A home sweet home in 2 weeks

■ By Minderjeet Kaur

IS it possible to construct a building, for example, a low-cost house, manually within two weeks?

An average project, from foundation to roofing, will take more than two weeks.

However, this was made possible through the use of the Fast-Track LightWeight System by a group of researchers of Kolej Universiti Teknologi Tun Hussein Onn (KUiTTHO) led by Associate Professor Dr Lee Yee Loon with industry collaborations from Multinal Asia Sdn Bhd and CHG Plywood Sdn Bhd.

The project's co-ordinators, Koh Heng Boon and David Yeoh, with their team of students — Gopalan Ramachandiran, Chong Fui Leng, Tan Chin Kian, Mohd Nizam and Kam Chee Yuen — constructed a 680-square-foot show house using the system within two weeks in Kampung Sengkuang, Sri Gading, Batu Pahat.

The advantages of the system, which contributed to the speed of construction, are found in the formwork, the lightweight concrete and the roof system.

YOUNG BUT EXPERIENCED: KUiTTHO signining an MoA with a private sector firm.

The Hand-E-Form system was used whereby the form is self-interlocking, requiring no nailing as compared with conventional methods.

Plastering works are not required as the cast surface is smooth. The show house is columnless with load bearing walls constructed with self-compacting lightweight foamed concrete having a density of less than 1,700 kg/m3 and a compressive strength of 18 MPa at 28 days. As for the roof system, prefabricated laminated veneer lumber (LVL) roof trusses were used providing defect-free timber, accurate sizing and minimising wastage of timber.

The entire roof was completed within one day. The cost was RM22 per square feet, inclusive of foundation as compared with RM30-RM35 per square feet for the conventional method excluding foundation.

This system can be a solution to the housing demand, which promises speed of construction and effective cost. For details, e-mail: ahloon@kuittho.edu.my, koh@kuittho.edu.my or david@kuittho.edu.my.

The success of such projects can be attributed to KUiTTHO's Research, Consultancy and Continuing Education, which promotes research activities within its staff.

The university has identified six research areas: advanced materials, advanced manufacturing, information and computer technology, environmental system, construction and transportation, technical and vocational education, technology management and social science.

Although the university is still young, it has secured more than RM6 million to conduct research, particularly in engineering and technology.

In-line with the programmes that are offered at the university, RM3.5 million was obtained from the Ministry Higher Education, RM1 million from the Ministry of Science Technology and Environment (MOSTI) through IRPA and RM1.5 million as contract grants from other institution like CIDB and NAPREC.

The centre's director, Professor Dr Hashim Saim, said the grants from the Ministry of Higher Education were for short-term research projects.

The university has managed to start 80 projects in 2002, 35 in 2003 and another 17 in 2004. Eight IRPA projects are undertaken by the university staff and another two projects from contract grants starting in 2002.

To initiate and intensify research activities, the university has also set up a few Excellence Centres: Electromagnetic Compatibity Centre (EMC), Centre for Environment, Construction and Transportation Studies (CECTUS), Advanced Textile Training Centre (ADTEC), Technology Transfer Cntre (TTC), Malaysia Soft Soil Research Centre (RECESS), Tecno Entrepreneur Development Centre (TEC), Centre of Excellence for facilities management (CFMM), Wireless and Radio Frequency Centre (WARAS).

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