using solar energy! A charging kiosk will let you see exactly how energy generated from the building’s solar cells is used to power devices in the building.

• Smart building design. You will be able to see how the building is designed—incorporating various green building technologies. You’ll be shown the benefits of using green building technologies and how they contribute to energy efficiency and sustainability.

• Have a seat by the building. All seats have solar panels under the seat to generate electricity. This energy is used to power the building’s electronic devices and lighting.

• Have the entire building at your command! See the sophisticated building management system in action. This system automatically controls the various systems in the building to balance comfort and energy efficiency. Toggle the touch screen to see how much power is generated by the solar cells, how much electricity each seat is using and more.

ZONE #2 THE SOLAR ENERGY PANORAMA

Climb up to the viewing platform for a close-up look at the solar panels that power this building and other exciting solar installations.

Highlights in this zone:

• Solar panels. High-performance solar panels inside the solar energy panorama can capture the sun’s energy for the building. Bigger than a tennis court, this energy generates about 227,000 kWh of electricity a year, enough to power 50 households.

• Solar chimneys. This feature uses warm air from the roof, vented to the chimney. Throughout the building, this warm air raises the temperature of the rooms, providing natural heating and ventilation.

• Displacement Cooling. Cool air is supplied from the corner and flows down into the spaces below. This approach is more efficient than traditional air conditioning systems.

• Passive cooling. Light shades positioned outside the windows of this office reflect sunlight deep into the room. This allows occupants to enjoy natural daylight while cutting down energy consumption by artificial lighting.

• Automatic light level adjustment. Sensors in this office measure the light intensity within the office space. When light levels are sufficiently provided by natural light, the artificial light is switched off.

Other features:

• Simple Cell Therm Fan Ventilation System. This invention by the National University of Singapore, co-developed with a commercial manufacturer, regulates the indoor temperature of this building by controlling air flow and temperature, thus reducing energy consumption.

ZONE #3 THE OFFICE OF THE FUTURE

In this actual working office, you will see many futuristic green innovations being tested out.