

# UTHM wall system meets green challenge

**GREEN building** (GB) has now become a flagship of sustainable development in Malaysia that takes the responsibility for balancing long-term economic, environmental and social health.

High total load of greenhouse gas emissions and inefficient energy consumption are the issues that the building sector in Malaysia is struggling with.

To cope with this, the construction industry has been urged to use more innovative construction techniques such as industrialised building system and building information modeling.

Industrial sectors, including the building sector, started to recognise the impact of their activities on the environment in the 1990s.

Significant changes were needed to mitigate the environmental impacts of the building sector. The industry had to focus on how buildings were designed, built and operated.

In order to mitigate the impact of buildings along their life cycle, green building has emerged as a new



*The Precast Composite Wall System is an initiative undertaken by Universiti Tun Hussein Onn Malaysia that can help mitigate the construction industry's activity impacts on the environment*

building philosophy, encouraging the use of more environment-friendly materials, the implementation of techniques to save resources and reduce waste consumption, and improvement of indoor environmental quality, among others.

The Malaysian construction industry has been called for incorporating innovative construction technique and to switch from traditional to modern techniques like the industrialised building system (IBS).

IBS is defined as a construction



technique in which components are manufactured in a controlled environment (on or offsite), transported, positioned and assembled in a job-site with minimal additional site works. It is claimed that IBS has potential usage to promote sustainability from the controlled production environment, minimise waste generation, use of energy-efficient building materials and promote effective logistics.

This would result in environmental, financial, economic, and social benefits.

Universiti Tun Hussein Onn

Malaysia (UTHM) is meeting the challenge to help the construction industry by coming up with an invention called Precast Composite Wall System.

Prof Madya Dr Lee Yee Loon from UTHM's Civil and Environmental Engineering Faculty said the system is a moulded composite wall that includes a foam board enclosed with foamed concrete, preferably a self-compacting lightweight TIA concrete.

He said foamed concrete is a relatively thin skin of concrete.

Tie bars are inserted within foamed concrete to form a wire mesh system that aids in bonding foam board to foam concrete and to form a middle wall, he said.

Dr Lee said wall ends with various shapes are connected to the middle wall with the cast-ins butted in between the walls, preferably with many reinforcement bars, providing tensile strength.

For further information of the product, contact Dr Lee at 07-4564338 or e-mail to [ahloon@uthm.edu.my](mailto:ahloon@uthm.edu.my).