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## W.D. FERRIS ELEMENTARY SCHOOL SEISMIC UPGRADE

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<b>CONSTRUCTION START:</b>	July 2019
<b>TARGET COMPLETION:</b>	September 2020
<b>PROJECT BUDGET:</b>	\$7.37 Million
<b>FUNDING SOURCES:</b>	Ministry of Education Capital Plan - \$8.49 Million(maximum)
<b>CONSULTANT:</b>	Thinkspace Architecture Planning Interior Design
<b>CONSTRUCTION MANAGER:</b>	Unitech Construction Management Ltd.
<b>PROJECT MANAGER:</b>	Richmond Project Team Enquiries: Jose Pelayo, 604-295-7000 ext. 7800

### BACKGROUND

W D Ferris Elementary School opened in 1960 with renovations and additions in 1964, 1971, 1979, 1982, 1989, 1994 and 2000 to serve Kindergarten to Grade 7. School District No. 38 (Richmond) confirmed that Ferris Elementary, currently our largest capacity elementary school, is needed for the long term as part of the overall long-range strategic planning.

Ferris Elementary, which consists of four distinct blocks, was seismically assessed using Version 3 of APEGBC's Seismic Retrofit Guidelines. Block 1 (1960-1982 Classrooms) and Block 4 (1989 Classrooms) have been assessed Seismic Risk Category H1 and H2 ratings, respectively, requiring superstructure seismic resistance upgrades as well as localized substructure upgrades to mitigate the effects of liquefaction. Block 2 (1971/1982 Gymnasium) requires full substructure upgrades to mitigate the effects of liquefaction. Block 3 (2000 Classroom Addition) requires no seismic upgrading.

### PROJECT SCOPE

- Block 1 (1960-1982 Classrooms) - structural upgrades consisting of: additional shear capacity through new plywood sheathing, blocking and hold-down anchors added in selected locations to existing wood stud walls; vertical reinforcement, grouting and upgraded connections to the roof diaphragm added to concrete block walls in the mechanical room; and drag struts and post/beam connections added to the existing roof structure as required. To mitigate the localized risk of liquefaction, foundation upgrades will be undertaken beneath new shear walls.
- Block 2 (Gymnasium): upgrading foundations with grade/tie beams added to mitigate the effect of liquefaction.
- Block 4 (1989 Classrooms) - structural upgrades consisting of: additional shear capacity through new plywood sheathing, blocking and hold-down anchors added in selected locations to existing wood stud walls; upgrading the roof diaphragm by adding blocking under at local roof locations; and improving the connection between wall top plate and roof joists/blocking as required. To mitigate risk of liquefaction, foundation upgrades will be undertaken beneath new shear walls.

- Non-structural seismic resistance upgrade to the entire school (added restraint of lighting, HVAC, plumbing and cabinets).
- Restoration of wall/floor/ceiling/exterior finishes and hard/soft landscaping affected by the structural work, addition and demolition.
- Minor removal and replacement of mechanical and electrical equipment to accommodate structural work.

## PROJECT STATUS

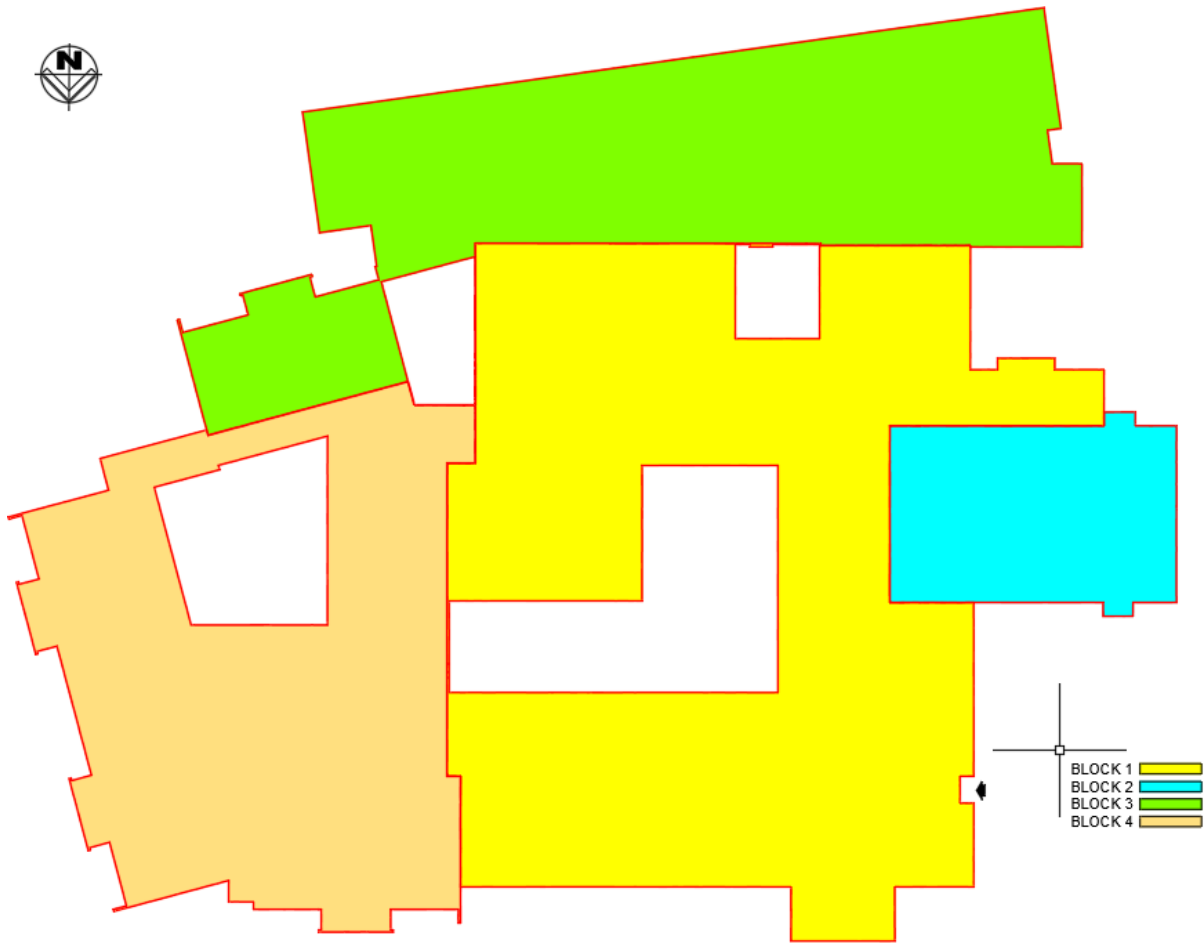
- The Ministry of Education approved the Project Definition Report in August 2018, with the Capital Project Funding Agreement executed between the Board of Education and the Ministry in September 2018.
- Phase 2 - work completed in January 2020, inspected – passed ready for occupancy.
- Phase 3 - work completed in March 2020, inspected – passed ready for occupancy.
- Phase 4 – work completed in April 2020, inspected – passed ready for occupancy.
- Phase 5 – work completed in June 2020
- Phase 6 – on going for September 2020
- Phase 6 – Office millwork, new flooring and lighting installed, re-finishing washrooms completed



- Phase 6 – Entrance metal cladding and name installed. Overhang - metal cladding, and LED lights on going. Chain link cage for gas on going



- Playground – 6 basketball hoops installed, sport storage in place, court ready for line painting.



Seismic Block Map – W.D. Ferris Elementary School