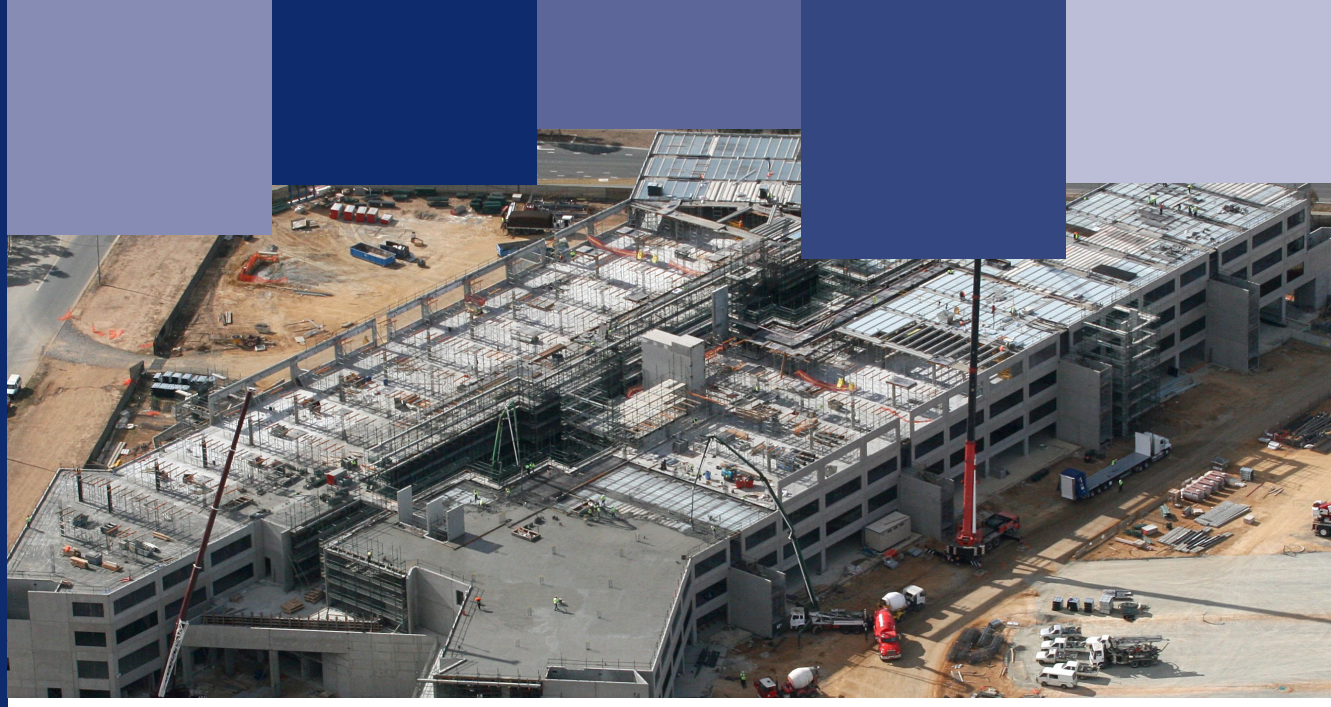
Centrelink Canberra



Precast aids working together at Centrelink

When Architects, Builders and Precasters team up early, the rewards can be significant for all parties. GSA Group Architects, working with Multiplex Constructions on the new Centrelink National Support Office in Canberra found that teaming up with Ultrafloor (Aust) Pty. Ltd. delivered the rewards of a fast track and largely problem-free construction.

Centrelink is a large decentralised organisation of 24,000 people, with its head office located in Canberra. Its growth found it occupying eleven separate buildings in Canberra, so a decision was made to construct the National Support Office in the Tuggeranong town centre precinct, with the majority of staff in Canberra in the one building. Centrelink has achieved this through the development of the new Greenway building of NFA 40,000 square metres, for its intended 2,750 on-site staff.

The new building consists of two parallel north-facing buildings of four and five storeys, with large floor plates and an internal 'Main Street' atrium. The building consists of the two main buildings stretching over 180 metres in length joined by a six-level glass atrium, known as 'Main Street'. The design provides flexibility for office spaces to be simply reconfigured as needs change. The building also delivers ample meeting rooms, breakout areas, a café, an auditorium, a kiosk, and 1,100 car parking spaces. A basement of 5,000 square metres below general ground level is provided for services, archive storage etc.

Precast manufacturer
Ultrafloor
Advanced Precast

Architect
GSA Group Architects

Structural Engineer
Sellick Consultants

Head Contractor
Multiplex Constructions

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Tim Pope, Multiplex Construction Manager, said: "To maximise the success of a project, and to obtain the maximum advantage of using precast, an early coming together of all parties is essential, to pre-plan for the eventualities that are part of the building process."

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The tight fast track construction programme set by Multiplex required that the installation of the floors was a critical element. Ultrafloor were able to respond by each week installing up to 5,000 square metres of flooring. That's the equivalent of a massive 50 house floors in area. The Ultrafloor requirement was for six levels of suspended precast concrete flooring, amounting to 50,000 m2 GFA in total.

Providing the Architect's viewpoint, Warren Meadley from GSA Group said: "The constraints involved with precast flooring require the input from all services consultants to ensure that the services requirements are met. The development of the structure incorporating the precast flooring system was an absolutely collaborative process."

The design live load of 4.0 kPa generally, with 10.0 kPa in compactus areas, all in addition to a static design load of 1.0 kPa. Typical floor-to-floor height is 3.85 metres.

A structural grid of a generous 8.4 metres by 8.4 metres dictated that an innovative development be required that allowed floor-to-floor heights to be minimised. The solution chosen was the Ultrafloor metal deck system supported on Ultrashell band beams. In each band a notch 1500 mm wide x 220 mm deep was formed to accommodate air-conditioning ducts. This innovative development allowed floor-to-floor heights to be minimised with the downstand band beam concept having nil effect in this regard. Band beams at notch locations were wet-cast prestressed elements 1800 mm wide by 150 mm deep.

Precast band beams were supplied up to 11.6 metres in length for special locations. The Ultrafloor deck was tied into precast panels around the perimeter and at lift shafts and stairwells. Product was supplied from the ultra-modern Ultrafloor production facility in Hunter Valley of NSW.

Matching the pedigree of its structural solution, the new building will achieve a 4.5-star Australian Building Greenhouse Rating. The building incorporates leading-edge ecologically sustainable development innovations in areas such as energy consumption, greenhouse gas emissions, stormwater and grey water containment, and minimisation of water consumption and waste. Chilled beam air conditioning will provide substantial energy savings. To help reduce water consumption levels, the site will have tanks for half a million litres of rainwater for use within the building. Hot water for the building will largely come from renewable resources, such as solar panels and/or wind generators on the roof. Fit-out is planned to be completed by November 2007.