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**Innovations In Construction**by **Engr. C.M.M. Aboobucker, MIEEM**

**INNOVATION** in construction can be spearheaded by or occur through research and development on construction materials, construction methods, available equipment, new design concepts, just in time methods in procurement integrated project management, project delivery system and available readymade products.

Traditional construction material such as timber, sand, steel, brick, cement, concrete, etc., are being investigated to produce durable, stronger and more cost effective material for use in the construction industry. Composite material, either build-in-situ or precast (off site products), have been in use since the end of the Second World War.

Thus, there is continuous innovation. Innovation is encouraged to make construction faster, safer, cheaper and to ensure structural integrity. This issue of JURUTERA focuses on several innovative products and construction methods.

Lately, industrial building systems are being propagated to deal with the expectation of faster construction, factory controlled quality finishes, abetting with the issues such as inadequate local skills, dependency on foreign labour, etc.

The use of the metric measurement system, modular coordination, production of building elements such as panels, beams, stairways, rails, tiles and earth retaining wall panels in standard sizes has contributed to the construction industry, to meet the needs of modern housing, institutional buildings, ramps, drains and canals for infrastructure.

The safety and health of those in and around the build environment is of paramount importance. The most recent case of dry walls imported from a developing country have been analysed to contain strontium sulfide which gives a rotten egg odour when moistened and reacts with the air to take on corrosion powers, affecting metals and electrical wires. Thus, long term research is imminent on the quality of material and products.

Investment in construction works is enormous and the quality of workmanship and attention to detail need to be emphasised to gain the full benefits of these investments. Although there are researches being carried out on trial applications of new materials and products, few of these have caught the market's attention.

Some examples are the use of ferrocement products, rice husk cements in concrete and fibre reinforced concrete. Concerted and coordinated effort is required to propagate these material on a large scale. The question is, who will lead us in this direction?

Engineers have also tried to reduce construction cost in formwork and concrete with new design concepts, such as utilising steel sheets or introducing transverse beams and using removable corrugated steel sheets that serve as formwork to form short-span slabs, in order to reduce concrete volume and steel reinforcement in flat slabs.

IEM could play a role together with PAM, ACEM and CIDB in establishing a database on the researches carried out, and in the publishing of Best Practice Guides where information on material properties, methods of assembly, safety considerations and cost-benefit analysis are included to progress with innovative construction. ■