KUUGALAAQ

A SPACE FOR INUINNAQTUN IMMERSION DESIGNED FOR INUIT | ENERGY RESILIENT ENVIRONMENTALLY SUSTAINABLE

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INNOVATING THROUGH INUIT KNOWLEDGE

Pitquhirnikkut Ilihautiniq / Kitikmeot Heritage Society (PI/KHS) is an Inuit-led cultural organization based in Cambridge Bay, Nunavut. Incorporated in 1996, we have spent over two decades dedicated to the renewal of Inuinnait culture and the Inuinnaqtun language, and to innovating through the wisdom and experience of our ancestors. We operate the May Hakongak Cultural Centre in Cambridge Bay, which functions as a community-focused gallery, library, archives and museum space. We focus on the urgent needs of Inuinnait—a distinct regional group of Inuit living in the Central Canadian Arctic in the communities of Cambridge Bay, Kugluktuk, Gjoa Haven and Ulukhaktok. We're working as one to revitalize intergenerational language and cultural transmission by developing programming and resources immersed in Inuinnait values, beliefs, direction, and ways of knowing and being. Our team is rebuilding and supporting the ecosystem around Inuinnait through immersive experiences that support what it means to be an Inuinnaq. In addition to language initiatives, we research and design exhibits for local, national and international audiences, deliver oral history and traditional knowledge projects, and facilitate community land camps.

In 2021, PI/KHS assembled a team to address the Arctic's need for community structures and facilities that draw from and reinforce local culture, language, and environmental knowledge. This collaboration has led to Kuugalaaq, our vision for a 2550 sq metre campus in Cambridge Bay that combines indoor and outdoor facilities, a highly customized cultural workspace, and outdoor areas to support cultural activities, and experimental landscaping with local plant species for climate adaptation, nutrition, and cultural use. The name Kuugalaaq refers to the waterway adjacent to the campus site; one that local Elders say used to run wide and deep, but which was reduced to a small creek due to climate change. With a dual focus on climate adaptation and cultural revitalization, our new campus will draw from deep reserves of Inuit and local knowledge to foster innovation, and enable knowledge and connection to landscape to once more flow deeply through our community.

Bridging local Elders and cultural producers, with northern-based industry and southern research support, our team's diverse expertise has helped us conceive Kuugalaaq as a space that is genuinely needed by Nunavummiut, that can be built and maintained by local companies and experience; and that experiments with the latest developments in renewable technology and energy efficiency.

AT HOME ON THE LAND

For centuries, Inuinnait have been at home on the land. Our environment provides everything we need to survive in the extreme climate of the Arctic. Our winter houses, igluit, are made of snow. Our tents, tupiit, created from the skins of caribou and other animals that sustain us with food. Driftwood and the tree line to the southern edge of our territory provides the wood we need to frame our tents, buildings and transportation.

With the introduction of outside cultures, ideas and materials to our region, the strong connections between constructed spaces and surrounding landscape have changed. Our people were moved off the land and into urban settlements. Residential schooling distanced our children from their homelands and weakened the generational transfer of knowledge and language that allowed them to make it their own. The spaces we now occupy in our communities are high cost, made with low-grade and imported materials, and configured in designs not suited to our culture, lifestyle, or climate. Living in such buildings takes a toll on mental and physical health.

MAINTAINING THE BALANCE

Like Inuinnait society, the Arctic environment continues to change. The same landscapes that have sustained our people for so long, are facing the dangerous effects of climate change. Action must be taken now. We are working to preserve, protect and renew our language and culture, at a time when the foundations of our identity and lifestyle–the land–is equally at risk.

Kuugalaaq is envisioned as an Inuinnait Ingilraatuqanit Ayuiqharvik (cultural place of learning) and will host a highly experimental, language immersive campus that combines indoor and outdoor activities to support cultural learning and activities that many community members can not otherwise access in an urban setting. It will bring the land back to Cambridge Bay by providing highly customized spaces for meat and hide preparation, documentation and transfer of environmental terminology, renewable energy production, and cultural production including sewing, tool making and traditional arts.

BY THE NORTH, FOR THE NORTH

For millennia, our ancestors thrived in one of the world's harshest climates, their lives completely intertwined with the land, sea, and everything in between. The insight we need to create better buildings in the North must be found in the North itself and in our knowledge. As we look to the health and wellbeing of our communities and our culture, the buildings we make—and our lives within them—must be integrated with the environment, harmonized with our surrounding landscape, rather than at odds with it. For that reason, our research is grounded in three key concepts:

EXPLORING INUIT ARCHITECTURE: Since 2016, we have been recovering and documenting Inuinnait architectural concepts, principles and terminology through conversations and workshops with local Elders, land users, and knowledge holders. Our long-term archaeology partnership with the University of Toronto has documented the evolution of regional architecture and its adaptation to systems of environmental and social change over the last 4,000 years. Multiple workshops have seen participants reflect on the overlap between language revitalization and cultural revival through the lens of traditional architecture. How we live and what we do in lived spaces has changed. Conversations have uncovered Inuinnaqtun terms for architecture that we no longer use, simply because our buildings and homes today lack these spaces for cultural activity.

UNDERSTANDING LOCAL KNOWLEDGE AND NEEDS: Consultations with our community have taken place as meetings, workshops, design charrettes and dozens of interviews with local construction and energy industry experts, home and cabin owners, Elders and knowledge holders, traditional architecture experts and the municipal government. In-depth conversations have outlined a vision for our cultural workshop space and the function of each room. Elders shared key components of Inuit vernacular architecture to carry into the design. Homeowners and local contractors described challenges with current infrastructure, the technologies they have tried, tested and are using, and what features should exist in modern Arctic buildings. All of these conversations help to ensure that our new cultural workshop reflects our community's experience, needs and priorities.

BUILDING CAPACITY: Kuugalaaq aims to build awareness of renewable energy and energy efficient infrastructure among community members and industry experts in Cambridge Bay. Local contractors, builders, and a renewable energy firm have been involved from the onset of our project. Together, we are learning from identified challenges and solutions, and forwarding the community's expertise by exploring and testing new research areas in building design. By promoting and building Cambridge Bay's entrepreneurship and capacity, we are ensuring that our construction project will be supported and managed locally, in addition to long-term operation and maintenance.

THE FUTURE OF CULTURALLY ROOTED INFRASTRUCTURE

Inuinnait Elders fondly remember the traditional buildings they grew up in. They often speak of them as animate dwellings: spaces that actively shape daily life, and that need, in turn, to be cared for. These buildings breathe and communicate with the outside world, absorbing sunlight and fresh air, while keeping out dampness and cold. Like the weather and animals, they are an integral and intimate companion to human existence.

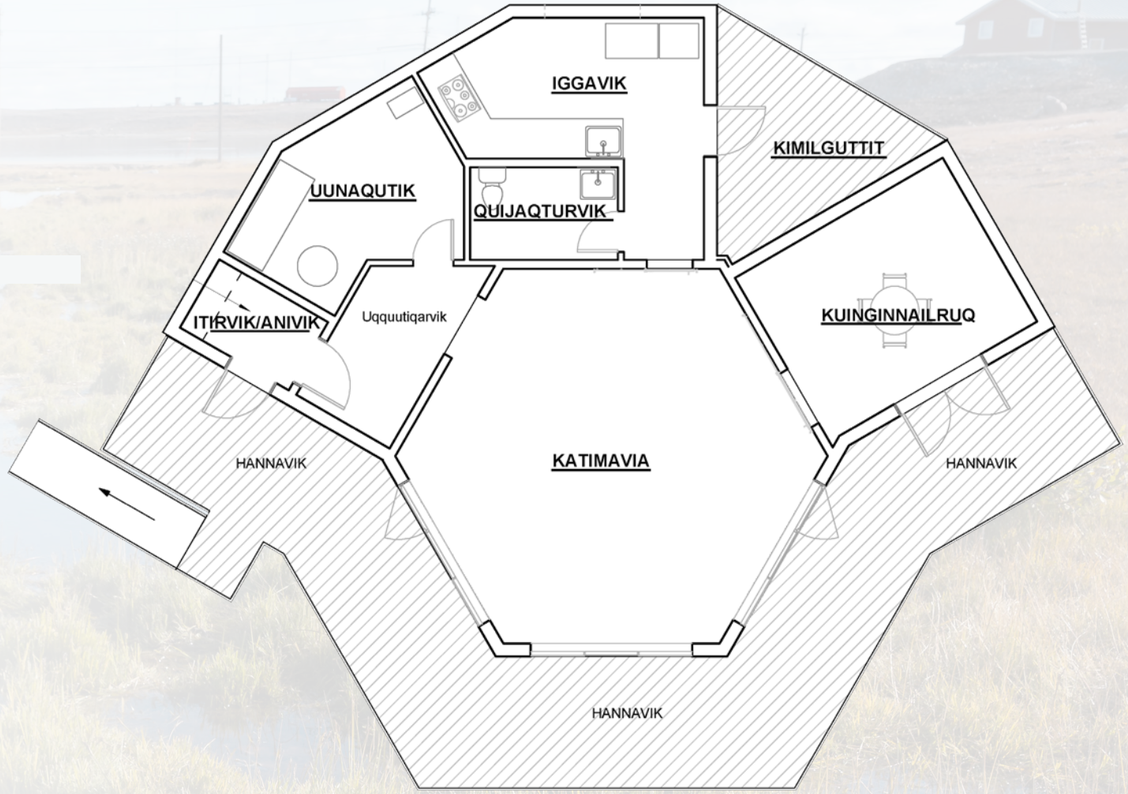
In alignment with these architectural values, our cultural workspace is designed to be a part of its human and natural environment. The building responds to the natural features and topography of its landscape. The building's southeastern facing position and large solar awning have been designed to actively absorb the sun's heat and light during colder months, and to minimize passive solar overheating during the warmth of summer. The building's design centres on a large circular room for collective activity in homage to qalgiit, traditional snow houses built to accommodate community gathering. Three walls of windows bring in natural light and create a space that minimizes physical barriers between the indoors and outdoors. The building's entrance has been designed as a buffer between the outdoor temperatures and the inner main room, functioning much like the 'cold trap' entrance of traditional igluit. Equal attention has been given to the ways in which the building's temperature intersects with the cultural activities that will occur there, with colder areas designated for work with meat and hides, and warmed floors for Elders and community members to conduct their work. The building specifically allows for different temperatures to store skins, fabrics, tools, etc., each of which has their own optimal temperature profile.

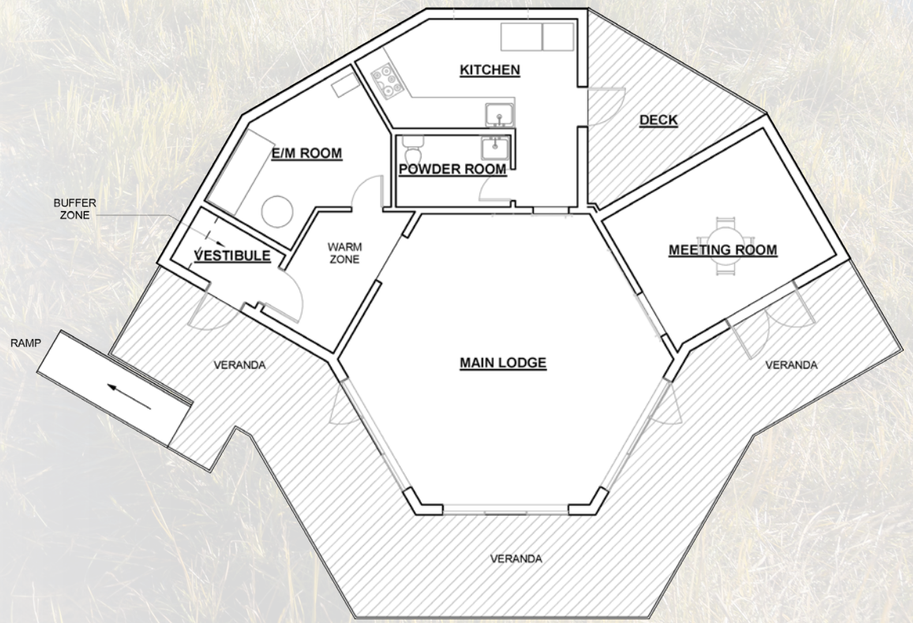
Three additional rooms within the building serve specific cultural purposes. A mechanical room encloses the necessary parts of any modern building, providing a space to hide electrical panels, batteries, and water, heating and ventilation systems. A kitchen equips the building with plenty of fridge and freezer space for food and other items needing low temperatures, as well as washing and cleaning. Finally, a meeting room will allow for solitude, separate from the main room and hub of activity. It is a space for reflection, conducting interviews and engaging in work not compatible with large groups or activities.

An enclosed veranda at the rear of the building faces into the wind, and has been designed as a site for drying meats and hides in the summer, and as a walk-in freezer for storing foods and cultural materials during winter months.

"This building will be utilized for our future generations to come and to learn and remember the importance of Inuit traditional knowledge."

Bessie Omilgoetok, PI/KHS Honourary Chair





BUILDING FOR A SUSTAINABLE FUTURE

The main research question driving Kuugalaaq was how to create more climate and energy resilient buildings for the Canadian Arctic. Kuugalaaq's workspace has been designed to be highly energy efficient, exceeding current community construction standards and setting a precedent for high performance buildings in the North. Energy models show significant energy and GHG reductions compared to standard building practices in Nunavut.

Kuugalaaq's building envelope maximizes its thermal barrier continuity and airtightness between the R40 wall and R60 Roof, and R45 Floor. Energy efficient systems include boilers, HRV, plumbing, mechanical, electrical, and lighting in order to reduce energy demands. Energy generation will be facilitated through photovoltaic solar panels (16 panels with a total 6.7 kW capacity) under QEC's CIPP program. Space has been included to add batteries in future years to contribute to energy storage and building resiliency. Key concepts from traditional Inuit architecture–including passive solar and solar shading techniques, building orientation, fenestration, and foundation and permafrost considerations also increase energy efficiency through integration into the design of our building. Traditional architectural strategies provide an important foundation for design to ensure the new building's resilience in the northern climate. Local and low embodied carbon materials and high-performance products from Northern and Indigenous-owned businesses were prioritized for our build.

	Fuel Load Distribution (kWh)		Description
	Base Case	Proposed Case	
Space Heating	67,264.00	29,608.00	The space heating through HVAC and radiator loops
Heat Trace	548.00	69.80	Plumbing system pipe heat trace
Mechanical Units	5,298.00	4,388.00	Heat Recovery Ventilation Unit
Fans	5,227.30	2,790.33	Inlet, exhaust and circulation fans of HVAC
DHW	145.20	84.80	Domestic hot water supply
Lighting	1,154.00	404.10	General interior lighting
Water Pump	459.00	424.00	Pump for all water uses in the building
Appliances	4,573.00	4,573.00	Arctic Living Essentials and Kitchen, Washroom Exhaust Fan
EUI (kWh/m²)	822.02	411.09	Building Footprint Area 103 m^2
Electricity Grid	16,711.30	12,664.23	Carbon Factor 0.795 $kg\text{-}CO_2/kWh$
Fuel-Diesel	67,957.20	29,677.80	Carbon Factor 0.253 $kg\text{-}CO_2/kWh$
$CO_{2e,equ}$ (Tonne)	30.48	17.58	Net equivalent mass of carbon dioxide emission
Renewable Source Generated Energy (kWh)			
Solar (kWh)	0.00	6,717.00	On-site electricity generation by 16 solar panels
$CO_{2e,Saving}$ (Tonne)	0.00	5.34	Net equivalent saving mass of carbon dioxide emission
Net Total			
Total (kWh)	84,668.50	35,625.03	Annual Net Total Energy in Fuels Consumption
EUI (kWh/m²)	822.02	345.87	Annual Energy Use Intensity
$CO_{2e,equ}$ (Tonne)	30.48	**12.24**	Net equivalent mass of carbon dioxide emission

Summary of the Kuugalaaq workspace's modelled annual energy performance. Please access the full online energy report via the QR code on the next page for base case and modeling details.

GUIDING INFRASTRUCTURE CONCERNS

WATER, WASTE AND EMBODIED CARBON REDUCTION: In addition to high energy efficiency, other green design features, such as water efficient fixtures and low carbon materials are included in the building. We have conducted an embodied carbon analysis to guide us in our choices of building materials, along with life cycle and disposal considerations. The Municipality of Cambridge Bay does not have a recycling program or engineered landfill and burns all waste. By pre-building select components of pilot structure through training workshops in Calgary and dismantling it we are only shipping what we need, therefore reducing the amount of waste going to the community dump, reducing GHG emissions from shipping, waste transportation and incineration.

ENSURING FUTURE CLIMATE RESILIENCY: Our first Climate Risk Assessment conducted in summer 2021 highlighted several potential infrastructure and site vulnerabilities to a changing climate; some of the major concerns being permafrost degradation, terrain instability and seasonal meltwater and drainage issues that could impact the piece of land that we are leasing for construction. A series of geotechnical studies at the site have assessed the extent of these concerns and allowd us to adjust the foundation design of our new building to adapt to them.

MAINTAINING NATURAL ECOSYSTEMS: Upon completion of construction, the property will be returned to a natural tundra environment more suitable to cultural activities. Local Elders have prioritized leaving the drainage area undisturbed, and protecting all natural features during construction. Plans are in place with several local professionals to guide attempts to 're-wild' the property with a focus on plants that are edible, medicinal and used for cultural purposes. Landscaping the property will also help us mitigate the impacts of climate change, such as by slowing down the rain and melt water to protect our foundations.

ACCOMPLISHMENTS TO DATE

CARBON AUDIT

We have sourced information about our organization's energy use and turned the results into easy-to-understand infographics and strategies. This will ensure action and change from year-to-year through attainable impact reduction goals and benchmark data.

FEASIBILITY STUDY AND ENERGY MODELING

Kuugalaaq's workspace was created to innovate across multiple areas, including piloting renewable technologies and energy efficient materials for Arctic conditions. Created by SAIT, this feasibility study and energy model outline key decisions behind the building's design and engineering.

ENVIRONMENTAL TERMINOLOGY

Inuinnaqtun has rich concepts and terminology relating to our surrounding world. We document this knowledge to build a local vocabulary for climate change and environmentally conscious practices, technologies, materials that inform our work.

BLUEPRINTING INUIT KNOWLEDGE

Elders fondly remember the buildings they grew up in. These dwellings actively shaped daily life, and needed, in turn, to be cared for. In alignment with these architectural values, we worked closely with our Elders and cultural experts to design a cultural work space that could bridge human and natural environments.

MONITORING OUR FOOTPRINT

We have developed an extensive monitoring plan to help us and others assess the performance of the materials, technology and design incorporated in our new building. It is our hope that this will provide users with more data and greater opportunities for informed decision making about future buildings.

COMMUNITY MONITORING

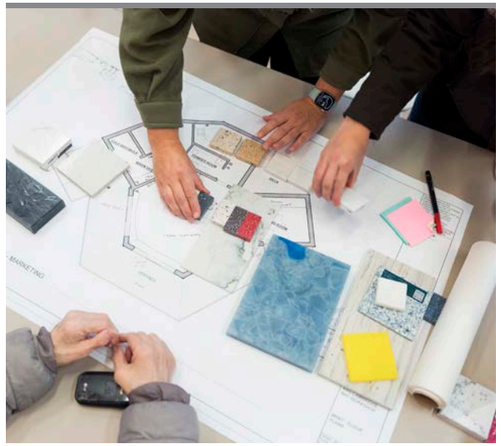
In addition to our own building, we are monitoring and analyzing six community structures representing a range of conventional and advanced building methods. The goal is to better understand the impacts of different building choices in the Arctic, including building envelope; mechanical, electrical energy use, renewable energy systems; ventilation; and water.

A SPACE FOR INUINNAQTUN IMMERSION

With a new physical location, comes new possibilities for defining Inuinnaqtun place. Kuugalaaq's campus and facilities will forefront Inuinnaqtun in spatial design, signage and programming. It will be a dedicated site for documenting Inuinnaqtun terminology and a meeting place for a regional language committee. Ongoing and free community programming will be led by PI/KHS staff and Elders, and who will design and deliver programs and workshops based on PI/KHS' 2024-2029 Strategic Plan and number one priority of Inuinnaqtun immersion.

The term "Inuinnaqtun" is most associated with the dialect of the Inuktut language spoken in Cambridge Bay, Kugluktuk, Ulukhaktok, and some people in Gjoa Haven. However, the meaning of the term is "to be or to live like an Inuinnaq". The term can refer to the fact that one speaks like an Inuinnaq as much as it can refer to one's knowledge, skills, behaviors, beliefs, and activities. Inuinnaqtun was once a robust ecosystem, with Inuinnait physically immersed in a landscape and way of life that nourished a fluent and full language, supported human relationships, and maintained a sophisticated body of cultural knowledge.

The team will work to rebuild and support that ecosystem, through the development and delivery of fully immersive programming that supports what it means to be an Inuinnaq.



DESIGNED FOR INUIT

Kuugalaaq's facilities and equipment have been custom designed by Inuit for Inuit use. Northern infrastructure is often imported wholescale from the South, and rarely fits the physical and cultural needs of northern people. Chairs and tables are too high for Elders. Building floors are too cold or hard for extended sewing work, too soft for tool-making, or not cleanable enough to handle the processing of meat. Inuit have shown extensive innovation in finding their own solutions to these issues.

We partnered with an Indigenous design firm, local tradespeople, Elders and cultural experts to engineer a highly customized space that meets the physical and cultural needs of its users. We targeted six key areas, including flooring and working surfaces, furniture, lighting solutions, indoor and outdoor storage, facilities for meat drying and hide processing, and a multiuse outdoor gathering area.

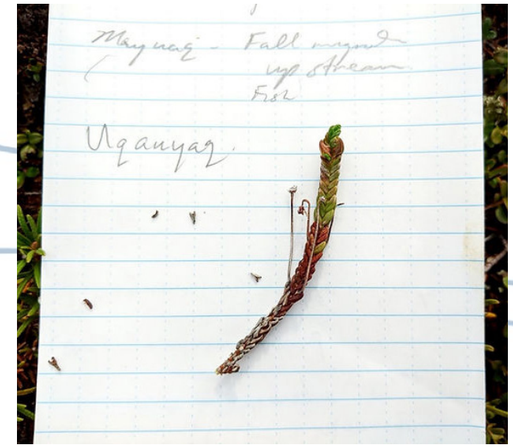
Design solutions prioritized Indigenous/northern sourced products, local construction, high energy efficiency, and low GHG/carbon intensity materials. We will monitor and evaluate their performance, and support other northern communities in their adoption through the creation of a customized digital portal for sharing our knowledge.

ENERGY RESILIENT

Cambridge Bay recently committed to the construction of a new diesel generation plant as its primary source of power for the next 20 years. While renewable energy is increasingly viable in the Arctic, its cost continues to serve as a roadblock to its adoption by communities, and smaller scale commercial and residential users.

Kuugalaaq will pilot new possibilities for renewable energy production and storage that is lower-cost, and more readily available to small-scale users. Kuugalaaq will be a testing ground to explore local ideas for energy islanding, which entails the creation of a distributed generation system able to operate independently of the primary grid. We will learn from and refine Kugalaaq's existing solar panels, and experiment with low impact renewables throughout the campus to increase the energy we are able to produce. We will pilot the newest innovations in battery and storage systems to allow us to operate independently of a diesel grid for longer and longer periods of time. Arctic energy islanding has become increasingly important with the onset of extreme weather events and climate change, as it provides a means to continue operations, backup data, and generate warmth and light during periods of primary grid failure. This ultimately builds both energy sovereignty and resilience in our community.

While recognizing the challenges faced in reaching net zero emissions in an Arctic environment, we continue to pave the way through technologies and strategies that are both accessible to, and can be realistically achieved by, local, independent, and small scale power producers.



ENVIRONMENTALLY SUSTAINABLE

Kuugalaaq will bring the land back to Cambridge Bay. Outdoor portions of our campus will be returned to a natural tundra environment suitable to cultural activities and harvesting. Working alongside local students, Elders, plant experts, and gardeners, we will experiment with selective revegetation of the property with a focus on local plants that are edible, medicinal and of cultural use. Through geothermal and other monitoring programs, we will explore the role that natural vegetation can play in ground stabilization, drainage and erosion management, and permafrost melt mitigation, with the ultimate goal of adaptation to climate change.

We will work with Kuugalaaq's landscape to create experimental programs that both document and learn from Inuinnaqtun landscapes, and apply traditional knowledge and strategies to novel solutions for managing urban and natural environments across the Arctic.

MONITORING AND EVALUATING OUR SUCCESS

There is currently very little information available about the performance of energy-efficient and renewable materials and technologies in Arctic environments. A key objective of our pilot workspace is to conduct monitoring and analysis of energy, water and indoor air quality of the building with the goal of maximizing occupants satisfaction and decreasing reliance on a fossil fuel based grid. Through the concurrent monitoring of six other similarly sized community buildings, we will determine the ability of various construction methods and mechanical systems to maintain optimum performance levels, energy efficiency and comfort for their occupants. We will also collect data to better understand the return on investment for choosing high energy efficiency solutions over business as usual design and construction, and help build the business case for green building design in the Arctic.

All seven buildings will be closely monitored and adjusted to ensure compatibility with desired cultural uses. Our monitoring and evaluation plan includes the collection of:

- Insights into energy and water consumption.
- Insights into current ventilation strategies and their impacts on indoor air quality.
- Data to better understand the return on investment for choosing high energy efficiency solutions over business as usual design and construction.
- Information to help identify roadblocks, whether technical or regulatory, in the current municipal and territorial systems.
- Data on solar power and other renewable energy production that can inform decision making for both the community and the territorial utility.
- Insights into the relationships between construction method, energy efficiency and indoor air quality as measured by CO_2, humidity, particulate matter and other criteria.
- Qualitative assessments of occupants' comfort as a function of consistent temperature throughout the building and indoor air quality, especially humidity.
- Opportunities to train local industry and community to be able to install, operate, maintain, and analyse systems and their data.

A bilingual (Inuinnaqtun/English) user portal/visualization tool will be created for Kuugalaaq to share real-time information regarding the building's performance and mechanical/environmental response to the cultural events being held there. This will help communicate and monitor data to optimize building operations and educate users, with an understanding that shared learning helps to build stronger communities of practice and resilience.

SERVING OUR COMMUNITY

Kuugalaaq is designed by community members with community wellness in mind. It will provide direct cultural and social benefits to to both those living in Cambridge Bay and the wider Inuinnait community by offering culturally-anchored services and resources not otherwise available. It also seeks to encourage and strengthen local peoples' economic and educational pursuit of traditional practices and ways of life, and directly supports traditional economies.

In 2021 alone, we invested over $800,000 into our community through employment, payment for services, and the sourcing of cultural resources. We have been promoting and building local entrepreneurship from the earliest stages of our project with the goal of supporting future stages of the facility's construction, operation and maintenance. Local contractors have been included from the start of project design to identify the support they will require to scale and engage with this work. In May 2022, we brought a group of industry professionals from Cambridge Bay to Calgary to work directly with SAIT's team and industries fabricating the structure's envelope and mechanical systems so that all knowledge and practices associated with our building continue to reside in the North.

Our project has provided local companies with the opportunity to try out new building solutions and explore innovative green energy research in a manner that commercial construction typically does not allow.

Programming at Kuugalaaq will recognize and respond to the needs of diverse community members. We will oversee a long-term Elder mentorship and training program, and continue to support and uplift men, women, and youth in pursuit of traditional technologies and arts, providing safe and empowering spaces for people to share their life experiences and knowledge. Our programming directly supports lifelong learning, from language development, to cultural reconnection, to land-based skills. Kuugalaaq is designed to cater to our range of our clientele's physical and accessibility needs—from ensuring that features such as windows to countertops and cupboards can be reached by Elders, to making the space easily navigable for the visually impaired. Alongside our existing May Hakongak Centre–we will offer free programming, culturally immersive spaces and a variety of resources and tools designed to strengthen our community and support Inuinnait innovation and talent.

A PROJECT FOR TRUTH AND RECONCILIATION

Our project is guided through four key sections of the Truth and Reconciliation Commission's Calls to Action.

EDUCATION: A place of Inuinnaqtun immersion, Kuugalaaq will foster a rich working environment for staff to develop and facilitate culturally-based curricula and programs, and for generations to share and transfer knowledge.

CULTURE AND LANGUAGE: Committed to Inuinnaqtun immersion, and guided by a regional language committee, we will ensure that the preservation, revitalization and strengthening of Inuinnaqtun is led by local and regional priorities.

MUSEUMS AND ARCHIVES: Our building intersects with museum and archives design, policies, collections and licensing that have been uniquely created by Inuinnait to reflect the specific needs of our people and priorities. Documentation of activities in the workspace will join a digital platform created by our organization to ensure that all of its content is accessible to, and used by, communities and classrooms across the country.

BUSINESS AND RECONCILIATION: This project maximizes the inclusion and advancement of local businesses, and has prioritized their input and feedback from initial stages of this project. We are committed to working with an Indigenous architect and designer to complete the non-structural design of our building features to ensure that final design speaks to and integrates with the local landscape.

PROJECT TEAM

PITQUHIRNIKKUT ILIHAUTINIQ / KITIKMEOT HERITAGE SOCIETY

We are Inuinnait—a distinct regional group of Inuit living in the Central Canadian Arctic. Our language, Inuinnaqtun, has fewer than 500 speakers remaining. The Pitquhirnikkut Ilihautiniq / Kitikmeot Heritage Society is among the longest-established heritage organizations in Nunavut, having operated since 1996. Pitquhirnikkut Ilihautiniq means learning through culture, and that is exactly what we do. We are working as one to revitalize intergenerational language and cultural transmission by developing programming and resources immersed in Inuinnait values, beliefs, direction, and ways of knowing and being. Our team is rebuilding and supporting the ecosystem around Inuinnait through immersive experiences that support what it means to be an Inuinnaq.

QILLAQ INNOVATIONS

Qillaq Innovations is a 100% Inuit owned company based in Cambridge Bay, Nunavut. Qillaq Innovations offers a variety of essential services such as construction and contracting, earth works and heavy equipment, petroleum products and services.

MADE POSSIBLE WITH SUPPORT FROM

The capital contstruction of Kuugalaaq's workspace has been made possible through generous support from Canadian Northern Economic Development Agency and Infrastructure Canada. This builds on previous and ongoing funding from Nunavut Tunngavik Inc., the Government of Nunavut, Crown-Indigenous Relations & Northern Affairs Canada, and Indigenous Clean Energy, for the feasibility and pre-construction phases. Environmental terminology research for this program has been funded through Inuit Tapiriit Kanatami and Polar Knowledge Canada.

SAIT'S GREEN BUILDING TECHNOLOGIES ACCESS CENTRE

For more than a decade, GBTAC researchers from SAIT's Applied Research and Innovation Services have worked with SAIT students, faculty, industry organizations, and businesses to develop green technology, programs, systems and services. As an applied research facility, the Green Building Technology Lab and Demonstration Centre provide hands-on training and industry-based experience. The on-campus research facilities are flexible, living laboratories, designed to study the many aspects of buildings and their environment including : net-zero energy and carbon emissions, materials and building science, site ecology, renewable energy solutions, and healthy buildings. Working in cooperation with builders, government, regulatory bodies and numerous stakeholders, the GBTAC team brings new products and processes to the green building marketplace and aims to transform the green building industry.

AURORA ENERGY SOLUTIONS

Aurora Energy Solutions Inc. is a 100% Inuit owned company based in Cambridge Bay, Nunavut. Aurora provides renewable energy system installations and program consulting. Consulting services also include power system analysis, data collection, and surveying.

FOR MORE INFORMATION, PLEASE VISIT
WWW.NUNAMIUTUQAQ.CA

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