

ADOPT A DIFFERENT SOLUTION

says SPA chairman Peter Camber

Much has been said and written over a long period about the need for off-site construction. The lack of available skilled trades, reduced training and high-profile initiatives such as Egan have put the issue under the spotlight.

The fundamentals are unchallenged – now is the time to adopt a different solution. Why therefore is the industry still talking and not doing? We should be turning the opportunity into reality based on the principle of value not cost.

The recent Offsite 03 showcased several solutions using various materials including precast concrete. All had the capability to move the construction industry into the 21st century and bring the UK up to the standards already enjoyed in other parts of the developed world. In Europe, Japan and USA, off-site construction is the preferred method, not the alternative. There are companies providing solutions of superior quality and timescale than the traditional UK methods.

Companies in the SPA are ready and highly enthusiastic to adopt a similar approach. We need like-minded customers who want better value, flexible choice, shorter timescales and improved quality. This can be achieved by adopting a fast track philosophy from initial concept by carefully selecting a fully committed team and supply chain.

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A CIRCULAR CLIMB

Hanson's growing expertise for casting unusual staircases has led to housebuilder St Marks Homes of Wembley taking delivery of a 3-storey set of circular staircases and landings to sit inside a central feature circular access tower for their development of flats at Widmore Road, Bromley, Kent.

The staircases were to be cast in-situ but, for the construction team, guaranteed accuracy, quality of finish, speed and ease of erection made precast the ideal solution.



Right Next Door

Staff travelling by car to the Leicestershire headquarters of leading retailer Next will shortly benefit from a new 6500m² car park. Tarmac Precast Concrete designed, manufactured, supplied and erected frame components and prestressed double tees in a £1.1 million contract. The frame components were manufactured at the company's Henlade factory in Somerset and the double tees at Tallington, Lincolnshire.

Commented Paul Whitham Tarmac's commercial manager "This is the latest in a series of car park projects where double tees have been an integral part of the company's design solution. Current car park projects include retail developments in Winsford, Cheshire and Pescod Square in Boston, Lincolnshire".

30% cost savings



It was recognised early on in the development of Garstang Marina that the design and construction of the supporting perimeter walls would be one of the most critical elements of the entire project. The original design had specified driven trench sheeting made from steel. But the client was concerned about the costs and asked for alternatives.

John Lowrey, managing director, Askam Construction, explains, “We have never used precast concrete walls on previous canal projects but we calculated that they would offer a 30% cost saving over the steel sheeting.” Bell & Webster Concrete was chosen to supply 406 units 1.5m high by 1m wide, weighing ½ tonne for the first phase of the project.

A further 718 units were ordered for phases two and three. “The precast concrete units are perfect for the job,” says Robert Chippendale, Garstang Marina. “They even have a little ‘give’ in them. Therefore, should a boat hit the side with any significant force, the risk of damage to both the marina and boat is reduced.

A study in crosswall

Bison Concrete Products is supplying 22,740m² of precast concrete walling, 23,610m² of precast prestressed flooring and 145m³ of precast staircases for a 948 bedroom student accommodation in Deptford. When completed, this two phase project will consist of eleven buildings ranging from four to ten storeys.

Architect: Willmore Iles

Main Contractor: Jarvis Construction

Engineer: Curtins Consulting



Another string to the bow

In another of Ebor's frequent departures from the usual manufacture of stairs, ground beams, retaining walls and dock leveller pits, the factory is currently producing circular concrete encasement of structural steel columns. Formwork is cardboard tubes with a plastic liner which gives a high-quality surface requiring minimal surface finishing to achieve the high standard demanded by Aren Building Concepts (High Wycombe) Ltd and the end user - Ikea.

Following an earlier report on investment in cranes, the company continues to purchase modern machinery and has recently acquired a new automatic link bending machine for the reinforcement department. Bent bars up to 12mm can now be produced in record time, freeing labour to assemble prefabricated reinforcement cages rather than spending time cutting and bending on existing semi-automatic machines.



Precast graduates at university

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Trent Concrete produced an entirely precast solution – a special reconstructed stone precast concrete frame and Hardwall composite sandwich cladding – for a new building linked to the main student hub at The University of Nottingham.

Both the frame and the cladding were cast in an acid-etched reconstructed Portland stone mix. The concrete columns are typically 350mm square and 15m in length, manufactured and installed in one piece with a pinned connection to the pile caps. Precast concrete shear walls provide lateral stability. All edge and spine beams are connected to the columns via the Trent T6 system. Perimeter ties between edge beams to columns/shear walls are made via welded connections, which remove the curing period required for more traditional grouting methods.

Trent addressed the project requirement for no structural screed on top of the hollow core flooring by applying in-situ concrete stitch zones to cater for internal tie forces, and thus create a floor diaphragm within the 260/200mm pre-stressed flooring thickness. Cladding components have



been integrated wherever possible with the “L” profiled edge beams, thereby reducing component quantities and providing efficiency within the structural beam design.

Internally, the exposed beams and columns will be painted white to maximise both the thermal capacity of the concrete, and the light levels, contributing to the building’s energy efficiency.

This entirely precast solution

offers cost-efficiency and programme benefits with a total of 940 components being erected in 18-weeks.

Client: University of Nottingham, Director of Estate Management

Architect: Michael Hopkins & Partners PLC

Contractor: Willmott Dixon Construction Ltd.

Engineer: ARUP

There are difficulties to overcome, not least the traditional procurement route that is focused on cost rather than value. We should reflect that the structure is only a small percentage of the overall cost when compared with the cost of fit out. It’s a bit like saving pennies for gold taps. My comments only relate to structure but in practice the philosophy can be extended throughout including foundation, internal fit out, M & E and the roof. The argument has been won; SPA members are in a position to deliver. Please give us the opportunity to put it into practice.

Finally I would like to express sincere thanks to the retiring chairman Mike Downing for all his hard work and efforts in raising the profile of SPA and consolidating the position of its members in a strong and forward-looking industry.

Peter Camber is managing director of CV Buchan.

Introducing the ultimate solution

Milbank Industries will shortly be able to offer developers and contractors the ultimate solution in factory-built wall construction.

Unlike other off-site construction techniques, Milbank will provide 250mm-thick brick-faced external walls, insulated and with a rendered finish to the lightweight concrete internal skin. These storey-height sandwich panels,

up to 8m long, will be delivered to site complete with factory-finished fenestration and door sets.

The company is close to obtaining BBA approval for this system, that has been developed over 40 years on the European



houses; it does not rely upon large repetitions to make it economically viable, as it is based upon a brick module.

An integrated CAD/CAM process produces the fully factory-finished wall panels within a three-day cycle – this includes glazing, cills, external doors and internal electric conduits. Danilith currently manufactures 200 – 250 detached houses per year.

mainland by the Belgian firm Danilith Delmulle.

A unique feature is that the panel has been designed for one-off bespoke

Fabrication to the Fore

As part of the ongoing development of its Merry Hill Shopping and Leisure Complex, client Chelsfield PLC has appointed design build contractor S.C.C. Limited to construct a 1600-space car park and residential

development valued at £14 million.

Due to client demand for a very high standard of finish, Chelsfield was keen on securing a solution that would provide the necessary finish within the tight programme. This has

been achieved by the use of an off-site prefabrication method designed in conjunction with INC Design acting for the client, Building Design Partnership and Nolan Associates for the residential area, with Pulmann Associates and Hill Cannon Partnership

being responsible for the car park. Most of over 3500 prefabricated components being produced at SCC Ltd's Reddish factory will be for the car park.

Work commenced on site in the second week of January with the handover of the car park scheduled for mid-October.



New walling system helps fast track construction

A new walling system 'ProWall'® has been developed by Roger Bullivant Concrete Products to help fast track construction on warehouse and distribution centres.

Used in place of cladding and some steelwork, the system drastically reduces or removes completely the numerous return visits required by steelwork and cladding contractors around the loading bay areas of the building.

The 'ProWall'® units, which are fully insulated to meet current building regulations, complement the successful range of precast dock leveller pits supplied nationwide by the company.

"The units are manufactured in our Burton on Trent factory and delivered to site complete and ready for rapid installation which means that follow-on work such as fitting dock levellers and shutter doors can effectively be removed from the

building's critical path", said RBL's national sales manager, Trevor Howells.

He continued, "We have already used the new ProWall® on a number of contracts and are negotiating several other schemes."



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