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## **MANOAH STEVES ELEMENTARY SCHOOL SEISMIC UPGRADE & PARTIAL REPLACEMENT**

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<b>CONSTRUCTION START:</b>	November 2019
<b>TARGET COMPLETION:</b>	September 2021
<b>PROJECT BUDGET:</b>	\$11.18 Million
<b>FUNDING SOURCES:</b>	Ministry of Education Capital Plan - \$12.78 Million(maximum)
<b>CONSULTANT:</b>	KMBR Architects
<b>CONSTRUCTION MANAGER:</b>	Unitech Construction Management Ltd.
<b>PROJECT MANAGER:</b>	Richmond Project Team Enquiries: Jose Pelayo, 604-295-7000 ext. 7800

### **BACKGROUND**

Manoah Steves Elementary School originally opened in 1965 with additions in 1967, 1971, 1973 and 1975 to serve Kindergarten to Grade 7. School District No. 38 (Richmond) has confirmed that Steves Elementary is needed for the long term as part of the overall long-range strategic planning.

Steves Elementary, which consists of four distinct blocks, was seismically assessed using Version 3 of APEGBC's Seismic Retrofit Guidelines. The entire school has a high risk of liquefaction potential requiring substructure upgrades, with Block 1 (Administration Wing), Block 2 (South & West Classroom Block) and Block 3 (North Classroom Wing) having a Seismic Risk Category H1, requiring a superstructure seismic resistance upgrade.

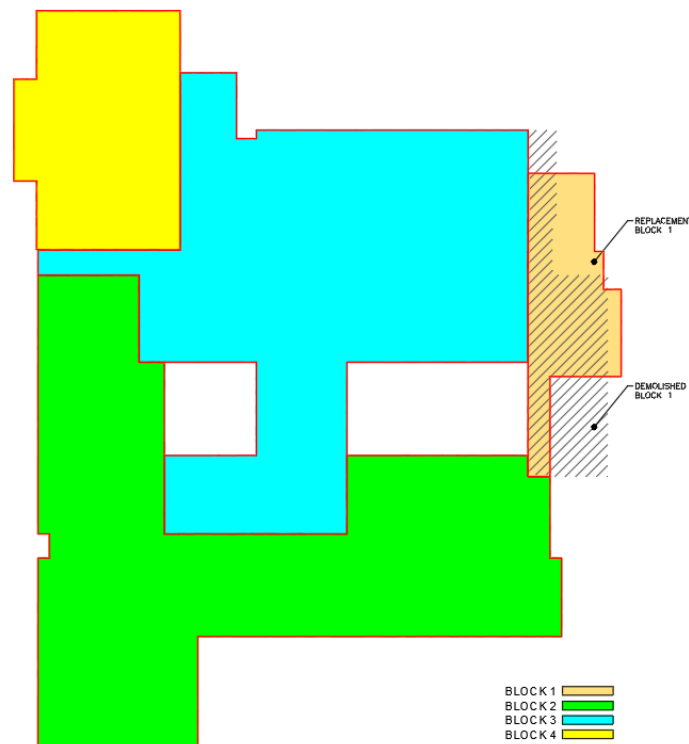
### **PROJECT SCOPE**

- Block 1 (Administration Wing) - Demolition of the highest seismic risk block of the building and construction of a new replacement block consisting of new main entrance and administration offices in the same general location.
- Block 2 (South & West Classroom Block) and Block 3 (North Classroom Wing) - Structural upgrades to mitigate the high seismic risk consisting of: converting existing drywall/shiplap walls to plywood shear walls; adding new plywood to existing roof structure with new drag/chord members to increase diaphragm capacity and to complete the seismic load path; adding vertical reinforcement to existing non-load-bearing masonry block walls; and adding reinforced concrete grade beams to perimeter and interior foundations to mitigate the high risk of liquefaction. A portion of Block 3 would be renovated to accept part of the administration and special needs spaces demolished and not part of the addition.
- Block 4 (Gymnasium Block) - Adding reinforced concrete grade beams to perimeter and interior foundations to mitigate the high risk of liquefaction.

- 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 Province of British Columbia approved the project 18 April 2019 and the Capital Project Funding Agreement for the seismic upgrade/partial replacement of Manoah Steves Elementary, funded from the Seismic Mitigation Program (SMP), was received 19 June 2019.
- Project is Completed.



Seismic Block Map – Manoah Steves Elementary School