

Kingfisher Lake First Nation School

Kingfisher Lake, Ontario, Canada



Kingfisher Lake First Nation School and Teacherages

Kingfisher Lake, Ontario, Canada



Kingfisher Lake First Nation School - Exterior

1 | Executive Summary

Overall Project Goals and Outcomes

Client: Kingfisher Lake First Nation

Completed: 2024

Size: 2,446 SM | 26,329 SF

Budget: \$41,800,000 CAD

Delivery Method: Design Build

Through an extensive community consultation process with members of Kingfisher Lake First Nation and education representatives, an iconic design emerged, symbolic of the Kingfisher Bird, and the community's name sake. Through interactive workshops exhibiting 3D walk-throughs, precedent research, story telling and a walk through memory lane with Kingfisher Lake First Nation, the Team developed a concept that reflects the community in a culturally unique and meaningful way.

The school and teacherages are carefully designed to meet sustainability targets, schedule targets (based on winter road access), and budget requirements. Economy was achieved through simplicity in design, details, materials, and construction. Wood is expressed in the heart of the school, where the community gather after school hours.

Land based learning opportunities were also emphasized during design in the form of an indoor cultural cooking space and an outdoor classroom complete with tipi building areas and fire pit. In the most visible location of the school is a dedicated elder's room that is accessible to students and elders at a given time. Local translation services were used as part of the signage, wayfinding, and FF&E design.



Kingfisher Lake First Nation School - Sub-Dividable Gymnasium



Kingfisher Lake First Nation School - Hallway and Bench Seating, and Elders Room



Kingfisher Lake First Nation School - Foyer, Common Area, Servery, Hallway, Main Entrance

2 | Scope of Work and Budget

Scope of Work

Services: Architecture, Interior Design & FF&E, Structural Engineering, Mechanical Engineering, Electrical Engineering, Civil Engineering, Geotechnical Engineering, Sustainability, and Energy Modelling

The original Kingfisher Lake First Nation school was undersized, had exceeded its life-use, and did not meet the communities educational needs. Designing school projects with First Nation communities brings new hope to generations, enhances learning opportunities, and provides a safe, modern, inspiring environment that promotes discovery and cultural learning. The planning and design creatively harness ways to best use the school for community functions such as feasts, broader learning, and elders' participation. The facility planning and design employs creative solutions, while providing strong management, production, and robust monitoring of the construction process. The Team considered winter road logistics, regional costing, and value engineering to bring the design to fruition.

The approach was to work in close collaboration with the Project Team and Kingfisher Lake First Nation. When possible, the preference

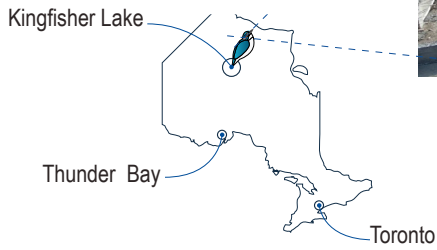
was to be able to visit the community to learn, engage, and meet; the aggressive project schedule and current travel restrictions required alternative solutions. Adapting to a new reality during COVID, the Team developed communication and feedback tools that served to engage and exchange ideas in a clear and effective manner, including use of real-time virtual and traditional surveys, easy to understand visuals, and three-dimensional representations. Design ideas were communicated through an array of engaging graphics, images, and 3D experiences, with the goal of creating excitement and garnering consensus in the community. The multi-disciplinary team will included Architecture, Interior Design, Landscape Architecture, Structural, Mechanical, Electrical, Civil Engineering, Energy Modelling, Acoustics, and Environmental Services. A third-party Cost Consultant and Kitchen Consult rounded out the team.

Budget

The construction budget for the KFLFN New School and Teacherages was \$41,800,000 CAD. As this is a fly-in remote access community, construction is approximately double compared to if the same project was built in a major city centre.



Teacherages



Kingfisher Lake First Nation School - Map and Aerial Views



Kingfisher Lake First Nation School Exterior - Lighting



Kingfisher Lake First Nation School Incorporating the Oji-Cree Language in Signage

3 | School & Community Research and Engagement

3A | Context

Community

Kingfisher First Nation is an Oji-Cree First Nation reserve located 350 kilometres north of Sioux Lookout, Ontario, Canada. It is accessible by air all year and by waterway in summer and ice roads in winter.

Understanding of First Nation Context and the great need for proper education facilities, particularly facilities that provide a full K-10 program as well as a facility that separates the younger years from the older years was important. This involved creating a school environment with the best programs and educational opportunities - the original school and playground, while centrally located, were cramped inside and outside with no ability to expand or repair.

Kingfisher Lake First Nation's original 1,393 SM school was undersized and did not provide a full K-Gr.12 program, as a result, students in Grades 9-12 were attending school outside of the community and this has not been a successful educational model for the community.

The Kingfisher Lake First Nation community expressed a need and desire for positive change, including providing a new school for K-Gr 10 in order to keep Grade 9 and 10 students in the community longer.

The school was originally built in 1971 and numerous additions were completed with the newest being in 1997. The school was difficult to maintain, lacked accessibility, and had passed its intended life cycle. The original school needed significant repairs and could no longer serve the educational needs of the students, teachers, and community.

The new Kingfisher Lake First Nation (KFLFN) school was designed in close collaboration with the KFLFN community. Situated in close proximity to the community and away from the lake, the new school meets the community's program requirements and is a unique cultural reflection of KFLFN.

The design conceptualizes a new and dynamic school design that portrays a Belted Kingfisher taking flight, a symbol that is culturally important to the community. To further accentuate the notion of the expansive wings, large glass panels, natural light and wood canopies are introduced. The floor plan is separated into two major zones: one

focused on cultural aspects and is community orientated. The second wing is for all classrooms, with an opportunity for future expansion. The entire single-storey facility will be completely accessible for students and communities with different physical needs.

Stakeholders

Chief and Council, Elders, Local Education Leaders, Staff, Parents and community members were involved in the engagement processes. A concept design workshop proved to be very successful in generating community participation and interest in the project. Two concepts were derived from community feedback, one concept was inspired by the “Beaver” and the second concept was inspired by the “Kingfisher”.

When the Beaver inspired school design and the Kingfisher inspired school design was put up for consideration, it was unanimously decided by key decision makers that the Kingfisher inspired concept was the right fit for the new school design.

Challenges

There were numerous challenges to the design and construction of this project. This project was designed in 2021, during the COVID-19 pandemic. Communication was quite limited due to safety and distancing requirements that the pandemic imposed.

During construction, working up north in a remote community only accessible by winter road for a few short weeks becomes a challenge involving careful planning and execution. Materials must be meticulously considered as there are no easy or cheap ways of gaining access to building materials in the remote community of Kingfisher Lake First Nation. Coordinating skilled trades and labour to produce a quality design for communities that have the highest need, becomes even more of a challenge.

Available Assets

There are limited available assets when constructing in northern communities. Local equipment such as an excavator or even a drill may be rare. However, local resources such as aggregate, and underground fill are bountiful, the caveat is, they must be prepared accordingly to meet performance specification requirements. There was a substantial effort made on this project so that 10% of construction value would be contributed via local resources, labour, and content. This is done through the lens of stimulating the local economy for the duration of design and construction. Local fill and aggregate went through a sieve analysis and were tested in the lab to meet minimum performance requirements. Local workers were provided training opportunities to build on their skill-sets and to empower skilled trades people for future employment.



Kingfisher Lake First Nation School Entrance, Office, Foyer / Common Space, and Servery with School Logo (Kingfisher Bird and Tipi)



◀ Foyer, Office, and Hallway | ▶▲ Gymnasium Stage / Classroom with Retractable Wall | ▶▼ Gymnasium

3B | Process

Visioning Process

Kingfisher Lake First Nation clearly required a new school and new teacherages to create an environment of health, safety, wellness and the highest quality of education. The Team understands the various challenges and opportunities within Indigenous communities, and strove to understand the unique needs, wants, and desires of the users, along with the requirements to fulfill those needs within a modern and culturally sensitive context. The priority was a community-based design that is flexible, inviting, and can offer opportunities to embrace traditions. Accordingly, the Team applied active listening, design leadership, experience, respect, creativity, and a positive spirit while working with the community to achieve project vision for the planning, design, and construction of the new K4 – Grade 10 School, site work, and new Teacherages for Kingfisher Lake First Nation.

The importance of creating a unique and representative design, while respecting the available budget, schedule, and functional needs of the school, its students, teachers, maintenance staff, and the many generations that will use this community amenity was paramount. Recognizing the construction of the school would provide opportunity for employment and use of other local resources, the Team endeavoured to maximize those opportunities. Equally important, was

the selection of simple building systems and technologies that are easy to use and are low-maintenance, due to the challenges of repairing components in remote locations. The design utilized opportunities for Oji-Cree Language and Cultural Studies, as well as outdoor and land-based learning elements.

Engaging Local from Planning, to Design, Through Construction

The approach for the new school project was based on a foundation of communication; it was crucial and critical to have Kingfisher Lake First Nation's input, involvement, and subsequent benefit from being involved in the entire process. This approach extends from the initial design through to construction and ultimately, management and maintenance of the facility.

Value of Process and Project to Community

Planning and Design Phase | The Team utilized the following methods to integrate the First Nation's input and realize community benefit: Virtual School Tours, Concept Design Workshop, Community Project Involvement, Community Communications - Internet, Broadcast and Print Technologies, Training and Employment Assessment & Opportunities, and Heavy Equipment, Vehicle and Tools Usage

Construction Phase | During the construction phase, the Team integrated Kingfisher Lake First Nation’s input and involvement through tracking and capitalizing on local employment and equipment use.

Post-Construction Phase | For the Post-Construction Phase including the long-term life cycle maintenance and operations of the school building and specifically around community involvement and benefit, the Team assisted the Project Manager and First Nation in the development and implementation of a building management and maintenance program. This assistance includes the collection and compilation of Operations and Maintenance manuals supplied by the General Contractor towards the development of a Maintenance Management System as administered by the First Nation; and confirmation that follow-up training of First Nation maintenance staff is maintained on a quarterly basis during the Warranty Period.

Diversity, Equity, and Inclusion Engagement

A natural colour palette creates a sense of calm - wood, blue (sky and water), white, etc. Irregular patterns and busy clashing colours can cause confusion and disorientation, and therefore the design brings nature (shown to be stress-relieving) into the building as much as possible. Transition spaces are considered, providing gradual transition between low and high activity. Direction is reinforced throughout the building for wayfinding (colour-coded directional cues, clearly marked entrances, signage).

Harvard Health publication describes neurodiversity as the idea that people experience and interact with the world around them in many

different ways; there is no one “right” way of thinking, learning, and behaving, and differences are not viewed as deficits. Physically diverse children are children with a range of physical characteristics, abilities and limitations - including conditions such as speech delay or motor challenges, vision / hearing impairment, and cognitive delays.

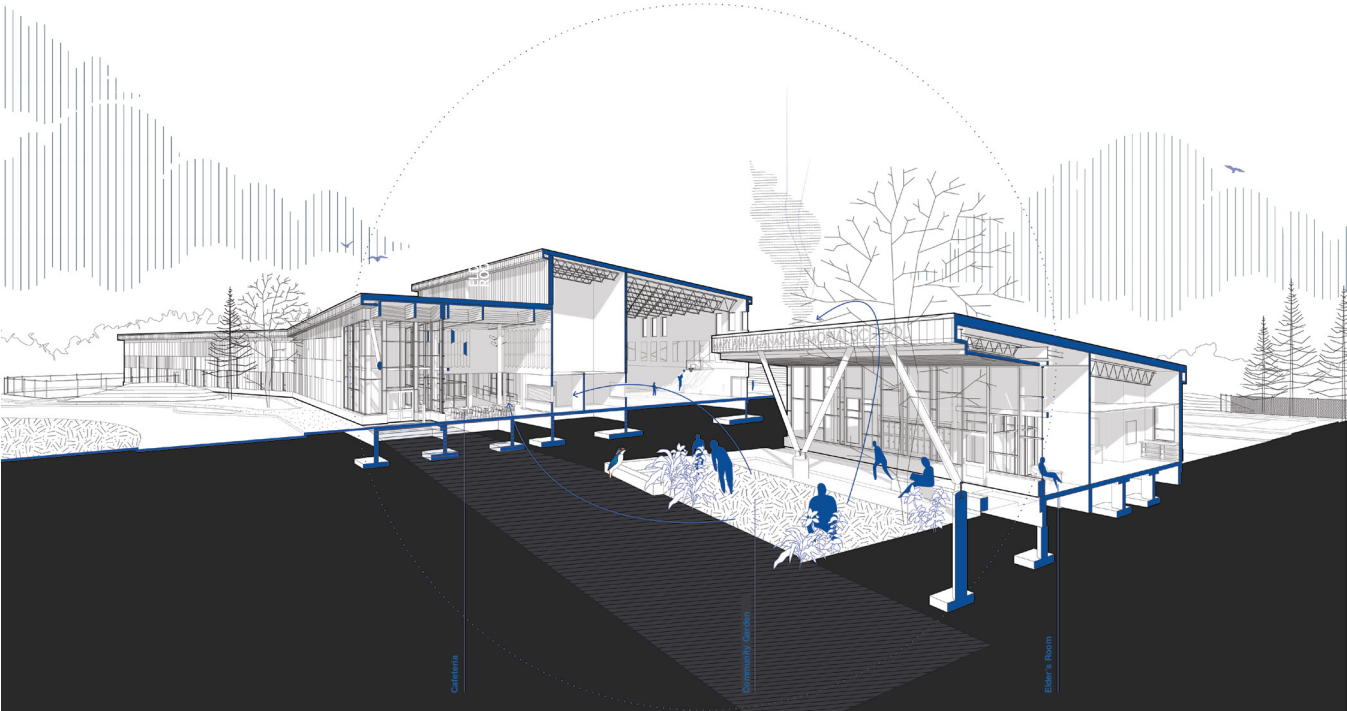
Kingfisher Lake First Nation school incorporates planning and design that considers how everyone learns differently, integrating a variety of spaces which vary in size and connection for access control and a sense of openness or enclosure, depending on the use. Neighbourhood style classroom pods, breakout / flex spaces, and exterior gathering environments contribute to having engaged with diversity, equity, inclusion, and accessibility in mind.

3C | Exhibits

Kingfisher Lake First Nation school takes inspiration from nature (biophilia). The ample glass enables nature to enter the school as a prominent feature. Signage incorporating the Oji-cree language and the six animals for each season were part of the planning and design.



KFLFN School - Main Entrance Cantilever with Oji-cree Language Signage ►



Kingfisher Lake First Nation School - Cross-Sectional Programming Diagram



Kingfisher Lake First Nation School - Main Entrance

4 | Physical Environment

4A | Context

Physical Attributes of Environment

The school has multipurpose uses and adjacencies in planning was essential to the design of the school. Careful consideration to wayfinding and signage played a role, and was crafted into the resulting facility. The Elders room, for example, is at the end of a corridor of the main entrance and is utilized by outside elders within the community, making accessibility easy for those using the space.

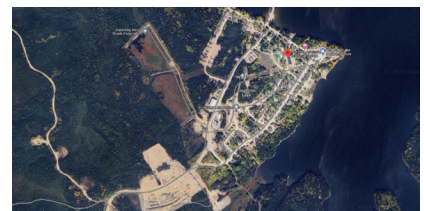
Natural materials were used, such as glulam - featured throughout the inside and outside. Expansive glazing allows light to enter the common double-high space, held by structural steel. The building uses open web steel joists, is supported on steel beams, and steel columns with shallow foundation spread footing. The teacherages has open wood joists and beams, supported on shallow foundation as chosen due to the geotechnical report following soil investigation.

Community Context

Importance of Culture

Appropriate design considers the importance culture plays in the following:

1. Identity Formation | 2. Social Cohesion | 3. Guidance for Behavior
 4. Adaptation and Change | 5. Educational Impact
- (Culturally Responsive Teaching)



Original Kingfisher Lake First Nation School and Aerial Map

4B | Response

Project Inspiration and Motivation

The concept reflects the community in a culturally unique and meaningful way. The environment supports learning that is both dynamic and flexible with various levels of engagement in group and individual settings.

Methodology and Consultant Approach

We believe in listening first, and wanted to learn as much as possible about the community of Kingfisher Lake First Nation - values, traditions, and the people who call Kingfisher Lake First Nation home. The methodology is based on listening, respect, lessons learned, and successes in educational design. The process was integrated, highly participatory, inclusive, thoughtful, and environmentally responsive.

The team used appropriate software at each design phase, including but not limited to: BIM 360 Revit, sketch-up, Rhino, MS Groups and Teams, Bluebeam, Navisworks, Newforma, Revit add-ons including Enscape and others. This technology, due to Covid-19, enabled community engagement. A high value is placed on in person engagement when possible, such as community workshops and focus group meetings, particularly with elders. To protect community members and comply with provincial health guidelines, some meetings

were conducted virtually through zoom, MS teams, and platforms enabling communication between project team members.

It was important to provide a culturally relevant design representative of the Kingfisher Lake First Nation community. With that in mind, an honorarium working with a local artist to design an art mural of the new school logo was given. We welcomed the opportunity to develop a project reflective of community values including a comprehensive approach to community involvement, awareness and participation in the design process, and an approach of truly listening to the Kingfisher Lake First Nation community to distill the meaning of place.

Innovative Aspects of Physical Environment

A Kingfisher Inspired design was at the forefront of this school acting as a cultural learning tool. One that promotes health and well-being through culturally immersive art and symbology. There is also ample natural light through expansive windows (that are also protected by a polycarbonate 3rd pane). Furthermore, Security is a major consideration for spaces serving young people on the spectrum. By creating extra turns in interior spaces and transitional spaces we can delay egress and require decision-making; delayed egress, a security feature interwoven in the design, can mitigate running, etc.



Kingfisher Lake First Nation School - Floor Plan



Kingfisher Lake First Nation School - Main Entrance, Bus Drop-off, and Benches | Gardening Boxes

Fostering Diversity, Equity, and Inclusion

How Do We Learn?

Cognitive diversity relates to the fact that we all think and learn differently. We are all cognitively diverse because our brains are all different. Every person has differences in perspective, insights, thinking and experiences, and synthesizing this information to inform planning / design improves educational facilities.

Planning and design that incorporates how different brains process information results in spaces that help promote teaching and learning best practices - considerations include complex attention (focus), executive function (planning), learning and memory (record, retrieve), language (ability communicate), perceptual/motor (motor skills), and social cognition (social context).

How School Design Supports Culture, and Neurological / Physical Diversity

By incorporating a variety of engagement opportunities, Kingfisher Lake First Nation school is planned and designed as a response to unique cultural characteristics of students and staff, along with neurological

/ physical requirements of students. Planners, designers, educators, and facilities personnel walk away with practical examples of ways to translate abstract ideas into physical realities. The objective is to determine how to best interpret research and engagement into physical manifestations in a school building design. The process approaches space planning, programming, scale, and materials by looking through the lens of project objectives and goals.

Fostering Sustainability and Wellness

Materials were chosen to minimize noise levels, dampen extraneous sounds and work to eradicate echoes; use of interior finishes with high noise-reduction coefficient values: acoustic paneling, resilient rubber flooring, and ceiling tiles to reduce sound reverberation.

Highly energy efficient design incorporating heat recovery ventilation system and in-floor heating, and low energy ceiling fans for air de-stratification and additional cooling.

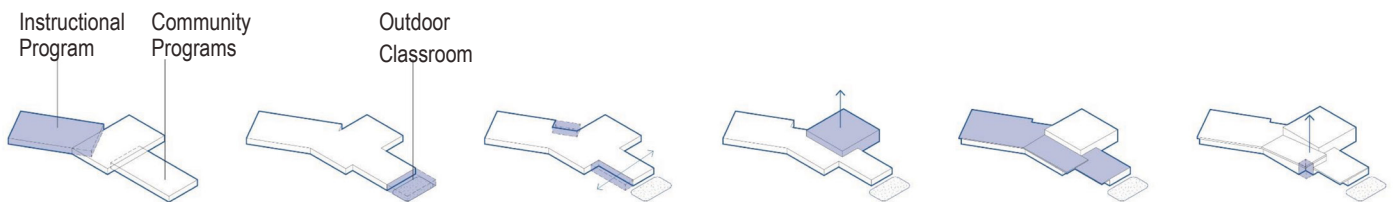
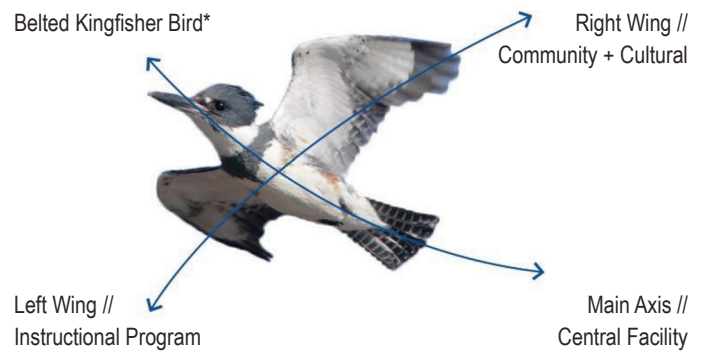
The project incorporated the use of soft warm-toned lighting to prevent sensory over-stimulation - avoiding complex lighting, bright, flashing light, reflection from shiny surfaces - in order to promote a positive learning environment.

4C | Exhibits

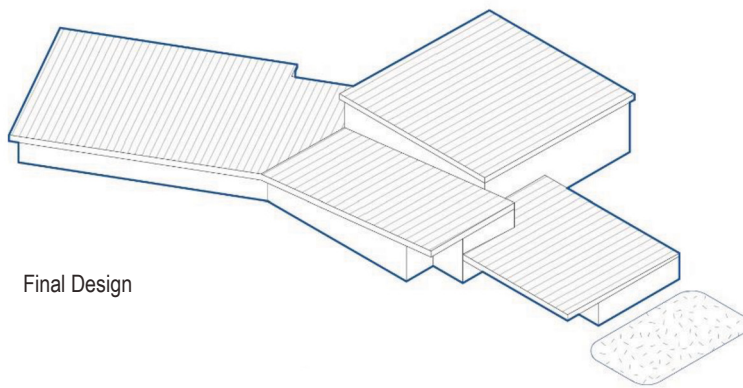
Concept Design Development

Inspired by the belted kingfisher bird, the school conceptualizes a design that is meaningful to the community. The west school wing is intentionally angled to give the impression of the Kingfisher bird taking flight as one approaches the school facility.

<https://www.birdzilla.com/birds/Belted-Kingfisher/description.html>



Skew / Displaying Wings | Subtract / Outdoor Classroom | Carve / Exterior-Interior | Extrude / Gym | Envelope / Wings | Extend / Creating Hierarchy





Kingfisher Lake First Nation School - Gymnasium and Stage / Classroom

5 | Educational Environment

5A | Context

Educational Vision and Goals

Land based learning opportunities were emphasized during design in the form of an indoor cultural cooking space and an outdoor classroom complete with tipi building areas and fire pit. Community gathering spaces are important, and the school is a facility with dual uses, enabling efficient and effective use of the space beyond school hours.

Planning / Design Education

A priority for the KFLFN Community is improving the quality of education provided. The new school enables K4-Gr10 students to be together under one roof. The total number of K4-10 students is expected to increase from 54 to 153 students in two years. The key components is to ensure the school is sustainable, fun, and innovative, while creating a strong cultural presence. The new school establishes a strong visual and functional connection to the natural environment that aligns with the communities' cultural values.

Attention to comfort in the classrooms ventilation being key to children being able to focus is always a priority.

By making the structure visible, the exposed exterior V columns provide a learning element. These custom columns support the significant cantilever. The interior space incorporates large amounts of glazing held by structural beams of steel, resulting in a large spanning spaces.



- 1 New School Building
- 2 Multi-Purpose Field
- 3 Beach / Volleyball Playfields
- 4 Court Sports
- 5 Intermediate Play Field (Grass)
- 6 Intermediate Play Area
- 7 Kindergarten Play Area (Fenced)
- 8 Bus Drop-off
- 9 Parking (25 stalls)
- 10 Outdoor Classroom
- 11 Outdoor Structure
- 12 Warehouse
- 13 Mechanical Compound
- 14 Teacherages

5B | Response

Supporting Curriculum

The new school provides a culturally meaningful design that supports land-based learning and local traditions passed down from generation to generation. Elders are at the forefront of local traditions & knowledge.

Elders Room

An Elders room is featured at the most prominent part of the building, directly adjacent to the front entry and high visible. Elders are leaders and teachers in the KFLFN community play an important role in guiding the children.

Culinary Arts Classroom

Adjacent and connected to the servery, the culinary arts classroom services the servery and enables large scale prepping of food for not only the school, but the community of Kingfisher Lake First Nation.

Science Laboratory

Equipped with a state of the art science laboratory, including fume hood for experiments that require ventilation. The classroom created a new facility to teach science, bringing proper educational resources to the children and community.

Gymnasium | Classroom

Having a year-round operational gymnasium with the ability to sub-divide the full size court into smaller courts for a variety of sporting activities. In a northern community with long winters, indoor activity is important to physical and mental health.

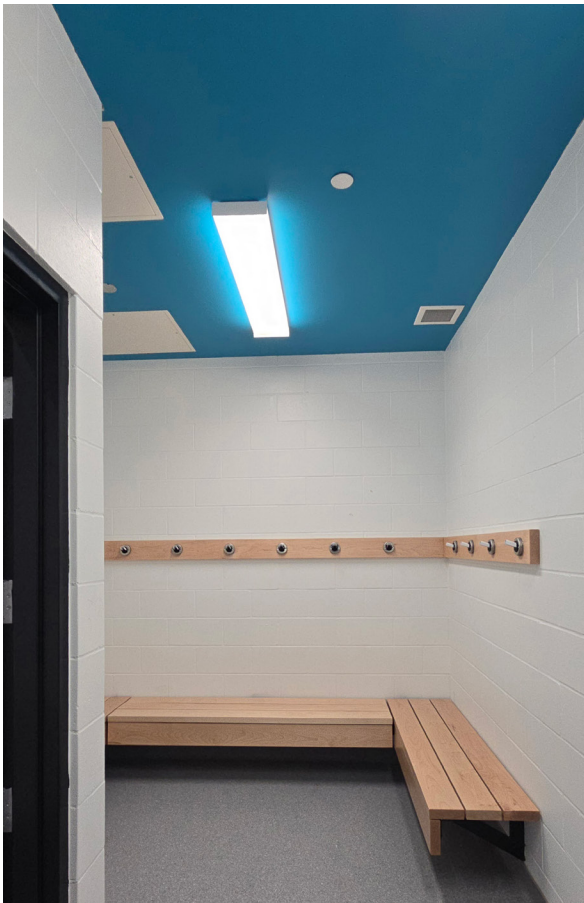
Connected to the gymnasium, on the other side the main entrance / foyer, the stage doubles as a classroom, and retractable walls with folding partition framing enable open or sub-divided spaces depending on the use / requirements. The classroom / stage is equipped with AV equipment and retractable projector.

Washrooms

Washrooms were designed to support the wellbeing, equity, dignity, and safety of students and staff. Washrooms are located in main circulation paths and areas of high visibility to allow for natural surveillance. They are assigned clusters to specific grade divisions and space them throughout the building to reduce wait times and enhance student autonomy. The position of sinks and mirrors, outboard of toilet stalls, allow for passive supervision to mitigate bullying and vandalism. Even acoustic comfort is considered as younger students reported being frightened by the loudness of the automatic flush valves and hand dryers. Students in older grades have full height washroom partitions that provide a level of acoustic control to further support privacy.



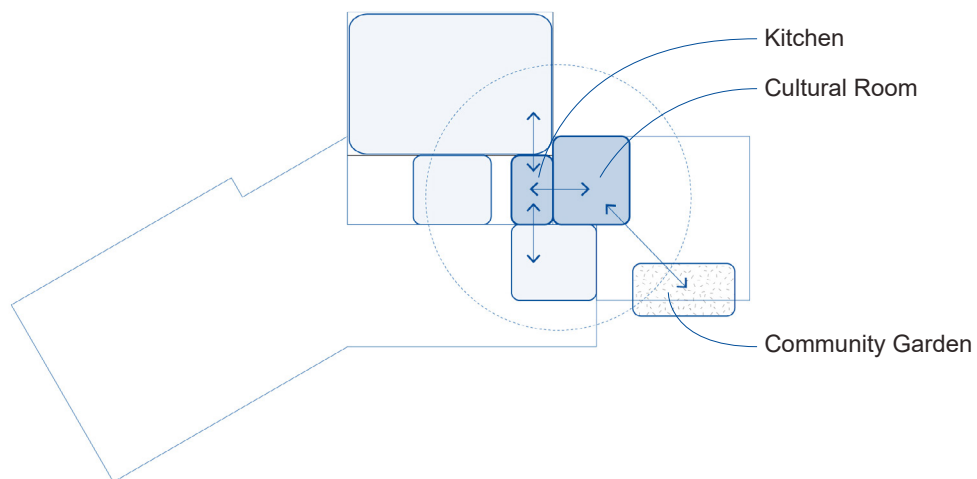
◀▲ Culinary Arts Classroom | ◀▼ Science Laboratory | ▶ Elders Room



◀ Locker Room | ▶ ▲ Main Entrance / Foyer | ▶ ▼ Gymnasium / Stage / Classroom

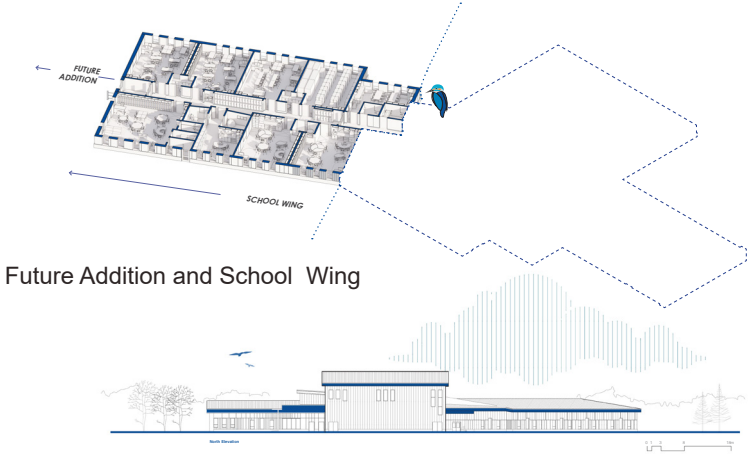
Supporting Varying Learning and Teaching Styles

As cooking plays a crucial role in the cultural teaching of the Kingfisher Lake First Nation community, the new school centres the program around the kitchen and cultural room, emphasizing local land based learning traditions that are often brought to life through the art of cooking and gathering.

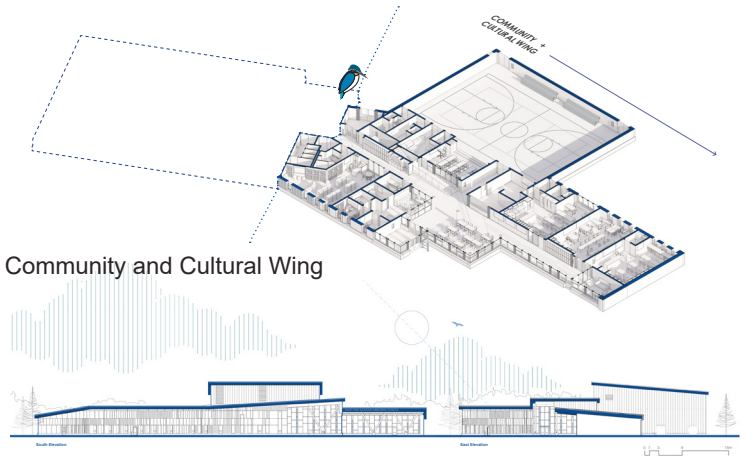


Educational Innovations

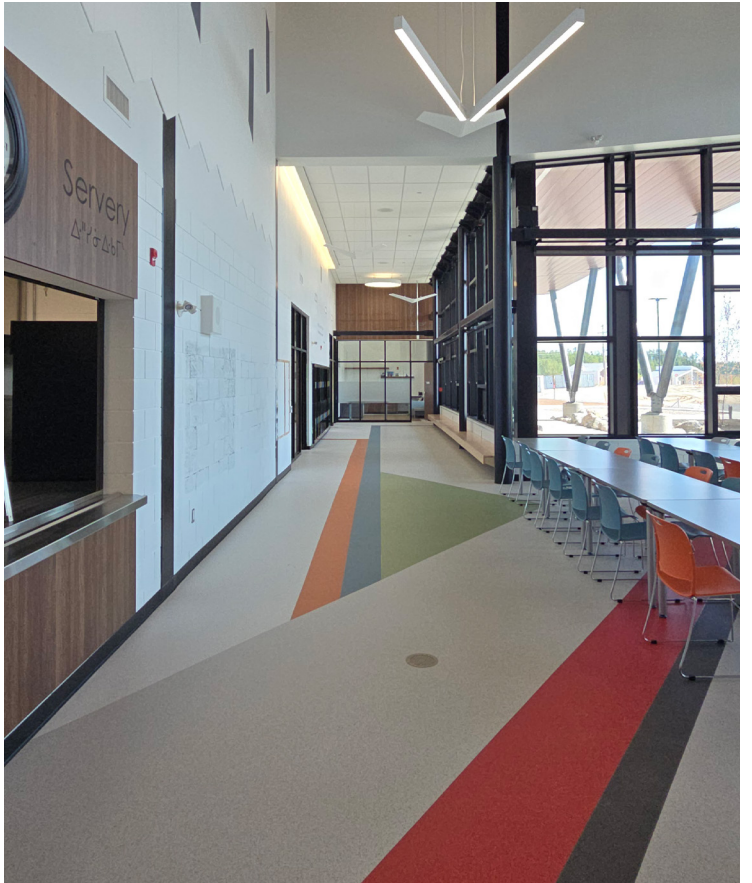
Connecting materials - glulam, steel, concrete pier, on a shallow foundation provided a structural challenge met with an elegant solution of V columns holding the cantilever of wood, welcoming the student into a large outdoor covered space upon entry. This protects against the elements in all seasons.



North Elevation



South Elevation | East Elevation



◀▲ Servery and Kingfisher Lake First Nation School Logo | ◀▼ Library | ▶ Foyer - Servery, Seating Space, and Hallway with Bench Seating



Kingfisher Lake First Nation School Main Entrance and Bus Drop-off

Adaptable and Flexible Environment

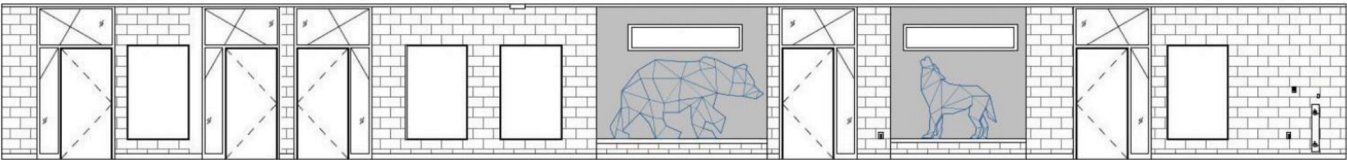
By having a wall that can open into a larger space that services multiple functions - classroom for gym and other subjects, stage, etc. - the school is planned and designed to incorporate flexibility and therefore support varying learning and teaching styles important to Kingfisher Lake First Nation. The foyer doubling as a large scale seating space for the community to gather enables easy access serving from the strategically placed servery. Using hallways as more than roadways that get you from A to B, benches are added into the double high space with windows allowing large amounts of light to enter - in a remote climate that has long cold winters, connection to nature is important for physical and mental health.



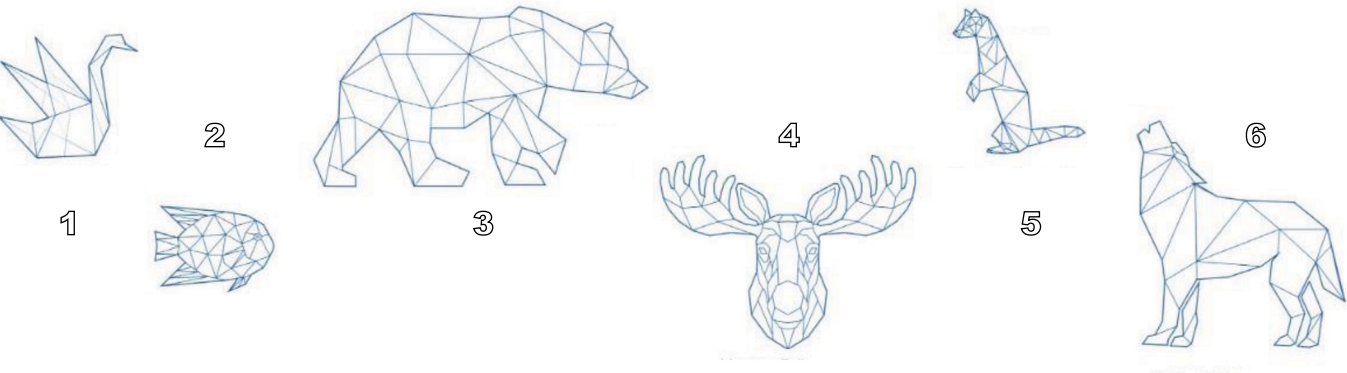
Gymnasium Stage / Classroom with Retractable Wall

5C | Exhibits

Kingfisher Lake First Nation acknowledges six seasons in a year. Each season is represented by a culturally significant animal, integrated in the school's design.



West Corridor School Wing



L-R | 1. Goose - Spring | 2. Fish - Break-up | 3. Bear - Summer | 4. Moose - Fall | 5. Marten - Freeze-up | 6. Wolf - Winter



◀▲ High School Classroom | ◀▼ Kindergarten and Preschool Classroom | ▶ Grade 5-6 Classroom



Kingfisher Lake First Nation School - Main Entrance with Glulam (wood) Cantilever

6 | Results

6A | Achieving Educational Goals and Objectives

Communication Strategy / Consultation, and Managing Issues and Constraints with Kingfisher Lake First Nation

When considering the optimal location of the school as well as siting the new school on the site, it was important to be cognizant of the site conditions that can have massive bearing on the financial feasibility of the project. The Environmental Assessment helped to identify any potentially contaminated soils as well as potential areas of peat or rock outcrops, where remediation or blasting has the potential to add substantial cost to the project. Site optimization was an imperative piece to this school project.

Heritage | In a 2003 Canadian Education and Youth publication called Integrating Aboriginal Perspectives into Curricula, outlines two main goals of integrating Aboriginal perspectives for Aboriginal students in modern curriculum:

1. To develop a positive self-identity through learning their own histories, cultures, traditional values, contemporary lifestyles, and traditional knowledge, and

2. To participate in a learning environment that will equip them with the knowledge and skills needed to participate more fully in the unique civic and cultural realities of their communities.

This reminded the Team of the humble need to collaborate with Kingfisher Lake First Nation to learn to incorporate traditional teachings into modern day curriculum to help nurture children into becoming future leaders, teachers, makers, and builders for the community.

Cultural | Although the team had worked with numerous First Nation Communities, no two communities are alike. Consequently, we approached the project with an open mind, open ears, and an eagerness to learn Kingfisher Lake First Nation's unique story. As guests in the community, we wanted to understand community values, learn about local culture, and respect laws as we joined with Kingfisher Lake First Nation in the planning, design, and construction of the new school.

6B | Achieving School District Goals

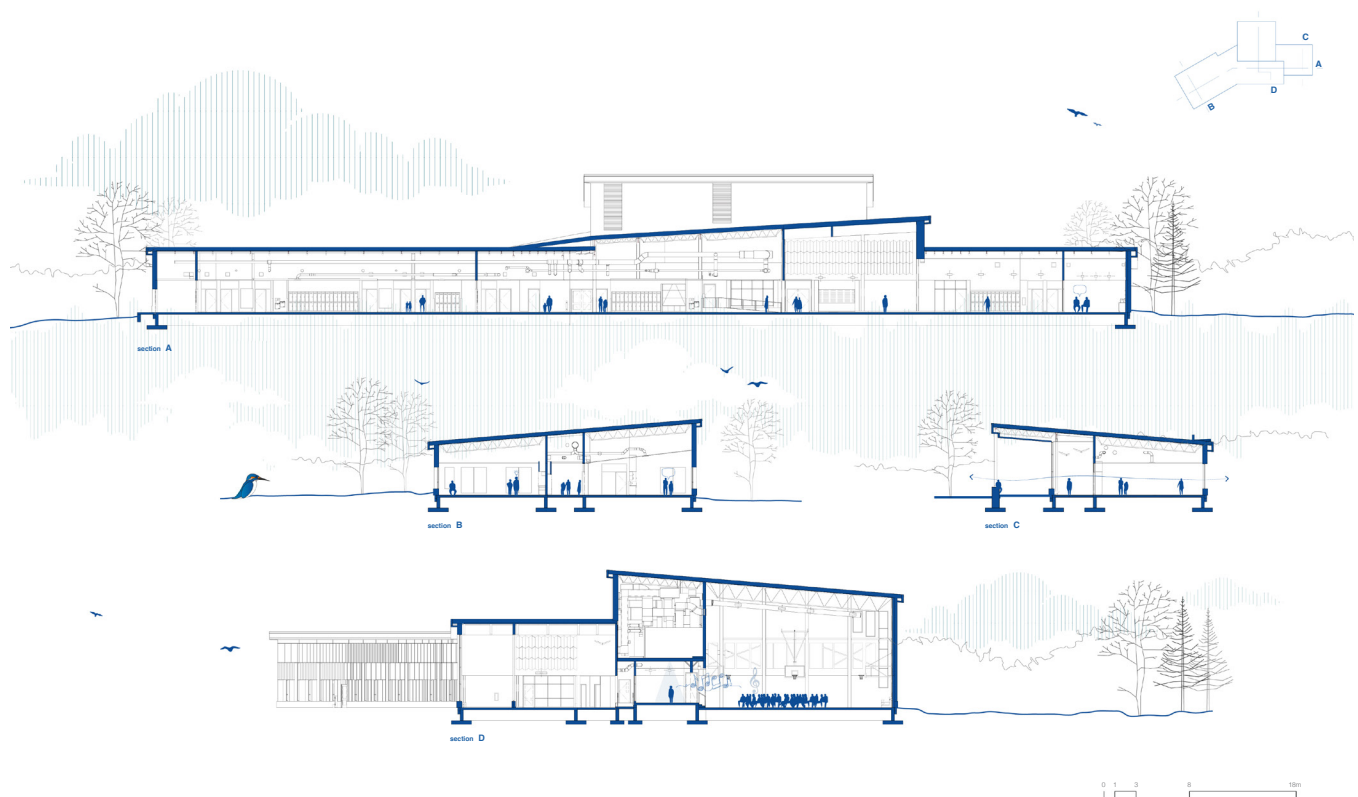
Socio Economic | The school project provided an opportunity for community employment, training, and skills upgrade in the construction field. The Team, in concert with the First Nation and Project Manager, assisted in developing strategies to maximize employment and training benefits to the community. At the onset of the project, it was essential to explore these economic opportunities in order to maximize local labour and resources. Similarly, economic opportunities included equipment procurement and rental, as well as the economy that was generated through food and accommodation services that were required.

Environmental | Northern communities are increasingly facing the consequences of climate change and a proactive approach is taken to help ensure the resilience of the community and the buildings within. Decisions made today will have implications into the future and the future is uncertain. The design of the Kingfisher Lake First Nation school project takes into consideration the transportation limitations; the infrastructure of the community where they are situated; a fragile ecosystem; the need for more efficient construction technologies while creating a school environment that is inviting, culturally relevant, safe, enabling, and nurturing.

6C | Achieving Community Goals

The overall approach to the planning and design involved the delivery of a creative and functional School building and site design within a cooperative and integrated design process. Project success is measured by the degree that community members embrace the design process and claim the resulting project as their own. Ownership of the process brings pride in the project solution, which is the end goal. In this participatory framework, the Team seeks to plan and design the project to address community and educational needs today and into the future.

Teacherages are an important part of remote school designs as they can help to attract teachers to the community. Some teachers have families, others require individual private suites. Various types of teacherages including 1 bedroom, 2 bedroom, and 3 bedroom units were planned and designed. These facilities are durable, provide an appropriate shield against the cold during winter months, and create a welcoming living environment. Designers from the Team collaborated with Kingfisher Lake First Nation to come up with a solution that was suitable for the community's educational needs.



Kingfisher Lake First Nation School - Community Space Diagrams



Kingfisher Lake First Nation School - Teacherages Exterior



Kingfisher Lake First Nation School - Teacherages Interior





Kingfisher Lake First Nation School - Exterior

6D | Process and Project Results and Achievements

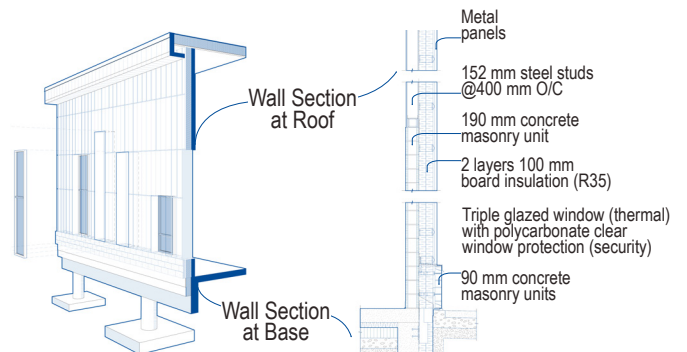
The design philosophy *modus operandi* is that good, enduring, and responsible design flows from an open, integrated, creative, and collaborative process. This is especially true in the design of educational environments and, within this realm, the philosophy is founded upon the following principles:

- Stakeholders bring expertise and experience that is fundamental in shaping successful design solutions; therefore, meaningful engagement and participation in the design process is critical.
- We have a responsibility in advocating and facilitating a design process that recognizes the importance of integration of projects into the fabric of our communities, increases awareness of environmental stewardship, and development of sustainable built environments.
- The quality of the design of spaces we create has an impact on the educational performance and outcomes of students and teachers who work within these places.

The Team design philosophy is not intended as a lofty statement – it is the manner in which we practice our craft each and every day. Our mission is to design with community in mind. As an integrated and

interdisciplinary organization - collaborating across design, engineering, planning, geotechnical, acoustical, sustainable and other specialized disciplines - we brought an integrated expertise and knowledge network that we were able to bring to the Kingfisher Lake First Nation community for this project.

The building was designed to be thermally comfortable and robust in a remote winter climate. The building's roof is sloped to maximize drainage. The building is insulated with outboard insulation to achieve R52 roof and R35 equivalent walls. The envelope design maximizes natural light in public or 'community' spaces. Meanwhile, glazing is protected with an added layer of polycarbonate window protection. All materials specified meet sustainability benchmarks.



Kingfisher Lake First Nation School - Wall Section

6E | Providing Value and Good Stewardship of Financial Resources

In the design and construction of the Kingfisher Lake First Nation School, providing value and demonstrating good stewardship of financial resources is paramount. Every decision -- from the selection of materials to the choice of energy-efficient systems -- reflects a commitment to long-term sustainability, cost-effectiveness, and cultural relevance. By engaging community members in the planning process and prioritizing durable, locally appropriate design solutions, the project aims to maximize educational outcomes while minimizing future maintenance and operational costs. This approach ensures that the investment not only meets immediate educational needs, but also supports the community's growth and well-being for generations to come.

6F | Project Sustainability and Wellness Outcomes

The project made several considerations for environmental sustainability such as energy efficient mechanical/electrical systems and a high performance building envelope system.

Not often mentioned, is the social sustainability aspect of a project. There is typically a high turnover in staff in First Nation remote community schools which can be quite stressful for students particularly if this happens during the school year. In order to attract and maintain teachers to the remote community, housing is provided. The teacherages were designed in close proximity to the new school with modern open floorplan layouts as well as wood fired stoves to provide supplemental heat during the winters.

Furthermore local language and knowledge was highly emphasized throughout the design of this school in order to normalize the local language and culture of Kingfisher Lake First Nation in their community facilities. This is one step towards truth and reconciliation through an architectural lens.



Kingfisher Lake First Nation School - Foyer / Main Entrance



Kingfisher Lake First Nation School - Main Entrance



Kingfisher Lake First Nation School - Nursery and Kindergarten Playground