Holcim

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QueensPlaza - Stage 1

Project Report - Queensland

The QueensPlaza retail development is situated on the corner of Queen and Edward Streets in the Brisbane CBD. The 8,400m^2 site is designed to house prestige tenants such as David Jones, designer boutiques, Prada and Gucci. The $300 million development comprises five levels of retail space above four levels of parking and loading dock facilities.

Key design criteria

The main design criterion was to develop a heavy-duty foundation and lower levels for the QueensPlaza building. This is to allow for the future development of a 30 storey residential tower, above the car park and retail levels.

Specification requirements

The specification requirements included post-tensioned concrete for the floors (22MPa at 4 days with a shrinkage requirement of 650µm). The lower floors were constructed using 32MPa concrete with a maximum aggregate size of 20mm with a shrinkage requirement of 650µm. The columns were constructed using 65MPa and 80MPa concrete.

Concrete used

The concrete used for the QueensPlaza retail development includes:

- 80MPa and 65MPa for the columns
- 22MPa at 4 days for the post-tensioned concrete floors
- 32MPa Superspray™ for rapid construction of retaining walls
- early strength concrete (32MPa at 3 days)

Solutions developed

Solutions were developed to ensure the satisfactory application of Superspray™ to facilitate more rapid construction. Load size was optimised to ensure that consistent vertical application of Superspray™ was achieved. Pumping problems encountered were managed by discharging concrete into a main pump hopper at road level and then subsequently transferring material to a trailer pump located 22m below ground level. The trailer pump then pumped the Superspray™ to its final application.

Location	**Brisbane, Qld**
Client	**Gandel Retail Management**
Contractor	**Watpac Constructions**
Engineer	**MPN**
Products supplied	**25,000m^3 of concrete including:** • 80MPa • 65MPa • 22MPa at 4 days
Commencement	**September 2003**
Completion	**June 2005**