07-Dec-2015

Shundi Customs Limited
PO Box 105708
Auckland City
Auckland 1143

Dear Sir or Madam

FEB application number:	PG/2015/1481
Address:	85-89 Customs Street West, Auckland Central, Auckland 1010
Description:	50 storey high-rise. The building is a luxury residential tower upon a mixed-use podium with five storeys of basement car parking.
Area office:	Central

Fire Engineering Brief Meeting Minutes

1. MEETING DETAILS

Date	30/11/2015	**Time**	10-12:30 at Auckland Council

2. MEETING PARTICIPANTS - CUSTOMERS

Name	Area of expertise / profession / title
Tony Enright	Fire Engineer
Luke Bradley	Peddlethorp Architects
Simon Weaver	Independent peer reviewer - Aurecon
Simon Davis	New Zealand Fire Service
Etienne Hermouet	New Zealand Fire Service
Geoff Purcell	New Zealand Fire Service

3. MEETING PARTICIPANTS - COUNCIL

Name	Role at meeting
Apeksha Shah	Auckland Council - Fire Engineer
Ed Claridge	Auckland Council - Fire Engineer

4. SITE & PROPOSAL

Site address of proposal	69-105 Customs Street East
Street number and name:	85 Customs Street East, 1010
Suburb, town or locality:	Auckland CBD

Brief Description of Proposal:

191m high tower consisting of 49 (incl. 2x upper plant room floors), 5 below ground levels. Tower includes 212 apartments, 185 car parks. Excerpt from FEB:

The development includes a tall residential tower (L7 to L56) upon a mixed use podium building (GF to L7) of retail, car parking, office and recreation, and with five basement levels (B5 to B1) for plant and further car parking. The development also includes the refurbishment of Ballantyne House, an existing 13-storey building having its use changed from an office building to a hotel.

This FEB is the first of two volumes. This Volume 1 is for the new Tower and Podium development. A second volume (Volume 2) relates to the refurbishment and change of use of Ballantyne House to the Tower Building's East.

Meeting minutes recorded by E Claridge as a brief record of meeting discussions and outcomes.

5. MATTERS / ITEMS DISCUSSED AT MEETING

The following notes provide a brief discussion of the items discussed in order;

a) General discussion regarding the project including background to the shape and form of the building.
b) Ballantyne House is a separate building but interconnected so will undergo a separate FEB process. It is only connected at basement level and will be provided with a fire separation between the two buildings.
c) Tony set out the proposed design philosophy which is based on a C/VM2 design as well as incorporating best practice for tall building design – refer SFPE Engineering Guide: *Fire Safety for Very Tall Buildings*.

d) First portion of the meeting was largely dedicated to discussing matters surrounding the single stair serving the top portion of the building and impact on NZFS operations
    I. General fire system philosophy discussion
        i. Single stair and pressurisation. Only portions of the building at basement and top levels are served by a single means of escape only. These portions to be positively pressurised.
        ii. Hydrant outlet locations agreed with NZFS at half landings due to being sprinkled building and providing optimum access from stair
    II. General discussion regarding communication systems and types of systems and to what standard? <u>Discussion regarding WIP/Red phone and leaky coaxial cable systems due to the height and nature of the building.</u> NZFS to confirm communications system necessary to meet their operational needs.
    III. Discussion around occupant and fire service re-entry to staircase. As doors will be normally locked for security reasons a means to unlock the doors and allow re-entry from the staircase will be necessary. Building

owner will want to avoid unlocking the doors unless necessary so discussion around having doors unlock on fire alarm system activation and double knock activation. TE identified possibility to unlock the doors on confirmed fire alarm. NZFS identified that they would also have a preference for a master switch located at the fire panel/fire control room as a backup.

IV. Fire Service discussion around access from stair and hose running and blocking. NZFS to provide further consideration and outcome of impact of single stair and issue of hose operations compromising stair.

e) Currently the fire design does not use C/VM2 occupant density and has referenced CIBSE guidance. TE stated that occupant density has no impact on design outcome other than spacing in refuge floors. TE to confirm this and identify in the report. Auckland Council will require adequate justification regarding impact of using a different occupant density for the design before acceptance of the current proposal. The design will need to clearly identify the impact of using the proposed methodology resulting in a lesser number of occupants on the design and in particular confirm that there is no reduction in fire life safety features as a result.

f) NZFS discussion about single means of escape at top of building specific to fire service operations.

I. Single stair discussion and transition floor. The 'transition floor' connects two stairs therefore providing a choice of using two stairs at this location. The stair includes a fire separation 'forcing' people into the corridor at the transition level. There are two transition levels which provide a level of robustness to the corridor. If one corridor becomes smoke logged the second corridor can be used. A vision panel in the door can be used for occupants to determine if there is smoke in the stair. This transition corridor is an extension of the stair and needs to be treated as such within the robustness checks.

Post meeting note: means to provide identification and also confirm how the evacuation will be overseen to manage the transition level needs to be considered. There is a concern that should the corridor become impacted by fire/smoke that occupants would be forced to enter the corridor at this level. The presence of a transition corridor on the level above may not be obvious and would require occupants to stop and reverse against the direction of flow.

g) Hardened fire lift, discussion surrounding which lift will be 'fire hardened', goods lift has good lobby access but does not run full height.

I. NZFS to confirm that they require the firefighting lift to go full height of building

II. NZFS confirmed that firefighting lift will need to 'home' to fire service access level and doors open.

III. Tony to identify standards of construction for all systems including lifts and communications systems.

h) Discussion regarding fire control room and fire service attendance location considering access to basement and stair separation issues. NZFS to confirm acceptability of fire service attendance location

i) TE indicated that proposed RSET calculation will be based on 5 floors rather than entire building evacuation as It will consider egress only to the 'refuge floors'. Auckland Council note that for top portion where only a single means of escape is available RSET will need to consider evacuation from top of the building to refuge floor from where two means of escape are available.

j) NZFS asked about car fire in basement 4. Discussion regarding pressurised stair and ventilation. Tony indicated there could be a lobby arrangement but currently pressurised stair is sufficient. NZFS enquired about extract fan fire rating and if it was being designed for elevated temperatures to allow smoke extraction to some extent. TE to confirm given location of the fan and impact of sprinkler cooled smoke and it being potentially remote from the fire location.
k) TE indicated that lift shaft pressurisation in lieu of lobbies at some levels. This may reconsidered during detailed design.
l) The Level 5/6 office opens into both stairs. The analysis will therefore need to investigate both stairs being compromised when both doors are open during egress from the space. TE to check fire scenario and impact of both stairs being compromised, may consider lobby arrangement to stair. This location will likely require a Robustness check.
m) Discussion regarding measurement of hose run and egress distances and including all accessible balcony areas. It was noted that some balconies at the top of the building have been reduced in area reducing this issue.
n) Discussion regarding the robustness check of the stair and testing this based on pillow count rather than a reduced occupant number. This will be a sensitivity check to substantiate the alternative occupancy numbers currently proposed for these scenarios.

o) Following the Auckland Council review of FEB documentation the following queries were discussed
    I. Council identified that construction monitoring at CM4 had been accepted for similar size and scale of projects and considered this appropriate for this project
    II. It was agreed that Ballantyne House would be addressed as part of different building and that it would be provided with a separate address point and consent application.
    III. A brief discussion followed regarding the use of other guidance, i.e. the SFPE guide. It is currently unclear what, or if any actual recommendations have been taken/used from this guidance and or to what extent the building has been designed or incorporates features that exceed minimum Building Code compliance when assessed against the C/VM2 methodology. It is considered that it would be advantageous for the design to identify if there are features to be provided that exceed the minimum requirements. That would then provide more confidence that the design is appropriately safe rather than just achieving the bare minimum requirements.
    IV. Currently the Building Importance level has been identified as an IL2 building. It was noted that a IL3 classification would not make much difference to the design outcomes, however this is a concern for the IL classification system and it not recognising the relationship of building height as a risk factor.
    V. It was noted that the building level numbering was discussed and identified that this could be confusing to building users and in particular the fire service. Fire Service will specifically identify any specific concerns with this as part of their design acceptance and completion of the firefighting facilities checklist.
    VI. Fire rated plans are to be provided identifying preliminary fire separations. These are necessary as part of the FEB process as they impact the design scenarios required and agreements required as part of the FEB process.

VII. <u>Challenging fire locations to be advised and agreed as part of the FEB process including what Tenability criteria will be assessed for each scenario.</u>

VIII. Balcony fire separation and Council policy AC2230 was discussed. It is noted that the provision of dual water supplies for the sprinkler system is an acceptable means of achieving NZBC C3.6 as allowed by C/VM2.

IX. Discussion regarding fire rating for the structure. It was identified that C/VM2 does not account for building height as a risk factor for the requirements relating structural fire rating provisions as do many overseas codes. On this basis it was noted that the building may have far lower levels of structural fire relating than would otherwise be considered acceptable in other international jurisdictions. However, the design to C/VM2 will provide compliance with the NZ Building Code. The building will utilise a steel structure, both internal and external. Detail of structural fire rating will be undertaken during detailed design.

<u>Key outcomes / actions</u>

1. NZFS to advise what communication systems are necessary to support fire service operations. TE to advise applicable design standards
2. NZFS preference for switch at the fire panel/fire control room to enable doors to be unlocked and access to be gained to all floor levels from the stairs under fire/emergency conditions
3. NZFS to provide further consideration and outcome of impact of single stair and issue of hose operations compromising stair.
4. TE to confirm that the proposed methodology regarding the occupant density and occupancy calculation has no impact on design outcome
5. NZFS to confirm that they require the firefighting lift to go full height of building
6. NZFS confirmed that firefighting lift will need to 'home' to fire service access level and doors open.
7. TE to identify standards of construction for all systems including lifts and communications systems.
8. TE to consider RSET allowing for top portion of the building to egress from the top until the refuge floor is accessible which includes two means of egress.
9. TE to confirm basement stair entry/access and need for lobby and/or stair pressurisation as part of design.
10. TE to confirm given location of the extraction fans and impact of sprinkler cooled smoke, them being remote from the fire location and ability to provide a smoke extraction/control function.
11. TE to check fire scenario and impact of both stairs being compromised considering design scenarios in office levels 5 and 6 and others if applicable.
12. Construction monitoring at CM4 to be applied to the building
13. TE to consider specifically identifying features of the building that exceed minimum code compliance and or aspects of the design that have been taken from other guidance and 'best practice' for these types of buildings. If this is not covered in the design documentation Council expectation is that peer reviewer will cover such details within the PS2 review report.
14. Challenging fire locations to be advised and agreed as part of the FEB process including what Tenability criteria will be assessed for each scenario.
15. Plans showing the fire and smoke separations are to be provided
16. Council expect that the Fire Service will provide written confirmation that the design meets their operational needs and acceptance of the FEB including any fire service related design requirements will be confirmed including completion of a firefighting facilities checklist as is standard practice.

6. Meeting Conclusion

It was noted that Developed design is due before the end of the year on 21st December.

Stakeholders will require revised FEB documentation and additional information to enable signoff and acceptance of the FEB to enable the design to proceed.

Meeting Concluded at 16:20

If you have any further queries regarding this matter, please contact the writer on (09) 301-0101 quoting the above FEB application number.

Yours faithfully

Ed Claridge

Digitally signed by Ed Claridge
DN: cn=Ed Claridge, o=Auckland Council, ou=Building Control, email=ed.claridge@aucklandcouncil.govt.nz, c=NZ
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