



Ref: 17091-018

13th September 2019

Attention: Jeremy Hung

JQZ Pty Ltd
PO Box 686,
BURWOOD NSW 1805

Dear Jeremy

Subject: 88 Christie St, St Leonards – Y to V Column Change

ABC Consultants have been engaged as the structural engineer for the above project which is a large mixed-use development with 3 towers over a common podium and deep basement excavation. The site is located at 88 Christie St, St Leonards and extends from the Christie Street frontage to its East to and over Lithgow Street at the Western edge of the development and immediately adjacent to the Sydney Trains boundary.

A major design feature of this project is the expressed concrete columns that were in the shape of a Y arrangement as part of the approved DA architectural documentation. As design development has progressed, we have investigated these Y-Columns in detail to determine their appropriate size and details to ensure that they are designed to withstand all required future loadings applied to the various buildings in accordance with the required Australian Standards and the BCA.

As part of this review, and within the context of the current public concerns with any large visible cracking present to exposed concrete elements after the recent issues with certain buildings in Sydney, we have identified that these columns may exhibit signs of cracking. While this cracking is non-structural in nature and will not affect the structural ability of these columns to withstand the applied loads, this cracking may cause public concern and potentially create un-necessary negative publicity for this project.

As a result of the shape of the Y-column, the forces that travel down the arms of the Y are resolved at the base of the intersection (i.e. top of the straight part of the Y) however as these forces are not equal then a horizontal force is generated at this location which causes the vertical section of the Y to go into bending and hence tension which may cause the cracking of the concrete to occur.

Our proposed solution to this potential issue is to change the geometry of the Y-Column to be a V-Column whereby the same forces travel down the inclined arms of the V but are then resolved at the slab level meaning that there is no bending and hence tension in the V-Column itself. As a result, there should be a greatly reduced chance of any cracking being present and it would be limited to hairline shrinkage cracking at worst which should not be a cause for concern.

If you have any queries regarding the above information, please contact the undersigned at your convenience.

Regards

Yours faithfully,

Ryan Campbell BE(Hons) BSc MEngSc MIABSE RPEQ FIEAust CPEng NER
Director