The Architecture of the Western Canadian Fur Trade: A Cultural-Historical Perspective

Henry Glassie, in a classic study of Middle Virginia folk housing, wrote:

Any artifact that can be provided with association in space and time, either by being accompanied by a document or better — as with gravestones or buildings — by being set into the land, is a valuable source of a great quantity of information.¹

There is in architecture a set of complex cultural meanings, or “information.” Humans use architecture to cope with their environment and their economies, and to support their traditions and beliefs. It also influences people’s perception of their physical and social environment.

Western Canadian fur trade architecture, which forms the basis of this study, contains information about an early Canadian way of life. Its raw simplicity is a statement about the harsh conditions of the early western Canadian frontier. But fur trade architecture changed through time and space, and was linked to variable economic or social conditions in the fur trade. It is a measure of cultural change, and this truly makes it a valuable source of information about the past.

In this study I assess fur trade architecture in western Canada from about 1780 to 1900. First, the basic elements of fur trade architecture are summarized. Next, how those architectural elements are related to the economics and organization of the fur trade are reviewed. Finally, the relationship between architectural elements and the regional and corporate structure of the fur trade are explored. In particular, I examine how and why fur trade architecture is related to regional and occupational inequality.

A regional comparative approach is used in this examination of fur trade architecture. Consequently, the architecture of each individual post is not described in detail. Although the comparative approach neglects some very interesting architectural detail, it brings to light the broader connections between fur trade architecture and the elements and processes operating within the fur trade of western Canada.

Information for this study was collected from documentary records and archaeological remains of fur trade posts in the interior of western Canada, primarily Alberta. These posts were constructed in the Saskatchewan and Athabasca fur trade districts (figure 1).² The types of fur trade data include: 1) scattered references about architecture, which are difficult to use for comparative purposes; and 2) quantitative data from maps and the archaeological record, allowing some general comparisons between posts to be undertaken. These data are by no means exhaustive, and the conclusions drawn from them are therefore a first approximation.

By Heinz W. Pyszczyk

¹ Henry Glassie, Folk Housing in Middle Virginia (Knoxville: University of Tennessee Press, 1975), 12.
FUR TRADE ORGANIZATION AND ARCHITECTURE

History and Organization

Inland fur trade posts emerged in the early 1780s, when European traders moved along the major waterways into the interior of western Canada to trade for furs with the natives. By the end of the nineteenth century, approximately 130 fur trade posts had been constructed between Hudson Bay and Lake Winnipeg, west to the slopes of the Rocky Mountains, south of Lake Athabasca to the edge of the northern plains. Trade in this vast region was dominated by the Hudson's Bay Company (1670- ), the North West Company (1776-1821), the short-lived XY Company (1802-1805), and a few independent traders (figure 1). The architecture of the North West Company and the Hudson's Bay Company comprise the principal subject matter of this study.

Many fur trade posts consisted of little more than a few small log buildings enclosed by a wooden picket fence, or palisade. Alexander Ross's first glimpse of the Hudson's Bay Company's Fort Assiniboine in 1825 was a rude awakening to what the western Canadian experience was going to be like:

... a petty post erected on the north bank of the river, and so completely em bossed in the woods, that we did not catch a glimpse of it until we were among his, and surrounded by howling dogs and screeching children. At this sylvan retreat there were but three rude houses ... and there was not a picket or palisade to guard them from either savage or bear. This mean abode was dignified with the name of fort 4

On the other hand, Philip Turnor, in 1791, described Fort Chipewyan as "the completest Inland House I have ever seen in the country."5 In 1843, John Lefroy was less impressed with Fort Chipewyan:

Although assured by my guide beforehand that the Fort was one of the finest in the country and the most famous for the men, the dogs, and everything, I could see nothing of those honours in its first appearance. Quite the contrary, it appeared to me the poorest I had seen.6

There was considerable variability in both the architecture of these "forts" of the northwest, and the impression they made on people unaccustomed to the Canadian wilderness. Fort Chipewyan was perhaps more grand than many posts because it was a regional

Figure 1. Location and name of the fur trade posts referred to in the text.

KEY:

1. Fort Assiniboine
2. Fort Augustus 4 (Edmonton)
3. Fort Augustus 2
4. Buckingham House
5. Fort Carlton
6. Fort Chipewyan
7. Fort Dunvegan
8. Fort Epinette
9. Fort Fort
20. Red Deer's Post
21. Riviera Tramblan
22. Rocky Mountain House
23. Fort St. James
24. St. Mary's House
25. Fort Vermilion
26. Fort Victoria
27. Fort World Earth
28. Fort White Earth
29. York Factory
30. York Factory

- Approximate Boundaries of Athabasca & Saskatchewan Fur Trade Districts.

headquarters, but it did not meet with the approval of all outsiders.

Fur trade company posts varied in size and function. Wintering posts were small and occupied only during the winter months. They were constructed in native territory, often in very isolated areas, to acquire furs and provisions (i.e., dried meat, pemmican) from the natives. District trading posts were large and more permanent than wintering posts. They were often occupied by the senior partner and shareholders of the company. After 1821, one trading post became the headquarters for an entire region and performed many roles (e.g., fur trading, provisioning, redistributing trade goods). Decisions regarding regional trade affairs and the allocation of goods and resources were made by the officers in charge of these forts.

Fur trade employees were organized vertically and horizontally according to the roles that they performed. Roles not only dictated what functions people undertook, but also specified how much income, power, and prestige each person received. Officers in charge of the forts had the highest income and often shared in company profits. Clerks carried out administrative duties. Craftsmen and labourers who carried out the menial tasks were paid the least, and thereby held the lowest positions in the fur trade companies. An employee's ethnic background was instrumental in determining his type of employment. Officers and clerks were almost always English or Scottish. Craftsmen and labourers came from a variety of ethnic backgrounds. Orkneymen and French Canadians made up a large part of the labouring class. Natives hunted for the companies or acted as interpreters; native women who lived with company men bore their children and carried out many domestic tasks at the post. As a result of these alliances, large numbers of mixed-blood people entered the fur trade labour force, but rarely, if ever, attained positions in the upper ranks of the companies.

A Summary of Fur Trade Architecture

Prior to 1821, the Hudson's Bay Company, North West Company, and XY Company competed fiercely for furs in western Canada. Because of this intense rivalry, the fur trade rapidly expanded west and north, continually lengthening supply lines. Consequently, many fur trade posts were temporary and built quickly from readily available materials; they were abandoned after a few years and left to rot in the wilderness. This type of fur trade architecture was simple and crude, reflecting to a large degree the impermanence of the settlement system.

The roofs of buildings at many fur trade posts were covered with bark or sod and dirt. Even clay, sand, and grass were occasionally used to build roofs. Generally, though, whatever materials were used, the result was the same — leaking roofs which constantly needed repair. By the latter half of the nineteenth century cedar shakes were being imported from the west (e.g., Fort St. James), increasing the quality and durability of roofing. Parchment skin covered the windows of buildings (e.g., Fort Chipewyan). Window glass was rarely used at the early posts, but its use increased during the last half of the nineteenth century.

The frames and walls of buildings were constructed from logs. Mud, mixed with straw or sand, filled the cracks between logs, or covered entire walls of houses for warmth and comfort: "men mounding the Men's Houses." A good local clay source for mudding was as important as good timber. In fact, available mud may have had a greater effect on the location of the post than timber, which was relatively abundant. In 1789, when looking for a suitable place to build Moose Lake Post for the North West Company, Angus Shaw noted: "I arrived at the entrance of Rivière Original .... I brought the goods, however, to a large point on the south-east of the lake, and wrought two or three days at felling trees for my house, but, to my great mortification, we then discovered there was no clay to be found within five leagues of us. There was no alternative short of a removal to another and more favorable situation at the entrance of a small river on the west side of the lake ...."

Both framed and massed building wall construction techniques were used in the fur trade. In the framed construction method a series of grooved vertical upright logs were placed at regular intervals (generally 8-12 feet) along the building wall. Then infill logs were "tongued" on each end and slipped horizontally into the grooves in the vertical uprights. Long, straight trees were unnecessary, since the sections between the uprights were relatively short. Vertical posts were placed either in holes in the ground (post-in-ground construction) or on sills (post-on-sill construction). Each method was a slightly different version of the Red River frame log construction technique, originally of French Canadian origin.
House, Dunvegan). The North West Company consistently placed vertical posts in the ground at the corners, along the walls, and down the centre of their buildings. The Hudson's Bay Company placed posts in the ground along the walls and sometimes at the corners of buildings.

Post-in-ground building construction was replaced by the post-on-sill construction technique some time after 1821. In the latter method, vertical wall and corner posts were set on sills or foundation logs which rested directly on the ground or on rocks (e.g., Fort Victoria). The reason for abandoning the post-in-ground method is uncertain. Post-on-sill construction appeared when forts were occupied for relatively longer periods of time, in turn requiring a longer-lasting log building method. However, it is questionable whether post-on-sill building construction was structurally superior to the post-in-ground method. It has been suggested that the change in framed construction techniques was due to the strong French Canadian influence after 1821. This explanation is weak because both methods were of French Canadian origin.

The deficiencies present in the framed construction techniques may have led to the introduction of the elaborate, but more structurally sound, massed wall construction techniques during the last half of the nineteenth century. The walls of massed structures contained horizontal logs that were joined by various corner-notching techniques (dovetail, saddle, lap notch, trenailed/keyed). These corner notching techniques (e.g., dovetail at Fort Dunvegan and Fort Chipewyan) required relatively more skilled labour and were more costly than the framed construction methods.

Fireplaces and chimneys were made from mud, sticks, and rocks. The base, made of rocks, rested on a clay pad. The fireplace was made from clay, which hardened when heated. Chimneys were framed with sticks and poles, then covered with mud: "fixed Poles to the chimney of Mr. McLeods upper Room in order to heighten it." The men often complained when the wind blew, "which causes every chimney in the Fort to smoke, and renders our house very disagreeable." Sometimes the mud chimneys washed away during heavy rains.

Flooring was crude during the early fur trade period. Wooden floor boards rested on the ground, on sleepers or on ledger strips placed along building walls. At Fort George, floor boards were pit sawn, with the bark-covered end facing down. Often the labourers' quarters contained sand or hard-packed dirt floors. Later in the nineteenth century, sawn floor planks rested on evenly spaced joists which were placed on stones or on the ground.

Building foundations were made primarily of wood or stone (e.g., Fort Dunvegan). Dwellings and stores had cellars, which were often crude holes in the ground with no cribbing whatsoever (e.g., labourers' barracks, Fort George). However, at some posts the clerk's and factor's house cellars were large and elaborately cribbed. In the most lavish houses, such as the Big House at Fort Edmonton, large basements served as cooking facilities and servants' quarters.

Fortifications
Fortifications at many inland trading posts were often neglected and inadequate. Wooden palisades enclosed buildings and working areas to form a square, rectangle, or quadrangle. Wooden palisades, between 12 and 28 feet in length, were placed in trenches three to four feet deep to form walls. Blockhouses or bastions were sometimes constructed at opposite corners of the palisades, or were placed along the walls near gates: "Put the Men to work on an elevated half Bastion above the Gate." Galleries ran around the top of the palisade to provide some protection against attack. However, because the forts were operated and constructed by civilians, defense against attack was often of secondary importance. At Rocky Mountain House the gates and bastions were "the most wretched buildings for defence." On occasion, competing companies built their posts close together or shared a common palisade for protection against attack. Defenses at fur trade posts were quite often simply a show of strength:

Edmonton is a well-built place... surrounded by high pickets and bastions, which, with the battlemented gateways, the flagstaffs, etc., give it a good deal of a martial appearance.

There was very little difference in the basic construction methods of fortifications at the western Canadian fur trade company posts, although there was considerable variability in their strength. By the last half of the nineteenth century, fortifications at many posts diminished because native/non-native hostilities were also diminishing (e.g., Dunvegan, Victoria, Chipewyan). The 'martial' appearance of these posts gave way with the devolution to a more scattered distribution of buildings, often with no palisades.


41 Statistical significance tests of these means, however, indicate that they are not different at a 95 percent confidence level.

42 National Archives of Canada, PA-9141, Fort Dunvegan, October 1872.

Table 1. Summary Data of Western Canadian Fur Trade Architecture.

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Note: Fort Area was calculated only when forts were enclosed by palisades.

REGIONAL VARIABILITY IN FUR TRADE POST ARCHITECTURE

The following results are derived from the fur trade post data presented in table 1.

Fort Size

The size of fur trade posts increased as their role changed from wintering posts to district headquarters. Prior to 1821, North West Company posts were larger than Hudson's Bay Company posts, likely because they had larger populations and more diverse functions (table 2). Hudson's Bay Company posts increased substantially in size after 1821 (table 2). Furthermore, the Saskatchewan River posts were slightly, but not significantly, larger than the northern establishments.41

Building Diversity, Size, and Frequency

Most fur trade posts contained dwellings, storage facilities, and specific work areas. A sketch of the 1875 Hudson's Bay Company Fort Dunvegan represents the layout and functional diversity of buildings necessary to conduct the inland trade (figure 2).42 Imported goods, local provisions, and furs were stored in large buildings. Large storage cellars contained perishable goods. The blacksmith's and carpenter's shops were essential to the operation of the inland posts. Dwellings housed the fur trade employees. Animals were kept farther away from the fort compound.

Variability in the diversity, size, and number of fort buildings reflected primarily the individual needs of posts and districts. Furthermore, number of buildings, size, and activity areas all increased as the role and rank of the fort changed. The large district headquarters, such as Fort Edmonton and Chipewyan, performed many roles, contained many different types of buildings, and incorporated considerably more space for storage, working, and living (table 1). Prior to 1821, number of buildings, total building space, and functions were all greater at North West Company fur trade posts than at the Hudson's Bay Company posts (table 2). These differences likely reflect the considerably larger populations and greater economic output at North West Company posts than the Hudson's Bay Company. After 1821, Hudson's Bay Company posts became larger, and contained more buildings, total build-
ing space, and functional areas (table 2). The Hudson's Bay Company reduced the number of inland posts after amalgamation with the North West Company to decrease their operating costs; consequently, there were fewer, larger, and more functionally diverse forts in each region.

**Architecture as Display**

Apparently, then, variability in fur trade post size, and the diversity of roles, was related to variability in fur trade economics. Occasionally, however, personal prestige and status, and sometimes competition between officers, also left its mark on fur trade architecture. This behaviour defied rational economic principles and enraged chief Company officers. For example, George Simpson, Governor of the Hudson's Bay Company, complained about construction expenses at Fort Pelly in 1832:

... from being merely a temporary Post, it has since then gradually become one of the most expensive permanent Establishments in the Country, the different Gentlemen who have been in charge thereof exhausting their ingenuity and wasting means in embellishments and fanciful improvements.

Fort Pelly was an unprofitable enterprise, but its officers intended to keep up with other posts in the region. It was prestige and competition between chief traders, and their attempts to visibly demonstrate equality, that were instrumental in the investment of resources in architecture.

Events at Fort Dunvegan leave a similar impression of how architecture was used to display rank of the posts and their occupants. When Fort Dunvegan became the new headquarters of Peace River District in 1878 improvements to its buildings were undertaken. Some buildings were rebuilt, despite the continuing decline of furs and profits. Dunvegan's new role as a district headquarters was reflected in its architecture. It carried out more roles and tasks, which is probably why some of its buildings were rebuilt and others added. The construction of a new factor's house some distance away from the servants' quarters—which were not rebuilt—also reflected the higher status of the man in charge of the new district. Evidently, architecture was used for conscious display of occupational rank at Fort Dunvegan.

**VARIABILITY IN OCCUPATIONAL RANK AND ARCHITECTURE**

Major trends in fur trade architecture, when compared with occupational inequality, are summarized in table 3.

**Living Arrangements**

Living quarters at many inland fur trade posts were arranged along palisades to form a courtyard within the main compound (e.g., Fort George, Dunvegan, Buckingham House). The trader's or factor's house was usually the largest, most dominant dwelling. Other Company employees lived in long barracks or small cabins, either inside or outside the fort. Privacy, which was minimal, was attained by constructing fences between dwellings. By the late nineteenth century the posts began to resemble small settlements, their buildings scattered over a larger area (e.g., Fort Dunvegan, 1880s).

Officers and labourers at the majority of the posts lived in separate quarters (table 4). These two occupational groups more often lived under a common roof prior to 1821 than after. Furthermore, officers and labourers lived together more often at Hudson's Bay Company posts than at North West Company posts. Finally, the degree of spatial proximity of the company employees was closely related to the relative size, and consequently the rank, of the fur trade posts they inhabited. And whenever possible, as at Fort Dunvegan during the 1880s, the living quarters of the officers and labourers were separated by a great deal of space.

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**Table 2. General Trends in Fur Trade Post Size.**

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45 Pyszczyk, *Big Men - Big Houses?*
Table 3 (above). Summary of Western Canadian fort dwelling data (see appendix for sources).

Table 4 (below). Spatial proximity of living quarters between Company officers and servants at Western Canadian fur trade posts.

What factors are responsible for these results? Historically, there was a much stronger ethnic link between the British officers and Orkney labourers of the Hudson's Bay Company than the British/Scottish officers and French Canadian labourers of the North West Company.46 These closer ethnic ties may account for the often closer proximity of living quarters of the officers and their servants in the Hudson's Bay Company than in the North West Company. Evidently, habitation of the same building by Hudson's Bay Company officers and servants was preferred because this arrangement resembled the master-servant relationship in Britain during the early nineteenth century. But the present fur trade sample shows that fort size played an equally important role in the degree of proximity between Hudson's Bay Company officers and servants prior to 1821. Proximity decreased as the size of the post increased in the Hudson's Bay Company (figure 3). Therefore, habitation of the same dwelling by officers and labourers was not due to greater ethnic compatibility in one company than the other, but occurred out of economic necessity.

Dwelling Space and Rooms

The amount of living space and number of rooms for each occupational class is given in table 3. Living space was calculated as square feet per person. It is only a rough approximation, since often many people (especially the labourers) shared the amount of space listed in table 3.

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For example, in 1810 Alexander Henry described the occupants in ten houses at Fort Vermilion. 47 Each house contained between one and 18 people, with a mean of 10.8 people per house. At Fort Edmonton in 1858, the number of occupants ranged between two and 10 people in 14 separate houses, with a mean of 6.8 people. 48 At Fort George, approximately 12 separate compartments have been identified to house approximately 140 people, or roughly 11.6 people per compartment. Sometimes these houses or compartments were often no bigger than 200 square feet.

In order to further examine general trends in living space, officers' space was divided by servants' space and expressed as a ratio (table 5). The officers have relatively more space than the servants as this figure increases; a decrease in the ratio signifies the opposite. Clearly, the officers always had more living space than the labourers. Prior to 1821, differences in living space between the two ranks was greater in the North West Company than in the Hudson's Bay Company. Furthermore, differences in living space among the ranks were much greater after 1821 than before 1821 in the Hudson's Bay Company. Finally, the degree of difference there was in living space between the occupational ranks was related to the size of the post (table 5, figure 4). In short, the degree of inequality in living space grew larger between the occupational classes as the size of the post increased.

There is also considerable variability in the number of rooms or partitions in dwellings (table 3). One room often served many functions for the labourers (eating, sleeping, etc.). At other forts, each specific activity took place in a separate room. For example, the men's quarters at Lower Fort Garry consisted of one or two rooms, and were much smaller than the officers' quarters. 49 Often, however, the men lived in barracks-like quarters that contained little or no internal partitioning: 50

... while the exterior is fair enough with its winter porch, protected doors, the inside was somewhat of a maze and more like a rabbit warren is supposed to be, both in excess of occupants ... 51

The number of officers' to labourers' rooms was computed as a ratio, by dividing the number officers' rooms by the number of labourers' rooms (table 5). Differences between officers'/labourers' number of rooms is only slightly higher in the North West Company than in the Hudson's Bay Company, though there is a significant difference in the officers'/labourers' number of rooms before and after 1821 (table 6). Furthermore, the ratio is also significantly different when large posts are compared to small posts. Like living space, the difference in number of rooms between the officers and labourers increased as the size or rank of the fur trade post increased.

CONCLUSIONS

Fur trade architecture is a valuable source of information about the people who first settled the Canadian west. While an understanding of basic log construction techniques in the fur trade is important, there are other architectural attributes, such as size and diversity of posts or buildings, which are equally informative about the past. These attributes are sensitive to changes that occur in the economic or social processes that operated in the fur trade. The first step in analyzing these attributes is to document the architectural variability, and then to

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51 McTavish, Behind the Palisade, 114.
Table 5. Summary of Living Space and Number of Rooms of Company Officers and Servants.

<table>
<thead>
<tr>
<th>Period/Company/Size</th>
<th>Officers' to Servants' Mean Living Space Ratio</th>
<th>Mean No. of Rooms Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>N.W. Company</td>
<td>3.5</td>
<td>2.6</td>
</tr>
<tr>
<td>H.B. Company &lt;1821</td>
<td>2.9</td>
<td>2.3</td>
</tr>
<tr>
<td>H.B. Company 1821-60</td>
<td>5.8</td>
<td>3.5</td>
</tr>
<tr>
<td>H.B. Company 1861-</td>
<td>4.9</td>
<td>2.5</td>
</tr>
<tr>
<td>&lt;1821</td>
<td>3.2</td>
<td>2.5</td>
</tr>
<tr>
<td>&gt;1821</td>
<td>5.4</td>
<td>3.5</td>
</tr>
<tr>
<td>Head quarters</td>
<td>7.8</td>
<td>3.8</td>
</tr>
<tr>
<td>Other</td>
<td>3.4</td>
<td>2.7</td>
</tr>
</tbody>
</table>

Note: Ratios are computed by dividing the Officers' figures by the Servants' figures.

52 The exceptions occurred at the large establishments, such as Fort Edmonton and Fort Garry, where the house servants lived in the basement of the factor's house.


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Table 5. Summary of living space and number of rooms of Company officers and servants.

Table 5. Summary of Living Space and Number of Rooms of Company Officers and Servants.

explain it. Although there are still deficiencies in the fur trade database, some trends are already discernible.

In the fur trade, as in many other societies, basic environmental and economic factors account for most of the variability found in architecture. The architecture of the fur trade post was designed so that furs could be acquired from the natives and its inhabitants would be protected from the elements. For the most part, readily available local building materials were used to construct these posts. Consequently, the form and function of fur trade architecture strongly reflects basic needs and availability of resources.

Even though fur trade post architecture was a direct response to immediate economic needs or available resources, it was also sensitive to larger prevailing economic and social conditions. Internal competition between company officers and their respective posts often led to improvements in architecture intended primarily for outward display and status. Under these circumstances, architecture categorizes humans and their environments. It is a means of active expression of human affiliation or differentiation, a fact often overlooked by conventional economic models. Resources, when divided unequally among posts and their inhabitants, are the means to accomplish these ends. When given the opportunity, as at the larger fur trade posts, officers invested labour and resources in architecture to differentiate themselves from the labourers.

Thus, at one end of the spectrum, when access to labour and resources were limited, there was relatively more similarity in architecture of the different ranks than when labour and materials were unlimited. This trend was evident when examining living conditions at the Hudson's Bay Company posts built before 1821. The close degree of proximity between the occupational ranks was not a consequence of closer ethnic ties that existed between the different ranks. As soon as access to labour and resources increased, as at the larger posts, greater spatial distance between the ranks occurred.52 Humans use material things to fix or make concrete their social positions within society. Initially, the ability of people in the fur trade to make those distinctions with architecture was minimal, but grew as access to labour and resources increased.

To conclude, fur trade architecture impressed upon people the importance or dignity of an institution or position, whether economic, political or religious. Consider, for example, Governor George Simpson's statements of how architecture was used to impress the natives:

This fort [Edmonton], both inside and outside, is decorated with paintings and devices to suit the taste of the savages that frequent it. Over the gateway are a most fanciful variety of vases; but the hall, of which both the ceiling and the walls present the grandest colors and most fantastic sculpture, absolutely rivets the astonished natives to the spot with wonder and admiration.53

Now, consider the following statement from the Edmonton Bulletin, 1906, describing the new Alberta legislative building:

While it is with a degree of pride and pleasure that we note the changed conditions from the fur traders' life to a prosperous, modern civilization, we must admit the feeling that we are, after all, aiming only to establish for our people the most important and imposing structure in the Province.

Architecture, in both cases, was used in a similar fashion: to rivet the "astonished natives" (and, in the latter case, non-natives) "to the spot with wonder and admiration."
Appendix: Sources for data presented in tables 1 and 3.

Established in 1873 as the North-West Mounted Police, and known since 1919 as the Royal Canadian Mounted Police, the Mounties are an enduring national symbol. Although film makers and writers of fiction have elevated the police to the realm of folk heroes, the force's reputation is rooted in the role it has played in the development of Canada's frontiers — the Prairies in the 1870s and 1880s, the Yukon in the 1890s, and the Arctic after the turn of the century. The Mounted Police were the federal government's primary instrument for administering these areas, for asserting authority over the population, and for demonstrating Canadian sovereignty. As the police moved into frontier regions, an ongoing concern was the provision of shelter for the rank and file, a task that often demanded as much energy as the duties related to law enforcement. The frontier activities of the force have inspired heritage-minded groups in many parts of the country to restore and, in some instances, to reconstruct historic forts and outposts as a way of establishing tangible links with the force's past accomplishments. The Canadian Parks Service, for example, manages several former police posts as national historic sites, including forts Walsh and Battleford in Saskatchewan, and Fort Herchmer at Dawson in the Yukon. Other former posts are managed by provincial and municipal authorities in western Canada and by territorial officials. It is not surprising, therefore, that the impact of the police on Canada's development is a topic of ongoing interest for historians and preservationists alike.

BY JAMES DE JONGE
This paper examines the development of Mounted Police posts on Canada's northern frontiers, particularly above the Arctic Circle in the first half of this century, to provide a broader context for understanding the force's built heritage. Police detachment buildings in the Arctic symbolized the federal presence on the frontier and the strategy of reinforcing Canada's control through effective occupation of this vast area. In addition to their historical significance, the buildings are of interest from an architectural viewpoint for what they reveal about the organization and outlook of the police over time. The establishment of northern detachments in the opening decades of the 20th century followed an earlier pattern by the police of placing minimal emphasis on living accommodations. This attitude toward housing stemmed mainly from the force's paramilitary structure, which made it difficult to respond effectively to the demands of the environment. It also reflected the transitory nature of police work on the frontier, and the necessity of responding to shifts in settlement and to changes in the force's areas of jurisdiction. Coordinating the far-flung activities of the police and establishing secure supply lines proved to be difficult tasks.

Beyond providing an insight into the internal workings of the force, Arctic detachment buildings are relevant to a broader topic that has received little attention to date — the development of northern building technology. In the early 20th century the Mounted Police were among a relatively small number of non-native sojourners, including missionaries, whalers and fur traders, who constructed shelters in Canada's Arctic regions. Prior to 1940 the police established about 14 outposts in the Eastern Arctic and about 24 in the Mackenzie Valley and along the Arctic Coast (Figure 1). They established an additional 40 to 50 detachments in the Yukon Territory, mainly before 1910. The police serve as a useful focus for examining the process of Arctic construction, the problems encountered, and the gradual evolution of improvements in building design.

Probably the most interesting aspect of the force's northern work was the extension of its activities to the Arctic archipelago in the 1920s. While the decade marked the beginning of a period of sustained occupation of the high Arctic, it was also the culmination of decades of work in the Yukon, the Mackenzie River Valley, and along the shores of Hudson Bay. It is, therefore, useful to begin with a discussion of police work in these locations before 1920, as this was a period of initiation and adjustment to the North. In the decades before 1920, the police confronted many problems in establishing supply lines and in securing living quarters, and they overcame several challenges imposed by the environment, albeit after much trial and error. An examination of northern detachment buildings after 1920 suggests that the force's embedded traditions, its bureaucratic structure, and the shifting nature of police work all inhibited efforts to build upon past achievements.

**BUILDING BELOW THE TREE-LINE: THE MOUNTED POLICE IN THE YUKON**
The Mounted Police were deployed to the Yukon in the mid-1890s in response to the growth in speculative mining, primarily by Americans — a situation that raised unsettling questions about Canada's claim to the territory. Moreover, the Canadian government was concerned that the maintenance of law and order in the scattered communities of the Yukon had come to be based upon the self-governing system of the "miners meeting." This informal institution was considered contrary to the Canadian tradition of centralized, paternalistic control that had been well demonstrated by the Mounties in the opening of the Canadian West. In the Yukon the police were introduced to the rigors of a more northerly climate, but the experience they acquired there proved of limited value for their subsequent work above the Arctic Circle. Indeed, the Mounties were compelled to make relatively few changes in the methods used to secure supplies and shelter.

In the Yukon, supplies of timber were usually available in the vicinity of proposed detachments, and this prompted the force to rely upon the initiative of the rank and file to construct traditional log buildings wherever possible. This approach was a continuation of the practice followed by the police in the Canadian West. On the Prairies the Mounties often relocated detachments and divisional headquarters in response to shifting settlement patterns and to changes in police duties. As a consequence, the force's senior officers had become hesitant to invest money in the construction of new posts. They were pleased whenever the men in the field could use local timber to build adequate, but inexpensive quarters. The force's experience on the Prairies had also demonstrated the importance of the scattered resident population on the frontier, especially the American traders. Until the completion of the Canadian Pacific Railway in the 1880s, the Mounties drew heavily upon the services of American entrepreneurs and their main bases of supply in Montana. This reliance upon those who were supposed to be the focus of police work was evident in the Yukon as well, and it reinforced the tendency of venturing into new regions without giving serious attention to planning.

1 In past decades the Canadian Parks Service has undertaken considerable research on the police posts under its jurisdiction. The Parks Service has also researched a number of Mounted Police buildings to assist the Historic Sites and Monuments Board of Canada in assessing their national significance. In recent years the Architectural History Branch of the Canadian Parks Service has also prepared several evaluation reports of Mounted Police facilities for the Federal Heritage Buildings Review Office (FHBRO).

The construction of Fort Constantine, the first major police post in the Yukon, was typical of the approach taken by the force in the northern territory. It was built in 1895 by a group of 20 Mounties, led by Inspector Constantine, near the mining community of Forty Mile along the Yukon River. Having made no prior arrangements for accommodation, the men were left to their own resources and to the good will of others. Fortunately for the police, the American-based North American Trading and Transportation Company provided temporary shelter in miners' shacks and offered the use of its portable sawmill. For two months the police were preoccupied with the construction of the post, which proved to be an arduous task because of a scarcity of suitable timber in the vicinity. From locations upstream, hundreds of logs were floated to the site for use in erecting buildings and an imposing palisade to enclose the police property (Figure 2). The force's lack of preparation provided an opportunity for the men to demonstrate their resourcefulness. Sergeant Hayne, one of the officers, later boasted in his memoirs: "All this work was done by our twenty selves, with no outward help of any kind or description. The mounted police in these parts of the British Empire have to be able to do most things from dentistry to engineering on a large scale, with a little navigation thrown in."4

The log buildings of Fort Constantine were the first of many erected by the force throughout the Yukon. Headquarters posts came to be established at Dawson and at Whitehorse, each responsible for 10 to 15 outlying detachments. Officers who had been in the region for several years recognized the importance of having adequate food supplies, tools, and building hardware on hand, but this was a point not always appreciated by senior administrators. The senior officer of the force, the Commissioner, was stationed in Regina but he reported to the Comptroller, a civilian bureaucrat stationed in Ottawa who advised the government about police activities and conveyed government policy back to the Commissioner. Not surprisingly, problems resulted from the bureaucratic chain of command and from the geographical separation of these two administrators. Matters were compounded by the conservative outlook of Frederick White, who occupied the position of Comptroller from 1880 to 1913. His overriding concerns for limiting capital expenditures and his reluctance to expand operations in the Yukon did not augur well for the efforts of lower ranking officers to improve supply lines and living conditions on the frontier.5

As at Fort Constantine, the men in the field continued to shoulder the burden of constructing the outposts. In 1897, for example, Inspector Constantine lamented the failure of senior officials to supply a portable sawmill and horses for the construction of the new headquarters post at Dawson. His men spent days hauling heavy logs hundreds of yards to the building site and then hewing them by hand on three sides.6 When the Tagish post was built in 1898, the men were particularly hampered by the lack of equipment (Figure 3). The commanding officer there reported: "We had very few tools with us and neither dogs nor horses and we consequently found the green timber very hard to handle. I managed to buy a few axes, shovels and picks from the passers-by but of course they charged exorbitant prices."7 Yet, the experiences of the men at Tagish and Dawson typified the force's predilection for leaving the officer-on-the-spot to his own devices for procuring materials and determining the final design of frontier posts.

Despite uncertainties in the supply of materials, and the frequent need to relocate detachments as new areas were opened to mining, the police succeeded in constructing many buildings of a respectable character (Figure 4). A Mountie's adeptness at handling an axe proved to be indispensable in a region where the task of securing food and shelter could be as time-consuming as the duties associated with law enforcement. The preoccupation with buildings is evident in the annual police reports from the Yukon, which are replete with accounts of construction work, including detailed information on the dimensions of buildings and their

3 Report of the Commissioner of the North-West Mounted Police, 1895 (Ottawa: Queen's Printer, 1896), 7-10 (hereafter cited as NWMP, RNWMP or RCMP Annual Report, as appropriate).
6 NWMP Annual Report, 1897, 308, 310.
7 NWMP Annual Report, 1898, 81.
component parts. As Dawson and Whitehorse became settled in the opening years of this century, the police adopted standard frame construction techniques for several of their headquarters' buildings, in keeping with the overall trends in these communities. They were also able to devote less time to construction work and to rely more on outside expertise. The four surviving buildings from the Dawson post, now managed by the Canadian Parks Service, are indicative of this evolution. The oldest two — the Married Officers' Quarters and the Hospital — are log buildings dating from 1898, and are testimony to what could be accomplished with minimal resources. By contrast, the Commanding Officer's Residence and the Stable are frame buildings constructed in 1902 and 1903 respectively. The former was based on a common residential plan and the latter was the work of a local builder.

But as in the West, police requirements in the Yukon changed abruptly, just as commercial construction firms were able to offset some of the burden of securing living accommodations. Mining activity declined in the opening years of this century, prompting a reduction in the size of the police contingent in the territory, from some 300 men in 1903 to 228 by 1905, and eventually to a mere 45 by 1918. Little new construction occurred after 1905, and the force tended to make do with existing buildings. The log hospital building at the Dawson headquarters, for example, was renovated in 1910 to serve as a jail. In all, the rapidly changing policing requirements in the Yukon reinforced the tendency by senior police administrators to place little priority on living quarters. They recognized that many detachment buildings were occupied for only a brief period, and that the men on site could, after some difficulty, look after their own building requirements.

THE WESTERN ARCTIC AND HUDSON BAY, 1903-1920

While the police presence in the Yukon declined in the opening decades of this century, the force extended its work further north to the coast of the Western Arctic and to the shores of Hudson Bay. The underlying purpose of most of these posts was to assert sovereignty over a region acquired from Britain (1870-1880), but given attention by Canada only when other countries showed an interest in exploiting its potential. The police posts were the federal government's primary way of demonstrating Canada's claim to the Arctic — a point reinforced by the Mounties who were instructed to sell permits and collect customs duties from foreign whaling vessels operating in northern waters. The police also monitored the Indian and Inuit populations, although the lack of funds and the absence of a clear government policy on the treatment of Canada's native peoples limited the force's ability to ameliorate the difficulties they were encountering.

In contrast to their smooth transition from the Prairies to the Yukon, the Mounted Police found the extension of their work into the Arctic to be an arduous adjustment. Their problems stemmed primarily from the absence of local building materials and supplies. Above the tree-line almost all food and equipment, including the living quarters for the men, had to be shipped in, and the detachments were resupplied only once a year. The success of police operations and the very survival of the men depended upon careful planning. Efforts were focused on the short summer season, when the construction of living quarters was possible and when the ice had cleared sufficiently to permit the arrival of the supply ship. Moreover, the region above the tree-line contained only a sparse and transitory non-native population, consisting mainly of whalers, fur traders, and missionaries, who had limited supplies and living accommodations to offer the police. The officers assigned to northern duty also faced the continuing problem of the Comptroller's ambivalence to extending the force's role to the Arctic.

The difficulty of adjusting to the Arctic was well illustrated by the establishment of the police posts in 1903 at Herschel Island in the Western Arctic and at Fullerton in Hudson Bay, the principal wintering sites for whaling vessels. In both cases the organizational ability of the Mounted Police was found wanting. Herschel Island, located in the Beaufort Sea about 100 kilometres northwest of the mouth of the Mackenzie River, was a desolate place where an American whaling company and an Anglican mission had erected a handful of frame buildings using imported lumber. A small party of Mounties, led by Inspector Constantine, travelled up the Mackenzie River in 1903 and imposed upon the Hudson's Bay Company at Fort McPherson to rent them a log building. Two officers ventured on to Herschel Island without making arrangements for food or shelter. Upon their arrival, the best they could do was to rent from the resident missionary a rudimentary sod hut of the type used by the native population on the island. These shelters were made of boards, driftwood or staves, covered with sod, and lined with canvas on the interior. A hole in the roof provided ventilation and served as a window. The dark, damp structure was considered by the men to be unsuitable in every way for carrying out police work. Living conditions did not improve until 1906, when the men rented a frame building from the whaling company, which they subsequently purchased and renovated to serve as the detachment (figure 5). Additional time passed before

Figure 5. Herschel Island detachment in the Western Arctic, c. 1924-25. The police purchased the building from the Pacific Steam Whaling Company. (RCMP Photo Archives)
the detachment established its own supply lines, thus reducing the dependency on the whalers for coal and for some of their food. Success had depended upon the good will or the opportunism of fur traders, missionaries and whalers, rather than upon the planning efforts of the force.

The 1903 expedition to Fullerton on the west coast of Hudson Bay was better prepared in that the Mounted Police brought in more supplies, including lumber for a detachment quarters, but the men still suffered from ad hoc planning. Superintendent Moodie, the leader of the four-man detachment, was an officer of proven experience in the Yukon, but from the outset he found life above the tree-line difficult to endure. Many of his initial assumptions about the needs of the detachment did not hold true. Moodie prepared rough plans for modest gable-roofed frame buildings to house the detachment members and their provisions, but he underestimated the amount of storage space required for the two years' stock of goods they had brought to Fullerton. The task of supplying the lumber was contracted out to a private architect who estimated only the gross board measurement, forgetting to calculate the wastage when the various pieces were cut for assembly at Fullerton. The stock was further reduced by two other requirements. Some lumber was needed to construct a temporary winter shelter, known as a deck house, for the supply ship Neptune, and much of this wood was unusable in the spring. It also became necessary to build a make-shift guard room to confine the ship's surgeon, who became insane shortly after the ship arrived at Fullerton. For these reasons the Mounties found themselves short of lumber even for the small buildings planned by Moodie, and they were compelled to endure the winter in cramped, unfinished quarters (figure 6).

Fortunately for the detachment, the captain of the Era, the only American whaling vessel to winter at Fullerton, sold the Mounties the lumber from his deck shelter when it was dismantled in the spring, and he permitted his ship's carpenter to assist the police in building a storehouse. As at Herschel Island, the outcome of events at Fullerton was paradoxical in that the force depended so heavily upon the resources and good will of those who were the focus of police work. But as one historian of the Mounted Police has noted, the relationship between the police and the whaling and missionary groups was a symbiotic one. The police were usually welcome company in these desolate places, and they curbed unruly behaviour by crews of whaling vessels. Moreover, the collection of duties was done on an ad hoc basis and provoked no opposition as a token gesture of Canada's title to the northern regions. 17

The assistance from whalers and missionaries helped mitigate some of the difficulties encountered by the police, but it clearly underlined the force's unfamiliarity with northern conditions. When planning for the Fullerton buildings, Moodie gave no consideration to the prefabricated system of construction known as knocked-down or k-d housing in which most of the framing members were pre-cut to permit speedy construction of the dwelling. Since the 1860s this method had been familiar to the whalers, who had learned quickly that favourable building conditions in the Arctic existed for only a few weeks of the year. The overall design of the buildings was no different from the frame buildings erected by the force in the Yukon or in the West. The Mounties followed the accepted technique of placing a double layer of boards on the outside and on the inside of buildings, with building paper placed between each of the two layers. Insulation was provided by the dead air space between the studs and by banking the outside of the buildings with snow, another traditional measure long employed by the whalers and adopted at the outset by the police. At Fullerton, the police lined the interior with oiled canvas, but this proved ineffective in keeping out the frost. Ultimately, it was only by burning large quantities of coal that any degree of comfort could be attained. Like the missionaries and other scattered sojourners in these Arctic regions, the police burned upwards of ten tons of coal annually to heat a single building, all of it imported by supply ships.

Herschel Island remained the focus of Mounted Police work in the Mackenzie Delta area, but Fullerton soon became a secondary outpost in favour of Churchill, established in 1905 some 500 kilometres to the south. Churchill served as the headquarters for police work in Hudson Bay until 1914, when the headquarters was moved to Port Nelson — the intended terminus of a railway designed to transport Prairie grain to Hudson Bay. The police moved to Churchill because of the isolated location of Fullerton and because of its discontinuance as a wintering place for whalers. Churchill was the site of a Hudson's Bay Company store and it was also an ideal place to monitor the Indians and the Inuit, as both races congregated there. Police administrators welcomed the southerly locations of Churchill and Port Nelson. Construction timber was available and they could establish overland supply routes with the Prairies. The situation was reminiscent of the Yukon in that the police had to haul in logs from many miles distant. Both posts tended to be the product of ad hoc planning efforts. They consisted of a mixture of log and frame buildings, the former being used for storehouses and for residences for the native helpers employed by the Mounties. 19

16 RNWMP Annual Report, 1905, 10; National Archives of Canada (hereafter cited as NA), RG 18, Vol. 281, File 716, pt. 1, Moodie to Comptroller, 3 September 1904.
17 Morrison, Showing the Flag 82. The generally amicable relations between the police and whalers at Fullerton in 1903-04 is recorded in the journal of the whaling captain there. See W. Gillies Ross, ed., An Arctic Whaling Diary: The Journal of Captain George Corner in Hudson Bay, 1903-1905 (Toronto: University of Toronto Press, 1984).
19 NA, RG 18, Vol. 354, File 155, Moodie to Commissioner, 1 July 1908.
quarters for the police were of standard frame construction, using lumber imported by steamers and erected with the assistance of a carpenter brought in for the task. The buildings at each location housed about 15 men and were heated primarily by imported coal, although the economy-minded Commissioner in Regina was keen on having the men burn firewood to reduce their dependence on coal, despite the fact that the nearest supply at Churchill was some eight miles from the post. 20

Although the Churchill post met the basic needs of the men, the frame buildings delivered to Port Nelson in 1914 revealed an underlying inattention to design by the Commissioner in Ottawa, who did not appreciate the severity of the northern climate. The incident revealed how the force’s bureaucratic structure could prevent officers at northern posts from improving their living conditions even after years of experience. Responsibility for providing the buildings was shuffled back and forth between the Commissioner and the Comptroller until the latter finally agreed to supply them. 21 The buildings’ interconnecting prefabricated panels were warped by heavy machinery that had been placed on top of them in the supply vessel. The situation was compounded by the failure of the hired carpenter to arrive in Port Nelson and by the fact that the different buildings had not been packed separately, requiring much time to be spent in sorting the various components. These problems were minor, however, in comparison to the basic shortcomings in design. The walls of the portable buildings consisted of a single layer of boards on the outside only. The superintendent in charge at Port Nelson likened them to “the usual sort of houses erected at summer resorts,” and noted that “however suitable they may be for that purpose, they certainly are not satisfactory as dwelling houses in this climate, where the winter season is long and severe, accompanied by very high winds.” 22

One of these portable buildings was used to establish a new outpost at Baker Lake, located several hundred kilometres north of Port Nelson, inland from Fullerton (figure 7). The discontent among the men there was great. The officer in charge commented in 1915 that “despite all efforts to improve its defects, we have not been able to secure anything that may be termed real comfort. When the thaw set in we were constantly deluged with melting ice from the roof interior, the ice had to be frequently chopped down with a spade, then the rain and sleet came, leaked through the roof, and ran down the walls inside the quarters, wetting almost everything...” 23 The portable buildings were made habitable only by employing the traditional method of banking them with snow and by importing lumber in subsequent years to line their interiors. 24

Apart from the experimentation with prefabricated buildings, the designs for northern detachments were based on rough sketches and general recommendations made by senior officers. In neither instance did the police give much attention to incorporating the expertise of architects or housing contractors. Superintendent Moodie, for example, drew up plans for the Fullerton buildings and made detailed recommendations on the design of other proposed posts, despite his own admission to having no architectural training. 25 This approach was in keeping with the force’s past practice of relying upon the instincts of the men in the field and upon their familiarity with the climate and geography. In Hudson Bay the police escaped the worst effects of the climate by concentrating operations in the southern part of the bay. As the police moved farther north during this period, however, the limitations of the men to look after their own needs had become self evident. Herschel Island remained the most northerly detachment until the early 1920s, and it made the police aware of the need for self sufficiency and for secure supply lines. The original frame detachment building that the force purchased from the whalers at Herschel Island has survived, and now forms part of the Yukon’s first Territorial Park. It stands as a reminder of the tentative forays made by the force in the far North in the first two decades of this century. From the viewpoint of architecture, the force devoted relatively little attention to the design of buildings during these years. When police operations were extended further north in the 1920s, the Mounties grew to appreciate the desirability of pre-cutting the framing members of buildings and ensuring that structures be sheathed with lumber on the inside and outside, so that they were at least comparable to those in the south.

THE FINAL FRONTIER: PENETRATING THE HIGH ARCTIC AFTER 1920

In the early 1920s the Mounted Police maintained a presence in the Yukon and Hudson Bay, residing in somewhat makeshift dwellings that were kept warm by burning large quantities of imported coal. The focus of their work, however, gradually shifted to the high Arctic, and the principal task again was to assert Canadian sovereignty over a region that was being visited by Norwegian, Danish, and American explorers. Between 1922 and 1927 the police established seven new posts in the Eastern Arctic, situated on Baffin Island, Devon Island, Ellesmere Island, and on both sides of Hudson Strait. The decade marked the beginning of a period of

21 NA, RG 18, Vol. 2163, pt. 33, various correspondence between Commissioner and Comptroller, April-May 1914.
22 NA, RG 18, Vol. 480, No. 67, Superintendent Howard to Commissioner, 4 December 1914.
23 RCMP Annual Report, 1915, 265.
sustained occupation by the force of Canada's most northerly regions, in contrast to their limited, tentative forays into Hudson Bay of previous decades. In the following decades, the police established additional posts throughout the Arctic regions, occupying several of these for a period of only a few years.

Even more so than before, the success of the Arctic expeditions depended upon careful planning. In the Eastern Arctic, the Mounties were generally better prepared in the 1920s, following the establishment of a new administrative arm of the federal government, the Northwest Territories and Yukon Branch of the Department of Interior. In 1922 the new branch inaugurated the Eastern Arctic Patrol — an annual government-sponsored expedition to assist the work of various departments and agencies. A major part of its work was the establishment and supply of new police posts in the high Arctic. The planning of these expeditions was made easier by the reorganization of the Mounties as a national police force in 1919 — the Royal Canadian Mounted Police. The transfer of the force's headquarters from Regina to Ottawa in 1920 and the abolition of the position of Comptroller permitted greater, more centralized control and coordination of police work in the Arctic, especially between the Mounted Police and other government departments who assisted in the northern expeditions. Still, unanticipated problems arose occasionally, an example being the first expedition of the Eastern Arctic Patrol in 1922 when only two of the three proposed Arctic posts were established because the police realized just prior to their departure at Quebec that the supply ship C.G.S. Arctic was not large enough to hold the buildings for the last detachment.

The improvement in planning for the northern posts was evident in the provision of living quarters. For most buildings in the Eastern Arctic after 1920, the Mounties relied on the federal Department of Public Works, which prepared standard plans for living quarters and storehouses, and arranged for their manufacture and delivery to the annual supply vessel. When railway lines were completed to Churchill on Hudson Bay, the police had the alternative of shipping their buildings overland to Churchill, where they were taken by the supply vessel to their final destinations farther north. In the Mackenzie Valley and the Arctic Coast, where police operations were administered out of the force's divisional headquarters in Edmonton, a different group of standardized building types was developed by an officer of the force experienced in northern service (Figure 8). Using these plans, commercial firms in Edmonton furnished the necessary materials. The designs were traditional knocked-down or k-d houses in which the framing members were pre-cut and marked to facilitate their transportation down the Mackenzie River system, and their subsequent assembly in the Western Arctic. Detachments at Fort Providence, Rae, and Fort Good Hope, erected in the early 1920s, were among the first in the Mackenzie Valley to be constructed along these standardized lines. For detachments constructed along the Arctic Coast, the force had the option of having the building components fabricated by firms such as Mill Cut Homes of Vancouver, and then shipped up
through the Bering Strait to the Arctic Ocean. Regardless of the option chosen, freight charges accounted for a large proportion of the total cost, often in excess of the cost of fabrication.29

The designs continued to rely for insulation on the air space between the studs and on a double layer of boards on the inner and outer walls, between which was placed building paper. This was the standard practice followed by commercial firms specializing in prefabricated dwellings in the early 1920s. Banking the houses with loose snow or with a wall of snow blocks continued to be the principal form of insulation. In the first of the high Arctic expeditions in 1922, Joseph Bernier — the veteran captain of the Arctic — gave the Mounties detailed instructions on the methods of constructing snow walls.30 The timing of a northern expedition was important because Arctic waters were open to navigation for only a few weeks of the year, usually during the month of August. When establishing a post, the Mounties found that a group of five or six men, working 12 hour days with an experienced carpenter, could erect a detachment building and storehouse in approximately two weeks (figures 9, 10). The daily journals and the published memoirs of detachment members capture the sense of urgency felt by those involved in constructing the outposts. Expedition members closely monitored changes in the weather, especially sudden shifts in the wind that could push pack ice close to shore and threaten the departure of the supply ship. In his published reminiscences of establishing the Craig Harbour detachment in 1922, Herbert Lee noted:

The ship dropped anchor half a mile off shore and the unloading of coal, lumber and supplies commenced. For six days we toiled without a let-up. The ship could not stay long. It was now the 21st of August and already the ice masses pouring down the Sound from the west menaced the ship. It was a relief to get the 125 tons of sacked coal ashore.

Then, while a party headed by the ship’s carpenter worked erecting the buildings, the rest of us toiled frantically to load the boats and get the supplies on shore. Everything depended on speed. Each day the buildings of the new detachment took more shape, and by the morning of the sixth day the last boat-load of stores was landed. The “Arctic’s” crew worked heroically. Not one of them could have slept for more than four hours a night throughout that hectic week. The Captain anxiously eyed the weather and the great pack which hovered threateningly on the western horizon. Late on the 28th of August the line of floes crept down on the ship and forced the Captain to raise anchor and keep the vessel moving to evade being crushed.31

Initially the doors and windows of the detachments were crated up whole when transported north, but in subsequent years they were often broken down into their component parts to save space, so long as their reassembly in the Arctic did not require too much time.32 The storehouse at each Arctic detachment had to be capable of holding two years’ supply of basic provisions in the event that the supply vessel was unable to reach the post in any year (figure 11). The packing crates and spare lumber generally were used to make huts for the Inuit who were hired as “special” constables to perform tasks essential to the survival

29 RCMP Archives Unit, Ottawa, Files S1316-18, D1940, Providence NWT Buildings, and S1316-19, D1940, Good Hope Buildings. The standardized designs included a Type “A” warehouse (15 feet by 22 feet), a Type “B” detachment quarters (18 feet by 22 feet) for two single men, and a Type “C” detachment quarters (22 feet by 28 feet) suitable for a married NCO and one constable, with accommodation for a portable steel cell. Commercial firms in Edmonton which supplied buildings to the western Arctic included Kendall Ltd., H. Cashing Bros. Ltd., and the Hayward Lumber Co. Ltd.


31 Herbert Patrick Lee, Policing the Top of the World (Toronto: McClelland and Stewart, 1928), 34-35.

of the men, such as assisting on lengthy patrols and hunting game to feed the dog teams. In the 1920s there was much debate within the force as to whether the special constables should be provided with wooden houses as a means of assimilation, or whether they should be encouraged to live in traditional shelters — igloos in winter and the skin-covered tupiks in summer. By the 1930s, however, wooden houses for special constables had become the norm (figure 12). In addition to the main detachment building, the storehouse, the residences for special constables, and a latrine, the northern outpost had a building for dog food, referred to as the blubber shed because of the large quantities of waleus and seal meat stored there.

Arctic detachments situated near native settlements were often equipped with portable steel cells installed in the adjacent storehouse or in a separate building.

The main detachment building was a utilitarian structure. Those in the Eastern Arctic measured about 16 feet by 40 feet and were designed to house three men. Each contained three rooms — a kitchen and general living area for the men, a room for the officer in charge, and another bedroom shared by the two constables (figure 13). Initially the kitchen and dining area was intended to be located in one of the outer rooms, but later was moved to the middle room to obtain optimum heat distribution from the coal-fired cooking stove. Two smaller stoves were installed in the outer rooms, although these tended to be used only in the coldest weather. Enclosed porches at the front and rear entrances, although not designed for the original buildings, were subsequently added by the officers at the Arctic posts to reduce heat loss. A common problem at the northern posts was shrinkage of the lumber as a consequence of the use of unseasoned wood by building contractors, who were often compelled to fabricate building components on short notice. The lumber also became swollen if exposed to the elements during the lengthy journey north.

Although the detachment buildings were plain in appearance and lacked distinctive design elements, they were identifiable as police posts by virtue of their prominent flag staffs and standardized paint colour schemes. Other agencies in the Arctic also developed their own distinct colour schemes for buildings. In the mid-1930s the police used pale grey with dark grey trim in the Eastern Arctic, and white with grey trim in the Mackenzie River and along the Arctic Coast. Bright red roofs also helped to distinguish the police buildings in the Western Arctic. Equally important were the grounds of the police detachments, which were noted for their clean, orderly appearance. The police property usually featured pathways bordered with white-painted stones that had the practical value of helping to define the path at night and during the dark period. The contrast between the barren landscape and the well-kept, manicured character of the buildings and adjacent grounds could be quite striking, as in the case of the Lake Harbour post on Baffin Island, nestled on the side of a hill (figure 14). The landscaping imposed a sense of order and permanence on the frontier and reinforced the federal presence.

The routine of the post was broken by the lengthy patrols by dog sled during the winter months, when the police covered hundreds of kilometres to visit Inuit camps and to
strengthen Canada's claims to sovereignty. Despite the barren landscape, the rigorous climate, and months of continual darkness, there was no shortage of volunteers for Arctic service, especially among young recruits who valued the relative independence offered by the northern lifestyle in comparison to the more regimented character of southern service. Still, living in such close quarters placed a high premium on cordial relations among the men. The officer in charge of the most northerly post at Bache Peninsula must have been concerned in 1929 when an argument between his men erupted into a full blown fist fight, although he reported that the incident was soon resolved. When indoors, the men generally passed their spare time reading books and magazines from the extensive libraries kept at the posts.

The police made a few design adjustments to the buildings when circumstances warranted. In 1923, for example, an overheated chimney pipe at the Craig Harbour detachment on southern Ellesmere Island was believed responsible for starting a fire during a raging storm when the temperature was minus 50 degrees fahrenheit. The blaze engulfed the detachment in a matter of minutes, compelling the men to retreat to the blubber shed where they spent the remainder of the winter in less than ideal conditions. The incident emphasized the need to ensure that chimney pipes were of the best possible design and of a strong gauge. It also underlined the necessity of spacing outpost buildings sufficiently apart to prevent the spread of fire.

Such modifications were of a minor nature, however. In all, the design of northern detachments changed little during the 1920s and 1930s, and in fact lagged behind technical improvements that were being introduced in southern construction. The slow pace of adaptation was especially evident in the crucial area of thermal insulation. Already by the mid-1920s various insulating materials were being developed in North America for residential and commercial buildings. For the Mounted Police the adoption of these advances was not a high priority. In the Eastern Arctic, apparently the first recorded improvement came in 1931, when the Commissioner of the force agreed to the use of a thicker building paper known as "Houseline," produced by the Johns Manville Company, for the construction of a cell room at Port Burwell in Hudson Strait. At the same time in the Western Arctic, detachments built along the Arctic Coast were made warmer only by nailing a third layer of boards on the exterior walls, a measure that also helped to brace the buildings against the force of the winds.

At first glance this slow pace of adaptation may appear surprising, especially in view of the harsh northern climate and the adeptness of the police at learning traditional Arctic survival skills practised by the special Eskimo constables — skills which proved invaluable on the lengthy winter patrols. The force's inattention to housing construction was, however, consistent with the attitude of the Hudson's Bay Company and of the various missionary groups, whose efforts in this area before the Second World War were not innovative. It is important to consider this broader context. When design innovation in Arctic construction appeared, it

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36 Douglas S. Robertson, To the Arctic with the Mounted Police (Toronto: The Macmillan Company of Canada, 1934), 111-12.
38 A vivid account of the near-disaster at Craig Harbour is found in Lee, Policing the Top of the World, 190-58.
39 RCMP Archives Unit, Ottawa, File GS1316-155, D1945, Port Burwell, Assistant Commissioner Duffus to NCO in charge of Port Burwell, 5 July 1930.
40 RCMP Archives Unit, Ottawa, File GS1316-20, D1940, Cambridge Bay Detachment, Superintendent Acland to Superintendent Newson, 28 January 1931.
41 For an account of the poor housing conditions at the Hudson's Bay Company post at Cape Wolstenholme in the 1940s, see Bruce D. Campbell, Where the High Winds Blow (New York: Charles Scribner's Sons, 1946), 41-43. In a discussion about the merits of building cold storage plants in the Arctic, D.L. McKeand, an official of the Department of Mines and Resources, remarked, "The Hudson's Bay Company and the Royal Canadian Mounted Police were antagonistic towards insulated residences and so were Mesers. Finnie, Mackenzie and Burwash [officials of the Northwest Territories and Yukon Branch], for that matter: insulation is now universal. Refrigeration will follow as a natural consequence." NA, RG 85, Vol. 924, File 11675, Refrigeration, Cold Storage, Pangnirtung, McKeand to Gibson, 26 February 1941.


43 NA, RG 85, Vol. 816, File 6969, Medical Health Officer’s Residence, Chesterfield; RG 85, Vol. 195, File 554/170, pt. 1, Saint Lake’s Hospital, Pangnirtung, Finnie to Parry, 18 December 1929.


45 Rock wool was used by the Hudson’s Bay Company for a new post at Arctic Bay in 1936, and by the Anglican Mission at Aklavik, apparently in the same year. NA, RG 85, Vol. 816, File 6969, MHI Residence, Chesterfield Inlet, McKeand to Gibson, 28 February 1945; RCMP Archives Unit, Ottawa, File GS1316-7, Aklavik Buildings, Covell to Aklavik Subdivision, 1 December 1936. Rock wool was used in all new HBC buildings thereafter. NA, RG 85, Vol. 826, File 7231, pt. 2, Departmental House, Lake Harbour, McKeand to Gibson, 13 February 1940.

46 RCMP Archives Unit, Ottawa, File GS1316-47, Eskimo Point, Bill of Material for revised “C” Type dwelling, June 1936; Superintendent, “G” Division, to Manager, Empress Lumber Company, 2 June 1936.

47 RCMP Archives Unit, Ottawa, File GS1316-7, Aklavik Buildings, Inspector Carleigh to Officer Commanding, “G” Division, Ottawa, 5 December 1936.

48 RCMP Archives Unit, Ottawa, File GS1316-11, D1966, Pond Inlet, NWT, Inspector Bowmen, “G” Division, to Inspecting Officer, RCMP, Eastern Arctic Patrol, 29 July 1942.


40 Despite its apparent success at Pangnirtung, Insulx was not widely used elsewhere in the Arctic, perhaps because of the initial cost of installation and the work involved in shipping the bulky material north. The next dwelling built by Livingston in 1929, at Chesterfield Inlet on Hudson Bay, was not as successful because of the inability to obtain Insulx, combined with a shortage of lumber and the lack of skilled labour to assist in the building’s construction. Used as a substitute for Insulx was a thin felt paper called “Salamander,” which proved of limited use in keeping out the cold. Although Livingston’s experimentation was praised by certain officials of his department and was copied by a departmental scientist at Lake Harbour, he was probably considered as much an eccentric as a pioneer in the context of his time, when little concern was given to improving the thermal qualities of Arctic buildings.

42 Insulx and Salamander were two of many insulation products that were marketed for use by building contractors in the late 1920s. By the early 1930s, wall fillers, insulating wall boards, and improved insulating papers were becoming commonplace in North American building construction. One of the most popular materials was mineral wool, composed of fine fibres of mineral silicates. It was commonly made by melting limestone or slag at high temperatures, and blowing it into wool-like threads by means of steam or compressed air.

43 Gradually, the product was introduced to the Arctic. In 1935 the Department of the Interior imported a quantity of rock wool insulation produced by the Johns Manville Company for the medical health officer’s residence at Chesterfield Inlet. The product was lighter than Insulx, cheaper to transport north, and its thermal qualities were superior to the hair-lined building papers, such as Salamander or Houseline. In 1936 the Hudson’s Bay Company and an Anglican missionary group incorporated rock wool in the construction of two northern buildings.

44 That same year the Mounted Police used the product in the construction of a new post at Eskimo Point on the western shore of Hudson Bay. Widespread application of the product to new and existing police buildings was not, however, immediately endorsed by senior officials of the force. When an officer stationed at Aklavik in the Mackenzie Delta quizzed in 1936 about installing rock wool insulation in a new building there, he was encouraged by police officials in Ottawa to use sawdust from a local mill instead. The concern appears to have been the additional $55 for the rock wool — a fraction of the annual heating costs incurred by the detachment.

45 By 1940 rock wool insulation was being used for new construction throughout the Arctic. The decade also marked the beginning of concerted efforts to improve the designs of northern buildings, due in large part to the outbreak of the Second World War. The skyrocketing price of coal and the disruption of previously secure supply lines during the war were probably the salient factors behind the improvement in building design. With the price of coal rising above $200 per ton in the early 1940s, the police, like other agencies operating in the North, found themselves spending upwards of $2000 a year to heat each Arctic detachment, a sum comparable to the cost of erecting the building. Research undertaken to date indicates that the lead in new building design for the North was taken by the Frontier Trading Department of the Hudson’s Bay Company. In 1939 the department began to experiment with new materials and assembly techniques in an effort to save operational costs and to improve living standards for its employees in the Arctic. The Hudson’s Bay Company developed lightweight structures made of plywood, insulated with rock wool and equipped with double-glazed windows. The buildings were based on the “stressed skin” principle, in which the outer and inner walls of plywood assumed most of the building load, thereby reducing the need for heavy framing members. In addition to being lightweight, the buildings were designed to be quickly erected in sections on site. This saved time, freight costs, and wastage in cutting, and the houses could be easily disassembled and re-erected elsewhere.

46 The Mounted Police, by contrast, did not develop new building designs, nor were they quick to draw upon the advances made by others. When the price of coal rose sharply in the early 1940s, the police decided to replace the 1922 detachment building at Pond Inlet on
virtually identical to the original building, the main difference being the use of rock wool insulation in the walls. The Mounties simply re-used the 1920s Public Works plan that was based on conventional framing and double layers of boards on the inner and outer walls (figure 13). Gradually, however, the force benefitted from the growing expertise of others. By the late 1940s the police were making use of the building services offered by the Hudson's Bay Company and by firms that began to specialize in Arctic construction. The Tower Construction Company, based in Montreal, and its affiliate, Prefabricated Homes of Lachute, Quebec, received a great deal of business from the force during the late 1940s and the early 1950s, when many Arctic posts were renewed and new ones established. Buildings offered by the Tower Company in the 1950s consisted of prefabricated plywood panels for the walls and floors, triple-glazed windows and aluminum roofing. Commodious entrance porches were a prominent component of the designs.

In the 1950s, the issue of housing design was a topic of ongoing interest for the force. Police correspondence for this period, especially in the Western Arctic, is replete with discussions about the relative merits of buildings designed by the Hudson's Bay Company versus those offered by other commercial firms. This certainly was a marked change from previous decades when the police, like other agencies operating in the Arctic, had given little attention to building design. The new focus on design was particularly evident in the force's most northerly detachment buildings for the post at Alexandra Fiord on Ellesmere Island in 1953. Consisting of interlocking, prefabricated plywood panels, they were quickly erected with little difficulty (figure 17 and cover). The design provided a stark contrast with the 1926 Bache Peninsula post, situated a short distance away and long since abandoned.

THE MOUNTED POLICE: CONTINUITY AND CHANGE IN NORTHERN DESIGN

The Mounted Police are a useful focus for examining the broader evolution of building practices among non-native peoples in the Arctic. They typified a general inattention to the technical aspects of Arctic design in the first four decades of this century. The force's continued reliance on traditional frame construction until the early 1940s and its hesitation to incorporate insulation into building designs were the result of many factors, the most important probably being the relatively small number of frame dwellings scattered throughout the Arctic during this period and the affordable cost of coal. The supply vessels for the Arctic were also not fuel-efficient, and thus provided little impetus for improving the design of northern buildings. The Hudson's Bay Company vessel, Nascopie, for example, reportedly burned two thousand tons of coal on a return voyage. The Second World War undermined long-held assumptions about the ease and the cost of northern supply systems, and it also prompted an expansion in northern settlement, especially by Canadian and American military forces. This in turn focused attention on the issue of building design and led to a new emphasis on energy efficient construction, a concern that gained momentum in the post-war era.

The Mounted Police serve as a barometer of this change, but when compared to other groups operating in the Arctic in the early 20th century, they were perhaps the least receptive to new building designs. At first glance this is surprising, given that the police were penetrating the northernmost frontiers of settlement. But the experience of the force in the Arctic was in keeping with their tradition of making do with substandard living conditions. On the Prairie frontier and in the Yukon, the police had become accustomed to leaving arrangements for accommodations in the hands of the officers on site. The Arctic compelled the Mounties to devote more attention to the problems of supply and housing, but they remained uncommitted to a systematic construction program. The shifting nature of the force's work in the rest of Canada, especially during the 1920s and 1930s, made the police hesitant to invest heavily in detachment buildings, often to find them obsolete within a few years because of changes in settlement patterns or in the police's legal jurisdiction. In the Arctic the police were often frustrated by the costs of closing and relocating outposts to better monitor the activities of northern residents.

Aside from the frontier nature of police work, another reason for the slow response to advances in construction technology was the bureaucratic, paramilitary make-up of the force. The provision of portable buildings at Port Nelson in 1914 was an extreme example of bureaucratic bungling, but it demonstrated how a break in the chain of command could bring disastrous results. In a paramilitary organization like the Mounted Police, an officer of limited rank in the field had few opportunities to impress his opinions upon the senior members of the force. For example, when the police post at Dundas Harbour was reopened in 1945, after having been closed for several years, an officer stationed there was shocked to find not a trace of insulation in the walls or ceiling of this, the most northerly detachment at the time. A

52 RCMP Archives Unit, Ottawa, File GS1316-43, Tuktoyaktuk Harbour, N.W.T.
The quality of the materials used in the construction of the Port Harrison detachment on Quebec's northern shore was also criticized. An officer reported, "I can only say that everything from foundations to roof­ ing, with the possible exception of the wall board for the interior of the dwelling house, is undoubtedly the cheapest and poorest quality that money could buy."

The detachment was open for only three years, 1935–1938.

DESPITE THEIR UNASSUMING APPEARANCE, the force’s Arctic detachments served as important symbols of the federal presence on the northern frontier. The buildings conveyed an official image that depended largely on such things as the ordered appearance of the landscaping around the detachments, the colour schemes used on the buildings, and the presence of a prominent flag staff nearby. Parallels can be drawn between the Arctic posts and those in the Yukon and in the West. In all frontier regions the police rarely concentrated on architectural form, preferring instead to use the materials at hand to their best advantage. The palisade at Fort Constantine, like the character of its log buildings, was in keeping with this tradition of projecting the best image possible with limited financial resources. Several Mounted Police detachments in Canada's northern regions survive as reminders of the force's work during the first half of this century. In addition to those at the former Dawson headquarters of Fort Herchmer and at Herschel Island, these include buildings at Alexandra Fiord, and storehouses from various Arctic locations.

Their historical associations aside, Mounted Police buildings are one component of the evolution of northern architecture. The findings presented here suggest that further research on the emergence of distinct building designs for the Arctic should focus on factors associated with the Second World War and the experiences of other agencies in the North, in particular the Hudson's Bay Company and the transformation of its attitude to the demands imposed by the environment. The police buildings on the northern frontier illustrate somewhat divergent aspects of the force. On the one hand they evoke an image of the pioneering nature of police work in the Arctic, notably the isolated, solitary lifestyle and the lengthy winter patrols, which were directed at the noble task of asserting Canadian sovereignty. But when examining the design of the buildings for the rank and file who endured the rigours of the frontier to show the flag for Canada, the Mounted Police can best be described as followers, rather than leaders.

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