

MINUTES OF MEETING
HELD FEBRUARY 13, 2019

OAKRIDGE REDEVELOPMENT
650 WEST 41ST AVENUE, VANCOUVER, BC

City of Vancouver - City Hall
453 West 12th Avenue – Main Floor Town Hall (Room 110)

Our File: 17-113

Attendees:

Mr. Pat Ryan, Chief Building Official, City of Vancouver (COV)
Mr. Darren Lee, Project Facilitator, City of Vancouver (COV)
Ms. Kelly Anderson, Manager, Building Review Branch, City of Vancouver (COV)
Mr. Matthew Lam, Assistant Director, Building Review Branch, City of Vancouver (COV)
Mr. Saul Schwebs, Assistant Director, Building & Trades Inspections, City of Vancouver (COV)
Ms. Mihajla Viktovic, Building Code Specialist, Building Review Branch, City of Vancouver (COV)
Mr. Rick Cheung, Assistant Chief, Fire Protection, Vancouver Fire & Rescue Services (VFRS-FP)
Mr. David Boone, Assistant Chief, Operations, Vancouver Fire & Rescue Services (VFRS-OP)
Mr. Chuck Stanford, Assistant Chief, Operations, Vancouver Fire & Rescue Services (VFRS-OP)
Mr. Gregory Henriquez, Managing Director, Henriquez Partners Architects (HPA)
Mr. Rui Nunes, Principal, Henriquez Partners Architects (HPA)
Mr. Michael van Blokland, Principal, LMDG Building Code Consultants Ltd. (LMDG)
Mr. David Steer, Principal, LMDG Building Code Consultants Ltd. (LMDG)

Distribution:

To all attendees and
Mr. Paul Mochrie, Deputy City Manager, City of Vancouver
Mr. John Cordonier, Vice President, Development, Quadreal
Mr. Sailesh Balachandran, Vice President, Design & Construction, Quadreal
Mr. David Leung, Westbank
Ms. Rhiannon Mabblerley, Westbank
Mr. Martin Dolan, Associate, Adamson Architects Associates
Mr. Bill Bradley, Principal, Adamson Architects Associates
Mr. Frank Mattia, Principal, Managing Director, LMDG Building Code Consultants Ltd.

1.0 INTRODUCTION

Pat Ryan (PR) identified the purpose of the meeting was to attempt to resolve COV and VFRS fire and life safety concerns responding to Oakridge Centre. PR noted the Project presented an extremely large complex building type, which the Vancouver Building By-law (VBBL) was never envisioned to address.

PR noted that Oakridge Centre warranted additional compartmentation and sprinkler measures to address life safety and extended Fire Department response over and above the minimum standard set by the VBBL. Consideration for evacuation of large occupant loads from multiple towers and other security concerns are necessary in the current environment.

Gregory Henriquez (GH) concurred that ownership and the design team will work with COV to incorporate additional safety measures to provide a level of safety Oakridge Centre that satisfies COV concerns and maintains the design of the Project.

2.0 ITEMS DISCUSSED

2.1 Parkade Levels Separated into Separation Compartments

HPA presented parkade floor plans identifying five compartments separated by fire separations having a 2-hour fire-resistance rating (FRR) to meet COV's conceptual approach, roughly aligning with the boundary of Phase 1N (NW), Phase 1S (SE), the existing buildings and transit plaza (NE), High Street (SW), and the remainder (Centre) on Levels P1, P2, and P3.

HPA explained the challenges of dividing the centre compartment into two smaller compartments as identified by COV since it created challenges with existing tenant parking lease agreements.

LMDG noted dividing the centre compartment would create visual obstruction to the "perimeter exiting" concept applied to this area.

LMDG noted the additional measures provided throughout the parkade, including pressurized vestibules, at elevator lobbies, exit stairs and other vertical circulation component, smoke exhaust provisions of the parkade, and the provision of a secondary water supply designed for a duration of 2-hours.

LMDG noted additional emergency access only pressurized stairs from the retail level of the mall were proposed to access the centre compartment to address VFRS-FP comments regarding hose coverage within the parkade.

LMDG noted that the parkade will be divided into numerous sprinkler zones based on area, which can be used to identify the location of the nearest emergency response stair. Further identification will also be provided by the addressable smoke detection within the pressurized vestibules serving the parkade stairs. The multiple VFRS response points to the parkade will include these zones on their respective CACFs and associated directional graphics.

VFRS-OPS noted the emergency access stairs should be identified by strobe lights corresponding with the area of parkade where the sprinklers or fire alarm device are activated.

VFRS-FP noted that an emergency responder radio amplification system will be required to be provided.

PR noted that the intent to separate the parkade into logical compartments was to provide ability for occupants to be evacuated to adjacent compartments and allow VFRS to stage fire suppression and rescue operations from a safe area and that this concept should extend through the mall and park areas.

VFRS OPS noted that their experience with large parkade compartments is a tendency for occupants to ignore alarm signals and exit using vehicles where as within smaller compartments, the same fire/smoke condition is more visible with occupants less likely to ignore the alarm signal.

PR reiterated their position that the centre compartment be divided into two compartments would present a safer design.

HPA agreed to divide the centre compartment roughly aligned with the Canyon Run of the mall level above between the transit plaza and High Street (NE to SW) if this will allow the design to move forward.

PR confirmed that this additional centre compartment would address their concerns.

HPA to identify additional fire separation on Levels P1, P2, and P3 to create six parkade compartments.

COV agreed with the six parkade compartments approach on Levels P1, P2, and P3.

2.2 Secondary Water Supply

LMDG noted that the Project is divided into seven separate water parcels, each provided with a dual connection to the municipal water supply. The water supply is provided by a water main located along West 41st Avenue, Cambie Street, and connected along the perimeter of the development along New Street. The water parcels are aligned with the building groupings around the site with the parkade and mall served by a single parcel.

LMDG noted a secondary water supply would be designed to supplement the parkade and retail mall components. The secondary water supply would be designed to provide a 2-hour design duration.

LMDG noted that Firefighters Underwriters Survey calculations have been completed and submitted to the Engineering Department to confirm adequate water supply for fire suppression (“fire flow”).

LMDG noted the COV previously identified three simultaneous fires as assumed “worst-case” condition for a Project of this size. The Project will be designed to address three fire scenarios assuming one fire located per water parcel via municipal connection, or alternately, two fires occurring in the retail and parkade water parcels based on the provision of municipal connection supplemented by the secondary water supply.

COV concurred the approach was acceptable.

2.3 High Street – Fire Department Access

LMDG noted that the Fire Department access would be primarily around the perimeter of the site from West 41st Avenue, Cambie Street, New Street (constructed primarily off structure), and High Street.

HPA noted the suspended concrete slab and structure supporting High Street will be constructed to provide a 4-hour fire-resistance rating.

LMDG noted that this additional 4-hour provision is in addition to the High Street parkade component (SW) below, which creates a separate compartment from the remainder of the mall for Fire Department staging along High Street.

COV found the proposed design of High Street and Fire Department access acceptable-in-principle.

VFRS-OPS noted that the Fire Department connections would be required to be located consistent with response point and clearly identified so that responding fire trucks are clear on which water parcel they are connecting to avoid potentially charging the wrong standpipe system.

LMDG identified hydrant locations provided for the site, including private hydrants located along High Street. Hydrants have been located within 90 m of Fire Department connections. The Fire Department response and hydrant locations are identified in the site plans.

2.4 Other Fire Separations and Fire-Resistance Ratings

HPA described the floor slab thickness and fire-resistance ratings provided for the Project. Refer to the attachment provided for a summary.

HPA noted that portions of the food hall will contain protected steel construction designed to provide a 2-hour fire-resistance rating. The roof area above the food hall will be a “lower occupant load” use area.

LMDG noted that the park/rooftop concrete slab thickness provided more than the 4-hour fire-resistance rating envisioned by COV, though noted that the challenge with increasing concrete cover to bottom reinforcing would result in significant additional cost given the areas in question.

LMDG noted that the bottom reinforcement would not be impacted under exposure with an operational sprinkler system and for at least 2-hours with the proposed secondary water supply should the municipal supply be compromised. The 2-hour FRR of the park/rooftop would provide an effective duration of 2 hours of sprinkler suppression plus 2 hour of fire-resistance.

LMDG noted that fire-resistance is determined based on exposure to elevated temperature for an extended duration and represents a severe fire scenario.

LMDG noted that the vertical interface of the tower components with the mall, which are not connected, are proposed to be provided with a 2-hour fire separation at these interfaces consistent with the 2-hour slab approach and supporting features.

LMDG noted exit stair shafts, service shafts, and emergency conductor protection require a maximum 2-hour fire separation regardless of the degree of fire-resistance rating provided.

LMDG noted that timed-exiting analysis would be completed under various scenarios to establish required safe time to egress from the park and adjoining buildings.

In response to further COV comments about park/rooftop evacuation, LMDG noted that the previously discussed features are proposed, which include exterior emergency lighting, directional exit signage, PA system, and Fire Department hose connections.

COV was in agreement-in-principle with the approach to provide an effective performance of four hours based on the provision of secondary water supply.

HPA noted the retail mall was separated by wide high corridors recognized by the VBBL as sufficient separation in a mall application. HPA noted the canyon run would provide more than the required width and height and would form a spatially separated compartment.

COV noted concern with use and storage within the mall corridors, which could create an opportunity for fire to spread beyond the corridor.

LMDG noted that the VBBL provides prescriptive requirements of the occupancy of mall corridors to maintain adequate spatial separation and egress are provided.

COV noted additional protection measures be considered.

LMDG/HPA noted sprinkler water curtain at openings facing the canyon retail run could be provided to address COV's concerns (location to be determined).

COV was in agreement with this approach.

3.0 CONCLUSION

COV agreed that with the additional features noted above, an acceptable level of fire and life safety would be provided to Oakridge Centre.

COV noted a separate meeting would be required to address building permit and development permit coordination.



Minutes of Meeting Held on February 13, 2019
Oakridge Centre, 650 West 41st Avenue, Vancouver, BC

Page 6 17-113
February 20, 2019

COV requested a table of applicable VBBL requirements and the additional measures incorporated into the design be provided with the building permit submission.

LMDG to prepare minutes of meeting.

We trust that these meeting minutes are an accurate reflection of the discussions that took place. However, if your recollection differs from that recorded above, please notify the undersigned at your earliest convenience.

Prepared by:

LMDG BUILDING CODE CONSULTANTS LTD.

A handwritten signature in blue ink, appearing to read "D. Steer".

David J Steer, M.Eng., P.Eng., CP

Reviewed by:

A handwritten signature in blue ink, appearing to read "Michael van Blokland".

Michael van Blokland, P.Eng., CP

DJS/cy 17113022019.min(1).docx
Attachment