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Archaeological Evidence of Architectural Remains at Fort St. Joseph (20BE23), Niles, MI

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ARCHAEOLOGICAL EVIDENCE OF ARCHITECTURAL REMAINS AT
FORT ST. JOSEPH (20BE23), NILES, MI

by

Erika K. Loveland

A thesis submitted to the Graduate College
in partial fulfillment of the requirements
for the degree of Master of Arts
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April 2017

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Erika K. Loveland, M.A.

Western Michigan University, 2017

Throughout New France, Native and non-Native peoples frequently interacted as a result of French colonialism. These prolonged relationships affected the ways in which people identified themselves and others around them. To explore this dynamic process, historical archaeologists can examine the material culture left behind. Architectural remains are particularly informative because inhabitants construct their buildings in accordance to their needs and cultural values. Fort St. Joseph, an eighteenth-century mission, garrison, and trading post, is utilized as a case study to examine architecture and how it was employed to express identity. Daily interaction between Native and French peoples in the fur trade provides scholars with an opportunity to explore the varying effects of cultural interaction on identity. Architectural elements discovered through excavation at the fort offer insights on the techniques and materials used in the construction of its buildings. Historic documents reveal little information on the fort's built environment, highlighting the importance of archaeological evidence. This study examines the architectural remains of Fort St. Joseph in order to determine the types of construction techniques and materials used by the fort's occupants. Knowledge gleaned about the techniques and materials employed will provide evidence for how occupants were choosing to express their identity through architecture at an important frontier outpost on the edge of empire.

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CHAPTER I

INTRODUCTION

Throughout New France, Native and non-Native peoples were frequently interacting as a result of French colonialism and the success of the fur trade (Loren 2008; Nassaney 2015; Waselkov 1997). Here, France established a network of trading posts, forts, and missions to expand and sustain its influence in the New World during the seventeenth and eighteenth centuries (Loren 2008; Nassaney 2008). New France quickly encompassed the St. Lawrence River Valley, the Great Lakes region (known as the *pays d'en haut* or upper country) and the Mississippi River valley stretching down to Louisiana and the Gulf Coast (Eccles 1964; Loren 2008; Nassaney 2008). The missions, forts, and settlements located across New France reflected France's religious, military, and commercial goals (Loren 2008). The frequent encounters with Native peoples had a significant impact on the identities of the French men and women with whom they interacted (Brandão and Nassaney 2006; Loren 2008; Nassaney 2008, 2015; Nassaney and Brandão 2009; White 2011).

Although France claimed a larger territory in the New World than the English, the French had a much smaller population that remained dispersed (Eccles 1986; Loren 2008). In an effort to halt the English from expanding west of the Appalachian Mountains, the French allied themselves with the Native occupants of the region by creating mutually beneficial exchange relationships that were often reinforced through intermarriage (Loren 2008; White 2011). These prolonged relationships affected the ways in which people were identifying themselves and others around them (Loren 2008; Nassaney and Brandão 2009; White 2011).

To explore this dynamic process, historical archaeologists can examine the material culture left behind as a means to understand identity formation and expression in colonial populations (Hodder 1982; Loren 2008; Lyons and Papadopoulos 2002; Mann 2008; Nassaney 2008, 2017, 2019; Nassaney and Brandão 2009; White 1991; Yentsch 1994). Adornment, architecture, ceramics, subsistence, and other forms of cultural remains can be analyzed to better understand how individuals express their identity (Becker 2004; Deetz 1997; Kerr 2012; Loren 2000; Mann 2008; Nassaney 2008; Nassaney et al. 2001; Nassaney and Brandão 2009; Upton 1986). Architectural remains are particularly informative because structures and the built environment are material expressions of social groups and their ethnic identities (Mann 2008; Nassaney et al. 2001). Humans shape and alter the landscape to facilitate and constrain activities and express relations of power (Nassaney et al. 2001). The placement and construction of buildings on the landscape are based on social practices and therefore can offer additional information on the ethnic identities of their occupants and builders (Mullaley 2011; Nassaney 2002).

In order to better understand past architecture, it is necessary to examine excavated remains, surviving structures, and documentary evidence (Deetz 1997). Archaeological analysis has demonstrated “that architecture and the arrangement of space in pluralistic colonial settlements serve social and communicative functions” (Mullaley 2011: 2). While French architecture has been examined throughout New France (e.g., Bazely 2013; Brazier 2013; Crompton 2012; Edwards 1986; Ekberg 1985; Evans 2013; Farah 2011; Fisher et al. 2013; Gums 2002; Gums et al. 1991; Hart 2013; Keene 1991, 2014; Kornwolf 2002; Mann 2008; Moogk 2002; Mullaley 2011; Pendery 2010; Peterson 1965; Roache-Fedchenko 2013; Sheldon Jr. et al. 2008; Starbuck 2011; Thurman 1984; Walthall 1991), no systematic study has yet to be

conducted on the architectural remains at Fort St. Joseph, an eighteenth-century French mission, garrison, and trading post in the St. Joseph River valley.

Fort St. Joseph can be utilized as a case study to examine how Natives and non-Natives employed architecture to express their ethnic identity. Daily interaction between Native and French peoples in the fur trade provides scholars with an opportunity to explore the varying effects of cultural interaction on identity. Previous archaeological and documentary research has provided information on the social composition and appearance of the fort (Kerr 2012; Nassaney 2008; Nassaney and Brandão 2009). However, very little is known about the size, function, and design of the buildings that have been identified at this fort thus far (see Brandão and Nassaney 2006: 65-66) and the messages these architectural forms may have communicated. Historic documents reveal little information on the fort's built environment, highlighting the importance of archaeological evidence. Architectural elements discovered through excavation over the past decade at the fort can offer insights on the size, function, techniques, and materials used in the construction of these buildings. To better understand the architecture, cultural landscape, and their social implications at Fort St. Joseph, it is essential to analyze the architectural features and artifacts themselves and how they relate to one another across the site.

At a location where evidence indicates frequent and prolonged relations between French and Native Americans (Idle 2003; Peyser 1992), this study will explore aspects of cultural interaction, identity, and architecture in New France. Specifically, I will examine the architectural remains of Fort St. Joseph in order to determine the types of construction techniques and materials used by the fort's occupants. Knowledge gleaned about the techniques and materials employed will then assist in deciphering the ways in which occupants were expressing their identity through architecture. This analysis will not only shed light on the built

environment at Fort St. Joseph, but also add to our understanding of the extent of French building practices throughout New France. Insights will also be gained from this case study on the use of material culture as a means to express ethnic identity, providing a better understanding of how identity is asserted and negotiated in areas of intense cultural entanglement. As scholars continue to focus and explore the ways in which aspects of identities can be altered and preserved during cultural interactions, we are able to further recognize the impacts of colonial ventures both past and present.

CHAPTER II

LITERATURE REVIEW

The study of architectural remains at Fort St. Joseph can be informed by previous work on colonialism, cultural interaction, identity, material culture, architecture in New France, and Fort St. Joseph. Research on colonialism, cultural interaction, and identity, specifically in New France, offers background information on the complex relationships that developed during these processes, focusing on the ways in which aspects of identities are altered and preserved. Studies on the expression of identity in material culture, especially in architecture, provide insight on how identity is asserted and negotiated in areas of intense cultural entanglement. Previous work by scholars examining architecture in New France through historical documents, oral accounts, standing structures, and archaeological remains will highlight popular construction methods and materials used, shedding light on the possible types of buildings and construction techniques used at Fort St. Joseph. Lastly, historical and archaeological research previously conducted at Fort St. Joseph provides information on the inhabitants living at the fort, which then will aid in informing this investigation on the architectural styles most likely to be present.

Colonialism, Cultural Interaction, and Identity

Throughout history, societies have become altered by outsiders on their quest for valuable resources be it land, labor, or material goods. Each instance of cultural interaction can have an effect on the social identities of the colonizers, the colonized, and those who remain somewhere in the middle (Loren 2008; Lyons and Papadopoulos 2002). As cultural interaction and identity formation are central issues in colonial studies, scholars have been exploring the

many dynamic dimensions of cultural interactions within colonial populations, specifically on the colonial peripheries (e.g. Ekberg 1985; Kerr 2012; Loren 2000, 2008; Mann 2008; Nassaney 2008; Nassaney and Brandão 2009; White 1991). It is on the peripheries of colonial populations where the settler and local ideologies converge, often resulting in the innovation, negotiation, and displacement of cultural differences and meaning (Loren 2008; Lyons and Papadopoulos 2002).

New France offers, as scholars have found, an appropriate setting for the study of colonial encounters and interaction on identity due to the frequent contact between Native and non-Native peoples (i.e. Brandão and Nassaney 2006; Kerr 2012; Loren 2000, 2008; Mann 2008; Nassaney 2008; Nassaney and Brandão 2009; White 2011). During the seventeenth and eighteenth centuries, the fur trade and desire for political alliances often facilitated the formation of new societies that reshaped and merged the cultural beliefs, practices, and lifeways of those involved (Loren 2008; Nassaney 2015). In examining the relationships between French Canadians and the Algonquian nations of the western Great Lakes, White (2011) notably identified that the two groups found a “middle ground” in which fictive and real kin relations were formed, binding them in numerous cultural relationships. White (2011: 50) makes it clear that neither of the groups’ culture was consumed by the other and that distinguishable French and Native peoples continued to exist throughout the Great Lakes. However, it was the blending and formation of new cultural practices, ultimately resulting from the fur trade, that fused the groups together.

Loren (2000, 2008) also explores the dynamics of colonialism through encounters between Native and non-Native peoples in North America and the resulting effects on the groups’ identity and material culture. In her analysis of French and Spanish colonial policies

versus colonial practices along the eighteenth-century Spanish Texas and French Louisiana frontier, Loren (2000) discusses the creolization that occurred as a result of individuals crossing social and racial boundaries, which ultimately led to the creation of new colonial identities in both policy and everyday settings. Her examination of the Eastern Woodlands during the sixteenth and seventeenth centuries expands on her work regarding colonial identity and discusses the continuous interactions as well as the ever-changing social, political, and economic relationships between Natives and French inhabitants in this region (Loren 2008).

As each cultural entanglement between Native and non-Native peoples differed throughout the colonization of the New World, some scholars (Kerr 2012; Loren 2000, 2008) have seen cultural blending in terms of identity, while others (Mann 2008; Nassaney and Brandão 2009) see cultural distinctions. The fluidity of the colonial identity then requires a careful examination of the historical and archaeological record to tease out the many facets that compose and express a person's identity (Nassaney 2017). The frequent and situational interactions between Native and French settlers throughout New France often facilitated the blending of cultural practices and ideas; however, these cultural transformations do not require the removal of all the traits that originally distinguished them from one another (Nassaney 2017). Thus, while some aspects of identity may fluctuate throughout time and space, others may persist.

Materiality in Archaeology

Investigation into the material remains of a society allows researchers to better comprehend the transformations that occur in cultural practices (e.g. diet, clothing and adornment, and architecture), highlighting the importance of examining artifacts not only as evidence of interaction but as having agency in shaping the identities of their users, in both how

they identify themselves and how others identify them (Hodder 1982; Kerr 2012; Loren 2008; Lyons and Papadopoulos 2002; Nassaney 2008). This is true for the material culture of the people in New France because the expanding fur trade brought about frequent cultural interaction (Loren 2008; Nassaney 2008). Nassaney and Brandão (2009: 32) argue that throughout New France French and Native peoples “found opportunities to assert their personal identities” while simultaneously interacting with each other.

Indications of ethnic identity and any effects as a result of colonialism and cultural interaction can be found in “artistic expression, architecture and town planning, clothing, foodways, gender and caste identities, marriage, naming, storytelling, and religious ritual” (Lyons and Papadopoulos 2002: 1). The examination of material culture as a means to understand identity formation and expression in colonial populations has become a widely accepted notion amongst archaeologists (Hodder 1982; Loren 2008; Lyons and Papadopoulos 2002; Mann 2008; Nassaney 2008, 2017, 2019; Nassaney and Brandão 2009; White 1991; Yentsch 1994). In her examination of colonial policy and practices, Loren (2000) found that the inhabitants of the eighteenth-century Spanish Texas and French Louisiana frontier manipulated the material culture used to racially and socially classify them in order to meet or challenge official political positions. Through dress, diet, and acting out of character Creoles were able to negotiate their identities to situationally appear more French or Native American, which may have allowed them to benefit economically or politically on these frontier borders (Loren 2000).

While scholars have examined a variety of cultural remains (adornment, architecture, ceramics, and subsistence) as a means for individuals to express their identity (Becker 2004; Deetz 1997; Kerr 2012; Loren 2000; Mann 2008; Nassaney 2008; Nassaney et al. 2001; Nassaney and Brandão 2009; Upton 1986), architecture is particularly informative. In Mann’s

(2008) examination of the Great Lakes fur trade society's relationship with the dominant British and then later American powers, he contends that both sides, the colonizers and the colonized, were using material distinctions to affirm their identity, categorizing themselves and each other. The French continued to reproduce familiar vernacular structures because the styles provided a sense of identity and ethnic pride (Mann 2008).

Architecture offers a permanent and public mien to express identity as it cannot be easily changed or concealed like items of personal adornment (Loren 2000; Upton 1996).

Archaeologists have demonstrated that the placement and construction of buildings on the landscape are based on social practices and can therefore offer supplemental information on the identities of their occupants (Mullaley 2011; Upton 1986). Previous research on adornment and foodways at Fort St. Joseph has suggested that cultural blending was occurring in the inhabitants' diets and personal adornment items (see Becker 2004; Hearn 2015; Kerr 2012). Kerr (2012) specifically argues that the personal adornment found through excavation of areas associated with the fireplace features that will be examined in this study suggest that mixed French and Native families are occupying these structures. While this may be true, an analysis of the architectural features and artifacts will provide another line of evidence that can be used to discern the ethnic identities of the fort's occupants.

Evidence of Architecture in New France

To better understand how architecture expresses the cultural identity of its makers, archaeologists collect evidence pertaining to buildings from historical documents, oral accounts, surviving structures, and archaeological remains (Morrison 2001). Historical documents such as letters, official correspondences, material inventories, labor contracts, travel journals, and maps

can all reveal aspects of past architecture (Kimball-Brown 1991; Kornwolf 2002; Moogk 2002). While documents may not provide exact details about the appearance of a structure, they often offer small clues into its size, function, and the construction methods used by its builders. The population of a town or settlement can also help suggest the number of buildings that might have been present at a site.

Oral accounts provide archaeologists with first-hand testimonies and knowledge that have been passed down from older generations (Loveland and Nassaney 2017; Nabokov and Easton 1989). These accounts can offer information on the types of buildings used for different seasons and special purposes as well as their construction techniques and number of occupants (Loveland and Nassaney 2017; Nabokov and Easton 1989). Information gleaned from oral accounts may be subjective or limited in detail, but it reveals evidence about architecture that may have otherwise gone unrecorded such as the layout of individual rooms and their furnishings (Loveland and Nassaney 2017).

Standing structures provide evidence of the techniques and materials employed by their builders. French-style structures in the St. Lawrence and Mississippi River valleys have been examined with these questions in mind (Ekberg 1985; Gums 2002; Gums et al. 1991; Mann 2008; Peterson 1965; Thurman 1984). For example, many eighteenth-century houses in Ste. Genevieve, Missouri were built using upright posts placed in the ground (the *poteaux en terre* construction technique) and exhibit distinctive double-hipped roof lines that were common in the eighteenth century (Ekberg 1985; Peterson 1965; Thurman 1984). Archaeologists can then use this information to better understand the patterns they observe in the archaeological record and suggest what a building may have looked like.

Archaeological investigations conducted throughout New France have uncovered and identified numerous structures (see Bazely 2013; Crompton 2012; Evans 2013; Farah 2011; Fisher et al. 2013; Gums 2002; Gums et al. 1991; Hart 2013; Keene 1991, 2014; Mann 2008; Sheldon Jr. et al. 2008; Roache-Fedchenko 2013; Walthall 1991). While buildings varied considerably over an area as extensive as New France, archaeologists are able to derive some generalizations about building traditions and how they were adapted to local circumstances (Loveland and Nassaney 2017). Evidence of the construction methods and materials used in different locations is found in archaeological remains comprised of artifacts and features left behind. Fort Michilimackinac, located at the northern tip of Michigan's Lower Peninsula, has yielded extensive information on colonial architecture through archaeology (Evans 2013; Heldman 1991; Roache-Fedchenko 2013; Stone 1974). Scores of structures and features have been recorded in site drawings and photographs since 1959. Other French colonial sites, including Fort de Chartres (Illinois), Fort Massac (Illinois), Fort Ouiatenon (Indiana), the Fortress of Louisbourg (Nova Scotia, Canada), and Fort St. Joseph (Michigan) have been examined archaeologically, providing valuable information that complements and sometimes contradicts historical documents (Babson 1968; Bazely 2013; Crompton 2012; Fisher and Huey 2013; Gums 2002; Gums et al. 1991; Keene 1991, 2014; Mann 2008; Nassaney 2008; Nassaney and Brandão 2009; Starbuck 2011; Tordoff 1983; Walthall 1991). Together, these lines of evidence—historical documents, oral accounts, surviving structures, and archaeological remains—can provide a more complete picture of the types of architecture built in New France during the seventeenth and eighteenth centuries. These observations inform our understanding of how the people of Fort St. Joseph and their allies sheltered themselves.

Native American Domestic Buildings in the Great Lakes Region

Native North Americans employed construction for the living and the dead for millennia before Europeans arrived (Loveland and Nassaney 2017; Nabokov and Easton 1989). The practice of house construction and the types of raw materials (e.g., wood, bark, reeds, leaves, grass, stone, earth, snow, skins, bones) used have long differentiated Native groups throughout the continent (Nabokov and Easton 1989: 11-16). Their buildings were adapted to the Native groups' lifeways, reflecting group size and mobility patterns among other factors (Mason 1981: 15; Nabokov and Easton 1989).

The Potawatomis are an Algonquian people who lived in southwest Michigan during the eighteenth century and their descendants inhabit the region to this day (Claspy 1966; Loveland and Nassaney 2017; Quimby 1960). Potawatomi ancestors subsisted on hunting and gathering, supplemented with the domestication of some plant foods, namely maize, beans, and squash (known as the "Three Sisters") (Loveland and Nassaney 2017; Nabokov and Easton 1989: 64). As with other so-called "mixed horticultural groups," they moved their settlements on a seasonal basis within a larger homeland to take advantage of the shifting availability of resources (Mason 1981: 17; Nabokov and Easton 1989: 35-37; Quimby 1960). They did not spend much time in their homes and regarded them as shelters from the weather, places to sleep, and storage areas (Loveland and Nassaney 2017). They cooked and ate outdoors as weather permitted. The Potawatomis lived in wigwams during late fall, winter, and early spring, and spent the warmer months in a summer house (Nabokov and Easton 1989: 52, 64-67; Quimby 1960: 128-129). During the winter, their homes were positioned in valleys to shelter them from the harsh weather (Nabokov and Easton 1989: 52). In the summer, the Potawatomis lived in larger villages near rivers alongside relatives and extended families (Nabokov and Easton 1989: 52).

To construct an oval frame for the wigwam, women bent saplings in the ground and fastened them together to form an arch (Mason 1981: 16; Nabokov and Easton 1989: 56-61). Potawatomi homes had a central fireplace and sleeping platforms padded with mats or skins along the walls (Nabokov and Easton 1989: 60-61). Women sewed mats of cattails and reeds to cover the frames (Mason 1981: 16; Nabokov and Easton 1989: 58). The mats were sewn tightly together and “overlapped slightly to keep out rain and wind” (Nabokov and Easton 1989: 58). On top of the mats, women placed large sheets of elm bark for insulation (Mason 1981: 16; Nabokov and Easton 1989: 59). The rear was used for storage and the frame of the house was used to hang household goods and foodstuffs (Loveland and Nassaney 2017).

These portable structures were easy to assemble, dismantle, and transport, making them efficient and effective shelters (Nabokov and Easton 1989: 35). When they moved, the Potawatomis carried the mats from one house and placed them on the other (Mason 1981: 16). They left the framework of the abandoned home standing for reuse (Mason 1981: 16; Nabokov and Easton 1989: 35, 56). These buildings are hard to identify archaeologically because they left few traces in the ground (Loveland and Nassaney 2017). Archaeological evidence consists of compacted house floors and occasional post molds, sometimes associated with areas of burned earth (Loveland and Nassaney 2017; Nabokov and Easton 1989: 55). Historical records and oral accounts from members of the Pokagon Band of the Potawatomi, who still reside in southwest Michigan, also allow scholars to interpret these ephemeral traces (Loveland and Nassaney 2017; Nabokov and Easton 1989).

Colonial New France Domestic Building Styles

Houses and building techniques embody material distinctions that ethnic groups often use to mark their social identities (Mann 2008). French colonial building styles in New France derive from the half-timbered houses of northwest France that date back to the French Renaissance (Brazier 2013; Eccles 1964; Edwards 1986; Ekberg 1985; Peterson 1965; Sheldon Jr. et al. 2008; Thurman 1984). Modifications were made in the St. Lawrence River valley, the Great Lakes region, and the Mississippi Valley to adapt architecture to resource availability, group size, and perhaps most importantly, environmental conditions. For example, Charles Peterson (1965) provided valuable information on French houses by studying those still standing in St. Louis and examining their derivation from and similarities to buildings in France and other French colonies. Buildings in the central Mississippi River valley combined the floor plan of the French–Canadian house (*maison Canadienne*) with porches from the Caribbean to create a new architectural form distinctive to this region (Ekberg 1985; Peterson 1965; Thurman 1984).

Archaeological studies, historical documents, and standing structures indicate that French colonial buildings were constructed using one of four methods: (1) *poteaux en terre* (posts in the ground); (2); *poteaux sur sole* (posts on a sill) (3) *pièce-sur-pièce* (squared timbers); or (4) stone masonry (Figure 1) (Brazier 2013; Ekberg 1985; Kornwolf 2002; Heldman 1991; Mann 2008; Moogk 2002; Peterson 1965; Sheldon Jr. et al. 2008; Thurman 1984). These construction methods were used for buildings that served various functions including powder magazines,

guardhouses, prisons, warehouses, churches, barracks, commandants' quarters, kitchens, simple dwellings, hen houses, and iron forges.

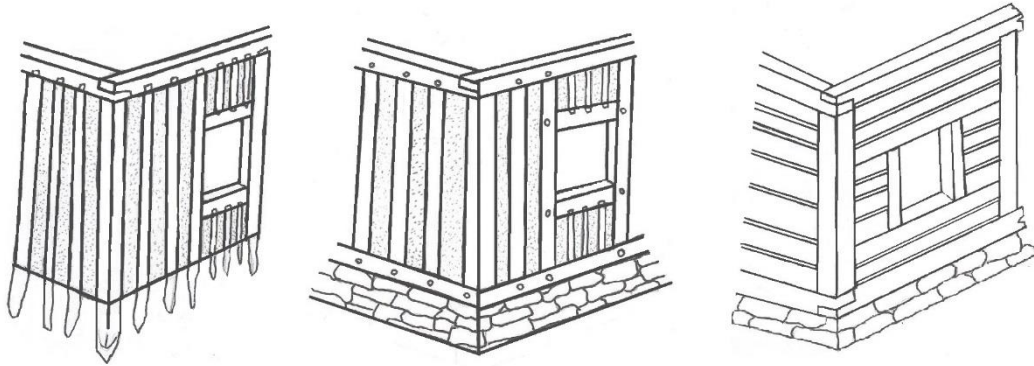


Figure 1. French colonial buildings were constructed using the *poteaux en terre* (left), *poteaux sur sole* (center), and *pièce-sur-pièce* (right) methods. Adapted from Moogk (2002, Figures on p. 15 and 19) and Thurman (1984, Figure 1). Redrawn by author.

Many buildings, particularly in frontier settings, were simple *poteaux en terre* structures that were built by setting upright posts within a trench and filling the interstices with *bousillage* (clay and mud mixed with straw, grass, or Spanish moss), then covered with white wash (a mixture of lime and water to protect the walls from the elements) (Brazier 2013; Ekberg 1985; Gums 2002; Mann 2008; Moogk 2002; Peterson 1965; Sheldon Jr. et al. 2008; Thurman 1984). This type of building was relatively quick and simple to construct, but wooden posts inserted directly into the earth were susceptible to moisture rot and insect damage (Brazier 2013; Ekberg 1985; Gums 2002; Moogk 2002; Sheldon Jr. et al. 2008). Sometimes the wall posts would be pegged and nailed into a horizontal wooden sill, which, in turn, either sat on the ground or on a stone foundation using a technique known as *poteaux sur sole* (Figure 2) (Ekberg 1985; Mann 2008; Moogk 2002; Sheldon Jr. et al. 2008; Thurman 1984). This method of construction resulted in a more durable structure, but required more time and skill. In both techniques a mortise and tenon system of timber framing was used (Ekberg 1985; Mann 2008; Moogk 2002;

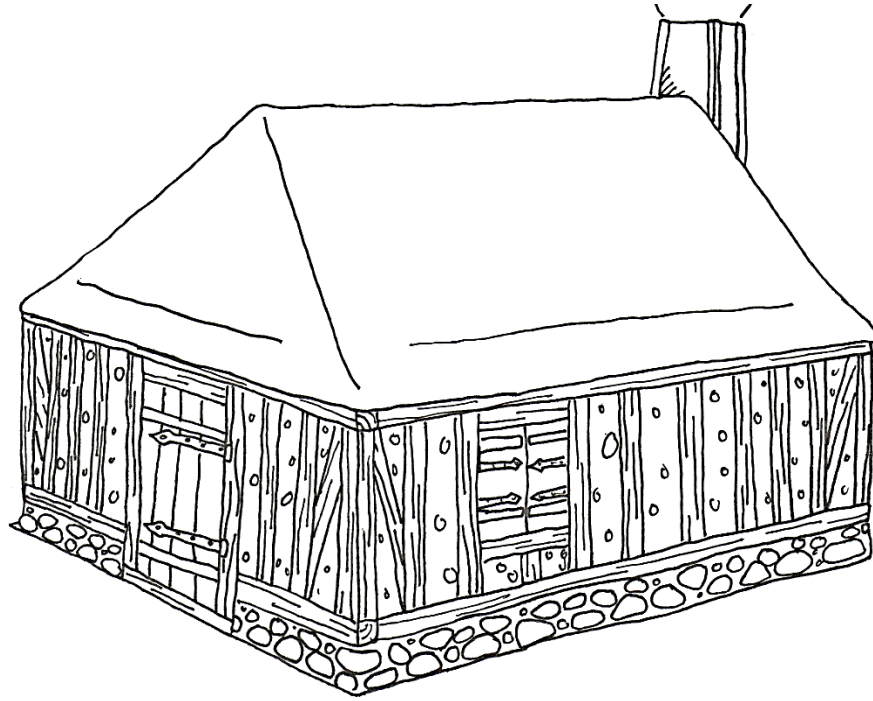


Figure 2. Artist's depiction of a French-style dwelling built using the *poteaux sur sole* construction technique. Drawing by John Cardinal.

Sheldon Jr. et al. 2008; Thurman 1984). A plate, or the upper large hewn timber, was used to frame the top of the structure to match the wall trench or sill at the bottom (Thurman 1984). To support the plate, upright posts were needed at each corner and beneath the splicings (Thurman 1984). Even though the cold and damp climate required more permanent structures these construction techniques remained common, especially during the seventeenth century (Brazier 2013; Kornwolf 2002; Heldman 1991).

Stone fireplaces and hearths with wattle and daub chimneys were often placed at the ends or corners of habitation rooms (Brazier 2013; Moogk 2002). Fireplaces were used for cooking and to warm the home (Moogk 2002). They also were a source of light in dwellings, allowing for domestic activities such as sewing to occur when the natural light was insufficient. Windows made of glass or oiled paper were placed on adjacent sides for cross ventilation (Moogk 2002). A

steep hipped roof, made of either long wooden boards, wooden shingles, or pieces of bark was common in order to shed rain and snow and divert water from the building's foundations (Crompton 2012; Edwards 1986; Gums 2002; Kalm 1937; Kornwolf 2002; Moogk 2002). Attics or lofts may have been built within French-style homes for sleeping areas and to store dry foods and goods used in the fur trade (Farah 2011; Moogk 2002). Structures either had earthen or wooden floors that were typically lifted off the ground to keep the wood from rotting (Gums 2002; Kalm 1937; Kornwolf 2002; Moogk 2002). Joists or stones held up the floorboards, which were secured in place by nails or using a tongue and groove method (Thurman 1984).

These four building techniques could be adapted to structures of various size. At Fort Michilimackinac, high-status artifacts indicate that individuals of better means most likely occupied slightly larger buildings even though the dwellings were constructed in similar *poteaux en terre* styles (Heldman 1991). Building size also depended upon function; most residences typically featured one room containing a fireplace with an additional room, if desired, to serve as a storage or sleeping area (Brazier 2013). Some inhabitants lived in row houses, like those found at Fort Michilimackinac (Heldman 1991). These were long one-story buildings with three to six interconnected rooms, with attics for storage (Heldman 1991). Interior walls were typically mere partitions, narrow in comparison with the sturdy thickness of the exterior walls. Outbuildings like barns and sheds were constructed using these techniques as well in the Illinois and Upper Country (Gums et al. 1991; Moogk 2002).

The use of these four construction styles varied from urban to frontier settings and over the duration of the French regime depending on the needs and desires of the builders (see Harris 1987: 138-141). However, these structures often left archaeological evidence in the form of fireplaces, postholes, and foundation walls along with the presence of artifacts deposited by their

occupants, allowing archaeologists to discern the techniques, size, and materials once used to shelter the *habitants* of New France.

Building Materials

The French used both local and imported raw materials to construct their structures. Early explorers and settlers were forced by necessity to employ local raw materials of wood, stone, and clay in their constructions (Sheldon Jr. et al. 2008). Great efforts were put forth, however, “to acquire, produce, and maintain products of Old World technology” (Nassaney 2017: 5). Through an extensive trade network built by the French in North America, construction materials not locally available such as window glass were imported from Europe (Jones and Sullivan 1989). Blacksmiths made iron hardware like nails, pintles, locks, keys, and hinges (Roache-Fedchenko 2013: 49).

Wood.

In New France, wood was readily available for French inhabitants to construct a variety of buildings and fortifications. An increase in population and skilled labor in addition to the need for permanent architecture in New France contributed to the diversity and complexity of French colonial structures (Loveland and Nassaney 2017). The type of wood (e.g., ash, beech, black walnut/butternut, birch bark, cedar, hickory, maple, oak, white pine) was dictated by the type of trees found in the immediate area and its use (DesJardins 2003; Gums et al. 1991; Thurman 1984).

Stone.

The French often employed stone to construct buildings in addition to wood. Stone could be found along riverbanks, in outcrops, or in glacial till. Suitable sources of stone were readily

available and different sizes served different purposes. Small foundation stones supported a wooden sill used in the more durable and permanent *poteaux sur sole* construction technique (Moogk 2002). Larger stones were used to form fireplaces that supported wattle and daub chimneys (Moogk 2002). If needed, stone could be modified to form building blocks of the appropriate shape and size. The use of stone in constructing structures was probably related to issues of permanence, security, and resource availability (Loveland and Nassaney 2017).

Clay.

Clay has been used as a binding agent throughout the ages in architecture. Clay can be shaped by hand and baked to fill a variety of needs. In New France, clay was mixed with water, soil, and straw, grass, or Spanish moss to produce *bousillage* to fill the interstices between upright posts or to form wattle and daub chimneys (Brazier 2013; Gums 2002; Mann 2008; Moogk 2002). The latter components of the mixture depended on the types of materials available in the area. For example, straw and grass were frequently used in the *pays d'en haut* and the Illinois Country, whereas Spanish moss appeared further south on the Gulf Coast and in Louisiana (Gums 2002; Moogk 2002; Sheldon Jr. et al. 2008).

Pierrotage.

Similar to *bousillage*, *pierrotage* was a common material used in the construction of buildings, specifically in the Illinois Country (Gums et al. 1991; Mann 2008; Walthall 1991). *Pierrotage* is a mixture of sand and crushed limestone that was used as insulation in walls made of two sets of boards or timbers (Moogk 2002). While *pierrotage* is a hard mixture, it can settle over time causing the boards to shift and the *pierrotage* to easily crumble and deteriorate in areas like the Great Lakes region where there are frequent freeze-thaw cycles (Crompton 2012: 200; Moogk 2002). Thus, the use of *pierrotage* was rare due to its easy deterioration as well as the

extra work required in making the material and trimming two sets of finished boards. This technique could easily be replaced by simply using thick squared timbers because wood was abundant in New France (Moogk 2002).

Window glass.

In the eighteenth century, window glass was made of sand, limestone, and soda, resulting in a bluish or greenish tint (Brown 1971). The thickness of the glass varied slightly due to its manufacturing method (Brown 1971; Jones and Sullivan 1989). French and English glassmakers were producing both broad and crown glass for window panes and these types of glass have been found at many eighteenth-century sites (e.g., Fort Michilimackinac, Fort Ouiatenon, Old Mobile) (Brown 1971; Lynn Evans, personal communication 2016; Gregory Waselkov, personal communication 2016; Jones and Sullivan 1989). The glass would have been transported across the Atlantic to New France from large production areas in Europe, and taken by canoe to forts and settlements in the interior of the continent (Jones and Sullivan 1989). Due to the long journey across turbulent waters, it was practical for glass to have been carefully transported as small panes, cut in diamond, triangular, and other shapes to prevent breakage in route (Brown 1971; Jones and Sullivan 1989; Moogk 2002). Margaret Brown (1971) has analyzed the glass collection from Fort Michilimackinac and suggests that after window glass was imported as small precut panes, it may have been, then, cut again for specific use at the fort. Archaeologists can distinguish window glass from container glass by its shape because window glass is flat while container glass is curved (Brown 1971). The presence of hand blown window glass at French settlements and fortifications provides insights not only on the appearance of its structures, but also on the extent of imported building materials at the site.

Hand-wrought nails.

Prior to the advent of machine-cut nails in the early nineteenth century, nails were made by a blacksmith and exhibit a distinctive shape—square in cross-section and tapered on all four sides (LeFever 2008). The frequency and style of hand-wrought nails can often reveal how they were used in the construction of a building because the size and shape of the nail shaft and head can vary depending on its intended purpose. Common nail types are rose head, L-head, T-head, square head, offset head, and large nail head with a small shank (Stone 1974). The rose head nail is “probably the most common nail type found on eighteenth century sites” (Stone 1974: 229). It has four to five hammer marks on the nail head with either a pointed or flattened shank end and was used for general construction purposes (LeFever 2008; Stone 1974). The use of larger nails, like the rose head nail type, was most likely beneficial when nailing hard or thick wood. Additionally, flattened shank ends are thought to help minimize the nail bending as it strengthened the shank end (Stone 1974: 231). The remaining nails types are thought to have more specialized functions. For instance, T-heads and L-heads were used for finer trim boards, stairways, and flooring (LeFever 2008; Mullaley 2011), though hand-wrought nails may have been used for a variety of tasks regardless of their style if they were in short supply.

Door and window hardware.

Various types of iron hardware were needed to secure doors and windows onto frames and to allow them to open and close. The flexibility in design and craftsmanship of hinges is a result of hand forging, allowing items to reflect local tastes and the ability of the blacksmith (Priess 2000). The use of wrought iron also allows repairs or alterations to be made if needed (Priess 2000). In North America, early iron hinges were typically surface-mounted types, occurring in a variety of sizes and shapes (Priess 2000: 50). Strap hinges are long and narrow,

tapering from the socket to the decorative finial (Priess 2000). French hinges frequently feature the splayed fishtail on either an untapered or slightly tapered strap or sometimes the bifurcated curved-scroll (Priess 2000: 51-52). Common European finials also include the spear-shaped and the fleur-de-lis (Priess 2000: 51-52).

Other metal fasteners include latches of various types. Hook and eye latches consist of simple hooks that were fastened onto doors, window shutters, or gates and latched onto metal rings in the frame to keep a door or shutter closed (Priess 2000; Stone 1974). If separated, they can be difficult to identify in the archaeological record (Priess 2000: 63). Door latch bars, thumb lifts, and latch bar catches were used to secure doors as well. Door latch bars were horizontally mounted on the door by a nail placed through the bar end that allowed the bar to move up and down (Priess 2000; Stone 1974). The thumb lifts were hinged on the opposite side of the door and permitted the lifting of the latch bar (Priess 2000; Stone 1974). Latch bar catches were driven into the door frame to act as a catch for latch bars (Stone 1974).

Locks.

Private property was often secured in locked buildings, trunks, or chests. There are three types of lock mechanisms: hasp locks, padlocks, and door locks (Priess 2000; Stone 1974). Hasp locks are typically used on objects with movable lids, such as trunks and chests, but they were also used on doors and gates (Stone 1974). These locks can be plain or highly ornamental. At Fort Michilimackinac, excavations have uncovered both rectangular and “shield” shaped hasp locks (Stone 1974: 198).

Padlocks are portable locks. Three varieties of padlocks have been found in French colonial sites that date to the eighteenth century: the half heart, the heart shaped, and the rectangular shaped lock with a pointed bottom (Priess 2000: 78-81). The half heart lock is a

common eighteenth-century type and has been recovered at the Fortress of Louisbourg and Fort Michilimackinac (Priess 2000: 79). Remains of the heart shaped lock have been found at Fort Michilimackinac, while the rectangular-shaped lock with a pointed bottom occurs at the Fortress of Louisbourg (Priess 2000: 80).

Door locks, such as stock locks and rim locks, are permanently fixed to the door and are commonly attached to the door's surface (Priess 2000; Stone 1974). Stock locks can only be operated from one side and are nailed or screwed to the door exterior (Stone 1974). To accommodate the lock, part of the exterior was cut out (Stone 1974). Rim locks consist of a main plate with an iron rim that encloses the lock mechanism (Stone 1974). This style of lock can either be made to operate on one or both sides (Stone 1974). While door locks are not often found archaeologically intact, their many parts can usually be identified (Priess 2000). Protective, ornamental shields or plates known as escutcheons cover keyholes and can be recovered through archaeology as well (Stone 1974).

Archaeological and documentary records indicate that a wide range of raw materials was used to create building forms in New France. Available technology, cultural practices, and the desired architectural outcomes dictated the use of straw, sticks, clay, wood, stone, glass, and iron, in various combinations. Information gathered on the domestic architecture present in New France can be used to suggest the types of buildings present at Fort St. Joseph as well as the techniques and materials that were employed by the residents. The methods, materials, and functions ultimately provide evidence of how *habitants* are using material culture to express their ethnic identity. The cultural interactions that took place in the St. Joseph River valley after the French settled there in the late seventeenth century provide a laboratory to investigate the extent to which cultural hybridity influenced French architectural forms.

Fort St. Joseph

Fort St. Joseph was an important eighteenth-century mission-garrison-trading post complex located near present-day Niles, Michigan (Brandão and Nassaney 2006; Peyser 1992). The complex was one of a series of trading posts the French established in the late seventeenth century to secure the interior of the continent by creating alliances with native groups (Brandão and Nassaney 2006; Nassaney 2008). Permanent settlements were essential for reinforcing those alliances. Fort St. Joseph was a relatively small but intensely occupied mission, garrison, and commercial center for much of the eighteenth century (Brandão and Nassaney 2006). Despite its importance to French imperial ambitions, documentary records provide little information on the built environment of the fort; no detailed maps, drawings, or building descriptions are currently known to exist (Brandão and Nassaney 2006). Thus, the appearances, construction techniques, and sizes of the buildings can only be ascertained through archaeological investigations.

French Jesuits were granted a tract of land for their mission in the area that became Fort St. Joseph in the 1680s (Brandão and Nassaney 2006; Peyser 1992: 43). In 1691, Governor General Louis de Buade, Comte de Frontenac of New France sent Augustin Legardeur de Courtemanche with a dozen soldiers to the St. Joseph River to build and command a fort (Nassaney 2008; Peyser 1992: 46-48). The relatively small but intensely occupied fort complex was strategically located along the St. Joseph River near the important St. Joseph–Kankakee River portage (Nassaney 2008). From this location, the French could control the southern Lake Michigan region, with the fort serving as a commercial, military, and religious center for almost a century (Nassaney 2008).

By the early eighteenth century, the post supported a commandant, a small garrison of ten to fifteen officers and soldiers, a blacksmith, an interpreter, and up to fifteen additional households (Brandão and Nassaney 2006: 65-66; Nassaney 2008; Peyser 1992). Historical documents such as marriage and baptismal records indicate that a Jesuit priest visited the fort regularly as well (Brandão and Nassaney 2006; Idle 2003: 149-154). Fort St. Joseph never became a strong military post even though it played an important role during the Fox and Chickasaw Wars (Brandão and Nassaney 2006; Peyser 1992). One account suggests that Fort St. Joseph was defended by a wooden palisade with an entrance gate on the north and south sides, enclosing homes for the commandant and his soldiers as well as storage buildings needed for the fur trade (Brandão and Nassaney 2006: 65). The palisade is thought to not have been very secure because “in 1695 the Iroquois Indians were able to put their guns through its gaps and shoot into the fort” (Brandão and Nassaney 2006: 65). If the attackers were able to get that close to the palisade then perhaps there were no platforms or bastions for defensive fire (Brandão and Nassaney 2006). Archaeological evidence of military fortifications or a powder magazine has not been found thus far.

Frequent interactions between Native Americans and Europeans occurred at the fort throughout the eighteenth century (Nassaney 2008). French survival on the edge of empire depended upon close cooperation with Native Potawatomi and Miami allies (Loveland and Nassaney 2017). Fort St. Joseph played a major role in the fur trade by providing European manufactured goods in exchange for furs trapped and processed by the Natives (Brandão and Nassaney 2006; Nassaney 2008, 2015: 164-196). This is exemplified by the fort’s high ranking (fourth) in volume of furs traded among all of the posts in New France in the mid-eighteenth century (Brandão and Nassaney 2006: 64; Nassaney 2008). While a storehouse has not been

found in the archaeological record at Fort St. Joseph, documentary sources indicate that some buildings at the fort were used to store trading goods and furs (Brandão and Nassaney 2006).

A payment voucher indicates that Commandant François-Marie Picoté de Belestre ordered the construction of a jail in 1750 (Brandão and Nassaney 2006; Peyser 1978: 140). The Crown paid the fort's blacksmith, Antoine Deshêtres, to provide the necessary ironwork and a lock for a ten-by-eight-foot square cut stone building (Peyser 1978: 140). Material evidence of this structure at the site is needed to determine if the construction of the jail was indeed completed.

In 1753, documentary evidence reported that the fort "contained 'fifteen huts which the owners call houses'" (Brandão and Nassaney 2006: 65). This report was consistent with a 1780 census of the French inhabitants' removal from the fort. The census specifies that fourteen households, totaling about forty-five settlers, were evacuated (Brandão and Nassaney 2006). Furthermore, the historical record reveals some information on the occupations and identities of a few of Fort St. Joseph's inhabitants including religious and military personnel, an interpreter, a blacksmith/gunsmith, voyageurs, and both French and Native women (Brandão and Nassaney 2006; Nassaney 2008).

The material remains found at the site provide information on the identities of the fort's inhabitants as well. An analysis by Kerr (2012) on personal adornment objects (buttons, buckles, tinkling cones, finger rings, religious items, jewelry, and wampum) suggests that French traders, Natives, and *métis* lived in the area that has been subject to excavation since 1998. Kerr (2012) identified adornment items indicative of French identity such as glass inset rings, French marine buttons, and religious objects in addition to items that represent the presence of Native peoples such as tinkling cones and wampum. An examination of the faunal remains by Hearn (2015)

indicates the importance of white-tailed deer at the site in both hide production and consumption practices. Both Kerr (2012) and Hearn (2015) conclude through their investigations that these material remains suggest cultural blending and mutual accommodation are occurring at the site, providing evidence for a multi-ethnic population.

Recent archaeological investigations of Fort St. Joseph have been oriented towards recovering evidence of structural remains to ascertain building size, function, and methods of construction in use at the site. Information collected thus far, along with associated artifacts, suggests the presence of several structures, probably for habitation, along the St. Joseph River (Brandão and Nassaney 2006; Nassaney 2008, 2015; Nassaney and Brandão 2009). Preliminary work by Nassaney (2015: 178-180) has identified two of these structures (House 1 and House 2) from architectural features found in association at the site. House 1 is defined by the presence of a fireplace, a section of a foundation wall, and two wooden posts; whereas House 2 is composed of a fireplace, a segment of a foundation wall, and an architectural beam, perhaps a sill or plate (Nassaney 2015: 179). More research is needed, however, to determine the presence and layout of other structures at the site, the construction techniques and materials used to build these structures, and how the fort's residents expressed identity through architecture.

Summary of Literature Review

Throughout New France, Natives and non-Natives were frequently interacting in the process of exchanging goods and building alliances. This intense entanglement among close allies affected the ways in which these fur trade participants were identifying themselves and others around them. To explore this dynamic process, historical archaeologists can examine the material culture left behind. Architectural remains are particularly informative because inhabitants construct their buildings in accordance to their needs and cultural values. Fort St.

Joseph offers an appropriate case study to examine architecture and how it was used to express identity due to the daily interaction between Native and French peoples resulting from the complex's role in the fur trade. Evidence from recent excavations can be used to determine how buildings were constructed at Fort St. Joseph and the messages they communicated.

CHAPTER III

METHODOLOGY FOR SITE FEATURES AND ARTIFACTS

It is the architectural features and materials left behind that provide evidence on how buildings were constructed, the identities of those who constructed and occupied the buildings, and the ways in which the buildings were used (Deetz 1977; Mullaley 2011). This chapter outlines the data set and methodology employed to analyze the architectural elements found among the excavated remains of Fort St. Joseph. Together, an investigation of the spatial relationships among structural features and architectural remains on the Fort St. Joseph landscape will shed light on its built environment and the social message the site occupants were actively communicating.

Methods Used for Site Features

To determine the architectural styles that were used at Fort St. Joseph, I will examine the structural remains (i.e. features) to make inferences about their sizes and the construction techniques used to build them. I will compare the overall sizes of the fireplaces, foundation walls, wooden posts, and postholes in addition to the sizes of the structural stones used to construct the fireplaces and foundation walls in order to discern any similarities and differences in the construction methods employed at the site. This information will be collected from the Fort St. Joseph field notes associated with twelve field seasons conducted from 2002 to 2016.

Once I have examined the architectural features, I will analyze the spatial relationships between features found across the site by drawing each feature out in plan on a large site map. The outlines of the buildings will ultimately be inferred from the structural features (fireplaces,

foundation walls, posts, and postholes) found through excavation. The depths (centimeters below datum) of each feature will be monitored closely when determining the association of these features. The purpose of this is to establish the contemporaneity of features that appear to be associated. From these features, I will be able to identify if similar construction techniques were used in each of the buildings at the site.

The function of the buildings may also be recognized from this analysis. To determine the buildings' use, I will first search for similarities at Fort St. Joseph in building sizes and layouts based on the outlines I propose. Similarities in size and layout will at the very least demonstrate the buildings were used in related manners, while discrepancies will provide evidence that they were not. I will then examine the types of features (e.g. trash middens, metal deposits, pits, concentrations of oxidized soil) found in and around the outlines that I propose for each building. The features found near these outlines may provide evidence for the functions of the buildings as well. By establishing the functions of the buildings, insights may be gained on the ethnic identities of its inhabitants. Documentary sources and archaeological remains that discuss and describe buildings and their functions in New France, specifically the Upper Country, will be used as well to help interpret the built environment at Fort St. Joseph.

Methods for Architectural Artifacts

Architectural artifacts will be examined to determine the types of materials used in construction by the inhabitants of the fort in addition to offering supplemental evidence for the techniques employed during construction. These artifacts include daub (*bousillage*), window glass, hand-wrought nails, and a variety of iron hardware found through excavation at the site

from 2002 to 2013.¹ This analysis will exclude artifacts found without a clear provenience (shovel test pits, surface finds, and underwater units) and those found in N36 E39 because of its isolated location on the site.

Individual Artifact Classes

Daub

To determine the extent of *bousillage* used in construction among the proposed structures to fill spaces between wooden posts and to build chimneys for the structures' fireplaces, I will examine the spatial distribution by weight (grams) of the daub, or baked clay, fragments used to produce this material across the site. Both the *poteaux en terre* and *poteaux sur sole* construction methods employed the use of *bousillage* as a building material (Brazier 2013; Moogk 2002). Its presence at each of the proposed structures will confirm the use of those techniques and its spatial distribution across the site may provide supplemental support in demarking the location of the structures.

Window Glass

The many fragments of window glass found at Fort St. Joseph will be examined to determine the spatial distribution by weight (grams) of the material across the site. This analysis will provide evidence for the ability of the *habitants* of each of the proposed structures to obtain this fragile commodity. As it can be difficult to identify window glass in the archaeological record because glass fragments are typically very small, varying in color and thickness, I will now define the criteria I will use to determine which flat glass fragments will be classified as

¹ When the artifact analysis for this thesis began, the 2015 and 2016 artifacts were not inventoried from the field. Therefore, the artifacts recovered from those two field seasons were not included.

window glass. The color of eighteenth-century window glass is often described as pale green or yellow-green, however Margaret Brown (1971) cautions against the use of color as a sole distinctive attribute for window glass for two reasons: 1) the color of glass is dependent on the materials used in its manufacture; and 2) humans see colors differently which could potentially lead to unintentional errors when deciding which fragments are indeed window glass. Thickness, however, can be used in conjunction with color to identify window glass. Generally, window fragments found at Fort Michilimackinac vary in thickness from 1.5 to 2 millimeters (Lynn Evans, personal communication, 2016), while individual panes from Old Mobile range from 0.85 to 1.55 millimeters (Gregory Waselkov, personal communication 2016). Though, one windowpane from Fort Michilimackinac was found to vary in thickness from 2 to 4 millimeters (Brown 1971). From these previous findings, I will classify flat glass fragments as window glass on the basis of the artifacts' color and thickness including fragments of flat glass that are transparent, varying in color from clear, clear/blue, to pale green/yellow-green, and ranging in thickness from 0.1 to 4 millimeters.

Hand-wrought Nails

The complete hand-wrought nails found at the site will be analyzed to determine the type of nails present as well as their spatial distribution by count across the site. The typology that Lyle Stone (1974) created for his analysis of the hand-wrought nails found at Fort Michilimackinac will be used to identify the types of nails present at Fort St. Joseph. By determining the frequency and style of hand-wrought nails at the site, I hope to reveal how nails were used in the construction of the newly proposed buildings at the site. The identification of T-head and L-head nails will be particularly informative because both types are thought to have

been used for more specialized purposes such as for nailing trim boards, floor boards, and boards used to construct staircases (LeFever 2008; Mullaley 2011).

Architectural Hardware

Iron hardware such as hinges, pintles, keys, escutcheons, hook and eye latches, and lock fragments found at Fort St. Joseph will be examined to identify the type of hardware found through excavation at the site based on previous identifications of similar eighteenth-century artifacts by Stone (1974), Hulse (1977), and Priess (2000). I will determine, if possible, the style, quantity, and context of each identifiable hardware artifact and spatially locate each on a site map to indicate their relationship to the features and proposed structures at the site. The styles and their quantity will then point to their availability and perhaps the extent of traditional French influences on architecture.

Methods Used for Spatial Distribution of Artifacts

To begin, the quantity of each artifact class will be determined for each unit at the site in order to determine their spatial distributions across the site. At Fort St. Joseph, the size of excavation units include 1 x 1 meter and 1 x 2 meter units. To standardize the length and width of these units, I will divide the 1 x 2 meter units in half so they become 1 x 1 meter units. If it was clear from the field notes or artifact tags which half the artifacts were found in, the artifacts will be designated as such. For instance, if a glass fragment was labeled N33 E8 N, then the glass fragment will be placed in the northern half designation. If it is unclear which half the artifacts were found in, then the total sum (count or weight) will be divided by two, which will become the value for both halves. For instance, if five glass fragments were found in N33 E8, totaling four grams, and the half in which these artifacts were found is unclear, the total weight of these

fragments would be divided into two, equaling two grams for each half of the unit. The units' depths of excavation vary as well across the site. To standardize this aspect, I will identify the volume of soil excavated from each of the units associated with the proposed structures.

An intra-site comparison among the five proposed structures will be conducted as well. For this comparison, I will place the proposed structure's layouts that I determine from the feature analysis on the site map and compare the density of daub, glass, and nails per cubic meter found in association with each structure. As the structures are thought to have been occupied by mixed families of French and Native descent (Kerr 2012), any similarities or discrepancies between the structures will shed light on the use of the materials across the site. The same methods of standardization used previously will be used for this comparison as well.

CHAPTER IV

ANALYSIS: RESULTS AND INTERPRETATIONS

This chapter will discuss the results and interpretations of my architectural analysis. I will begin by describing the architectural features and their spatial relationships. I will then suggest the possible layouts for each of the buildings thought to be associated with the fireplace features. From this analysis, I discern the types of construction techniques that were employed in the building of these structures and the buildings' possible functions. A discussion of the architectural artifacts examined will follow, highlighting the types of construction materials and hardware items used at Fort St. Joseph as well as their spatial deposition across the site. Lastly, I will summarize what these architectural elements can reveal about identity at Fort St. Joseph.

Structure Identifications and Interpretations

To date, excavations have located a series of five fireplace features, four of which have been interpreted as elements of residential structures based on previous work examining the personal adornment found amongst four of the fireplaces discussed in this study (Kerr 2012). In his analysis, Kerr (2012) examined the Feature 2, Feature 6, Feature 10, and Feature 14 fireplaces as well as Feature 5, which was previously thought to be a fireplace. The Feature 20 fireplace found in Structure 4 that is discussed below was not examined by Kerr (2012), adding to the significance of this study to interpret this building's function and the identity of its occupants. While the personal adornment objects (buttons, buckles, tinkling cones, finger rings, religious items, jewelry, and wampum) studied by Kerr (2012) specifically suggest that French traders, Natives, and *métis* lived in this area that has been subject to excavation since 1998, this

analysis below of the architectural features and artifacts will provide another line of evidence that can be used to discern the ethnic identities of the Fort's occupants.

The layout of two structures (House 1 and House 2) has recently been proposed from the spatial relationships of some of the fort's architectural features (Nassaney 2015: 178-180). After the reexamination of these two proposed layouts, they were used to approximate the layouts of the remaining three fireplace features found at the site thus far. Other features found at Fort St. Joseph were examined as well to determine if any features were indeed associated with the five fireplace features. Each of the five proposed structures will be described in detail, revealing information on the features associated with each, the structures' approximate size and orientation

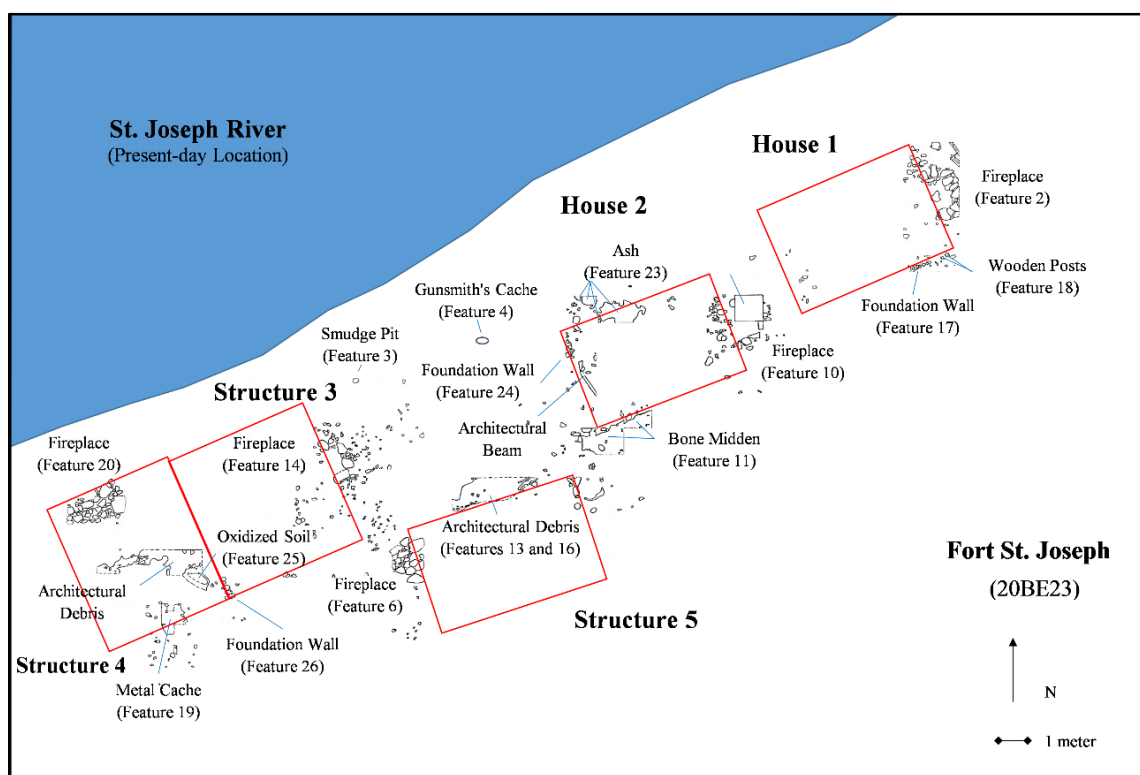


Figure 3. Buildings found at Fort St. Joseph. The red lines denote their proposed outlines. Map created by author.

if possible, and any additional information found during this analysis (Figure 3). A discussion of the construction methods employed at the site will follow.

House 1

House 1 appears as a fireplace (Feature 2) along the northeast wall with a stone foundation (Feature 17) and two upright posts (Feature 18) defining the southeast wall and southeast corner of the house (Figure 4). The fireplace is 2.25 by 1.30 meters in size and is

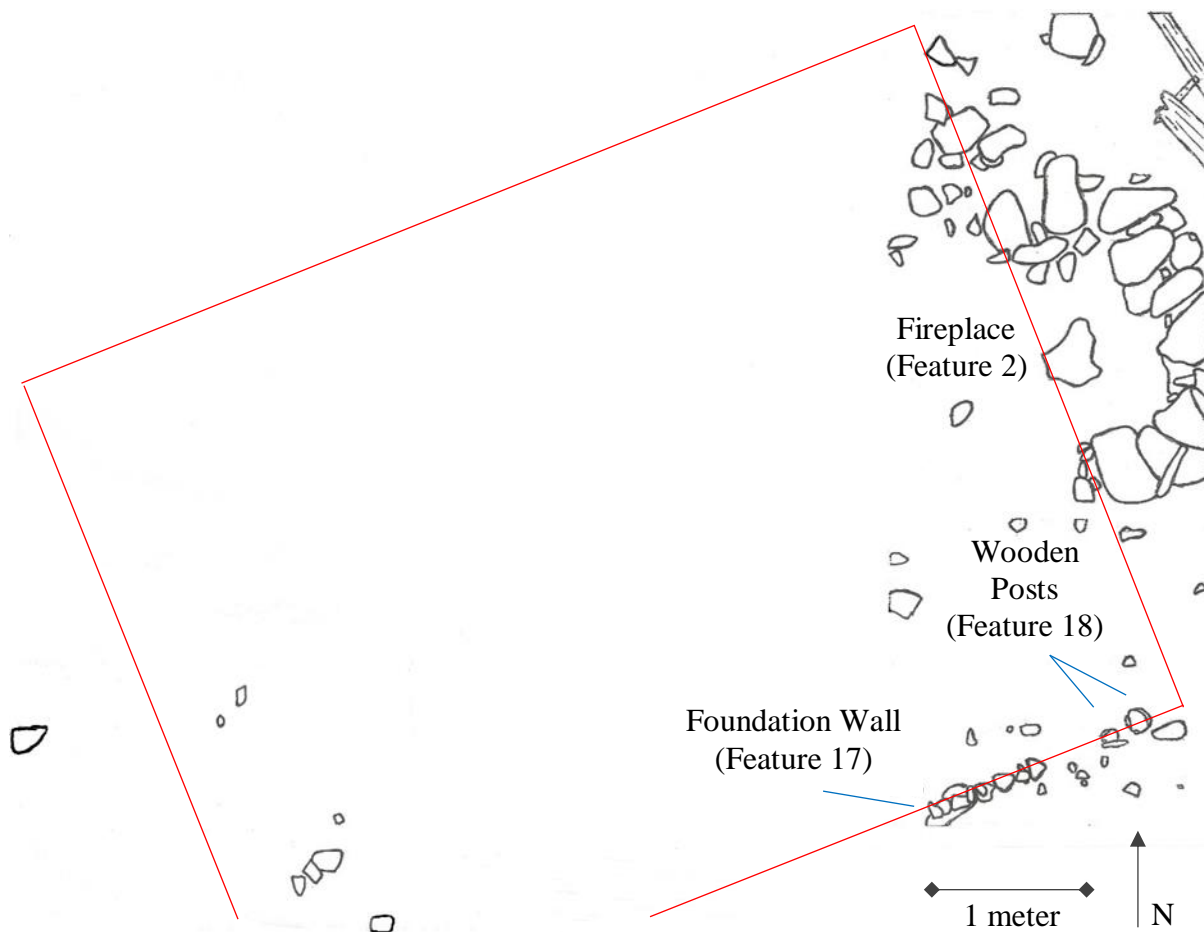


Figure 4. Plan view of House 1. The red lines represent the proposed layout of the building. Illustration created by author.

comprised of large stones (ten to fifty centimeters), opening to the southwest inside the structure. The foundation is at least ninety centimeters long, consisting of smaller stones (ten to fifteen centimeters) that rest on top of one another in a linear manner. A larger stone (thirty-eight centimeters) was placed underneath perhaps to fill in a low-lying area or to provide additional structural support. These stones were covered in mortar and intentionally placed by the constructors of this house. The extent of this foundation is unknown, as it has not been fully exposed at this time. The two upright wooden posts appear to be in line with the stone foundation and are interpreted as comprising the southeastern wall of the structure. The large post (fifteen centimeters in diameter) may be a load bearing corner post as it is placed 2.30 meters south of the fireplace. A soil core was used to determine that the post extends to a depth of just over sixty centimeters below the foundation wall. The smaller post (ten centimeters in diameter) is located just southwest of the larger post, perhaps to provide additional support. It appears to extend about thirty-four centimeters below the foundation wall. Archaeological evidence of the north and west walls has not been uncovered yet. However, due to the close proximity of the fireplace and foundation posts, it is safe to presume that the fireplace was located close to the center of the northeast wall rather than the north corner of the house. From this, the width of House 1 has been approximated to be about five meters, while the length remains unknown.

House 2

Southwest of House 1 lies another stone fireplace (Feature 10) associated with a stone foundation wall (Feature 24) and a hewn board (Figure 5). Together, these features make up House 2 and are remarkably similar to House 1. The fireplace is located along the northeast wall and opens to the southwest of the structure. It is made of large stones (fifteen to fifty centimeters)

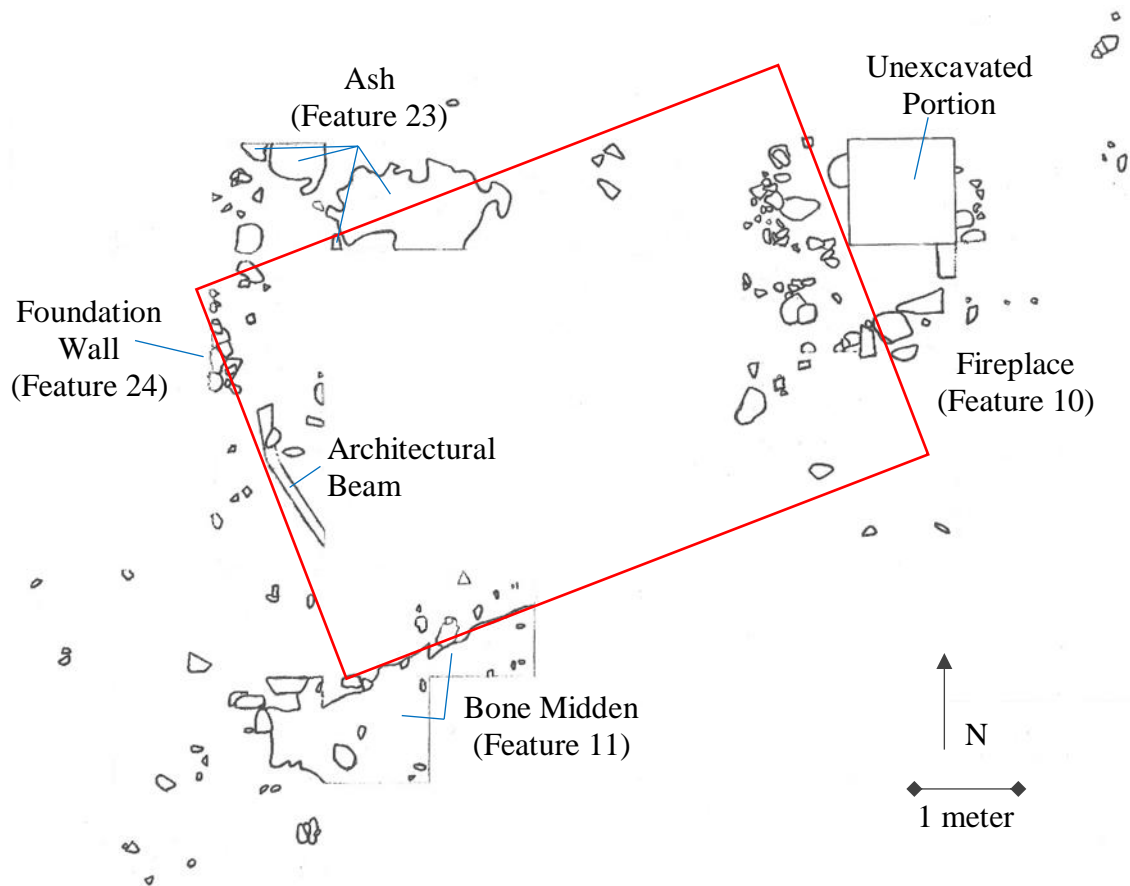


Figure 5. Plan view of House 2. The red lines represent the proposed layout of the building. Illustration created by author.

and is approximately 2.50 by 1.40 meters in size. The partially exposed foundation wall is at least one meter long, consisting of smaller stones (ten to twenty centimeters) that rest on top of one another in a linear arrangement along the southwest wall. A hewn board (about 140 by 12 centimeters) was found aligned with the wall immediately to the south. Its location suggests it may be a sill, perhaps for a door since it is located directly across from the fireplace. An ash pit (Feature 23) found where the northwest wall is thought to have been located may suggest the presence of a window where the home's residents could dispose of ash buildup from the fireplace. Recent excavations have revealed a large bone midden (Feature 11) south of the structure, possibly accumulated debris immediately outside the house wall. While there is no

conclusive evidence (wall foundations, wooden posts, postholes) for the location of the northwest and southeast wall, the presence of the ash pit and bone midden suggest that the walls would have been located within this perimeter. The approximate size for House 2 is therefore thought to be four by seven meters.

The size of House 2 is comparable with other French houses, individual houses within row houses, and individual rooms within barracks found throughout seventeenth- and eighteenth-century New France. At Fort Michilimackinac, Halchin (1985: 59-61) describes the individual houses within the row houses to be approximately seven by seven meters in size. The individual rooms within the east and west barracks at Fort Massac measure 5.5 meters in width and vary between 4.5 and 5.5 in length (Walthall 1991). At the site Mo20 in Morrison County, Minnesota, Birk (1991) unearthed two domestic structures of varying sizes. The Central Structure is the most comparable in size to House 2 as it is 5 by 7.5 meters, containing a main room (five by five meters) and a smaller section separated by a partition wall (Birk 1991). The South Structure was a single-room building, measuring 4.75 by 9 meters in size (Birk 1991). While the sizes of structures slightly vary from site to site, they are similar to the size of House 2 and the projected sizes of the remaining four buildings found at Fort St. Joseph.

Structure 3 and Structure 4

Located to the southwest of House 1 and House 2 lies the proposed Structure 3 and the proposed Structure 4 (Figure 6). These two structures are similar in some respects to the previously described structures. Structure 3 is composed of a fireplace (Feature 14) along the east wall made of large stones (ten to fifty centimeters). This fireplace feature is 1.90 by 1.10 meters and opens to the southwest. While this fireplace is slightly smaller than those in House 1

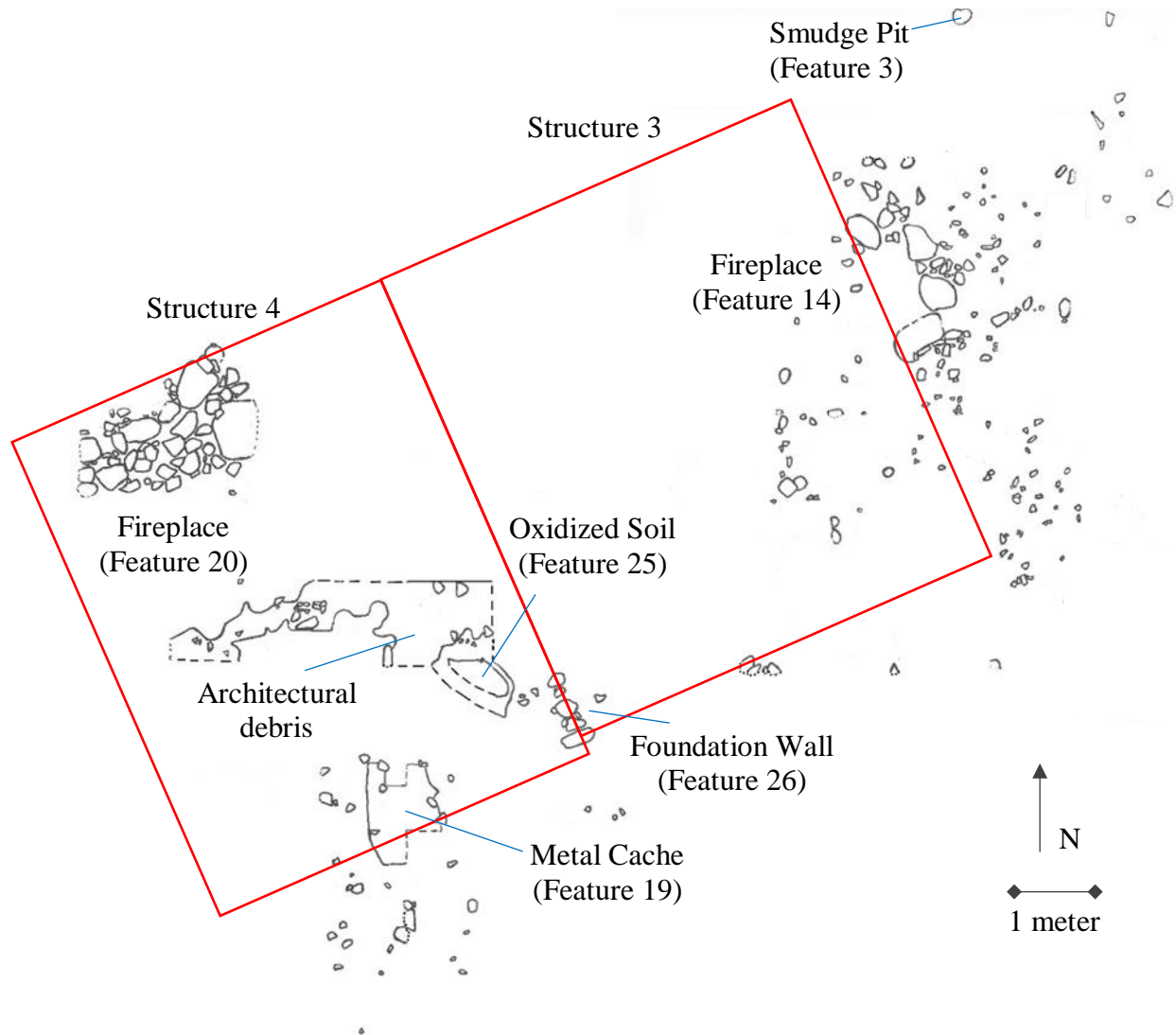


Figure 6. Plan view of Structure 3 and Structure 4. The red lines represent the proposed layouts of the buildings. Illustration created by author.

and House 2, its style, concentration of oxidized soil, and the structural stones employed in its construction are very similar. The proposed Structure 4 consists of a substantial concentration of large structural stones (ten to seventy centimeters) that are heavily mottled with oxidized soil, specifically near the south edge of the feature. This concentration, designated as Feature 20, has not been fully exposed, but it is at least 2.30 by 1.40 meters in size. Feature 20 has been interpreted as a fireplace, although its appearance is much different from the others found at the

site. The other fireplaces have a clear outline and opening, whereas this feature appears to be rectangular. Perhaps this is a result of the lower portion of the fireplace caving in on itself or this heated area may have functioned differently from the other fireplaces at the site. Feature 20 is also located along the north wall of the proposed Structure 4, which differs from the other three fireplaces described previously. The reasoning for this different appearance and orientation is ultimately unknown at this time.

In addition to the fireplace features associated with Structure 3 and Structure 4, there is a stone foundation wall (Feature 26) that could be associated with either or both structures. The stone foundation wall consists of five structural stones covered in mortar (fifteen to forty centimeters) with a few smaller stones (ten centimeters) placed around them. The foundation wall is at least ninety-five centimeters in length and may continue further north. Little about the function of this foundation wall is known, allowing many possibilities to arise concerning its relationship with the two structures. First, this foundation wall is located between the two structures and could be associated with the southwest wall of Structure 3 or the northeast wall of Structure 4. Second, the buildings may have been constructed at different times during the fort's occupation and the *habitants* may have wanted to reuse the architectural remains of one building to construct the other. Third, it is possible that these two buildings are connected and the foundation is the base of a partition wall between the two rooms. The third hypothesis is likely and can be supported by the types features found in and around the proposed layout of these structures, which ultimately suggest the presence of blacksmithing activities.

Payment records from 1739 to 1752 reveal that someone who could forge metal and repair guns lived at the fort and baptismal records further indicate that a blacksmith, Antoine Deshêtres, resided there as early as 1731 (Brandão and Nassaney 2006). Two archaeological

features (Feature 4 and Feature 19) are indicative of metal working at the site. Located about seven meter northeast of Structure 3's fireplace (Figure 3), Feature 4 is a large cache of more than a hundred gun parts, including twenty-two gun cocks, twenty-nine breech plugs, twenty-two frizzens, two lock mechanisms, related flintlock hardware, and other metal artifacts. Feature 19 is another large metal cache located just five meters south of the heated stone concentration feature in Structure 4 (Figure 6). This cache contains two ax heads, lead sprue, an iron chisel, a gun cock, a brass butt plate, a lead whizzer, a gun lock, iron screws, hand-wrought nails and nail fragments, lead shot, and unidentifiable iron and copper alloy fragments.

In addition, a smudge pit (Feature 3) is located just three meters north of the Structure 3 fireplace (Figure 6). This circular smudge pit is twenty centimeters in diameter and nine centimeters deep (Nassaney 2008). Smudge pits were commonly used by Native peoples to tan hides and this feature could represent hide processing activities (Binford 1967; Brandão and Nassaney 2006; Nassaney 2008). At Fort Ouiatenon, however, excavations have revealed a blacksmithing area represented by a packed earthen floor associated with three pits, iron tools, bone, and other artifacts (Tordoff 1980: 22). One contained a large amount of clay, ash, and iron oxide staining, while the remaining two contained charred corn cobs, which may have been used for tanning hides (Tordoff 1980). Gun parts, iron tools, and unidentifiable iron fragments were found in all three pits, suggesting they were used for refuse from forging activities (Tordoff 1980). The association of these features and artifacts at Fort Ouiatenon suggest that blacksmiths may have conducted a range of activities besides metalworking.

Accordingly, it is likely that Structure 3 and Structure 4 at Fort St. Joseph and the structures' associated features do represent the blacksmith's home and workshop. Workshops on the frontier are thought to average no larger than 7.5 by 7.5 meters (Roache-Fedchenko 2013:

70), which is comparable to the proposed size of Structure 4 (5 by 7 meters). The size of Feature 20 (2.30 by 1.40 meters) is also similar to the sizes of French forges identified by Roache-Fedchenko at Fort Michilimackinac (see 2013: 100-111). It is also not uncommon for the blacksmith's living quarters to be attached to their workshop (Roache-Fedchenko 2013: 80-81). For example, at Fort Pentagoet in Maine, the blacksmith's structure consisted of three rooms: a workshop, a storage space, and living quarters (Faulkner 1986). While Kerr's (2012) analysis did not include Feature 20, located within Structure 4, he did interpret that the area associated with Feature 14, within Structure 3, was a domestic space. Future analysis of the slag and various iron material found within Structure 4 is needed in addition to an intra-site comparison of these materials amongst the buildings identified in this thesis. If Structure 4 is the blacksmith's workshop, it would contain a higher quantity of slag and iron material than the other buildings at the fort.

Structure 5

The proposed Structure 5 consists of the Feature 6 fireplace (Figure 7). Little excavation has occurred around this fireplace feature compared to the others discussed above. It is made of large structural stones (ten to seventy centimeters) and is at least 1.80 by 1.40 meters in size. The sizes of the structural stones are similar to those in the other fireplace features. While this fireplace has been explored in a few 1 x 2 meter excavation units, the dimensions and precise orientation of the fireplace are unknown at this time. Due to the location of the oxidized soil found associated with this fireplace, it does appear that the fireplace may open to the east. This orientation correlates with the heavy amounts of architectural debris found to the northeast of the fireplace, designated as Features 13 and 16. Once more archaeological work is conducted around

this fireplace feature, the structural outline can be better determined and aid future researchers in placing archaeological excavation units in locations that will most likely reveal architectural

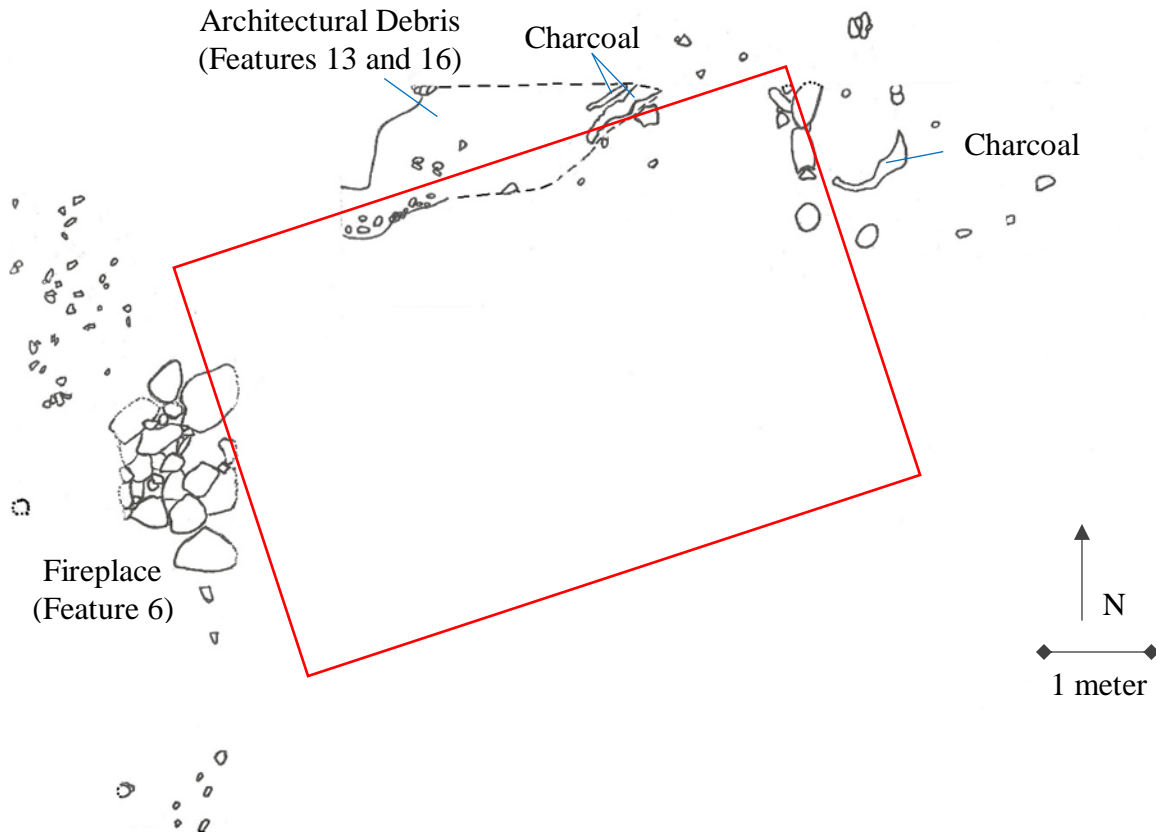


Figure 7. Plan view of Structure 5. The red lines represent the proposed layout of the building. Illustration created by author.

evidence.

The clustering of these buildings near the St. Joseph River and their contents suggest that these may represent some of the huts that sheltered fur traders as observed by the English prior to deportation. They were all built using a combination of the *poteaux en terre* and *poteaux sur sole* construction techniques, which is exemplified by the three stone foundations and two posts uncovered thus far at the site. The size, orientation, and other formal similarities between House 1 and House 2 suggest that these habitations conform to a regular template derived from French-

Canadian building traditions (Table 1). While slightly smaller in size, the appearance of the Structure 3 fireplace is also very similar to the fireplaces in House 1 and House 2 suggesting it was constructed with the same principles and design. Further excavation is needed to uncover additional architectural attributes of Structure 3, Structure 4, and Structure 5 as well as evidence for structures that have not been discovered on the site. This future research will help in determining the exact layout of the build environment and the range of variation in the size of Fort St. Joseph's buildings.

Table 1. Structures identified at Fort St. Joseph and their associated architectural attributes.

Fireplace Features	Location	Orientation	Size	Fireplace Stone Sizes	Associated Foundation Wall	Associated Posthole/s and Hewn Boards
House 1 (Feature 2)	Northeast wall	Opens to the southwest	2.25 by 1.30 m	10 to 50 cm	Feature 17: At least 90 cm long, 10 to 15 cm stones resting on and around one larger stone (38 cm)	Feature 18: Posthole 1- 15 cm in diameter; 60 cm in depth Posthole 2- 10 cm in diameter; 34 cm in depth
House 2 (Feature 10)	Northeast wall	Opens to the southwest	2.50 by 1.40 m	15 to 50 cm	Feature 24: At least 1 m, 10 to 20 cm stones	Hewn Board: 1.4 meters long by 12 cm thick
Structure 3 (Feature 14)	Northeast wall	Opens to the southwest	1.90 by 1.10 m	10 to 50 cm	Feature 26: At least 95 cm long, 15 to 40 cm stones with four 10 cm stones placed around them	X
Structure 4 (Feature 20)	North wall	Oxidized soil is located to the south	At least 2.30 by 1.40 m	10 to 70 cm		X
Structure 5 (Feature 6)	East wall	Oxidized soil is located to the east	At least 1.80 by 1.40 m	10 to 70 cm	X	X

The similarities in design, layout, size, and features present in House 1, House 2, and Structure 3 suggests that these buildings may have had similar functions. Given the personal adornment objects associated with these three buildings and Structure 5, I also interpret that these structures had domestic functions, serving as habitations for the fort's French traders, Natives, and *métis* occupants (Kerr 2012). Even though the adornment objects associated with Structure 4 were not examined, I believe that from the features present in and around the building, it is likely that it served as a blacksmith's workshop. An analysis of the architectural artifacts below will help to shed further light on the buildings' functions and the identity of their occupants.

Construction Materials Employed at Fort St. Joseph

At Fort St. Joseph, the French used both locally available raw materials and imported manufactured materials to construct their buildings using traditional Old World techniques. These materials emphasize the permanence of the buildings in contrast with the more ephemeral techniques and materials used in the construction of Native buildings (Loveland and Nassaney 2017). The archaeological record contains evidence for the use of wood, stone, clay, glass, and iron hardware in the buildings' construction at the fort. Wood was sourced from the immediate area to construct walls, sills, and roofs. The wooden sill in House 2 has been identified as white pine (*Pinus strobus*) (Katie Egan-Bruhy, personal communication 2016). Wood charcoal of ash, beech, black elm, walnut/butternut, hickory, maple, oak, white pine have also been found *in situ* at the site (DesJardins 2003). Both unmodified and modified pieces of wood were used in the construction of the forts' buildings. The wooden sill was intentionally modified which is evident by its squared-off nature. Log impressions found in pieces of baked clay, which will be further

discussed below, demonstrate that some wooden posts were not modified due to the circular imprints left in the clay.

The stones used in the foundations and fireplaces were most likely found in or along the banks of the St. Joseph River. The similarities in the size of stones used to construct wall foundations and fireplaces demonstrate that the builders chose stones for specific construction purposes. The large stones illustrated in Figures 4-7 were used as a base for the fireplace features. Mortar was found on many of the structural stones unearthed at Fort St. Joseph and used by the inhabitants to further secure the stones in place.

Clay—mixed with water, soil, and straw or grass to produce *bousillage*—served as a binding agent to fill the interstices of upright posts and to form chimneys. At Fort St. Joseph, there are close to ten thousand pieces of baked clay, or daub, varying in weight and size found through excavation. While I did not examine each piece of daub found at the site, Nassaney (2008: 303) has noticed that there are some “fist-sized pieces” present in the collection that “exhibit log and straw impressions, as well as white-washed surfaces suggesting that they represent chinking (*bousillage*)” used in the construction of *poteaux en terre* and *poteaux sur sole* structures (Figure 8). The log impressions found in the *bousillage* suggest that some of the



Figure 8. *Bousillage* found at Fort St. Joseph. Courtesy of the Fort St. Joseph Archaeological Project.

wooden posts used in the construction of these buildings were unmodified, or in other words, the posts were not squared-off. This coincides with the two circular wooden posts (Feature 18) in House 1.

The spatial examination of daub at the site indicates that this material does not generally accumulate around the buildings' fireplaces or walls as expected, with the exception of Structure 3 (Figure 9). Just under half of the daub found in association with Structure 3 is found in the unit near the building's fireplace (1043 grams total; 924.2 grams found *in situ*). This unit was not

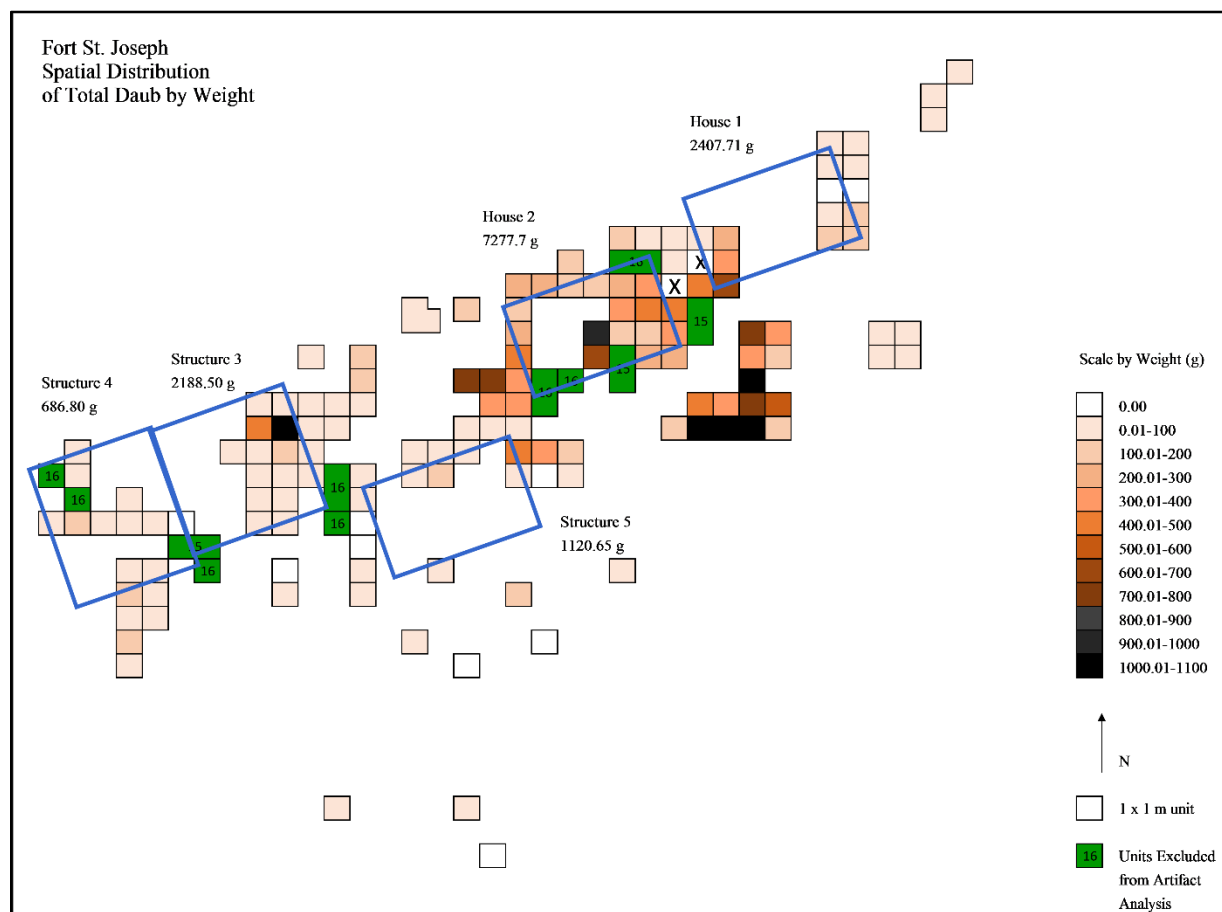


Figure 9. Spatial distribution map of total daub by weight found at Fort. St. Joseph. Map created by author.

excavated any deeper than a majority of the units at the site (fifty-five centimeters below datum), thus its high density may result from a chimney collapse of the Feature 14 fireplace.

The density of total daub found in excavation, measured in grams per cubic meter, is highest in House 2 compared to the other buildings (Table 2). Perhaps this high density is a result of the large concentration of daub in the center of House 2. Much of this daub however was not found *in situ* as 834.1 grams of the total 980.2 grams were found in the disturbed plow zone at the site. This disturbed zone resulted from “historic plowing following the abandonment of the Fort beginning in the 1830s” and contains a large amount of material culture contemporaneous with the fort’s occupation (Hearns 2015: 27; Nassaney 2008). The large concentrations of daub to the south of House 1 demark a large pit or filled in well feature.

Table 2. Density of daub found in relation to the buildings at Fort St. Joseph.

	House 1	House 2	Structure 3	Structure 4	Structure 5
Grams per Cubic Meter	264.00 g	582.22 g	224.46 g	105.99 g	119.73 g

Some materials like glass and iron were being produced in Europe and were transported along extensive trade networks that the French grafted onto pre-existing Native exchange systems. Just under two thousand window glass fragments have been found in excavations at Fort St. Joseph. These window glass fragments range in thickness from 0.3 to 3.4 millimeters (average 1.2 millimeters; standard deviation ± 0.37 millimeters) and provide evidence for the use of glass windows across the site (Figure 10). The most window glass, measured in terms of weight, found in a 1 x 1 meter square was 19.39 grams in the south half of N17 W7 (Figure 11). The presence of window glass at the site provides evidence for the ability of the *habitants* to obtain this fragile commodity.

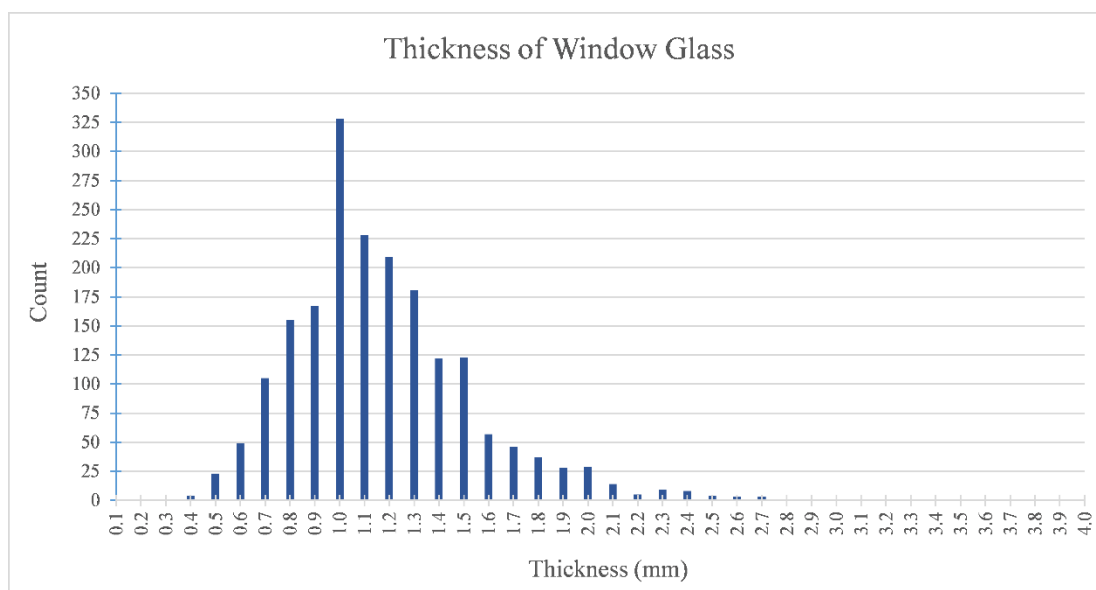


Figure 10. Thickness of window glass found at Fort St. Joseph. The average thickness of window glass recovered is 1.2 millimeters and the standard deviation is ± 0.37 millimeters, therefore sixty-eight percent of window glass found at the fort is between 0.83 millimeters to 1.57 millimeters thick. Illustration created by author.

The spatial distribution of window glass fragments was fairly uniform across the site and for the most part does not provide substantial evidence for the locations of the buildings' windows (Figure 11). The density of glass was measured in grams per cubic meter for each of the five buildings as well. House 2 has the highest density (9.63 grams per cubic meter) of glass per cubic meter out of the five structures (Table 3). However, near the proposed south corner of House 2 there is a high deposition of window glass fragments that are reflected in the building's density. These fragments do not represent the presence of a window at this location and were most likely found in a secondary context, as an eighteenth-century bone midden is located in this area, suggesting that the glass is found in secondary context.

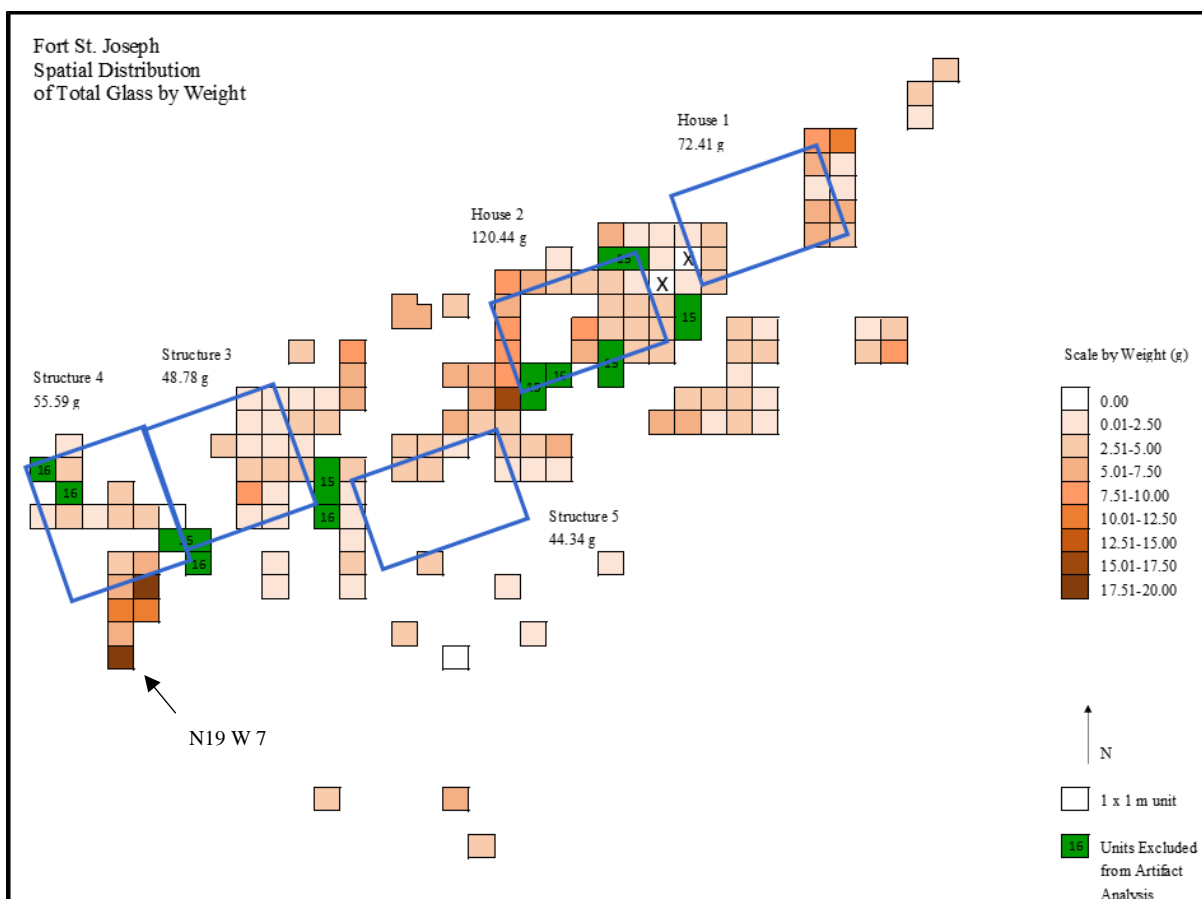


Figure 11. Spatial distribution map of total window glass by weight found at Fort. St. Joseph. Map created by author.

Table 3. Density of window glass found in relation to the buildings at Fort St. Joseph.

	House 1	House 2	Structure 3	Structure 4	Structure 5
Grams per Cubic Meter	7.94 g	9.63 g	5.01 g	8.58 g	4.73 g

Structure 4 has the second highest density of glass per cubic meter (8.58 grams per cubic meter) out of the five structures. A relatively high concentration of window glass is located along the south wall Structure 4. This suggests that either a window was located near this area or the remains of windowpanes were deposited in this location. If Structure 4 was associated with

blacksmithing activities, the location of these window glass fragments in addition to the iron cache (Feature 19) located along the proposed southern wall may indicate that this was a workshop area. In her analysis of blacksmithing activities at Fort Michilimackinac, Roache-Fedchenko (2013: 79) hypothesizes that workshops may have been located near windows to provide necessary light needed by the smithy.

French-style buildings required various types of iron hardware like hand-wrought nails, pintles, locks, and hinges that blacksmiths across New France were capable of producing. It is unclear as to whether the raw iron ore or the finished iron hardware was transported to Fort St. Joseph as the available documents do not discuss the manufacturing or trading of these types of materials at the site. At Fort Michilimackinac, a larger trading post complex, most metal brought to the fort came in the form of finished goods (Roache-Fedchenko 2013). Roache-Fedchenko (2013: 62) states, “Fort Michilimackinac was receiving iron goods from France from 1715 until shortly after 1736. After this period, iron may have been imported to the fort from either France or the St. Maurice Forges at Montreal” until the British occupation in 1761. From these findings at Fort Michilimackinac, we can presume that regardless of the blacksmith’s presence at Fort St. Joseph, finished products were most likely sent to the fort. This is not to say, however, that there were not occasional shipments of iron bars to the site for the blacksmith’s use in forging and repairing items for the fort’s residents and Native neighbors. Although, iron bars have not been recovered in the archaeological record.

Approximately two thousand hand-wrought nails and nail fragments have been found at the site thus far. Of these, 672 complete hand-wrought nails were examined and 455 nails were identified from the nail typology created by Stone (1974). Nail types recognized at the site include rose head with a pointed shank, rose head with a flattened shank, L-head with a pointed

shank, L-head with a flattened shank, offset head, T-head, large nail head with a small shank, and square head (Figure 12). It is not surprising that the most common type found at Fort St. Joseph was the rose head with a pointed shank end (237 nails) as Stone (1974) discusses the popularity of this type of nail for general construction (Stone 1974: 231). The presence of L-head and T-head nails at the site is unexpected because these types of nails are thought to have been used for more specialized purposes such as nailing finer trim boards, stairways, and flooring (LeFever 2008; Mullaley 2011). Identifying these types of nails at Fort St. Joseph provides strong evidence that the structures were not “huts” and had wooden flooring, lofts, and perhaps even two-stories.

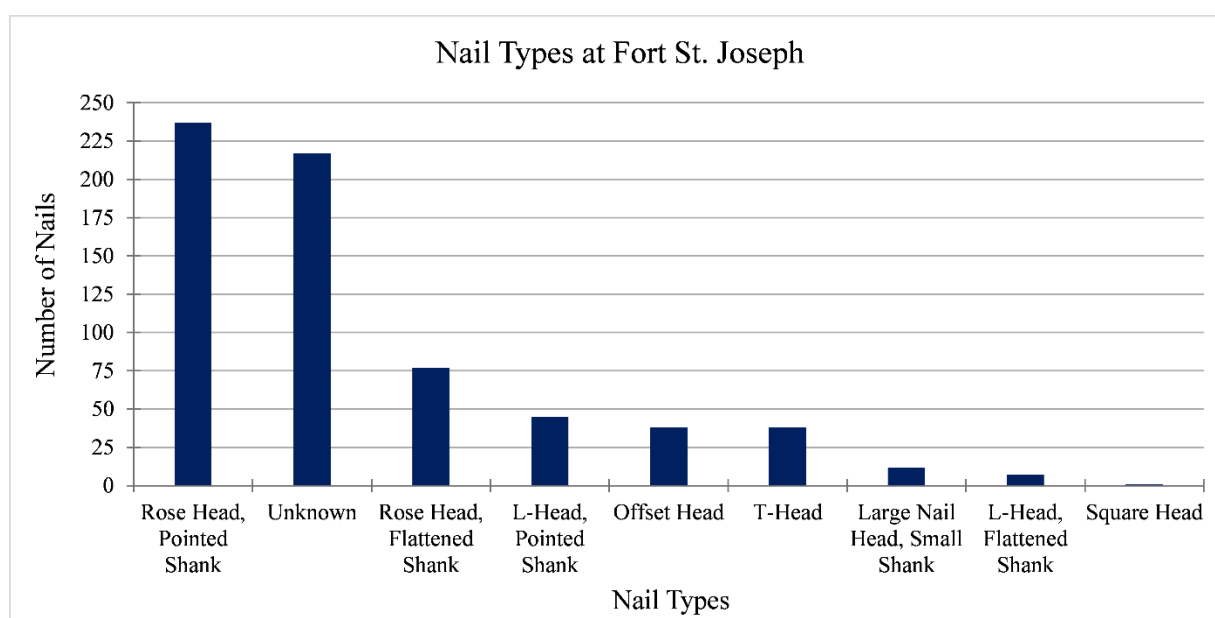


Figure 12. Nail types found at Fort St. Joseph. Illustration created by author.

The spatial distribution of complete nails across the site indicates that quite a bit more have been found in the vicinity of House 2 than the other buildings at the site (Figure 13). The density of nails per cubic meter was measured for each of the buildings and House 2 had the highest density at 15.52 nails per cubic meter (Table 4). This suggests not only that this house

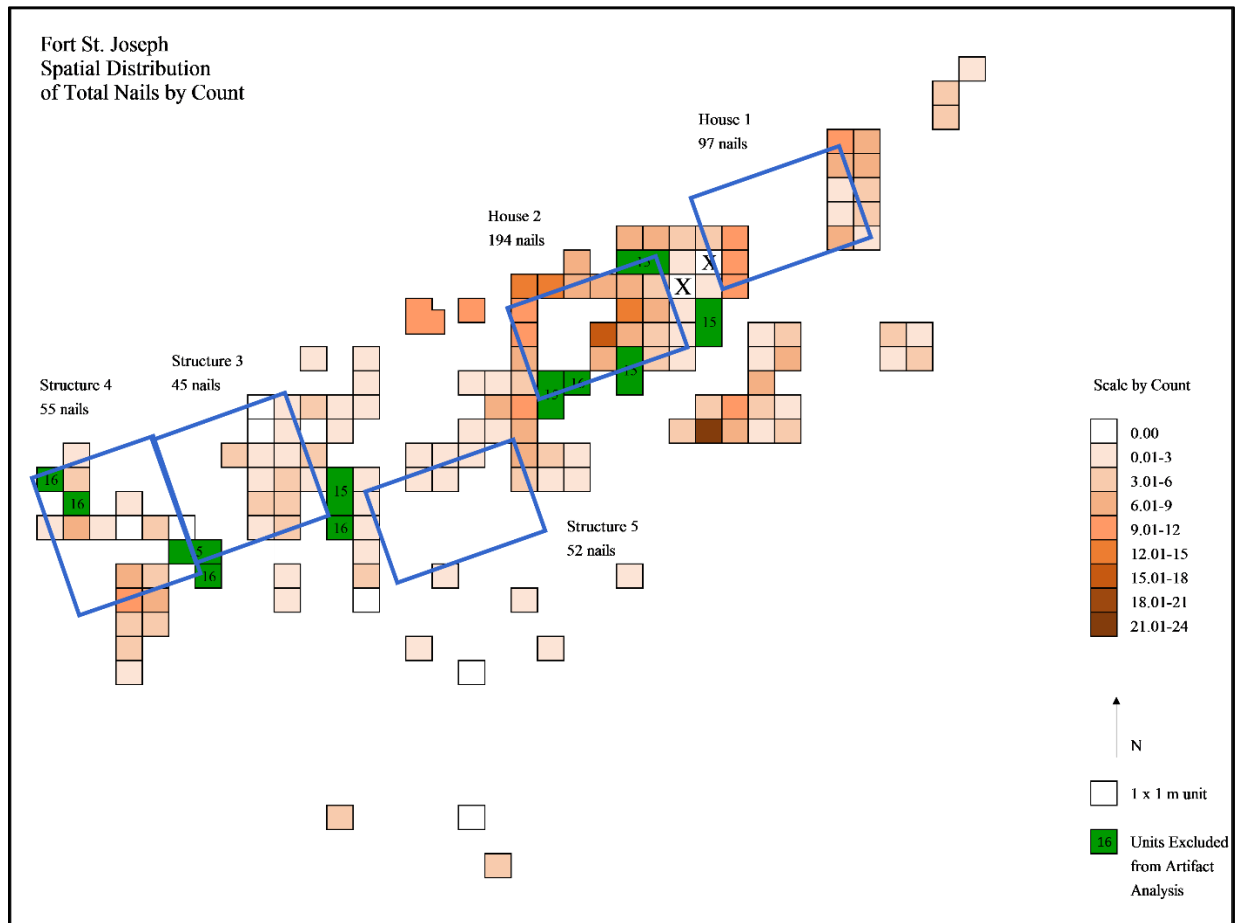


Figure 13. Spatial distribution map of total nails by count found at Fort. St. Joseph. Map created by author.

may have been built with more nails, but also that its occupants could afford this added expense. The high concentration of nails in the center of House 2 is similar to the high concentration of daub found in this same location. Again, the majority of the nails (15 of 17 total nails) unearthed in this unit were not found *in situ* as they were collected from the disturbed plow zone at the site. Perhaps, there was a low-lying area at this location, which caused the accumulation of these artifacts when the site was plowed. Nevertheless, the overall large quantity of nails and nail fragments collected through excavation at the site adds further evidence that the inhabitants were

constructing permanent residential structures as nails were used to firmly secure upright posts to the buildings' frames.

Table 4. Density of nails found in relation to buildings at Fort St. Joseph.

	House 1	House 2	Structure 3	Structure 4	Structure 5
Nails per cubic meter	10.64 nails	15.52 nails	4.62 nails	8.49 nails	5.56 nails

Architectural hardware such as hinges, pintles, hook and eye latches, latch bar catches, keys, keyhole escutcheons, and locks have also been found through archaeological work on the site (Figure 14). Several pieces of hardware have been found relating to locks as well as those

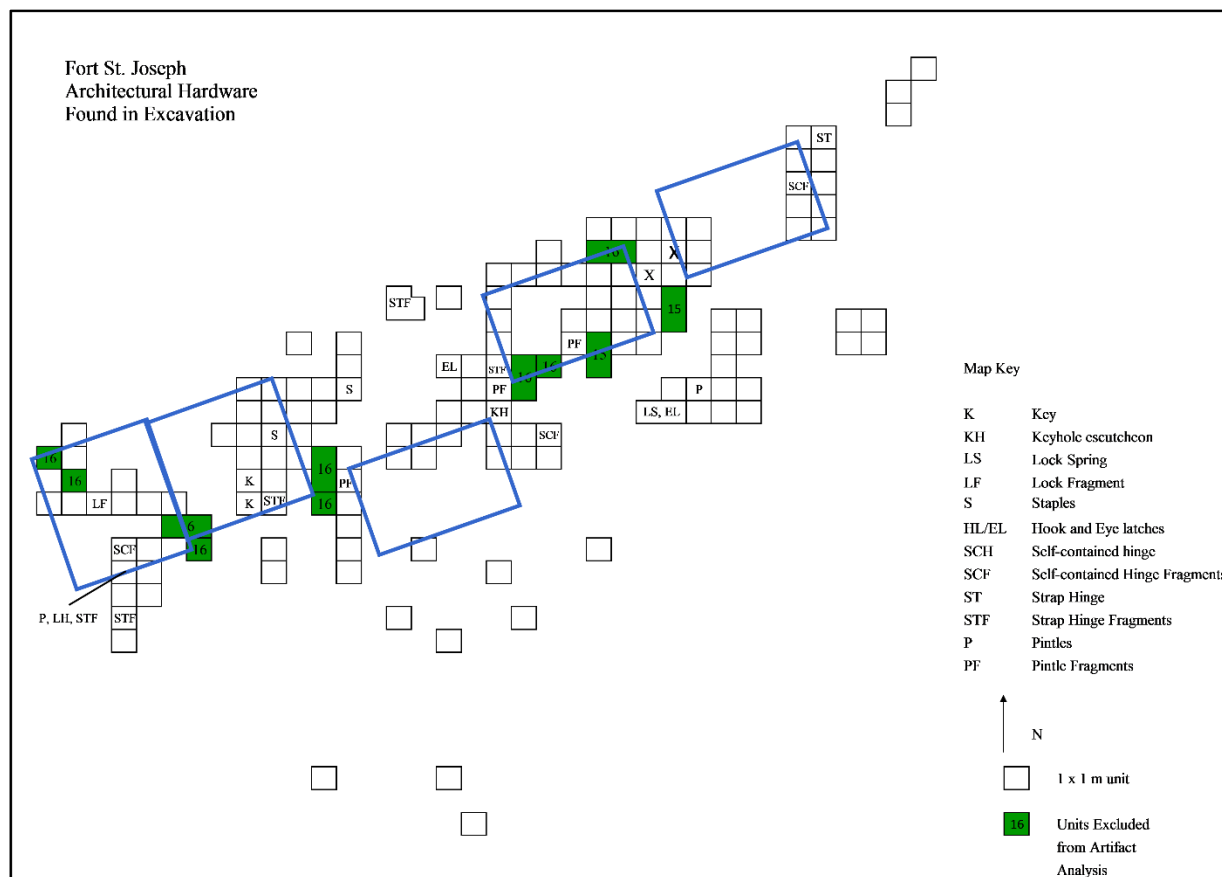


Figure 14. Map of architectural hardware locations at Fort. St. Joseph. Map created by author.

involved in securing windows, doors, and gates. Items relating to locks include two keys, two lock fragments, and one keyhole escutcheon. The two keys recovered were from the same 1 x 2 meter excavation unit located within the proposed Structure 3. Both keys may have been used in padlocks due to their small size and the absence of notches on their blades. One of the lock pieces has not been identified by type due its fragmentary state; however, the top of the keyhole is present. The other fragment is part of a lock spring used in rim door locks. The keyhole escutcheon is a complete plate coming to a point at the proximal and distal ends with the keyhole located in the center (Figure 15).



Figure 15. Escutcheon found at Fort St. Joseph. Courtesy of the Fort St. Joseph Archaeological Project.

Hardware related to securing windows, doors, and gates include three staples, one hook and two eye latches, three iron hinge strap elements from self-contained hinges, one complete strap hinge and five fragments, and two complete pintles and three pindle fragments. The staples uncovered may have been used as keepers for door latch bolts, although they may have also been repurposed for a variety of functions (Stone 1974: 235). The hook and eye latches were used to secure doors, shutters, or gates. The self-contained iron strap hinge fragments may have used for attaching shutters to window frames or gates to a post as self-contained hinges have been

described as being used for these purposes. The pintles would have been secured by driving or embedding the shank into the wood frame. None of the pintles required nails and screws to be attached to a frame. The strap hinge and hinge fragments were probably used on doors due to their large size. The complete strap hinge recovered from the site has a spear-shaped finial with four nails present in each of its nail holes. The nails are bent which may suggest that they laid flat against the back of the door that was about one and a half inches thick.

As Figure 14 demonstrates, iron hardware has been found across the Fort St. Joseph site. Most of the items examined were found near or within the proposed layouts for each of the buildings. This somewhat uniform distribution suggests that all of the five buildings employed elements of French-styled iron hardware and that the residents of each were choosing to do so. Documentary evidence compiled on the fort does not describe these hardware items being manufactured or imported to the fort (Peyser 1978). However, their presence indicates that they were either manufactured or more likely transported to the fort by request of the buildings' inhabitants, demonstrating the people living at the fort were actively selecting the French-style architectural hardware found in the archaeological record.

Summary

The architectural evidence recovered thus far derives from domestic functions² as opposed to barns, jails, powder magazines, and storehouses (Loveland and Nassaney 2017). The Fort St. Joseph inhabitants constructed these dwellings in accordance with their needs and

² Structure 4, the potential blacksmith's workshop, is a possible exception; however, more information is needed regarding its associated material remains before this can be conclusively determined. For the purpose of this discussion, I will not exclude Structure 4 as it employed similar construction techniques and materials as the other four structures and appears to be closely associated with the Structure 3 dwelling.

cultural values. They viewed their homes as shelters—places to sleep, conduct domestic activities, and store goods. Large quantities of calcined bone and adornment items found in association with the fireplaces of House 1, House 2, Structure 3, and Structure 5 indicate that these buildings served as habitations (Kerr 2012; Hearn 2015). Through this examination of the architectural features and artifacts found at Fort St. Joseph, it is clear that European-style building techniques and materials were employed to construct these structures that housed French occupants and their mixed families. The archaeological remains (remnants of foundation walls and wooden posts) found at the site demonstrate the use of the *poteaux en terre* and *poteaux sur sole* construction methods. The types of structural materials (wood, stone, *bousillage*, glass) and architectural hardware (locks, nails, pintles, hinges, latch hooks) found at the fort and among the five identified buildings provide evidence that the use of European materials and construction styles was important to the inhabitants of these buildings. These material remains stand in marked contrast to the more ephemeral structures that Natives constructed and used in the region and reflect different cultural attitudes to settlement patterns and land use practices in New France (Loveland and Nassaney 2017).

CHAPTER V

CONCLUSION

Archaeological evidence of structural remains provides important clues to the ways people constructed their buildings, the types of raw materials they used, and how they lived their lives. Building forms were influenced by intended function and provide information about the identities of their makers and users (Loveland and Nassaney 2017). At Fort St. Joseph, the *habitants* constructed their buildings using French *poteaux en terre* and *poteaux sur sole* methods and chose to import foreign materials such as glass and iron hardware for use in each of the five buildings discovered through excavation thus far. While some cultural aspects (adornment and foodways) of the fort's residents may provide evidence for ethnogenesis among Natives and French occupants (Kerr 2012; Hearn 2015), I argue that the architectural remains at this site indicate that the occupants were retaining characteristics of their identity through French construction styles.

Architecture remained a conservative aspect of *habitants'* culture despite the close social, political, and economic relationships between Natives and *habitants* at Fort St. Joseph. An explanation for the continued use of French construction methods and materials at the fort lies in the practicality and functionality of these styles in meeting the needs of the inhabitants. A supplies and services voucher details evidence for the structures' efficiency as this document records the request of a French-style structure to be constructed for a Native person residing in the area (Peyser 1978: 123₂ #11). This building request suggests that Native peoples in this area did not know how to construct this type of building and/or perhaps did not have an interest in learning. This voucher does provide evidence, however, that Native peoples did recognize the

utilitarian benefits of these types of structures. The permanence, functionality, and warmth provided by these *poteaux en terre* and *poteaux sur sole* buildings appealed to those residing in this region, resulting in the continued use of these architectural styles throughout the fort's occupation.

As demonstrated by this examination, frequent cultural interactions between Native and French settlers throughout New France did not eliminate all cultural practices and ideas that originally distinguished them from one another. In colonial contexts, it is important to recognize the many facets that compose and express a person's and a group's identity so that a better understanding can be gained on the ways in which non-Native and Native peoples actively and situationally chose to express themselves. It is through the alteration and preservation of a person's identity, reflected in material culture, that provides scholars with information on the complexity of colonialism.

Limitations can arise in a master's thesis due to choices in data selections, the scope of topics assessed, and other restrictions that are sometimes self-imposed. In this thesis, there are limitations as well. By choosing to focus solely on the architectural features and artifacts found at Fort St. Joseph, I limited the range of my study as it excluded the examination of other material culture found at site that could have also provided insights on identity. While faunal remains and personal adornment from Fort St. Joseph have recently been studied (Becker 2004; Kerr 2012; Hearn 2015), insights on identity could be gained through the examination of ceramics, glassware, and iron tools. The domestic materials could provide additional evidence on the identities and social status of the structures' occupants as well as providing information that could be used in seriation to discover a timeline for the buildings' use. An examination of the iron tools associated with activities or crafts (e.g. axes, chisels, files, fish hooks, hoes, knives) found at the site could provide occupational information for the fort's inhabitants, which could

then be compared to other eighteenth-century sites as well as the fort's baptismal record and the Fort St. Joseph Manuscripts (Peyser 1978). These documents indicate the names of some inhabitants at the fort as well as their occupations. A future analysis of these artifact types may confirm if these occupational roles listed in the historic record occurred at the site. Additionally, this analysis may provide evidence for other professions not discussed in the fort's historic record, contributing to our understanding and knowledge of everyday life at Fort St. Joseph.

My study is also limited by the architectural artifacts that I chose to exclude from my data collection. The artifact analysis does not include hand-wrought nail fragments, limestone, and other structural stones found at Fort St. Joseph. Limestone, an ingredient to make *pierrotage*, was excluded along with other structural stones because they have not been consistently collected at the site and I chose not to incorporate another variable to my analysis. Hand-wrought nail fragments were excluded early on from my analysis because I wanted to focus on the complete nails and identify the nail types present at the site. My study may have benefited if these categories of artifacts were added, but I do not believe they would refute my results and conclusions.

With each study conducted at Fort St. Joseph, knowledge is gained about the fort and its inhabitants yet more work is still needed. In the future, excavations should focus on continuing to explore the layouts that I have proposed here for Structure 3, Structure 4, and Structure 5. The purpose of these excavations would be to identify the exact placement of the walls for these structures, allowing researchers to discover building size and orientation, which can provide a better understanding of the function of the buildings and the identity of its inhabitants. Material evidence strongly suggests that French *habitants* were living in these buildings, specifically French fur traders, their mixed families, and perhaps the Fort St. Joseph blacksmith. However,

we do not know if the structures are contemporaneous or if they were in use throughout the entire occupation of Fort St. Joseph. Once the layouts for each of the newly proposed structures are confirmed, then an intra-site comparison of the material remains between all five the buildings at the site should be performed. This intra-site comparison should specifically include artifact classes that have not been subject to examination yet such as ceramics and glassware. It would be interesting and informative to understand how these material items were expressing identity at Fort St. Joseph.

The research presented here suggests that not all aspects of identity and culture are transformed as a result of colonialism and intense cultural interaction. Some aspects, in this case architecture, remain unchanged perhaps, as Mann (2008) argues, to provide a sense of identity and ethnic pride. The examination of material culture at sites throughout New France provide historical archaeologists with an opportunity to uncover the varying characteristics that made up the seventeenth- and eighteenth-century identities and culture of Natives and Europeans. Through this work, it is important to remember that while people may share some aspects of culture, they can be different and continue to successfully coexist with each other.

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