COLLABORATION IS KEY

Delivering the Best in Design-Build Projects

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NORTHERN FRONT STUDIO
Architecture ▪ Interiors ▪ Design

Chilliwack School District

INTRODUCTION
Mary Ellen Read

- Principal of Northern Front Studio
- Based in Whitehorse, Yukon
- Member of AIBC, NWTAA and AIA Alaska
- Doctor of Design candidate at U Calgary SAPL

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INTRODUCTION

David Lee Blanchard

- Partner at Thinkspace Architecture Planning Interior Design Ltd.
- Based in Surrey, BC
- Member of AIBC, AAA

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INTRODUCTION

Allan Van Tassel

- Director of Facilities & Transportation,

  Chilliwack School District #33 (2015 - present)
- Director of Operations, Peace River South District #59

  (2008 - 2015)

Chilliwack
School District

AGENDA

Case study 1 – CSSC Mercier

Case study 2 – Stitó:s Lá:lém Totí:lt

Commentary on DB Projects

Q & A Session

CSSC MERCIER

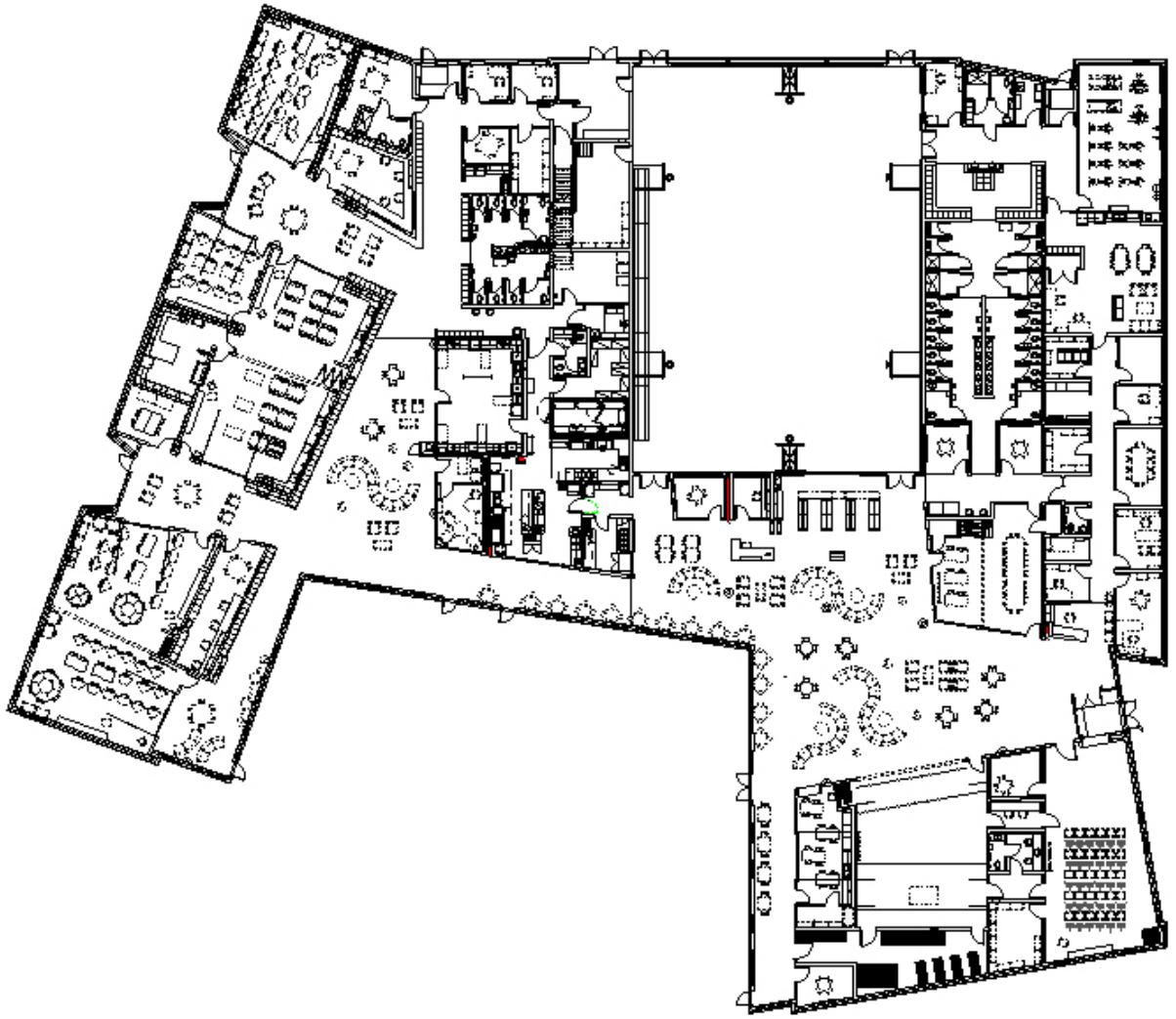
- Completed in 2020, in Whitehorse, YT
- New French school, 150 grades 7-12 students
- Community space plus 21st century learning design
- Single level, concrete & steel construction
- 3,570 sq m gross floor area
- Funding from Canadian Heritage

SITE

- Whitehorse, capital of Yukon
- 28,200 people, 70% bilingual
- Part of a larger school campus
- Shared amenities with existing high school and elementary school
- Track field, skate park, basketball courts
- Riverdale neighbourhood, southeast of downtown, near Yukon River and extensive trail system

PROGRAM

- Six learning studios
- Community commons
- Three common learning areas connected to outdoors
- Regulation gymnasium
- Music room
- Commercial kitchen
- Theatre studio that opens to the commons
- Recording studio
- Print media and resource centre
- Offices and staff rooms
- Gender neutral washrooms and change rooms



TEAM

- Yukon Government, Department of Education
- *Commission scolaire francophone du Yukon* (CSFY)
- Design team for design development and Statement of Requirements (SOR), responsible for the overall program
- Owner's advisory team during construction, responsible for assisting with contract interpretation, project management
- Design-builder team, responsible for implementing and completing the project
- Peer review, responsible for design-builder team and SOR compliance

- Process of design from client, public perspective
- Balance of local knowledge and school design expertise

DESIGN-BUILD

- Architecture as both design and implementation
- Progressive design-build, value-added negotiated procurement, and building trust
- Resolving the SOR, ability to pivot

Learning Commons

Learning Commons

Gymnasium

Gender-neutral washrooms

STEAM Lab

Learning Commons

DESIGN-BUILD

- Our role as Project Architect and Interior Designer

DESIGN-BUILD

- Design-builder's approach to collaboration
- Willingness to continue to develop the work
- Appetite to improve, bringing their expertise to problem solving
- Values and lessons

INNVOVATION

- Energy performance: 25% reduction of NECB 2015 baseline
- GHG emissions: 50% reduction of the reference building
- Consideration for future alternative energy, PV and biomass
- Energy modelling and monitoring
- Heating recovery strategies
- Energy efficient lighting
- Energy recovery ventilators 90% efficient
- Innovation in building envelope

PROJECT MANAGEMENT

- Schedule management, despite COVID
- Project management innovations, including first BIM, online communication platforms

SUMMARY

- Where is the design-builder relationship now?
    - Whistlebend Elementary, to be completed 2023-24

- Where is Yukon now re. new school long-term planning?
    - Replacing Whitehorse Elementary
    - Takhini Elementary School
    - Burwash Landing
    - Robert Service School Expansion
    - New First Nations School in Whitehorse

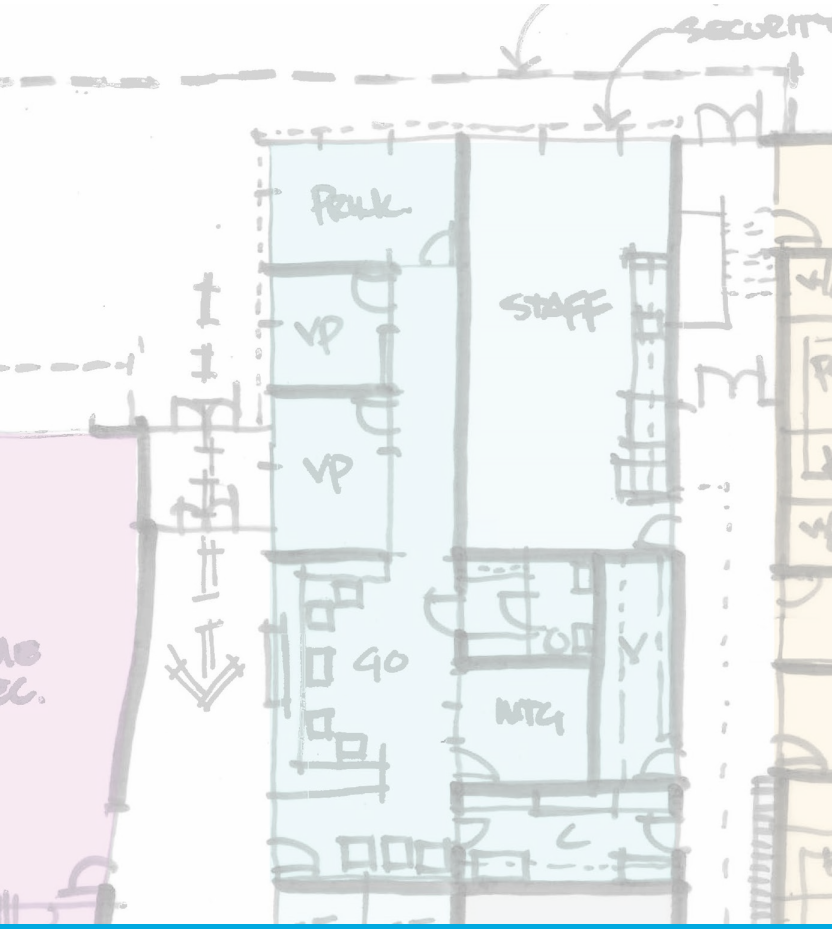
- First Nation School Board started in 2022, responsible for eight Yukon schools
    - delivers BC curriculum through a Yukon First Nation cultural lens

STITÓ:S LÁ:LÉM TOTÍ:LT

Elementary/Middle School

- Stitó:s – “place of crossing”
- Completed Sept. 2022, located in Chilliwack BC (SD#33)
- K-8 (850 students + 80 kindergarten)
- Neighborhood of learning / 21st century learning
- Two-storey interconnected; concrete, steel, mass timber
- 9,300 sq m gross floor area

PROJECT SCHEDULE



Design

100% Design Complete

October 2020

Build

Construction Complete

June 2022

Learn

School Opening

Fall 2022

TEAM

- Client (SD33) + advising team
- Design-builder – DGS Construction
- Architect – Thinkspace Architecture Planning Interior Design Ltd.
- City of Chilliwack
- Structural: Bush Bohlman & Partners
- Mechanical: Rocky Point Engineering Ltd.
- Electrical: Jarvis Engineering Consultants
- Civil: Aplin Martin

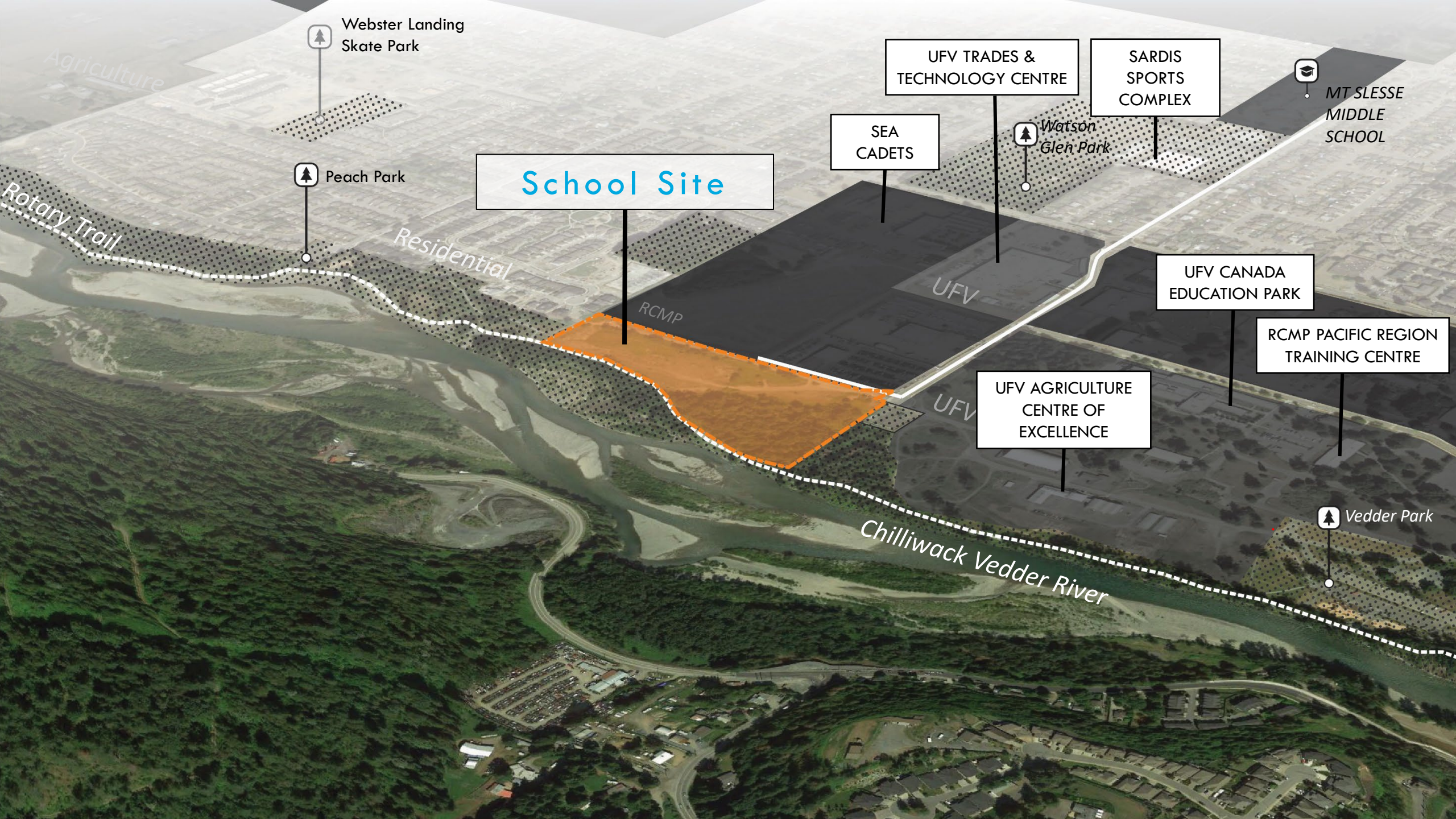
PROJECT OBJECTIVES & OUTCOMES

- Hub of community pride
- Ensure efficient, safe site design
- Incorporate flexibility in design to accommodate changing needs over time
- Enhance technology levels in buildings and infrastructure
- Create facility that reflect sustainable design best practices
- Includes energy efficiency, and building surrounded by as much green space as possible
- Maximize operational efficiencies to minimize long term operating and maintenance costs
- Ensure natural physical flow and logical, comfortable ergonomic design
- Provide safe and secure facility for staff and students
- Create adequate social space for students
- Provide suitable facilities to accommodate all modes of transportation to and from school

Neighborhood of Learning

- Expanded gymnasium space
- Daycare plus pre-school


School Site
5.0 ha (12.4 acres)
Rotary Trail
Petawawa Road
Tyson Road
Chilliwack Vedder River
N


Webster Landing Skate Park
Agriculture
Peach Park
Rotary Trail
Residential
School Site
RCMP
UFV
UFV TRADES & TECHNOLOGY CENTRE
SARDIS SPORTS COMPLEX
MT SLESSE MIDDLE SCHOOL
SEA CADETS
Watson Glen Park
UFV CANADA EDUCATION PARK
RCMP PACIFIC REGION TRAINING CENTRE
UFV AGRICULTURE CENTRE OF EXCELLENCE
Vedder Park
Chilliwack Vedder River


Google Earth

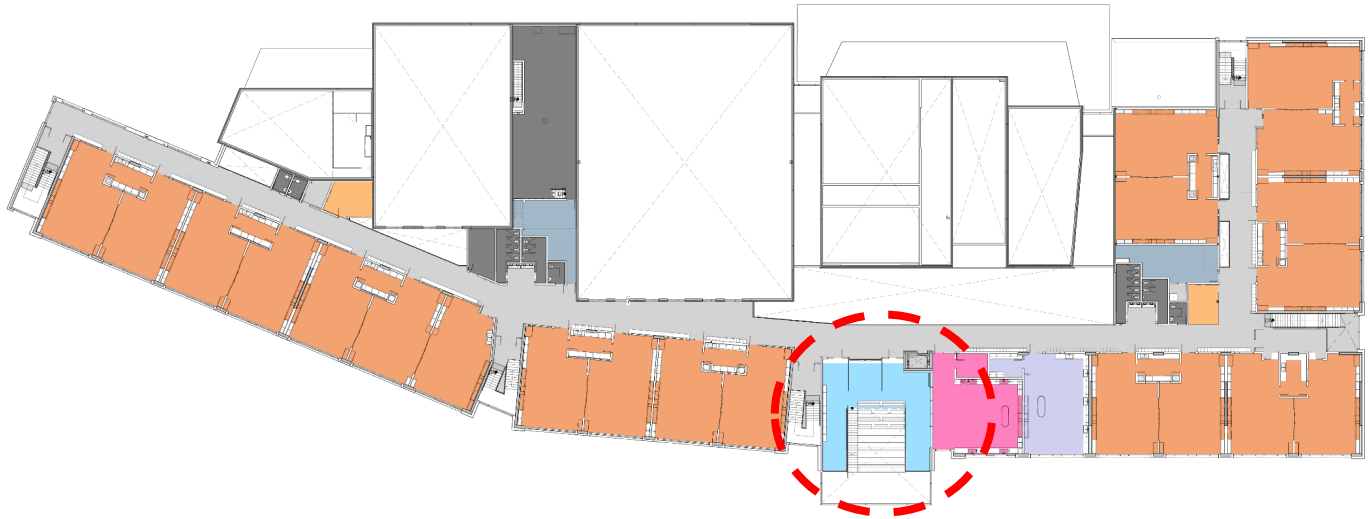

Petawawa Road
Rotary Trail

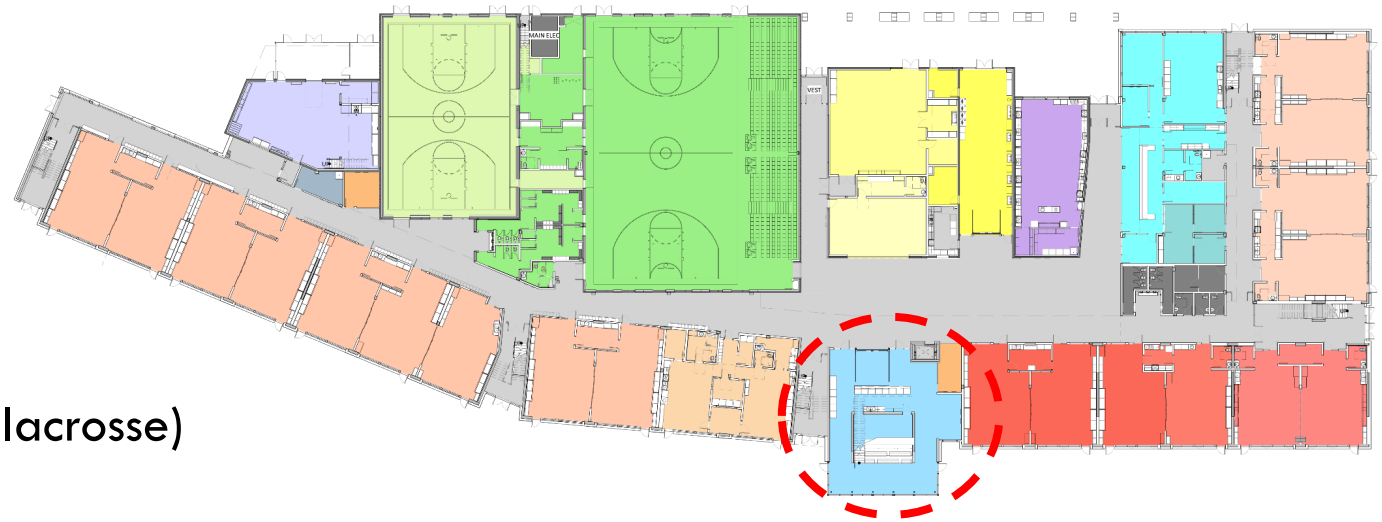
Site Legend

1. Artificial turf sports field: Includes spectator bleachers and covered teams' benches
2. One way circulation and vehicle parking
3. Student sports courts and event overflow parking
4. Field house washrooms and covered bike locker
5. Location for future addition
6. Nature play area
7. Structured play area
8. Secure kindergarten and daycare play area
9. Covered bus drop-off and loading
10. Open green space

PROGRAM

- Two gymnasia (Main & NLC)
- 41 classrooms (paired)
- Home Ec/ Foods / Drama /Band
- Multi-purpose spaces
- Two-storey learning commons
- Science / maker space
- Before/after-care classrooms
- Office/ counselling
- Field house (washrooms / bike storage)
- Bus shelter
- Artificial turf sports field (football, soccer, lacrosse)
- Flood plain considerations (FCL)
- After-hours use





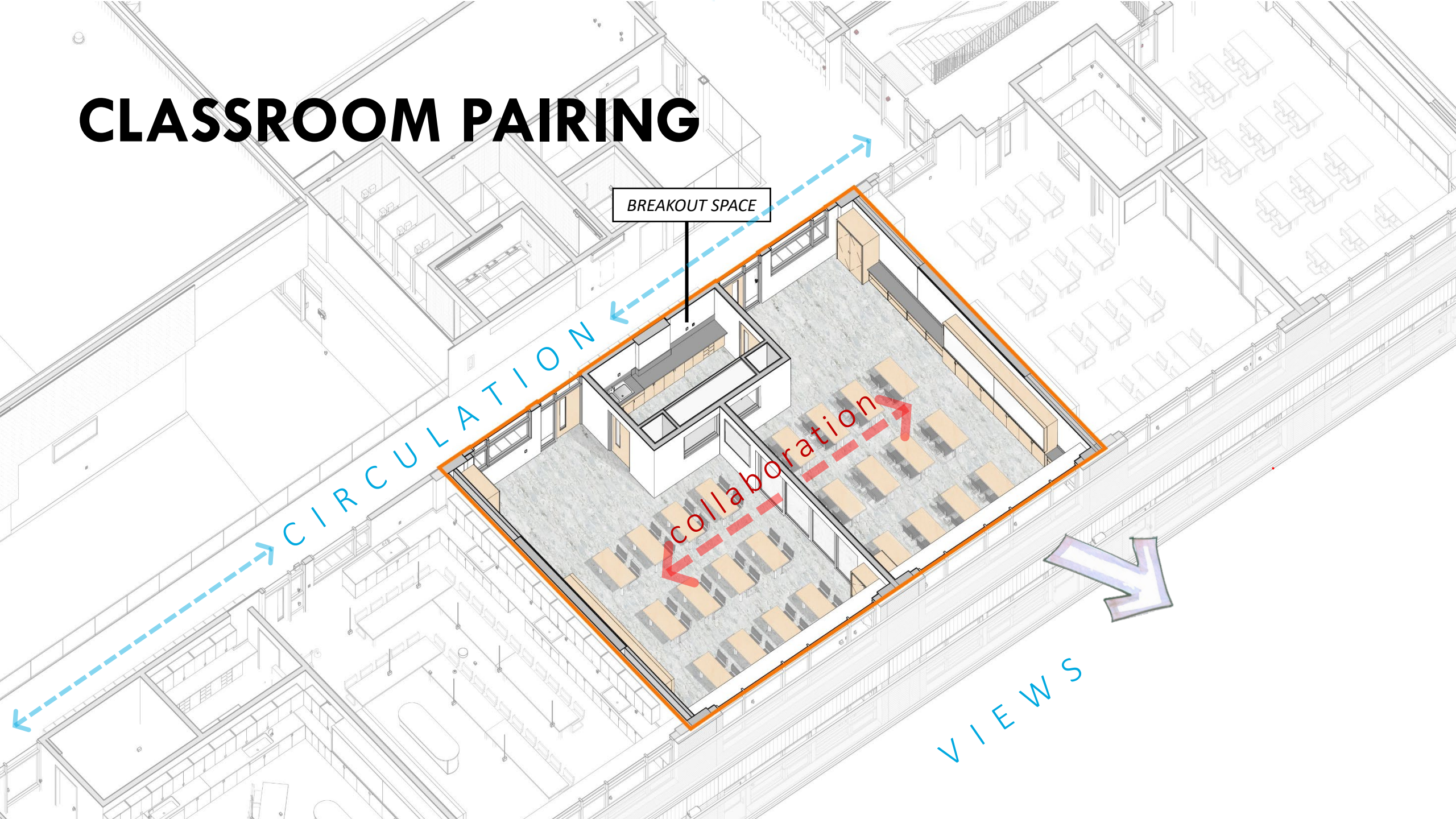
LEARNING COMMONS

Legend

1. Drama classroom
2. Multi-purpose space
3. Corridor
4. Learning commons
5. Storage
6. Exterior gathering space


5337 Tyson Road

CLASSROOM PAIRING



COVID + "THE GREAT FLOOD" (Nov 15, 2021)

- Collaboration + transparency
- Willingness to continue to develop the work
- BIM, online meetings (innovations)
- Supply chain
- Involving AHJs

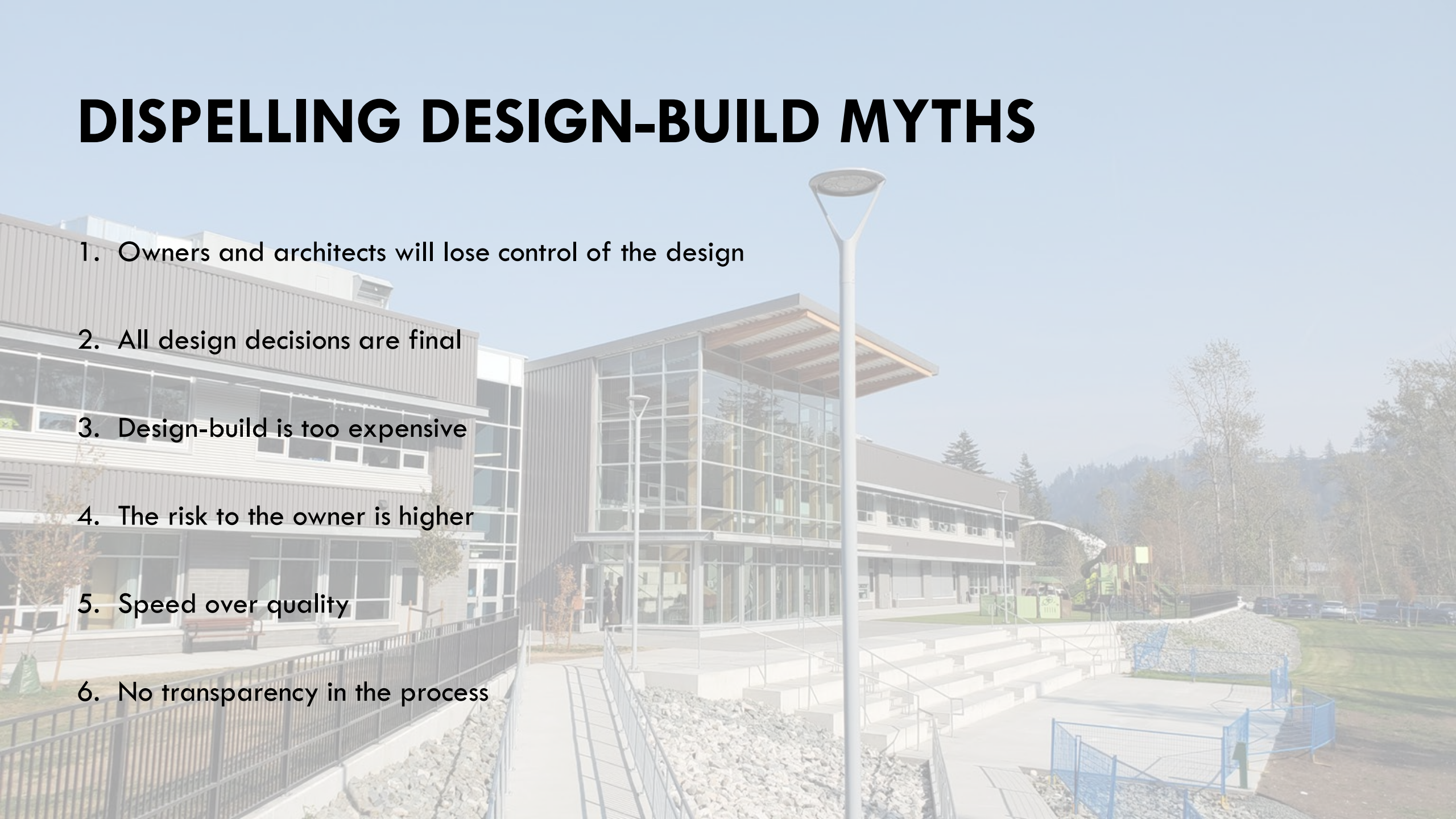
INNVOVATION

- Enhanced building envelope
- Maximum design Total Energy Use Intensity (TEUI) of 140 ekWh/m2
- Maximum design Thermal Energy Demand Intensity (TEDI) of 45 ekWh/m2
- Meet LEED Gold v4
- Maximum air leakage value of above-grade walls and roof of 0.25 L/s/m2 at 5 Pa
- Minimum above-grade wall effective R-value of RSI 1.76 m2 K/W
- Energy performance: 50% reduction of NECB 2017
- GHG emissions: 50% reduction of the reference building
- Energy modelling and monitoring dashboard
- Heating recovery strategies
- Flood protection strategy
- Integrated daylighting + solar mitigation strategies
- Energy recovery ventilators 90% efficient
- LEED Innovation – Implementation of Well standards, including Nature & Beauty in Design

COMMENTARY ON DB - STITÓ:S + MERCIER

1. What was the School District's rationale for going DB with Stitó:s?
2. Outline the DB process from the School District's perspective.
3. What are the advantages or disadvantages of the DB process?
4. What kind of design opportunities presented themselves?
5. How did SD33 take advantage of them? And at Mercier?
6. Where there any construction opportunities or challenges?
7. How did the architect challenge the original Statement of Requirements (SOR)?
8. How did the design-builder contribute to the project?
9. Are there any lessons learned or take aways from the DB process?
10. What, if any, are the short comings of the DB process?

DISPELLING DESIGN-BUILD MYTHS



1. Owners and architects will lose control of the design
2. All design decisions are final
3. Design-build is too expensive
4. The risk to the owner is higher
5. Speed over quality
6. No transparency in the process

FINAL THOUGHTS – WHAT'S NECESSARY FOR A SUCCESSFUL DB?

THANK YOU!

Questions?

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