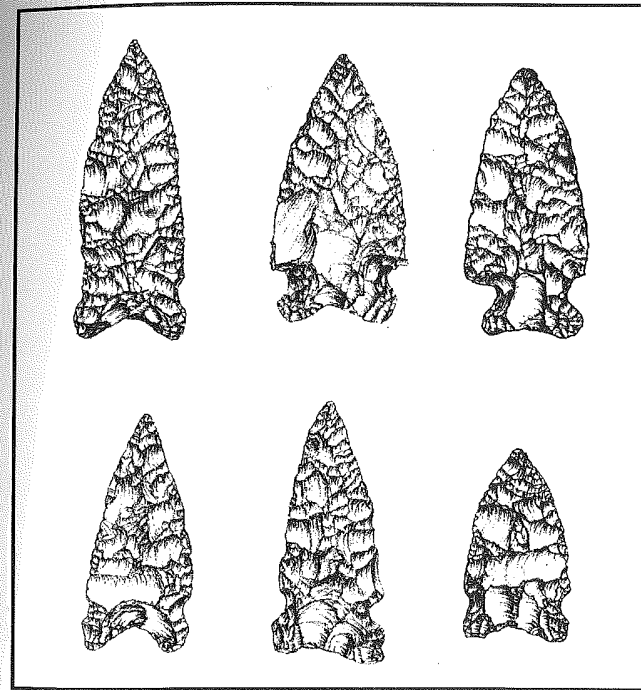


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STRUCTURAL EVIDENCE OF UPPER FORT GARRY

Sid Kroker
Quaternary Consultants Limited

Introduction

Between 1995 and 1999, the City of Winnipeg embarked on a massive road and bridge reconstruction project on Main Street. This project entailed the twinning of The Bridge of the Old Forts (over the Assiniboine River) and the Norwood Bridge (over the Red River), by building new bridges and rebuilding the originals. One of the major components of the construction of the new roadway system, linking the new northbound Norwood Bridge and the new northbound Main Street Bridge, was the redevelopment of Main Street between York Avenue and the north bank of the Assiniboine River. The southern portion of this section of Main Street lies over the east side of Upper Fort Garry. Quaternary Consultants Ltd. was engaged by the Project Manager, Reid Crowther & Partners, to provide archaeological monitoring and mitigation during the construction. The archaeological activities were undertaken under the terms of heritage Permits A8-96 and A24-98. The report on the entire project (Quaternary 1998) is on file with Historic Resources Branch, Manitoba Culture, Heritage and Citizenship, Department of Public Works, City of Winnipeg, and Reid Crowther & Partners. This paper has been abstracted from the main document and modified slightly to stand alone.

The majority of the construction took place in 1996, with a smaller component south of Assiniboine Avenue in 1998 (Fig. 1). During the excavations for the new roadbed, numerous remnants of the sub-surface components of Upper Fort Garry were exposed. These cultural exposures consisted of structural features, waste storage features, and artifacts associated with the period of the occupation of the fort (1836 to 1883). Historic documents can provide temporal constraints on many of the structures that existed within the walls of the fort, as well as describe their function. This paper will detail the archaeological remains and link them with known data derived from archival sources.

The excavations for the roadbed extended to a depth of 1.3m below the existing road surface. The location of the fort was relatively firmly known (± 3 m in horizontal displacement). Furthermore, the locations of the various structures within the fort were well established, relative to its walls (Loewen and Monks 1986). The fort walls were dismantled over time, with the east wall being removed in 1885 to permit the straightening of Main Street which had previously looped around the southeast bastion. Only the North Gate remains standing, and has been refurbished as a monument to the original fort.

The construction of the new roadbed was seen as an opportunity to ascertain the type of sub-surface features that were associated with the fort walls and the interior buildings. Prior reconstructions of Main Street had not extended to as great a depth, so that intact footings would be

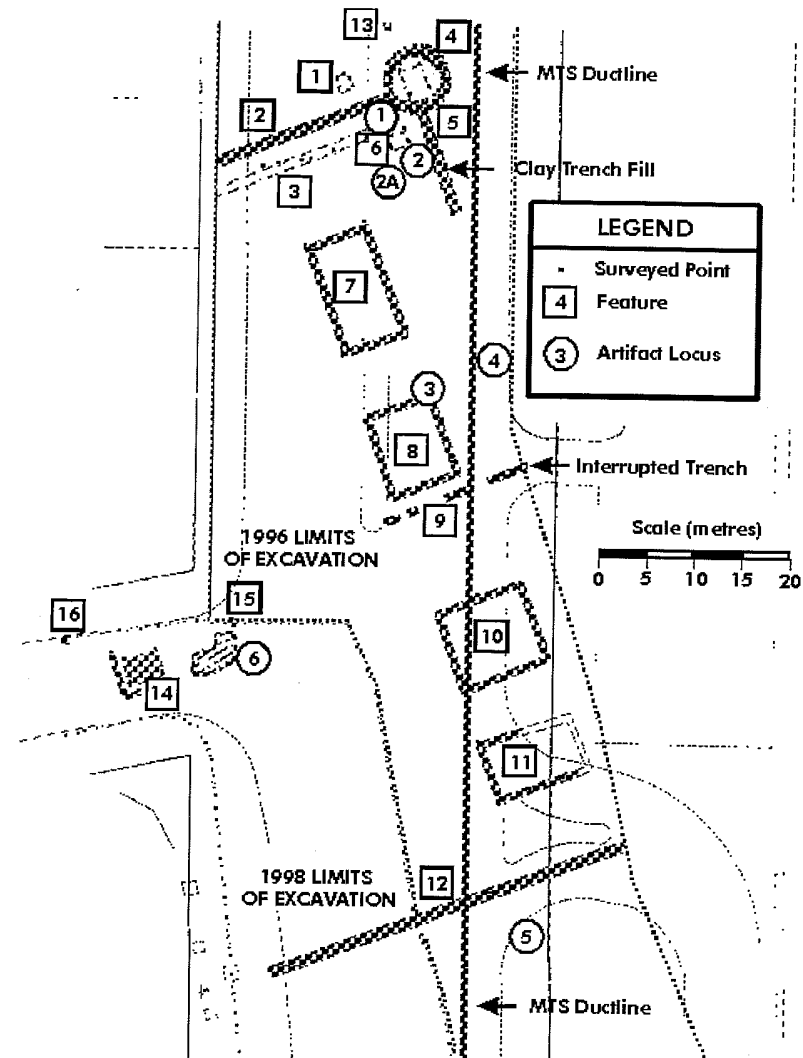


Figure 1: Features recorded during the excavation of Main Street.

exposed if, in fact, any had existed. Additionally, the construction project was seen as an opportunity to tie the location of the fort firmly in space, using current pin-point surveying accuracy.

A final benefit of the project was the opportunity to enhance public knowledge of this important facet of Manitoba history. During the first phase in 1996, Mr. Bernie Wolfe of Heritage Winnipeg contacted the senior archaeologist to ascertain if it was feasible to have exposed features remain open for public viewing for a limited time. The question was raised with Reid Crowther & Partners (Project Manager) and JC Paving Ltd. (the contractor). Both firms agreed that a two or three day exposure was feasible without cutting into project deadlines. As features, especially the footing for the northeast bastion, were exposed, they were outlined with flagging tape for visual enhancement. Many tourists and Winnipeg residents made special trips to view the exposed features, after media coverage on all the local television stations and some national news programs.

The down side of the public exposure of the previously buried resources occurred around midnight on July 31, 1996, when unauthorized (and unknown) individuals dug into one of the features in order to obtain artifacts. This vandalism was discovered at 7:00 a.m. on August 1. The individuals had excavated the eastern third of the cribbed feature (Feature 6) located adjacent to the northeast bastion and discarded faunal remains and other material around the perimeter. Later, the artifacts obtained from this unauthorized activity were brought to the Manitoba Museum of Man and Nature. When apprised of the situation, Dr. E. Leigh Syms (Curator of Archaeology) returned the artifacts to Quaternary Consultants Ltd. for cataloguing and analysis, as the recovery, albeit unauthorized and unwarranted, could be construed as part of this project. These artifacts are discussed separately as deriving from Locus 2A (Fig. 1).

Architectural Features

The archaeological term *feature* is used to identify complexes of artifacts which are the result of human activity. The term is not defined by types of artifacts or size of the complex and can refer to a concentration of small flakes at a lithic tool manufacturing location or the foundation of a large industrial structure, e.g., the Northern Pacific and Manitoba Railroad roundhouse at The Forks (Quaternary 1994:7). A feature's "significance may lie not in the object or the objects which constitute the feature, but rather in the relationship of the objects to each other" (Manitoba Culture, Heritage and Recreation 1989). In this report, the term is used to identify structural remnants, while the term *locus* is used to refer to the locales at which concentrations of artifacts were recorded. Both types of manifestations are depicted in Figure 1.

As the structures described in this section were built during the 19th century, British Imperial measurements will be used with metric conversions where relevant. Much of the archival data is derived from Loewen and Monks (1986), who made extensive use of the Hudson's Bay Company Archives (HBCA), including the post journal and letters of George Simpson, as well as other sources in the Provincial Archives of Manitoba.

Feature 2: North Wall of 1836

The excavations on the west side of Main Street encountered the footings of the original north wall of Upper Fort Garry. This feature extended across the west half of the street, from the sidewalk to the median curb (Figure 1:2). The centre line of the feature was surveyed, using the City of Winnipeg benchmark at the north end of the Bridge of the Old Forts, south of the intersection of Main Street and Assiniboine Avenue. The centre of the trench, at the sidewalk, lies 50.3m north of the north curb of Assiniboine Avenue.

This sub-surface component of the original wall, built in 1836, consisted of the outline of a trench 122.0cm wide. The portion of the trench remaining below the prior impact zone contained rounded river boulders (up to 50.0cm diameter) and irregular limestone cobbles (Fig. 2). The spaces between the rock material had been infilled with sand and clay. A soil profile was recorded at the west curb, immediately north of the trench. A second profile was recorded at the median curb, 60.0cm south of the trench (Table 1).

Table 1: Soil profiles at the north wall.

SIDEWALK PROFILE		MEDIAN PROFILE	
DEPTH (cm)	DESCRIPTION	DEPTH (cm)	DESCRIPTION
0 - 33	Brick/gravel	0 - 31	Asphalt/gravel/concrete
33 - 46	Sandy gravel	31 - 46	Fill clay/gravel
46 - 91	Black loamy soil	46 - 51	Black loamy soil
		51 - 51	Ash layer (0.3cm thick)
		51 - 65	Grey black mottled silty clay
91 - 113	Grey-black B Horizon	65 - 112	Dark grey silty clay
113	Base of excavation	112	Base of excavation

Original and subsequent road construction appears to have resulted in impact extending to a depth of approximately 0.5m below the current road surface. The black soil represents an original A Horizon which would pre-date the construction of the fort. Road clearing activities in 1885 would have scraped and leveled the upper soil, with subsequent construction excavating deeper and deeper. However, during the period of the fort's existence, three major floods (1852, 1861, and 1882), could have deposited silt within the confines of the walls, raising the ground level. These deposited riverine sediments would have been incorporated into the upper levels of the current ground surface. Daily activities within the fort would have resulted in the mixing of the underlying original soil surface with the new flood sediments, blurring or eliminating any clear demarcation of the flood deposits. The ash horizon at the median profile would represent a soil surface buried by flood-deposited sediments.



Figure 2: Footing of the 1836 north wall.

The footing from the original north wall terminated at the beginning of the northeast bastion, underlying the median strip between the two sections of Main Street. The cobble/boulder footing of the wall abutted the limestone block footing of the bastion.

Feature 3: Wooden Fence

The remnants of a linear wooden structure are located 7' south of the original 1836 north wall (Figure 1:3). The structure consists of parallel rows of sawn boards with remnants of vertical posts between them (Fig. 3). This component continues from the west sidewalk to the median divider. The feature is composed of paired 1.5"x6" boards spaced with vertical 4"x4" posts, averaging six feet apart. Original speculation during exposure was that this feature could represent a support structure for a catwalk along the north wall. Loewen and Monks (1986:56) note that

inside the wall, a wooden gallery about 8.5 feet (2.49m) off the ground ran all the way around the fort. It was supported by eight foot (2.44m) high wooden posts placed at four foot (1.22m) intervals, about three feet (0.91m) from the walls. A rail 3.5 feet (1.07m) in height ran along the inward side of the gallery. Access to the gallery may have been by way of the corner bastions, each of which contained a second floor.

During the military occupation of 1846-49 by the Sixth Regiment of Foot, a fence was built to separate the western portion of the fort (used by the soldiers) from the eastern portion, which remained the domain of the Hudson's Bay Company. This fence is portrayed in an 1846 sketch by Beatty (Loewen and Monks 1986:61), as well as a sketch by George Finley ca. 1846 (Loewen and Monks 1986:79), and shows that the military had access to the eastern bastions by a passageway between the fence and the stone walls. The wooden fence was built with "posts driven into the ground and planks nailed horizontally to a height of 8-10 feet (2.44-3.05m)" (Loewen and Monks 1986:85).

Sections of two different boards (DILg-21:96A/2 and 736) were submitted for dendrochronological analysis. The examination determined that they derived from the same tree,



Figure 3: Wooden fence.

having slightly different thicknesses (DILg-21:96A/2 = 3.5cm, DILg-21:96A/736 = 3.2cm) which would indicate individual hand manufacture rather than mechanical production. As neither sample possessed bark, the determined ages can only be considered as minimum dates. DILg-21:96A/2 yielded a minimum date of 1850 while DILg-21:96A/736 has a minimum date of 1839. Both boards derive from a tree cut after 1850 (Nielsen 1998:215). This rapidly eliminates the possibility of the timber being part of the catwalk (gallery) support structure, as it was built during the first phase of the fort (ca.1835-1837). Based on Beatty's map, the interior fence of the military period was in place by September 1846. Again, the documented construction pre-dates the wood. Also, Beatty's map places the fence 11'7" south of the north wall, while Loewen and Monks' reconstruction plan of the fort, as it would have been in 1850, places the military fence at 15'5" south of the wall (Loewen and Monks 1986:59).

After the departure of the military, the perimeter of the fort was expanded to the north and the original north wall was demolished. It appears that this occurred during the summer of 1853 (Loewen and Monks 1986:103) and it is probable that the interior fence was removed around the same time.

As the archival data does not correlate with the archaeological data, one is left in the uncomfortable position of having to reject the dendrochronological date of 1850+ or hypothesizing undocumented construction. The boards cross-dated with the other samples from the fort, showing internal consistency. Therefore, the dendrochronology minimum date of 1850 is accepted as valid. This requires the conjecture of the construction of a wooden fence parallel to the original north wall after the military departed in 1849. A possible clue can be found in a post journal entry containing the notation that "now that the wall is nearly completed all gates must be shut and locked every night" (HBCA, B.235/a/15, fo.19, cited in Loewen and Monks 1986:103). This suggests that even though the new northward expansion was not completed and the original north wall had been partially removed, an enclosure of the company's buildings still existed. It is possible that a temporary wooden fence was constructed to provide a secure perimeter while the expansion was

being undertaken. Such a fence would be ephemeral — having been built after the flood of 1852 when expansion commenced and demolished after the new walls had been completed by 1854. This timing would correlate with the dendrochronology dates. Also, the style of construction suggests that this was not planned as a permanent structure, i.e., 4" posts would not long support a solid wooden wall facing strong prevailing winds from the northwest. Alternatively, the dated boards could represent patching of the military period interior wall during the expansion period, although the location of the structure does not correlate with any of the archival data.

Feature 4: Northeast Bastion

The bastion (Fig. 4) was placed such that the centre lines of the north wall and the east wall passed through the interior of the bastion. The actual alignments were such that the continuations of the outer edges of the walls intersected at the centre of the bastion. The walls joined to the curve of the bastion (Fig. 1:4). The entranceway into the bastion was in the corner of the fort, with arcs of the bastion protruding into the interior of the fort. However, the sub-surface footing of the bastion is a complete circle of semi-dressed blocks of limestone (Fig. 5).

The measurements of the bastion have been compiled by Loewen and Monks (1986:56), using several sources. The interior diameter was 18'(5.5m) which, with 3' thick walls, yields an external diameter of 24'(7.3m). The external diameter of the exposed footing was recorded as 23.8', 24.2', and 25.1'—depending upon the degree of irregularity of the perimeter at the point of measurement. Upon construction, the cylindrical bastion had a conical roof, about 24'(7.3m) high at the eaves and 31'(9.5m) high at the peak. There were two floors, with the upper floor probably accessed by a stair or ladder. Considerable underpinning of the second floor would have been necessary as each bastion was equipped with four field pieces.

A drawing of the southwest bastion, ca. 1870, shows a thick line or seam midway up the structure (Loewen and Monks 1986:147). It could be possible that the planks for the second floor were seated between the courses of the limestone/sandstone blocks, but this would be unlikely due to the potential for wood rot at the outer ends and the difficulty of



Figure 4: Northeast bastion with internal wood feature (marked by flagging tape).

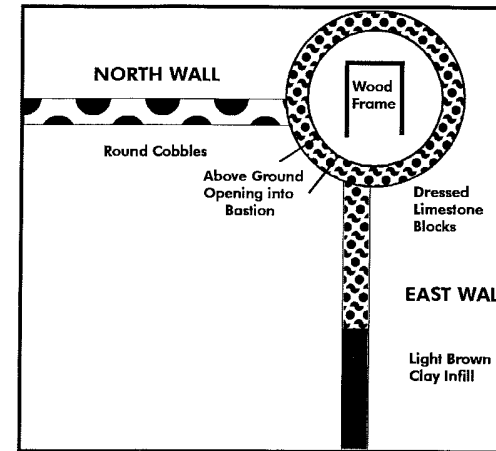


Figure 5: Sub-surface structural components at the northeast bastion.

replacing planks. Even if this had been the case, the upper floor would have still needed internal support, especially with the weight of the artillery.

During the excavations, a wooden component was uncovered in the centre of the northeast bastion (Fig. 4). A three-sided rectangle of squared wooden timber, measuring 9'6" (2.90m) by 8' (2.45m), was situated with the open side oriented toward the east wall (Fig. 5). The wood, severely decomposed, was left *in situ*. The timbers measured 7.0cm (2¾") wide—obviously insufficient for a support structure for the second floor. Also, no vertical timbers were present. It is more likely that this component represents a framework for a set of stairs for access to the upper level.

It must be noted that numerous modifications probably occurred after the bastion's initial construction in 1836. The Sixth of Foot had access to all bastions during their occupancy (1846-49), and used the southeast bastion as the guardhouse from which a "continual watch was maintained along the gallery around the fort" (Loewen and Monks 1986:85). At this time the northeast bastion was used as a magazine for the military, while the Hudson's Bay Company constructed a powder magazine just north of the north wall (Loewen and Monks 1986:65, 75). While the Royal Canadian Rifles were stationed at the fort (1857-62), two bastions were set aside for their use — one as a guardhouse and a second as a prison, with the second floor of the latter used by tailors and shoemakers (Loewen and Monks 1986:130). Which two bastions these were is unrecorded, although Loewen and Monks (1986:131) speculate that they may have been the western ones.

As well as modifications by the military during their occupations, internal reconfiguration of the bastions and/or change in usage likely occurred many times. The post journal and other sources

continually mention lack of space, even when soldiers were not stationed at the fort. Thus, although designed for a military defensive purpose, the bastions probably were normally used for storage, even after the demolition of the original north wall and the northward expansion of the fort.

Feature 5: East Wall

The east wall is situated at a 90° angle to the north wall and abuts the outer side of the northeast bastion (Fig. 1:5). The northern end of the east wall footing consists of several layers of dressed limestone blocks, laid in courses (Fig. 6). This stone component extends 19'6" (5.35m) southward. At this point, the stonework ceases and the outline of the trench is present, but infilled with a light brown clayey silt. The silt trench filling extends southward and gradually disappears about 30' (9.5m) from the end of the stonework. From this point southward, no trace of any trench outline is present. It would appear that no sub-surface preparation for the east wall was undertaken for most of the length of the wall.

The most major modification of the east wall occurred during the occupation of the Sixth of Foot. As the military portion of the compound included both the main south gate and the north gate, a gate was built into the east wall to permit access into the company portion of the fort. This postern gate was built "into the east wall some 100 feet (30.48m) from the southwest bastion" (Loewen and Monks 1986:84). This is a geometric impossibility and the probable result of a typographic error wherein the authors meant the southeast bastion. Using the calculated north/south dimension of 311.5' (Loewen and Monks 1986:51) and subtracting the bastion portions (2' x ½' x 24'), the gate would have been approximately 185' south of the northeast bastion. This is considerably south of



Figure 6: Coursed limestone construction of north portion of east wall.

the disappearance of the sub-surface trench for any potential sub-surface footing. Two possibilities exist for the lack of a footing:

1. the material was mined from the trench during the demolition of the east wall in 1871 (Loewen and Monks 1986:154), or
2. a footing was never constructed during the 1835-37 building period.

If the first possibility is examined, problems arise due to the archaeological evidence. The trench outline (1.13m wide) with the light brown infill would not have straight vertical walls on both sides. Removal of limestone blocks and/or river cobbles would have necessitated digging a sloped trench on either side to drag the stone material out. Secondly, the trench outline, in some format, would have extended the entire length of the east wall.

The second possibility is the more likely. A trench was started, heading south from the northeast bastion, but stone was only laid in the first 20'. The reasons for discontinuance of the construction methods observed for the north wall and the north portion of the east wall are only speculative. Two possibilities come to mind. The first is that there was a shortage of stone, especially limestone, and that which was available was required for the above ground portion of the wall. Given the availability of limestone at St. Andrews Rapids and Stony Mountain (see Hind's 1858 Topographic Map of Red River Settlement in Warkentin and Ruggles 1970:212) and river cobbles at numerous riffle locations along the Assiniboine River, this is not likely, even though there appears to have been a race between the HBC and the Catholic Church for the collection of suitable stone for building (Loewen and Monks 1986:25).

The second possibility is that weather determined the construction method. On 30 June 1836, George Simpson, as governor of the HBC, urged Alexander Christie, the chief officer at Red River, to get "on with the buildings, walls and bastions, likewise the jail, as expeditiously as possible" (HBCA, D.4/22 fo. 34, cited in Loewen and Monks 1986:25). Winter would have made obtaining river cobbles or quarrying limestone very difficult and time consuming. In addition, excavating a 3' deep, 3' wide trench in frozen soil would not have been easy. In order to comply with Simpson's directive, Christie must have had the east stone wall laid directly on the soil. This lack of a footing would have made the east wall more susceptible to frost heaving and wall-adjacent erosion, perhaps contributing to the collapse of the wall in 1871 (Loewen and Monks 1986:154).

Feature 6: Northeast Cribbed Feature

This feature (Fig. 1:6) consists of a rectangular outline of interlocked logs. The external measurement of the north side (oriented parallel to the north wall of the fort) is 8'6" (260.0cm) and that of the east side is 5'8" (173.0cm). The east side of the feature is parallel to the east wall of the fort, located 6'6" (210.0cm) west of the inner side of the wall. The feature is only one course of logs above the base of excavations and is filled with a grey sandy gravel (Fig. 7). The north side of the feature, adjacent to the northeast corner, consists of a black soil which contained faunal material and



Figure 7: Northeast crib feature.

ceramic sherds, in conjunction with other artifacts. This artifact-bearing area was designated as Locus 2.

The sandy gravel layer extends upward to the base of the previous road bed, while there are no additional logs above those observed *in situ*. The position of the gravel suggests that an intrusive activity (which was later infilled) occurred at this location, thereby resulting in the presence of the gravel on top of a fur trade period structure. This structure could have been a privy, a cribbed waste pit, or a root cellar.

To obtain a date on the construction of this feature, the upper eastern log (DILg-21:96A/773) was removed for dendrochronological dating. The date obtained was 1839, with the original tree having been cut in the summer (Nielsen 1998:215). The tree-ring analyst noted no traces of urine in the log, suggesting that the feature may not have been a privy. However, Nielsen (1998:213-214) notes that the upper logs from the privy at Bonnycastle Park (also within the confines of Upper Fort Garry and dating to the same time period) contained minimal amounts of urine in the large, open earlywood cells. Logs from lower down in the structure may contain evidence that the structure was, in fact, built to function as a privy and later became used as a waste pit.

During the period that the entire bastion complex was left exposed for public viewing, unauthorized individuals, during the midnight hours of 31 July 1996, haphazardly dug within the confines of the feature. The perpetrators burrowed one metre down along the eastern edge of the cribbing. The upper 40.0cm consisted of sand mixed with ash, below which a wide (12"+), 2" thick plank was positioned diagonally across the pit. This narrowed the area that was removed to approximately 45.0cm wide. The soil on the walls of the pit consisted of a black soil matrix containing wood chips and small ceramic fragments. Artifacts not deemed collectable by these individuals were scattered near the pit. These included faunal remains, windowpane, and bottles produced in automatic bottling machines. The artifacts taken away from the site eventually ended up at the Museum of Man and Nature, from whence they were taken to Quaternary Consultants for cataloguing and analysis. This location was designated as Locus 2A to keep these artifacts separate from the professionally excavated material.

Analysis of the artifacts left behind shows that there is an admixture of material dating to the occupation period of the fort with later artifacts deriving from the period during or after the demolition of the fort. Most of the glass containers are blown-in-mold although the length of the neck seams indicate that they were manufactured after 1880. One specimen (DILg-21:96A/253) was

produced in an automatic bottling machine, dating to the 20th century. It would appear that intrusive road works had occurred at this specific location after Main Street had been straightened in 1885 and that the excavation had been infilled with gravel which also contained contemporary garbage, i.e., broken bottles, etc.

Feature 7: Men's House

The footings of a structure (Fig. 8) were uncovered 40'4" (12.3m) south of the north wall (Fig. 1:7). The external sides of the rectangular footprint measure 42'2" x 24'9" (12.85m x 7.5m). This conforms with the recorded dimensions of the men's house of 42' x 24' (Loewen and Monks 1986:208), as it is expected that the footing would be slightly larger than the actual structure. The north and south walls are 2'5" (75.0cm) thick and the east and west walls are 2'2" (65.0cm) thick. The footings are composed of limestone spalls with some sand, ash, and silt filling the interstitial spaces.

Loewen and Monks (1986:208) describe the building as lying 28' from the east wall and 18' north of the Recorder's House which is listed as being 160' from the south wall. Adding this distance plus the 36' length (or 30' length) of the Recorder's House plus the 18' between buildings plus the 42' length of the Men's House indicates that the north wall of the Men's House would lie 256' (or 250') north of the south wall. If the external north/south

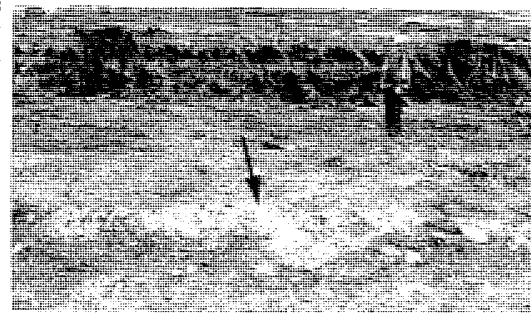


Figure 8: Northwest corner of footing on Men's House.

dimension of the fort is 290' (Loewen and Monks 1986:55), the internal distance would be 284', placing the north wall of the Men's House 28' (or 34') south of the north wall of the fort. Measurements of Loewen and Monks' (1986:28) scale reconstruction yields a distance of 32'9". This measurement derives from a photo-reduced copy of their original map, probably introducing error of scale. However, both measurements — the compilation of distances and the scale reconstruction — place the Men's House slightly north of the actual surveyed position. Discrepancies between recorded data from the different sources will be discussed later.

Feature 8: Recorder's House

The footings for the Recorder's House were exposed south of the Men's House. The north wall of the footing was measured at 112' from the interior of the north wall or 29'6" from the south wall

of the Men's House (Fig. 1:8). This does not conform with the data provided by Loewen and Monks (1986:208), which places the Recorder's House 18' south of the Men's House.

The second discrepancy occurs with the dimensions of the footings. The east/west measurement was recorded as 24', as recorded in archival sources. A major difference is the north/south distance which was measured at 28'2" (8.62m). Loewen and Monks list the measurements of this building as 36' x 24' (1986:208) or 30' x 24' (1986:46). It would seem that the latter measurement is closer to that which was recorded when the feature was exposed.

This structure is referenced many times in the archives, especially with comments by the various recorders. As well, it has been depicted in many illustrations, the earliest being the 1840 painting by Findlayson (Loewen and Monks 1986:46). In addition to the main structure, a one-storey lean-to, measuring 12' x 8', was attached on the east side (Loewen and Monks 1986:46). No archaeological representation of this attached structure was evident.

Feature 9: Drainage System?

A series of interrupted, in-filled, rectangular excavations were recorded approximately 5.0' (1.5m) south of the Recorder's House (Fig. 1:9). The components are parallel to the south wall of the Recorder's House and perpendicular to the east wall of the fort. They extend across the entire excavation area of the east side of Main Street. The width of each of the components is constant at 2' (60.0cm) but the lengths vary considerably. From the west, the lengths are 1.4m (4'7"), space of 0.85m (2'8"), 1.15m (3'9"), space of 2.4m (7'10"), 2.5m (8'2"), space of 2.4m (7'10"), and 3.6m (11'10"). At the eastern edge, the component continued under the unexcavated sidewalk on the east side of Main Street.

This feature is difficult to interpret. The composition of the fill is similar to that of the footings under the Men's House and the Recorder's House, i.e., chips and spalls of limestone with some sand. The alignment is consistent with the internal structural orientations within the fort. However, the width of the components is that of the standard bucket size of a rubbermount backhoe and coarse crushed limestone is often used to fill the base of modern excavations. No artifacts were present in, or adjacent to, this feature.

The orientation and alignment suggest that this may represent a feature constructed during the occupation of the fort. If the feature dates to the occupation period of the fort, determining its function could be next to impossible. A possible explanation could be that of an internal drainage system. Loewen and Monks (1986:105) note that

a system of drains lay underneath the surface of the soil. These drains backed up as the floodwaters (1852) rose, forcing water into the cellars inside the compound. In normal times they were connected to those buildings which had cellars.

The alignment of this trench does not appear to join with any of the structures within the fort and appears to run from higher ground outside the east wall. It would not be likely that the drainage system would extend perpendicular to the east wall, but would more likely take the shortest route from the structure containing a cellar to low ground or the Assiniboine River bank. Also, the trench, if used for drainage, would be continuous rather than intermittent.

While most sub-surface services are placed parallel with, or perpendicular to, existing streets, an oblique series of excavation cuts could have coincidentally aligned with the orientation of the fort. In conclusion, the data does not support the hypothesis that the feature is contemporaneous with the occupation of the fort. It probably derives from a 20th century excavation beneath the surface of Main Street.

Feature 10, Feature 11: Sales Store

A rectangular outline of the footing of a structure (Feature 10) was exposed 47' south of the south wall of the Recorder's House (Fig. 1:10). The north/south measurement is 25'7". A second rectangular footing outline (Feature 11) was exposed to the south of Feature 10 (Fig. 1:11). The west walls of the two features are in alignment and the two features are probably both footings for the same building, albeit separated by a distance of 17'9" (5.4m). The overall distance between the north wall of Feature 10 and the south wall of Feature 11 is 72'2" (22.0m), almost exactly the north/south dimension of the Sales Store provided by Loewen and Monks (1986:208), who list the building's size as 72' x 30'. The east/west measurements of both features are 30'4" (9.25m), which conforms with the archival data. The west walls of the footings are aligned with the west walls of the Men's House and the Recorder's House, meaning that the east wall of the Sales Store was 6' closer to the East Wall than those two structures. This conforms with Balsillie's map (Loewen and Monks 1986:90-93) which shows the western walls of all three structures in alignment. The south wall of Feature 11 is narrower than the other walls, measuring only 18" (46.0cm) across, whereas the walls of Feature 10 and the west wall of Feature 11 were 32" (84.0cm) thick. The south wall of Feature 11 is located 26'2" (7.95m) north of the south wall. This is 8' more distant than posited by Loewen and Monks (1986:208).

Considerable prior disruption was evident at both features. The MTS (Manitoba Telephone System) ductline (Fig. 1) ran through the west side of Feature 10, as did a Manitoba Centra natural gas pipeline which runs perpendicular to Main Street. Delays in the arrival of the surveyors on site resulted in the establishment of only minimal survey points (6), as Centra and MTS crews were working on the gasline and ductline with mechanized equipment. The dimensions of the feature were measured prior to its disturbance, but only small portions of the footing outline remained undisturbed by the time the surveyors arrived. The entire eastern wall and most of the north wall of Feature 11 had been eradicated by subsurface operations prior to this project. The disruption could have occurred during the 1950s when the land immediately east was occupied by a service station.

Loewen and Monks (1986:39-41) conclude that the construction of the Sales Store was completed in 1839. However, details of its construction are almost totally lacking. They further

suggest (1986:40) that the Sales Store did not have a stone foundation, based on two lines of evidence:

1. Simpson's letters to the Bishop of Juliopolis and to Christie stated that only two stores and a dwelling would be built with stone foundations (Loewen and Monks 1986:25), and
2. an entry in the post journal that stated, in 1858, that "Gadoua [was] carting sand round the Sale Shop foundation" (HBCA, B.235/a/16, fo. 12 cited in Loewen and Monks 1986:40).

From the first piece of evidence, they deduce that, because the fur store in the northwest corner and the warehouse in the southwest corner had stone foundations (Loewen and Monks 1986:37), the Sales Store would not have. From the second piece of evidence, they feel it is probable that the structure had a sunken, stacked timber foundation, with the foundation trench filled with sand for drainage and frost-heaving stabilization.

The question of what constitutes a stone foundation appears to be answered by the description provided by Loewen and Monks (1986:37). It is "three feet (0.92m) deep and three feet wide made of cobbles collected from the Red River, upon which crosswise beams about one ell (45" or 1.38m) apart and a floor of planks were suspended". This description matches the structural evidence located for the north wall, but not for any of the other structures, including the Sales Store. The underpinnings of the Men's House, the Recorder's House, and the Sales Store are similar in that a narrower trench (46.0 to 85.0cm) was excavated to a depth approximating three feet and filled with stone debris from wall and bastion construction. The buildings were then constructed over these footings, upon which wooden beams were probably placed. Feature 10 has a single limestone block at the southeast corner, otherwise the remainder of the footing is composed of small lithic fragments.

The disjunct nature of the two sections of footings for the Sales Store raises questions about the method and sequence of construction of this building. Was it originally built as two separate structures with a subsequent addition joining them into one building? Loewen and Monks note that the northern end of the Sales Store served as an office (1986:42), and it may have originally been envisioned as a separate building to further separate customers from the internal operations of the company. However, early depictions (Findlayson, ca. 1840; Murray, 1845) illustrated in Loewen and Monks (1986) show the building to be a single entity.

It is possible that the initial construction plan was for two separate buildings for which the trenches were dug and the footings prepared. During construction, it may have seemed expedient to combine the two buildings into a single structure by building through the gap between the two footings. As the external walls, except for a short (17'9" or 5.4m) distance, were underpinned by an existing footing, it may have been deemed unnecessary to trench and prepare a footing for the gap. Secondly, there may have been a shortage of limestone chips to fill a trench and complete the footing on the east and west walls. In any event, the building appears to have been constructed as a single structure which existed until 1883.

Feature 12: South Wall

The footing of the south wall was exposed near the southern end of the excavations on Main Street (Fig. 1:12). It is situated 26'2" south of the south wall of Feature 11. The construction of the wall footing was similar to that of the northern portion of the East Wall — several series of roughly dressed limestone blocks producing a linear wall approximately 3'4" (102cm) wide (Fig. 9). The continuity of the wall was breached by the MTS ductline at the western edge of the construction area and was also missing at the eastern edge of the construction excavation.

Feature 13: Northeast Wall of 1852

The size of the fort was nearly doubled in 1852-53 with the construction of a three-sided walled rectangle adjoining the north side of the existing fort perimeter (Loewen and Monks 1986:102-104). The new eastern wall (Fig. 1:13) continued north from the northeast bastion, in alignment with the existing stone east wall. This "new wall was only ten feet (3.05m) high and consisted of a hollow wooden structure three feet (0.91m) in width, secured upon a stone foundation and braced inside with 14 inch (0.36m) oaken planks running horizontally and a rammed earth core" (Loewen and Monks 1986:102). The vertical uprights appear to have rested on tabular limestone slabs (Fig. 10) which were spaced approximately 11'6" (3.5m) apart. The slabs occurred at the base of the roadbed excavation and had no other material above them. It would appear that the vertical uprights would have been pulled when the wall was demolished. The surviving remnant of this type of construction is at the extant North Gate west of Main Street.



Figure 9: South wall.

Feature 14, Feature 15: Main House?

During the 1998 roadbed excavations west of Main Street within the Assiniboine Avenue right-of-way, a rectangular wooden structural remnant was recorded at the base of the excavation (130.0cm below the original road surface). Feature 14 (Fig. 1:14) consists of a framework of squared



Figure 10: Limestone slab pad for uprights of 1852 northeast wall.

trace is evident on the north edge. A thin layer (3.0-5.0cm) of limestone chips similar to that filling the trench overlaid the wooden feature. In two or three locations where the planks had disintegrated and the samples had been removed, a similar layer of limestone chips was observed below the feature.

The trench component and the limestone layers contribute to the indecisiveness about the date of this feature because of its similarity to footings of fur trade structures. However, the milled characteristics of the planks plus the degree of disruption evident in the sediments overlying the feature suggest a date after the demolition of the fort. Dendrochronological analysis of the curated wooden artifacts may provide an answer.

Loewen and Monks (1986:45) state that the Main House measured 70' by 35' and rested on a stone foundation. It also had a cellar and two flanking one-story structures on the east and west sides. They also indicate that the total length of the Main House and lean-to was "more than 100 feet" suggesting that each of the lean-tos would measure approximately 16' wide (east/west).

timber, measuring 8' by 12', with the long axis oriented east/west. The external timbers, in extremely friable and partially decomposed condition, encompassed a series of mortised tongue-and-grooved planks. The planks, measuring 19 x 3.5cm (7½" x 1¾"), appear to be milled rather than hand-shaped. Three of these planks were curated: DILg-21:98A/22 (130.0cm long), DILg-21:98A/23 (121.0cm long), and DILg-21:98A/24 (173.0cm long). This feature could represent a floor or a collapsed wall.

A large, squared log (262.0 x 20.0 x 20.0cm) rested on the planking at the southern edge of the feature. This log (DILg-21:98A/21) was also collected. The shape and slight notching of the log suggest a function as a supporting tie for railroad and/or streetcar track.

Immediately adjacent to the west edge of Feature 14 is a narrow (6") trench infilled with limestone chips, reminiscent of the footings encountered under the buildings during the 1996 project. This filled trench, designated Feature 15 (Fig. 1:15), lies 2' (60.0cm) from the west edge of the timbers and extends a short distance to the south, paralleling the south edge of Feature 14. No

However, examination of their reconstructed plan (Loewen and Monks 1986:Fig. 1) depicts the lean-tos with only a 10' width and a north/south length of 24'.

The footings of this building were not encountered during the 1996 excavation of the west side of Main Street nor the Assiniboine Avenue intersection excavation in 1998. As previously discussed, a stone foundation is massive and would have been obvious during the excavation if at all present. The narrow trench would not have been a sufficient foundation for a three-storey large building but may have been the footing for the west lean-to. The orientation of the south and west portions of the trench coincide with those of footings of other structures encountered within the confines of Upper Fort Garry. Loewen and Monks (1986:45) speculate that the lateral lean-tos, built before 1846, may have housed privies and storage rooms. No evidence of privy pits was encountered adjacent to Feature 15 although they may have been hidden by the wooden plank construction designated as Feature 14. This wooden component may represent the floor of this lateral lean-to rather than a result of construction during the electric street car period. The dimensions of the planking feature (8' by 12') do not appear to match any of the potential dimensions of the lean-to. In addition, the wooden feature would have been below the original soil level of 1836.

The nails in all three planks (DILg-21:98A/22, 23, and 24) are all hand-wrought with either rose or dome heads. Even though sheet-cut nails would have been available in the 1890s, hand-wrought nails were still manufactured by local blacksmiths. The dating of both of these features is indeterminate and they may be part of the same structure or coincidentally juxtaposed.

Feature 16: "Yellow" Store?

The designation of a single block of limestone at the northern edge of the limits of excavation on Assiniboine Avenue (Fig. 1:16) as a feature may be a result of wishful thinking rather than reality. No other structural elements were observed within the roadbed excavation area and there was no evidence of a trench surrounding this single block. The "Yellow" Store, so-named because of the colour of its plaster coating, was built between 1840 and 1845 (Loewen and Monks 1986:38-39). Archival documentation does not indicate whether the building had a stone foundation, although Loewen and Monks (1986:39) suggest that it rested on a piled wood foundation.

The designation of this feature is primarily due to its location at a position near where the east wall of the "Yellow" Store would have been. It is also quite probable that land modifications during the electric street car period, as well as later developments involving the northwest corner of Main Street and Assiniboine Avenue, would have resulted in relocation of isolated blocks of limestone, perhaps from the southwest Ware House which was known to have a stone foundation.

Summary of Fur Trade Features

The locational data for the described features has been obtained by surveying numerous points, with the survey datum being the City of Winnipeg benchmark at the northeast corner of Bonnycastle Park. The compiled data is depicted on Fig. 1. During the description of each feature, discrepancies

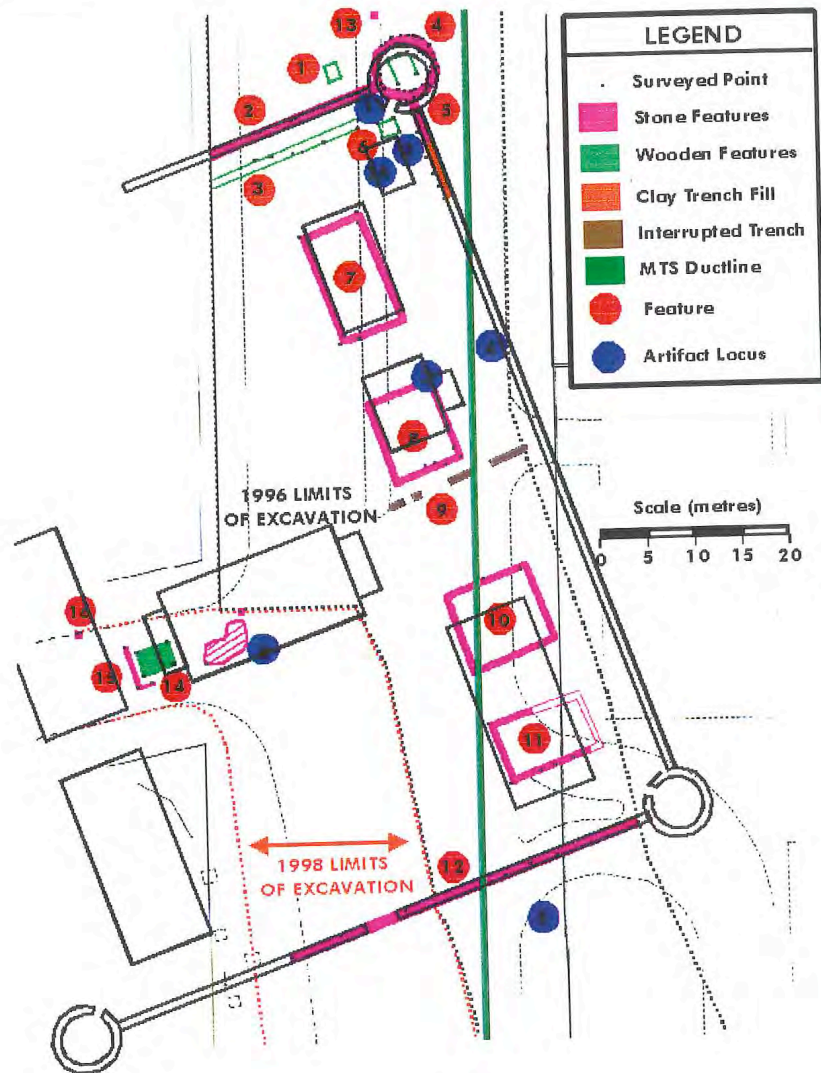


Figure 3: Superimposition of Loewen and Monks map over survey map.

between the survey data and previously published information have been noted. To further illuminate the differences, Figure 11 has been composed by superimposing the map of Upper Fort Garry in 1846, as compiled by Loewen and Monks (1986:28), over Figure 1. The two maps have been enlarged to the same scale to enable comparisons.

The two data sets appear to depict a slight difference in the location of the Northeast Bastion (Feature 4). Loewen and Monks (1986:53) suggest that "it is possible to infer that the centre of the three foot (0.91m) walls lined up with the exact centre of the bastions". The surveyed data indicates that the outer edges of the walls intersected at the centre of the bastion (Fig. 5). This is a minor positional variation resulting in the extreme edges of the bastions projecting 1.5' (0.45m) further from the walls than determined by Loewen and Monks (1986:49-55).

The superimposition shows that the cookhouse was located in the extreme northeast corner, adjacent to Feature 6. The earliest archival mention of this structure is on a sketch by Warre, dated June 1845, which places the building in the northeast corner, adjacent to the bastion (Loewen and Monks 1986:30). A scaled plan, which is Warre's official plan of the fort published by the British War Office in 1860, shows a small rectangular building labelled "Servant's Quarters" in the extreme northeast corner, between the Men's House and the bastion (Loewen and Monks 1986:32). The cookhouse is portrayed on both the Beatty map of 1846 (Loewen and Monks 1986:61) and the subsequent Moody map of 1848 (Loewen and Monks 1986:63, 65). These maps show this building in alignment with the Men's House and the Recorder's House. The reconstruction by Loewen and Monks places the building close to both walls and it is evident that they placed most credence in the Warre sketch and the subsequent scaled map of 1845-46. The 19th century maps show considerable variation in the size of the building:

- ◆ Beatty shows it the same size as the Men's House — a problem noted by Loewen and Monks (1986:84);
- ◆ scaling Moody's map provides dimensions of approximately 24' x 24';
- ◆ Warre's sketch shows a structure about one-fourth the size of the Men's House (Loewen and Monks 1986:30), and his scaled plan (Loewen and Monks 1986:32) provides the measurements 12' x 16' (3.62m by 4.88m), which are the dimensions given by Loewen and Monks (1986:48).

The position of the Cookhouse immediately adjacent to Feature 6 may be a coincidence but it may also help identify the function of the cribbed feature. As the log from the upper tier of the feature provided a dendrochronology date of 1839, it was probably constructed around the same period as the Cookhouse, which predates 1845. If the feature had been excavated and the cribbing constructed with green logs, the earliest it could have been built would be the summer or fall of 1839. Given the small complement of personnel wintering at the fort and residing in the nearby Men's House (see Loewen and Monks 1986:44-45), it is unlikely that a privy would have been used until filled and then a cookhouse built immediately beside the abandoned structure. A more probable

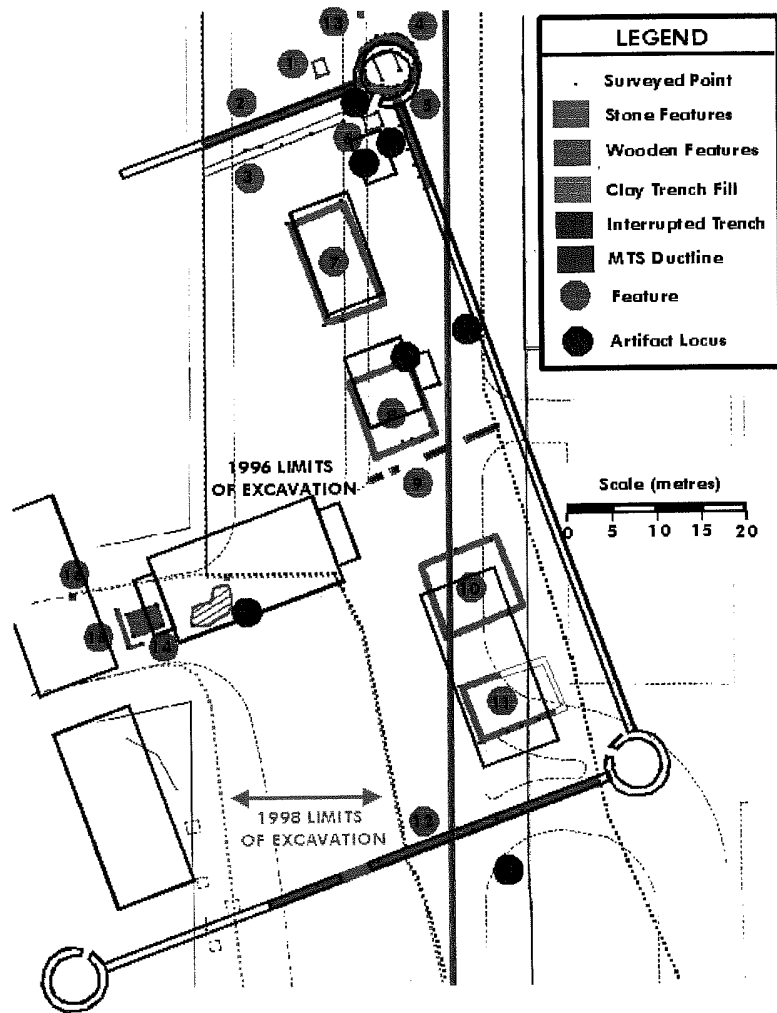


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explanation, and one that complements Nielsen's observation of the absence of urine in the log (Nielsen 1998:213), is that the cribbed feature was a cellar for food storage. It was a common practice for root cellars to be dug within new buildings before the floor was laid (Loewen and Monks 1986:105). If the juxtaposed Cookhouse were to be located five feet north and three feet east, the cribbed feature would be in the northeast corner of the building. It is more probable that the cribbed cellar would have been inside rather than abutting the exterior north wall of the Cookhouse, thereby obviating the necessity of going outside to retrieve root vegetables for cooking. Secondly, by being indoors, the temperature extremes — both winter and summer — would be lessened, increasing the storage life of the vegetables. Thus, it is suggested that the Cookhouse was situated slightly north and east of the position portrayed by Loewen and Monks.

The surveyed dimensions of the Men's House (Feature 7) confirm those stated by Loewen and Monks (1986:208) as 42' x 24'. The location of the structure is the major discrepancy between the actual position of the sub-surface footing and the reconstruction based upon archival sources and photogrammetry. As is evident from Figure 11, the east/west location relative to the east wall of the fort matches perfectly but the north/south location differs. On Loewen and Monks' map, the north wall of the Men's House is 32'9" south of the north wall of the fort while calculations based upon distances presented would place the structure either 28' or 34' south of the wall. The distance between the interior of the north wall of the fort and the north wall of the Men's House footings was measured at 40'4".

The footings of the Recorder's House are aligned with the footings of the Men's House and confirm the east/west location of the building as reported by Loewen and Monks (1986:208). The north/south location is considerably different. They place the structure 160' north of the south wall or 18' south of the Men's House. The footing was measured at 29'6" south of the Men's House, a difference of nearly 12'. A contributing factor to the locational problem is the difference of the size of the footprint of the structure. The north/south dimension of the footing was measured at 28'2", while Loewen and Monks alternatively provide measurements of 36' (1986:208) or 30' (1986:46). The latter measurement is similar to the one obtained from their scaled reconstruction plan. Part of the problem of determining the dimensions would be the construction of a one-storey passageway between the Men's House and the Recorder's House between 1846 and 1848. The Beatty map of 1846 shows two separate structures, as does the earlier Warre sketch (1845) while the Moody map of 1848 depicts a continuous structure (Loewen and Monks 1986:70). Problems of scale with the Beatty map have already been noted in the discussion of the Cookhouse. Thus, his depiction of the Recorder's House as being similar to the Men's House (scaled calculation = 37'6") should not be heavily relied upon. The Warre map, as published in 1860, again indicates that the Recorder's House was only slightly smaller than the Men's House (Loewen and Monks 1986:32). The Warre map shows the eastern lean-to positioned at the northeast corner of the building (Loewen and Monks 1986:32), while Loewen and Monks' map place it at the centre of the east side. No sub-surface component of this addition was observed, leaving the exact placement of this addition still undetermined. Additionally, no evidence of the passageway of 1848 was observed, so it cannot be confirmed that the addition resulted in a single continuous structure as depicted on the Moody map (Loewen and Monks 1986:65) and the 1868 Balsillie map (Loewen and Monks 1986:93), or as an

offset passageway extending along the eastern face of the two buildings as shown on Loewen and Monks' map of the probable plan in 1850 (1986:59).

The most surprising discovery concerned the footings of the southeast Sales Store. Two separate rectangular footings 25'7" x 30'4" (Feature 10) and 29'2" x 30'4" (Feature 11) were observed. These two features were separated by 17'9", providing an overall footprint of 72'2" x 30'4" which almost exactly matches the archival data of 72' x 30' (Loewen and Monks 1986:208). The implications of the two footings under a single building have been previously discussed. The composite footprint is displaced north and east from Loewen and Monk's placement. The western wall of both features is aligned with the western walls of the Men's House and the Recorder's House. This conforms with the depictions on Warre's map, Moody's map, and Balsillie's map. However, the Beatty map and the Hazel map (Loewen and Monks 1986:166) show the eastern walls to be aligned with the west wall of the Sales Store, jutting 6' into the interior compound. Loewen and Monks' map appears to have split the difference, aligning the centre line of the Sales Store with the centre lines of the Men's House and the Recorder's House, although their structural inventory (1986:208) lists the two residences as 28' from the east wall and the store as 22' from the east wall. This would mean that the west walls of all three structures would be aligned, contrary to the appearance on the map.

The second discrepancy concerns the north/south position, which Loewen and Monks (1986:208) state to be 18' north of the south wall, while the footing was measured at 26' north of the wall. The Warre map depicts the Sales Store to be approximately 18' north and aligned with the western Store. As a comparative note, Warre also places the Fur Store (in the northwest corner) the same distance south of the north wall, a distance recorded by Loewen and Monks in their structural inventory (1986:208). Beatty's map has the same placement of the three buildings, while the Moody map shows the distance between the south wall and the southern two buildings to be at least 130% that of the distance (approximately 24') between the north wall and the Fur Store. Inasmuch as Monks (1984) did not uncover the footing of the south wall during his excavations in Bonnycastle Park (1981-83), it is unknown how far north of the wall the western Store was situated. If it is aligned with the Sales Store, it too is probably 26' from the wall.

The lack of evidence of any structural remnants of the Main House was unexpected. The most important building within the fort, it was also the largest and most carefully constructed. Due to its three-storey height, a stone foundation was imperative. A letter from George Simpson to the Bishop of Juliopolis, during a dispute over use of river cobbles, notes that "we determined on building two stores and a dwelling house on stone foundations" (Loewen and Monks 1986:25). However, no traces of limestone and/or river cobble foundations were present in the vicinity of where this building had to have been. Three features may be minimal evidence of the existence of this building — Feature 14 (a wooden plank wall/floor); Feature 15 (a narrow footing trench); and Locus 6 (a pile of limestone rubble). Features 14 and 15 have previously been discussed and their relationship to the Main House, if indeed they are part of it, would have been as part of the west lean-to attached to the main building. The limestone rubble, which contained isolated artifacts and some wooden structural remnants, may have been infill into the cellar of the Main House. Mitigating against this

interpretation is the irregular shape of the rubble pile. A cellar used for vegetable and meat storage would have been cribbed with wooden timbers, usually in a rectangular shape. An isolated limestone block was found at the edge of the 1998 excavations immediately north of Locus 6. Situated in the middle of the footprint of the building (Fig. 11), its position probably results from previous modification of the area.

The total absence of stone in the footprint of the Main House may be a result of quarrying the footings during the demolition of this building in 1872 or 1873 (Loewen and Monks 1986:153). When the east stone wall was removed in 1871, the stone was used for the construction of the Land Titles Building on Main Street north of Upper Fort Garry (Loewen and Monks 1986:154). A similar requirement for dressed or semi-dressed limestone, for construction of other buildings, may have resulted in total quarrying of the entire footings of the Main House. Unusable fragments of limestone from these footings and/or the tall chimneys which "rose from each end of the level peak of the roof" (Loewen and Monks 1986:45) may have accumulated and become the pile of rubble designated as Locus 6.

Minimal evidence, if any, exists for confirmation of the location of the "Yellow" Store. Feature 16, an isolated block of dressed limestone, is situated near where the east wall of the building would have been located. No other confirming evidence, in terms of footings, infilled trenches or sub-surface pilings, was present in the vicinity.

To recapitulate, Loewen and Monks have provided a useful reference work based upon archival data. The slight discrepancies between their information and the recorded sub-surface features uncovered during the Main Street reconstruction have been detailed above. These consist mostly of building placements relative to the walls and each other. One structure (the Recorder's House) has been found to be slightly smaller than archivally determined. Although the actual building could have been constructed larger than the footing, this is very unlikely as the benefits provided by the footing for frost heaving and drainage would be negated.

Artifact Loci

Seven distinct artifact loci (1, 2, 2A, 3, 4, 5, and 6) were designated within the confines of Upper Fort Garry (Fig. 1). Two of these locations (Locus 3 and Locus 5) contained artifacts post-dating the occupancy of the fort. The location designated as Locus 3 is a recent intrusive disturbance which affected the northeast corner of the footing of the Recorder's House (Feature 8). Locus 5 consisted of a deposit of recent material immediately above the top of the foundation of the south wall of the fort. The diagnostic material within the deposit could be dated to the 1890s, after the demolition of the east wall of the fort and the straightening of Main Street. The other loci contain artifacts which limit their period of deposition to that of the occupancy of the fort. The following descriptions of artifacts recovered from these loci are summaries rather than detailed analyses. A comprehensive examination of the recovered artifacts from each locus is provided in *Archaeology of Main Street Roadworks: York Avenue to Tache Avenue 1996-1998* (Quaternary 1998).

Locus 1

The area defined as Locus 1 is at the junction of the east wall and the inner curve of the northeast bastion. A small quantity of artifacts found immediately adjacent to the lithic footing of the bastion possibly derives from trench fill deposited after the course of limestone for the bastion footing had been laid. The deposit is very localized, extending only 12.0cm from the limestone footing and having a linear distance of 30.0cm along the curve. Fifty-three artifacts, consisting of nails, kaolin pipestem fragments, faunal remains and dinnerware ceramics, were recovered from the locus.

Locus 2

Locus 2 is the designation for the artifact-bearing deposit which occurred above and adjacent to the north side of Feature 6 (Fig. 1). The matrix above Feature 6, designated as the Northeast Cribbed Feature, consisted of a grey, sandy gravel and extended upward to the base of the prior roadbed. This gravel would be the result of infilling an intrusive excavation which happened to coincide with the position of the feature. The basal portion of this deposit, especially within the confines of the feature, consisted of a fine sand mixed with ash and extended to a depth of 40.0cm below the top of the cribbing. Various artifacts were present in the gravel and on the soil matrix surrounding the cribbing. A black, loamy soil matrix, present on the north and east sides of the cribbing, also contained artifacts. One hundred fifty artifacts were recovered from Locus 2.

A large percentage of the recovered material does not provide temporal markings. The ceramic dinnerware sherds are the obvious exception, wherein the maker's marks define a time range between the 1830s and the 1850s. The multi-faceted glass bead probably dates to the occupancy of the fort. Other artifacts are more problematic. The clay pipe stem could have been manufactured anywhere from the period of the construction of the fort through to the middle of the 20th century. The sheet-cut nail could be as early as the ceramics and the hand-wrought nail could date as late as the early part of the 20th century. Most of the glass products appear to date from the latter part of the 19th century, especially the glass containers. The date of the glass tumblers is indeterminate, as is that of the ginger jar.

Based upon the artifacts, it appears that two different periods of deposition occurred. The first period was during the early years of Upper Fort Garry, probably as a result of infilling behind the cribbing walls of the feature. Surface debris, including broken dinnerware, would have become incorporated with the soil that was packed into the space between the cribbing and the outer wall of the excavation. The second period of deposition appears to have occurred after the fort was abandoned, either during the initial construction of Main Street when it was straightened in 1885 and first passed over this location, or at a later date, when an intrusive excavation coincided with the exact location of the cribbed feature. The plank located within the feature, at a depth of 40.0cm below the top of the cribbing, may have been a capping of the infill into this feature during the fort occupancy period. It has been suggested that this feature originated as a food storage cellar which eventually became obsolete and was subsequently used as a garbage pit. When the fort was

abandoned, and the structure over top of the feature was removed, the pit was filled to ground level with the sand/ash mixture.

Locus 2A

As noted earlier, during the period that the northeast bastion and associated features were exposed for public viewing, unauthorized individuals undertook clandestine excavation of the cribbed cellar (Feature 6). The degree of intrusive activity was constrained by the presence of a wooden plank lying diagonally across the interior of the cribbing at a depth of 40.0cm below the top log. Material was removed from the eastern portion of the cribbing, within an area approximately 45.0cm wide and extending to a depth of 1.1m.

The upper matrix of the interior of the cribbing, above the plank, consisted of gravel and sand mixed with ash and containing isolated artifacts. The artifacts in the upper matrix are more recent than those which apparently derived from the lower portion of the cribbed feature. The exact placement of specific artifacts or artifact-bearing strata cannot be determined as no information concerning context was provided when the artifacts were turned in to the Manitoba Museum of Man and Nature. A total of 412 specimens was received by the Museum and then returned to Quaternary Consultants Ltd. for cataloguing and analysis, as their provenience required them to be considered a part of this project.

To reiterate, a mixture of temporal periods appears to be represented by the artifacts retrieved from this locus. While many of the specimens definitely relate to the period of occupancy of the fort, especially the ceramic dinnerware, other items are much more recent in time. Several types of artifacts are indeterminate, as their manufacture occurred over a long span of time. Also, it is often difficult to temporally distinguish specimens which are incomplete or have been poorly preserved. Architectural artifacts are rarely temporally distinctive and those from this locus are no exception. The sheet-cut nails could be as early as the mid-1800s or considerably later. The two combs fall into this grouping. The material of which they are composed is not firmly identified and the earliest date of manufacture of synthetic combs, i.e., hard rubber, is unknown. Many of the ceramic storage containers are also ambiguous; very little stylistic change occurred from the early 19th century into the early 20th century, so that the ginger jar, the stoneware bottles, and the ink bottle are temporally free-floating.

Some artifacts can be readily assigned to the time period after the fort was abandoned, either because that type of artifact did not exist at that time or because the manufacturing technique was developed later. The shot shell was definitely deposited after the fort was abandoned. At present, it is unknown if the change in the maker's mark from "ELEY BROS" to "ELEY" pre-dates or post-dates the illustrations in the 1909 Ashdown Hardware Company catalogue. Most of the glass containers appear to derive from the last quarter of the 19th century, with at least one specimen (DILg-21:96A/253) manufactured in an automatic bottling machine.

The artifacts that derive from the fort's occupancy period are a combination of those which can be definitely dated, i.e., the ceramic dinnerware, and those which appear to have been used by a resident population, wherein the discarded materials represent a range of activities, rather than those which would have been incorporated in a relocated, secondary deposition at a later date. The iron gimlet could have been manufactured at any time and only a spectrographic analysis could perhaps narrow the time frame. A similar situation applies to the cutlery handle. The clothing fragments most likely derive from the fort period but cannot be firmly assigned. The porcelain doll (DILg-21:96A/283) firmly fits with the period of the fort's occupancy. DILg-21:96A/237, tentatively identified as a hand-made wooden doll, was probably manufactured at the fort. The harmonica spacer was probably used by residents at the fort, as were the kaolin pipes. The grapeshot would be associated with either the field pieces owned by the Hudson's Bay Company or one of the military units stationed at the fort. The faunal remains are likely associated with food processing activities at the Cookhouse.

Locus 4

The area defined as Locus 4 is adjacent to the east wall (Fig. 1) and lies almost due east of the north wall of Feature 8 (the Recorder's House). The locus consists of an amorphous uncribbed garbage midden, roughly oval in shape, measuring 1.2m x 0.8m. Cultural material was exposed by the backhoe at nearly the base of excavations for the roadbed. The matrix above the cultural deposit was similar to the surrounding soil, suggesting that after the garbage had been deposited in the hole, the excavated soil was used to fill the pit to existing ground level.

As the project was slightly behind schedule, because of the down time resulting from the period of public viewing of the exposed structural remnants of the fort, the matrix of Locus 4 was removed *en bloc*. The portion of the locus which protruded above the roadbed base level was excavated, as was a portion of the matrix below roadbed level, extending to a depth of 10.0cm below final grade. This resulted in a volume of nearly 2.0m³ of material which was taken to the laboratory facilities of Quaternary Consultants Ltd. This material was screened through successively finer meshes, resulting in the recovery of 10,903 artifacts. The recoveries consisted of structural elements (787), window pane fragments (3001), fabric (291), kaolin pipes (27), beads (8), faunal remains (2410), floral remains (4105), glass bottle sherds (92), glass dinnerware (31), ceramic dinnerware (44), and smaller quantities of other artifacts.

All the artifacts appear to be the result of simultaneous deposition, although there may have been evidence of earlier sequential deposition in unexcavated, lower levels of the locus. Loewen and Monks (1986:68) note that, at least during the presence of the Sixth of Foot, "numerous pits were dug along the west wall". The practice of digging privy and garbage pits adjacent to the walls would have not been confined to the military occupancy and probably occurred throughout the life span of the fort.

Locus 6

The area defined as Locus 6, which was uncovered in 1998, is located in the centre of Assiniboine Avenue just west of the Main Street right-of-way. The locus is an amorphous area characterized by a large pile of limestone rubble with occasional short pieces of structural timber and isolated artifacts scattered throughout the irregular oval-shaped area. The rubble possibly derives from the demolition of the Main House. This structure was removed by 1873 (Loewen and Monks 1986:46) and the documentation is minimal as to whether the stone components, i.e., the foundation and chimneys were recycled or deposited in the cellar. It is unknown if this cellar, used as cold storage for roots and meat, was cribbed or stone walled (Loewen and Monks 1986:45). The position of the cellar within the building footprint is also unknown.

The artifacts from this locus were scattered around and throughout the rubble pile. Their original point of deposition may have been adjacent to the Main House, or perhaps residual within the building after it became uninhabitable, ca. 1855 (Loewen and Monks 1986:153). There is an admixture of fort period artifacts and more recent material. Considerable activity by the Winnipeg Electric Street Railway Company and its predecessor the Winnipeg Street Railway Company occurred in this area. The two remaining storehouses of Upper Fort Garry were used by the transportation company (Loewen and Monks 1986:156) and other structures were built in the immediate vicinity. Demolition, modification, and waste disposal during the use of the area would account for the presence of artifacts which post-date the demolition of Upper Fort Garry. Thirty-six artifacts were curated from Locus 6.

Summary

The reconstruction of the Main Street roadbed provided a window of opportunity to investigate the sub-surface components of the east portion of Lower Fort Garry. The primary data recovered was positional, and the locations of the walls, northeast bastion, Men's House, Recorder's House, and Sales Store were firmly fixed. Sufficient sub-surface footings and foundations remained to provide exact locations and dimensions for these structures, as previous road works had not totally impacted the underground components. Most of the information confirmed the general locations of the buildings that had been deduced by Loewen and Monks (1986) through their examination of archival sources and photogrammetric analysis of visual records (sketches, paintings, and photographs). Some discrepancies between the archival data and the observed data have been noted: the dimensions of the Recorder's House (24' x 28' versus 24' x 30' or 24' x 36'); the location of the Men's House (40' south of the 1836 north wall versus 28', 32', or 34' south); the location of the Recorder's House (29'6" south of the Men's House versus 18' south); and the location of the south wall of the Sales Store (26' north of the south wall versus 18' north of the south wall).

The lack of a footing for the majority of the east wall was surprising and is tentatively explained in terms of construction scheduling. Similarly, the observation of two discrete footings underpinning the Sales Store was unexpected and suggests a change in plans during the initial construction phase in 1836.

The location of only two sub-surface refuse features (Feature 6, the cribbed feature near the probable location of the Cookhouse, and Locus 4) in the eastern portion of the fort suggests that garbage disposal took place outside the walls of Lower Fort Garry. No privies were located in this portion of the fort, suggesting that they may have been placed along the west wall, as recorded by Monks during his Bonnycastle Park excavations (1984), or outside the walls.

Artifact recoveries were extensive, with the greatest quantities deriving from Locus 4, an amorphous uncribbed pit feature that contained more than 10,000 artifacts. All artifacts were analysed and will be deposited at the Manitoba Museum of Man and Nature (the repository designated by the City of Winnipeg). The structural remnants that had to be removed for the construction of the roadbed (dressed and semi-dressed limestone blocks) are stored by the City of Winnipeg and hopefully will be used in a future interpretive reconstruction in the immediate vicinity of the now firmly located fort footprint.

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FUR TRADE CERAMICS FROM UPPER FORT GARRY

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Introduction

This paper is an examination of the assemblage of ceramics found within the walls of Upper Fort Garry during the recent (1996-1998) reconstruction of Main Street in Winnipeg (Kroker 1999, this volume). It was considered advantageous to compile this data for the following reasons:

- ◆ the large quantity of identifiable ceramic material;
- ◆ the constrained time frame for the fort, a tightly defined period in which the artifacts would have been used and discarded;
- ◆ the defined group of people living within the fort perimeter, i.e., soldiers, officers, families of officers, Hudson's Bay Company employees and their families; and
- ◆ the defined activities within the fort, i.e., the cookhouse, the mess hall, the dining areas, the stores, etc.

A total of 293 ceramic dinnerware sherds was recovered from Locus 1, Locus 2, Locus 2A, Locus 4, and Locus 6 (Kroker 1999:Fig. 1). The majority of these artifacts have an identifiable pattern and many have been assigned to a specific manufacturer. It is hoped that this paper will provide the seeds of information for a further in-depth academic-based study, perhaps a thesis. Due to the magnitude of the information, time constraints, and budgetary constraints (an in-depth study does not fall within the parameters of a mitigation project), as much work as feasible was done on the ceramics.

Tables outlining information such as the pattern names, a manufacturer of the pattern, if identifiable, and any dates that can be ascribed to the piece are included. A brief overview of the manufacturing companies, a description of some of the patterns, and various dates — date of manufacture, date of company, date of shipment to Western Canada, and date on site — is presented. In addition, a brief comparison with the work done on Upper Fort Garry during the Bonnycastle excavations (Fifik 1986; Larcombe 1988; Monks 1982, 1983, 1984), will be attempted. Much of the research in this paper was based on the references of Sussman (1978, 1979a, 1979b) and Hamilton (1982, 1985), in addition to other available works.

One advantage of working with the materials from the loci within Upper Fort Garry is the very concise time frame for this particular fort. Construction of Upper Fort Garry began in 1836. The original size of the fort stayed the same until 1852, although some internal structures were added during the first decade of the fort's existence. The fort was always under the control of the Hudson's Bay Company (hereafter, HBC). However, from 1846 to 1849 the Sixth Regiment of Foot occupied the western portion of the site, with the HBC constrained to the eastern portion. After the flood of 1852, the fort was doubled in size with an extension of the walls to the north, enclosing buildings which had been built outside the original perimeter. A second military occupation of part of the fort occurred between 1857 and 1862, when the Royal Canadian Rifles were stationed there (Loewen and Monks 1986:129-141). While several structures remained intact from the beginning, many other buildings and facilities were much shorter lived, with several ephemeral structures built by both the military and the HBC. As well, modifications to the interiors and exteriors of the major buildings occurred (Loewen and Monks 1986). The general dismantling and abandonment of Upper Fort Garry appears to have commenced in 1878, and by 1883 the fort was partially destroyed and completely abandoned.

Knowing the time line of the fort, as well as the information that it was variously occupied by factors, clerks, and traders of the Hudson's Bay Company as well as the officers and soldiers of the military, and in some cases the officers' families, gives a good sense of the people living within the walls of Upper Fort Garry. Several activities that would involve the use and/or sale of ceramics would have been prevalent. The Hudson's Bay Company was in the business of buying or trading for furs, while the employees would have carried on daily personal activities, such as meals, entertaining, etc. The military would have provided goods for their personnel as well as their families. People would have bought dinnerware from the company, the company would have ordered supplies from England, and, in some cases, people may have brought personal goods with them when they came to the fort. These activities would have occurred in the cookhouse for the military, in the soldiers' mess halls, in the dining halls for the officers, or in the quarters of the HBC staff. Much of this information is not available when dealing with artifacts recovered from a general dump site.

The Artifacts

In Chapter 6 of the mitigative report *Archaeology of Main Street Roadworks: York Avenue to Tache Avenue 1996-1998* (Quaternary 1998), the recovered ceramics were presented in tabular