
J.J. MARINO & ASSOCIATES

Consulting Engineers

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20 August 2007

UrbisJHD
L21, 321 Kent Street
SYDNEY NSW 2000

ATTENTION: MR PAUL ALTREE-WILLIAMS

Dear Paul,

**RE: DWYER'S REDEVELOPMENT
CROWN STREET, WOLLONGONG
PRELIMINARY DESIGN PHILOSOPHY**

At your request, we have reviewed the architectural concept plans for the purpose of assessing whether a feasible structural scheme can be designed and constructed for the proposed development.

As part of our review we have provided a series of sketches, namely Dwyers / Sk_1 to Dwyers / Sk_9 inclusive. This letter should be read in accompaniment with these sketches. These sketches show the maximum depth of structural zones required for various areas of the development. Please note that these depths relate to the deepest structural elements, e.g. beams. Beyond the beams we would expect the deepest slab thickness to be 200mm.

Our comments / assumptions are as follows:

- The proposed layout of the residential towers above the Roof level appears suitable for a system such as "Ritek" or equivalent. Our preliminary load rundown calculations have been based on the adoption of such a system, leading to the structural depths for the transfer at Roof Level.
- The remaining roof level was assumed to be trafficable also.
- All structural depths / zones noted are based on post-tensioned concrete design, with the exception of the roof over the cinema zones. Due to the clear spans involved over the cinemas, a steel framed system with a concrete slab on structural formwork was deemed to be the more appropriate solution.
- Indicative locations of columns under (and over in transfer situations) are noted on the sketches.
- Level 5 extends to cover the footprint of the residential tower noted as part of Stage 2 of the development. This level is dedicated to commercial / office use. There is no concrete slab over the cinemas at this level.
- Additional columns added at Level 4 at the "travelator void" East of Grid C negating the need for a deep cantilevered structural zone.
- Columns added within the "inter-cinema" walls all transferring at Level 3.
- 1500 deep transfer beams over loading dock area, spanning approximately 17m to support columns over and storage loads on Level 2.
- Lifts on Grid 10/K commence at Level 1 with lift pits etc extending to Level 1 Basement. 600 thick transfer zone allowed for locally to support the lift shaft walls.
- Basement levels allowed for normal carparking loads with no "heavy" vehicles allowed.
- A 600 wide zone should be allowed for along the entire perimeter of the basement levels to accommodate a shoring wall system.

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The above comments present a possible solution for the development. In general, we do not foresee any structural concerns that would prevent the design and construction of the development from proceeding.

We trust this satisfies your current requirements. Should you require clarification on any of the sketches or this report, please do not hesitate to contact our office.

Yours faithfully,

Laki Revellos

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