

A TOTAL PRECAST SOLUTION FOR CAWARRA ROAD

PROJECT: 38 CAWARRA ROAD, CARINGBAH, NSW

PRECASTER: ALPHA PRECAST

CLIENT: PARKES GROUP ASSET HOLDINGS

BUILDER: PARVOY CONSTRUCTIONS

ARCHITECT: PHIL O'DONNELL ARCHITECTS

ENGINEER: VALAIRE AND ASSOCIATES

The specification of offsite manufactured building products in construction is on the rise, with companies growing wise to the advantages of moving the building process off site and into a controlled factory environment. This has certainly been the case for PGAH Constructions—a company who opted for a total precast solution for their new industrial development.

When complete, a new development on Cawarra Road in Caringbah, NSW, will house industrial warehousing, office and carparking spaces. When embarking on the project, the focus was on ensuring expansive column-free spaces and a flooring system that will carry loads of up to 15 kPa.

To achieve this brief, precast concrete floor slabs, walls, columns and beams became the favoured option and National Precast member Alpha Precast, was awarded the contract to manufacture all of these elements. The precaster supplied and erected 49 columns, 39 beams and 2,790m² of V-Slab flooring—a total precast value of \$2,210,000.

A PRACTICAL PRECAST TOPOGRAPHY

The building consists of four levels with suspended floors for carparking spaces and two office levels, as well as warehouse spaces accessible from one street front. The lower level warehouse has

a high ceiling and mezzanine office, accessible from a second street front. A height difference of more than 4 metres is present between the two access roads and the warehouse space has been arranged as a multi-story design—meaning that a practical use of the site topography was required.

Alpha Precast's General Manager, Daniel Nassar, advises that the precast proposition offered a range of benefits that insitu methods could not. Onsite labour, supervision, the need for amenities, waste removal, site clutter and material deliveries were all either considerably reduced or totally removed.

"Using precast prestressed beams and flooring gave greater spans, enabling a reduced number of columns," he details.

"Using conventional insitu concrete would have required a lot of formwork to cater for the 7 meter clearance between the lower ground floor and the main warehouse floor, and a lot of propping would be required to allow trucks to safely access this floor. We eliminated all the insitu formwork and this enabled a large cost reduction of formwork and propping to those heights."

SPEEDY CONSTRUCTION WITH V-SLAB SYSTEM

The flooring system that was used for the project was Alpha Precast's V-Slab system—a product that achieved a structurally integrated floor with a smooth surface finish.

The system was chosen for the Cawarra Road development because it is able to span long distances under construction loading, without the need for propping—meaning that as soon as a slab is erected, it serves as an instant working platform. As well, it eliminates the need for falsework.

Mr Nassar reveals the client chose the system because it offers a highly efficient method of constructing a suspended floor.

"We were able to bring the construction time down considerably because the beams and



columns were prestressed in the factory and we didn't have the usual waiting times before we could access the floor," he explains.

Columns can be installed above the floor, on the day after the floor is topped, and most importantly, the floor below—which is clear of propping and formwork—is ready to for immediate fitout.

"In conventional construction we would have to wait several weeks before fitout could take place. We were able to keep the project rolling over, taking advantage of the fact that the panels, beams and transfer elements were made off site," Mr Nassar adds.

SUPERIOR FINISH

Not only did the precast flooring system achieve cantilevered floors and faster construction times, but it also provided a higher quality of finish.

"This particular system offers a much superior finish to insitu flooring because the elements are cast on steel beds," Mr Nassar says.

"The steel beds give a Class 2, off form finish all round. Minimal formwork joints are required due to the wide slabs and because of the very consistent and minimal deflections of the prestressing system, the finish is much more visually attractive, especially when looking along the soffit."