

Green's the colour of construction

TRENDS According to a survey, energy efficiency is a priority in construction projects, which is why building solutions are going green, notes Bindu Gopal Rao

The recent Carlton Towers fire in Bangalore could have been largely contained had a new construction technology been deployed. New ideas in building technologies are changing construction dynamics. These encompass a wide spectrum of activities spanning from green initiatives to new guidelines in safety standards to conservation of power. As the environment we live in changes, so do building solutions.

Changing times

Construction technology in India over the past few decades was extremely conservative in approach. However, with the opening up of the markets and the subsequent realty boom, a great need was felt to implement technologies that could speed up and accelerate construction. "These technologies include efficient and light weight aluminium shuttering systems like 'Mivan' to technologies developed using pre-cast construction.

In addition to speed, eco-crisis has become an issue of serious concern, a significant part of which is caused by construction. To address these issues, "green building technologies" have gained immense importance wherein there's a lot of focus at every level, commencing with simple systems including resource optimisation, bio-walls and roofs, water management with zero-discharge systems, energy supplementation through alternative resources and waste management," explains Indrajit Kembhavi, Principal Architect, Kembhavi Architecture Foundation. For instance, Johnson Controls Building Efficiency busi-

ness makes buildings more comfortable, productive, safe and energy-efficient. Their products and services include HVAC&R equipment and control systems, industrial refrigeration, fire and security systems, and services for commercial, industrial and residential buildings. In fact, products and services in this space are constantly seeing innovation like never before, compelling builders to rethink their building solutions.

Aurigo's BRIX 2009, the company's fifth generation product is a comprehensive capital programme and project management system (CPMS) that completely automates the entire lifecycle of a large capital construction project; starting from estimation, planning, project monitoring, site inspection, asset maintenance and even asset disposal. Further, it integrates seamlessly with standard ERP platforms to create industry ready ERP solutions for the infrastructure and construction verticals.

"This helps companies streamline their processes, control costs and reduce delays. The bottom line is that in the infrastructure domain, the spend on implementing IT tools provides immediate ROI. For example, even a mere one per cent cost reduction in a small Rs 100 crore road project cost is sufficient to recover the investment made in technology," says Balaj Sreenivasan, founder & CEO, Aurigo Software Technologies.

Drywall technology
Fabtech's Saral Plaswall is a unique lost-in-place system or permanent concrete form which replaces costly steel, alu-



ENERGY EFFICIENCY
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SOLUTION PROVIDERS (from



l) Krish Murali, Milind Godbole and Balaj Sreenivasan



Subramanian, MD - Saint-Gobain Gyproc India Limited.

minium, plywood for work brick laying, plastering, cement rendering and producing complete load bearing wall.

Likewise, Saint-Gobain Gyproc gypsum plaster board are based on a drywall technology. Gypsum is a light-weight material which is formed as the result of evaporating sea water in massive prehistoric basins and has excellent insulation properties (both thermal and acoustic) and can offer very good passive fire protection, moisture resistance, impact resistance and vapour control when used in combination with the right systems.

Studies have shown that acoustically designed spaces can increase the overall producti-

ty in terms of better concentration level of people working in offices, allow clearer communication in schools thus increasing the effectiveness of teaching, facilitate a disturbance free environment in hospitals thus ensuring faster patient recovery in hospitals etc.

"Keeping this trend in mind, Saint-Gobain Gyproc is launching its global acoustic solution, Ecophon in the Indian market. Ecophon's mission is to contribute to a good working environment for the eye, the ear and the mind. This is done by supplying sound absorbing ceiling and wall absorber systems with well devised functions, attractive design and excellent sound absorption," says Venkat

Subramanian, MD - Saint-Gobain Gyproc India Limited.

Trends

According to the Energy Efficiency Indicator (EEI) Survey, conducted by Johnson Controls for Corporate India in 2009, more than 92 per cent of the respondents say that energy efficiency is a priority in new construction as well as in renovation projects. The EEI findings highlight the fact that business leaders are becoming increasingly aware of the need for energy efficiency and the potential impact this can have on reducing operating costs.

Evolving trends in building solutions include speedy construction techniques to turn

around more built-up space in a shorter time frame, involving pre-cast, pre-fabricated, aluminium shuttering technology and the like. Reliance on machinery and modern equipment to maximise quality and reduce error is also being seen.

Most importantly evolution of green design practices to improve efficiency and performance of buildings has taken precedence.

"There is a growing demand for renewable energy - solar, biomass, geothermal, wind, photovoltaic. Reason is not just the rising energy prices but also the growing awareness of the economic and environmental impact. The result is a cleaner source of energy, reduced emissions, less cost volatility, greater energy independence, all while you operate with cost reduction," says Pramoda Karkal, Vice President & Managing Director, India, Johnson Controls. With the upsurge in infrastructure investment, infrastructure companies are realising the role technology can play in increasing profitability.

"The one big advantage for the Indian infrastructure com-

panies is that as first technology adopters, they are not burdened with legacy systems. They can leapfrog the latest feature rich use, standard solution at a cost that is a fraction of what it was a decade ago," opines Sreenivasan.

"People are moving towards modular systems. Fabtech started this trend back in 2002, we launched our modular facades. Pre-engineered walled partitions in place of brick and concrete (for the pharmacy)," says Asif A Khan, Fabtech Technologies.

The green equation

An obvious and much talked about aspect is that of conservation of environment. Says Krishna Eswar (COO BCIL), "We have been attempting to bring in the spirit of living into our buildings. Our floors are made of natural materials that require less energy to manufacture; our walls are made with chemical-free paints; our ceilings are fitted with efficient lighting that consumes much less energy than traditional lighting. You get better visual comfort through fenestration - the windows - open out to nature. We have race gardens ensure that the air is cool always."

BCIL's air conditioning system is either a chemical based handling system or a natural based system that does not hurt the planet. The buildings come with a plumbing system where water that drains from the basin goes to a treatment plant.

The treated water fills tanks in the closet. The water then is treated in a plant and the treated water is used for campus irrigation. Other external washing "Glass can save as much as 40 per cent energy by reflecting entry of natural light, protecting from harmful rays and controlling room-temperature."

As a result, the need for high performance glass buildings has increased. "Glass is used extensively," adds Mukul JMD, Hindustan Glass Group.