Multiplex Steel Framed Tower

50 Londsdale Street, Melbourne

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Geoff Thomas
Multiplex

Speed of Construction

A need to ensure a guaranteed completion time was the motivation for Multiplex deciding to chose steel composite construction at 50 Lonsdale Street Melbourne.

Engineering

Peter Chancellor of Connell Mott MacDonald, the design engineers on the project said that: "We produced designs for two versions – in post tension concrete and in steel. Both were costed by Rider Hunt and were pretty close. Because of similar floor-to-floor heights of 3.95 metres for the concrete and steel alternatives and the same vertical interval for accommodating services, there was no significant variation in costs for services."

Multiplex, the builder on the project, then made the call for the steel version, and the detailed design was done. In making the decision to use steel Multiplex said that steel presented less risk to the building program and a significant reduction in labour resources.

Chancellor went on to say that: "There was a tight program for this job, and Multiplex felt there was a lower risk with the steel option as more of the components could be fabricated off site."

"Another benefit was the jump-start method of construction for which steel is very suitable. The lower podium floors are quite complex post tensioned concrete structures so it was advantageous to be able to remove these from the critical path for the project. The tall steel jump start columns protruded above the podium levels, and meant that by building on top of those jump start columns, work could proceed on the upper levels, while the complex and time consuming podium floors were attended to. Steel construction is ideal for this approach," Chancellor concluded.

Architects

According to its proponents, the new Urban Workshop at 50 Lonsdale Street, Melbourne, designed by John Wardle Architects in association with Hassell and NH Architecture, has "unparalleled modern features that will set new standards in office accommodation." Built for the Industry Superannuation Property Trust, the majority of the building's occupants will be within 12 metres of a window, no matter where they are in the 54,000 square metres of floor space on the 34 above ground levels. There are 5 basement levels.

Column Free Spans

The design is for an asymmetrical core with a central 12 – 14m primary beam and 12m spanning secondary beams. Circular tubular steel exterior columns and rectangular plate welded hollow section interior columns are concrete filled.

The column free spans provided by the design was a massive selling point for the client enabling significant improvement to efficiency of work station layouts.

Project Management

Multiplex was very impressed with the speed of construction afforded by steel framing and was delighted by the professionalism of the fabricator GFC. "GFC offered a 'total solution' service inclusive of fabrication, erection, decking and stud fixing which is very attractive to the builder."

Competitive Costs

From a management point of view this project would have taken 150 form workers on site in concrete construction instead of 10 for steel. This has substantial implications on the costs for preliminaries with an estimate of the builders premium for steel being 13% for steel compared with 15% for concrete. This coupled with a speed differential of 10% estimated for this project resulted in a considerable advantage in cost of builders preliminaries for steel that is not generally known or often not taken into account in the initial structural choice decision.

"The clear floors afforded by the steel design was the most significant advantage as with concrete, 3 floors would need to be back propped and we would be unable to work on these....and hence service rough in (ie the base building services installation), could commence immediately on the floor below with a steel structure,". commented Geoff.

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Multiplex Steel Framed Tower

50 Londsdale Street, Melbourne

Project team

Developer: ISPT
Architect: John Wardle Architects in association with Hassell and NH Architecture
Structural Engineer: Connell Mott MacDonald
Builder: Multiplex Constructions
Steelwork Contractor: GFC Industries
Steel Detailer: Straightline Drafting
Quantity Surveyor: Rider Hunt
Fire Engineering: Norman Disney Young and Victorian University of Technology

STRUCTURAL STEEL delivered:

- Earlier Occupation
- Reduced Risks
- Larger Column-Free Space
- Competitive Cost

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