

# BUILT TO EDUCATE: The Architecture of Schools in the Arctic from 1950 to 2007<sup>1</sup>

MARIE-JOSÉE THERRIEN teaches at the Ontario College of Art and Design (OCAD University), Toronto. She specializes in twentieth-century Canadian architecture. Interested in building typology, she has published on embassies and shopping malls. In 2014, in collaboration with France Vanlaethem, she edited *La sauvegarde de l'architecture moderne* (Presses de l'Université de Québec).

> MARIE-JOSÉE THERRIEN

The Inuit activist and Nobel Prize nominee Sheila Watt-Cloutier mentioned in her memoirs that the newly built school she had to attend at the age of six, in 1959, “was bigger than most buildings in town.”<sup>2</sup> The town was New Fort Chimo, then a “tiny community” in Northern Quebec, now renamed Kuujuaq and the administrative centre of the territory of Nunavik. Watt-Cloutier’s account documents the rapid transformation of the Canadian Arctic (fig. 1) during the period covered in this article, a time in which schools were built, rebuilt, and expanded to answer the growing demographic needs of the region. The story of these schools is also that of the development of a modern Arctic, where in one generation “ancient traditions gave way to southern habits.”<sup>3</sup> Built to educate, their design informs us about the intentions of the various stakeholders involved in their establishment, but also about their users, who lived “both in the ice age and the space age.”<sup>4</sup>

The built environment of the Arctic is a subject that has barely been examined by architecture historians. Although the Arctic in general has received more published attention in recent years, the building types of the Far North remain, to quote Harold Kalman’s 1994 survey, “relatively understudied.”<sup>5</sup> Moreover, this small body of scholarly literature (a shortage that may be due in part to the vast distances one needs to cover to actually see the buildings) fails to adequately represent the architectural diversity of the Arctic, which has undergone steady development since the Cold War. The irreversible process of

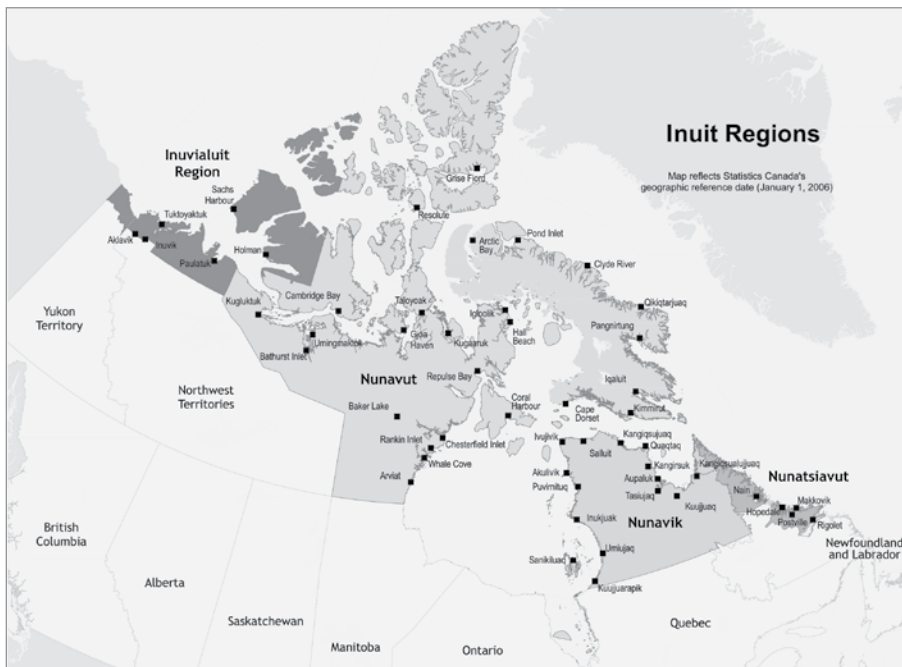


FIG. 1. MAP INUIT REGIONS, STATISTICS CANADA, 2007. | [HTTP://WWW.STATCAN.GC.CA/PUB/89-634-X/2008004/FIGURE/6500054-ENG.HTM](http://www.statcan.gc.ca/pub/89-634-x/2008004/figure/6500054-eng.htm)

sedentarization, with its negative and positive consequences, has brought with it a proliferation of building types that have materialized the evolving intentions of the various government agencies operating in the region, from the assimilationist policies of the early post-war years to more recent approaches that aim to promote and integrate traditional knowledge. Among these building types, schools have held a privileged position in the architectural landscape of towns and settlements in the High North.<sup>6</sup>

In this paper, I consider school architecture in the Northwest Territories (NWT) and Nunavut through a selection of elementary and secondary schools planned by the federal, territorial, and Nunavut governments. The selected schools illustrate watershed moments in the history of education in the High North between 1950 and the early twenty-first century, across a geographic area extending from Inuvik to Iqaluit. The first part of this period overlaps with the last decades of operation of the residential schools, which were officially abolished in the 1990s. Although not directly covered here, the residential school system forms a backdrop to the developments in school design that are the subject of this paper.<sup>7</sup>

A consideration of the spatial programming of schools in the Inuit territories calls for the simultaneous analysis of three fields: education, architecture, and environment. The education policy in the North has been subject to continuous renewal, influenced by shifts in broader pedagogical and societal concerns. The area's architecture and environment, meanwhile, have evolved in response to developments in construction methods, architectural forms, technology, and the climate. Imposed by the government as successors to the residential schools, the Arctic's non-denominational day schools

constitute a body of examples whose programming and construction (under extreme physical conditions) reflect both the educational trends and the socio-political and environmental changes that have marked the decades since the 1950s. This paper intends to show how schools in the region, evolving from models parachuted into the High North by Ottawa to more recent projects developed through ever-greater collaboration with the communities, have become better learning environments for students, teachers, and Elders who are their primary users. To situate this transition, I begin with a brief survey of the postwar architectural landscape of the Arctic and trends in school design. A summary of the federal education policy in Northern communities follows, accompanied by a comparative analysis of two schools built under the supervision of the federal departments of Northern Affairs and Natural Resources (NANR) and Public Works. I then consider two schools designed under the NWT Department of Public Works, and conclude with a school planned after the creation of Nunavut. As with the federal schools, I examine changes in the education policy, which were influenced by the various movements for self-determination in northern native communities, and the impact of these changes on school design.<sup>8</sup>

The Canadian Arctic was long ignored by the federal government. The Royal Canadian Mounted Police (RCMP), Canada's national police force, maintained only a few scattered posts in the region, housed in semi-permanent structures.<sup>9</sup> It was thus mostly the religious orders—Anglican, Protestant, and Roman Catholic—and the Hudson's Bay Company that ventured to establish a field presence in this "hostile" region, the former to convert local populations, and the latter to engage in the profitable fur trade. It was not until after the Second



FIG. 2. SIR ALEXANDER MACKENZIE SCHOOL, INUVIK, BY RULE, WYNN AND RULE; AND RENSAA AND MINSOS, 1959 (DEMOLISHED). | LIBRARY AND ARCHIVES CANADA, NFB FONDS, E011093208, MIKAN 4676551.JPG.

World War, with the intensification of the Cold War, that the federal government began to modernize and militarize this vast area. Perceived as a strategic zone, the Arctic became a test bench for the deployment of new defence technologies and the building of modernist urban models. The intense militarization of the High Arctic began with the construction of the Distant Early Warning (DEW) Line, the Canadian segment of which spanned the distance between Inuvik, a newly established town, and Frobisher Bay (now Iqaluit), a small hamlet that was considerably transformed by the construction of an American air force base in the 1940s and by federal interventions from the 1950s on. This modernization and militarization of the Northwest Territories introduced a first wave of urbanization to the Arctic.

In the decades following the war, education reforms (which had already been percolating between the world wars) resulted in significant changes to school design, with modernist architects proposing innovations that remain in use today.<sup>10</sup> Functionalism provided the spatial flexibility that the postwar

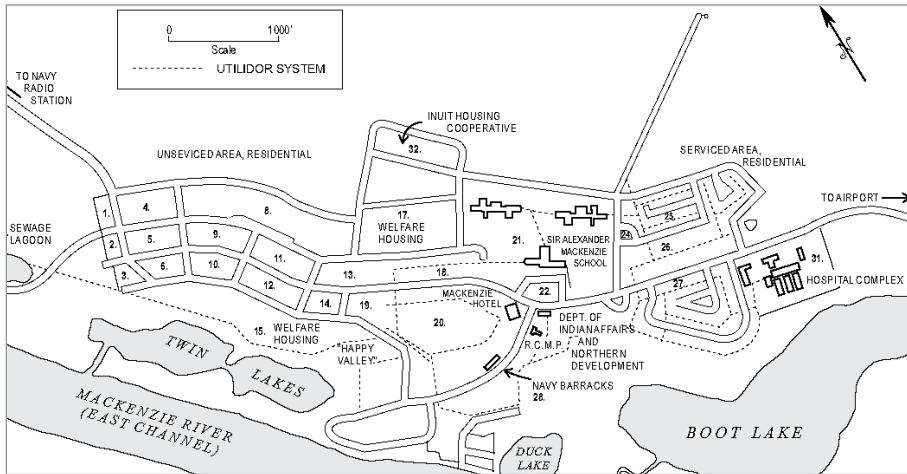


FIG. 3. INUVIK'S SETTLEMENT PATTERNS. | REDRAWN BY FARISH AND LACKENBAUER, « HIGH MODERNISM IN THE ARCTIC: PLANNING FROBISHER BAY AND INUVIK », *OP. CIT.*, P. 538. THE ORIGINAL DRAWING, BY A.M. ERVIN, WAS PUBLISHED IN "CONFLICTING STYLES OF LIFE IN A NORTHERN CANADIAN TOWN," *ARCTIC*, VOL. 22, NO. 2, 1969, P. 95.



FIG. 5. AERIAL VIEW OF INUVIK, 1961. | RAY WHITE [HTTP://JPROC.CA/RRP/INUVIK\_INUVIK1961\_B.JPG].



FIG. 4. SIR ALEXANDER MACKENZIE SCHOOL, GROUND FLOOR PLAN. | REDRAWN BY MAIESHA MAE FROM AN ORIGINAL SKETCH FOUND IN LIBRARY AND ARCHIVES CANADA, RG85 1296, 311/125-B PT.3.



FIG. 6. GYMNASIUM, SIR ALEXANDER MACKENZIE SCHOOL, INUVIK, 1959. | LIBRARY AND ARCHIVES CANADA, PA-129269, MIKAN 3381502.



FIG. 7. CHILDREN SITTING ON THE FLOOR, SIR ALEXANDER MACKENZIE SCHOOL, 1959. | LIBRARY AND ARCHIVES CANADA, PA 111777, MIKAN 3318474.

curriculum required, while the combination of technological advances and a pro-industrial modernist ideology allowed architects to erect educational buildings rapidly and cost-efficiently. The new one- and two-storey structures generally had angular forms, with clean lines, a flat roof, and an asymmetrical plan. In the Canadian Arctic, the impact of post-war education reforms on school design was felt as early as the mid-1950s, when

the federal government established its program of Aboriginal education in the North.

Prior to the 1950s, the few representatives of the Canadian government to be even remotely involved with the populations of the Arctic saw Inuit as "destined to remain collectively insulated from the modern world."<sup>11</sup> State-organized schooling was considered at best an unnecessary

expenditure, and at worst a threat to Inuit self-sufficiency."<sup>12</sup> The government saw no reason to establish education programs geared to helping Native communities adapt to the changes affecting their way of life; their schooling was seen as a "means to help Inuit become more efficient fur traders."<sup>13</sup> This double discursive framework of saving money and protecting the Inuit gave way, in the late 1940s, to a new discourse of facilitating



FIG. 8. CHILDREN AT THEIR DESKS, SIR JOSEPH BERNIER FEDERAL DAY SCHOOL, CHESTERFIELD INLET, 1958. | LIBRARY AND ARCHIVES CANADA, E004923401, MIKAN 4099002.

Inuit modernization. Rather than “keeping the native native,”<sup>14</sup> state-organized schools were to prepare students for the changes that would inevitably result from the introduction of a Euro-Canadian economy—or rather, as expressed in the official documents of the time, to prepare them to cope with the “advance of civilization.” Future generations of Inuit were thus “positioned as collectively in need of education,”<sup>15</sup> although there still remained an understanding that the government would support “the ability of Inuit to continue to live as hunters and trappers.”<sup>16</sup> It was not until the mid-1950s that the government displayed a clear shift in its discourse on Inuit peoples, education, and modernity. The transition came with the announcement by Jean Lesage, the federal minister of Northern Affairs and Natural Resources, of a new education policy intended to equip Inuit to access employment opportunities in a market economy. Lesage (who would later, as premier of Québec, play an instrumental role in the Quiet Revolution and support the Parent Report recommendations for a non-denominational school system) launched the construction of a network of federal schools in the High Arctic in 1955. This ambitious

endeavour, which was based on a secularization of the curricula, proved difficult to implement, as the leading church organizations were reluctant to give up their educational prerogatives. The reform was thus introduced gradually, with the result that two distinct building types were constructed: the schools themselves, now under secular authority, and residential hostels managed by the religious orders. Next came the adoption of new school curricula, which, as noted by education sociologist Yves Lenoir, were heavily influenced by “professionalizing”<sup>17</sup> or vocationalist orientations that originated in the United States.

#### SIR ALEXANDER MACKENZIE SCHOOL: A NEW SCHOOL FOR A NEW TOWN

The first federal school under consideration in this paper, Sir Alexander Mackenzie School (demolished), opened its doors in the new town of Inuvik (fig. 2), a planned community built under the direction of two federal ministries, the Department of Northern Affairs and Natural Resources, and the Department of Public Works.<sup>18</sup> During this “colonial period,” which Heather E. McGregor situates between 1945 and 1970, the federal government<sup>19</sup>



FIG. 9. NAKASUK ELEMENTARY SCHOOL, ARTIST SKETCH, 1973, PAPINEAU, GÉRIN-LAJOIE, LEBLANC, EDWARDS. | ARCHIVES CANADIAN CENTRE OF ARCHITECTURE, FONDOS GÉRIN-LAJOIE LEBLANC.



FIG. 10. GORDON ROBERTSON EDUCATION CENTRE, PAPINEAU, GÉRIN-LAJOIE, LEBLANC, EDWARDS, 1971. | REPRODUCED FROM PGL ARCHITECT, ARCHITECTURE DE PGL 1959-1975, MONTRÉAL, 1975 (N.P.).

did not so much adapt as transpose to the North solutions and plans that were originally conceived for the South. Their implementation in the High Arctic also reflected a desire to dominate nature and orient—if not determine—the future of local populations, with a view to enabling their participation in the market economy. The construction of Inuvik was considered a *tour de force* for the administrators of the day. The city was intended to replace Aklavik<sup>20</sup> as the new administrative centre for the Mackenzie River Delta. To some, it was proof that the “Canadians can build at least as well as the Russians under Arctic handicaps.”<sup>21</sup> To others, it was the embodiment of lofty ideals, as reflected by the evangelical tone of the town’s commemorative plaque: “This was the first community north of the Arctic Circle built to provide the standard facilities of a Canadian town. It was designed



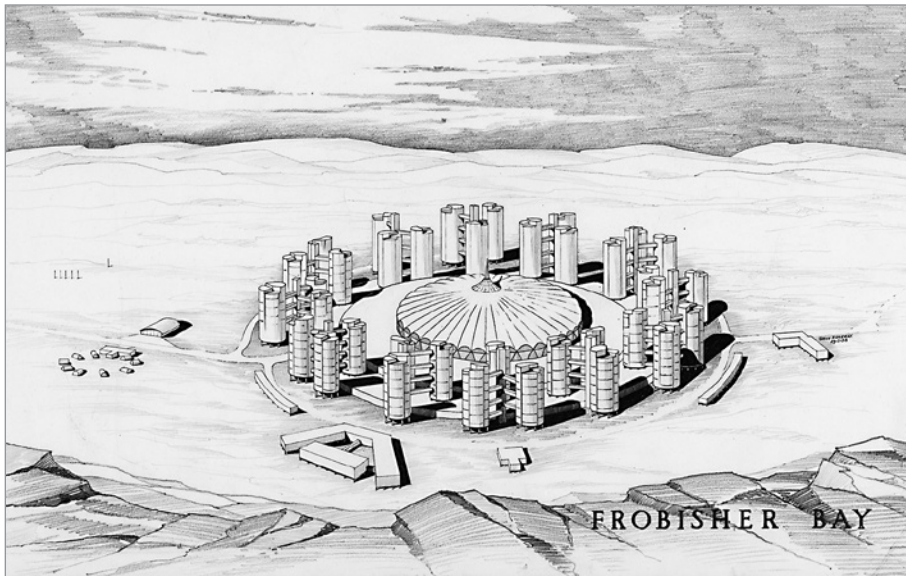


FIG. 11. FROBISHER BAY, NEW TOWN AERIAL PERSPECTIVE, E.A. GARDNER, DEPARTMENT OF PUBLIC WORKS, 1958. | LIBRARY AND ARCHIVES CANADA, NMC 122830.



FIG. 12. ASSEMBLING OF PREFABRICATED PANELS FOR THE GORDON ROBERTSON EDUCATION CENTRE. | REPRODUCED FROM PGL ARCHITECT, *ARCHITECTURE DE PGL 1959-1975*, MONTREAL, 1975 (N.P.).

not only as a base for development and administration but as a centre to bring education, medical care, and new opportunity to the people of the Western Arctic.”<sup>22</sup>

As in the case of any colonial project of territorial occupation, certain decisions may well have been shaped by the specific context, but the overall vision was the product of a social order foreign to the local ecology. Inuvik was no exception to the rule. The initial plan, a small-scale model of a generic suburb, integrated the canonical zones of urban modernism: residential, commercial, industrial, and public (school, hospital, mission hostels). It included recreational spaces with green zones, as well as winding roads and cul-de-sacs—features typical of the layout of most postwar, car-dependent suburban communities. There was at least one notable difference, however: the integration of a “utilidor” system, a network of aboveground utility conduits providing water and sewage disposal to the buildings connected to it. Notably, the system did not extend throughout



FIG. 13. NAKASUK ELEMENTARY SCHOOL, 2014. | WITH PERMISSION OF GERONIMO INUITQ.

the community. Contrary to the stated aspirations of its planners, the new town of Inuvik (fig. 3) developed along segregated lines, with two distinct residential areas: one benefiting from the utilidor and the other not. The former housed the transient Qallunaat (White people),

and the latter the local population that had been either displaced from Aklavik or drawn to the new town by the prospect of better living conditions.<sup>23</sup>

A school zone located near the centre included Inuvik’s first educational

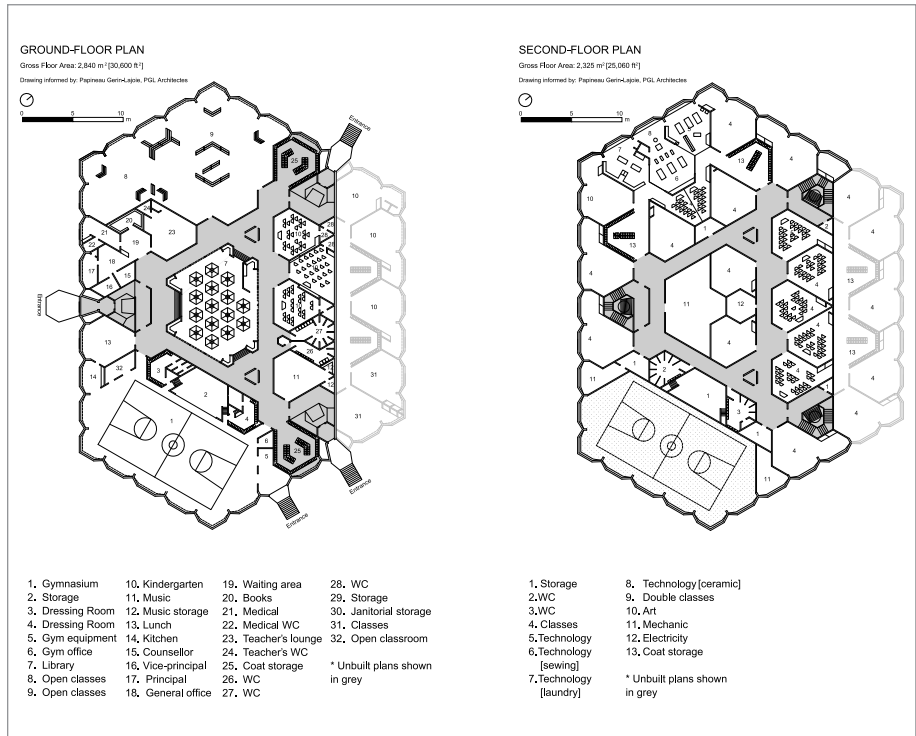


FIG. 14. NAKASUK ELEMENTARY SCHOOL, GROUND AND SECOND FLOORS PLANS, LATERAL OFFICE. | REPRODUCED FROM GUY GÉRIN-LAJOIE'S PLANS BY LATERAL OFFICE, TORONTO-BASED ARCHITECTS.



FIG. 15. NAKASUK ELEMENTARY SCHOOL, OPEN-PLAN CLASSROOM. | WITH PERMISSION OF GUY GÉRIN-LAJOIE.

building, the federal school (designed by two Edmonton firms, Rule, Wynn and Rule and Rensaa and Minsos), as well as two residential hostels administered by the Anglican and Roman Catholic orders. Like the school's design, which was foreign to the *genius loci*, its curricula and teaching methods failed to take account of Inuit culture and the Arctic way of life. They did, however, reflect postwar education reforms that had been endorsed by the Arctic's administrators in Ottawa. The education system thus established was standardized across the then Northwest Territories,<sup>24</sup> but placed under the oversight of civil servants with no pedagogical expertise. In principle, the Inuvik federal school (later named Sir Alexander Mackenzie School, SAMS) was intended to prepare Inuit and Aboriginal pupils to enter the "modern" world through the teaching of societal values and practical skills. It did so in English only, and in a physical environment that imposed its own form of imported discipline. Opportunities for experiential learning, to use today's jargon, were not provided in the curriculum, although it seems that the civil servants acknowledged the need for extracurricular activities such as muskrat trapping, which had "proven conclusively to be an important part of Arctic school activities."<sup>25</sup> But these were little more than token gestures, meant to "keep kids happy," as the unidentified author of a report mentioned in a handwritten comment.<sup>26</sup>

The school (fig. 4) was planned as a mixed institution serving Qallunaat, Metis, Dene, and Inuit students.<sup>27</sup> Indeed, ethnic integration was among the progressive aspects of the education program introduced by Jean Lesage, although it could, of course, only be implemented in places with a mixed population. However, this inclusive approach did not extend to religious affiliation, hence the school's



two distinct wings—one for Anglican students, the other for Roman Catholic students. These were connected by the central pavilion, with its shared entrance hall. SAMS followed the Alberta school curriculum and the standard system of grade levels, from 1 through 9. In addition to its academic and pre-vocational programs, it provided preparatory classes for students not proficient in English, and opportunity classes for older children and young adults.<sup>28</sup>

The Inuvik school exemplifies the continued reticence of some architectural firms—and their clients—with regard to functionalism. While the construction industry now allowed for more flexible and streamlined structures, it was not unusual for clients and architects to opt instead for conventional architectural forms expressive of their attachment to the past. With its triangular pediment and monumental double staircase (probably intended to accommodate its two distinct groups of students), the building reinforced the authoritarian nature of the institution.

An aerial photograph of the town of Inuvik (fig. 5) taken in 1961 reveals its architectural homogeneity, which was likely due to the use of prefabricated construction materials and the need to build a new town in record time, employing a functionalist approach. Both the federal school and the hostels have forms, siding, and gabled roofs similar to those of the town’s family homes and apartment blocks, and of several buildings in the commercial zone. The functionalist approach, which was based on a needs analysis, enabled the rational and standardized organization of the social aspects of the new town. However, Claude Bergeron noted concerning the evolution of Canadian schools during that period that the application of functionalism in



FIG. 16. MAANI ULUJUK ELEMENTARY AND JUNIOR HIGH SCHOOL, RANKIN INLET, CLIVE CLARK FOR BOIGON AND ARMSTRONG ARCHITECTS, 1982. | CLIVE CLARK.

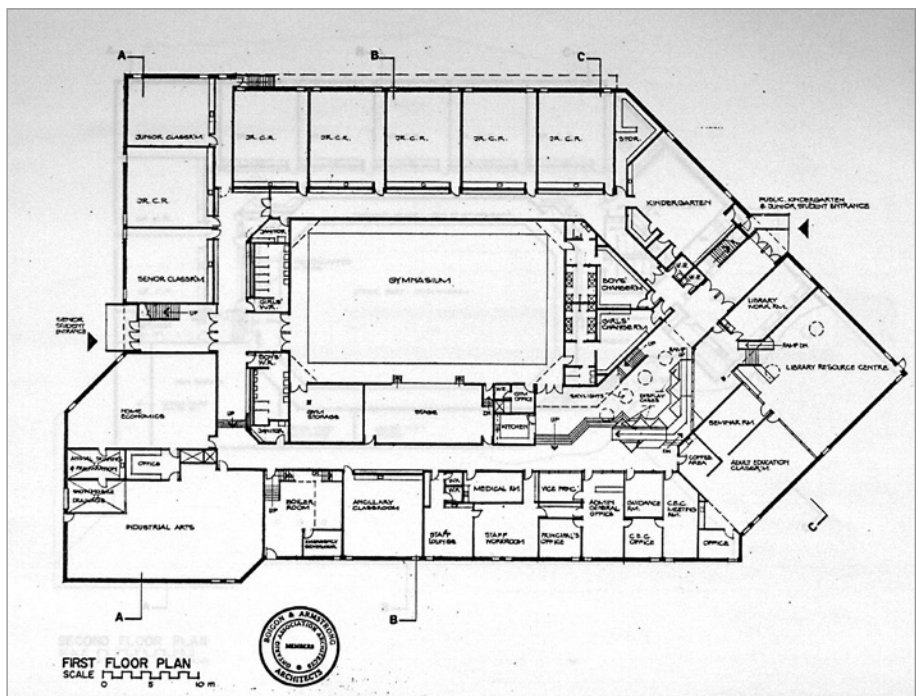


FIG. 17. MAANI ULUJUK, GROUND FLOOR PLAN, 1979. | REPRODUCED FROM BOIGON AND ARMSTRONG ARCHITECTS, PROGRAM CONFIRMATION FOR THE GOVERNMENT OF THE NORTHWEST TERRITORIES, 1979.

the design of educational institutions also encouraged a redefinition of school itself, inspired by “new pedagogical concerns, such as the value of physical education, sanitary conditions, lighting, safety, manual work, a freer model of education, and both individual and group work.”<sup>29</sup> Whatever the architects’ intentions with regard to the school’s exterior, its interior layout reflected trends in postwar education reform.

The configuration of the federal school corresponded to one of the most fundamental school building forms: that of the “centralized resources with double-loaded classrooms wings” model, as classified by Bradford Perkins, author of several architectural handbooks.<sup>30</sup> Built on piles because of the permafrost, its three wings housed spaces dedicated to administration, classroom education, and sports activities. Varying in size, these spaces all benefited from abundant natural light, provided by the continuous fenestration on all facades and clerestory windows in the two-storey gymnasium-auditorium (fig. 6). The distribution of the facilities was based on the relationship between the school’s educational and administrative activities, and as a function of its confessional division. Shared resources were centralized in the middle wing. As in many secondary schools of the time, one could access the auditorium-gymnasium, which also doubled as a community hall,<sup>31</sup> without using the corridors leading to the classrooms. Beyond that perimeter, a central corridor was flanked by classrooms in the school’s two side wings, each serving one of the school’s religious communities: Roman Catholic students were taught in the shorter west wing, Anglican students in the longer east wing. The same organization was repeated on the second floor, with a science classroom located at the junction of the two wings. On the first floor, each of the wings contained “one

pair of classrooms separated by partition walls, which could be opened to provide a room for small assemblies.”<sup>32</sup> Other modern facilities like washrooms and showers were located in all three wings. The classrooms were furnished with movable individual desks, a definite improvement over the previous long rows of fixed desks, which emphasized order and the teacher’s authority. As in the photographs of classrooms in Inuvik and Chesterfield Inlet (figs. 7-8), the latter being another federal school built around the same time, the classroom furniture could be rearranged, despite the seats being attached to the desks. Although such standardized furniture still imposed a certain physical discipline, it implied a more child-centred classroom, unlike the earlier pre-war model. While the building was not avant-garde, compared to functionalist models built in the South around the same time, that new federal school proved sufficiently flexible to enable different types of gatherings and activities, themselves representative of the latest educational approaches in use in the South. Unfortunately for Inuit generations to come, that alignment between curriculum and architecture had a limited reach. As Robert Carney writes, “the successive northern strategies and the vocational programs they elicited became increasingly beyond the grasp of those responsible for Inuit instruction, and as a consequence, beyond the grasp of the Inuit themselves.”<sup>33</sup> Those who would benefit most from the federal school system would be the transient White people temporarily settled in the Arctic in search for work.

#### NAKASUK: A FUTURISTIC, OPEN-AREA SCHOOL DESIGNED FOR THE MOON

Fast forward ten years, and it would appear that change had come at the speed of light, given this artist’s sketch

for Nakasuk Elementary School (figs. 9 and 13) in Frobisher Bay on the east coast of Baffin Island (now Iqaluit). Like the Gordon Robertson Education Centre (GREC, now Inuksuk High School) (fig. 10), a comprehensive school whose architecture marked a radical departure from traditional construction methods, Nakasuk was conceived as a spaceship-like shell made of fibreglass. The two buildings, designed by Papineau, Gérin-Lajoie, Leblanc, Edwards from Montreal, were the subject of numerous articles in Canadian and international publications.<sup>34</sup> How could these futuristic structures—praised as well-adapted to the lunar landscape of the Arctic, thanks to their modular panel assembly, white colour, and sobriety<sup>35</sup>—have been approved? We need to go back to the 1940s and 1950s to understand the context that led to the adoption of this high-tech architecture, a prime example of top-down design imposed by Ottawa.

The city of Frobisher Bay lies on an inlet that, prior to the Second World War, was part of “an extensive network of hunting and trapping, anchored by seasonal and permanent camps.”<sup>36</sup> The area was transformed by successive phases of construction that began with the establishment of a United States Army Air Forces (USAAF) airfield, Crystal Two, during WWII. Frobisher Bay gained in strategic importance with the advent of the Cold War, becoming a construction hub for the eastern section of the DEW Line communication system. As noted by Matthew Farish and P. Whitney Lackenbauer, “Frobisher Bay was becoming a target on the multiple maps of the North American military modernization.”<sup>37</sup>

Frobisher Bay was not a new town, strictly speaking. It was first and foremost a military base with high-performance service buildings, as well as dwellings carefully constructed to assure the comfort of



USAAF personnel. A first wave of Inuit workers, for whom no lodging had been foreseen, settled near the base, building makeshift housing from construction scraps left behind by the Americans. Scandalized by the lack of hygiene in these camps, the NANR decided to intervene by creating a new suburb, Apex Hill, only five kilometres from Frobisher Bay. It would become the site of the first day school serving this growing agglomeration. "As the home of most Inuit NANR employees, along with a number of 'Eurocanadians,' Apex Hill was understood to represent the future of Frobisher—a symbol of its transition to modernity."<sup>38</sup> In fact, Apex Hill nevertheless remained a satellite hamlet without a future, falling outside the scope of Ottawa's priorities, which instead were to modernize the village of Iqaluit, next to the military base. The influx of Inuit to Iqaluit had resulted in overcrowding, which was considered to "[be a threat to] the health of all who lived there."<sup>39</sup> If Frobisher Bay was to become the administrative centre of the Eastern Arctic, as Inuvik had in the western region, something had to be done. The matter became more urgent when the Department of Transport (DoT) took over the management of Crystal Two in 1957. The southern experts nourished great hopes, and dreamed of transforming Frobisher Bay into an Alexandria of the North, perceived as being at "a new 'crossroad of the world.'"<sup>40</sup>

The ambitious project proposed in the late 1950s by the DoT and NANR was worthy of science fiction, with touches of Le Corbusier's Radiant City (minus the automobiles) and Buckminster Fuller's dome (fig. 11).<sup>41</sup> Experts from the two federal departments proposed the construction of a group of apartment towers connected to a central dome, with heating and power provided by an atomic power plant—in short, an entire town sheltered from the

elements, offering pleasant year-round living conditions. It was believed that such a structure would attract immigrants to come work in the region's mines and help develop the local economy. Frobisher Bay would become an attractive modern city, designed to "overcome the hostility of a northern environment and catapult native northerners into conditions of modern living."<sup>42</sup> Like the Soviets, who had undertaken to urbanize Siberia, Canada hoped in this way to continue colonizing the High Arctic, believing it had the means to do so. Although government officials were well aware that such plans could not get off the drawing board without substantial investment, they nonetheless enthusiastically promoted them.<sup>43</sup> As for expert endorsement for this Qallunaat utopia, it was based on experience acquired through the construction of the DEW Line stations and a general confidence in new technologies. In its second special issue on the North, *The Canadian Architect*, a recently established industry publication that was itself an offshoot of this booming construction era, presented a celebratory feature on the project. A subsequent article in *The Globe and Mail* reinforced the belief that a new era was dawning in the Arctic.<sup>44</sup> But the new era never materialized. As Rhodri Windsor-Liscombe wrote in his assessment of the federal proposal, "[t]he basic problems of transportation costs of volatile economic activity aborted the Frobisher Bay new town."<sup>45</sup> Today, the only surviving evidence of this utopian vision are the "modest incremental" contributions of the architectural firm Papineau, Gérin-Lajoie, Leblanc, Edwards, which took the form of "high-tech modular steel and fiberglass-reinforced plastic panelled"<sup>46</sup> schools.

In the wake of Expo 67, Guy Gérin-Lajoie obtained a first contract to build an expansion for a federal day school in Pangnirtung. On his initial trips to the region, this architect from the South

found the buildings he encountered to be poorly adapted to their environment. The only elements distinguishing them were their triple-glazed windows and "extra insulation."<sup>47</sup> The extension added to the school in Pangnirtung, built using "traditional wood and aluminum techniques,"<sup>48</sup> convinced the architect of the need to address the question of building in the High North from a new angle. The "use of a new fibreglass-derived technology" would allow him to do so.<sup>49</sup> Gérin-Lajoie's intentions are well documented, thanks to the promotional articles and talks he devoted to his invention. He approached the challenges of the region with the enthusiasm of an inventor and the mindset of an industrial designer, at a time when the field of plastic manufacturing was making major strides.<sup>50</sup> The climate was his primary design parameter,<sup>51</sup> and it dictated the use of simple shapes, minimal overhangs, and limited glazing areas. Based on his observations of aircraft made of composite materials and their reactions to significant temperature changes, the architect, with the help of the scientific laboratories of the Public Works Department, developed a construction system based on fibreglass-reinforced polyester prefabricated panels. After a number of tries, modular panels were prefabricated and transported by boat to be mounted on the metal framework of the two schools in Frobisher Bay. Glazing was limited to just a few round windows that were integrated into the panels and triple-sealed for thermal insulation (fig. 12).

According to a publication of the time, that high-tech architecture was well "accepted by the Eskimo population."<sup>52</sup> The unnamed author (who may well have been inspired by the press release provided by Papineau, Gérin-Lajoie, Leblanc, Edwards) also suggested that the fibreglass used in the project was



FIG. 18. MAANI ULUJUK, GYMNASIUM, 1982. | CLIVE CLARK.



FIG. 19. MAANI ULUJUK, 1982, ELEVATED CORRIDOR AROUND GYMNASIUM. | CLIVE CLARK.

*"probablement plus près des conceptions esthétiques d'un esquimau que ne pourrait l'être la brique, le béton ou même le bois."*<sup>53</sup> In fact, Gérin-Lajoie's atypical high-tech solutions for the North,

applied in the construction of schools, a scientific research laboratory (Igloolik), and the Iqaluit airport, were supported by the assumption, shared at the time by the federal Public Works teams, "that the

Arctic is so unlike any other building situation and the requirements of construction are so unique that none of the physical solutions available in the South could be used. Design solutions had to be totally unique in planning, building forms and physical construction."<sup>54</sup>

Nakasuk Elementary School (fig. 14) corresponds to the "centralized resources with classroom clustering"<sup>55</sup> model in Perkins' classification system. The classrooms are located on the perimeter of the hexagonal plan, around a central corridor. The administrative areas are clustered near the entrance. The gym, which has its own entrance, occupies one entire section of the hexagon. This capsule-like school also has features that reflect progressive trends in school reform of the 1960s. The open education movement, which originated in the United States, advocated for schools without walls, where students would gather in small groups in open-plan classrooms (fig. 15). Taking down walls and providing a more flexible environment, they believed, would promote a more democratic and less intimidating teaching style, supporting students in their individual growth and development. In the context of the political empowerment of previously marginalized groups, the egalitarian aspirations of a school without walls were appealing. And the approach may indeed, in theory at least, have addressed the concerns of Inuit communities at a time when they were beginning to assert their rights. But reality proved otherwise, and the concept of open-plan schools was soon abandoned. Ultimately, the architecture of these schools made demands on users that proved too radical. It was assumed, for instance, that teachers working closer to their students would not have to speak loudly any more to be heard; they would thus be perceived as mentors rather than authority figures. Likewise, it was thought that the background noise



FIG. 20. MAANI ULUJUK, 1982, LOBBY. | CLIVE CLARK



FIG. 21. AQSARNIIT MIDDLE SCHOOL, IQALUIT, 2000. | PSAV ARCHITECTS.

created by the ventilation system (and air conditioning!) would dampen sound, as would the carpeting—which, moreover, would provide a softer surface for students to sit on, alone or in small groups. Students would be free to move around, thanks to movable furnishings. Features such as these were intended to accommodate the various types of learners. But none of the program’s aims could be achieved without the adoption of a suitable curriculum. It also depended on the full support of teachers—who, in the Arctic, have tended to come and go like revolving doors. Alignment between the built environment and the curriculum was essential, and the absence of such coordination produced a wave of resentment, in the North as elsewhere, leading to a general abandonment of open-plan schools by the mid-1970s. As noted by architecture historian Margaret Hodge, “there is little evidence that the open school plan was successful in connection with new pedagogical goals.”<sup>56</sup> Critics did not mince their words, as in the following excerpt

from a report by the Canadian Education Association: “Open-plan classrooms were intended not so much to improve learning as to glorify the ‘progressive’ attitude of school administrators, educators, architects, and all others favouring this type of school facility.”<sup>57</sup> Unfortunately, those who suffered most from the lack of alignment between these progressive concepts and the built environment were the users, who were not consulted in the planning process. In the words of the staff at Nakasuk:

The acoustics of the building are such that even in the smallest classrooms, communication between teachers and students is difficult; the quietest sounds echo and are magnified. The effect is rather like working in a drum. The existing classrooms are too small and confined for the present class sizes. The peculiar shape makes them very inflexible for various programs and activities. The lack of windows in the building necessitates use of artificial lighting which presents an overall cheerless and sterile effect.<sup>58</sup>

Nakasuk was among the last schools to have been imposed from the top down by Ottawa, without the involvement of local communities in the design process. Change came in the 1970s, when jurisdiction over education was transferred to the government of the Northwest Territories. Although modifications were slow to come to the administrative structure, the integration of Inuit language and culture in the school environment became a priority from the time of the transfer. As well, architects began to work more closely with local communities, as in the case of Maani Ulujuk, an elementary and junior high school in Rankin Inlet.

#### MAANI ULUJUK: “LEARNING SHOULD BE FUN”

Rankin Inlet, or Kangiqiniq (“deep inlet”) in Inuktitut, is the only settlement in Nunavut to have been founded by a mining company, the North Rankin Nickel Mine.<sup>59</sup> Prospectors discovered nickel and copper deposits in the area in 1928, but



mining only became economically viable in the early 1950s, when the Korean War triggered a rise in world nickel prices.<sup>60</sup> The extraction of this non-renewable resource covered a period of only five years, from 1957 to 1962. Attracted by job opportunities, a number of Inuit settled in the village. Like many other Canadian mining towns, Rankin Inlet saw its built environment evolve incrementally as a function of the needs of the mining company. The closing of the mine plunged the community into an economic quagmire, from which it would only recover through federal and then territorial intervention. Arising from its ashes, the mining town became a small, tertiary agglomeration in the 1970s, when the territorial government made it the site of an administrative centre for the region of Keewatin (Kivalliq). A first school, built in the 1960s and extended in 1973, was completely destroyed by fire in 1978.<sup>61</sup> The need to rebuild was thus urgent. This time, the community became actively involved in the planning process. Immediately after the school's destruction, a committee was established, comprised of members of the community, school staff, and employees from all levels of the territorial government. Project managers, now more likely to adopt a participatory approach, could also look back and learn from past mistakes, sidestepping solutions that had proven inadequate.<sup>62</sup>

The resulting program outline, prepared by the NWT Department of Education, provided the architect with a list of requirements and the following design philosophy statement: "The building design should convey to the community, students and staff that—'Learning Should Be Fun.' A sterile and institutionalized building is not desired. The architects are to be given considerable leeway in design within fiscal restraints, to accomplish this goal."<sup>63</sup>

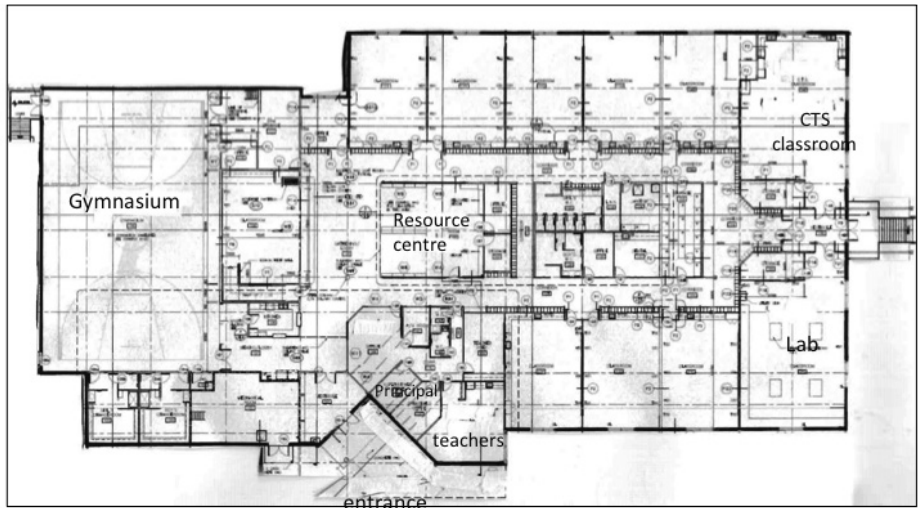


FIG. 22. AQSARNIIT MIDDLE SCHOOL, GROUND FLOOR PLAN, 2000. | PSAV ARCHITECTS.

Appointed by the firm Boigon and Armstrong Architects, Clive Clark went on site in 1979, set up a makeshift office, and launched a month-long consultation process, during which he met informally with all stakeholders—from the school principal to the nurse, and from students to parents and Elders. The firm also distributed a bilingual newsletter in Inuktituk and English to keep the community informed of project developments. Clark today acknowledges the limitations of the consultation process.<sup>64</sup> However, he also notes that this visit to the Arctic allowed him not only to become familiar with the living conditions there, but also to "provide solutions for unresolved problems" in the standard building programs established by the Departments of Education and Public Works of the Northwest Territories.

The building (fig. 16), constructed on the site of the former school, is set on a rise, giving the school a prominent position in the community. Its compact plan is another example of the "centralized resources with classroom clustering" model. The wood-clad school is oriented to deflect the extremely cold winds and

reduce energy consumption. Unlike the "introverted" Nakasuk school, it enjoys views over Lake Williamson (a water reservoir in the middle of the town) and the residential area, thanks to the windows provided by Clark. Each classroom has two operable windows, equipped with wind deflectors to avoid snow accumulation.

Generally speaking, the room types are hardly distinguishable from those of a standard elementary school, but the activities described in the brief reflect the significant changes that the educational program had recently undergone. In the 1970s, a watershed period in which Inuit communities increasingly asserted their right to self-government, advocacy groups grew more insistent about the need for an educational model that would be more inclusive and respectful of their ancestral traditions.<sup>65</sup> An official policy endorsed by the NWT government in 1972 required that schools teach children in their traditional language between kindergarten and Grade 3.<sup>66</sup> Another new element in the curriculum was the "land-based program," a cultural inclusion program that encouraged the participation of Elders in school-based education through the



FIG. 23. AQSARNIIT, CENTRAL HALL, 2007, PSAV ARCHITECTS. | GOOGLE MAP © [HTTPS://WWW.GOOGLE.COM/MAPS/@63.740941,-68.482474,3A,66.8Y,350.95H,91.57T/DATA=!3M4!1E1!3M2!1S!1VJKYQCIJWU8AAAQIT5TICQ!2E07HL=EN].



FIG. 24. AQSARNIIT, ADDITION, NORTH FAÇADE, 2007, PSAV ARCHITECTS. | GOOGLE MAP © [HTTPS://WWW.GOOGLE.COM/MAPS/@63.740941,-68.482474,3A,66.8Y,350.95H,91.57T/DATA=!3M4!1E1!3M2!1S!1VJKYQCIJWU8AAAQIT5TICQ!2E07HL=EN].

introduction of more culturally appropriate activities. Instead of taking appliance repair classes, students could learn how to build *komatiks* (wood sleds) and other hunting and fishing tools, service snowmobiles, or carry out basic construction tasks more appropriate to their needs. And, in addition to standardized workshops, students could now tan hides or butcher game within the walls of the school, in a purpose-designed skin preparation room.

Clark decided to place the gymnasium and stage in the centre of the building

(figs. 17-18). As set out in the specifications, the gymnasium can be directly accessed through the senior students' entrance. The architect was sensitized to the issue of bronchitis among young Inuit by the nurse, who recommended the inclusion of a space allowing students to run during the long winter months. Inspired by his own experience at Jarvis Collegiate Institute in Toronto, Clark included a corridor (fig. 19) that could serve as both a track for runners and a viewing gallery for spectators. The corridor was specially designed to reduce the noise of the runners.

As requested by the committee, the Adult Education Centre and Community Library were moved to the school in "order to encourage more community participation in the school facility."<sup>67</sup> Clark grouped all community-shared facilities in a section directly accessible from the junior students' entrance (fig. 20). He connected this section to a lobby, lit by four skylights, that serves as an intergenerational gathering place. Display cases were added to the hall in response to the community's request for "a safe place to exhibit historical artifacts and art works."<sup>68</sup> Also located near this public section of the



FIG. 25. AQSARNIIT, ADDITION, SOUTH FAÇADE, 2007. | PSAV ARCHITECTS.

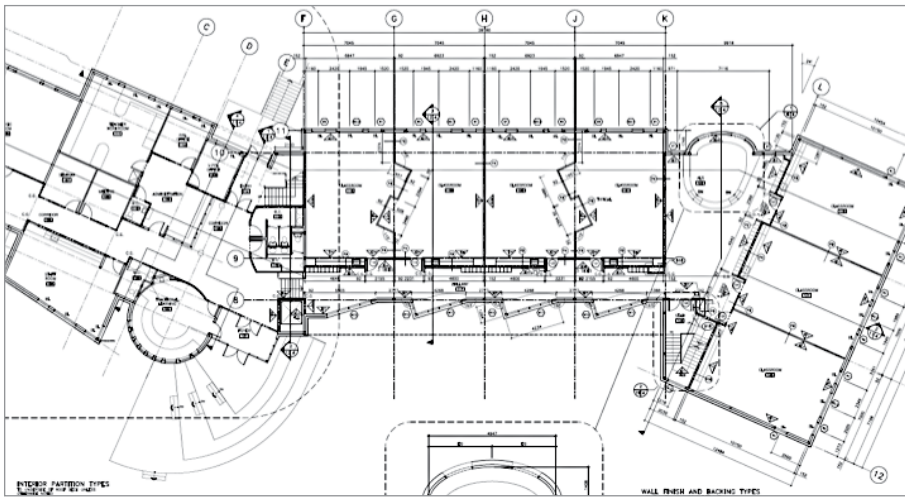


FIG. 26. AQSARNIIT, ADDITION, GROUND FLOOR PLAN, 2007. | PSAV ARCHITECTS.

Clark noted during his consultations that the parents still felt a deep mistrust of the school system,<sup>70</sup> a result of the scars caused by years of acculturation and of inappropriate curricula that alienated children from their parents. While Maani Ulujuk would not be able to eradicate these memories, the friendly design of this section of the school opened the way to practices more respectful of Inuit culture, in which children learn by observing adults.<sup>71</sup>

#### AQSARNIIT<sup>72</sup>: A MIXED SCHOOL IN AN URBAN SETTING

The last school considered here, Aqsarniit Middle School (fig. 21), was constructed in 2000 and expanded in 2007. The fourth school to be built in Iqaluit since the late 1960s, it was planned at a time of rapid growth for the town, which was preparing to become the capital of Nunavut, Canada's newest territory, established in 1999.<sup>73</sup> With a population of five thousand in 2001 (following a demographic increase of forty-seven percent over ten years), the built environment of Iqaluit was undergoing considerable change, as was the rest of Nunavut society. The region was taking on significant identifying characteristics, as explained by anthropologists Frédéric Laugrand and Jarich Oosten: "In Nunavut, a major change came in 2000 with the progressive introduction of a new concept, Inuit qaujimagatuqangit ('knowledge that is still relevant'), whose primacy has since been reaffirmed in all official documents of the new government."<sup>74</sup> The initial definition formulated on the eve of the creation of Nunavut presented the concept as encompassing "all aspects of traditional Inuit culture including values, world-view, language, social organization, knowledge, life skills, perceptions, and expectations."<sup>75</sup> Iqaluit was no longer a town under the control of a

school is the kindergarten, with its own separate entrance. The senior students have a separate entrance as well, with a staircase leading to their main classrooms on the second floor. This circulation scheme is consistent with recent school design models that are "based on the respective ages of the student population."<sup>69</sup>

Unlike the other schools analyzed here, Maani Ulujuk does not have its administrative offices near the entrance. Their

placement in a less strategic area distinguishes the school from traditional models, where institutional surveillance begins before students have even crossed the threshold into the building (in urban schools especially, administrative offices are typically located by the entrance). Maani Ulujuk's lobby serves as the heart of the school—a place where all users can mingle. In an interview, Clark said that the parents welcomed the idea of the lobby, which helped position them as stakeholders in their children's education.





FIG. 27. AQSARNIIT, ADDITION, VIEW FROM THE CORRIDOR, 2007, PSAV ARCHITECTS. | GOOGLE MAP © [HTTPS://WWW.GOOGLE.COM/](https://www.google.com/maps/@63.740941,-68.482474,3A,66.8Y,350.95H,91.57T/DATA=!3M4!1E!13M2!15VJKYQCIJWU8AAAQ15TICQI2E0?HL=EN) MAPS/@63.740941,-68.482474,3A,66.8Y,350.95H,91.57T/DATA=!3M4!1E!13M2!15VJKYQCIJWU8AAAQ15TICQI2E0?HL=EN.

distant government. It had become “the epicentre of Inuit power and authority,”<sup>76</sup> attracting more Qallunaat than ever before. As the demographics of the town became more multicultural, so did those of the schools.<sup>77</sup>

Built by the Yellowknife-based firm PSAV, Aqsarniit<sup>78</sup> features a layout (fig. 22) that does not include spaces specifically designated for the teaching of a traditional culture program. This does not, however, exclude the adoption of a school program based on traditional knowledge: given the experiential nature of certain traditional activities, these are more likely to be carried out in nature, far from the city. Although the original Aqsarniit does not have an intimidating entrance in the manner of Sir Arthur Mackenzie School, its layout does imply certain forms of control typically observed in school architecture. Fairly conventional in design, the school has its administrative offices near the main entrance, with windows enabling administrators to monitor students as they come and go. The plan features regular classrooms and special-use rooms (science and computer labs), located in the perimeter of the building,

and a gymnasium in a separate wing. Like Maani Ulujuk, Aqsarniit (fig. 23), has a central hall that is generously lit by clerestory windows. The school has no spaces specifically allocated to adult education and the Elders, which is understandable in the context of Iqaluit, where such facilities are provided through other resource and community centres.

Consultations during the planning of the first building involved only the school staff.<sup>79</sup> The 2007 addition (figs. 23-26), however, was developed through closer collaboration with the various stakeholders, including the Elders. The resulting two-storey building comprises three pavilions and a separate entrance in the section connecting it to the original school. Like in the first building, the administrative offices of the middle school are near the entrance.

The central section has a spacious corridor (fig. 27) with benches that allow users to congregate informally, and bay windows that connect them with the outdoors. The corridor is no longer a simple, linear space through which students circulate in single file. As described by the architect, it was

planned “for socializing in the sun during the winter.”<sup>80</sup> It is also a learning path, capable of facilitating knowledge acquisition outside the box of the traditional classroom. The rotunda, a space designed for “traditional learning” according to the plans, was requested by the local communities. Its shape, reminiscent of an igloo, evokes the consensus-based decision-making process in Inuit culture. Although the design of Aqsarniit’s new wing offers an example of the positive outcomes of closer collaboration between users and experts, it would be illusory to believe that layout alone can resolve the issues confronted by schools in Arctic communities, such as high dropout rates. Still, one can hope that schools like Aqsarniit will nurture a feeling of belonging, helping to counteract outside factors that cause students to become disengaged from learning.

#### IN LIEU OF A CONCLUSION TO THIS WORK IN PROGRESS

This initial foray into the school architecture of the Canadian Arctic offers only a broad overview of a little-known aspect of the education of Inuit and Aboriginal peoples. Thanks to the Truth and Reconciliation Commission (TRC), we have a better understanding today of the failures and abuses of the residential school system, which, as described by the Commission’s report, was anchored in a “policy of cultural genocide.”<sup>81</sup> The walls of the federal schools in the Arctic did not witness the worst abuses of this dark chapter in our history.<sup>82</sup> Although the first school buildings imposed by Ottawa were intended to propagate educational principles favouring Inuit assimilation, their design was also influenced by the progressive trends that were emerging in North American education at the time—albeit with little regard for context. Today, the models imposed by Ottawa have made

way for school buildings that integrate the principles of more recent curriculum initiatives, themselves an expression of the quest for self-determination on the part of Arctic communities. Gone are the authoritarian tendencies of the religious orders, which lingered on in the federal schools. Gone, too, are the models of the 1970s, whose advocates believed that a high-tech approach and the latest pedagogical trends could solve all the problems of modern teaching. Lessons have been—and continue to be—learned by all parties involved.

## NOTES

1. Translated from French by Helge Dascher.
2. Watt-Cloutier, Sheila, 2015, *The Right to be Cold, One Woman's Story of Protecting Her Culture, The Arctic, and the Whole Planet*, Toronto, Allen Lane, Penguin Canada Books, p. 20.
3. *Id.* : viii.
4. *Ibid.*
5. Kalman, Harold, 1994, *A History of Canadian Architecture*, vol. 2, Toronto, Oxford University Press, p. 677.
6. Similarly to Watt-Cloutier, education historian Heather E. McGregor (2010, *Inuit Education and Schools in the Eastern Arctic*, Vancouver, University of British Columbia Press, p. 12) observes: "Schools are usually the biggest buildings in the community, and apart from a nursing station or a detachment of the Royal Canadian Mounted Police, schools are the most evident institutional or government presence."
7. For a history of the federal intervention in the implementation of schools in the Arctic, see: King, David, 1998, "The History of the Federal Residential Schools for the Inuit Located in Chesterfield Inlet, Yellowknife, Inuvik and Churchill, 1955-1970," M.A. thesis, Trent University, Ontario; and King, David, 2006, "A Brief Report of the Federal Government of Canada's Residential School System for Inuit," prepared for the Aboriginal Healing Foundation, Ottawa, [<http://www.ahf.ca/downloads/kingsummaryfweb.pdf>], accessed May 14, 2015.
8. Information for this research was collected from the following sources: archival records, primarily from the National Archives of Canada and the Canadian Centre of Architecture; in-person and phone interviews with architects, including the late Guy Gérin-Lajoie; secondary sources such as professional architectural magazines; the *Journal of the Society for the Study of Architecture in Canada*; and a vast number of on-line sources. These data are by no means exhaustive.
9. On the Hudson Bay posts, see Pyszczyk, Heinz W., 1992, "The Architecture of the Western Canadian Fur Trade, A Cultural-Historical Perspective," *Society for the Study of Architecture in Canada (SSAC) Bulletin*, vol. 17, no. 2, p. 32-42. On the RCMP posts, see de Jonge, James, 1992, "Building on the Frontier: The Mounted Police in the Canadian North," *SSAC Bulletin*, vol. 17, no. 2, p. 42-54. All issues of the *SSAC/SEAC Journal* are available at [<http://www.canada-architecture.org/journal.aspx>].
10. See Hille, Thomas, 2011, "Postwar Modern Schools," in *Modern Schools: A Century of Design for Education*, Hoboken, NJ, Wiley, p. 92.
11. McLean, Scott, 1995, "To Educate or not to Educate? Canadian Discourses Concerning Inuit Schooling from the 1930s to the 1950s," *Journal of Historical Sociology*, vol. 8, no. 2, p. 182 [accessed via *JSTOR*, May 14, 2015].
12. *Id.* : 184.
13. *Id.* : 185.
14. *Id.* : 185. McLean is paraphrasing the following 1989 article by Richard Diubaldo: "You Can't Keep the Native Native," in Kenneth S. Coates and William R. Morrison (eds.), *For Purposes of Dominion: Essays in Honour of Morris Zaslow*, Concord, ON, Captus Press.
15. McLean : 187.
16. *Id.* : 188.
17. Lenoir, Yves, 2005, "'Le rapport Parent', point d'encrage de l'école québécoise dans la logique anglophone nord-américaine," *Canadian Journal of Education*, p. 639 [accessed via *JSTOR*, May 31, 2015].
18. The very first high school (1958) planned by the federal government under its program for Aboriginal education in the North was located in Yellowknife. Sir John Franklin was an academic and vocational school whose plan was inspired by southern Canadian models. For a detailed history of the planning of Sir John Franklin (and Akaitcho Hall hostel), see Miller, W.P.J., 2015, "'An exceedingly Complex Institution': The Making of Sir John Franklin High School, Yellowknife, Northwest Territories, 1958-1967," *Historical Studies in Education / Revue d'histoire de l'éducation*, Education North of 60, vol. 27, no. 1, p. 40-56, [[http://historicalstudiesineducation.ca/index.php/edu\\_hse-rhe](http://historicalstudiesineducation.ca/index.php/edu_hse-rhe)], accessed May 31, 2015.
19. The federal government entered the field of education in 1946. The Indian Affairs Branch of the Department of Citizenship and Immigration supervised the construction of the first federal day schools. See Department of Northern Affairs and National Resources, Annual Report, 1954-1955, p. 18, Yukon Digital Library, [<http://yukondigitallibrary.ca/Publications/Canannualreport195455/index.html#21/z>], accessed June 7, 2015.
20. In the modernist rhetoric of urban renewal that was prevalent at the time, existing Arctic settlements such as Aklavik were perceived as inadequate and unsuited to further development.
21. *The Globe and Mail*, September 17, 1959, p. 33.
22. The plaque's text is quoted in Kalman : 701.
23. On the planning of Inuvik see: Ervin, Alexander M., 1969, "Conflicting Styles of Life in a Northern Canadian Town," *Arctic*, vol. 22, no. 2, p. 91-105; Farish, Matthew and P. Whitney Lackenbauer (2009), "High Modernism in the Arctic: Planning Frobisher Bay and Inuvik," *Journal of Historical Geography*, vol. 35, no. 3, p. 517-544 [accessed via *JSTOR*, December 18, 2014].
24. Department of Northern Affairs and National Resources : 18.
25. Library and Archives Canada, RG 25, 630/125-1, Inuvik Hostel, July 9, 1959.
26. *Id.* With regards to the recommendation of "Rat[sic]-trapping in the area of Inuvik," the unidentified author of the report added the following handwritten comments: "yes being worked on. Safety value, kids make fire camps, skin a rat [sic], to keep kids happy."
27. The categories used by the civil servants at the time identified the different ethnic groups as White, Indian, and Eskimo.
28. Students who wished to continue their education beyond Grade 9 had to go to Yellowknife or further south.
29. [My translation] Bergeron, Claude, 1989, *Architecture du XX<sup>e</sup> siècle au Québec*, Québec, Musée de la civilisation / Méridien, p. 170.

30. Perkins, Bradford, 2001, *Building Type Basics for Elementary and Secondary Schools*, New York, John Wiley & Sons, inc., p. 64.
31. The auditorium-gymnasium was "equipped with a well proportioned stage, a balcony, a projection room and with dressing room and storage space beneath the stage." Library and Archives Canada, RG 25, 630/125-1, April (?) 1959.
32. *Id.*
33. Carney, Robert, 1983, "The Canadian Inuit and Vocational Education. If Not Reindeer Herding, How about Small Appliance Repair!," *Études/Inuit/Studies*, vol. 7, no. 1, p. 85.
34. Those include *The Canadian Architect*, *Progressive Architect*, *L'architecture d'aujourd'hui*, and various engineering publications, as well as a supplement of the Montreal daily *La Presse*.
35. *L'architecture d'aujourd'hui*, 1973, no. 16, March/April, p. 27.
36. Farish and Lackenbauer : 528.
37. *Id.* : 529.
38. *Id.* : 531.
39. Duffy, Ronald Quinn, 1988, *The Road to Nunavut, The Progress of the Eastern Arctic Inuit since the Second World War*, Montreal-Kingston, McGill-Queen's University Press, p. 30
40. Farish and Lackenbauer : 529. The original quotation comes from a Department of Transport (DoT) press release, 823, September 1, 1957, in An Introduction to Frobisher Bay, Department of National Defence, Directorate of History and Heritage (Ottawa), File 83/15. The airfield in Frobisher Bay was the largest in the Arctic, serving as a refuelling stop for short-range aircraft crossing the Atlantic from North America to Europe. With the advent of long-range aircraft, the airport would no longer attract the volume of commercial traffic anticipated at the time of its transfer from the Armed Forces to the DoT. On the history of Crystal Two, see Eno, Robert V., 2003, "Crystal Two: The Origin of Iqaluit," *Arctic*, vol. 56, no. 1, p. 63-75, [<http://arctic.journalhosting.ucalgary.ca/arctic/index.php/arctic/article/view/603>], accessed June 7, 2015.
41. For an assessment of the different federal unrealized projects, see Waldron, Andrew, 2008, "Frobisher Bay Future: Megastructure in a Meta-Land," *Architecture and Ideas, Experimental Modernism*, vol. 8, p. 20-35.
42. Farish and Lackenbauer : 517.
43. See Duffy, Robert, 1958, "Costly but Exciting, Dream of Arctic City Takes Form in Frobisher Bay," *The Globe and Mail*, May 6, p. 7.
44. Goodman, Roderick, 1958, "36 Towers around Dome Considered for Arctic City," *The Globe and Mail*, December 6, p. 1.
45. Windsor-Liscombe, Rhodri, 2006, "Modernist Ultimate Thule," *Revue d'art canadienne / Canadian Art Review (RACAR)*, vol. 31, nos. 1-2, p. 71.
46. *Id.* : 75 [accessed via JSTOR May 31, 2015].
47. Quoted by Dempster, David, 1987, "Composities – Proven Answer in Arctic Construction, Challenge for Large Urban Centres," c. 1987. This article, with no mention of its source, was provided by the late Guy Gérin-Lajoie during an interview on July 5, 2014.
48. Marcoux, Alain, 2003, *Histoire de Papineau, Gérin-Lajoie, Leblanc Architectes, Tome 1 (1958-1973)* [limited self-published edition], p. 52.
49. *Ibid.*
50. On the use of derived plastic material in architecture see Charney, Melvin, 1966, "Environmental Chemistry-Plastics in Architecture," *Journal of the Royal Architecture Institute of Canada*, vol. 43, no. 5, p. 105-107.
51. For more on the architect's approach, see Gérin-Lajoie, Guy, 1972, "Une architecture de fibre de verre dans l'Arctique," *L'ingénieur*, no. 275, February, p. 2-6.
52. [My translation] "École élémentaire, Frobisher Bay, Canada," *L'architecture d'aujourd'hui*, no. 166, March/April, 1973, p. 27
53. *Ibid.*
54. Barr, Stephen, 1988, "Is There a Northern Architecture?" *SSAC Bulletin*, vol. 13, no. 1, p. 39.
55. Perkins : 67.
56. Hodge, Margaret, 2012, "The Importance of Interior Design in the Open Plan School," unpublished paper presented at the University Art Association of Canada, Montreal, November 2, n.p.
57. *Écoles à aires ouvertes*, Rapport d'une enquête de l'Association canadienne d'éducation, 1974. On the enthusiasm on the part of modernist architects for these reformist schools, see Koutamanis, Alexander and Yolanda Majewski-Steijns, 2011, "An Architectural View of the Classroom," in Sjaak Braster, Ian Grosvenor and María del Mar del Pozo Andrés (eds.), *The Black Box of Schooling, A Cultural History of the Classroom*, Bruxelles, P.I.E. Peter Lang, p. 203-222.
58. *Inukshuk*, October 1973, p. 5. Document found in the Fonds Gérin-Lajoie Le Blanc, Canadian Centre of Architecture, file 14-08-24.
59. Cater, Tara and Arn Keeling, 2013, "That's Where Our Future Came From": Mining, Landscape, and Memory in Rankin Inlet, Nunavut," *Études Inuit/Studies*, vol. 37, no. 2, p. 59 [accessed via JSTOR, July 12, 2015].
60. Duffy, *The Road to Nunavut* : 175.
61. As mentioned in the program prepared by the NWT Department of Education, the cause of the fire was determined to be arson. Boigon and Armstrong, 1979, "Maani Ulujuk Elementary & Junior High School, Rankin Inlet, NWT, Program Confirmation for the Government of the Northwest Territories, n.p. report.
62. As part of the specifications resulting from the consultation process, the following item can be found: "There should not be open teaching areas." *Id.* : section 5, "A Community Participation," n.p.
63. *Id.* : Section "Program Outline for the Replacement Maani Ulujuk School," prepared by the Department of Education, J.D. Moffat, coordinator, n.p.
64. Information provided by Clive Clark during an interview at his home on March 18, 2014.
65. The most influential advocacy group is the Inuit Tapiriit Canada, founded in 1971, which became the Inuit Tapiriit Kanatami in 2011.
66. See Bonesteel, Sarah, 2006, *Canada's Relationship with Inuit, A History of Policy and Program Development*, Indian and Northern Affairs, Canada, p. 84, [<http://www.aadnc-aandc.gc.ca/eng/1100100016900/1100100016908#note479>], accessed July 15, 2015.
67. Boigon and Armstrong : Section 5A.
68. *Ibid.* Clark explained during the interview (March 18, 2014) that the members consulted were very concerned that their works and artefacts would be sent to the South, as had happened in the past.
69. Perkins : 179.
70. Phone interview with Clive Clark, July 10, 2015.



71. Arlene Stairs (1994, in “Indigenous Ways To Go to School: Exploring Many Visions” (*Journal of Multilingual and Multicultural Development*, vol. 15, no. 1, p. 67, [<http://dx.doi.org/10.1080/01434632.1994.9994557>], accessed July 19, 2015) provides a useful summary of Inuit learning: “Learning seems to take place through observation rather than through trial-and-error and practice, and activities are acquired as wholes rather than in a series of sequenced steps. The learning occurs embedded in kinship and community relationship, and participation in the life of the community appears rewarding in itself—direct praise and rewards for accomplishment are rare. The motivation seems simply to be included, to contribute, and so to strengthen bonds of relationship. Children appear confident in what they have learned; they know what they know without being judged by adults. What is learned, whether sewing or hunting or contemporary skills such as repairing motors, is usually of immediate use to the family and community. The learner is not asked to perform or display her work, but presents it—often as a gift when complete. The initiative for learning comes from the learner; it is seldom directed or controlled by older relatives or other ‘teachers.’ In fact elders expect to be approached for certain kinds of teaching rather than going to young people to instruct.”
72. *Aqsarrnit* is the Inuktituk word for Northern Lights.
73. Iqaluit became the capital of Nunavut in 2001.
74. Laugrand, Frédéric and Jarich Oosten, 2009, “Education and Transmission of Inuit Knowledge in Canada, *Études/Inuit/Studies*, vol. 33, nos. 1-2, p. 27, [<http://id.erudit.org/iderudit/044957ar>] DOI: 10.7202/044957ar, accessed via *JSTOR*, July 15, 2015]. For a definition of the principles of Inuit Qaujimatjuqangit, generally referred to as IQ, see Therrien, Michèle, 2002, “La question du concept d’Inuit qaujimatjuqangit et le bilan du jeune gouvernement du Nunavut,” *Études canadiennes / Canadian Studies*, no. 52, p. 131-147.
75. Tester, Frank James and Peter Irniq, 2008, “Inuit Qaujimatjuqangit: Social History, Politics and the Practice of Resistance,” *Arctic*, vol. 61, suppl. 1, p. 48, [<http://arctic.journalhosting.ucalgary.ca/arctic/index.php/arctic/article/view/101>], accessed July 15, 2015. The impact of the adoption of Inuit Qaujimatjuqangit, while outside the scope of this article, is addressed in numerous studies.
76. Searle, Edmund, 2010, “Placing Identity, Town, Landscape and Authenticity in Nunavut, Canada,” *Acta Borealis*, vol. 27, no. 2, p. 159 [accessed via *JSTOR*, July 15, 2015].
77. Today, Iqaluit has six public schools: two elementary and two middle schools, one high school, and one French-speaking school with classes from kindergarten to Grade 12. At the post-secondary level, Iqaluit hosts a campus of the Nunavut Arctic College and the Akitsiraq Law School.
78. For a virtual tour of the school, see: [<https://www.google.com/maps/@63.740893,-68.482508,3a,90y,13.73h,86.83t/data=!3m7!1e1!3m5!1ss4RAVxQj9HwAAAQIt5THiQ!2e0!3e2!7i13312!8i6656!6m1!1e1?hl=en>], accessed July 15, 2015.
79. Information provided by Darrel Visky, from PSAV, July 21, 2014.
80. Andreas Mayer, from PVS, email August 20, 2014.
81. [[http://www.trc.ca/websites/trcinstitution/File/2015/Honouring\\_the\\_Truth\\_Reconciling\\_for\\_the\\_Future\\_July\\_23\\_2015.pdf](http://www.trc.ca/websites/trcinstitution/File/2015/Honouring_the_Truth_Reconciling_for_the_Future_July_23_2015.pdf)], accessed August 22, 2015.
82. For a list of the schools recognized by the Truth and Reconciliation Commission, see [<http://www.trc.ca/websites/trcinstitution/index.php?p=12>], accessed August 22, 2015. None of the schools analyzed in this article appear on that list.