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## **JAMES WHITESIDE ELEMENTARY SCHOOL SEISMIC UPGRADE**

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<b>CONSTRUCTION START:</b>	October 2021
<b>TARGET COMPLETION:</b>	July 2023
<b>PROJECT BUDGET:</b>	\$17.28 Million
<b>FUNDING SOURCES:</b>	Ministry of Education Capital Plan - \$15.14 Million (maximum) + SD38 Contribution - \$2.14 Million
<b>CONSULTANT:</b>	Station One Architects
<b>CONSTRUCTION MANAGER:</b>	Unitech Construction Management
<b>PROJECT MANAGER:</b>	Richmond Project Team Enquiries: Steve Ahluwalia, 604-295-7000 ext. 3436

### **BACKGROUND**

James Whiteside Elementary is in a single-storey wood frame building of 3,107 m<sup>2</sup>, constructed in 1958 (Block 1) with additions in 1960 (Gymnasium - Block 2, Changerooms and Storage – part of Block 1), 1961, 1963, 1966, 1967 (parts of Block 1), 1969 (Block 3), 1986 and 1988 (parts of Block 1). School District No. 38 (Richmond) has confirmed that the school is needed for the long term as part of the overall long-range strategic planning. Block 2 received a seismic upgrade in 2002.

William Bridge Elementary, which consists of two distinct blocks, was seismically assessed using Version 3 of EGBC's Seismic Retrofit Guidelines. The entire school has a low risk of liquefaction potential requiring substructure upgrades, with Blocks 1 and 3 having a Seismic Risk Category H1 rating, and Block 2 having a Seismic Risk Category M rating.

### **PROJECT SCOPE**

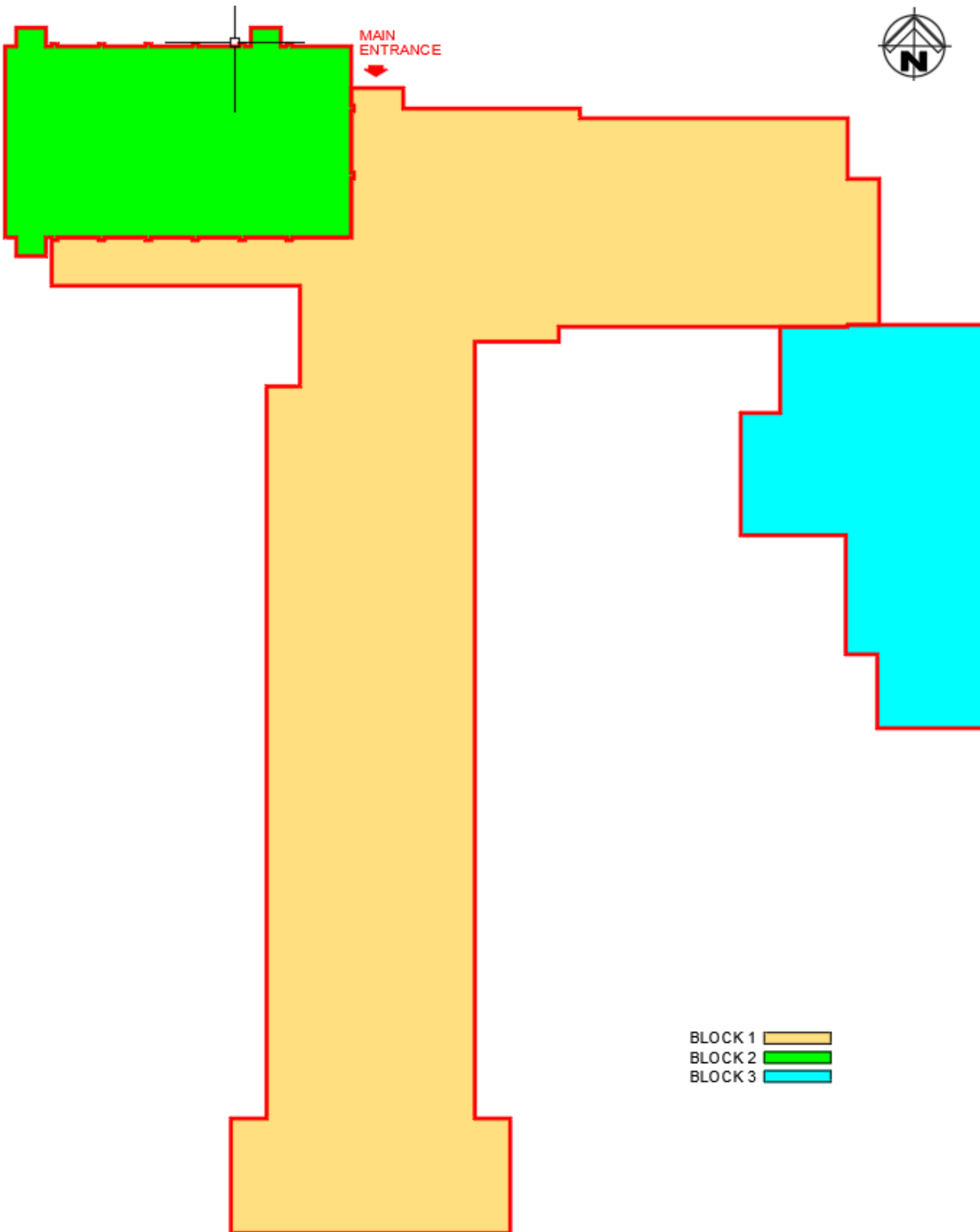
- New plywood shear walls to be constructed in the N-S direction and E-W directions;
- New E-W shear walls between Classrooms 2/4 and 1/3 will require new footings that will extend through the crawl space from the ground to the floor level;
- For each new shear wall, additional anchor rods and hold-down anchor will be drilled and epoxied to the existing foundation walls;
- Drag struts will be installed to provide adequate load transfer between LDRS elements. Drag struts will be installed at roof level and at crawl space level (along South wing in N-S direction) as required;
- Block 1 will be separated from Block 2 with a new seismic gap;
- The E-W URM firewall in Block 1 will be reinforced with vertical rebar complete with dowels to the existing foundation wall; at the top of the CMU walls, new clip angles will be installed to provide lateral restraint as required;
- All existing roof diaphragms will be upgraded with new plywood overlay and steel chords to increase

their capacity and limit their drift; and

- URM firewalls at the Block 3 boiler room will remain unreinforced but will be laterally supported at the top of wall with bent plates connected to the framing around it.
- Non-structural seismic resistance upgrade to the entire school (added restraint of lighting, HVAC, plumbing and cabinets).
- Installation of new automatic fire suppression system.
- Upgrades to building envelope, mechanical ventilation and domestic water distribution systems.
- 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 in January 2021, funded from the Seismic Mitigation Program.
- We are currently working on central wing of the school (north part of block 1). This area houses the administration area, staff room, classroom, library, computer laboratory, medical room, and girls washroom. This phase is planned to be wrapped up in June 2023.
- The project is planned to be completed in June 2023.



Seismic Block Map – James Whiteside Elementary