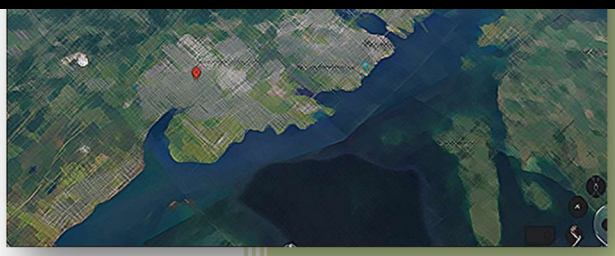
ARCHBISHOP O'SULLIVAN CATHOLIC SCHOOL



RYERSON UNIVERSITY: LANDSCAPE DESIGN

SUBMISSION TO COME ALIVE OUTSIDE 2019

12/2/2019

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PROPOSAL:

ARCHBISHOP O'SULLIVAN CATHOLIC SCHOOL SCHOOL GROUNDS RE-DESIGN

RYERSON UNIVERSITY LANDSCAPE DESIGN PROGRAM

CONTEXT

LOCATION AND SIZE OF THE PROPERTY

Archbishop O'Sullivan Catholic School is at 974 Pembridge Crescent in Kingston, Ontario. As the crow flies, it is about 2 km away from the nearest part of Lake Ontario (at Lemoine Point Conservation Area), bringing the property well within reach of the 'lake effect' on wind, ice and snow.

It has a land mass of approximately 6 acres, 3 acres of which is play area in the scope of this project (exclusive of kindergarten area). About 2 acres of this is turf and/or tree covered.

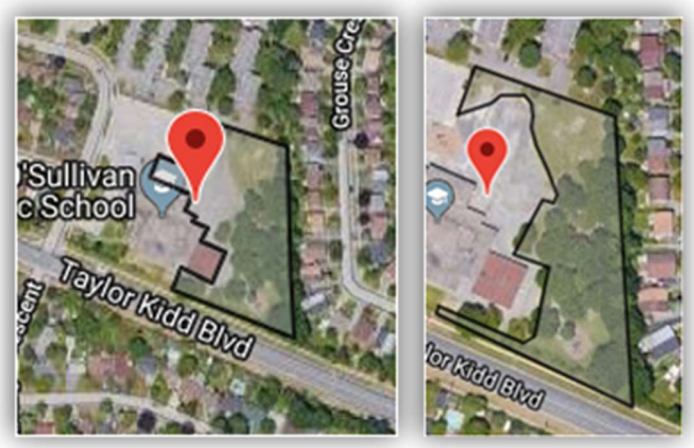

Figure (left) Playspace in project scope; (right) area in project scope turf/tree covered (measurements from Google Earth, using www.mapdevelopers.com (kindergarten areas are not included)

ENVIRONMENT AND SOCIAL CONTEXT

Climate: Kingston is built on Lake Ontario, where the lake empties into St. Lawrence. It has a climate like Southern Ontario cities on the lake shore, but a with cooler climate conditions, and higher levels of precipitation.

SIGNIFICANT HISTORICAL CONTEXT

In the Mohawk language, the name Katarokwi means a place where there is clay or where the limestone is, while the French translation of the Algonquin use of the term Cataracoui, means great meeting place

Cultural heritage: In the early 1600s, the first Europeans on the north shore of Lake Ontario and the area originally known by the First Nations Haudenosaunee Peoples as Katarokwi (now Kingston) and shared with Anishinaabe First Nations groups for both gathering, camping and trading.

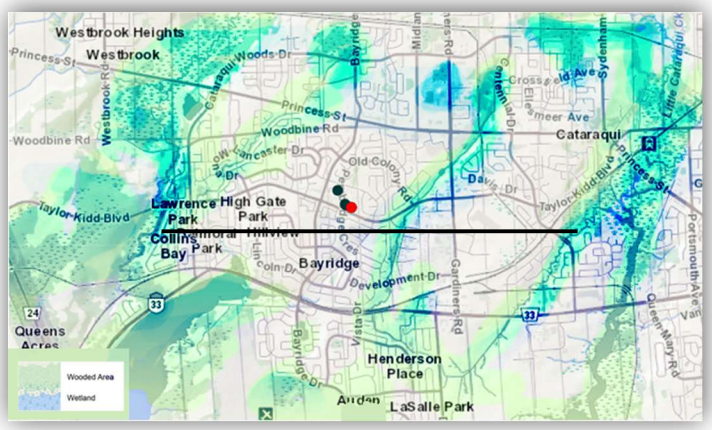

Figure Shaded areas are wetlands east of Kingston, around 974 Pembridge Crescent (red dot) (topographic information from Ministry of Natural Resources and Forestry GIS)

ENVIRONMENTAL SENSITIVITY

There are several decommissioned wells north and south of the property – abandoned by Imperial Oil in the 1980s

Most of Kingston, including Pembridge Crescent, is defined as 'highly vulnerable aquifers and significant groundwater recharge area1"

Kingston's Official Plan includes stewardship of two UNESCO sites in the region: Rideau Canal and associated fortifications, a World Heritage Site, and the Frontenac Arch, a UNESCO Biosphere Reserve

Watershed: 974 Pembridge Crescent is on the Highgate Creek watershed (*), direct to Lake Ontario. means special care with stormwater and use of chemicals on site. Wetlands dominate the area around the school (Figures 2 and 3)

Wildlife habitat: Areas of contiguous woodlands, wetlands and other natural heritage features and areas represent important areas of wildlife habitat that are critical to the movement of wildlife to Lemoine Point Conservation Area.

Recreation: The school is directly on a walking trail that runs east west on Taylor Creek Drive. Old Colony Park, just north of the school, is popular with residents from the neighbourhood.

School values: The Code of Conduct considers healthy communities to include reducing use of non-renewable resources; and greening strategies like restoring and naturalizing school grounds, active play and stormwater management

THE CLIENT: ARCHBISHOP O'SULLIVAN CATHOLIC SCHOOL

Archbishop O'Sullivan Catholic School is overseen by the Algonquin and Lakeshore Catholic District School Board (ALCDSB)

FROM THE AOS POSITIVE SCHOOL CLIMATE AND WELL-BEING: CODE OF CONDUCT

"*We are all responsible for creating communities of shared belonging that are safe, sustainable, inclusive, respectful and healthy*"

Includes: supporting relationship building, healthy relationships, and healthy sustainable communities by reducing water, energy and resource consumption

The school is home to 254 students in JK-8 who use the playspace in: kindergarten, primary (about 20 students on average), junior and intermediate (average of 20-30 students on average). The youngest, in kindergarten, have exclusive use of a fenced-in at the south perimeter of the property.

"The portable on the north west corner of the playground is a classroom for those in the Belong Classroom Initiative i·. This program provides and environment and curriculum that accommodates students with trauma and attachment difficulties

Outdoor education is a vital part of the program. Students (in the company of staff). They use: the climbing play structure outside the portable; play baseball, basketball and four-square); and skate first thing in the morning when the rink is operational.

SUMMARY OF SITE ANALYSIS

SITE ANALYSIS	Zones		
Factors of Influence	**Kindergarten Zone**	**Junior Zone**	**Senior Zone**
Climate	▪ Exposed to the south sun ▪ Exposed to South Winds ▪ Does not Receive building Shade	▪ Partial Exposure to South Sun ▪ Does not receive building Shade ▪ Partially exposed to South Wind	▪ Partially Exposed to South Sun ▪ Receive Building Shade ▪ Not So Exposed to South Winds
Any Critical Site Constraint, Obstruction or Barrier	▪ Exposed to Roadside noise and pollution ▪ Physically Contained area	▪ Intersecting pathway ▪ Rock bed hedge	▪ Intersecting pathway ▪ Rock bed hedge ▪ Residential neighborhood interface ▪ Parking interface
Existing Slope / Drainage	▪ Flat	▪ Steep Slope on one side	▪ Steep Slope in part
Existing Design Elements	▪ Building Wall-Backdrop ▪ Fencing	▪ Building Steps in backdrop	▪ Building Wall backdrop ▪ Bench Seating on Concrete pad
Existing Activity features	▪ Lawn ▪ Wooden Fiber Soft Ground ▪ Play Equipment ▪ Sand bed ▪ Soccer posts	▪ Play Equipment	▪ Play Equipment ▪ Basketball court ▪ Soccer field ▪ Skating rink ▪ Sand bed ▪ Four Square line painting ▪ Basketball hoops on walls
Paving Material	▪ Asphalt pathway along built block ▪ Paved Entrance	▪ Asphalt	▪ Asphalt
Major Ecological Aspects	▪ Sparsely planted Trees and Shrubs ▪ Gradual Slope ▪ Lawn	▪ Dense cluster of Mature Trees ▪ Lawn	▪ Dense cluster of Mature Trees ▪ Lawn ▪ Heat islands
Functional Requirements mentioned by Users	▪ Space for bags and children effects ▪ Lack of many activity / play areas		▪ Broken Asphalt allows black-ice to form. Reduce Slippery surfaces

FORMAL AND INFORMAL INFORMATION SOURCES

STUDENTS, TEACHERS AND NEIGHBOURS

We heard from students formally through table discussions; and informally at recess, before and after school. The summary at the charette was very useful (and exhaustive). Our design incorporates what we heard and the team's joint intelligence.

We had the opportunity to speak with some of the neighbours. One neighbourhood resident, with a yard directly adjoining the school playground stated that she likes the student presence and the kids coming up to her fence. She feels that having full visibility of the grounds is like having a 24-hour sentry, which discourages vandalism.

Another neighbour visits the AOS grounds regularly with her dog and her three-year-old to play and ride her bike. The school yard proves to be a popular place for dog owners, who use the forested area as unofficial dog play area (and pick up after themselves).

EARLY FEEDBACK ON CONCEPT PLAN| DESIGN RESPONSE[ii]

OME ALIVE OUTSIDE 2019 DESIGN CRITERIA

Encourages interaction with the space using all five senses

Integrates the creative input of the students and teachers who will use the space

Creates habitat for native wildlife

Effectively manages and utilizes rainwater

Demonstrates a practical grasp of material costs and suggests an innovative implementation plan

Favourite features: wall map/mural; use of explanatory language (e.g., Explorer's Room, Enchanted Forest); use of grade to create berm seating and potentially save on cost for fill addition or removal from site	***Thank you***
Design criteria consideration: can rainwater be better utilized and managed on site to advantage?	*Yes, it was our intent and we have now included more specific elements to mitigate runoff and manage stormwater (within grading limitations for now)*
Opportunities: was football a noted request from the students? Taking out soccer and baseball and putting it down into a sloped area will required extensive fill and retention. This will be cost prohibitive.	*The comment is about being able to use the limited turfed area for more than one use, simultaneously (in their words of Grade 7/8 students – "soccer hogs the field when we want to play football at recess".*

Further clarification required:

(a) why replace existing granite boulder wall with limestone retaining wall? It would be expensive and is not a local material

(b) what is meant by a permeable pathway through the woodlot and what is its impact on tree roots?

a) the use of limestone connects directly to Kingston's architecture and geology; granite is not native to area – boulders had to be brought in. We can substitute materials depending on overall project costs

b) a permeable pathway (mulch, pavers, etc.) allows water to be absorbed, slowing runoff; the pathway is sited to divert foot traffic away from, and avoid compaction of, soil in sensitive root zones.

WHAT PROBLEMS IS THE PROJECT TRYING TO SOLVE?

- Trees in the wooded area are suffering – roots are exposed, and soil is compacted affecting nutrient and water availability to the deep taproots (of oak and shagbark hickory). De-icing salts and other chemicals are washed into the space with rain and snow melt.
- The ground in the playing fields is quite uneven, and rocks protrude in places. It makes it a challenge for the students to play on the field safely. One half of the field area is asphalted over, and much of the asphalt is in disrepair.
- Lack of a safe and hospitable outdoor learning and playspace for kindergarten children (noise, no shade from sun, no simulative colours or activities.
- No purposed seating for students, or spaces that encourage talking and playing quietly together
- There is no real exterior learning space or designated outdoor classroom(s). Creating such a space could attract more funding from the Board.

PROPOSED SOLUTIONS (IN THREE STAGES)

Each of the proposed landscape solutions is aimed at bumping-up educational value for AOS, while also preserving the school's natural assets. It could attract other educational money from the school board.

FUNDING FOR AGING SCHOOL IMPROVEMENTS

The Ministry capital program allocates School Condition Improvement funds to Ontario school boards to revitalize and renew aged building components of schools, including a portion that can be spent on surrounding site components.

AOS, as with other ALDCSB schools, has committed to creating a health and sustainable school environment. Creating and restoring wildlife habitat sand managing storm water helps this happen

Our proposed solutions, and the staging help make a business case for continue receiving future funds.

A. CREATE HOSPITABLE AND SENSORY-RICH OUTDOOR PLAYSPACE

CREATE A STIMULATING SPACE FOR ALL AGES, using nature to widen understanding of the natural world (including STEM-related learning with found objects) and learning through play; and building sensory-rich accessible space for all students, including the Belong Classroom Initiative.

B. DEMONSTRATE FISCAL RESPONSIBILITY TO THE SCHOOL BOARD

CREATE OUTDOOR SPACES THAT ARE AN EXTENSION OF THE CLASSROOM for education, increasing school capacity for higher enrolment; and share this multi-purpose space across grades on landscape investments. The boundaries of newly designed areas are defined not by physical separation of space, but by scheduling time for use by multiple grades.

C. CREATE A HEALTHY, SUSTAINABLE COMMUNITIES AS A SCHOOL

MAKE A LARGE GATHERING SPACE to help build community. This is an extended classroom, a fun place for general assembly; and for daily use by students (including those in Belong Classroom Initiative) during breaks and after school. (e.g., a treed amphitheatre on the currently unused asphalt ground.

D. PRESERVE THE BOARD/SCHOOL NATURAL ASSETS

CORRECTING DRAINAGE can be very expensive, in materials, machinery and labour. The proposal lessens the damaging water flow off the asphalt by modest changes to topography that buys time for more extensive grading in future stages

PROTECT TREE AND PLANT LIFE by diverting traffic from the drip zone of the trees to allow root systems to recover and keep healthy–create walking paths with geometry to encourage more interesting walking and running. alternate route and respect for the contribution of trees

SUMMARY OF THREE STAGES OF PROJECT		
Stage One (spring 2020)	Stage **Two** (2020 to 2021)	Stage **Three** and beyond 2021
TEND TO THE NECESSARY	**BUILD OUT FROM STAGE TWO**	**AMBITIOUS PROJECTS**
Fix drainage by grading and stormwater management	More extensive grading for restoration of habitat and new learning space	More sophisticated greening and materials
Ensure play safety	Build priority hardscape structures that were deferred by funding	State of the art sports field and storage

Enriched learning and play spaces	Continue rebuilding of sports fields	Community garden
A big early win for the school - wallball courts and Kingston mural		Treed outdoor amphitheatre that is a classroom and performance space

STAGE ONE: IMMEDIATE PRIORITIES (SPRING 2020)

In order of priority:

1. FIX DRAINAGE (in all areas, less in kindergarten space) through grading;
2. ENSURE SAFETY by emending currently turfed field for student play; and
3. Make ENRICHED LEARNING AND PLAY SPACES (for kindergarten to juniors) with simple regrading and an early-win Kingston mural ball wall in school yard.

STAGE TWO: MEDIUM TERM PRIORITIES (FALL 2020/SPRING 2021)

Grading to create a variable topography in the forest area

- To carry on the landscape restoration started in Stage One: for aesthetics (areas of different heights) create visual interest; and to create additional play area using vertical space in the same horizontal footprint.

Building nice-to-have hardscape structures that could not be funded in previous stages:

- Continue to build a wildlife corridor that runs contiguously from east to west across the school yard, to connect Old Colony Park to the river system and to Lemoine Conservation Area
- Install a new bike lock-up within the school boundaries to encourage both students and teachers to commute to work on bicycles, scooters, etc.
- Remove and re-build turf to create a proper sports field
- Allow multiple, and simultaneous, use by students during break.

STAGE THREE: LONG TERM PRIORITIES (2021 AND BEYOND)

A continuation of what could not be finished or completely funded in the previous two stages, but also more ambitious design:

- A more developed wetland area at the neighbourhood using a more expensive material (like Kingston limestone), instead of small cairns; the limestone could be repeated in small details across the built landscape

- Create a permeable parking area with a mechanism to divert salt and runoff from reaching the school grounds

Completely renovate the sports field area, by removing asphalt and amending soil:

- Create to-standard sports field(s) with appropriate markings, and seating areas for parents and teachers; storage for outdoor equipment, sports and/or otherwise
- Create a community garden space on the east perimeter of the parking lot, including repurposing the baseball backstop to a green roofed shelter for students (from sun and winds)
- Build a treed outdoor amphitheatre that is an extended classroom and performance space on the currently unused asphalt ground:

  For general assemblies and outdoor theatre; that is also used daily use students during breaks or for gathering in small groups after school (e.g., a treed/shaded amphitheatre with a formal stage); bring Belong students portable and equipment 'into' the school space.

DESIGN APPROACH

LANDSCAPE DESIGN PRINCIPLES USED

These guided our design

- NODES AND WIDTH VARIATION of spaces and paths
- A KEY FOCAL POINT, and focal points within.
- UNPREDICTABILITY and SOMETHING JUST AROUND THE CORNER
- Lots of HEIGHT VARIATION in topography or hardscaping
- SIMILARITY OF BUILDING MATERIALS to connect spaces

FINANCIAL

BUDGET

DETAILS TO FOLLOW

In some cases, we might have chosen a more costly option because of the value it brings to the design and program. We are open to substitutions (e.g., different stone material). This might change the budget, significantly in some cases

MATERIALS USED

We designed with three simple principles in mind:

IF YOU CAN, DON'T THROW IT, RECYCLE AND REUSE MATERIALS
USE FOUND NATURAL OBJECTS AS LEARNING MATERIALS
IF A GOOD IDEA IS TOO BIG, MAKE IT SMALLER

THE DESIGN TEAM AND PARTNERS

DESIGN TEAM

DESIGNERS:

Team Cherry: Teréz Szoke
Team Cornflower: Rosslyn Mackay
Team Crocus: Margaret Vallieres
Team Daisy: Feroz A. Faruqi
Team Lavender: Margareth Lobo Gault

ACADEMIC COORDINATOR AND DESIGN MENTOR:

Sam Benvie, Ryerson University, Landscape Design

VOLUNTEER HIGH SCHOOL CONTRIBUTORS[1]

Kayla Baker, Sir Guy Carleton High School, Nepean: for design ideas and hand drawings of murals for ball wall and kindergarten Explorer Room space)

Abby Stewart, (Holy Cross Catholic Secondary School and former Archbishop O'Sullivan student): for inspiration with her music and ideas of incorporating marine adventure in design

PROFESSIONAL PARTNERS

Landscape Ontario and Wentworth Landscapes for guidance in site assessment, suggestions and material costing.

[1] *Prior to Ryerson University being assigned a school for the design competition, we worked with two high school students. We mentored them in Kingston and developed an ongoing friendship beyond that day. They asked if they could volunteer to help on our design (in addition to their design schools). They are credited here as they influenced specific elements in our design:*

ENDNOTES

i The Belong classroom initiative was developed for children who are not able to manage regular classroom or traditional behavioural classrooms because of trauma and attachment difficulties. There is a maximum of eight students who can be enrolled in the program. Students are required to live within 20 minutes of the school program to avoid lengthy travel to and from the program.

ii From 'Concept Submission - Review and Comments' provided by Come Alive Outside, November 2019