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Precast concrete is the future

by Shikha Mishra

Dec 6, 2008

Precast concrete is a form of construction where concrete is cast in a reusable mould or form which is then cured in a controlled environment, transported to the construction site and lifted into place. In contrast, standard concrete is poured into site specific forms and cured on site.

Precast concrete can be used for all buildings ranging from residential complexes to highways, bridges and highrise buildings.

Frank Schlotter, vice president of Vollert Weckenmann, says precast concrete is more commonly used now as it saves costs, time, and it can be used to erect houses and multi-storey buildings in a faster way. "It gives a better quality of buildings," he says.

Contrary to popular perception, precast concrete is not more expensive than block concrete.

"It is a better way to build. Workers who are manufacturing precast panels work under better conditions. The raw material for precast and regular concrete is the same, but when you use concrete on construction site, it is fresh and fluid, so you have to use more processes on site by hand. When you use fresh concrete in a production hall, you can use machines which are preparing it, as opposed to on a site where a worker has to do it by hand," says Schlotter.

Erecting a precast wall takes about half an hour, while building a wall made out of concrete blocks can take one day, so the difference in the two methods lies in time taken for the process, which is especially important to the fast-track projects of Dubai.

But the Middle East construction market is still resistant to change and a number of contractors are not used to handling precast panels.

"Historically, the way to build here is block by block as the labour cost is very cheap. The first company which produced precast panels was Mammut. They started four to five years ago with precast and this year they have been successful in using it. It is the mind set which needs to change as it is a completely different way of working," says Schlotter.

Mohammed Edwan, engineer of Concrete Technology, says that the way the region works is changing slowly and the advantages of precast concrete will become apparent to contractors in the near future.

"Precast concrete is a very fast building process that offers a complete solution for structures," he says.

Concrete Technology manufactures precast concrete in its factory in Ras Al Khaimah and its material is being used in the construction of Dubai Industrial City and the Rembrandt project in Dubailand.

"Precast concrete is precast in factories and then pre-stressed so it can used as a structural solution, it is solution that saves time. And saving time is saving money in this business," he says.

As the slowdown in the construction market is projected to correct itself in the near future and the construction industry rises up again, the cost of labour might rise as well.

"We are convinced precast will be very successful in the future in this region as the manufacturing of precast panels will get more viable. With the rising need for living spaces, for fantastic buildings which need to be built fast, then there is no option but to go for precast," says Schlotter.



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Precast concrete is the future

by Shikha Mishra

Dec 6, 2008

Despite the fact that the Vollert Weckenmann stand saw fewer visitors at the Big 5 this year, Schlotter is convinced it is a temporary phase and the market will bounce back. "Yes, there is a slowdown. We are disappointed with the visitors at the show this year. But, we hope it is just a phase that will last for a few months," he says.

Vollert Weckenmann is going ahead with its expansion plans for the region and is building a second plant to manufacture double slabs in Ras Al Khaimah. "Combined with our first factory, the two factories will be able to produce 1000 m² of precast concrete elements on a daily basis," says Schlotter.

Vollert Weckenmann's precast concrete is being used on the Al Raha Beach project in Abu Dhabi by Aldar.

Concrete by itself can be unsightly to look at. The solution lies in concrete formliners which are used to create a pattern or texture on the concrete. These patterns can be used to create surface treatments and textures that are more pleasing to the eye.

It means that there can be a beautiful decoration on the concrete without having to flat apply on it afterwards. Formliners are used on precast concrete to give it a beautiful design with very little cost as a mould can be re-used about 100 times.

Reckli supplies readymade formliners in 250 standard patterns, which are usually glued to the shutters in the precast yard on the concrete moulds, then we have a release agent that has to be applied to the formliner, so the concrete can be cast and released without any damage to the concrete.

"Formliners can also be used to create logos like the Nakheel logo on the bridges in the Marina area in Dubai. Even the most delicate design can be reproduced as rubber moulding adapts to concrete very well without taking off any corners," says Chris Tometzki, area manager, middle east region, Reckli.

Using formliner increases the cost of the concrete by 5-10 euros per m² or less than that as most formliners are reusable.

Khansaheb are the local distributors for Reckli in the region. Reckli has recently won a contract for its formliners to be used on the bridges on the Palm Deira project.

"It will be a very beautiful and unique design with leaves and branches. It is the first time something so interesting will be done on a bridge in Dubai," says Tometzki.

Working in association with Reckli in the region is US-based company Nawkaw.

Nawkaw deals in concrete staining products that are used to change the colour of concrete after it is erected and can be used to colour in patterns created in concrete.

"Staining products can be used on damaged precast panels as these can be used to repair concrete damage. They penetrate the surface and highlight the concrete instead of hiding it under paint," says Russell Gray, president and CEO, Nawkaw.

The IDAT CAD software is a newly developed tool for the production of precast concrete units. Production-compliant data provide the best conditions for the entire planning phase. Whether it is creating a floor plan from scratch or from detailed design plans based on conventional paper or using existing digital plans, the software is able to plan walls, ceilings, stairs, facades, columns, beams and special features such as balconies in precast concrete.

