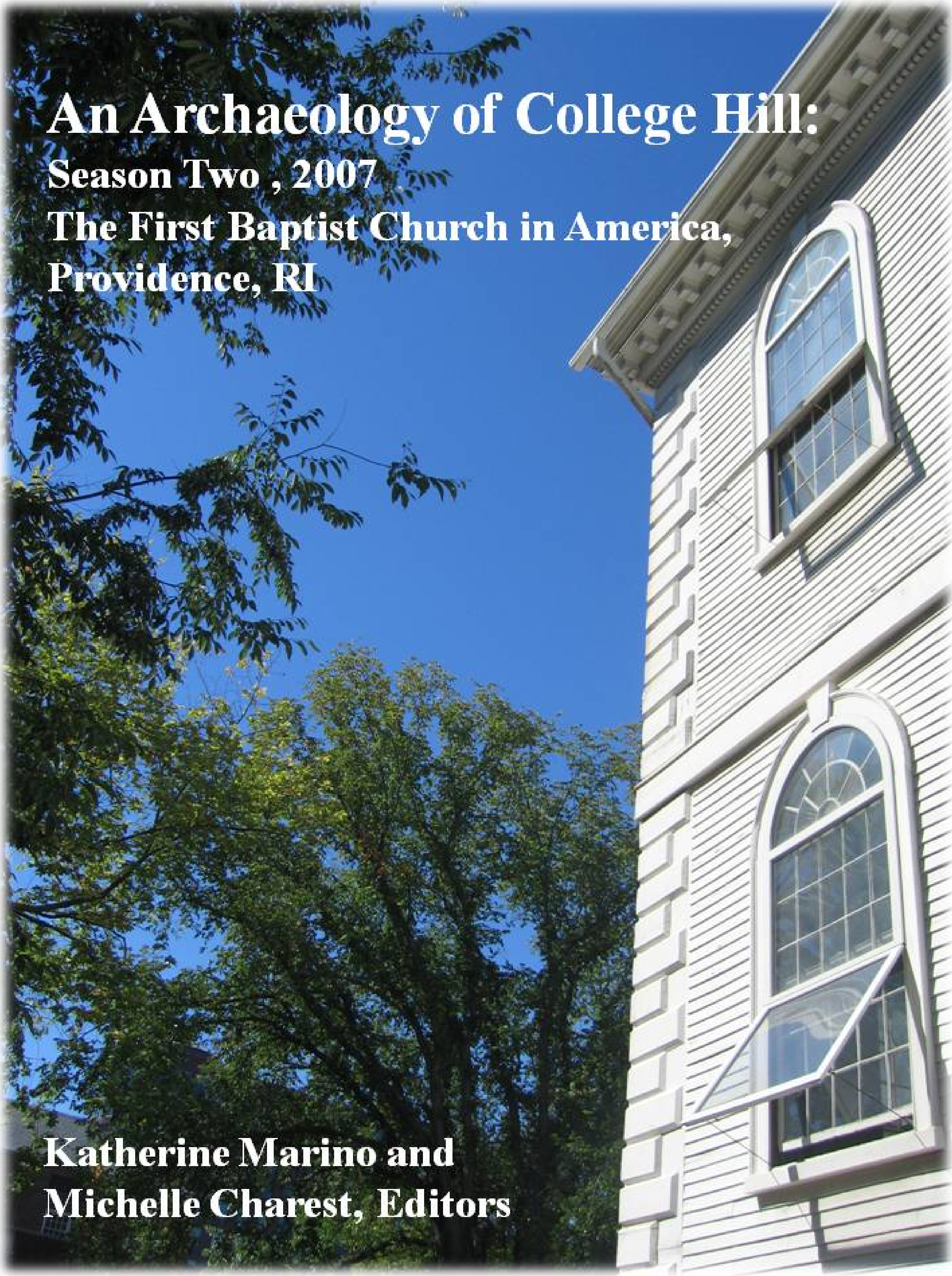
An Archaeology of College Hill:

Season Two , 2007
The First Baptist Church in America, Providence, RI



Katherine Marino and
Michelle Charest, Editors

An Archaeology of College Hill:

Season Two, 2007
The First Baptist Church in America
Providence, Rhode Island

Edited by Katherine Marino & Michelle Charest

Report of Field Investigations at the First Baptist Church of America, Providence, Rhode Island, undertaken from September through December 2007.

Katherine Marino, Principal Investigator

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Acknowledgements

As in 2007 many more people were responsible for the success of this project than whose names appear on the following pages. We would like to use this space to recognize them.

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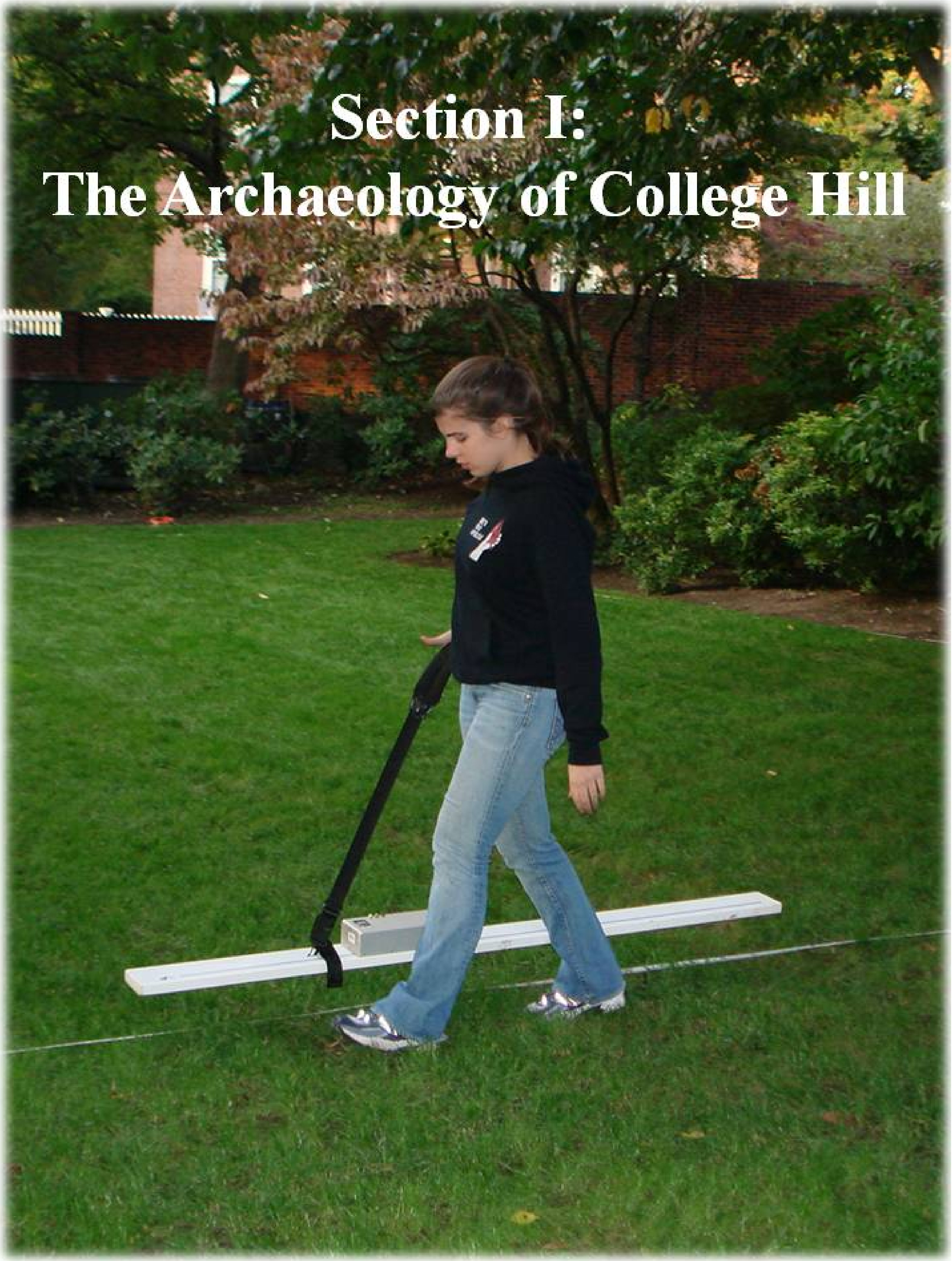
Finally, innumerable other friends, faculty, family members, staff and people of Providence provided suggestions and support. Although it is not possible to name each individually, to these and all those named above, we offer our sincere thanks and gratitude.

Section I:
The Archaeology of College Hill



Chapter 1

An Introduction to the Project

Katherine Marino

This publication is the culmination of the 2007 field season at the First Baptist Church in America in Providence, Rhode Island. From September until early November 2007 a group of thirteen Brown University undergraduates and two graduate students could be found every Monday afternoon on the lawn of the First Baptist Church (FBC) busily excavating the remains of over 225 years of continuous occupation of the spot by the Church congregation and the greater community of Providence at large.

This is not the first time this has happened. In the fall of 2006 the first excavation of the church grounds by Brown University occurred under the direction of Dr. Zachary Nelson and the shared aegis of the Artemis A.W. and Martha Sharp Joukowsky Institute for Archaeology and the Ancient World, and the Anthropology Department at Brown. Indeed, the results of that season set the goals and the tone for the 2007 season's work. (Nelson and Agoos, 2007 for the results of the 2006 fieldwork). Although one of the goals of the dig was to familiarize students with the methods of field archaeology in a convenient and real-life setting, this is not the only purpose of the work.

The project is part of a greater initiative being undertaken by The Joukowsky Institute called the Archaeology of College Hill in which the history of Providence is being explored from pre-colonial times forward. Brown is situated in the oldest parts of one of the most historically rich cities on the Eastern seaboard. The city of Providence was founded in 1636 by Roger Williams during his flight from religious persecution in the Mass Bay and

Plymouth colonies. The current streets along the east side of the river, ascending what is known now as college hill follow the original divisions of land allotted by Williams to the first settlers of the city (Urbanus, this volume). It is this area of the city that the Archaeology of College Hill is investigating to get a better sense of how the city has grown and developed over time, and how institutions such as Brown, the First Baptist Church and RISD have participated in this development and articulated with the city and its residents.

The first locus of investigation has been the First Baptist Church. In 2006 geophysical investigations and mapping were undertaken on the land surrounding the church, which still houses a vibrant and active congregation (Urban and Jacobs, 2007). These investigations were subsequently followed up by excavation seasons in 2006 and 2007, the latter being the subject of this volume. In fall 2007 we expanded the horizons of the project by carrying out a multi-method geophysical survey of the yard of the Nightingale-Brown House, a Brown owned property on Benefit St, several blocks south of the FBC (Urban, this volume). While the latter is currently owned by the University it must be emphasized that the FBC is an institution separate from Brown and the decision to allow student archaeologists from the University to excavate their up-to-that-point nice lawn was one which was both very kind, and indicative of the nature of the interaction between town and gown that this project is attempting to promote.

Providence's heritage is owned by no one person or group, and by undertaking to uncover it the Archaeology of College Hill has as a primary goal to share its findings with the entire Providence community and beyond, rather than to make any claims of possession on the part of Brown (Marino, Chapter 18, this volume). It is hoped that at every stage, from volunteering a space to excavate, to coming out to help the archaeologists dig, to contributing voices to the interpretation of the finds, that the greater community will be involved in this project. The work is meant to foster a greater sense of integration and community spirit with Providence and Brown; to highlight our collective past, rather than to enlarge any perceived gap between the two.

Bearing the above in mind it was quite a pleasant task to put this volume together. Each chapter is the product of primary investigation and research by the individual students who participated in the class. Taken as a whole, however, they begin to paint a picture which highlights the integrated nature of Providence as a community. If the results of last season seemed to point strongly in the direction of the churchyard as a place for communal feasting and picnicking, the results of this year answer the question of who may have been engaged in such activities (Nelson, 2007). The finds from the FBC 2007 season illustrate that the church, although always a place for religious services, was equally a focus for the social, civic, economic and intellectual lives of the citizens of Providence from the moment it took up residence in its current home in 1775. For instance, although Baptists have traditionally eschewed the use of tobacco, many fragments of pipe stems were found throughout the grounds surrounding the church, indicating the presence of other groups within the bounds of the church yard (Swain, Lucero, both this volume). Lucero's work on the social customs of the First Baptist Church congregation, though primarily based on historical documents rather than archaeological evidence, goes a long way to pointing out some of the potential disjunctures in understanding the space of the First Baptist Church as chiefly religious in nature, as opposed to a more community oriented place. Kunstadt's essay on the architectural parallels of the church building highlights ephemeral ties made manifest in the building itself to other communities beyond Providence and beyond the Bapstist denomination, while Harris's contribution connects the brickwork in the foundation of the church to other homes within the community of Providence (Kunstadt and Harris, both this volume). The church did not build itself, and the people who built and used it constructed their homes with similar techniques. They lived their lives in and around the church, lives which were in part shaped by the interactions which took place within that space. At the same time the shape of the meetinghouse and its grounds was influenced by the activities and beliefs of those meeting within it. The two are equally dependant on each other for their form.

The last part of the work is focused on connecting with various communities, be it through an exhibit of the artifacts recovered at the church or through using innovative digital media to make our work accessible to all. It is by the light of these last essays that much of the physical evidence recovered from the church yard has been understood. While all may not concur with the conclusions, it seems to me that the most important, and most obvious understanding of the church is as the nexus in a web of myriad relationships with the many and varied communities of Providence throughout time, and as a binding agent among them.

Works Cited

Harris, Stephanie. "Brick by Brick: An Analysis of the Bricks at the First Baptist Excavation." An Archaeology of College Hill: Season Two, 2007, at The First Baptist Church in America, Providence, Rhode Island. Ed. Katherine Marino and Michelle Charest. Providence, Rhode Island, 2008.

Kunstadt, Scott. "Meetinghouse & Church: The Influences and Motivations Behind The Architecture of The First Baptist Church in America." An Archaeology of College Hill: Season Two, 2007, at The First Baptist Church in America, Providence, Rhode Island. Ed. Katherine Marino and Michelle Charest. Providence, Rhode Island, 2008.

Lucero, Tyler. "'Mother Church': Understanding Providence's First Baptist Church as Social Institution in the Larger Community through Analysis of the Historical Record." An Archaeology of College Hill: Season Two, 2007, at The First Baptist Church in America, Providence, Rhode Island. Ed. Katherine Marino and Michelle Charest. Providence, Rhode Island, 2008.

Nelson, Zachary and Agoos, Zöe. "The Archaeology of Picnics" Picnic Archaeology: Archaeological Investigations at the First Baptist Church in America. Ed. Zachary Nelson and Katherine Marino. Providence RI, 2007.

Nelson, Zachary. "Conclusions." Picnic Archaeology: Archaeological Investigations at the First Baptist Church in America. Ed. Zachary Nelson and Katherine Marino. Providence RI, 2007.

Marino, Katherine. "A Brief History of the First Baptist Church in America." Picnic Archaeology: Archaeological Investigations at the First Baptist Church in America. Ed. Zachary Nelson and Katherine Marino. Providence RI, 2007.

--- "Digital Initiatives Utilized by the Archaeology of College Hill Project." An Archaeology of College Hill: Season Two, 2007, at The First Baptist Church in America, Providence, Rhode Island. Ed. Katherine Marino and Michelle Charest. Providence, Rhode Island, 2007.

Swain, Cindy. "Kaolin Pipes at the First Baptist Church." An Archaeology of College Hill: Season Two, 2007, at The First Baptist Church in America, Providence, Rhode Island. Ed. Katherine Marino and Michelle Charest. Providence, Rhode Island, 2008.

Urban, Thomas and Jacob, Robert. "First Baptist Church Geophysical Report." Picnic Archaeology: Archaeological Investigations at the First Baptist Church in America. Ed. Zachary Nelson and Katherine Marino. Providence RI, 2007.

Urban, Thomas. “Nightingale-Brown House Multi-method Geophysical Survey.” An Archaeology of College Hill: Season Two, 2007, at The First Baptist Church in America, Providence, Rhode Island. Ed. Katherine Marino and Michelle Charest. Providence, Rhode Island, 2008.

Urbanus, Jason. “A Brief History of Rhode Island and the Providence Plantations.” An Archaeology of College Hill: Season Two, 2007, at The First Baptist Church in America, Providence, Rhode Island. Ed. Katherine Marino and Michelle Charest. Providence, Rhode Island, 2008.

Chapter 2

A Brief History of Rhode Island and the Providence Plantations

J. M. Urbanus

It’s difficult to grow up in Rhode Island without a bit of a Napoleon complex. After all, its diminutive size often makes it the brunt of national jokes. Rhode Island is the country’s smallest state, having a landmass of a little over 1000 square miles. By comparison, Texas, the United States’ second largest state has 50 counties bigger than the state of Rhode Island, while “Little Rhody” could fit comfortably inside Alaska, the country’s largest state, over five hundred times. However, when it comes to a richness of history, this small state takes a back seat to nobody. The impact and the role that colonial Rhode Islanders played in the shaping and founding of the early United States remains unparalleled, even to Massachusetts, Pennsylvania and New York.

For the past two years, a team of archaeologists from Brown University has been investigating one of the more important historical sites in Providence, The First Baptist Church of America (FBC). As part of a course titled “The Archaeology of College Hill”, Brown students and archaeologists have been excavating around the property of the FBC in order to shed more light on the history of the building and the role it played in the developing urban community.

The First Baptist Church, as it stands today, was built in 1775 amidst the storm of the impending American Revolution. It stands as testament to the religious enlightenment, so fundamental to colonial Rhode Island, and as a symbol marking the most important era in Rhode Island’s history. The land on which the church stands, in between North Main and Benefit Streets, and where the current team of Brown archaeologists is working, is in the heart of Providence’s most historic district. It was on the streets and neighborhoods around the First Baptist Church that the ideas embracing religious tolerance were nurtured and where the city of Providence and the state of Rhode Island were born. In order to understand the archaeology of college hill, it is important to reflect upon important events early in Rhode Island’s history and to survey the landscape into which the FBC was built.

Rhode Island's geographic landscape played an undeniable role in shaping its current history. As mentioned above, Rhode Island is famous for its modest dimensions, having a maximum length north to south of 48 miles, and maximum width east to west of 37 miles. However, it has a coastline of over 400 miles (including the Atlantic Ocean and Narragansett Bay) contributing to its nickname: "The Ocean State." Like much of the northeast of the United States, this coastline was carved out by glaciers, as the state was completely covered during the Ice Ages. Sometime around 10, 000 B.C., the earth warmed enough for the last glacier to recede far enough to unveil Rhode Island in the shape we know it today.[1] The result of the movement and melting of glaciers was a large bay which cuts through the state, and was the lifeblood of early communities. Narragansett Bay (Figure 1) divides the state in two, the West Bay and East Bay (although the East Bay is significantly smaller). The Bay itself is scattered with around 30 islands, the largest of which is Aquidneck Island, where the towns of Portsmouth, Middletown and Newport are located. Much of Rhode Island's topography is defined by low coastal plains and rolling fields which are scattered with boulders and debris left over from the retreating glaciers. The northwestern part of the state is defined by an upland region which is rough and hilly, and home to Rhode Island's highest point above sea level. This is the rather modest Jerimoth Hill, which stands at 812 ft. and is currently owned by Brown University.

Prior to the arrival of the Europeans, Narragansett Bay and Rhode Island were home to a series of Native American tribes (Figure 2). The Narragansett Tribe controlled much of the area within the current Rhode Island borders, with the Niantic present in the southwest by the Connecticut border, the Nipmuck in the northwest and the Wampanoag along the East Bay. It is difficult to estimate native populations prior to the arrival of the Europeans, but perhaps there were around 25,000 living around the shores of Narragansett Bay.[2]

Evidence of the first Europeans in Narragansett Bay is shrouded in mystery and has been the topic of much controversy, folklore and scholarly debate. At the heart of this argument is the famous old stone tower that sits atop a hill in Newport's Touro Park (Figure 3). This architectural enigma is a circular stone building which rests on eight columns or pillars and is considered by some to be one of Rhode Island's biggest mysteries, attributed to

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[1] Jones (2006)
[2] Jones (2006) 114-115.

Norseman of the 12^{th} century, the Portuguese or early English settlers. The most recognized theory of its origin supports that it was built as a windmill in the 17^{th} century by Rhode Island governor Benedict Arnold (great-grandfather of the famous American traitor). The theory states that in 1675, a terrible storm destroyed Newport's only working windmill, and that Arnold, a wealthy man, contributed the funds to construct a new one, made of stone and modeled after a famous one he saw growing up in Chesterton, England. Evidence for this is documented in Arnold's will of 1676 in which he refers to "*my stone built wind-miln*."[3]

However, as early as the mid-19^{th} century, scholars were beginning to question its origins and sought alternative theories. Although the stone mill does draw some strong comparisons with the one in Chesterton, England, some scholars have been quick to point out characteristics which do not fit with the Arnoldist theory. If this building was constructed in 17^{th} century America, it would have been the most unique building on the continent. During this time, almost all buildings were made out of wood, particularly windmills, and the appearance of columns as architectural features was extremely rare before 1700. Furthermore, its design would seem to be one that would make it difficult to function as a windmill. The tower consists of an upper enclosed room with a fireplace that sits feebly on eight stone columns below, forming an open circular colonnade. If the millstone was placed within this open space, then there would be nothing to protect the ground meal from blowing around in the wind. However, the enclosed room on top would also be an unsuitable location for the grinding stone, since the fireplace would be extremely dangerous with the combustible dust produced by grinding grain.

In his publication of 1942, P.A. Means gives a detailed analysis of the tower's construction and arguments for its earlier origins, that of a Norse Church. The Norse theory states that sailors from Scandinavia had been visiting the American continent for centuries prior to Columbus's voyage and that Rhode Island was part of the Viking land called 'Vinland'. Proponents of this theory state that the tower was built in the 12^{th} century, possibly by Eric Gnupsson, and draw on several comparisons to early Norse round churches.

Most scholars today reject the Norse theory, as archaeological excavation has been unable to uncover anything conclusive to its existence prior to the 17^{th} century, but the tower

[3] Means (1942)

remains today an object of mystery and perhaps tantalizing proof of early Europeans visitors to Narragansett Bay.

Perhaps an even stranger object than the Newport Tower and further evidence of the early exploration of southern New England lies in a riverbank just to the northwest of Providence in southern Massachusetts. Located in the Taunton River near the town of Dighton, MA there is large boulder covered with strange inscriptions, which has been a subject of mystery since the 17th century (Figure 4). On one face of the large rock there are a series of almost indecipherable carvings which are of unknown origin. However, there is no shortage of explanations, as the Native Americans, Portuguese, Vikings, Phoenicians and even the Chinese have been theorized as being responsible for the stone. The most widely known theory is the one proposed by Brown Professor Edmund Delabarre in the early part of the 20th century and which still garners supporters.[4] After several years of studying the rock, suddenly something jumped out at him, which he had never noticed previously. Professor Delabarre claimed that within the jumbled mess of carvings he could clearly make out the date 1511 along with the words MIGUEL CORTE REAL (Figure 5). That discovery would lead to a new theory, which claims that Portuguese sailors visited Narragansett Bay in the early 16th century. Miguel Corte Real was a Portuguese explorer who set sail from Portugal in 1502 and headed towards North America. Incidentally, his brother Gaspar had disappeared in the previous year off the coast of Newfoundland and Miguel was determined to find him. Unfortunately, Miguel also became lost and was never heard of again, that is until Professor Delabarre's publication of the Dighton Rock inscriptions. Besides the date of 1511 and Corte Real's name, further evidence for Portuguese origins of the carvings may be seen in several symbols which have been interpreted as representing Portuguese crosses and coats of arms. Perhaps Miguel, after disappearing in 1502, made his way down the North American coast as far as Rhode Island, and set up the rock as a crude Padrão, marking Portugal's territorial claims. It is also Miguel Corte Real, along with other Portuguese sailors who are sometimes held responsible for building the Newport Stone Tower mentioned above.

Putting aside all mysteries and controversial theories of early visitations to Rhode Island, the first verifiable proof of a western explorer in the Narragansett Bay comes from the letters of the Italian adventurer Giovanni de Verrazzano. In 1524, Verrazzano, financed by

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[4] Silva (1971)

the French throne, landed in North America. After exploring what is today New York Harbor, he headed east towards New England and came across a small island. He named the island Luisa, after the queen mother of France, and describes it as a '*triangular-shaped island…similar in size to the island of Rhodes.*'[5] Verrazzano's triangular island is most likely what is known today as Block Island, however his mention of the island of Rhodes may have contributed to the naming of the state as Rhode Island. Verrazano then sailed into Narragansett Bay and anchored off the coast of Newport for fifteen days to explore the Bay. He was thoroughly impressed by this new land and detailed his interactions with the Native Americans,

> We saw about boats full of people who came around the ship uttering various cries of wonderment. They did not come nearer than fifty paces but stopped to look at the structure of our ship, our persons, and our clothes; then all together they raised a loud cry which meant that they were joyful…These people are the most beautiful and have the most civil customs that we have found on this voyage. They are taller than we are; they are a bronze color, some tending more toward whiteness, others to a tawny color….their manner is sweet and gentle.[6]

Coincidently, maps compiled from Verrazzano's voyage might indicate the location of the famous Newport Tower, lending substance to the pre-colonial theory for its origins, although the evidence is disputed. Today, the bridge connecting mainland Rhode Island to the island of Jamestown in Narragansett Bay is named after Verrazzano, honoring the first documented visit of European explorers into the territory of Rhode Island.

If the Native Americans of Narragansett Bay originally greeted the Europeans with a welcoming attitude in the 16th century, their attitudes would change in the following century as more and more visitors arrived in New England. The first permanent English settlement in the region was founded in Plymouth, Massachusetts in 1620, followed closely after by the settlement of Boston in 1630. It is impossible to separate the early colonial history of Rhode Island from that of Massachusetts, since the events that would take place in that state would ultimately lead to establishment of Rhode Island.

[5] Adapted from a translation by Susan Tarrow of the Cellere Codex, in Lawrence C. Wroth, ed., The Voyages of Giovanni da Verrazzano, 1524-1528 (Yale, 1970)
[6] Tarrow (1970)

By the early 17th century, the religious situation in England was fraught with turmoil, as vocal minorities began to question the authority and direction of the English church. Small groups of frustrated parishioners began to seek alternatives and ultimately they looked in the direction of North America. The new continent could not only provide valuable economic opportunities but a place to practice their religion as they envisioned it and free from the restraints they faced in England. It is for these reasons that English settlers began to flock to New England in the first half of the 17th century.

The Puritans of Massachusetts were defined by their strict religious discipline, in which failure to adhere to their principles resulted in harsh punishment and banishment from the community. When they arrived in the New World at Boston, under the leadership of John Winthrop, they established what was essentially a Theocracy, in which there was a strict alliance between church and state.[7] It was into this atmosphere that Rhode Island's founding father Roger Williams (Figures 6a & 6b) arrived in 1631. He would eventually ignite a movement which would reshape colonial New England and establish the principle which is defined in the First Amendment to the United States Constitution; the freedom of religion.

Williams was not part of the original migration of Puritans to Massachusetts but set sail the following year in 1631. He born in England around 1603 and educated at Pembroke College, Cambridge University, where he excelled in languages. He soon became an ordained minister in the Church of England, but found himself sympathizing with the Puritan movement and their call for reforms in the Anglican Church.[8] When Williams arrived in Massachusetts, he was at first welcomed by the Puritan communities, since he had met many of the church leaders in England, but he would soon become a controversial figure, criticizing the church and many of their fundamental ideas.

Williams' stay in Massachusetts was a short one, which saw him bouncing around between the colonies of Boston, Plymouth and Salem as he gradually fell out of favor. After brief stays in Boston and Salem, Williams eventually landed a position as a minister in Plymouth. It was here that he first encountered the native Wampanoags and Narragansetts and forged his strong relationships with the Native American peoples that would come to define his personality. Williams interacted frequently with the Wampanoags, even learning

[7] Richman (1908)
[8] McLoughlin (1978)

their native language, on which he would later publish a book, *A Key into the Language of America*. It was in Plymouth that he first began to question colonial practices concerning Indian lands, arguing that the King of England had no authority to seize and grant land, but that it must be purchased directly from local tribes, as they were the rightful owners. This concept was extremely controversial at the time, making him an unpopular figure in Plymouth, so he eventually departed and headed back to Salem.

It was in Salem that the firestorm surrounding Roger Williams reached its pinnacle. After spending a few years in the various Massachusetts colonies, he became an outspoken opponent of church practices. Among his many criticisms was the church's involvement in state affairs. He argued against the church's custom of punishing its members for missing mass and rallied against religious conformity, noting that religious beliefs cannot be forced upon an individual. The Puritan authorities eventually had enough of Williams' blasphemous statements and he was brought to trial for 'religious crimes' and heresy. He was soon convicted and sentenced to banishment in England. However, Williams managed to escape his would-be captors in the middle of the night and headed south in the dead of the New England winter of 1636.

Relying on his good relationship with the Native Americans, Williams headed toward what is now Rhode Island where he and several of his followers were granted land in East Providence. Once again, his stay there would be short lived, as he was forced to leave. The land that he had settled on was technically still within the bounds of Plymouth colony, so fearing he would be extradited to Massachusetts, Williams paddled across the Seekonk River into unchartered territory.

The story of Roger Williams' arrival in Providence is one that is steeped in folklore. According to legend, as Williams crossed the Seekonk, he was met by a band of Indians standing on a rock on the far shore (Figure 7), who greeted him with the phrase, "*What Cheer, Netop* (friend)?."[9] Williams stepped ashore onto a large slate outcropping that jutted out into the river to greet his welcomers. Although, the slate rock itself is no longer visible today (it is said to have been accidentally blown up in the 19th century), Roger Williams' original landing spot is still commemorated. There is a small park, aptly named Slate Rock

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[9] Simister (1968)

Park or sometimes What Cheer Square, off of Gano Street on the East Side of Providence that is marked by a monument with the inscription (Figures 8a & 8b),

> BELOW THIS SPOT THEN AT THE WATER'S EDGE STOOD THE ROCK ON WHICH ACCORDING TO TRADITION ROGER WILLIAMS, AN EXILE FOR HIS DEVOTION TO FREEDOM OF CONSCIENCE, LANDED 1636.

Incidentally, during the late 19th century, pieces of the slate rock were collected as souvenirs. Today, inserted into the back of the pedestal that supports the statue of Bruno the Bear on the main green of Brown University (Figures 9), there is a piece of that rock accompanied by the words, "*This is a piece of the slate rock on which Roger Williams landed….May his spirit live in Brown men*."

Roger Williams did not found his settlement at Slate Rock Park. Instead, taking the advice from his Narragansett friends, he sailed down the Seekonk River, around Fox Point and up the Providence River to the confluence of the Moshassuck River until he found a decent location beside a fresh water spring on the eastern bank. It was at this spot, off of North Main Street, which is currently commemorated by Roger Williams National Memorial (Figures 10a & 10b), where the first town of Rhode Island was founded. Williams soon thereafter was granted the tract of land by Canonicus and Miantonomi, sachems of the Narragansett tribe, and wrote:

> I, having made covenantes of peaceable neighborhood with all the sachems and natives round about us, and having in a sense of God's merciful providence unto me in my distresse, called the place Providence; I desired it might be for a shelter for persons distressed of conscience.[10]

The land on which Providence was settled was beneficial for its strategic location. It was located at the head of Narragansett Bay, providing it with easy access to the Atlantic Ocean, while three important rivers joined and emptied into the Bay in its vicinity. Positioned between the two most influential Native American tribes, the Narragansetts on the West Bay and the Wampanoags on the East, important trade routes criss-crossed through the city, heading to other parts of New England. Some of these old Indian paths are still perceptible in the street plan of present day Providence (Figure 14). One of these, the Narragansett or

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[10] McLoughlin (1978)

Pequot Trail, lead from southern Rhode Island and entered Providence from the southwest, crossing the river at a well-known fording point, which is currently the location of the Weybosset Bridge in Providence. This path then turned north and followed the direction of present day North Main Street, on which Roger Williams' settlement was located. Originally, there was only one path heading east over College Hill and this was the old Wampanoag trail, which would have taken the course that Meeting Street does today.[11] One more Indian trail, entered Providence from the southeast, where India Point Park is located, ran north for some distance until it veered off to the west, following the course of Power Street until it reached the Providence River. From there, it also headed north and followed the course which South/North Main Street takes today.[12] It is interesting to note the proximity of these old Indian trials in relation to The First Baptist Church, which was built near the major crossroads of traditional movement.

Roger Williams' original settlement consisted of about 5-6 families, but a decade later, the population may have reached 250 inhabitants.[13] A map of Providence in 1664 shows the city's early configuration (Figure 11). One main street ran along the waterfront, Towne Street (now North/South Main) with rectangular family plots of land running parallel from Towne Street up College Hill as far back as Hope Street. The names of these early settlers have been preserved in many of the streets of the Eastside, including Olney, Angell, Waterman, Wickenden, Brown and Power Streets.

It was in the early years of Providence's history when Roger Williams is accredited with the founding of the First Baptist Church. In 1639 Catherine Scott, sister of Anne Hutchinson, prevailed upon Williams, always seeking to reform practices of worship, to accept the errors of infant baptism. Williams agreed that baptism should only be reserved for those adults who could confess their faith and recognize the grace of God. Williams and ten others then rejected their infant baptism and were re-baptized, thereby founding the First Baptist Church. Throughout the 17th century, the providence Baptists met in each other's homes or outdoors in open spaces. The first meetinghouse was not built until 1700 on North Main Street, near the bottom of Star Street.[14] A second meetinghouse was built in 1726 and

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[11] Simister (1968)
[12] these Indian trails can be seen on the 1664 Map of Providence from Greene (1886)
[13] McLoughlin (1978)
[14] Lemons

lasted until the current church was constructed between Benefit and Main in 1775. It is interesting to note that Williams, with his characteristic restlessness, left the Baptist Church after only a few months, once again questioning its validity.

Once Roger Williams founded Providence as a land where there was freedom of conscience and refuge from religious persecution, it opened the doors to the establishment of further communities that characterized Narragansett Bay as a country of exiles. In the decade following Williams' arrival, three other major towns were settled, Portsmouth (1638), Newport (1639) and Warwick (1641) (Figure 13).

The second group of famous refugees to reach the Bay was comprised of Anne Hutchinson (Figure 12) and her followers. Like Williams, Hutchinson was convicted of religious heresy in Massachusetts Bay Colony and banished. Among the principles which Hutchinson preached were that faith alone could lead to salvation (as opposed to deeds) and an overall equality for women. Hutchinson's group of followers was headed south towards Delaware,[15] when Williams advised them to settle in Narragansett Bay. He assisted them in their purchase of Aquidneck Island, the largest island in the Bay, from the Narragansett sachem Miantonomi. There in 1638, with the famous historical figures John Clarke and William Coddington, she founded the village of Pocasset (later named Portsmouth). It is perhaps at this time that the name of Rhode Island first appears in history. The theory is that either Williams or the new settlers of Aquidneck misinterpreted Verrazzano's description of Block Island as being about the "size of the island of Rhodes" as incorrectly referring to Aquidneck Island. Thereafter, the large island in the middle of Narragansett Bay was known as Rhode Island. The second theory is that the Dutch Explorer Adriaen Block (for whom Block Island is named) referred to it as a "roodt eylandt" or 'red island".

The following year, disagreements would soon develop in Portsmouth among its leaders, forcing William Coddington to depart with some of his followers and settle the southern tip of the island, which he named Newport. The town of Newport would soon develop into the largest settlement in Rhode Island and was considered Rhode Island's richest and most important city throughout the 17th and 18th centuries.

The last of the four major early Rhode Island towns was founded by Samuel Gorton at Shawomet (Warwick) in 1641. Gorton was constantly surrounded by religious disputes

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[15] Beals (1970)

which forced him to flee from town to town. After being banished from Plymouth, Gorton settled into Portsmouth and then Providence, but could not get along with the leaders of either town so he eventually purchased land in the modern town of Warwick.

Williams' legacy was the foundation of a country where freedom of religious practice and conscience was allowed. It became a haven for religious exiles who were being persecuted in Massachusetts, Plymouth and England. Quakers arrived and settled on Aquidneck Island in the 1650's along with a Jewish population in Newport and some French Huguenots in East Greenwich in 1686.

By the mid-17th century, these new settlements of Narragansett Bay still lacked a royal charter, a matter of considerable fear for its inhabitants since the more powerful colonies in Massachusetts and Connecticut began to eye territorial expansion and claim Rhode Island's lands. In 1634 the colonies of Massachusetts Bay, Plymouth, Connecticut and New Haven joined together in the New England Confederation to unite against their common enemies (Figure 15). This effectively isolated the Narragansett Bay settlements and sparked a fear of invasion. Several delegates from Rhode Island traveled to London to seek a royal charter from the English throne but the tumultuous political situation in England at that time led to the instability of these documents. Finally after the restoration of King Charles II, John Clarke was able to secure a royal charter in 1663 for the colony of "Rhode Island and the Providence Plantations" assuring it of its independence. The Providence Plantations consisted of Providence and Warwick while Rhode Island was made up of Portsmouth and Newport. The actual state name of Rhode Island today is the State of Rhode Island and the Providence Plantations, although most Americans simply know of it by the abbreviated name, Rhode Island.

The single most important event in early Rhode Island History, apart from maybe Roger Williams' arrival, was King Phillip's War of 1675-1676. The outcome of this conflict, between English settlers and Native Americans would forever change the landscape of New England.

Although early white settlers in New England managed to keep a reasonable peace with their Native neighbors, by the late 17th century the relationship had become strained. Each year brought more and more Europeans and their settlements and farmlands had begun to infringe upon Native territory. The Wampanoags particularly had become frustrated with their treatment by Plymouth and Massachusetts colonists and armed conflict was inevitable. Although most Rhode Islanders tried to remain on good terms with the Narragansetts, thanks in large part to the aging Roger Williams and his life long friendship with them, ultimately they could not avoid bloodshed. Most of the activity of the war was centered in Massachusetts, but no New England colony was free from conflict.

By 1675, the Wampanoag sachem Metacomet (Phillip was his English name) (Figure 16) was determined to defend his territory and successfully united most of the tribes of New England into an armed conflict against the colonists. After a series of events, which saw his brother die under suspicious circumstances in English custody, Metacomet attacked the settlement of Swansea in southern Massachusetts. This sparked the event which would ultimately lead to the total subjugation of New England's Native American tribes.

In the early stages, both Rhode Island and the Narragansetts remained at peace and avoided war, but they would eventually be dragged into the fray. In the winter of 1675, a large percentage of the Narragansetts had settled into their winter grounds in southern Rhode Island. This was a stronghold, defended by a palisade and located in the Great Swamp near South Kingstown, Rhode Island. There were purportedly 3,000 Narragansetts of various ages within the fort, with around 1,000 active warriors.[16] In addition, there was a group of Wampanoag refugees, mostly women, children and the elderly, who had been displaced by the war in the previous months. Canonchet, the Narragansett sachem, had been ordered by the authorities of Massachusetts to hand over all Wampanoags, which he failed to do, convincing the colonists of the need to attack. Soldiers of the New England Confederation, which remember did not include Rhode Island, illegally marched through Narragansett Bay to the native settlement in the Great Swamp. On December 19, 1675 around 1,000 colonial soldiers made a surprise attack, burning wigwams and massacring anyone they came across (Figure 17). Although the few remaining Narragansett warriors managed a sustained defense, eventually the whole fort was overrun, scattering the survivors into the cold winter. Numbers vary, but it is estimated that as many as 400 hundred Narragansett Indians were killed, mostly women, children and the elderly, along with the total destruction of their homes. Reports put the English losses at 60 dead and 150 wounded.[17]

[16] Jones (2006)
[17] Jones (2006)

As would be expected, after the massacre at the swamp, the Narragansetts no longer remained neutral, but entered the conflict. Canonchet managed to escape the swamp with many of his warriors and joined forces with Metacomet, devastating English settlements along Narragansett Bay with little restraint. By spring of 1676, Canonchet and his warriors had reached Providence and were poised to attack. The town itself had been largely abandoned due to the fear of attack, but the aged Roger Williams and a few dozen others remained.[18] Williams himself set out from the town to meet Canonchet and try and convince him to leave Providence standing. The Narragansett sachem acknowledged Williams' lifelong friendship, assured him of his own personal safety but nonetheless advanced upon Providence, burning most of the town.

While the unified New England tribes met with success on several occasions in 1676, they were outnumbered and out supplied. Canonchet was captured and executed, which essentially put an end to organized Narragansett resistance. By the summer, the war was all but over and Metacomet himself was killed by a Wampanoag scout working for the English near the base of his operations on Mount Hope in Bristol. The spot where Metacomet was killed is today marked by a small monument on the property of Brown University's Haffenreffer Museum (Figure 18).

Although it was not a lengthy event and remains little known in other parts of the country, King Phillip's War is considered the bloodiest conflict ever to take place on American soil. Estimates indicate that 50% of all European settlements were attacked, while almost 90% of all Native American villages were attacked and destroyed.[19] Although the war was disastrous for both sides, it was truly decimating for the Native populations and an event that they would never recover from. In pre-war Rhode Island, there were perhaps 30,000 Narragansetts around the Bay, but after King Phillip's War, less than 1000 remained.[20] Many of the Narragansett survivors left Rhode Island and joined with other tribes in Connecticut and New York. The few remaining Narragansett Indians who remained in Rhode Island were forced to live in a reservation in Charlestown with a population of Niantics. As a result of King Philip's War, southern New England was left virtually free of Native populations.

[18] Richman (1908)
[19] Jones (2006)
[20] Native American Archaeology in R.I. (2002)

In the years after the War, Providence was rebuilt and continued to expand. With the threat of Native Americans eliminated, settlers flocked to the land around Narragansett Bay in increasing numbers. Much of southern Rhode Island was characterized by large plantation farms while shipping and trade dominated Providence and Newport. Rhode Island was a major player in the infamous "triangular trade' across the Atlantic, a very prosperous endeavor. Molasses and sugar was imported from the Caribbean to Rhode Island distilleries where it was made into rum. Merchants would than ship the rum to West Africa, where the cargo was unloaded and the ships were filled with African slaves. These slaves in turn were shipped to the Caribbean where they were exchanged for molasses and sugar, and the process would repeat itself. This trade, while reprehensible, was very profitable for 18th century Providence.

Roger Williams' town grew up in the 1700's and began to take the shape. Along the river, wharves were built to support the city's blossoming sea trade. In 1704, Providence's one street, "Towne Street" (today North and South Main) was paved. It was called Towne Street since the whole town was literally located on it. In 1700, the first meetinghouse for the First Baptist Church was constructed and was replaced in 1726 by a secondary structure. By the mid-18th century, Towne Street had become so crowded that there was a demand for a second street to the east, running parallel to the city's main street. The planning of this street was difficult, since most of Providence's private properties ran from the river up over College Hill. Therefore, the proposed street would run through people's backyards, many of which had small cemeteries for deceased family members. By 1756, obstacles were overcome and a new street was laid out, originally called Back Street because it was behind Towne Street.[21] In its initial design, this street was full of bends and turns as it had to avoid cemeteries and gardens. The name Back Street was eventually changed to Benefit Street, since its presence was a benefit to all those in Providence who could now avoid the traffic and chaos of Towne Street. It was on a plot of land between Benefit and Towne that in 1775 the current First Baptist Church was constructed, one of the greatest tributes to Roger Williams and his fledgling congregation. It remains today a symbol of Providence's colonial era and the prosperous decades of the 1700's.

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[21] Simister (1968)

Providence's role in the American Revolution may not be as famous as that of Boston's, but patriotic sentiment was strong. Like Boston and other American colonial ports, the taxes imposed by Britain in the 1760's and 1770's threatened Providence's thriving sea trade. Although little known today, Providence's patriots staged their very own Tea Party on March 2, 1775. Instead of dumping the tea into the water, as happened in Boston, Providence's rebels gathered in the main marketplace and burnt large quantities of English tea. This event is commemorated today with a plaque on the Old Market Building on Main Street (Figure 20), not far from the location of the First Baptist Church.

Rhode Islanders are often held responsible for shedding the first blood of the Revolutionary War, three years before the skirmish of Lexington and Concord. As part of Britain's new laws regulating American trade, British schooners patrolled Narragansett Bay, stopping and boarding American ships suspected of smuggling goods, a practice which was extremely irritating for the American colonists. In 1772, Benjamin Lindsay, the captain of an American sloop failed to stop off the coast of Newport when the British schooner *Gaspee* attempted to inspect him. Lindsay continued towards Providence with the *Gaspee* giving chase. Six miles south of Providence, off the coast of Warwick, Captain Lindsay tricked the British schooner into running aground onto a shallow channel. When Lindsay arrived in Providence, he reported that the British *Gaspee* was helplessly stuck just outside the city. That night, a band of Providence patriots organized by John Brown rowed out in silence to take the British vessel. After a brief exchange of gunfire, in which the British lieutenant was injured, the colonists succeeded in capturing the ship and set it on fire (Figure 19). The blood shed by the British officer can be interpreted as they very first to spill in the armed conflict between Great Britain and the American colonies. Today, in the town of Warwick, the place where the British ship ran aground is named Gaspee Point.

So it was into this landscape that the First Baptist Church was constructed in 1775 (Figure 21). Completed the year before the American colonies officially declared their independence, architecturally, it stands as one of the greatest monuments of colonial Providence. A symbol of Providence's prosperous 18th century and a reminder of its founding by Roger Williams and his freedom of conscience. The land around which it sits is rich in history, as is the entire state of Rhode Island. If one stands upon its famous steeple and looks out across the landscape, it is possible to visualize Rhode Island's early history, from the views across the city and out to Narragansett Bay and over the scattered islands.

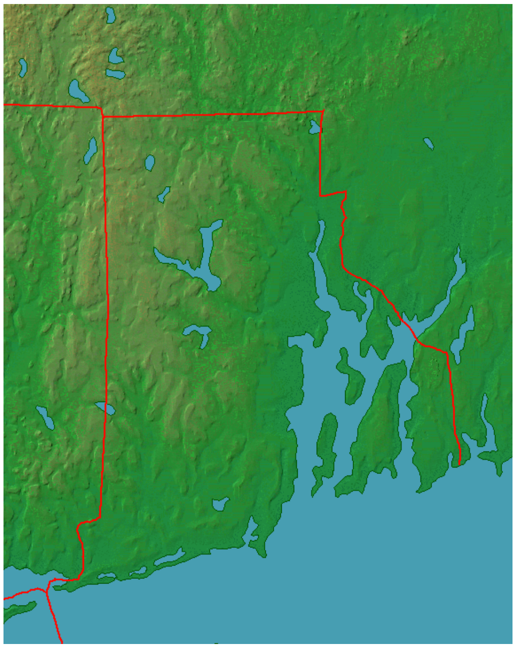


Figure 1: Map of Rhode Island and Narragansett Bay

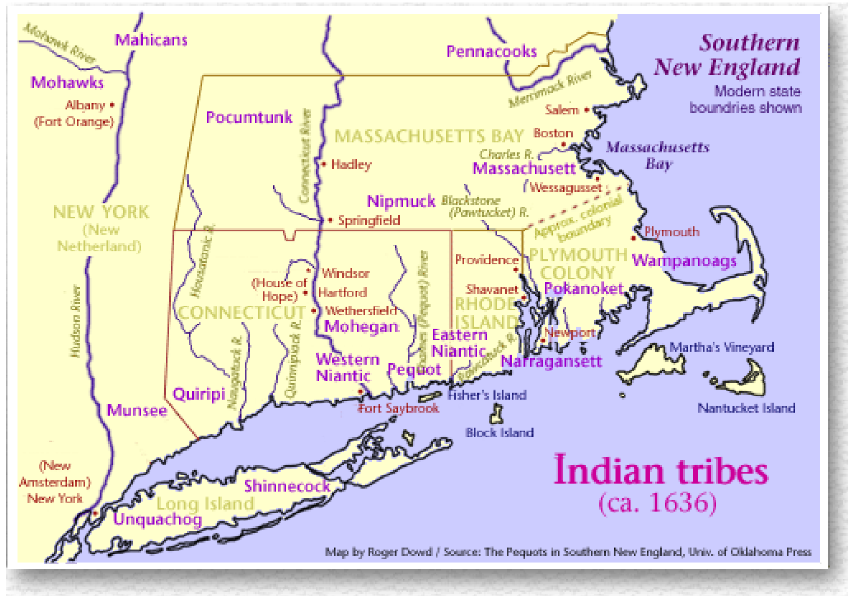


Figure 2: Map of Native American Tribal Territories

Figure 3: Stone Tower in Touro Park

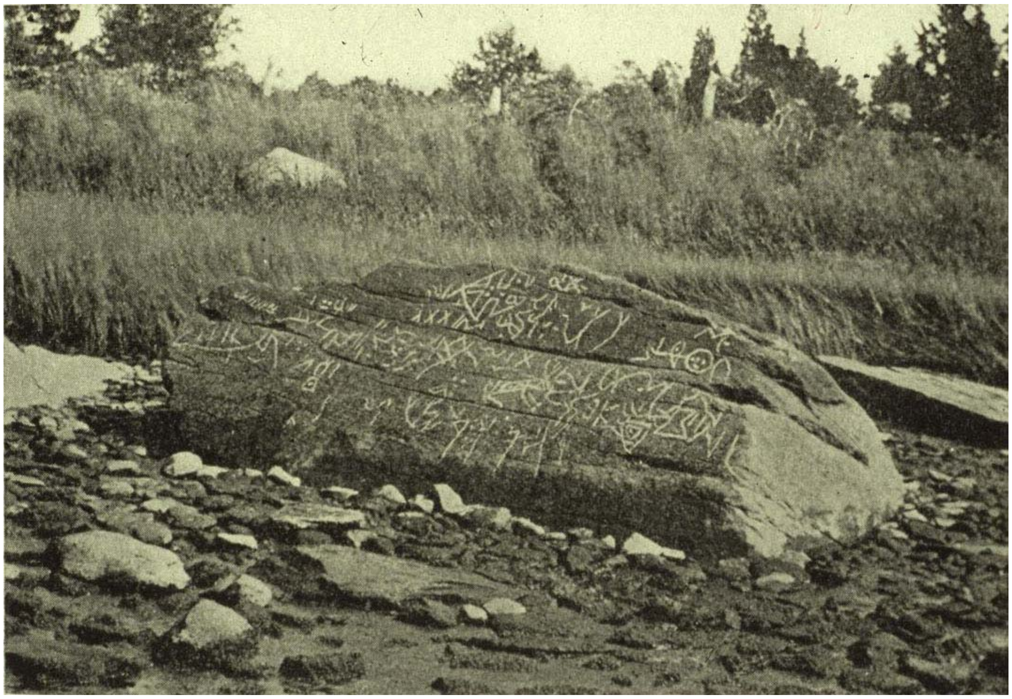


Figure 4: Dighton Rock

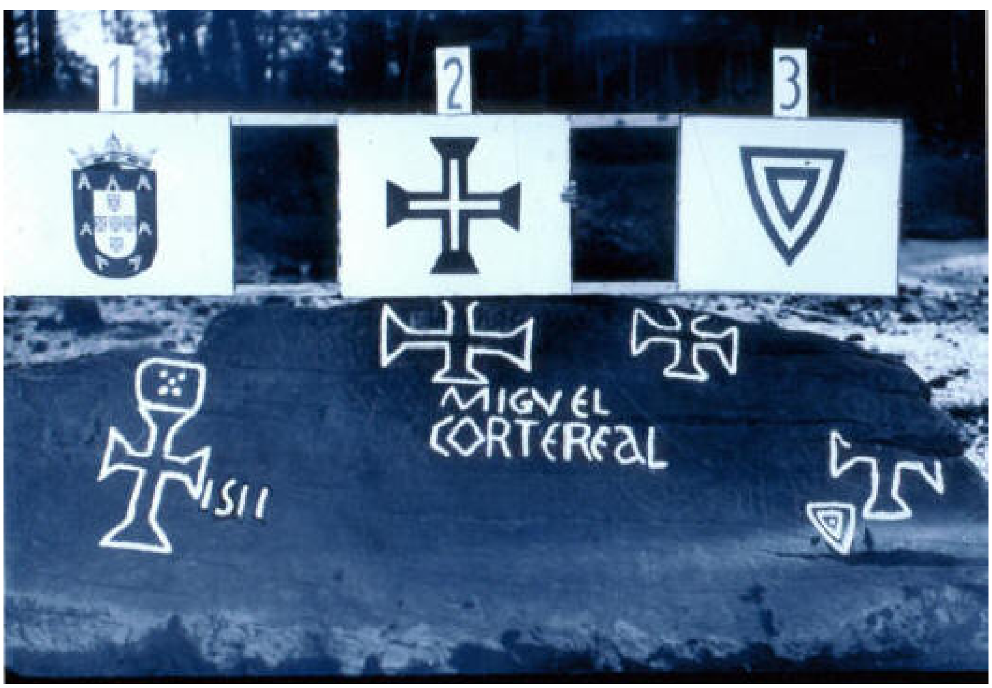
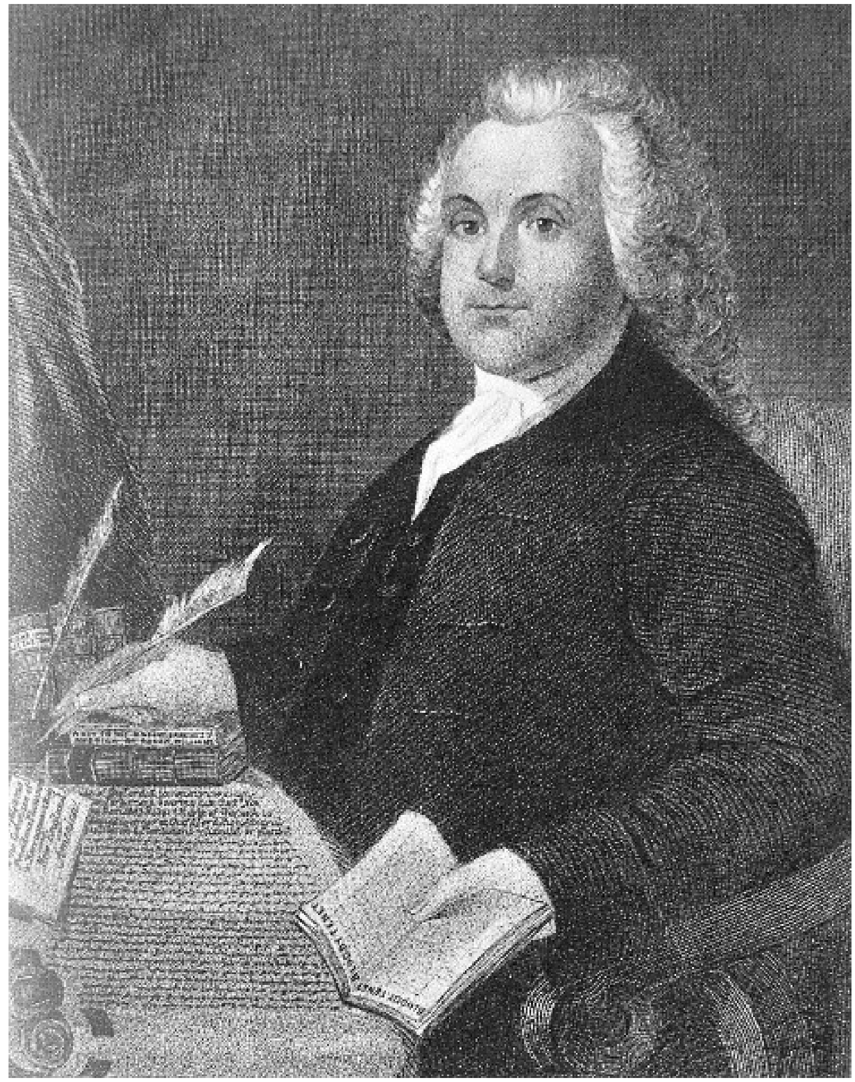


Figure 5: Carvings on Dighton Rock



Figures 6a & 6b: Roger Williams

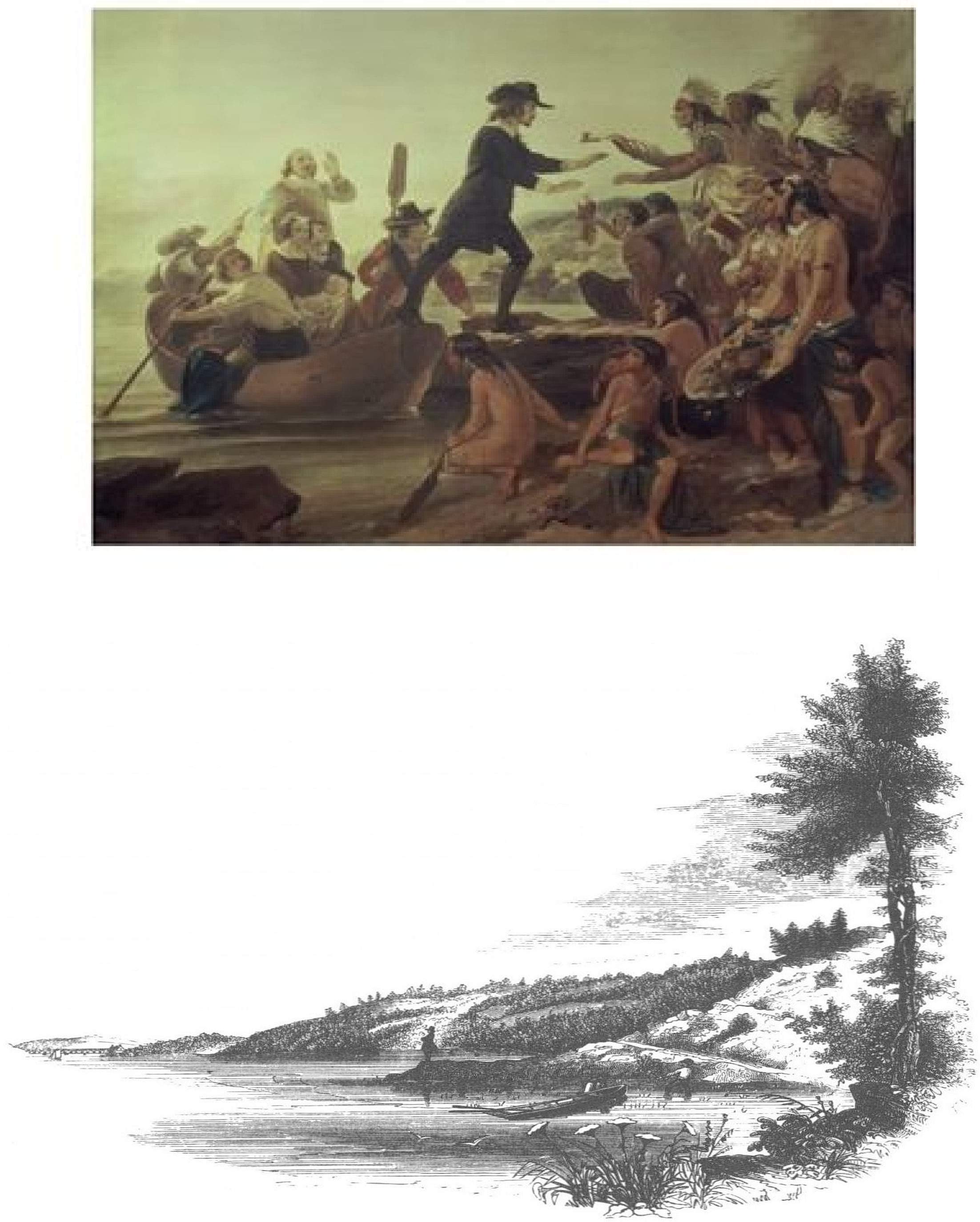


Figure 7: Renderings of Williams Landing on the Slate Rock

Figures 8a & 8b : Slate Rock Park on Gano St., Inscription at Slate Rock Park;

Figure 9: Bruno the Bear with Slate in Base

Figures 10a & 10b: Colonial Well at Roger Williams National Memorial; Roger Williams National Memorial

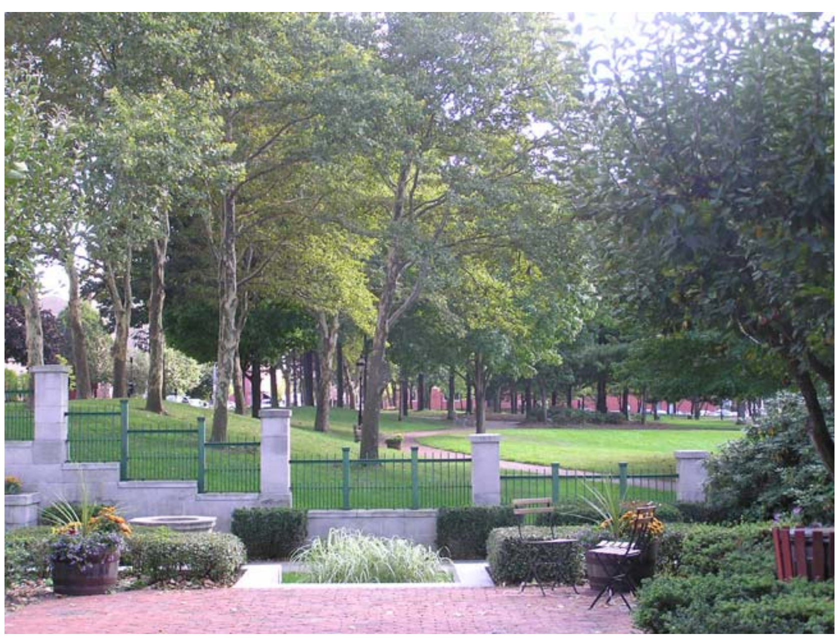


Figure 11: 1664 Map of Providence with **l**and allotments to settlers

Providence, circa 1650, showing original layout of Home Lots.

From W. A. Greene, *The Providence Plantations for Two Hundred and Fifty Years*, 1886.

Figure 12: Anne Hutchinson

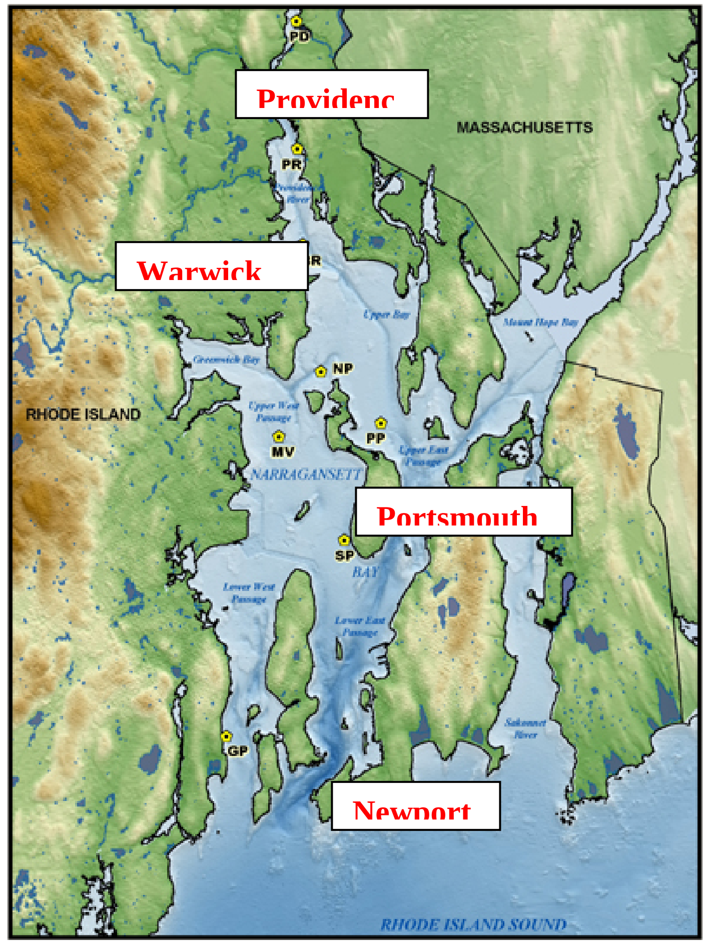


Figure 13: Early Rhode Island Settlements

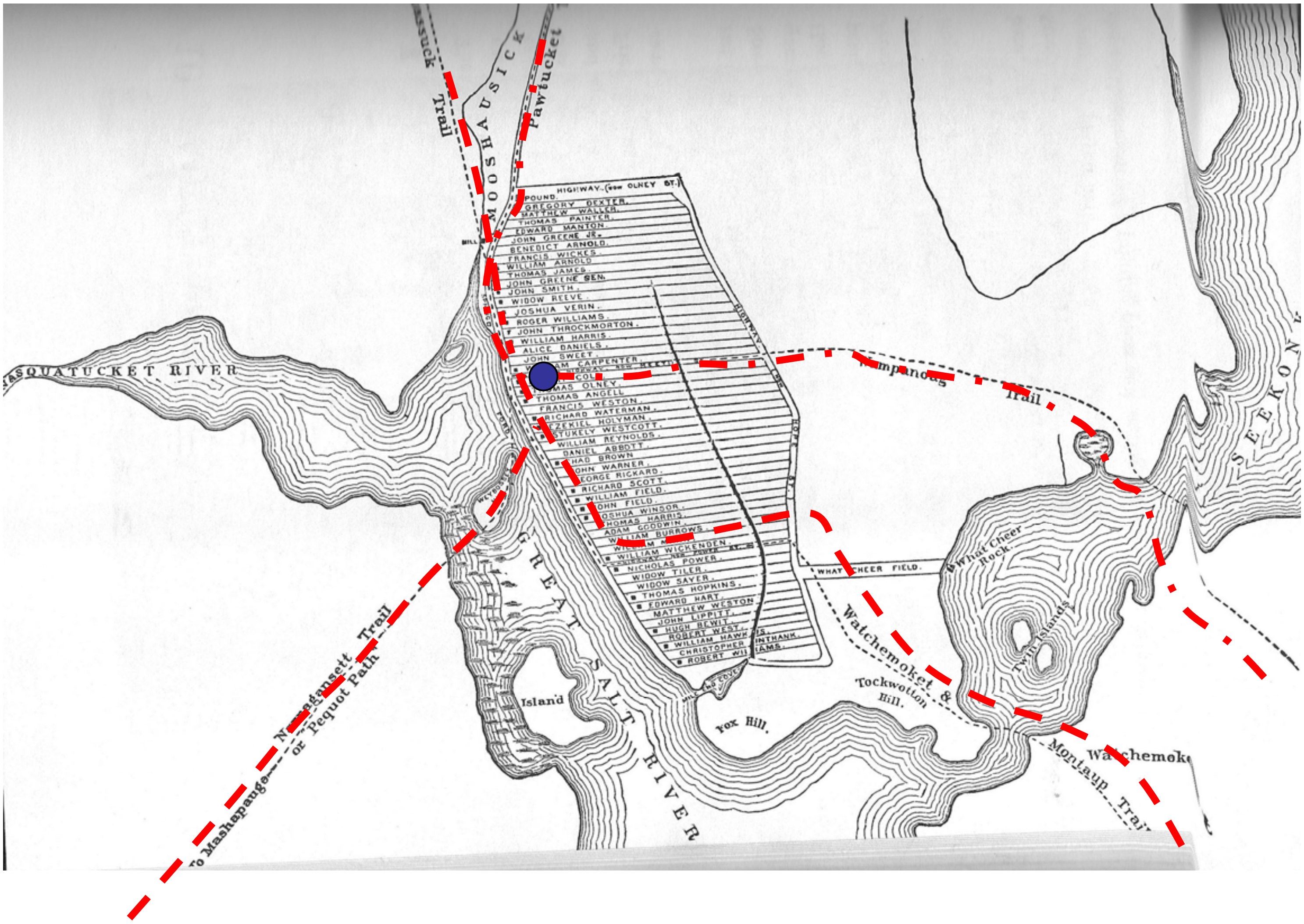


Figure 14: Map showing Native American Trails in relationship to early Providence

Figure 15: New England Confederation

Figure 16: Metacomet

Figure 17: Storm of the Great Swamp stronghold of the Narragansetts

Figure 18: Metacomet's Memorial, Bristol, RI

Figure 19: The Burning of the Gaspee

Figure 20: Old Market Building and plaque commemorating the Providence Tea-Party

Figure 21: The First Baptist Church in America, Providence, RI

Works Cited

Beals, Carleton. Colonial Rhode Island. Campden: T. Nelson, 1970.

Clauson, J. Earl. These Plantations. Providence: E.A. Johnson, 1937.

Conley, Patrick T. An Album of Rhode Island History 1636-1986. Norfolk: Donning Company, 1992.

Da Silva, M. L. Portuguese Pilgrims and Dighton Rock. Bristol: 1971.

James, Sidney V. Colonial Rhode Island. New York: Scribner's Sons, 1975.

Jones, Capers. The History and Future of Narragansett Bay. Boca Raton: Universal Publishers, 2006.

Lemons, J. Stanley. The First Baptist Church in America. Providence: Charitable Baptist Society, 2001.

McLoughlin, William. Rhode Island: A Bicentennial History. New York: W.W. Norton and Compan, 1978.

Means, P.A. Newport Tower. New York: H. Holt and Co., 1942.

Native American Archaeology in Rhode Island. R.I. Historical Preservation and Heritage Commission, 2002.

Richman, Irving Berdine. Rhode Island: Its making and Its Meaning. New York: G.P Putnam's Sons, 1908.

Simister, Florence Parker. Streets of the City: an anecdotal history of Providence. Providence: Mowbray, 1968.

Steinberg, S. and McGuigan, C. R.I. : The Rhode Island Guide. Providence: Rhode Island Bicentennial Foundation, 1976.

Chapter 3

Nightingale-Brown House Multi-method Geophysical Survey

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In fall of 2007 Brown University archaeology students conducted a multi-method geophysical survey of the Nightingale-Brown House grounds in Providence, Rhode Island, under the supervision of the Brown University Environmental Geophysics Group. The survey followed a classroom lecture that familiarized the students with some of the basic principles of near-surface geophysics. In the field, students rotated through various tasks so that each got a full hands-on experience of geophysical surveying. Students learned the process of establishing a grid in a geometrically irregular setting, as well as proper operating procedures for two geophysical methods, magnetic gradiometry and two-loop electromagnetic induction. The goals of the survey were two-fold. First, to locate any areas on this historic property that might be considered for future archaeological excavations. Second, to execute a pedagogical exercise designed to expose students to archaeological geophysics both on the conceptual and practical levels. The results of the survey are presented in this report.

The Nightingale-Brown House Site and Survey

The Nightingale-Brown House is an historic property located on the campus of Brown University in Providence, Rhode Island, and is currently home to Brown University's Public Humanities Program. The property is situated in an urban setting, bordered on three sides by public streets. Though the property dates to the 18th century, many elements of modern infrastructure were evident both through on-site inspection and examination of various site plans kept at the property. Several grated storm drains were visible, and site plans showed that a nylon sprinkler system had been recently installed, as well as an HVAC (heating, ventilation, and air conditioning) system. The HVAC system appeared to have an underground conduit leading from an external, aboveground unit, to the building. All of these modern amenities are apparent in the geophysical survey results.

A survey grid was established covering areas of the property accessible to geophysical equipment. A good deal of the site was inaccessible to equipment due to landscaping and construction features. Of the 1352 m² shown in the electromagnetic plan view maps given in this report (Figure 3.1), 877 m² were covered by the survey. The area surveyed consisted primarily of mowed lawn. The area not surveyed included gardens, the parking lot, and the building itself.

After establishing a grid, magnetic and electromagnetic data were collected along transects spaced .5 m apart. This close interval was chosen so that small archaeological targets might be imaged with greater precision (Abdallatif *et al*, 2007). Brown University archaeology students under the direction of the author conducted the grid set up and geophysical survey. The overall survey tempo was somewhat slower than typical commercial surveys as procedures had to be explained and equipment operators were frequently switched so that each student could gain experience. The overall operation was a success as each student got a hands-on survey experience within the allotted class time.

A multi-method approach was used at the Nightingale-Brown site for three reasons. First, each of the chosen methods has unique merits in revealing certain types of features under certain conditions. Second, a stronger description can be made of a given feature when it is identified with more than one method. In other words, redundancy acts as a sort of safety net that mitigates the shortcomings of any one method in a worst case scenario while offering the confidence of reconfirmation under the best circumstances. Third, for educational purposes it seemed sensible to expose students to more than one method. A recent archaeological report argues for the superiority of using multiple methods of remote sensing and geophysical prospecting techniques (Kvamme *et al*, 2007), and we (Brown University Environmental

Geophysics Group) always advocate this approach when feasible within the constraints of time and budget.

Following the processing of electromagnetic and magnetic results, ground penetrating radar data were collected by the author and Dr. Robert Jacob (Post-Doctoral Research Associate). The radar survey targeted an anomaly discovered in the previous electromagnetic survey. The collection of this focused data set was intended to demonstrate to the students the utility of following-up with additional methods capable of characterizing different properties than the initial survey. The following sections include technical descriptions of the methods employed at the Nightingale-Brown House site as well as a discussion of the results.

1. Two-loop Electromagnetic Induction: Principle of Method

The electromagnetic method is an application of Faraday's law of induction. In a two-loop system, by harmonically varying the electrical current of the primary coil (transmitting coil), an electromotive force (EMF) is induced in nearby conducting targets setting up a magnetic field that, in turn, is sensed by the secondary (receiving) coil. The induced current in the target will be shifted in time relative to the transmitted signal depending on the electrical conductivity, magnetic susceptibility, dimensions of the target, and the frequency and position of the field system. Hence separating and measuring the "in-phase" fraction of the induced signal from the "out-of-phase" (or "quadrature-phase") fraction of the induced signal can provide important information on the dimensions and the electrical and magnetic properties of the target.

The electromagnetic instrument used for the Nightingale-Brown survey was the GEM 2 by Geophex. This unit offers data collection in up to five frequencies and features a fixed spacing between the primary and secondary coils of 1.57 m. The frequencies used for this survey were 450 Hz, 1170 Hz, 3930 Hz, 13590 Hz, and 20010 Hz. The unit was carried at 20 cm above the surface of the survey area along pre-established transects, unidirectionally, with a .5 m spacing between transects.

The instrument used at the Nightingale-Brown site characterizes targets through their electrical conductivity (and resistivity) and magnetic susceptibility using an artificially generated electromagnetic field. The Geonics EM-31 has been the prime workhorse for these applications (i.e. Kvamme 2003, 2007; Steinberg 2002, 2004). Since most frequency domain electromagnetic (FDEM) surveys are done using single frequencies, the metrics most readily recovered at a site are the boundaries or edges of the target, while refined procedures, combined with other, complementary techniques, are required to characterize the cross-sectional volumetric properties of targets such as walls, ditches and pits. As already mentioned, the two-loop system deployed at the Nightingale-Brown site operates in up to five frequencies. Unlike the single frequency units (i.e.EM 31) the GEM 2 offers distinct advantages in data analysis as multiple data sets can be compared against one another to gain a more complete picture of the subsurface.

In ideal cases, the data, recorded as in-phase and quadrature, allow one to characterize the properties of magnetic susceptibility and electrical conductivity respectively. These properties vary within the subsurface for a variety of factors including such things as moisture variations, presence of metallic conductors and concentrations of ferrous or ferric materials. Many archaeological features and materials are rich in iron oxides and so posses the ability to be magnetized. Such features and materials are frequently revealed with the in-phase component, which under ideal conditions predicts magnetic susceptibility. Other archeological features and materials may be good electrical conductors. Conductors can be characterized as metallic conductors, semiconductors, or electrolytic conductors based on the nature of the conducting material and its associated dielectric properties. On historical archaeological sites, iron objects (metallic conductors) are often revealed with electromagnetic methods (Bevan, 1983). Filled in features are also frequently revealed due to increased or decreased electrolytic conduction as such features potentially hold more or less moisture content than surrounding areas depending on local climate variations, thus creating a dielectric disparity.

Resistivity ρ is the inverse of conductivity σ as defined by the electrical relationships between voltage and current in an ideal conductor expressed in Ohm's Law*. As such, resistivity characterizes features and materials that resist rather than conduct the flow of electricity. Under extremely good field conditions, the Brown group has been able to horizontally define *resistive* features, which is uncommon using two-loop electromagnetic techniques. For our best ground-truthed case, the resistive feature was a ceramic drainage pipe.

**Ohm's Law: (macroscopic version (scalar))* $V = IR$ *where* V *is voltage,* I *is current and* R *is resistance; (continuum form (vector))* $J = \sigma E$ *or* $J = E/\rho$ *where* J *is current density,* σ *is conductivity,* E *is electrical field and* ρ *is resistivity*

2. Magnetic Total Field and Gradiometry: Principle of Method

The methods employed for the Nightingale-Brown survey included magnetic gradiometry. The magnetic method is one of the earliest geophysical methods used for archeology (i.e. Black, 1962; Breiner, 1965; Ezell, 1965). The most obvious application is for detecting ferrous artifacts associated with a site, but refined procedures can detect fire pits and hearths, as well as disturbed soil and foundations (Kvamme *et al*, 2007; Hargrave *et al*, 2007; Horsley *et al*, 2005; Powell *et al*, 2002). Gradiometry was conducted at the Nightingale-Brown site with a Geometrics G-858 cesium vapor proton precession magnetometer in gradiometry configuration. Two magnetic sensors were configured one above the other and separated by one meter with the bottom sensor 20 cm from the survey surface. Data were collected unidirectionally along pre-set lines at a .5 meter separation interval and based on a pre-established grid.

In the gradiometer configuration, magnetic data can be viewed from either of the two sensors independently as well as the gradient between the two sensors. This can offer many advantages when interpreting the data as much more nuance of the magnetic environment will be revealed than is possible with a single-sensor magnetic survey. For example, the lower sensor may read small anomalies near the surface that are too weak to be recorded by the higher sensor. Just by knowing that these anomalies were not detectable by the higher sensor reveals valuable information about the nature of the anomalies. On the other hand, there may be a very strong anomaly that floods the bottom sensor with data. The top sensor in this case might provide a better view of the anomaly, as its greater distance from the source of the anomaly will weaken the reading of the magnetic field. The difference between the readings of the top and bottom sensors (magnetic gradient) can be particularly effective in locating and defining small shallow objects of archaeological significance (see Abdallatif *et al*, 2007), as well as defining larger areas of anthropogenically disturbed earth (i.e. see Hargrave *et al*, 2007; Kvamme *et al*, 2007). This is because recording the gradient between two sensors eliminates the background magnetic matrix of the earth's field, allowing one to view anomalous magnetic fields.

3. Ground Penetrating Radar: Principle of Method

Frequently used in archaeological investigations since the 1970s (Gafney and Gater, 2003), ground penetrating radar is a method that relies on reflections from propagating VHF/UHF radio waves in the sub-surface (Annan, 2006). A radio signal is generated by a transmitting antenna. As the radio wave propagates through the sub-surface, it changes velocity upon encountering interfaces with differing materials. Reflected waves from these interfaces travel back to a receiving antenna. These reflected signals can yield a variety of data about targets in the subsurface, as well as stratigraphy and other important features.

When field conditions are appropriate, this method can be key for delineating the edges and contours of the subsurface target, as well as for characterizing its volumetric cross-section. The interior character of the target is usually difficult to define using radar alone. Results may be analyzed using both original and migrated (Hermance, 2000) GPR sections. The two-way travel time of a signal can be used to calculate depths of interfaces when the approximate velocity of the matrix is known. Multiple profiles can be used to characterize volumetric properties of targets, and generate three-dimensional images (Conyers and

Cameron, 1998). This method of producing 3-D images has become very popular with archaeologists in recent years (Goodman *et al*, 2007).

As with two-loop induction, depth of penetration is a function of transmitter/receiver offset. Resolution of radar images is often related to the frequency of the signal. Generally, higher frequencies result in greater resolution. The drawback of higher frequencies is greater susceptibility to absorption and attenuation of the signal due to a shorter wavelength. Under appropriate field conditions, frequencies as high as 1 GHz are sometimes used (Goodman *et al*, 2007). A radar profile was collected at the Nightingale-Brown House with a PULSE EKKO IV GPR system employing 200 MHz antennas at a 1meter antenna offset.

4. Survey Results

The Nightingale-Brown House geophysical survey revealed a number of features likely related to modern infrastructure. Most prominent in the results were several linear features likely associated with drainage or lawn hydration, and the building's HVAC system. While some of the drainage features may be historic, and not presently functional, this cannot be determined with geophysical methods alone.

Several of the linear features appeared prominent in both the magnetic and electromagnetic data, while other features were clearer with one method or the other. Additionally, some features were clearer in certain frequencies and certain components of the electromagnetic data. This distribution of feature clarity is related to the varying physical attributes of the array of targets being imaged as well as the varying physical nature of the matrix in which the targets are situated. Such variability in responses is entirely normal, and is one reason for using multiple methods. Select examples of the magnetic and electromagnetic results are shown in plan-view anomaly maps in this report.

A radar profile was also collected at the Nightingale-Brown House after the results of the magnetic and electromagnetic surveys had revealed a number of anomalies. This was accomplished with a PULSE EKKO IV GPR system employing 200 MHz antennas. The profile was intended to provide a vertical slice view of a linear feature previously defined horizontally with two-loop induction. The resulting profile exhibited a hyperbolic anomaly typical of wave diffraction caused by a strong interface with abrupt curvature (Figure 3.1). The profile was collected primarily for educational purposes to provide students with a good example to relate back to classroom discussion and to allow them to consider how and argument might be constructed through the comparison of multiple geophysical methods.

In Figure 3.1, electromagnetic and radar results were combined so that the reader might gain a better understanding of the anomalies in question and the relationship of the radar profile to the plan view of the site. The plan view map of electrical conductivity at 13590 Hz was chosen as it shows the most anomalies of the various plan view geophysical maps for this site. Figures 3.2 and 3.3 are the results of the magnetic survey. The features identified with the magnetic survey are also visible in various components of the electromagnetic data. Figure 3.4 shows two components of the electromagnetic survey, in-phase at 3930 Hz and magnetic susceptibility at 450 Hz. These were chosen because they show several anomalies very clearly. In particular, the HVAC system anomaly and two discrete dipole anomalies shown in the magnetic data appear very clearly in the magnetic susceptibility map.

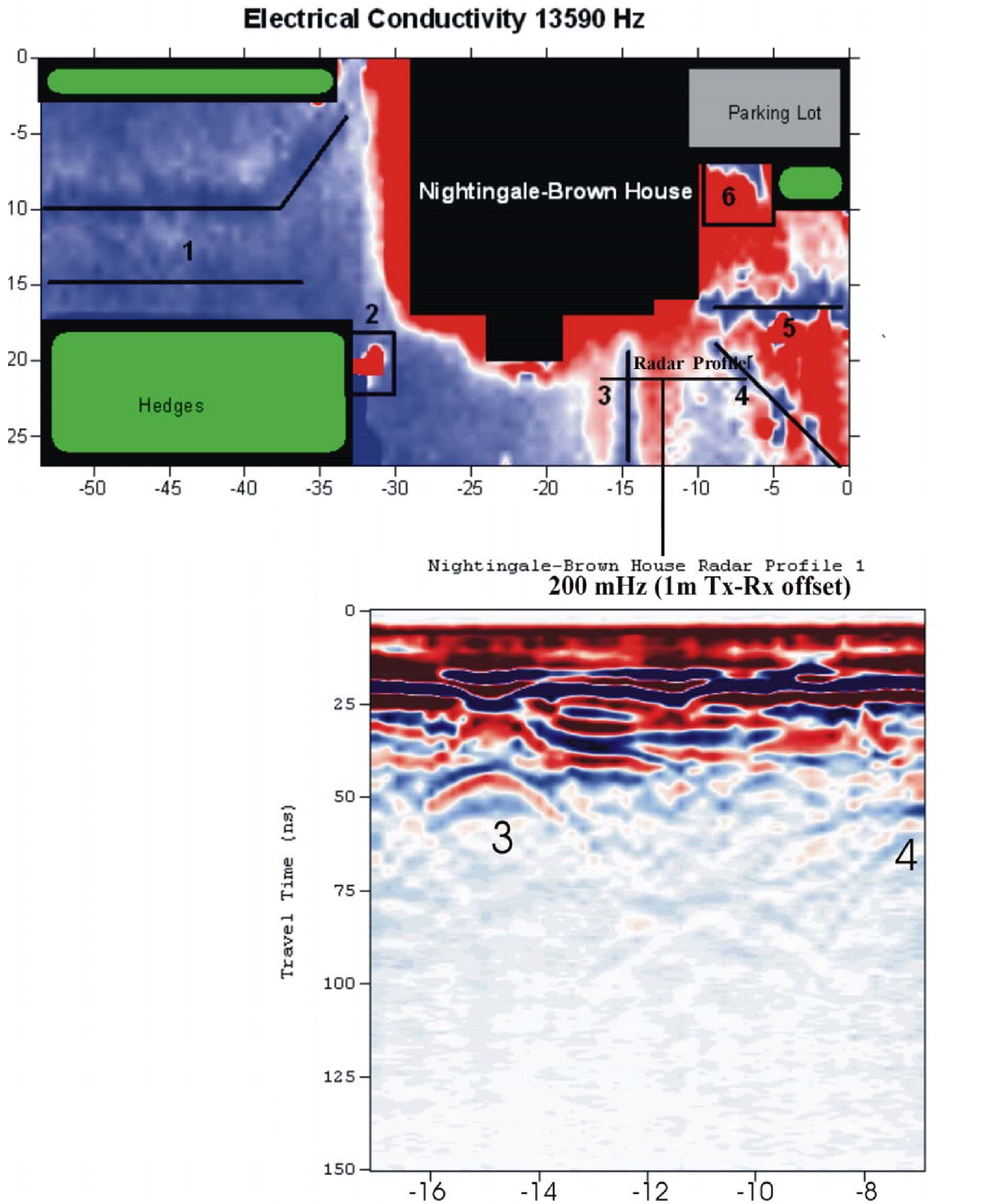


Figure 3.1: The above figure combines an electromagnetic plan-view map (electrical conductivity 13590 Hz) with a ground penetrating radar profile. Various anomalies identified with geophysical methods have been labeled 1-6. Anomaly 1 seems most likely related to the building's HVAC system. Anomaly 2 corresponds to a storm drain visible on the surface. Anomaly 3 exhibits both EM and radar signatures typical of a pipe. Less clear are anomalies 4 and 5, possibly related to lawn hydration or drainage. While anomaly 6 is near several elements of modern infrastructure, its relationship, if any, to those features remains unclear.

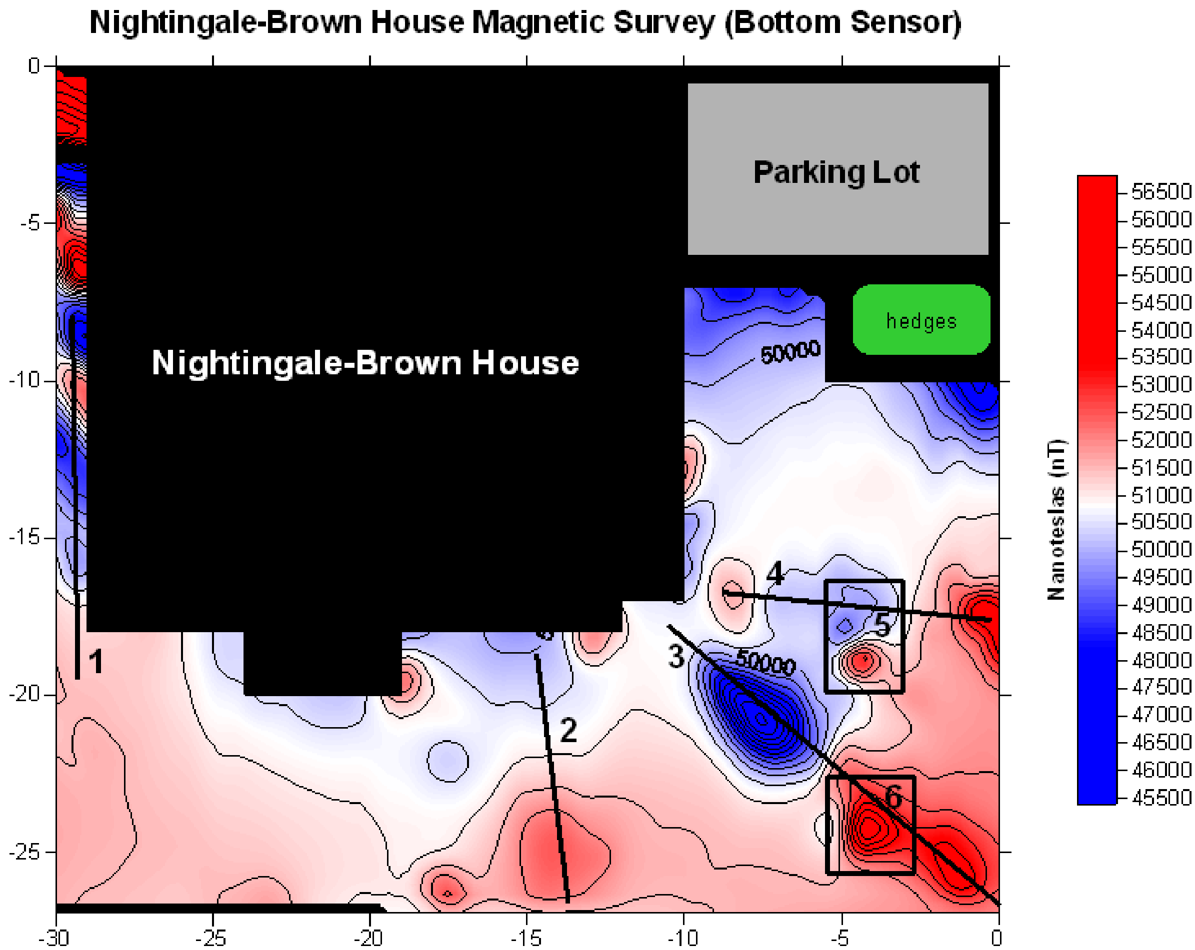


Figure 3.2: (Note that numbering of anomalies does not correspond to numbering of Figure 3.1) The above figure shows the magnetic total field as read by the lower sensor of the gradiometer. Anomaly 1 corresponds to the location of drainage pipe. Anomaly 2 is highlighted as a possible weak dipole feature related to the spatially corresponding pipe-like feature in figure 1 (EM and radar). Anomalies 3 and 4 also correspond to linear anomalies appearing in the EM data. Anomalies 5 and 6 have been highlighted as possible separate dipole features that correspond spatially to linear features 3 and 4. These 2 anomalies are clearer in the magnetic gradient, as well as some components of the EM data, as discrete anomalies.

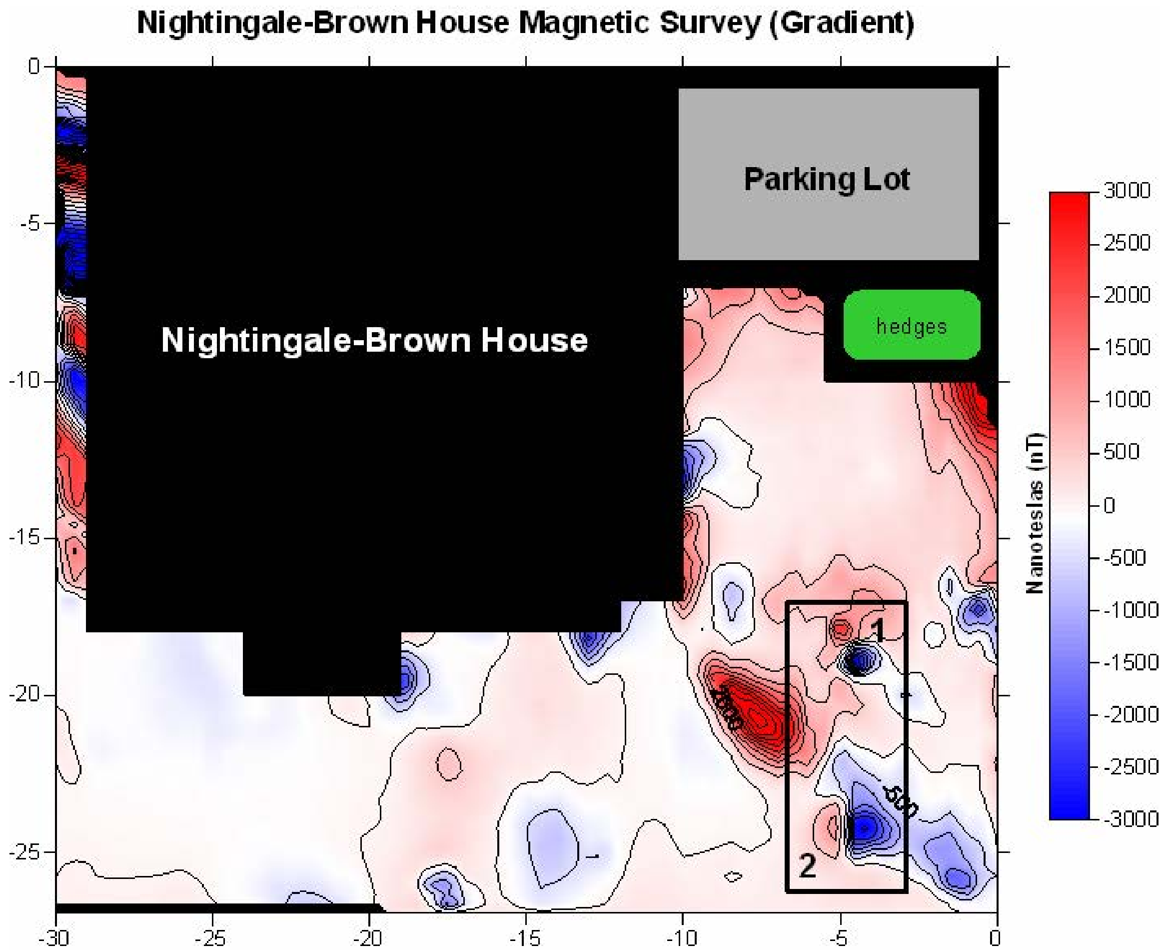
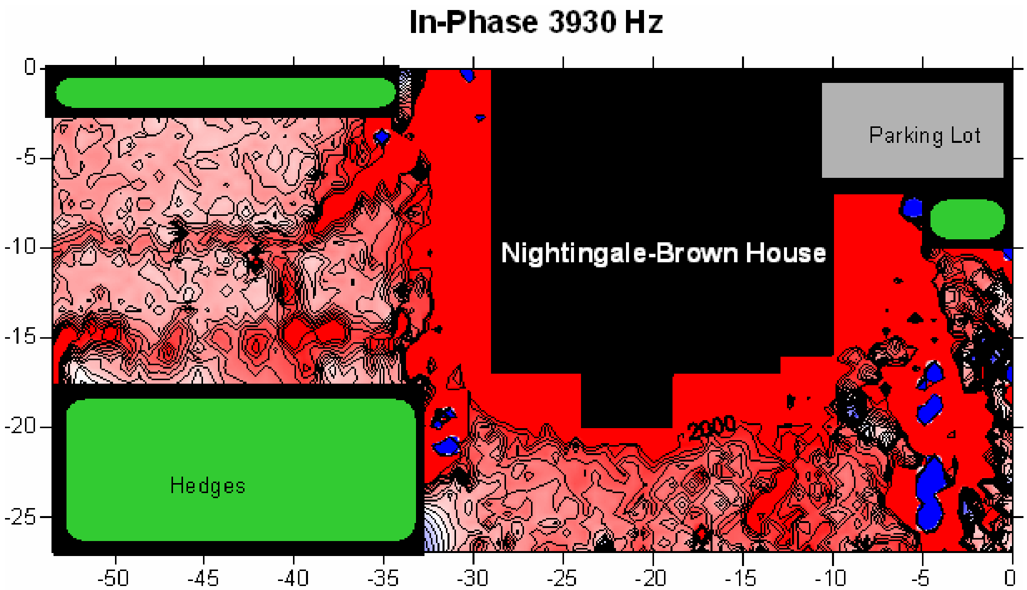


Figure 3.3: (Note that numbering of anomalies does not correspond to numbering of previous figures) The above figure shows the vertical gradient of the two magnetic sensors used in the gradiometer survey. Notice the difference in values (nT) between this map and the previous (total field). Here, the two anomalies highlighted in the total field map as potentially discrete dipoles, are shown more clearly as such (anomalies 1 and 2). Note that the dipoles have different orientations.



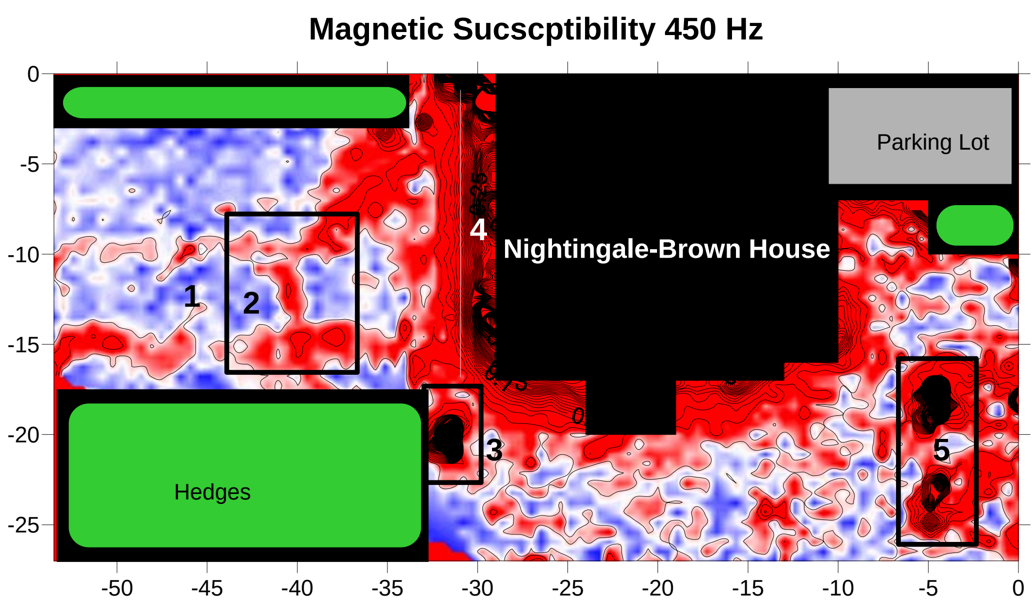


Figure 3.4: The above figures show maps of both in-phase data and magnetic susceptibility. These were chosen for clear imaging of a feature likely associated with the HVAC system, anomaly 1(i.e. Figure 3.1., anomaly 1.) Note the clarity and detail of this particular feature that is not readily apparent in the quadrature or conductivity maps. Of particular note is a perpendicular feature connecting the two parallel linear features (anomaly 2). Also note that the two discrete dipole features from the magnetic data (i.e. Figure 3.3, anomalies 1 and 2) are also quite apparent here as discrete anomalies, particularly in the susceptibility map (anomaly 5) as is the storm drain (anomaly 3). The liner feature running alongside the house in the magnetic maps (Figures 3.2 and 3.3) is also quite apparent in the susceptibility map (anomaly 4).

Conclusion

While the Nightingale-Brown House site geophysical survey was a pedagogical success and revealed a number of sub-surface features, it failed to yield any anomalies warranting further archaeological investigation. This does not mean definitively that no archaeological features are present. The overwhelming presence of modern buried infrastructure, however, reduces the likelihood of finding intact archaeological features. The abundance of modern features also makes this an unattractive site for future archaeological investigations due to the risk of injury or property damage. If excavation is undertaken, however, the geophysical maps can serve to guide archaeologist in avoiding potential hazards.

On a more positive note, the survey design, management plan, and lectures prepared for the Nightingale-Brown exercise may serve as a model for future inclusion of near-surface geophysics in the archaeological curriculum at Brown University. Students demonstrated active engagement in both the classroom and field portions of the exercise and were clearly interested in how geophysical investigations might contribute to archaeological research.

Works Cited

Abdallatif, Tareq Fahmy and Mancheol Suh, Jinyong Oh, and Kim Ki Hyun. "Impact of Magnetic Survey Design on the Imaging of Small Archaeological Objects: Practicability in Gradiometer Surveying." *The Leading Edge*. 26.5 (May 2007): 571-577.

Annan, A. P. "GPR methods for hydrogeological studies." Hydrogeophysics, Ed.Y. Rubin and S. Hubbard. Springer: New York, 2006.

Black, Glenn A.; Richard B. Johnston. "A Test of Magnetometry as an Aid to Archaeology." *American Antiquity*. 28.2 (Oct., 1962): 199-205.

Breiner, Sheldon. "The Rubidium Magnetometer in Archeological Exploration." *Science*, (New Series). 150.3693 (Oct. 8, 1965): 185-193.

Bruce W. Bevan. "Electromagnetics for Mapping Buried Earth Features." *Journal of Field Archaeology*. 10.1 (Spring, 1983): 47-54.

Conyers, Lawrence B.; Catherine M. Cameron. "Ground-Penetrating Radar Techniques and Three-Dimensional Computer Mapping in the American Southwest." *Journal of Field Archaeology*. 25. 4 (Winter, 1998): 417-430.

Ezell, Paul; James R. Moriarty; John D. Mudie; Anthony I. Rees. "Magnetic Prospecting in Southern California" *American Antiquity*. 31.1 (Jul., 1965): 112-113.

Gafney, C. and J. Gater. "Revealing the Buried Past: Geophysics for Archaeologists." Tempus: Stroud, Gloucestershire, 2003.

Goodman, D., K. Schneider, S. Piro, Y. Nishimura, and A.G. Pantel. "Ground Penetrating Radar in Sub-Surface Imaging for Archaeology." Remote Sensing in Archaeology. Ed. J.Wiseman and F.El-Baz. Springer: New York, 2007.

Hargrave, M. , T. Britt, and M.D. Reynolds. "Magnetic Evidence of Ridge Construction and use at Poverty Point." *American Antiquity*. 72.4 (2007).

Hermance, J. F. "Ground Penetrating Radar: Post-Migration Stacking of N-Fold Common Mid Point Profile Data." *Geophysics*. 66 (2001): 379-388.

Kvamme, K. and S. Ahler. "Integrated Remote Sensing and Excavation at Double Ditch State Historic Site, North Dakota." *American Antiquity*. 72.3 (2007).

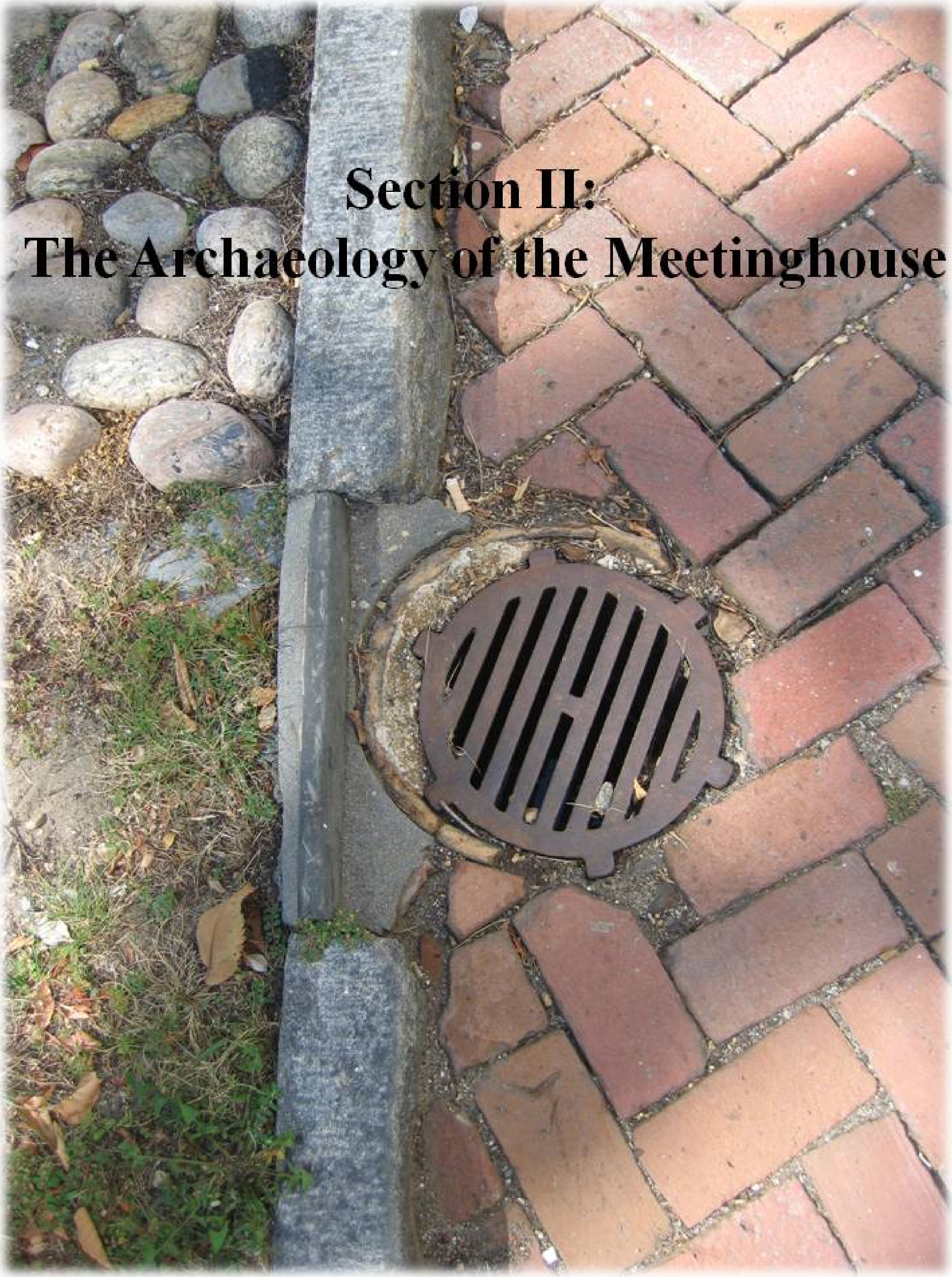
Kvamme, Kenneth L. "Geophysical Surveys as Landscape Archaeology." *American Antiquity*. 68.3 (Jul., 2003): 435-457.

Powell, A.J. and J.G. McDonnell, C.M. Batt and R.W. Vernon. "An Assessment of the Magnetic Response of an Iron-Smelting Site." *Archaeometry*. 44.4 (2002): 651-665.

Steinberg, J. Interim Report of the Skagafjörður Archaeological Settlement Survey (2001). Cotsen Institute of Archaeology, University of California: Los Angeles, 2002.

Steinberg J., Ed. Report of the Skagafjörður Archaeological Settlement Survey (2002). Cotsen Institute of Archaeology, University of California: Los Angeles, 2004.

Section II:
The Archaeology of the Meetinghouse



Introduction to Section II: The Archaeology of the Church

Michelle Charest

The excavations conducted during the 2007 field season at the First Baptist Church of America reveal a plethora of artifacts from which we can interpret a truly multifaceted view of church's history. This section will focus on the specifics of the archeological investigations conducted during this season as well as the details of the major artifact groups represented at the site.

To properly set the stage for any examination of the artifactual remains at the FBC, it is necessary to be aware of the logistics of the excavation as features in Chapters 1 and 4 – from the main objectives of the 2007 field season, to the selection of trench locations, to the particular techniques employed during the investigation. With the background of the excavation details revealed, Chapter 5 establishes the stratigraphy of the whole of the FBC site. This stratigraphic synopsis provides a common ground around which the following chapters discussing the results of the excavation can be understood.

The next grouping of chapters can be described as those involving the investigation of high temperature technologies, including the major artifact categories of glass, metal, and slag and asphalt. Chapter 6 discusses the totality of glass recovered from the site from both architectural and more personal sources. Chapter 7 investigates the metal found at the FBC site, placing a particular emphasis on the large number of nails excavated this season. Chapter 8 considers the presence of slag and asphalt at the site which helps to reveal the history of the roadways which surround the First Baptist Church.

The second grouping of chapters involve clay-based artifacts found at the FBC site. Ceramics, including hard- and soft-pasted artifacts, are discussed in Chapter 9. Chapter 10 explores the brick excavated at the site, detailing the implications of brick placement and patterns with regard to the history of the church. Kaolin Pipes are examined in Chapter 11, providing information about activities at the FBC as well as suggesting a useful chronology for dating the archaeological contexts of site.

The final grouping of chapters in this section deals with the interactions of humans and animals at the site. Chapter 12 looks into faunal remains which have been useful in establishing some of the communal aspects of the life of the First Baptist Church. Chapter 13 examines the implication of personal items found at the site to reveal an individual level of historic interaction with this site. Finally, Chapter 14 brings the findings revealed in this section together by investigating the spatial relationships of the artifacts found at the site through the use of GIS analysis.

Chapter 4

Test Pit Placement and Chronological Summary

Katherine Marino

Six test pits were excavated in the First Baptist Church lawn during the Brown University excavations of fall of 2007. The greater area of the property had been surveyed and mapped with both a total station and two loop electromagnetic induction during the summer of 2006. Further investigation of an anomalous dipole located in the eastern lawn was carried out shortly thereafter with ground penetrating radar (Urban and Jacob, 2007). In brief the survey and mapping resulted in the creation of a georeferenced digital elevation model (DEM) of the site (Figure 6.1) by Dr. Zachary Nelson and provided the 2006 team with several possible interesting anomalies worthy of archaeological attention (Figure 6.2). The interested reader is referred to Nelson and Urban & Jacob (Nelson and Marino, 2007) for more thorough discussions of the above. During the 2007 season no further mapping or geophysical survey took place on the property, and test pits were placed to either expand upon the results attained in the 2006 season, or to appraise an area of the site which had not yet been sampled, usually along the borders of property features. What follows below are the relevant details concerning the placement and excavation of the six test pits sunk in 2007. The two trenches to the east of the driveway were known as C1 and C2, the four to the west as D1-4. A map locating the 2007 trenches can be found in figure 6.3 while figure 6.4 shows the 2007 trenches in relationship to those of 2006. The terms “trench” and “test pit” are used interchangeably. “Su” stands for “stratigraphic unit,” the term used to describe the units of earth removed, both arbitrary and natural levels. Artifact counts follow Poepping, this volume.

Unit: C1

Location: In the northwest corner of the east lawn, about 2.5 meters from the wall of the driveway and 3 meters south of Thomas St.

Reason: The trench was placed here because investigation in 2006 had not sampled the north half of the east lawn. Its specific location, in close proximity to Thomas St, a major street for vehicular and pedestrian traffic, and the driveway of the church was chosen in the hopes that much debris from passing traffic over the years may have accumulated here. It was not placed closer to the wall for fears of the wall collapsing or a car coming over the side, an occurrence which has been relatively commonplace in the meetinghouse's history. There was a small tree about two meters to the south of the trench which it was hoped was far enough away for the roots to be a serious nuisance.

Size and Orientation: 1m by 1m. The sides of the trench were on north-south, east-west axes.

Stratigraphic Description: The stratigraphy of the trench is recorded in two profiles, those of the north and south walls. The north wall is more representative of the trench with three main layers of about equal thickness. These same layers, a dark brown or gray organic layer above a denser dark layer with flecks of clay above a light sandy layer, are found repeated throughout the site. The south wall is more irregular with intrusive mixing occurring in the top layer. The bottom two layers, while not as thick as in the north profile, are similar to those from that half of the trench. Irregular and highly mixed stratigraphy for the site, especially for the eastern lawn is to be expected based on the results of the 2006 excavations. The site has been modified by the congregation throughout its history and soil mixing has been the result. (See Charest, 2007 for more information about the history of the yard as demonstrated through pictoral sources)

Figure: 6.5, 5.2, 5.3

Artifact Quantity: 254

Chronological Information: This trench had a somewhat confused chronology, possibly related to the mixed stratigraphy evident in the south wall profile. In Su 2 an octagonal bottle base probably representing the base of a snuff bottle dating to the early 18th c. was recovered. Alternately it could be the base of an octagonal decanter which would date it to the same period, between 1700-1725. In the same Su was found glass used in transformers and other electrical devices which date post 1882 when electricity first came to Providence. Asphalt in Sus 3 & 4 date to 1860 or later when paving with asphalt was introduced to the city. Also in

Su 3 a pipe stem was recovered which was dated to between 1720-1750, predating the asphalt by at least a century. It is to be noted, however, that as Swain points out (this volume) the pipe assemblage from the site is too small to return accurate results, and pipes postdating 1800 are often dated too early.

Unit: C2

Location: Southeast corner of east lawn. 3 meters from southern edge of property, 2.5 meters from the eastern wall of property and Benefit St.

Reason: The east lawn location of the trench was chosen to provide further information about that half of the property. The location in the southeast corner was chosen to provide more even coverage over the entire surface of the lawn in relationship to other trenches already sunk. The corner seemed an ideal place, located at the intersection of two busy streets used by both pedestrians and vehicles, to accumulate the debris of passersby over the course of property's history, which could potentially shed light on the history of Providence's greater population. This information could provide a slightly different view of the past population compared to that afforded by trenches more centrally located on the property and which may potentially reflect the material residues of the congregation more than the general population and passers through of Providence.

Size and Orientation: 1m by 1m. The sides of the trench were on north-south, east-west axes.

Stratigraphic Description: The stratigraphy in this trench was straightforward. The soil was divided into three natural layers, the most typical stratigraphy on site. The top layer was dark with organic material, the middle layer was dark brown to grey with flecks of clay and rocks, and the bottom layer was yellowish and sandy.

Figure: 6.6, 5.4

Artifact Quantity: 265

Chronological Information: In Su 5 of this trench a transfer printed plate was recovered which dates to anywhere from 1750 to the present. White salt glazed stoneware was also recovered in this layer which dates to between 1720 and 1770. However asphalt was recovered in Su6 which dates to 1860 or later.

Unit: D1

Location: .25m west of the south staircase of the meetinghouse, in the center of the strip of land between an upper path to the steps and a lower brick path bordering the church. The strip of land is enclosed by curbs.

Reason: It was determined through research for the 2006 final report (Marino, 2007) that originally the members of the congregation entered the meetinghouse from the entrances on the south and north side of the building rather than the main entrance on the west side of the building to avoid using the central aisle, which they found too reminiscent of popery and all which that entails. Because of this it was hoped that these early congregation members may have left a greater concentration of artifacts around the steps, losing them while they entered or exited the building. The trench was not placed right against the staircase because we did not wish to disturb the foundations of the stones. Likewise, it was centered in the middle of the strip of land to avoid the curbs on both sides. During the excavations of 2006 a test pit had been attempted in the same general area between the east and west lawns, however it was located further south, where an abundance of tree roots severely impeded excavation. This trench was also placed with that one in mind, in an attempt to see how this marginal space between the two main lawns was used, but in an area clear of roots.

Size and Orientation: 1m by 1m. The sides of the trench were on north-south, east-west axes.

Stratigraphic Description: The stratigraphy of this trench was recorded in two profiles, that of the southern and eastern walls. The east profile shows the typical three layered stratigraphy found throughout the site. The south profile is more interesting in that seven layers are represented, four of which fall directly on top of each other and seem to represent the fill of a trench that may have been cut as the foundation trench for the staircase. The only problem with this interpretation is that the highly stratified area of the south profile, the eastern half, borders on the eastern profile which records a much more straightforward stratigraphy with no trace of the complex layering shown in the southern profile. It is possible that the eastern profile was mislabeled and that it is really a drawing of the west wall, or more likely since the soil gradations in the southern profile are so subtle and overlap in Munsell values with the middle layer of the east wall, that they represent the backfill of the same trench but the layers are more discernable in the southern profile. During excavation the cut for the foundation trench of the stairs was clear throughout the trench on the north-south axes and therefore it is unlikely that this aspect of the stratigraphy was significantly misreported in the south profile.

Figure: 6.7, 5.5, 5.6

Artifact Quantity: 1,419

Chronological Information: In Su 1 was recovered a brass eye of a hook and eye fastener of the type in use from 1830 to the present. Su 3 of this trench contained milk glass which became popular in the 1890s and experienced a resurgence in popularity in the 1930s. In the same Su was recovered a pipe stem fragment which dates between 1750-1800. In Su 4 creamware from 1762 to 1820 was found and in Su 5 scratch blue stoneware was recovered which dates to between 1745 and 1775. Also in Su 5 and 6 were brick pieces which roughly correspond to the measurements of 18th c. bricks. The chronology as inferred from the artifacts shows a continuous progression from probably the time of the construction of the meeting house until sometime in the 20th century.

Unit: D2

Location: Central western edge of western lawn. It is kitty corner to trench B2 from the 2006 season, sharing its northwest corner with the southeast corner of B2.

Reason: During the 2006 season a great quantity of bone, shell and pottery was recovered in this area. It was hypothesized that these objects were the remains of a communal feasting event. The trench was placed adjacent to the 2006 trench to see if more material which may clarify the nature of this event could be recovered.

Size and Orientation: 1m by 1m. The sides of the trench were on north-south, east-west axes.

Stratigraphic Description: The stratigraphy of this trench was in keeping with that in B2 excavated in 2006 (Nelson, 2007). Although only five to six layers were present, as opposed to the eight found in B2, it is possible that some of the finer layers present in B2 were either not present or not obvious and therefore recognized in D2. The top layer of D2 was the same dark brown organic humus layer found as the top layer throughout the site, however a light intrusive layer was found within this layer in both the east and south profiles. Beneath these layers the east profile has a dark brown layer with flecks of clay which is common across the site and below that two lighter layers of sandy soil, also common as the bottom layer on the site. The south profile is more complex but matches B2's well dated stratigraphy. Below the top organic layer is a thin layer of yellow sandy soil, beneath which is found a thicker layer of yellow-grey soil. Beneath this layer is a tan layer with a similar but rockier layer of a slightly deeper, greyer color beneath it. This bottom layer was found to be culturally sterile. The overlap between the south profile stratigraphy of B2 and D2 indicates that they were created at the same time by the same sequence of events.

Figure: 6.8, 5.7, 5.8

Artifact Quantity: 740

Chronological Information: From Su 2 came pieces of glass probably used in electrical devices dating to 1882 or after. From Su 3 came creamware dated to between 1762-1820 as well as a pipe stem dated to between 1750 – 1800. However, a pipe stem dating to the same period was found in Su7 as well. Finally in Su 8 pieces of a transfer printed plate dated to 1750 and after were recovered. Nothing in the chronology above is obviously anomalous provided that some of the artifacts are allowed to overlap in date and fall toward the latter ends of their date ranges.

Unit: D3

Location: This trench was located on the northeastern half of the western lawn, halfway between the border of the property along Thomas Street and the central walkway leading to the main entrance of the church.

Reason: A location in this area of the lawn was desired to spread archaeological testing more evenly throughout the site. A site close to the path leading to the main entrance of the church was desired, but we did not want to get too close lest the excavation interfere with the normal working of the meetinghouse or prove too much of an eyesore. Likewise, a location near Thomas St. was considered as a possibly interesting site. However, the hedge in this area of the lawn is not complete and a trench sited too close to the sidewalk along the street may have posed a safety hazard. There are also many roots and wires running through the area, thus the choice of sites was restricted. The final choice seemed a happy compromise between all these factors.

Size and Orientation: 1m by 1m. The sides of the trench were on north-south, east-west axes.

Stratigraphic Description: The stratigraphy in D3 conformed to the three layer breakdown typical on site. The middle layer was lighter in color than the average middle layer in other such stratigraphic arrangements, however. Through the middle layer to the bottom layer were found about 6 2 inch^2 tan colored features with root like structures and bits of white limestone or another hard mineral running throughout. These extended to almost the entire depth of the trench. Their regular shape with distinct corners suggests that they are man-made features such as wooden stakes, but their structure is reminiscent of potting soil with roots running through it. It is unclear what exactly these features are, but it is possible that their introduction or presence is responsible for or related to the lighter more mixed soil of the second layer. A dark brown to grey humus layer lies above this strata and a lighter sandy layer beneath it.

Figure: 6.9, 5.9

Artifact Quantity: 92

Chronological Information: Two artifacts allow a chronological picture to be developed for this trench. The first is asphalt recovered in Su 3 which dates to 1860 or after. The next is a relatively unworn coin also found in Su3 and dating to 1899. Its good condition suggests that it was deposited within several years of its manufacture. A delicate perfume bottle base was also recovered in Su 3 but it was not distinctive enough to date.

Unit: D4

Location: Strip of lawn along retaining wall holding back Thomas St. and a path bordering the northwest corner of the church.

Reason: The trench was originally to be placed adjacent to the north stairs for the same reason D1 was sited next to the south stairs, however the area was deemed to be too far from the rest of the dig and the spoil heaps to be practicable. A location about 8 meters west of the steps closer to the rest of the trenches was settled on. It was anticipated that its location adjacent to Thomas St. would facilitate the accumulation of cultural debris.

Size and Orientation: 1m by 1m. The sides of the trench were on north-south, east-west axes.

Stratigraphic Description: This trench had extremely mixed stratigraphy. The north wall, about six inches south of the retaining wall for Thomas St. demonstrated the tripartite stratigraphy typical for the site with a dark humus layer on top, a denser dark brown grey layer with clay in it in the middle and a base layer of yellowish sand at the bottom. Its east profile contains 10 clearly discernable layers within it, many of which contain clay, cement, charcoal and building debris. It appears that the stratigraphy is the result of building refuse having been piled and possibly burned here. In addition much asphalt from the paving of Thomas St. made its way into the fill of the trench. The most interesting aspect of the stratigraphy is the dark layer to the south of the wall which cuts through three other layers and abuts the curbstone that borders the path against the church. It would seem that this layer is the fill for the curb’s foundation trench.

Figure: 6.10, 5.10, 5.11

Artifact Quantity: 603

Chronological Information: The stratigraphy in this trench indicates that the soil in this area has been subject to several events involving mixing and laying down of new layers. From the upper levels three embossed pieces of glass were recovered but were not possible to date. From Su 3 also comes milk glass dating to 1890 or after and a piece of hand painted decorated pearlware probably dating to between 1780-1840. Asphalt was found in Sus 2-5, 7 & 8 which dates them to 1860 or after, or indicates that there has been mixing between levels at various points. From Su 6 comes a ground glass stopper dated to between 1850 and 1900. The stratigraphy of this trench was highly disrupted and the relative chronology cannot be trusted.

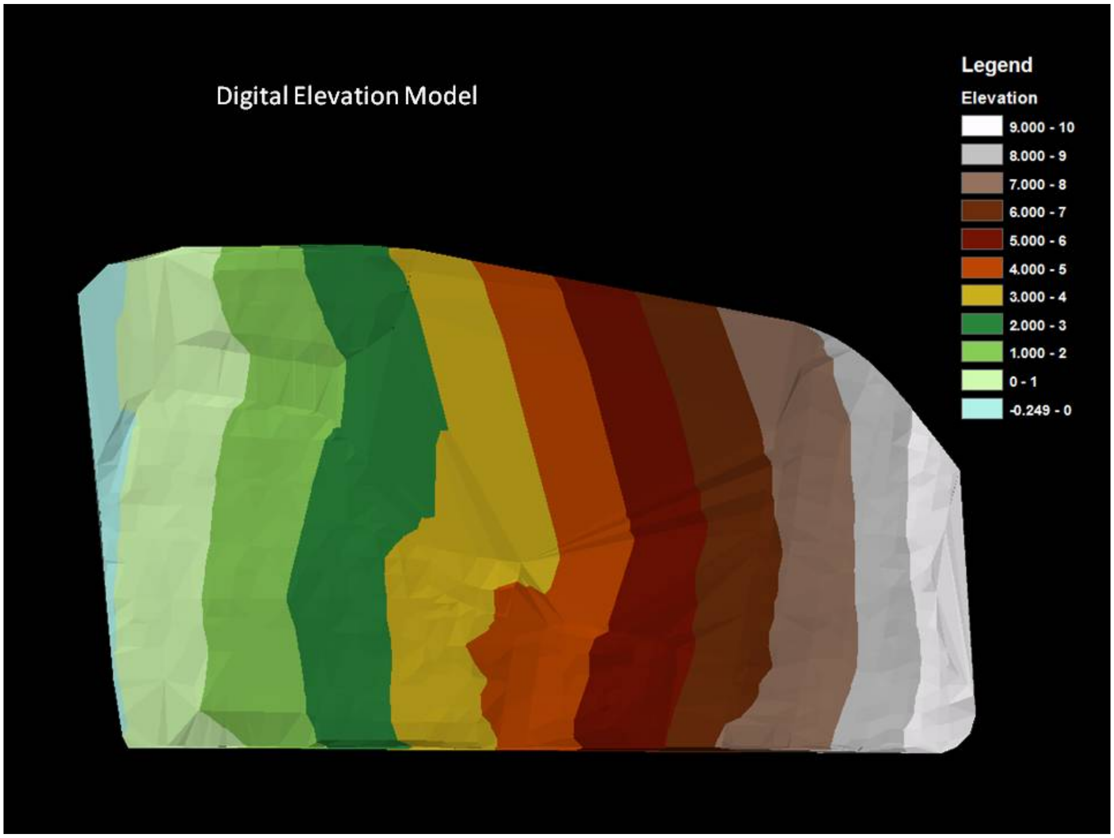


Figure 4.1: Digital Elevation Model of the FBC site created by Dr. Zachary Nelson.

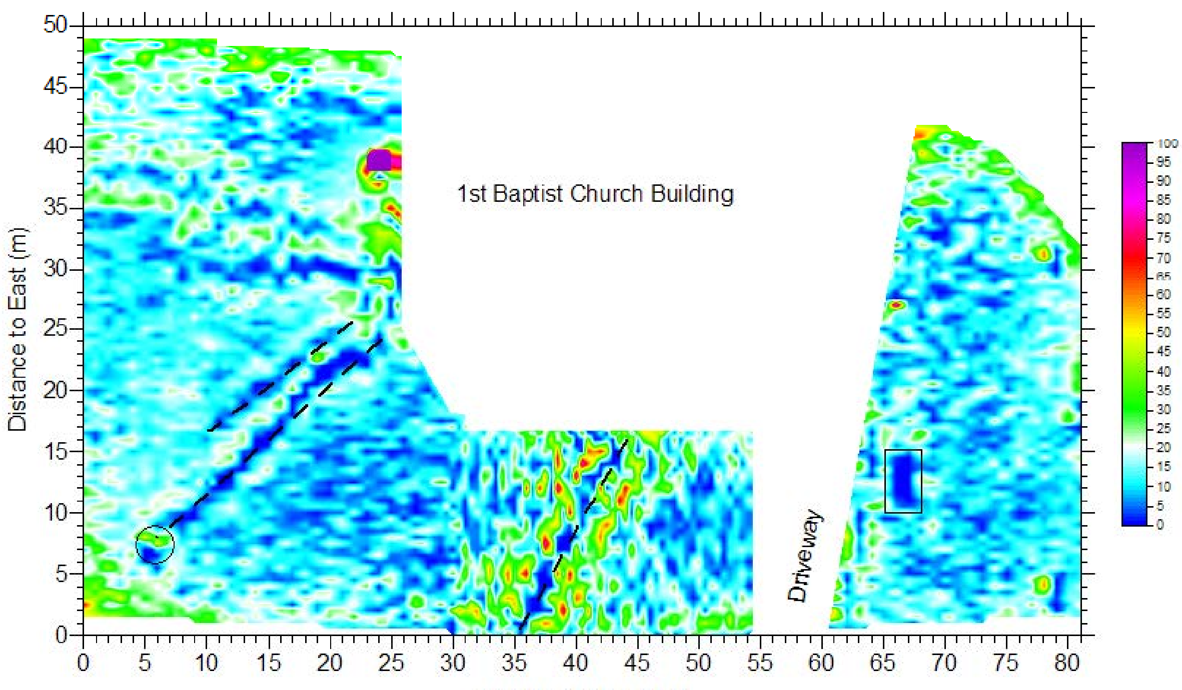


Figure 4.2: Electromagnetic survey of FBC yard in 2006 by Urban and Jacob

Figure 4.3: Placement of trenches during 2007 excavation season.

Figure 4.4: Placement of all trenches of 2006 2007 seasons. Trenches from 2006 are in blue; those from 2007 are in red.

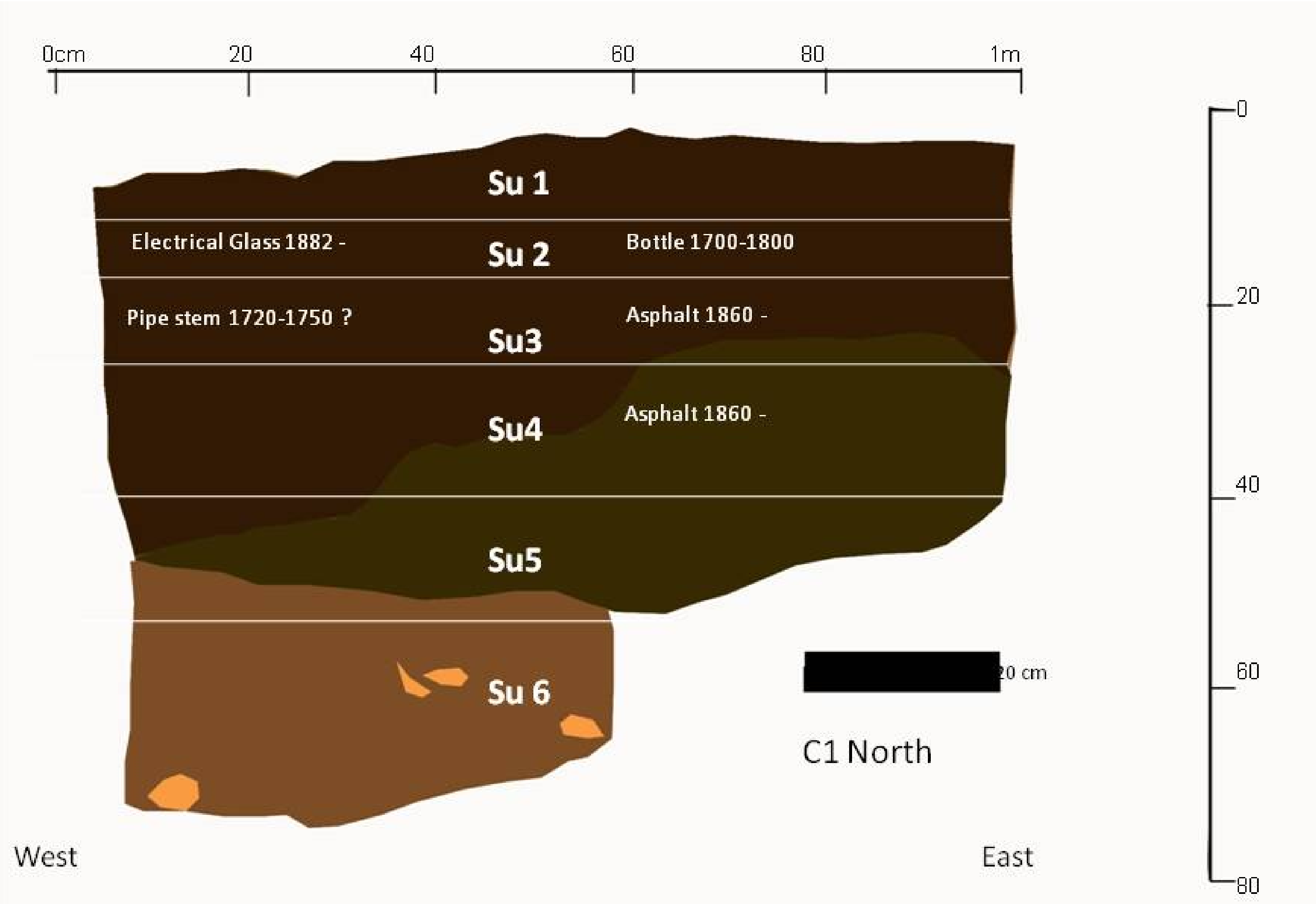


Figure 4.5: C1 Stratigraphic Excavation Units with Corresponding Dated Artifacts

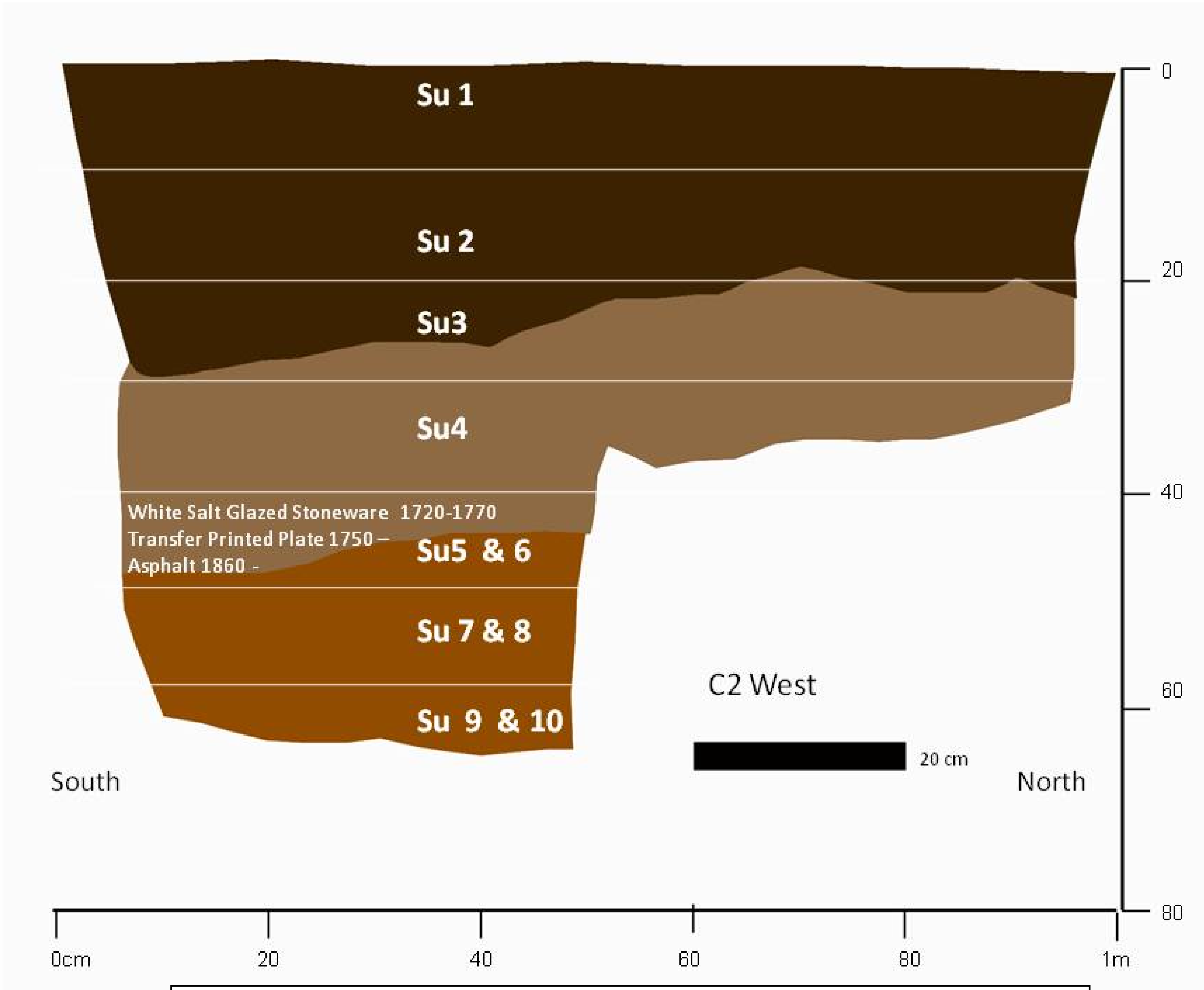


Figure 4.6: C2 Stratigraphic Excavation Units with Corresponding Dated Artifacts

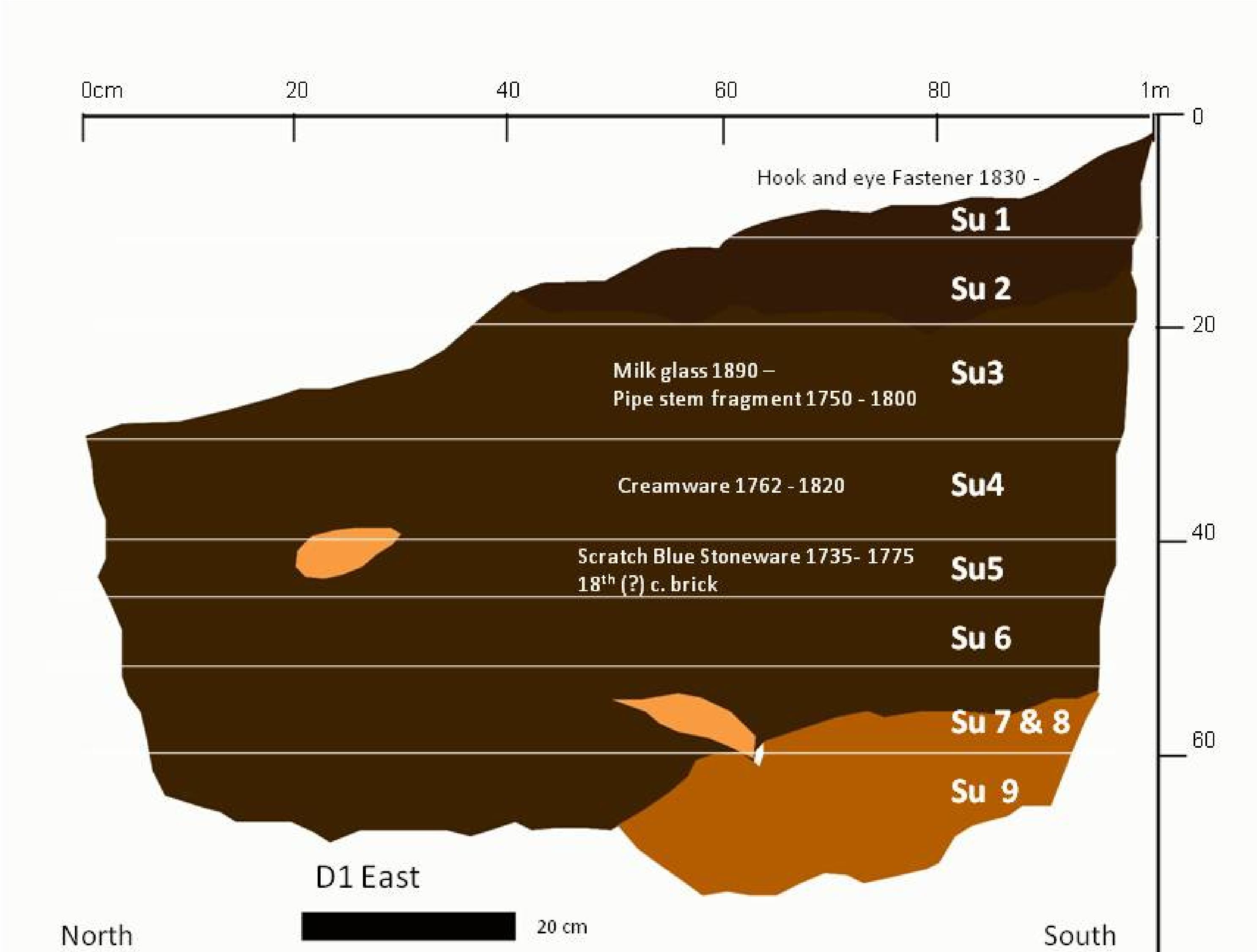


Figure 4.7: D1 Stratigraphic Excavation Units with Corresponding Dated Artifacts

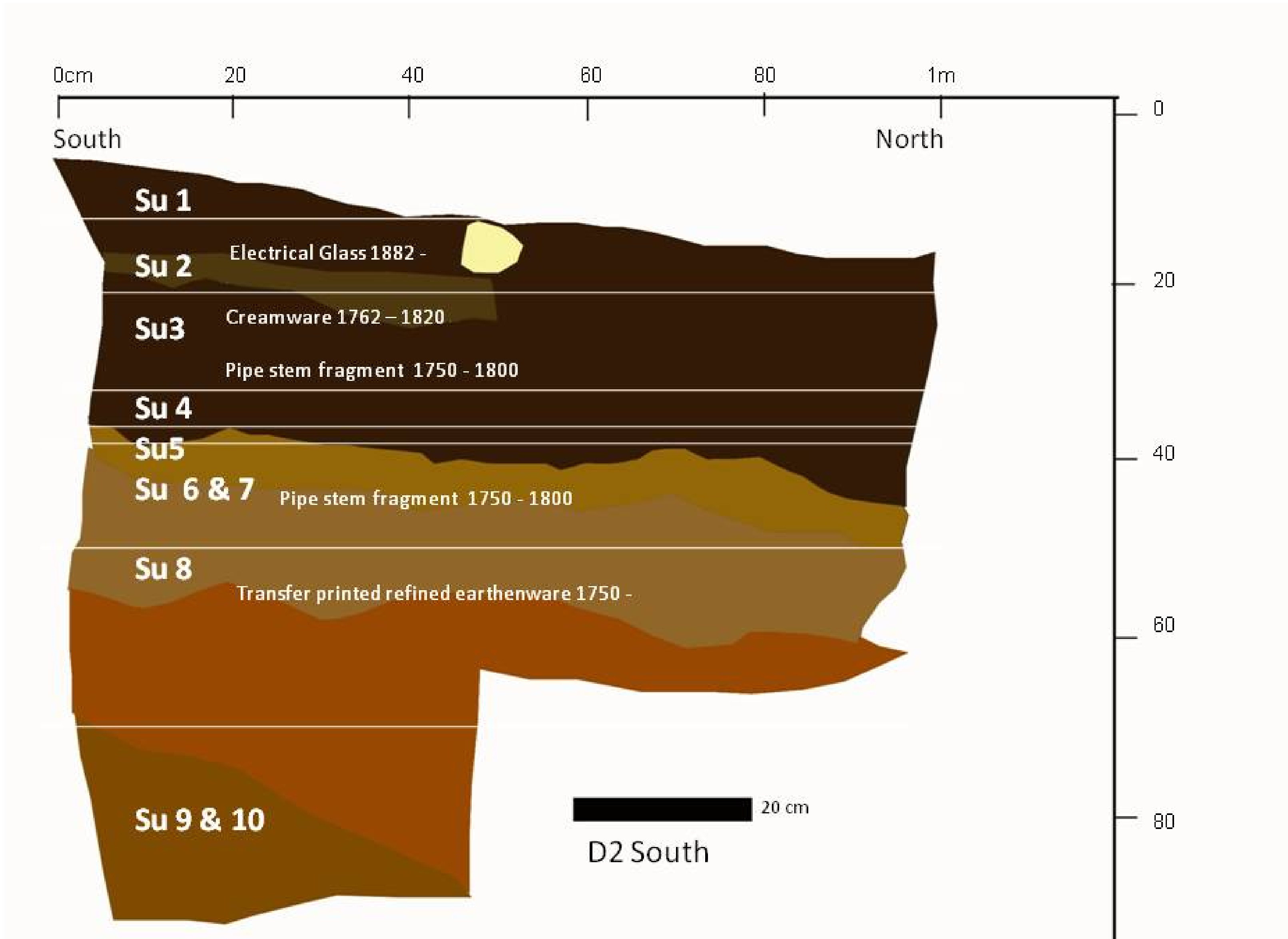


Figure 4.8: D2 Stratigraphic Excavation Units with Corresponding Dated Artifacts

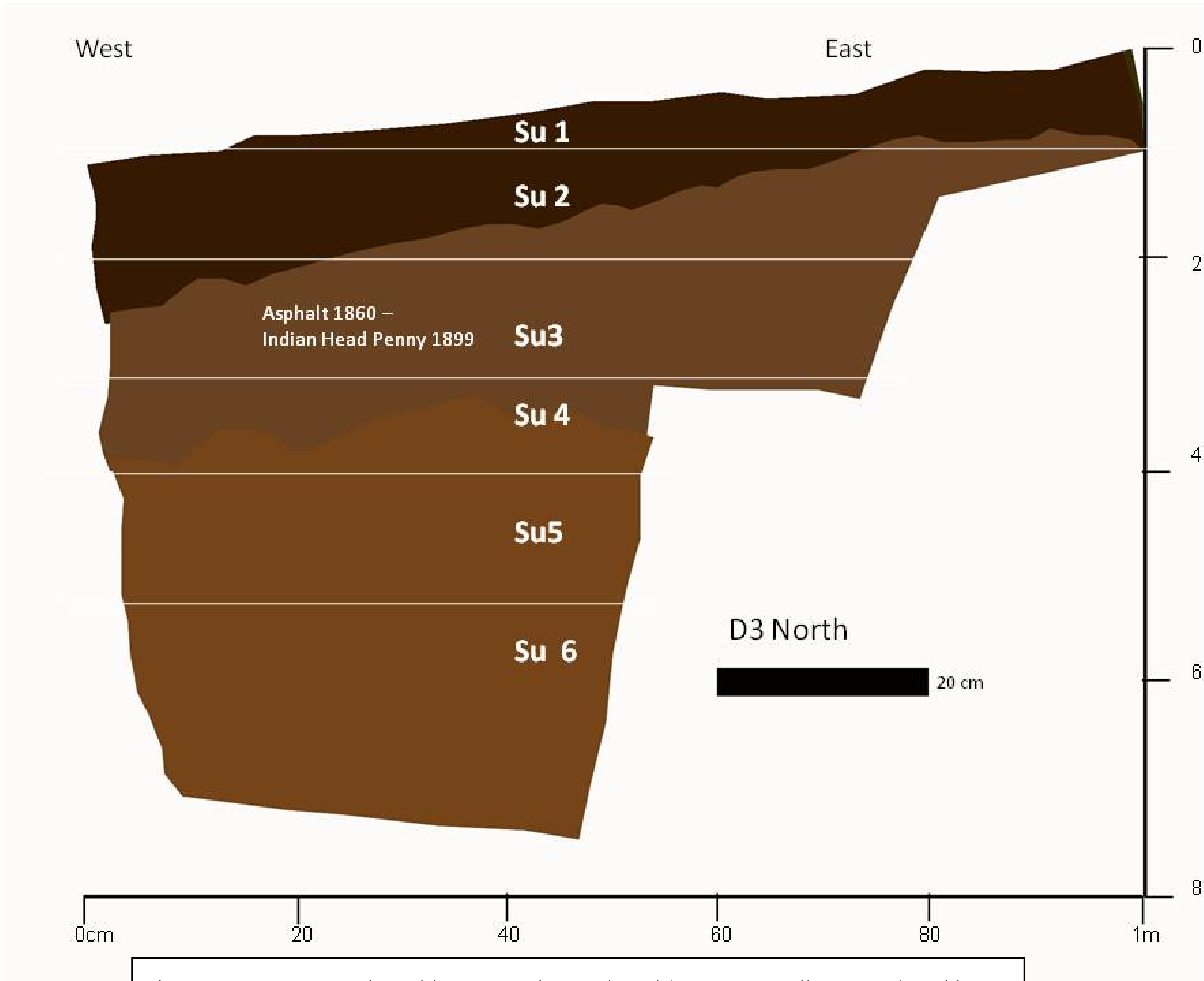


Figure 4.9: D3 Stratigraphic Excavation Units with Corresponding Dated Artifacts

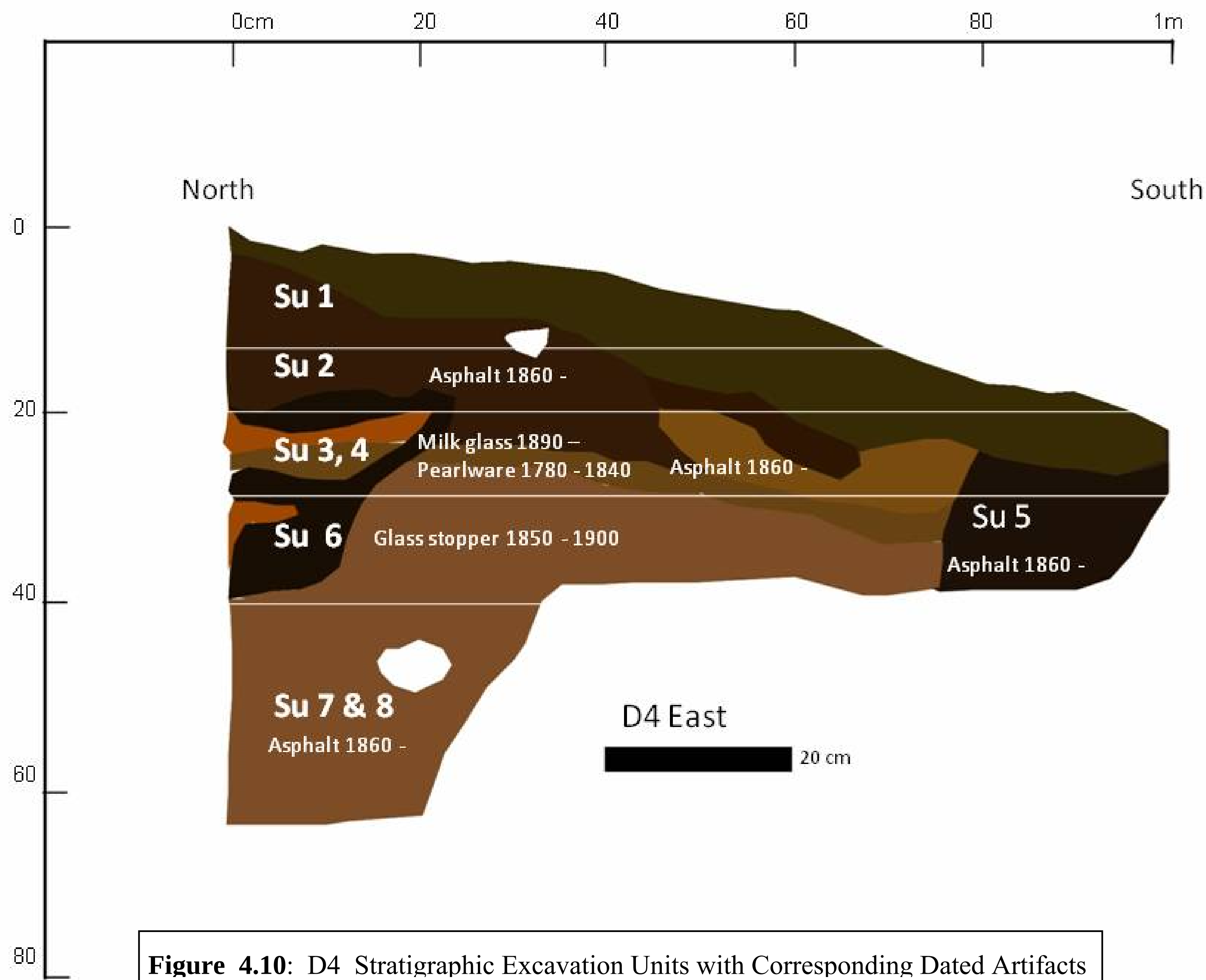


Figure 4.10: D4 Stratigraphic Excavation Units with Corresponding Dated Artifacts

Works Cited

Charest, Tina. "Map and Pictoral History of the First Baptist Church." Picnic Archaeology: Archaeological Investigations at the First Baptist Church in America. Ed. Zachary Nelson and Katherine Marino. Providence RI, 2007.

Nelson, Zachary. "Mapping and Testpit Descriptions." Picnic Archaeology: Archaeological Investigations at the First Baptist Church in America. Ed. Zachary Nelson and Katherine Marino. Providence RI, 2007.

Marino, Katherine. "A Brief History of the First Baptist Church in America." Picnic Archaeology: Archaeological Investigations at the First Baptist Church in America. Ed. Zachary Nelson and Katherine Marino. Providence RI, 2007.

Swain, Cindy. "Kaolin Pipes at the First Baptist Church." An Archaeology of College Hill: Season Two, 2007, at The First Baptist Church in America, Providence, Rhode Island. Ed. Katherine Marino and Michelle Charest. Providence, Rhode Island, 2008.

Urban, Thomas and Jacob, Robert. "First Baptist Church Geophysical Report." Picnic Archaeology: Archaeological Investigations at the First Baptist Church in America. Ed. Zachary Nelson and Katherine Marino. Providence RI, 2007.

Chapter 5

Stratigraphy and Soil Levels at the First Baptist Church of America

Veronica Lowe with Katherine Marino

Stratigraphy, a subfield of geology, involves the study of soil layers as way to access the history of a site (Harris, 1989: 31). In investigating the soil and its formation one is looking at the stratigraphic record. Each layer is a record of a separate event. The layers are defined by differences noted in the color and texture of the soil. From this examination, artifacts and bones discovered in an excavation can be relatively dated and further investigated to figure what happened in the time period in which they were deposited. The purpose of this chapter is to explain the archaeological importance of stratigraphy at the excavation Brown University excavation at the First Baptist Church in America during fall 2007.

Stratigraphy is a field that most archaeologists, paleontologists, and zooarchaeolgists use in their studies (Harris, 1989: 31). By carefully studying the layers that bones and artifacts are discovered in, these scholars can determine the relative dates in history and/or prehistory that the artifacts and/or fossils occupied. There are different sub-categories within stratigraphy that deal with separate findings or ways to study the soil layers. In relation to the excavation at the First Baptist Church of America, one of the five subcategories in stratigraphy was used to date and examine the artifacts and faunal remains found in the trenches.

The subcategory in stratigraphy used at the First Baptist Church is called lithostratigraphy (Davidson and Shackley, 1976: 34). This is the most used subcategory among archaeologists. It involves assessing the changes in the coloring of soil vertically and horizontally and based on those changes defining separate areas as different stratigraphic layers. The changes are determined visually and not chemically. It also involves the most important law in this field known as the Law of Superposition (Harris, 1979). This law states that among stratigraphic layers, the oldest layer, or strata, is at the bottom and youngest is at the top.

In archaeological studies and excavation, stratigraphy is used to understand and examine the processes that formed the soil and date the discoveries of an excavation relative to one another. The law of superposition helps place the artifacts in sequential order. Two other laws used in stratigraphy are the Law of Original Horizontality and the Law of Original Continuity. The former states that "any archaeological layer deposited in an unconsolidated form will tend towards a horizontal disposition (Harris, 1979: 112). The latter specifies that "any archaeological deposit as originally laid down will be bounded by a basin of deposition" horizontally. If it is vertical, the deposit was altered by natural or cultural transforms (Harris, 1979: 112). As stated before, different forms of activity can be inferred through stratigraphy by applying these laws to the differently colored stratigraphic layers. The relationship of layers to each other is best represented by a drawing called a profile or section.

A profile is a sketch or drawing of a side view of a trench in excavation that displays the stratigraphy of that trench. Profiles are important because they allow an archaeologist to determine comparable periods of deposition across a site in trenches that are non-contiguous. For example an artifact 30 cm deep in trench C2 may be in an equivalent soil layer in D1 which happens to be only 15 cm deep. Although the depths are different, the soil matrix in which the objects lie is the same. This fact points to a similar time period for the deposition of the artifacts and of the soil itself in both trenches.

Before looking at the stratigraphy of an archaeological site, it is best to first look at the historical geology of the area in which excavation is taking place. In this instance, the geology of Rhode Island will be investigated. In order to gain a better understanding of the methods used, laws applied, and the relation of such to the First Baptist Church, it is best to look at the soil that is found in Rhode Island, the soil in Providence, Rhode Island, and the historical geology of the soil in the area. We will look at the overall soil structure of this state.

Similar to other New England states, Rhode Island is by-in-large covered by sand and gravel. This type of soil in Rhode Island dates from the latest ice age. In scattered areas, bedrock is laid bare. The entirety of the state is within the Avalon Terrane. This is a “block of crustal rocks that once lay off the North American continent in the Late Proterozoic time” (Smith, Socci, and Skehan, 1990: 21). Based on the geological time scale, the Late Proterozoic time took place more than 550 million years ago. The United State Soil Conservation Service describes the Avalon Terrane area that Rhode Island lies on as:

> Two chunks of that terrane are separated by a major shear zone running down the west edge of the state. The Hope Valley subterrane is on the west (in light brown) and the Esmond-Dedham subterrane is on the right covering the rest of the state. It in turn is broken in two by the light-toned Narragansett basin. These subterranes have been intruded by granites and other igneous rocks in two main orogenies, or mountain-building episodes”. (USDA-SCS 1981)

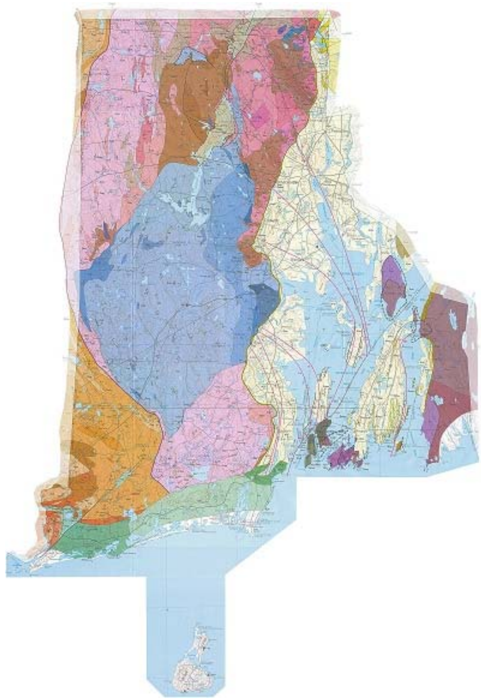


Figure 5.1: Geological map of Rhode Island

The two orogenies that are discussed here are the Avalonian orogeny from the late Proterozoic period and the Alleghenian orogeny from the Devonian period through the Permian period (roughly 400 to 290 million years ago). The geophysical forces of these orogenies caused the state's rock to warp leaving it metamorphosed (Smith, Socci, and Skehan, 1990: 21). In Figure 5.1, a map displaying the geology of Rhode Island, one can locate regions dense with metamorphosed rock, such as is represented in the lines within the Narragansett Basin (Office of the Rhode Island State Geologist). This basin was created during the second orogeny and contains also sedimentary rock. It is also where most of Rhode Island fossils are located (Smith, Socci, and Skehan, 1990: 21). In the remaining Triassic, Jurassic, and Cretaceous geological time periods (about 250 million years), the deep layers in the area were exposed by erosion and are now on the surface.

The most important method in studying stratigraphy is determining the soil color of each layer in the trench. The determination of the soil color is done by comparing it against a standard color chart. This chart, called a Munsell chart, is based on one fifth of the actual variations of soil in existence. The Munsell soil color charts were created by the United States Soil Conservation Service as a guideline for determining the colors of different soils. The arrangement of colors within the charts is by three dimensions that are used to define the various colors. The three dimensions are known as the hue, chroma and value. The hue indicates the soil color in relation to red, yellow, green, blue, and purple. Hue is denoted by the letter abbreviation of the color of the rainbow preceded by a number from 0-10. Chroma, the second number in the nomenclature, indicates the degree of saturation of the colors. The value, the third number in the nomenclature, indicates the intensity or lightness of the color. All three dimensions are required to determine the soil color.

As regards the excavation practices during the dig, general policy was to use arbitrary levels of 10cm depth as standard excavation units. Until a team found an obvious difference in coloring, the arbitrary levels were to be maintained. Each stratigraphic unit, arbitrary or otherwise, was recorded in a Harris matrix, which documented its relationships to all units which came before and after it. The Harris matrix is useful since it gives archaeologists the opportunity to view stratigraphic layers as they were excavated in diagrammatic form. At the conclusion of the dig each trench had one to two profiles of its most significant stratigraphy drawn. Soil samples were taken from every discernable layer within each profile or every 10 centimeters within a layer should it be more than ten centimeters thick. The position of each sample was noted on the appropriate profile. Each sample was about 20 grams and stored in a sealed, labeled Ziploc bag. Samples were later analyzed at the lab to ensure constant conditions of light and humidity, both factors which can affect the perception of soil color.

In the lab the soil colors were recorded through the clear plastic of the bag. Since everyone sees color differently, it was decided to have a single person do all the Munsell value assignations to ensure internal consistency within the readings. This was done by both Veronica Lowe and Katherine Marino. The chart of Marino's Munsell reading for each sample can be found in Table 5.1.

The profiles from the colors of the Munsell color charts were digitized using Photoshop. The originals were scanned and then traced and inked with each layer filled in with a color matching the Munsell reading assigned to it. The profiles, as rendered by Marino, can be found in the preceding chapter with artifacts labeled on them, and at the end of this chapter (Figures 5.2-5.11) Since every monitor shows color differently, the profiles when accessed electronically will appear different colors on different computers. However, the skew in any given direction should be even across all colors and by this means the general relationship between the colors will be maintained. Readers interested in viewing the "true" colors of the soil are provided with the Munsell readings in Table 5.2 and should compare those to a standard Munsell chart.

Within the same trench profiles from different walls had an overall uniform stratigraphy. Across the site three main stratigraphic layers could be determined, although some trenches did have considerably more, such as the North profile of D1. Generally the top layer extends to a depth from about five to 25 cm and is dark brown or grey, rich in organic materials. The middle layer is between 10 and 30 cm thick and is a dark brown layer occasionally with ash or clay mixed in. The bottom layer is lightest in color and is usually sandy in texture with a yellow to orangey color. Although not all soil readings matched up perfectly from trench to trench or even within two adjoining walls of the same trench, this can be viewed as a function of human error as the patterns in terms of hue and intensity are consistent throughout. Furthermore this reconstruction of the stratigraphy is in keeping with the results of the 2006 excavations and their stratigraphic analysis. The layering in D1 and D4 suggests that trenches were cut at some point in the past through the East and South sides respectively of the area that our excavations encompassed, probably as foundation trenches for the stone staircase and curb found to the East and South of the former and the latter.

Even though some aspects of stratigraphy may be flawed, it still can be a useful relative dating method for excavators. Especially in this case, where there is little absolute dating involved, stratigraphy and the laws entailed can help build small theories of the products of the excavation. For example, if one object is datable then the surrounding objects in the same stratigraphic layer can be speculated to have a date within the same time frame, and strata which are comparable in other trenches but otherwise un-datable due to the nature of the artifacts found within them may also now be relatively dated.

Stratigraphy is an important aspect of any archaeological dig, and such has been the case during the 2007 season at the First Baptist Church in America as well.

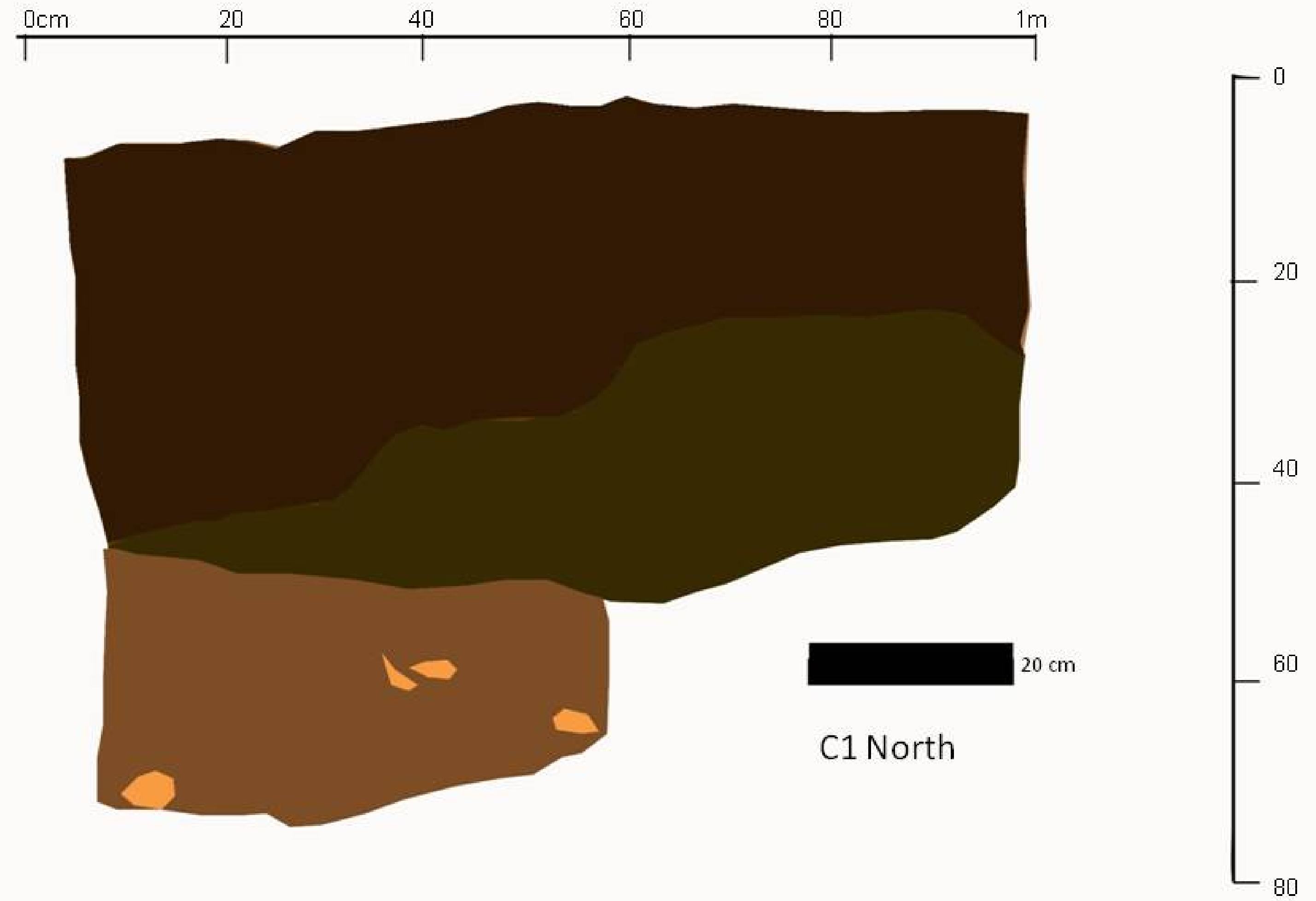


Figure 5.2: C1 North Wall

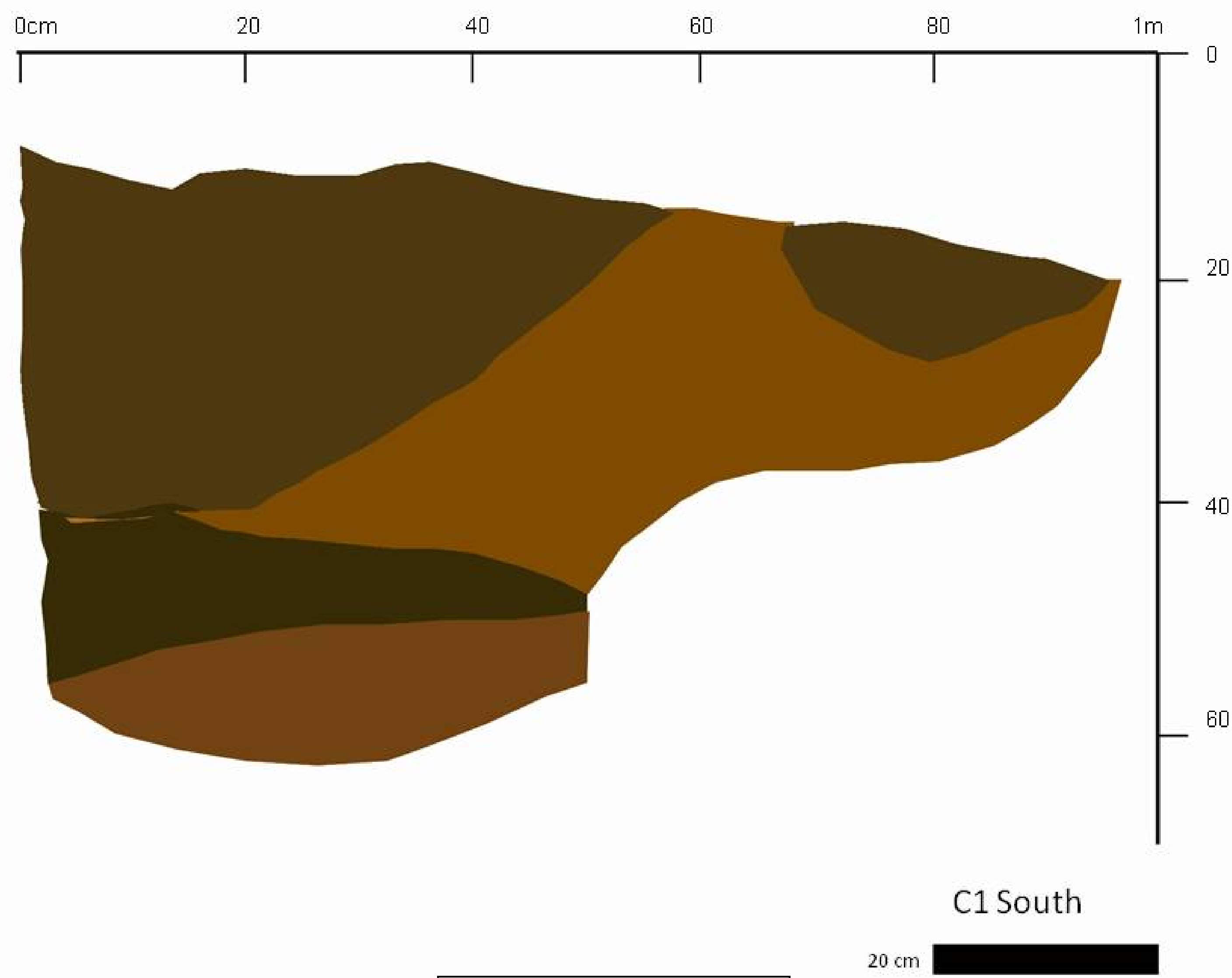


Figure 5.3: C1 South Wall

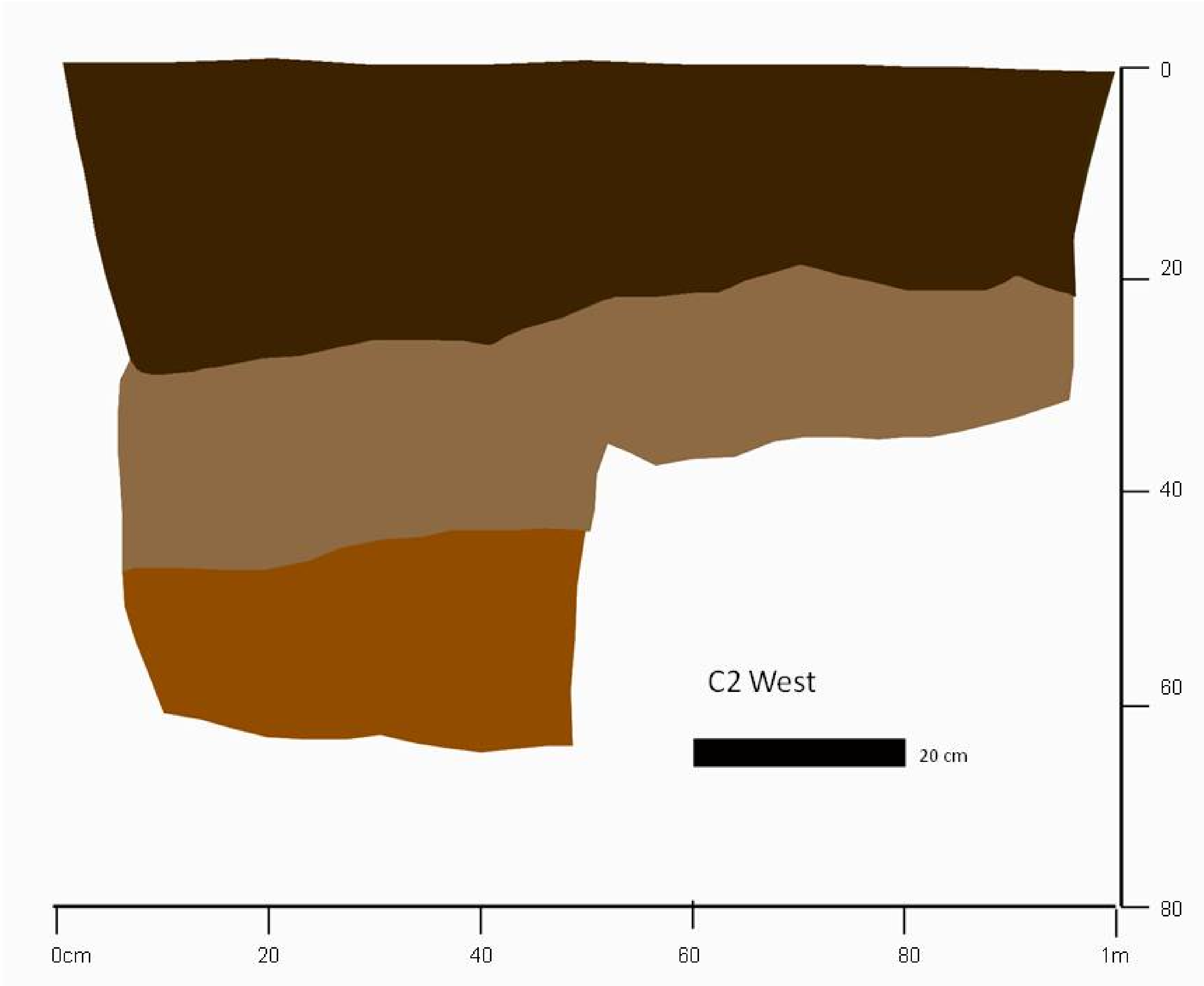


Figure 5.4: C2 West Wall

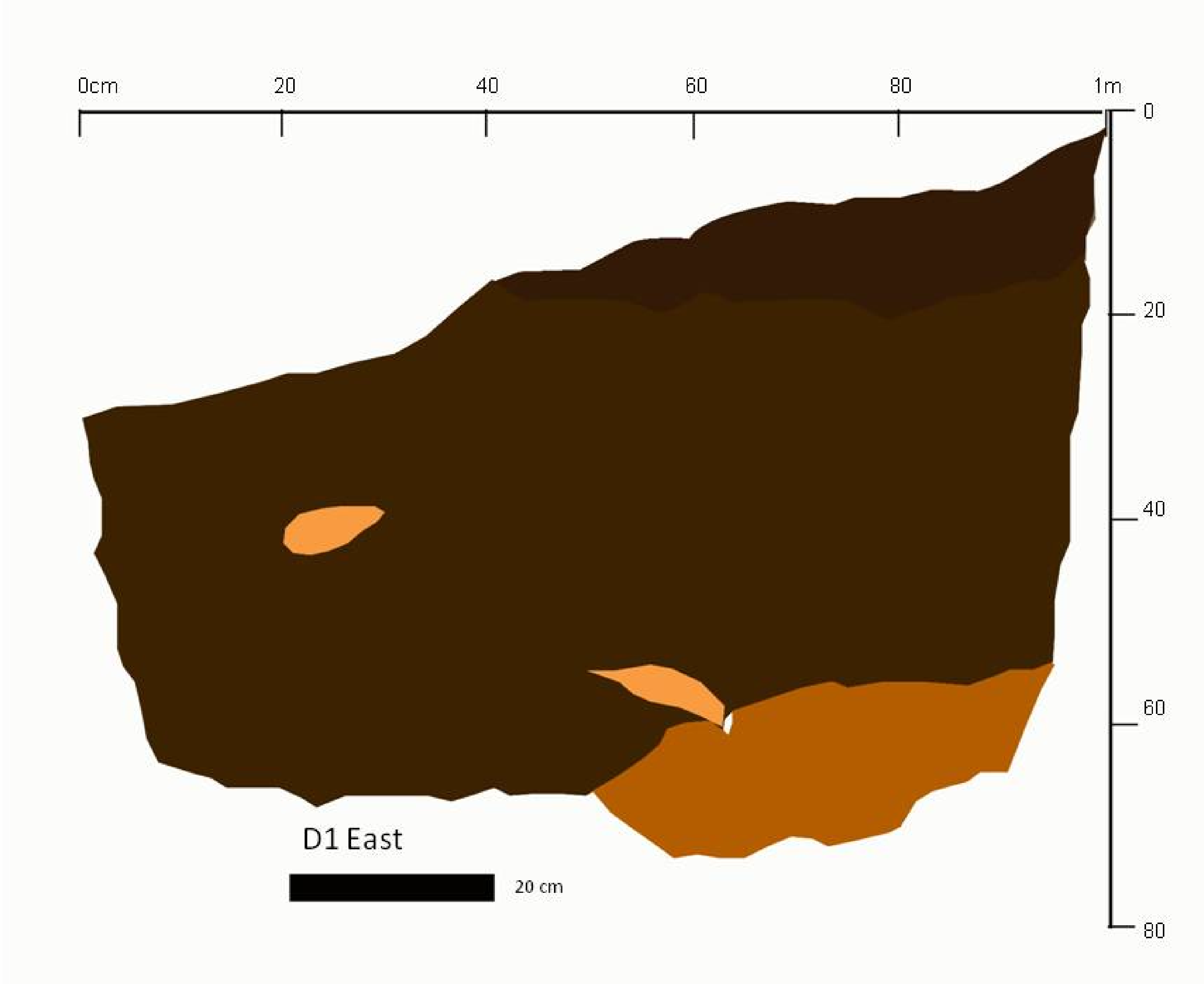


Figure 5.5: D1 East Wall

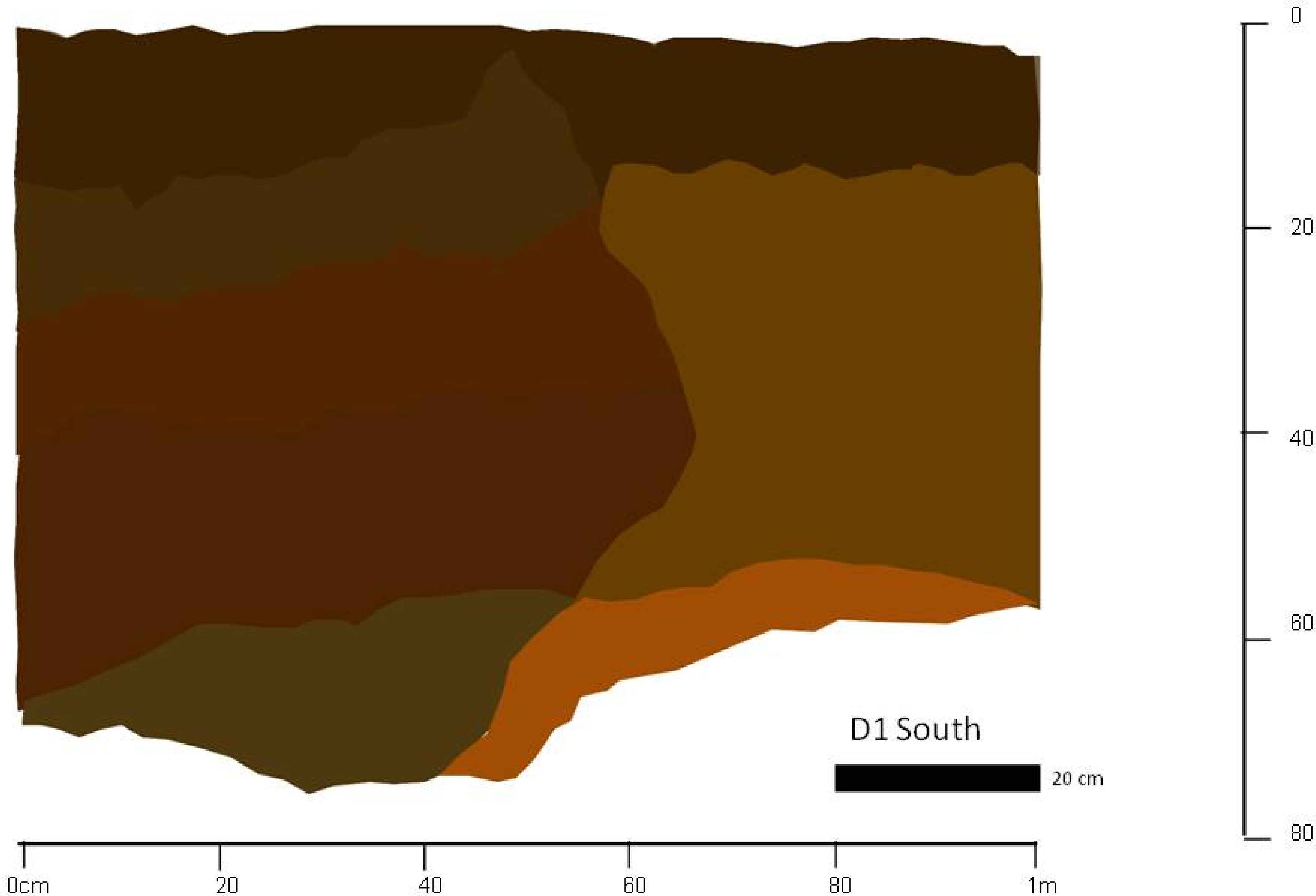


Figure 5.6: D1 South Wall

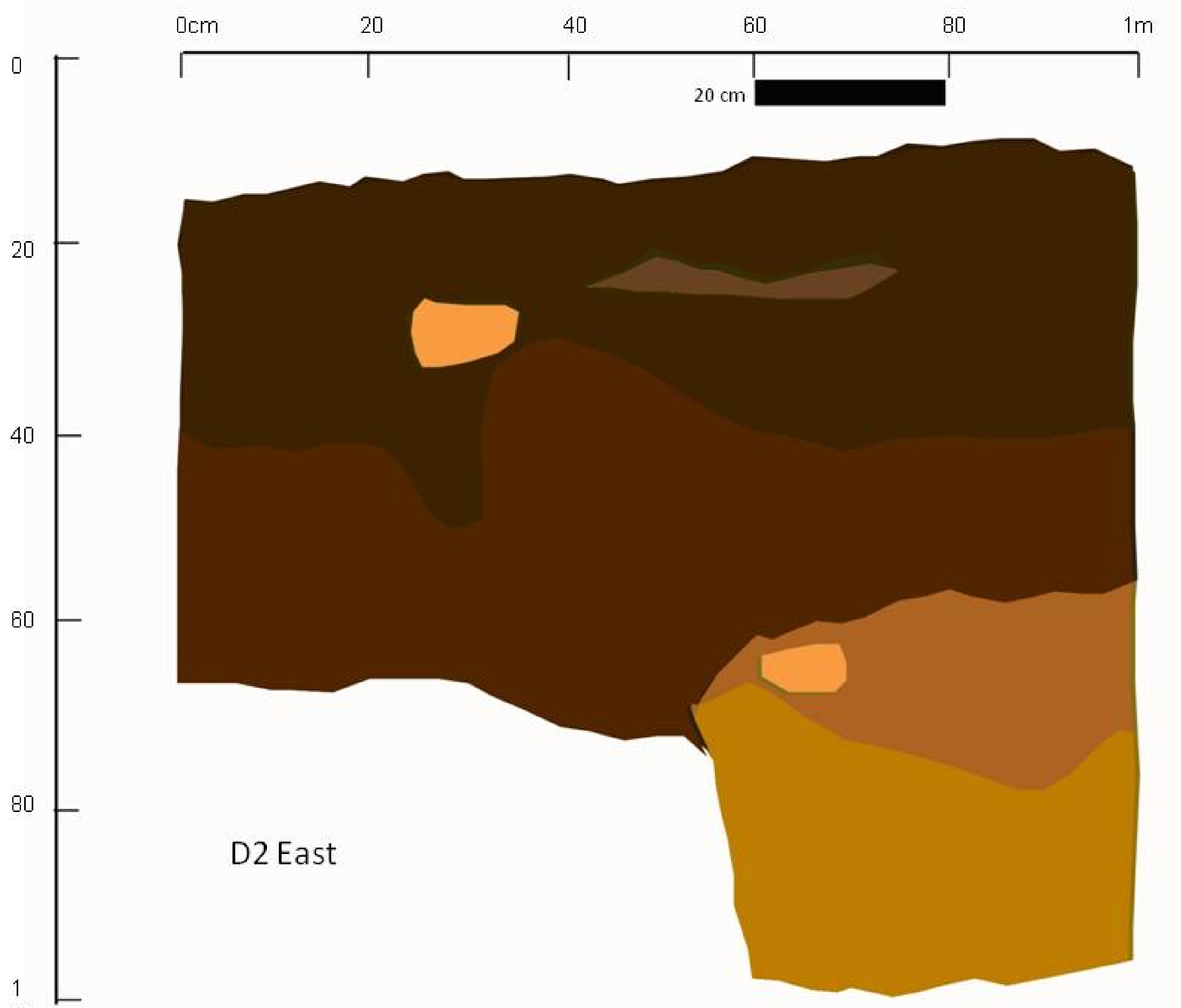


Figure 5.7: D2 East Wall

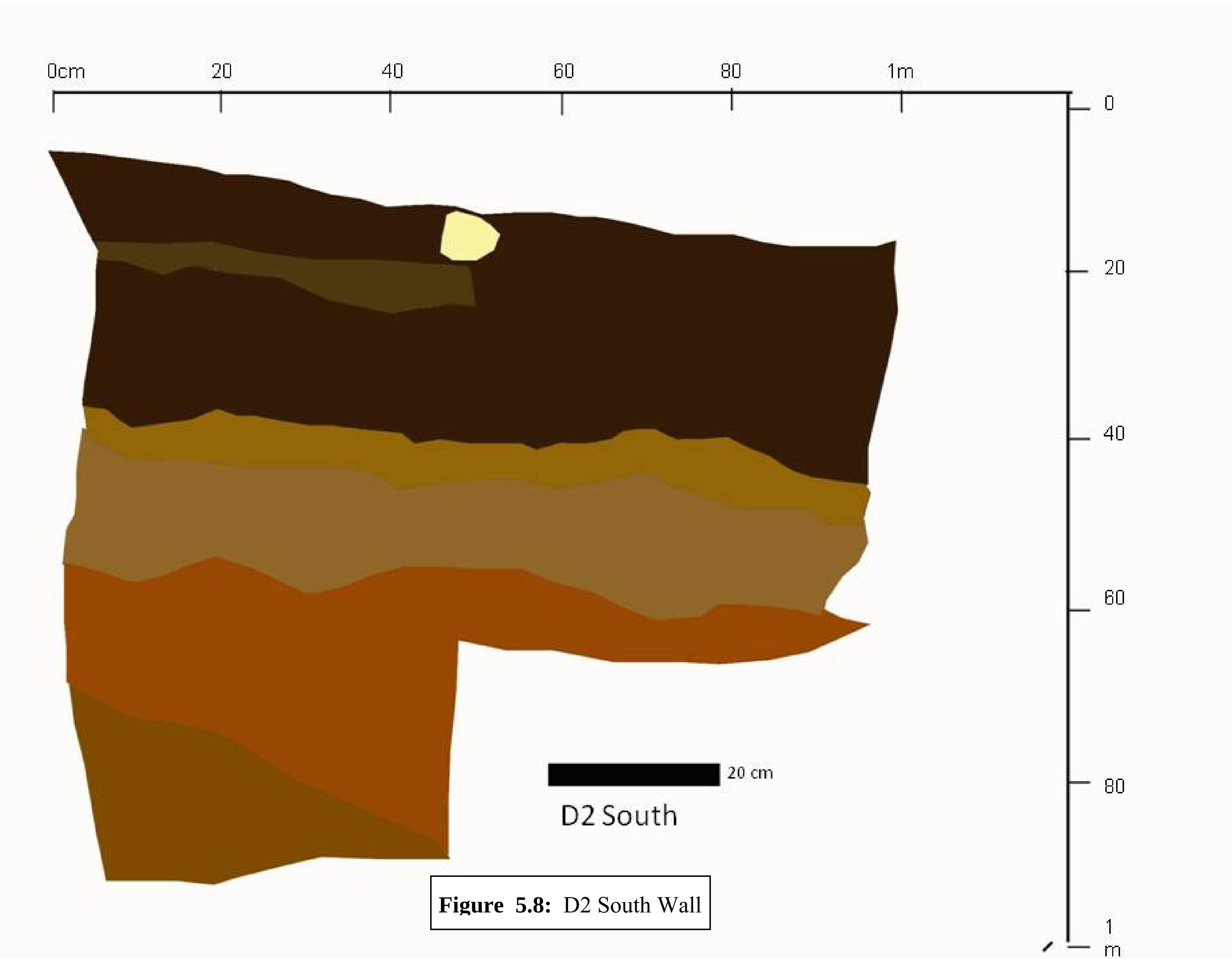


Figure 5.8: D2 South Wall

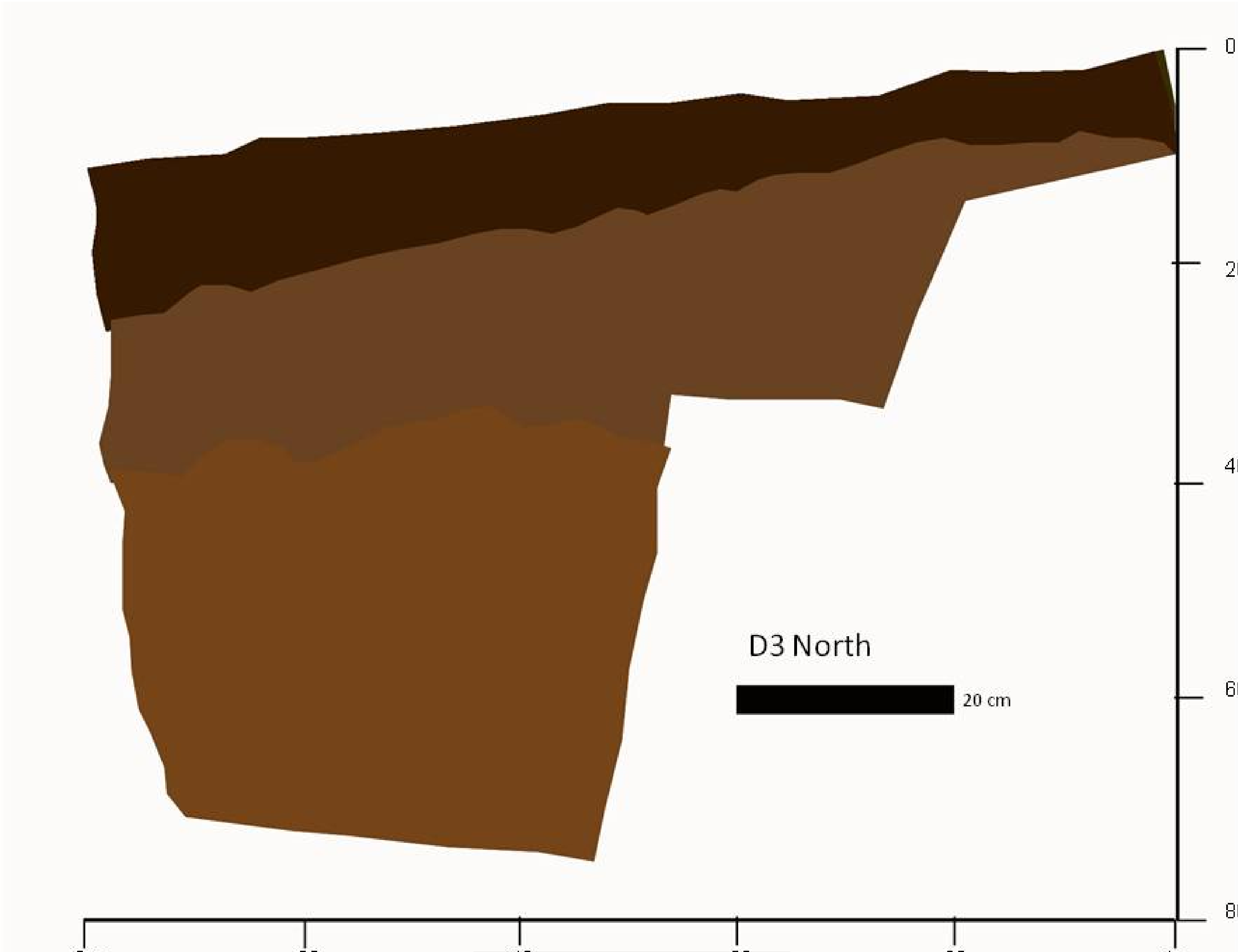


Figure 5.9: D3 North Wall

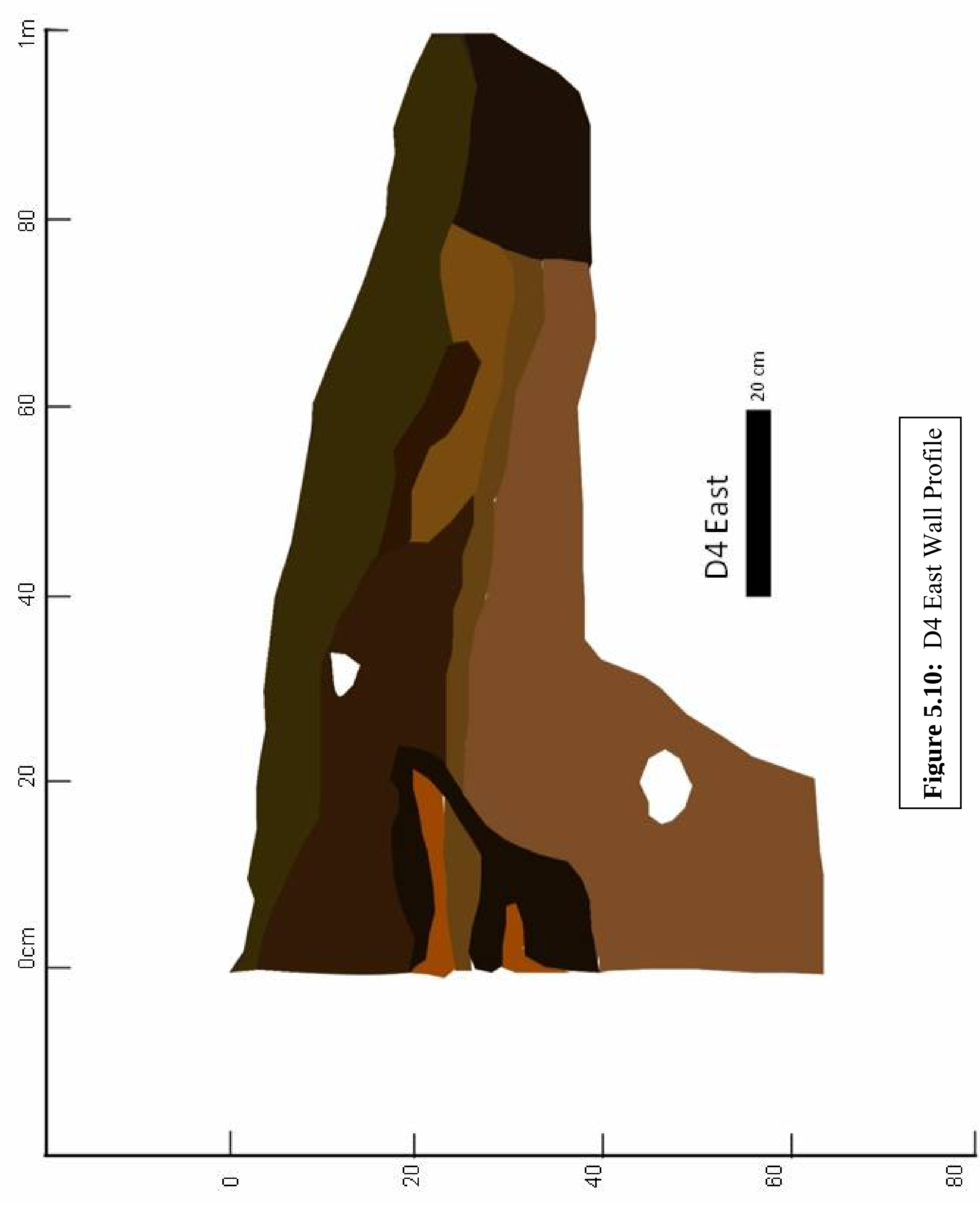


Figure 5.10: D4 East Wall Profile

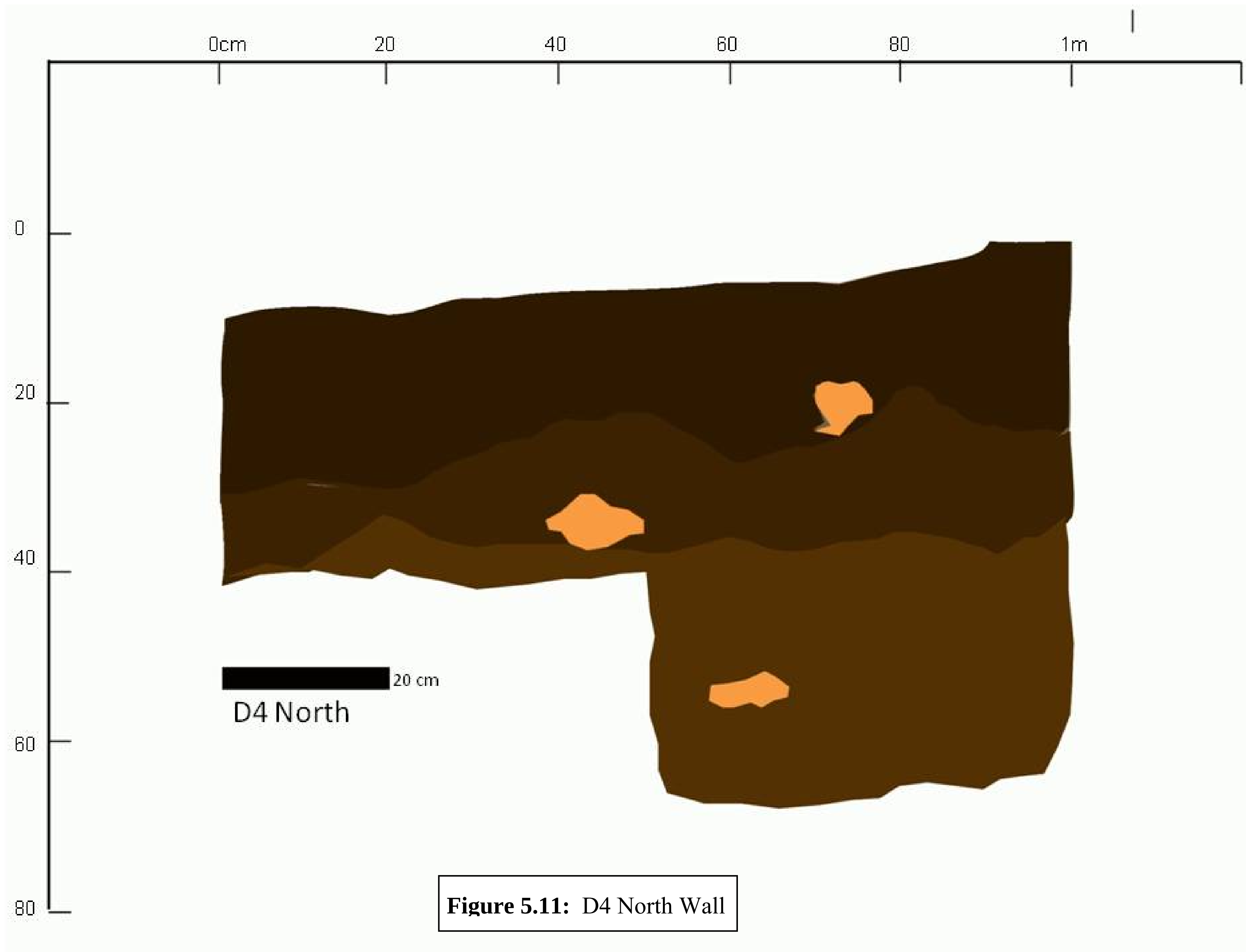


Figure 5.11: D4 North Wall

Table 5.1: Location of soil samples and accompanying Munsell readings.

Trench	Wall	Location	Depth	Mark on Profile	Reading
D4	N	80 East	10	1	5YR3/1
D4	N	80 East	25	2	10YR3/2
D4	N	80 E	40	3	2.5Y 4/2
D4	N	80 E	50	4	2.5Y 4/2
D4	E	10 S	4	1	10YR 4/1
D4	E	10 S	10	2	2.5Y3/2
D4	E	10 S	20	3	7.5YR 4/4
D4	E	10 S	30	4	7.5 YR 4/0
D4	E	10S	40	5	5YR 4/2
D4	E	10S	50	6	5YR 4/2
D4	E	60S	10	7	10 YR 3/1
D4	E	60S	16	8	2.5 Y5/2
D4	E	60S	25	9	5 YR5/3
D4	E	90S	15	10	2.5Y3/0
D3	N	30E	5	1	5 YR 3/1
D3	N	30 E	18	2	10 YR 4/2
D3	N	30E	35	3	10 YR 4/4
D3	N	30E	45	4	10 YR 4/4
D2	E	70S	10	1	2.5Y 3/2
D2	E	70S	20	2	10 YR 4/2
D2	E	70S	30	3	2.5Y 3/2
D2	E	70S	45	4	10YR3/3
D2	E	70S	60	5	10 YR 6/4
D2	E	70S	85	6	10 YR 6/6
D2	S	30W	10	1	2.5Y 3/2
D2	S	30W	23	2	7.5YR 4/2
D2	S	30W	30	3	2.5Y 3/2
D2	S	30W	40	4	10 YR 5/4
D2	S	30W	45	5	10YR 5/2
D2	S	30W	53	6	7.5YR 5/4
D2	S	30W	63	7	10YR 6/4
D2	S	30W	78	8	10 YR 5/3
D1	S	20W	5	1	10 YR 3/2
D1	S	20W	15	2	7.5 Y 3/2
D1	S	20W	28	3	10yr 3/3
D1	S	20W	40	4	5YR 3/3
D1	S	20W	55	5	7.5YR 4/2
D1	S	80W	28	8	5YR 5/4
D1	S	80W	38	9	5YR 5/4
D1	S	80W	56	10	5YR 5/6
D1	E	70S	5	1	2.5Y 3/2

D1	E	70S	12	2	10 YR 3/2
D1	E	70S	25	3	10 YR 3/2
D1	E	70S	38	4	10YR 3/2
D1	E	70S	50	5	5YR 4/6
C2	W	20N	15	1	10 YR 3/2
C2	W	20N	25	2	10 YR 3/2
C2	W	20N	40	3	5YR 4/1
C2	W	20N	55	4	10 R 5/6
C1	S	40W	10	1	7.5Y 4/2
C1	S	40W	25	2	10 YR 5/3
C1	S	40W	35	3	10YR 4/1
C1	S	40W	50	4	5YR 4/3
C1	N	20E	10	1	2.5Y 3/2
C1	N	20E	20	2	2.5Y 3/2
C1	N	20E	35	3	10YR 4/1
C1	N	20E	50	4	5YR 4/2

Table 5.2: Munsell values as rendered in Photoshop

Munsell Value	Color Code in Photoshop
5YR3/1	2D1900
10YR3/2	3C2200
2.5Y 4/2	543103
10YR 4/1	362B05
2.5Y3/2	321A05
7.5YR 4/4	9D4702
7.5 YR 4/0	362210
5YR 4/2	7C4D26
10 YR 3/1	2E1501
2.5 Y5/2	794B0E
5 YR5/3	674212
2.5Y3/0	1C1006
5 YR 3/1	351900
10 YR 4/2	684220
10 YR 4/4	744419
10YR3/3	502500
10 YR 6/4	AD6322
10 YR 6/6	BD7D00
7.5YR 4/2	4D380F
10 YR 5/4	936707
10YR 5/2	906629
7.5YR 5/4	984800
10 YR 5/3	7F4B00
7.5 Y 3/2	462C06

5YR 3/3	4C2303
5YR 5/4	683E00
5YR 5/6	A14E04
5YR 4/6	B45D00
5YR 4/1	8D6A44
10 YR 5/6	924C00
5YR 4/3	714313

Works Cited

Davidson, D.A., Shackley, M.L. Geoarchaeology: Earth Science and the Past. Boulder Colorado: Westview Press, 1976.

Harris, Edward C. Principles of Archaeological Stratigraphy. Academic Press, 1989.

Rector, Dean D. Soil Survey of Rhode Island. U.S. Dept. of Agriculture, Soil Conservation Service, 1981.

Skehan, J.W., Socci, A.D., Smith, G.W. Geology of the Composite Avalon Terrane of Southern New England. Geological Society of America, 1990.

Stewart, Michael R. Archaeology: Basic Field Methods. Kendall Hunt, 2002.

United State Soil Conservation Service. Interim Soil Survey for Providence, Rhode Island. West Warwick, Rhode Island, 1976.

Chapter 6

Through the Looking-Glass: Glass Artifacts of the First Baptist Church

Maia Peck

Although historical archaeology contains no such mind-boggling puzzles of logic and nonsense as those in Lewis Carroll's *Through the Looking-Glass* (1872), artifacts themselves often present intriguing enigmas, raising questions about our past and identity. What was its use? Whose was it? How was it made? Where did it come from? It is through close examination of these broken and decayed objects that we can better understand and piece together a world of antiquity. The glass unearthed at the First Baptist Church excavation in Fall 2007 gives the archaeologist glimpses into early American history and helps reconstruct the early American way of life. While many of the finds remain unidentified because of their fragmentary nature, we can still capture an image of what daily life was like in old Providence by understanding the functions and manufacture of glass found on the First Baptist Church grounds. Now, let us step through the looking glass.

HISTORY OF GLASS

To the modern observer, glass is a fairly familiar object, commonly used for windows, tableware, and optical purposes. In more technical terms, it is an inorganic substance that is usually transparent, lustrous, hard and brittle, produced by fusing sand (silica) with soda or potash (a potassium compound). Usually, it is combined with one or more ingredients, such as lime (calcium oxide), alumina (aluminum oxide) or lead oxide ("glass, *n.*[1]," 1989). Although glassmaking techniques have significantly changed, either for aesthetic or utilitarian reasons, glass has remained one of the most popular craft mediums since antiquity.

The origins of glass stretch as far back as 2500 BCE when ancient Egyptians first made glass beads. In the 1st century BCE, Syrian glassmakers invented the technique of glassblowing, giving greater variety to forms and shapes. By the 15th century CE, the Venetians made major developments in glass decoration by combining ancient and medieval techniques. The Venetian creation of a clear glass like crystal called *cristallo* was particularly admired and was exported throughout Europe. In 1675, an English glassmaker named George Ravenscroft discovered that the addition of lead oxide to Venetian-type glass produced a solid, heavier glass, known as lead crystal or flint glass. This type became very popular for fine tableware in England and among its American colonies ("glass," 2008).

HISTORY OF GLASS IN AMERICA

In the early years of American history, most of the glass was of foreign manufacture from Europe. In the case of Providence, Rhode Island (formerly an English settlement), it is likely that any glass artifacts dating prior to the Revolution were of English origin (Hume, 1991: 60). Most of the 17th and 18th century English and American glass was fabricated either by blowing or molding. Blown glass is made by blowing air through a tube into semi-molten glass and then shaping it. Molded glass, on the other hand, is crafted by blowing the semi-molten glass into a dip mold (one piece mold) or piece mold (several leaves). Molded pieces could also be patterned and then finished by hand (McKearin, 1941: 20-21). Ornamentation included enameling (used as early as the late 18th) and cutting (popular in the early 19th) (McKearin, 1941: 31,33). In the 19th century, pressed glass, or glass manufactured by a mechanical process, became popular, especially for small objects such as the feet for wines and stoppers for decanters and bottles (McKearin, 1941: 25-26).

The first instance of an American glasshouse was in Jamestown, Virginia in October 1608. The workmen, Dutch and Polish glassmakers, made all kinds of glass including beads to trade with the Native Americans. The Jamestown glasshouse, however, quickly fell into disuse about a decade later for unclear reasons (Northend, 1939: 13-14).

In 1739 a German emigrant named Caspar Wistar set up a factory in New Jersey. Wisterberg is credited to be the first successful flint glass house in America. Wistar glass is particularly known for table and ornamental works in clear and opaque white (Northend, 1939: 28). Another well-known flint glass factory was one established by Henry William Stiegel in 1764. Although products of Stiegel manufacture range greatly – there are hundreds of varieties of tableware, containers, decanters, medicine bottles, and vases in many forms, colors and motifs – they are most noted for their works in blue (Mckearin, 1941: 83; Northend, 1939: 42). There were other local establishments in the early 18th century, but in general the glass produced in America was inferior to products manufactured abroad because of the poor quality of the sand and problems with transportation (Northend, 1939: 18-19). In one article from Lord Sheffield's *Observations on the Commerce of the American States* (London 1784) he comments: "bad glass is made in New Jersey for windows, but there is not any quantity of glass ware made in America as yet, except bottles, and even of these the quantity is trifling" (Hume, 1991: 60).

Some of the most frequent finds at American colonial archaeological sites are bottles. The majority of the American bottles produced were of 'green' glass, naturally ranging from green to amber depending on the concentration of iron and alumina impurities. The early drinking vessels and household utensils often occur in these colors too. Soda glass, which was used for fashioning more refined wares, was a type of early clear glass produced in the colonies before the time of Stiegel glass. In the 1750s, colored glass became popular and continued to be so through the third quarter of the century. During this time, glassmakers started to experiment with artificial coloring using metallic oxides (Hume, 1991: 196). For instance, manganese can produce a range of purples from amethyst to a 'black' purple; cobalt can produce blues; copper and iron, various greens; and copper or gold, ruby. Until the 1830's, most American glass ranged from tones of blue and emerald green, of amethysts and purples, and, more rarely, of ruby and opaque white (McKearin, 1941: 9).

After the civil war, a new type of glass called lime glass, a new composition of flint glass, was developed. In 1864, William Leighton of Hobbs, Brucknier and Company of Wheeling discovered a new recipe, which produced clear glass that was not as resonant or heavy as the lead glass. It was less expensive to produce and soon became the preferred type (McKearin, 1941: 7-8). After 1930, arsenic was used as a decolorizing agent (Nelson and Marino, 2006: 207).

The functions of English and early American glass are many. In general, glass was used for bottles, medicine, inkwell, lamps, and windows. A particularly well studied group of glass vessels is glass liquor bottles which have an established chronology. Prior to the mid-seventeenth century, the common wine bottle was "blown into a square-sided mold and had a nearly flat base and a short neck with an everted lip" (Hume, 1991: 62). The sizes vary considerably, but their flat bottoms made them more vulnerable to breakage so they were often carried and housed in cases. By the mid-seventeenth century, globular-bodied, dark-green glass bottles with a high, conical basal kick became popular. By the mid-eighteenth century, square-bodied wine bottles (approximately 8 to 10 inches tall) with short, straight necks of a pale-blue color rose in popularity. One type known as a black wine bottle, free-blown as late as 1820, is distinct from the English ones in that the mouths of this type tend to be thick, broad and gently rounded (Hume, 1991: 62-71).

Decanters, too, have identifiable stages of evolution. Decanters were used to hold liquors such as wine or beer. The first ones were simple green glass wine bottles with green glass handles. After 1720, these green decanters were manufactured in clear, flint glass. Some of the earliest examples from the early eighteenth century have bulbous bodies, straight necks with slightly flaring mouths. In the first quarter of the eighteenth century, a new molded form developed with a six or more sided body, slightly broader at the shoulder than the base, long neck, and low string rim. From 1730 to 1745, they took on a cruciform shaped bottom in order to better cool the wine contents. This type usually has a plain neck with a triple-ring collar below the lip. In the mid-eighteenth century, the body of the decanter lengthened more like contemporary French wine bottles and had faceted conical stoppers. Around 1755 it became popular to decorate the vessels with wine labels surrounded by floral and botryoidal motifs. In the last quarter of the eighteenth century, the base started to become wider than the shoulder and the body taller than previously. A decanter type made from Irish glass was the most impressive of its kind, characterized by its short, bulbous body, broad fat lips, vertical fluting, and elaborately decorated midsection (Hume, 1991: 198-201).

Some of the smaller vessels found on colonial sites are glass pharmaceutical phials. From the late sixteenth century on, these small glass vials were manufactured in England. One early type dating from the early seventeenth century to about 1780 is a thin bottle glass with a swirling-ribbed molding. Pharmaceutical Stiegal products, however, used direct-pattern molding. In the early seventeenth century, small green bottles with four, six, seven and eight sides with short necks were fairly common. Cylindrical phials with a slightly broader shoulder from this early period were also manufactured. Their colors ranged from pale green to emerald to amber. Most common were the deep- or blue-green phials of the eighteenth century – these did not appear before the mid-seventeenth. Later examples are more angular and have smaller lips. As they evolved, the conical basal kick of the early phials becomes less pronounced. The same types in clear glass were eventually made in the mid-eighteenth century. Most of the molded phials are of clear glass, the earliest extant examples being some "cello-shaped bottles for Robert Turlington's Balsam of Life and embossed with the date March 25, 1750" (Hume, 1991: 74). In the second half of the seventeenth century, miniature wine-bottle shaped phials of a thin, bluish glass became popular. These were probably used for oil or vinegar (Hume, 1991: 72-75).

Easily confused with the pharmaceutical phials of the eighteenth century are angular-shouldered, cylindrical bottles without necks or everted mouths. These are actually inkwells. The exact manner in which they were used, however, remains unclear. It is thought that they were either stoppered and carried about or seated in stands on top of desks (Hume, 1991: 75).

Another function of glass was for lamps. Many of the early lamps used candles for light, but around 1850 whale oil lamps began to be made. The earliest type was of simple design in clear glass, whereas more elaborate ones were produced later. Sometimes ornate lamp bowls were imported and joined to Sandwich glass bases (Northend, 1939: 54). The earliest watchmen's lanterns were triangular, about four inches high, with two wooden sides and a front of glass or with two sides of glass and a tin back. A later version was the bull's eye, which had curved door of heavy glass that could be covered by a tin slide. These typically burned sperm oil (Northend, 1939: 133). The first street lights are thought to have been small framed tin lanterns suspended from iron cranes (Northend, 1939: 134). Ship's lanterns varied greatly; one from the U.S.S. Enterprise, used in the War of 1812, is tall and round with a horn window and D-shaped handle. A more elaborate lantern from a riverboat called Oliver Ellsworth (1829) is semi-circular with a pierced tin top and strong front of glass. Interior lamps often had a decorative as well as functional purpose and were usually richly colored or etched (Northend, 1939: 131-139).

The last main category of glass is window glass. Although this type of glass is one of the most common finds on American colonial sites, it is unfortunately one of the most difficult to date specifically. There are, however, a few diagnostic characteristics. In the seventeenth century, glass was usually cut up into 'quarries' or small pieces, which were then mounted in grooved strips of lead (or cames) anchored to iron frames that were nailed to wooden casements. One common type of glass used for leaded windows was a greenish-blue or greenish-yellow 'broad' glass. This was manufactured by "blowing a long, tubular bubble, cutting off both ends to create a 'muff,' slicing this down one side, and laying it on an iron plate in the furnace mouth. As the glass was heated, it was encouraged to open out along the cut until it lay flat on the plate, at which point it was known as a table" (Hume, 1991: 233-234). In the seventeenth century, a new method adopted from France was introduced to the colonies. This type of glass is known as 'crown' glass, named for the natural circles formed in the glass. In 1792, the Boston Glass Company was the first American establishment to make window glass using the crown glass method (Northend, 1926: 83-85). Crown glass was made by blowing a large bubble, transferring it from the blowing iron to a pontil iron and then enlarging the orifice with a wooden tool while constantly rotating the bubble. After rolling it back and forth on the arms of a gaffer's chair, the open mouthed bubble was spun out into a disc. Although this method produced high quality glass, it was extremely wasteful. The edges of the disc were often thick and were cut off and wasted. The center of the disc also formed a 'bullion' or 'bull's eye' that would for aesthetic reasons either be thrown away or used for basement or transom windows. A general difference between broad and crown glass is that broad glass often has elongated bubbles in straight lines, whereas crown glass often has circular strains of bubbles and stress lines. It can be assumed that glass with curving bubbles and stress lines will date after about 1690. Another later type of flat glass is manufactured using the sheet process, which was invented by Lucas Chance of Sunderland in 1832. He improved the broad sheet method by making much larger muffs that were cut cold with a diamond and opened out onto beds of glass rather than onto sand-covered iron. The sheets often measured from 6 to 10 inch squares and were of better quality than their predecessors.

GLASS ARTIFACTS OF THE FIRST BAPTIST CHURCH

All of the glass fragments from the First Baptist Church excavation of Fall 2007 were first washed with lukewarm water and dried on wire screens. They were then collected and stored in paper bags and labeled with the appropriate identification. Each assortment was marked according to the trench name and stratigraphic unit (SU) level from which the objects were uncovered. In addition, each bag was noted with the number of pieces and various types of glass. The data was organized using a Microsoft Excel spreadsheet, which recorded the test pit name, SU level, number of items, the total weight of the assemblage (g), the glass color, number of flat or curved pieces, any diagnostic features, and individual item weight (g) if applicable. Individual weights were measured only if the object was particularly large or categorized as a special find. Visual records were also taken using a digital camera and through sketching. Lastly, the grand total number of artifacts and weight was calculated and recorded (Table 6.1). Final curation of the artifacts will take place at the First Baptist Church.

Before beginning the analysis of the glass, it must be mentioned that there was one assemblage that was unidentified because of a labeling error during the collection of the artifacts into the paper bags. This portion of the total assemblage includes 39 pieces total with a weight of 32 grams altogether. Most of the fragments are aqua and flat (n = 33), while the rest are clear and flat (n = 4) or curved in light olive green (n = 1) and dark olive green (n = 1). Fortunately, no significant finds were present that would hinder the study of glass from the First Baptist Church excavation. The unidentified assemblage will hereafter be designated as 'Mystery Sample.'

DATA AND ANALYSIS

In sum, there were 1,028 glass artifacts excavated, weighing 934.2 grams altogether, of which 850 are flat fragments and 178 are curved. Most of glass unearthed is extremely fragmentary and possesses very limited information for detailed analysis. Fortunately, there are a few pieces that have diagnostic features that will contribute to our study of the First Baptist Church.

The majority of flat pieces are either aqua (n = 554) or clear (n = 288). We also uncovered 5 cobalt pieces, 1 of amber, 1 of amethyst, and 1 of dark olive green (Figure 6.1). Five of the clear, flat glass sherds are painted – two are black with gray spots (Figure 6.2) and two have a red and black design (Figures 6.3 and 6.4).

From the available evidence thus far, it seems likely that the light aqua pieces are fragments of window glass (Figure 6.5). In the seventeenth century, Providence houses had windows that were "small casements filled with oiled paper or little leaded panes of glass" (Providence City Plan Commission, 1959: 41). From an inventory of the construction of the First Baptist Church's Meeting House in 1774, we know that the architects originally used "32 Cumpus window 5 Squairs wide & 6 high beside the Compos heads, of Glass 10 by 13 a 64 / Including Stuf but exclusive of Glass"; "1600 Feet Window Glass a £5," and "2 Dorrick Vernition Windows Suppose may Cost Exclusive of Glass"; "8 Round windows, Stuf and work without Glass"; and, "2 windows Short Carrd out" (Isham, 1925: 24-25). The "Cumpus" window referred to was probably a plain rounded type of glass installed on the eastern face of the tower (Isham, 1925: 17). The "Dorrick Vernition" or Palladian window, which was once behind the pulpit, was covered in plaster in 1846 with the addition of the organ. While the historical records reveal some information about the glass used for the Church, they do not shed much light on the glass found on the property. Interestingly, most of the flat glass unearthed was found in test pits D1 and D4, which are located in close proximity to the Church. This may suggest that many of the glass fragments come from broken windows of the Church. The origin of their manufacture, however, remains a mystery. It is hypothesized that most of the glass comes from Boston since the architects of the Church, Joseph Brown and Jonathon Hammon, went to Boston to examine churches there (Nelson and Marino, 2006: 232). Unfortunately, it is difficult to specifically date fragments of window glass because of the small pane size and few discernable marks of manufacture. Nonetheless, it seems likely that most of the light aqua glass found at the First Baptist Church is broad glass, which was used in leaded windows since the seventeenth century, and is usually either greenish-blue or greenish yellow in color (Hume, 1991: 234). The presence of clear flat glass may suggest more modern manufactured types since earlier pieces are often discolored because of the lack of control over the impurities (Figure 6.6). It seems reasonable to estimate that the aqua and clear flat glass dates from the late seventeenth to eighteenth centuries.

The colored glass found may not be window glass, but part of vessels with flat sides. The cobalt blue pieces (Figure 6.7) may be fragments from a “Bristol blue” work, which developed in England in 1763, or they may be instances of glassware from the American factory William Stiegel, which was famous for its blue glass (Hume, 1991: 196). It is virtually impossible to distinguish between the two in their fragmentary state.

The excavation also uncovered five clear glass fragments with paint in test pits C1 and D4. The two from C1 SU1 have metallic black paint with small gray spots (Figure 6.2) and the two from C1 SU2 and SU4 have a red and black design (Figure 6.3 and 6.4). The piece found in C1 SU2, in particular, has a clear black band with two rows of red dots. The clear fragment from D4 SU3 has a black stripe. However, such small pieces were unable to be analyzed in greater depth because of their fragmentary nature.

The majority of curved fragments were clear (n = 106) and varied in thickness. The colored glass found ranged from amber (n = 30), dark olive green (n = 15), light olive green (n = 8), amethyst (n = 6), light aqua (n = 5), green (n = 5), opaque white (n = 2) and dark aqua (n = 1) (Figure 6.8). One item that is of particular interest is a fragment of a glass marble, which is discussed further in Chapter 13.

One identified piece was an octagonal base of clear glass from C1 SU2 with a diameter of 5.9 cm (Figure 6.9 and 6.10). The bottom has a slight basal kick and an impressed circle in the center. The sides also appear to rise straight. It seems probable that this vessel is an example of a snuff bottle from the early eighteenth century, which are "sometimes cylindrical in form but more frequently have four or more straight sides" (McKearin, 1941: 430). Snuff is the powdered form of tobacco that is sniffed up the nostril rather than smoked. It is also possible that this piece resembles the pharmaceutical bottles from the mid-eighteenth century, which were often multi-faceted, clear glass phials (Hume, 1991: 73-74). The thickness and size of the fragment, however, does not seem to coincide with most examples of medicine bottles, which are usually thin and small. It is also possible that this is a small decanter from the first quarter of the eighteenth century, which had "a six or more sided body, slightly broader at the shoulder than the base, long neck, and low string rim" (Hume, 1991: 199). However, this vessel seems a little too small to be a decanter.

Another object of interest is a flat base of clear glass from D3 SU3 with a diameter of 2.5 cm (Figure 6.11). Although there is only a small bottom fragment available, it seems probably that this vessel functioned as a pharmaceutical or perfume bottle from the thinness of the glass and its small size. The fact that it is clear, cylindrical and has a fairly flat bottom suggests that it is from the mid-eighteenth century (Hume, 1991: 74). This piece was unearthed closer to the surface, which may also indicate that this object is more likely to have a later date according to the law of superposition, which states that lower layers of the earth are older than those which lay on top if there is no disturbance.

There are four instances of embossed lettering from the excavation. In D1 SU4, a clear glass sherd with the lettering "-ER" (Figure 6.12) was excavated. Due its fragmentary state, very little information can be drawn from the object; however, the fact that it curves outward on the embossed side may suggest that this piece comes from the base of a vessel's lip. In test pit D4, three embossed fragments were unearthed in the upper stratigraphic units – an amber piece with lettering "PLEASE" (Figures 6.13 & 6.14), a thick clear fragment with lettering "-ERED / CO" (Figures 6.15 & 6.16), and another clear sherd with "M S" (Figures 6.17 and 6.18). These three pieces all appear to come from the body part of the vessel, though the curvature of the "-ERED / CO" fragment may come from the shoulder. While very little specific information can be gleaned from these bottle pieces, it is plausible to deduce that they are commercial items. In C1 SU2, we also unearthed an embossed fragment with no lettering but some sort of labeling feature. Unfortunately, there were no truly diagnostic characteristics (Figure 6.19).

Two pieces of opaque white glass, otherwise known as 'milk glass,' were found in test pits D1 SU5 and D4 SU3 (Figure 6.20, right and left respectfully). The sherd from D4 has a rim and a slight bluish tint, whereas the piece from D1 has a reddish tint and is slightly more delicate. Milk glass was invented by the Venetians sometime before 1500 as an imitation of Chinese porcelain ("glass," 2008). In America, it was mostly used for cosmetic bottles; however, it did not become popular until around 1890 (Nelson and Marino, 2006: 213).

There are also two decorative fragments found in test pit D1 that appear to have been engraved in a cursive design (Figure 6.21). Yet, because there were so few sherds and no pattern was identified, further analysis could not be attempted.

Finally, there were some unusual glass artifacts that we were unable to identify concretely. One is a small tube from C1 SU2 (Figure 6.22), a thick curved piece with a base from D2 SU1 (Figure 6.23), and a thick, embossed piece also from D2 SU1 (Figure 6.23). The unusual shape and curvature suggest that these pieces are not part of vessels. It is possible that they are pieces of an electrical device, such as a transformer. According to the 2006 report of the First Baptist Church excavation, an insulator and part of a light bulb were uncovered (Nelson and Marino, 2006: 213). If these glass pieces truly are electrical devices, then the earliest they could date would be 1882 when electricity was first installed in Providence (Providence City Plan Commission, 1959: 33).

CONCLUSION

The glass excavated from the First Baptist Church excavation in the Fall of 2007 presents a range of works from the early eighteenth to late nineteenth centuries. Unfortunately, many of the fragments offer very little visual information to assign specific dates without doing chemical analysis. To know these dates, we largely have to turn to soil analysis and other excavated artifacts such as pipes, brick and metal objects. Luckily, there are a few pieces that we can tentatively identify to an approximate date; for instance, the cobalt blue glass could date as early as the mid-eighteenth century. Both the milk glass fragments and electrical devices (if they actually are ones) could be from the late nineteenth century. By combining the evidence of glass with other finds at the First Baptist Church, we can start to gradually piece together a fragmentary portrait of early life in Providence. In the end, these glass artifacts are not only clues to what methods were used to craft them, but also reflections of their makers. They are the “looking glass” through which we can discover another world.

Table 6.1 Glass Artifacts of the First Baptist Church Excavation Fall 2007

Test Pit #	SU Level	# Items	Total Weight (g)	Glass Color	Flat	Description	Curved	Description	Item Weight
C1	1	5	4.8	Aqua	1		0		
C1				Clear	3	2 with metallic paint	1		
C1	2 Top	1	<1	Clear	1		0		
C1	2	17	64.5	Aqua	2		0		
				Clear	11	1 with paint (similar pattern to C1 SU4 find)	3	1 embossed, 1 tube, 1 octagonal bottom	bottom piece = 56
				Amber	0		1		
C1	3	17	11	Aqua	1		0		
				Clear	3		9		
				Amber	0		1		
				Light Olive Green	0		2		
				Dark Olive Green	0		1		
C1	4	15	33.6	Aqua	5		1	bottom (curved)	bottom piece = 12
				Clear	4	1 with paint (similar pattern to C1SU2 find)	3		
				Dark Olive Green	0		1		
				Amethyst	0		1		
C1	5	6	0.9	Aqua	2		0		
				Clear	4		0		
C1	6	7	7	Aqua	4		0		
				Clear	1		0		
				Light Olive Green	0		1		
				Dark Olive	0		1		

Test Pit #	SU Level	# Items	Total Weight (g)	Glass Color	Flat	Description	Curved	Description	Item Weight
				Green					
C2	1	0							
C2	2	10	8	Clear	7		0		
				Amber	0		1		
				Green	0		1		
C2	3	32	32	Aqua	1		0		
				Aqua Dark	0		1		12
				Clear	7		18	1 piece with abnormal curve (possibly a piece of lantern glass?)	
				Amber	0		5		
C2	4	55	72	Clear	34		14	1 bottom piece	
				Amber	0		3		
				Dark Olive Green	1		3		
C2	5	3	1.7	Clear	1		1		
				Amber	0		1		
C2	6	1	<1	Aqua	1		0		
C2	7	2	2	Aqua	2		0		
C2	8	1	4	Light Olive Green	0		1		
D1	Sod Remo val	1	0.3	Clear	0		1		
D1	1	47	70	Aqua	21	1 corner fragment of window pane	0		
				Clear	12		9		
				Amethyst	0		5	fit together	
D1	2	77	54	Aqua	40		0		
				Clear	30		7	marble	
D1	3	122	128	Aqua	95		0		
				Clear	26		0		
				Dark Olive Green	0		1		
D1	4	75	49.3	Aqua	44		0		

Test Pit #	SU Level	# Items	Total Weight (g)	Glass Color	Flat	Description	Curved	Description	Item Weight
				Clear	28		1	1 with lettering "ER"	
				Cobalt	2		0		
D1	5	105	61.4	Aqua	77		0		
				Clear	18		6	1 with decoration	
				Cobalt	3		0		
				Milk Glass	0		1	one side that is a rim	
D1	6	34	18.2	Aqua	29		0		
				Clear	4		1	1 with decoration	
D1	7	5	4	Aqua	5		0		
D1	8	13	13	Aqua	12		0		
				Clear	1		0		
D1	9	30	18	Aqua	16		0		
				Clear	13		1		
D2	1	11	30	Clear	0		10	2 pressed fragments, 1 with thick foot, 1 with impressed band (possibly parts of transformer?)	
				Amber	0		1		
D2	2	2	1.1	Clear	1		0		
				Dark Olive Green	0		1		
D2	3	21	5.8	Aqua	9		4		
				Clear	2		3		
				Amber	1		1		
				Light Olive Green	0		1		
D2	4	1	2.9	Clear	0		1		
D2	5	5	9	Aqua	3		0		
				Dark Olive Green	0		2		
D2	6	0							
D2	7	5	5.3	Aqua	2		0		
				Clear	3		0		
D2	8	13	17.5	Aqua	11		0		
				Dark Olive	0		2	90 degree edge	

Test Pit #	SU Level	# Items	Total Weight (g)	Glass Color	Flat	Description	Curved	Description	Item Weight
				Green					
D3	1	23	12	Aqua	11		0		
				Clear	8		2		
				Green	0		2		
D3	2	1	<1	Aqua	1		0		
D3	3	19	15	Aqua	2		0		
				Clear	9		6	1 flat bottom piece, 2.5 cm diameter	
				Amber	0		1		
				Green	0		1		
D3	4	0							
D3	5	5	<1	Aqua	3		0		
				Clear	0		1		
				Light Olive Green	0		1		
D3	6	3	<1	Aqua	3		0		
D4	Wall Clean	1	0.3	Aqua	1		0		
D4	1	0							
D4	2	21	21.5	Aqua	8		0		
				Clear	6		1		
				Amber	0		6	1 with lettering "PLEASE"	
				Light Olive Green	0		1		
D4	3	45	38.2	Aqua	13		0		
				Clear	17	1 with black paint	3	1 with lettering "ERED / CO."	
				Amber	0		8		
				Green	0		1		
				Dark Olive Green	0		2		
				Milk Glass	0		1	white	
D4	4	46	27	Aqua	27		0		
				Clear	18		1	1 with letter "M"	
D4	5	7	3.3	Aqua	6		0		

Test Pit #	SU Level	# Items	Total Weight (g)	Glass Color	Flat	Description	Curved	Description	Item Weight
				Clear	1		0		
D4	6	77	53.7	Aqua	61		0		
				Clear	11		3		
				Amber	0		1		
				Amethyst	1		0		
D4	7	2	1.9	Aqua	2		0		
Mystery Sample		39	32	Aqua	33		0		
				Clear	4		0		
				Light Olive Green	0		1		
				Dark Olive Green	0		1		
Total		1028	934.2		850		178		

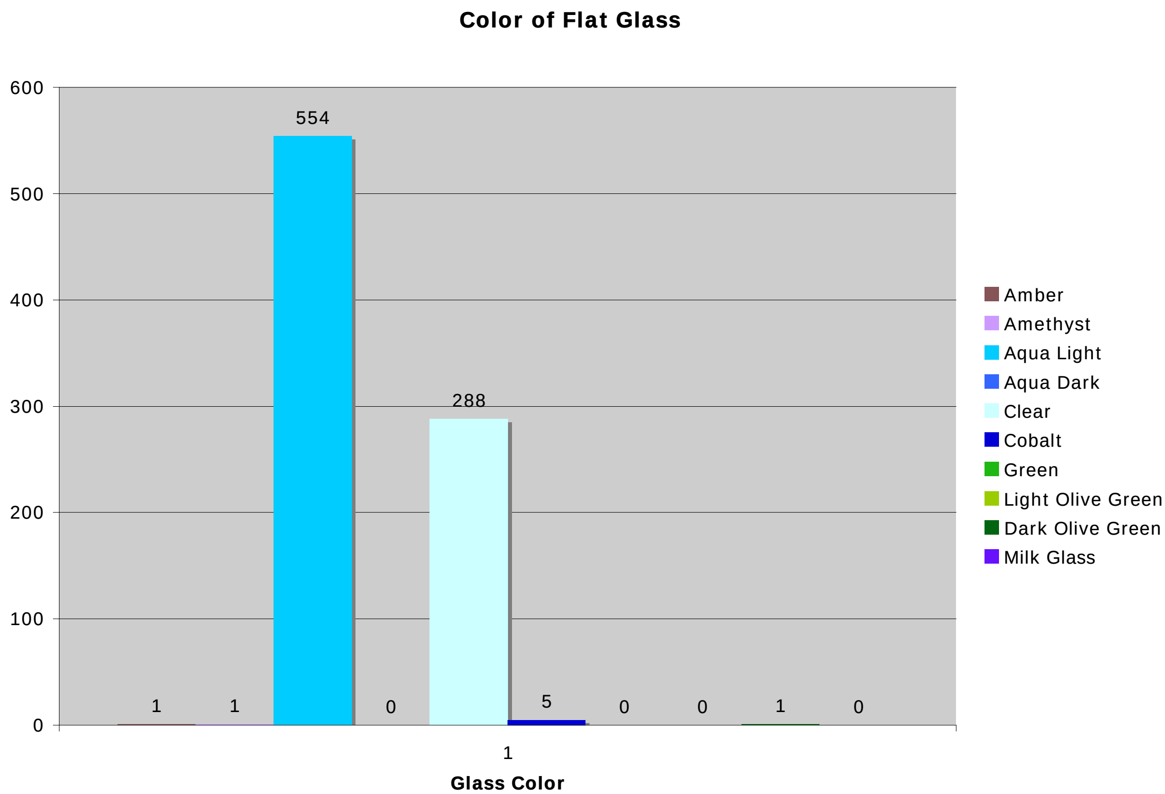


Figure 6.1: Number of flat glass shards by Color

Figure 6.2: Photo of two clear painted fragments

Figure 6.3: Photo red and black painted clear glass fragment

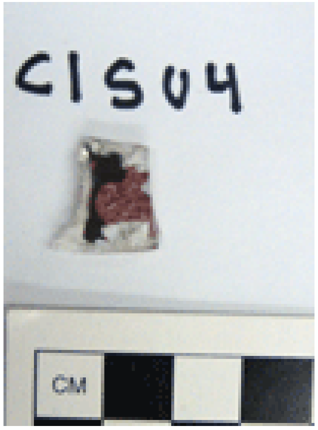


Figure 6.4: Photo of red and black painted clear glass fragment (similar to piece found in C1 SU2)

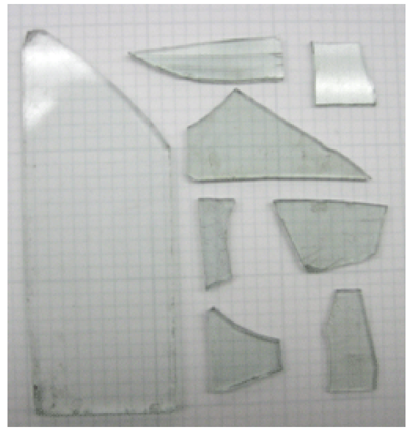


Figure 6.5: Light aqua glass

Figure 6.6: Clear flat glass

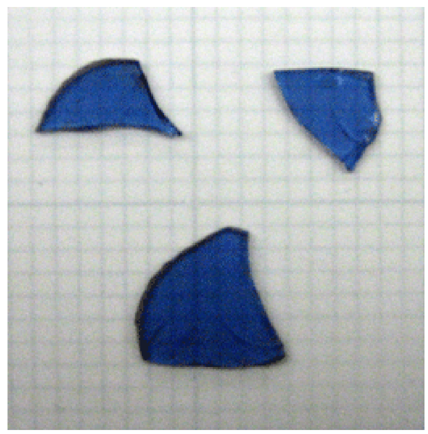


Figure 6.7: Cobalt glass

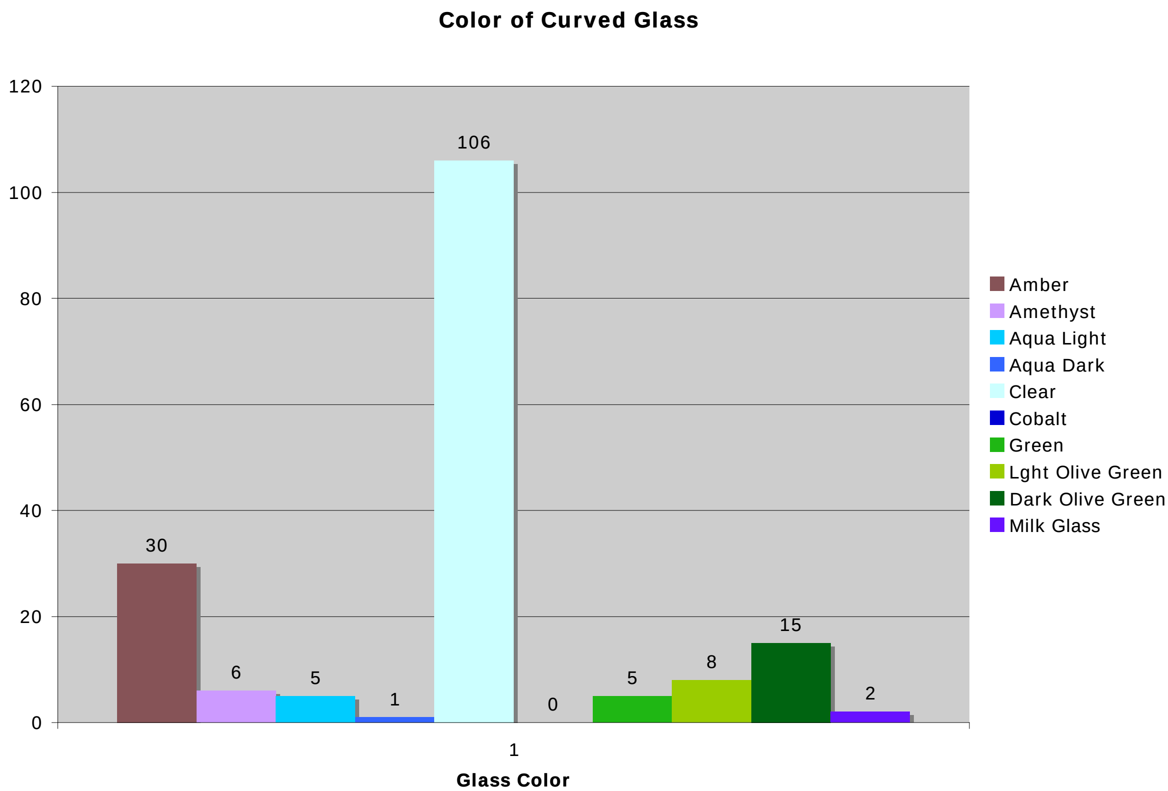


Figure 6.8: Number of curved glass shards by color

Figure 6.9: Photo of a clear octagonal base

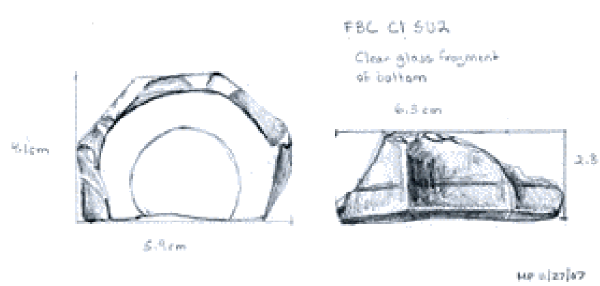


Figure 6.10: Drawing of clear octagonal base

Figure 6.11: Clear glass base

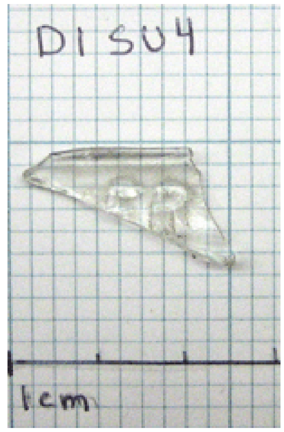


Figure 6.12: Embossed clear glass fragment with lettering "-ER"

Figure 6.13: Embossed amber fragment with "PLEASE"

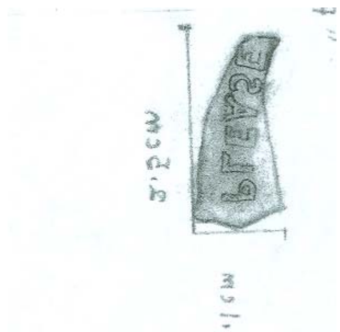


Figure 6.14: Drawing of embossed amber fragment with "PLEASE"

Figure 6.15: Embossed clear glass fragment with "-ERED / CO."

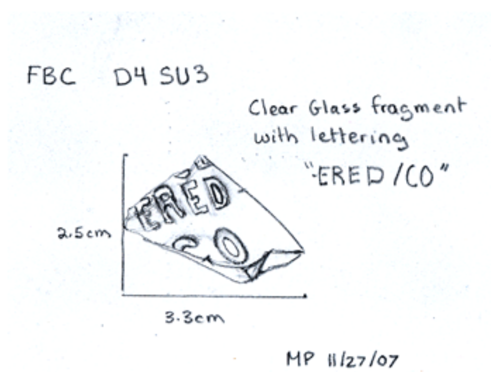


Figure 6.16: Drawing of embossed clear glass fragment with "-ERED / CO."

Figure 6.17: Clear glass fragment with lettering “M^{S}”

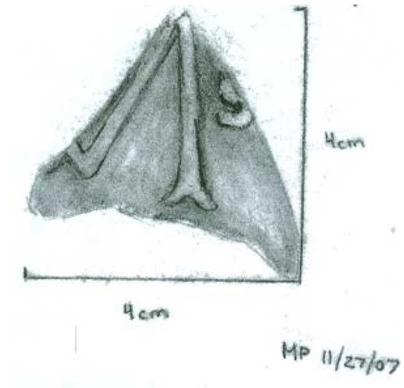


Figure 6.18: Drawing of clear glass fragment with lettering “M^{S}”

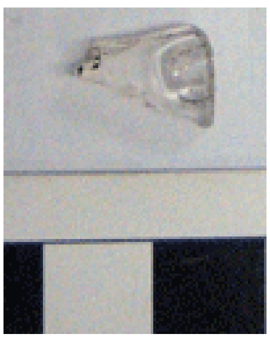


Figure 6.19: Embossed clear fragment

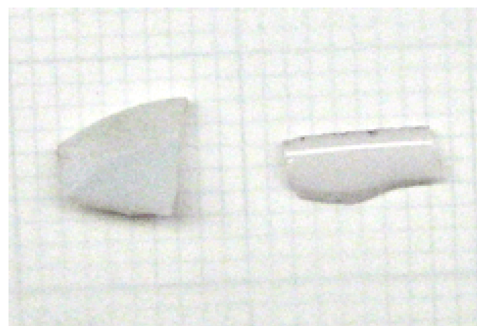


Figure 6.20: Milk glass

Figure 6.21: Clear glass with cut cursive decoration

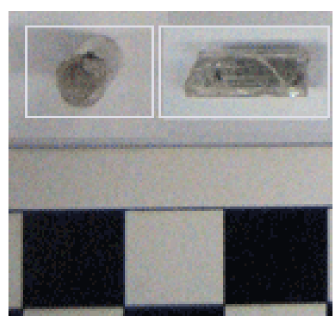


Figure 6.22: Clear glass tube – side and top views

Figure 6.23: Two clear glass fragments (possibly part of electrical device)

Works Cited

"glass." Encyclopædia Britannica. 2008. Encyclopædia Britannica Online. 14 Mar. 2008 <http://www.britannica.com/eb/article-9036988>.

"glass, *n.*[1]" Oxford English Dictionary. 2nd ed. 1989. OED Online. Oxford University Press. 14 Mar. 2008 <http://dictionary.oed.com/cgi/entry/50095230>.

Carroll, Lewis. Through the Looking-Glass, and What Alice Found There. London: Macmillan & Co., 1872.

Isham, Norman. The Meeting House of the First Baptist Church in Providence: A History of the Fabric. Providence: The Akerman-Standard Company, 1925.

McKearin, George S and Helen. American Glass. New York: Crown Publishers, 1941.

Moore, N. Hudson. Old Glass: European and American. New York: Tudor Publishing Co., 1924.

Nelson, Zachary and Katherine Marino. Churchyard Archaeology: Archaeological Investigations at the First Baptist Church. 2006

Noël Hume, Ivor. A Guide to Artifacts of Colonial America. New York: Vintage Books, 1991.

Northend, Mary Harrod. American Glass. New York: Tudor Publishing Co., 1926.

Providence City Plan Commission in cooperation with the Providence Preservation Society and the Housing and Home Finance Agency. College Hill: A Demonstration Study of Historic Area Renewal. Providence, City Plan Commission. 1959.

Chapter 7

Metal Objects at the First Baptist Church

Mark Caine

Metal Objects have played a central role in human material culture since well before Europeans ‘discovered’ and colonized the Americas. Strong, durable, and practical, metal has been used for a plethora of applications from building construction to jewelry making, from home cooking to industrial machining. Due to its high heat capacity, electrical conductivity, and long life, metals have entered almost every facet of modern technology. Imagine a world without metal: no water pipes, power lines, cars, computers, cookware, lightning rods, or weapons. In effect, technology as we know it is rendered possible by the existence of metal and the refining techniques that allow us to produce it. Our excavation of the First Baptist Church (FBC) in Providence yielded exactly eight hundred metal artifacts, an enormous figure considering the small scale of our project. The abundance of metals throughout all of our trenches suggests that metals were an integral part of the church community for numerous generations. By studying these artifacts—their origins, uses, and historical context—this study seeks to illuminate the societal, economic, and environmental conditions of the people who used these metals and the communities in which they lived.

The history of metal closely parallels the history of industry and the industrial revolution. As humans learned to better manipulate metals, they used stronger metals to create increasingly powerful machines. The advent of stronger machines, in turn, led to more efficient and advanced refining of metals. The history of metal in colonial America, of its evolution from a specialty craft to a mass-produced industrial staple, sheds a great deal of light on changing social conditions in the colonies. In addition, historically contextualizing metal production allows us to better understand how, when, and why metal became a building block for society as we know it.

In the first years of colonial life, virtually all iron in America came by British ships (Mulholland, 1981: xii). At the time, England had several well-established iron forges that were capable of producing large amounts of decent quality iron. As new settlers set out for America, they loaded their ships with this iron to meet to burgeoning demand of the colonists, who needed iron for construction, cooking, and shipbuilding purposes. Although there were small deposits of 'bog' iron found in New England, the refined product was brittle and the raw resources were quickly exhausted. As trade developed between the colonies and England, British merchants began shipping commercial quantities of iron to the port cities of the colonies. Initially, this supply was consistent and high-quality. However, mounting tensions between the colonies and 'Mother England' and increasing impatience with the English metal supply led to the creation of an indigenous American iron industry (Mulholland, 1981: 27).

The early American iron industry formed around a number of iron plantations, large tracts of land on which 50 to 100 men worked to refine iron ore into a product of higher purity (Hawke, 1988: 211). Iron plantations were built with three primary considerations: easy access to iron ore, high availability of lumber for fuel, and a local water source for powering waterwheels (Hawke, 1988: 211). Iron ore, the raw material for the production of iron, contains a high level of impurities, most notably lime and charcoal. Through the process of chemical reduction—or smelting—plantations purified iron ore into pig iron. Iron plantations used early blast furnaces to create enough heat to melt the ore. The ore melted, workers introduced limestone to draw the impurities to the surface. Once the slag, the impure byproduct of the smelting process, rose to the surface, workers manually skimmed it off the top of the molten iron (Hawke, 1988: 212). This purification process was all done by hand; as a result, the quality of the final product was inconsistent. Sometimes it was perfect; often it was too brittle (Hawke, 1988: 212).

The pig iron produced in New England in the 18th century was often turned into cast iron for cookware or wrought iron for building (Mulholland, 1981: 76). Iron was big business in colonial times, and it was by far the largest metal industry around. According to one historian, "Production and work in other metals never assumed any of the proportions of the iron industry" (Hindle, 1966: 46). However, with the rise of an industrial economy and increasing demand for durable building materials, Americans began favoring steel over iron. At the time, virtually all steel came from the Sheffield Company in England, which had a very precise formula for creating durable steel. Steel is most often produced by melting pig iron and adding charcoal until the desired iron to carbon ration is achieved. The trouble for early steel makers was figuring out what this ideal ratio was (Hawke, 1988: 174). Ultimately, American steel-makers began finding ways to produce steel that was stronger, more durable, and more easily machined than iron. This early development paved the way for the industrial revolution and later large-scale building projects, such as skyscrapers and trans-continental railroads.

Knowing the history of iron and steel manufacturing in the United States allows us to situate our metal artifacts within their historical context. Throughout the course of our excavation, we found a total of exactly eight hundred metal objects, of which six hundred and twenty four were nails (78%). As such, fully understanding our assemblage of metal objects requires historical knowledge not just of metal production, but also of nail production in particular. Primary sources from the colonial era indicate that the American colonists attached great value to nails. Before the iron industry took hold in the colonies, nails came from England and were exceedingly expensive. As a result, colonists did not use nails in the construction of their homes. Builders who did chose to import nails for construction tended to document their collections meticulously, so as not to lose track of their expensive investment (Mulholland, 1981: 77).

Nails of different forms have been manufactured and used for millennia. Nails became common in the 18th century when iron production became efficient enough to produce nails cheaply and in large quantities. Initially, iron manufacturers would provide bars of iron to slitters, who would cut them into smaller, more manageable sizes for nailers to manipulate. In 1642, John Winthrop of the Massachusetts Bay Colony built an ironworks with a rolling and slitting mill, the required machinery for producing and cutting iron nail rods (Gordon, 2001: 25). These rods would go to nailers, who would hammer one end into a point and attach a head to the other. Every nail consists of two main parts: the shank and the head. The shank is the long part that is driven into wood, and the head is the flattened end that one strikes with a hammer. These early hand-wrought nails were characterized by irregular rectangular-shaped shanks with tapering sides, the grain of the metal parallel to the shank, and hand-hammered heads with two to six facets. Any nail that fits these criteria is most likely hand-wrought, dating to the 18th century or before.

In 1780, a nailmaker from Bridgewater, MA named Ezekiel Reed invented the first hand-operated nail cutting machine, which turned iron nail rod into proper nails without the use of a hammer (Phillips, 1996: 50). This new method saved a great deal of labor, and between 1790 and 1792 another nailmaker, Jacob Perkins, improved on the design by inventing a machine requiring even less human labor (Phillips, 1996: 50). Both machines, however, suffered from the same problem: while they could cut nails into shape, they could not affix heads to them. Thus, this process remained manual until 1798, when Nathaniel Read founded the Salem Iron Works in

Connecticut and began producing machine cut and headed nails for the first time (Phillips, 1996: 50). These machine cut nails differed from hand-wrought nails in three ways. First, the necks of machine-cut nails appear slightly pinched below the head because a clamp was applied to that spot during the process of affixing a head. Second, machine cut nails were cut across the grain of the metal whereas hand-wrought nails were cut parallel to the grain. This was done for practical reasons; it was much easier for machines to cut against the grain. Third, machine-cut nails were fitted with flat heads, a departure from the rounded heads that nailers affixed when hand-making nails. These three differences are telltale signs when trying to establish whether a nail was machine-cut or hand-wrought (Phillips, 1993: 6-7).

As nail cutting machines became more technologically advanced and efficient, the tapered neck began to disappear, the heads became stronger and perfectly centered, and the archetypical machine cut nail took hold (Phillips, 1993: 9). This was the gold-standard of nail technology until 1851, when the wire nail came across the Atlantic from France. Wire nails are cut from round metal wires, and appear circular in cross section (Priess, 1973: 87). This is the primary distinguishing factor between wire nails and machine cut nails, which appear rectangular or square in cross section. Wire nails began to take hold in the 1880s, presenting a new alternative to cut nails that was appealing for many. According to expert Peter Priess:

> The advantages of these over common nails are many. For the same amount of metal they are much stronger; they can be driven into very thin boards without splitting them, and can be removed without leaving so unsightly a hole as is usually made by common nails. Besides this, on account of their superior stiffness, they can be driven into very hard wood, where much caution is necessary if common nails are to be used. They are also more easily produced, and are handled with less labor. (Priess, 1973: 89)

Knowing the dates of the introduction of wire nails and the beginning of mass manufacture is extremely helpful in dating wire nails: any circular nail found on a site can be assumed to be a wire nail, made after 1851 and most likely after 1880 (Priess, 1973: 87)

Nails are unique archaeological artifacts in that their physical form corresponds directly with their time period and the method by which they were made. To summarize, there are three different types of nails, hand-wrought, machine-cut, and wire, each of which corresponds to a well-defined time period.

> **Hand-wrought (Before 1780):** Hand-wrought nails are identified by their irregular rectangular cross-section, tapering sides, hand-hammered heads with 2 to 6 facets, and grain parallel to the shank (Phillips, 1993: 9).
>
> **Machine-cut (1780 to 1885):** Machine-cut nails are identified by their distinct pinched necks, 2 parallel and 2 tapering sides, and cuts against the grain. Early machine-cut nails are distinct in that their cross section is irregular and their heads are hand-hammered. As early machine-cut nails give way to tradition machine cut nails around 1820, the shank's cross section becomes uniformly rectangular and the heads become stronger, rounder, and better-centered. Around 1840, traditional machine-cut nails are replaced by modern machine-cut nails, which have thicker convex heads that are strong and well-centered on the shank (Phillips, 1993: 9).
>
> **Wire (1880 to present):** Wire nails are identified by their circular cross section and well-centered circular head (Priess, 1973: 87)

With these criteria, one can accurately correlate a nail found at a dig to the time period in which it was produced. Furthermore, one can conjecture what types of nails were used during a construction project if one knows the dates during which the construction took place. Cross-referencing this nail classification information to the various construction projects that have occurred at the First Baptist Church allows us to safely guess what types of nails were used at different times.

The initial construction of the church occurred in 1774 and 1775, right before the advent of the nail-cutting machine ("The First Baptist Church," 2007). As such, any nail used during the original construction must be hand-wrought, for no other nails existed during this time period. In 1792, the church added a grand chandelier to the meeting house ("The First Baptist Church," 2007). Any nail used for this process would have been either hand-wrought or machine-cut, more likely hand-wrought at this early stage in machine-cutting technology. In the 1840s the church conducted a renovation of the auditorium, adding new pews, an organ, and an interior baptistery. This renovation occurred just as traditional machine-cut nails began replacing early machine-cut nails, and it is likely that both types of nails were used in these projects. In 1884, the congregation added a memorial stained glass window to the rear of the church ("The First Baptist Church," 2007). This project occurred right as wire nails were gaining popularity, and it is unclear whether builders would have used wire nails, modern machine-cut nails, or a combination of the two. Finally, in 1957 John D. Rockefeller donated money to restore the church in its entirety, replacing rotted wood and drastically increasing the structural integrity of the building ("The First Baptist Church," 2007). This renovation would have used wire nails exclusively; by the 1950s, machine-cut and hand-wrought nails were relics of the past.

The distribution of nails throughout our trenches makes sense in light of this historical context. All together, the field team found six hundred and twenty four nails ranging from fully-intact wire nails to tiny rusted heads of machine-cut nails. They ranged in length from approximately one to fourteen centimeters, and the shank diameters ranged from two to eight millimeters. The nails were found in all six trenches at almost every SU level, although the vast majority of nails—422 out of 624, or 67%—were found in trench D1. Trench D4 contained the second largest amount, with 102 or 16%. Together, these two trenches represent 83% of the metal found at the site, a huge percentage. The distribution of nails in these two trenches is most likely due to their proximity to the building; both trenches were situated within 10 feet of the walls of the church. During construction, workers would have been walking all over these two areas while staying further away from other trenches such as D2 and C2. Any time a worker dropped a nail or removed one from the building, it is likely that the nail ended up within a short distance from the church, hence the disproportionate amounts of nails in trenches D1 and D4.

Dating metal objects and exploring their distribution around the First Baptist Church is important in understanding the material culture of the early inhabitants of Providence. Unfortunately, however, many metals items have fallen victim to corrosion over time, making their dating nearly impossible. When corrosion hits hard and effectively ruins the original metal, the important identifying details of a nail such as graining and head shape become virtually impossible to distinguish. The cultural information embedded into the iron is mostly lost, as no conservation technique can bring back the original composition of the artifact. The problem of storing corroded iron antiquities has received increasing attention recently; even so, one scholar concludes that “no satisfactory method appears to be available” (Turgoose, 1982: 97). The methods that are available seek to stabilize as well as possible the corrosive agents in the metal.

The best means of preventing further corrosion in storage is to ensure a humidity-controlled environment. Moisture in the air facilitates corrosion, so a dry environment with less than 20% relative humidity is best for slowing corrosive processes (Turgoose, 1982: 101). In addition, an oxygen-free environment can also help stabilize a corroding piece of iron. Another common problem in cleaning iron artifacts is a high level of chloride ions on the metal. Chloride ions are the byproduct of corrosive reactions, and they facilitate further corrosion of a metal object. The solution to this problem is to wash the artifact with sodium hydroxide or alkaline sulphite, both of which strip off chloride ions to lower the rate of corrosion (Turgoose, 1982: 99). While effective, these methods are highly impractical as they involve high temperatures and a sealed, sterile workspace. It is important to note that the most any of these methods can do is reduce the rate of corrosion; they cannot halt corrosion altogether. The best solution for conserving iron objects seems to be to wash off the corrosion with alkaline sulphite (if practical) and, more importantly, to store the item in an oxygen-free environment with relative humidity below 20%.

The metal objects that individuals and communities leave behind provide a profound window into the fabric of these past cultures. The way people use building materials such as nails, hinges, and bolts provides us with unprecedented knowledge of their political, social, economic, and technological circumstances. If a nail can be recognized beneath its corrosive layers, we can instantly deduce its approximate age and make reasonable conjectures as to its origin and original use. Accurate dating information can be used to extrapolate the age of sediment layers within trenches, allowing the dates of everything else from a nail-containing layer to be accurately judged. But why study the nail itself, the corroded, rusty piece of metal that has to be dug up from the ground, stabilized, and conserved for study? Why not simply acquire a catalog of nails from the same period, with accompanying photographs and descriptions? What is the value of the material object itself as opposed to the information it represents?

Material culture is the only true primary source of information regarding the past. All primary source written history necessarily contains the subjective voice of the person who wrote or compiled it. In a sense, material culture is the only truly objective primary source, for each artifact we find lays exactly as it did the very day that an individual decided to—or happened to—drop it on the ground. We see these elements of historical life exactly as they were, unfiltered by documentation or justification. There is something at once mystical and beautiful about this process, digging down into someone else's world and uncovering their whole existence based on the small items they left behind. As James Deetz suggests: "If we bring to this world, so reflective of the past, a sensitivity to the meaning of the patterns we see in it, the artifact becomes a primary source of great objectivity and subtlety" (1996: 259). In reaching into the past and uncovering artifacts of former lives and societies, we lay the groundwork for an exquisitely physical, concrete understanding of the people that came before us, their cultures, and the unique roles that they occupied in their historical context. Physical evidence allows us to reconstruct the past from a profoundly privileged perspective, allowing us to hold in our hands the very fabric of the societies we wish to understand. "Don't read what we have written; look at what we have done" (Deetz, 1996: 260).

Figures 7.1: A Bolt from Trench D1, SU5

Figures 7.2: The largest piece of metal from the site. Trench C2, SU4. Most likely either an animal shoe or bladed agricultural tool.

Table 7.1: Distribution of Metal Objects by trench and SU level.

FBC METALS TRENCH DISTRIBUTION				
Trench	**SU Level**	**# Metal Items**	**# Nails**	**Weight (g)**
D1	1	39	32	64
D1	2	47	33	54
D1	3	89	81	366
D1	4	49	38	122
D1	5	119	98	308
D1	6	66	59	118
D1	7	28	22	46
D1	8	41	25	78
D1	9	39	34	78
D2	1	0	0	0
D2	2	2	2	6
D2	3	2	1	5
D2	4	0	0	0
D2	5	8	3	25
D2	6	0	0	0
D2	7	6	3	14
D2	8	28	20	90
D2	9	2	1	21
D3	1	8	5	28
D3	2	0	0	0
D3	3	3	3	11
D3	4	5	2	20
D3	5	10	9	40
D3	6	6	7	14
D4	1	6	5	38
D4	2	21	14	40
D4	3	23	18	56
D4	4	49	38	176
D4	5	4	3	22
D4	6	15	10	34
D4	7	0	0	0
D4	8	22	14	74
C1	1	10	2	24
C1	2	10	6	28
C1	3	3	3	4
C1	4	6	5	16
C1	5	5	3	10
C1	6	6	6	17

C2	1	1	1	8
C2	2	0	0	0
C2	3	1	1	14
C2	4	10	7	204
C2	5	8	7	82
C2	6	1	1	8
C2	7	1	1	1
C2	8	1	1	6

Works Cited

"The First Baptist Church in America: History." The First Baptist Church in America. 13 Dec. 2007 <http://www.fbcia.org/page104.html>.

Deetz, James. In Small Things Forgotten: An Archaeology of Early American Life. New York: Anchor Books/Doubleday, 1996.

Gordon, Robert B. A Landscape Transformed: The Ironmaking district of Salisbury, Connecticut. Oxford: Oxford University Press, 2001.

Hawke, David F. Nuts and Bolts of the Past: A History of American Technology, 1776-1860. New York: Harper and Row, 1988.

Hindle, Brook. Technology in Early America: Needs and Opportunities for Study. Chapel Hill: University of North Carolina Press, 1966.

Mulholland, James A. A History of Metals in Colonial America. Tuscaloosa: University of Alabama Press, 1981.

Phillips, Maureen K. "Mechanic Geniuses and Duckies, A Revision of New England's Cut Nail Chronology Before 1820." APT Bulletin 25.3/4 (1993): 4-16.

Phillips, Maureen K. "Mechanic Geniuses and Duckies Redux: Nail Makers and their Machines." APT Bulletin 27.1/2 (1996): 47-56.

Priess, Peter. "Wire Nails in North America." Bulletin of the Association for Preservation Technology 5.4 (1973): 87-92.

Turgoose, S. "Post-excavation Changes in Iron Antiquities." Studies in Conservation 27.3 (1982): 97-101.

Chapter 8

Asphalt and Slag at the First Baptist Church

Madeline Meyer Ray

THE FINDS

During September and October of 2007, the Brown field team from the Archaeology of College Hill excavated the yard of the First Baptist Church in America, located at 75 North Main Street in Providence, Rhode Island. We were a group of 17 undergraduate students and two graduate students. Throughout the six or so weeks of digging, we dug up thousands of cultural inclusions, from the colonial or possibly pre-colonial era until the very recent past. We labeled, logged and saved them for later analysis. Once winter set in and we declared the excavation complete for the year, we brought our finds into the laboratory to find out as much as possible about them, and, through them, the history of the people who lived in this area.

Roger Williams founded the First Baptist Church in the 1630's in Providence, Rhode Island, where he had fled from religious persecution in England and later in the Massachusetts colonies. The church quickly became a major congregation in the area, necessitating larger and larger meetinghouses until, at last, the current First Baptist Church was built between 1774 and 1775. The first meetinghouse was built in 1700 at the location of the current church, meaning that, since that date, the land that we excavated has been property of the First Baptist Church. Previously, the land was mostly used communally, first by the Narragansett Native American tribe, and then by English colonists ("The First Baptist Church," 2007). There is evidence of a history of community events happening around the Church as well, such as picnics and outdoor sermons.

Because our field team did not dig far below 80 centimeters beneath the ground level, it is unlikely that we accessed any cultural inclusions from times before European contact in Rhode Island. Indeed, most of our finds probably dated from the later Colonial period onward, given that the Church has been located there since the beginning of the 18th century. However, despite its perhaps limited historical breadth, our excavations did allow for some depth of understanding, and some confusion, given the large number and variety of artifacts that we found.

Among our findings was a great quantity of slag and asphalt, found in all trenches and in many stratigraphic units. The slag and asphalt were easily distinguishable one from another, although the assemblages of each were relatively homogeneous. The weights, numbers, and origins (by trench and stratigraphic unit) of slag and asphalt inclusions are given below.

Table 8.1: Slag Artifacts

SU	Weight of Slag Artifacts by Trench					
	C1	C2	D1	D2	D3	D4
1		2g n=1	7.2g n=12			
2			10g n=12	1g n=1		2.3g n=1
3	9.5g n=19	7g n=8		16.3g n=1	11.8g n=4	
4	8.4g n=8	0.3g n=1				0.7g n=1
5						38g n=2
6						
7						
8						
Total	17.9g n=27	9.3g n=10	17.2g n=24	17.3g n=2	11.8g n=4	41.0g n=4

Table 8.2: Asphalt Artifacts

SU	Trench					
	C1	C2	D1	D2	D3	D4
1						
2						60.2g n=4
3	68.6g n=13				13.1g n=3	1423.7g n=19
4	10.8g n=5					830g n=42
5						954g n=25
6		44g n=1				
7						85.4g n=6
8						3.8g n=1
Total	79.4g n=18	44g n=1			13.1g n=3	3357.1g n=97

The tables show clear distribution patterns of slag and asphalt throughout the trenches and stratigraphic units. The asphalt is most predominant in trench D4, both in proportion of weight and number of artifacts, although there is some in trenches C1, C2, and D3. Within D4, asphalt is found in almost every stratigraphic unit. The slag, on the other hand, is present in all trenches, but is only present in stratigraphic units 5 and above. This implies that slag deposits were made in the relatively more recent past, according to the law of superposition, whereby, when layer A is above layer B, layer B is older than layer A.

The assemblages of asphalt tend to be massive, but relatively small in number, whereas the assemblages of slag tend to be composed of many small pieces. The large size of the individual asphalt inclusions is simply due to the nature of asphalt being originally in one large piece, and composed of rocks adhered together with coal tar or a refined petroleum product, depending on the time and place of its origin. The asphalt pieces here range in mass from 3 grams or less to 729 grams, because the minimum size of a piece of asphalt is the size of a piece of aggregate, which in these cases is stone or gravel. Beyond their distribution, mass and number, there is much to be learned about asphalt and slag, and about the history of the East Side of Providence, where it was buried.

ALL ABOUT ASPHALT

Asphalt has been used for paving roads in the United States beginning in the 1860s. Previous to that, the roads of a city like Providence would have been paved with brick, stone, wood, or some other material ("History of Asphalt," 1994), possibly even slag from iron production. Although it is difficult to imagine paving with any other material, a street such as Thomas Street, which runs East-West on the North side of the First Baptist Church at a downward grade of at least 7%, must have been paved in this manner for the bulk of the history and development of Providence. The history of asphalt production and use in the region thus sheds light upon the finds from the Church.

The basic formula for asphalt pavement is aggregate (usually stone, sand, or gravel) stuck together with coal tar, asphalt, petroleum products, some other strong binding agent, or a combination of these. The pavement was originally made with asphalt, a naturally occurring substance found in asphalt lakes and pits in the New and Old Worlds. In the 1870s, when asphalt road pavement became popular in the United States, coal tar was used as the binding agent. Over the years this 'natural' asphalt was replaced with asphalt made from refined petroleum products. By 1907 the replacement was complete, meaning that the asphalt finds from the upper stratigraphic units of the First Baptist Church are most likely bound with petroleum products, while the lower are bound with naturally-occurring bitumen, probably imported from Trinidad, a

Caribbean island possessing a wealth of asphalt lakes (“History of Asphalt,” 1994). The first ‘modern’ asphalt production facility was opened in 1901 in East Cambridge, Massachusetts, some 45 miles distant from the East Side of Providence, which gives a very likely provenience for the asphalt from that date onwards.

Given the even distribution of asphalt inclusions throughout the stratigraphic units, from the deepest to the second most shallow, we can infer that asphalt has been a feature of Providence material culture for some time. Indeed, the above history of asphalt use in the United States gives us a useful *terminus post quem* for SU8: the fact that SU8 of Trench D4 contains asphalt, though just one small chunk, indicates that that layer of soil must date to a time at which asphalt was likely to be in use in the area, which, according to the National Asphalt Pavement Association, is after 1860. This date is surprisingly late, given the dates estimated by other members of the field team for different material items.

ALL ABOUT SLAG

Slag is a nonmetallic byproduct of metallurgy, a prominent colonial industry. The smelting of iron in pre-industrial times could produce three products: cast iron, wrought iron, and steel. Each has a unique chemical composition, method, and use, and a different sort of slag results from each. Although it is unlikely that smelting of any sort occurred on the grounds of the First Baptist Church since 1700, when it became Church property, it is possible both that smelting occurred there previous to that date, and that remnants of the smelting process, such as slag, could have arrived to the grounds of the Church in other fashions. Slag is a byproduct with numerous secondary uses, which could account for its being transported to the site. The various metallurgical processes occurring in Providence in the past centuries informs our slag collection, inasmuch as these processes left behind slag that endures to this day.

Iron smelting is a process of heating fluxing agents (often limestone), iron ore, and some sort of fuel. The ore and the flux then melt, and the process yields bloom iron and slag as co-products. Colonists used charcoal as a fuel for smelting, as wood was one plentiful New England resource. The initial smelting of iron ore was done either in small bloomeries, or in fairly large-scale blast furnaces. Iron came out of blast furnaces in liquid form with slag, also liquid, floating on top. This iron was then further processed in various ways to produce cast iron, wrought iron, steel, and other iron products (Cowan, 1997: 61). Cast iron is an alloy of carbon, iron, and silicon; and wrought iron is a mix of iron and slag. Both of these were widely produced and used in colonial America (Gordon and Malone, 1994: 67). Slag was therefore used in further metallurgical processes, as well as in paving and sometimes in fertilizer.

The first blast furnace in the area opened in Providence in the 1650's. It produced pig iron for local use, as well as bar, or wrought, iron, for export and professional use. (Cowan, 1997: 59). A large-scale iron mill opened in Massachusetts in the 1640's, but it was not a financial success, and was abandoned in 1676. Such a production was not attempted again until the beginnings of the industrial era, a century later (Gordon and Malone, 1994: 68). However, small blast furnaces were common through the 18th century (Gordon and Malone, 1994: 77). The beginning of the industrial era in Rhode Island, with the opening of Slater Mill in the 1790's, increased the demand for iron products in the area, resulting in increased smelting (Gordon and Malone, 1994: 42). However, most smelting was industrialized and on a large scale after the 1820's (Gordon and Malone, 1994: 117).

Many metal wares throughout the colonial era were imported from England, which explains the origin of a large number of nails and other metal objects found in the First Baptist Church yard. However, the presence of slag is a sure sign that smelting was done locally, probably very nearby. Because Providence, like most of New England, was largely forested at the time of its founding, and because of its excellent source of water power in the numerous rivers draining into Narragansett Bay, it would have been a prime location for iron production, which needed a great deal of wood for charcoal (Cowan, 1997: 60). It is conceivable that there was a small bloomery operation on the East Side during the 18th century. The slag from such an operation could well have been used in the area for paving material, like gravel, for other metallurgical processes, or numerous other purposes whereby it would end up in the yard of the First Baptist Church.

CONCLUSIONS AND CONJECTURES

The curious aspect of the slag and asphalt collection from the First Baptist Church yard, however, is the distribution of the slag towards the upper stratigraphic units, indicating a later time. Correlating the asphalt finds with the slag finds, there is something of a chronological puzzle. As observed in the previous section, we can establish a *terminus post quem* date of 1860 for SU8, because that was when asphalt pavement became widespread in the United States, and we found asphalt in SU8. By the law of superposition, all of the layers above this SU8 must also have been put down after that date, as well. Slag from small-scale forgeries, however, was also found in numerous of these layers, even in the same trench. We can give a very approximate *terminus ante quem* date of the 1830's for this slag, because such small forgeries were quickly being replaced by larger ones, which would not have left slag lying about, especially not as a paving material. Therefore, it is odd that the slag should be found so overwhelmingly in the upper SUs, when it almost certainly was produced and used earlier than the asphalt. Indeed, slag might likely have been used as a paving material on the roads around the Church *before* asphalt was widely available. One possible conclusion, other than that archaeology is an extremely conjectural science, is that the slag, once it was replaced by asphalt in the paving of paths et cetera, was removed from its original positions, and only later went into the ground, above and among the asphalt that was already in the archaeological record.

Besides this chronological quibble, however, the study of these archaeological remains is quite informative about the history of the locality. In conjunction with the analyses of all of the other cultural inclusions unearthed this year at the First Baptist church in Providence, enough approximate chronologies might amount to a reasonably certain estimate, which in turn could improve our understanding of our East Side predecessors.

Works Cited

Cowan, Ruth Schwartz. A Social History of American Technology. New York: Oxford University Press, 1997.

"The First Baptist Church in America: History." The First Baptist Church in America. 13 Dec. 2007 <http://www.fbcia.org/page104.html>.

Gordon, Robert B. and Patrick M. Malone. The Texture of Industry: An Archaeological View of the Industrialization of North America New York, NY: Oxford University Press, 1994.

"History of Asphalt." 1994. National Asphalt Pavement Association. 13 Dec. 2007 <http://www.hotmix.org/history.php>.

Rehder, J.E. The Mastery and Use of Fire in Antiquity. Montreal: McGill-Queen's University Press, 2000.

Chapter 9

Ceramics at the First Baptist Church of America

Chelsea Sokolow

The study of Ceramics is a valuable resource in historical archaeology. The examination of ceramic pieces can aid in dating a site, reveal information about trade and production, as well as provide insight into the social practices surrounding an archaeological site. The variations in style and material composition are linked the geographic origin, the production methods of ceramic artifacts, and are indicators of class status in a community. When a ceramic assemblage is recovered the first step is to identify the artifacts. The three main attributes from which ceramic pieces are identified consist of the paste, surface treatment, and decoration (in that order). The paste is the type of the clay from which the pieces is made. The surface treatment is the manner in which the vessel has been covered or glazed. The decoration consists of the methods, motifs, designs, and colors used to decorate the piece ("Introduction," 2004). In general, the quality of the ceramic is directly connected to the composition of the clay and the temperature at which it has been fired. As the availability of high-heat kilns and advanced technology grew during the 18th and 19th centuries, the presence of higher quality ceramics also increased. The higher the temperature at which a piece is fired the less porous it becomes, making it more functionally useful. Discovered at the First Baptist Church of America were various types of ceramics pieces including coarse earthenware, refined earthenware, stoneware, ironstone, and porcelain pieces.

COARSE EARTHENWARE

Coarse Earthenware is also commonly known as simply 'earthenware', as 'terra cotta,' or most common of all 'pottery' ("Introduction," 2004). Coarse earthenware is the lowest quality ceramic and therefore the least valuable. Not coincidently, coarse earthenware is also the easiest type of ceramics to create, and the earliest type to be created. Earthenware is the most porous of all the paste types and is also softer and less compact then the other paste type. Because earthenware is so porous, it must be sealed with some sort of glaze in order to be watertight. However, it can be glazed with any number of surface treatments. Earthenware colors can range from a cream color through brown and dark red and is fired at temperatures ranging from 900-1200° C. ("Introduction," 2004). Although the composition of earthenware can vary widely, an average mixture consists of 25% ball clay, 28% kaolin, 32% quartz and 15% feldspar (Hamer and Hamer, 1991). Although earthenware is of lower quality, its lower cost and the ease with which it can be worked with compensate some for its deficiency in quality. Included among the subgroups of coarse earthenware are delftware, slipware and redware. Delftware is a type of coarse earthenware usually covered by a white glaze and often decorated with metal oxides. Slipware, a type of coarse earthenware in which colored slip (the aqueous suspension of a clay body mixed with minerals such as quartz, feldspar, and mica) is applied to the leather-dry but unfired body of the clay piece. The slip provides decoration but must also be followed by a more vitreous (glass-like) glaze if it is to become watertight. One advantage of slipware is the fact that it can be fired multiple times with different layers of slip if the color is not right the first time or a different design is preferred (Hamer and Hamer, 1991). Redware is a subgroup of coarse earthenware characterized by its red color caused by iron deposits in the clay used to form the ceramic.

REFINED EARTHENWARE

Refined earthenware is sometimes referred to as ‘China’ or ‘semi-porcelain.’ Refined earthenware is harder and more compact than coarse earthenware and if fired at temperatures that range from 1100° to 1200° C. Refined earthenware is usually thinner then coarse earthenware, cream to white in color and usually lead glazed (“Introduction,” 2004). Refined earthenware is of higher quality than coarse earthenware, and makes for better (but still affordable) tableware. The presence of so much refined earthenware at the First Baptist Church site is most likely explained by the fact that it was a common type of tableware used by the emerging middle class during the time of the industrial revolution. The three main types of refined earthenware are whiteware, creamware, and pearlware. Whiteware originated in England in the 1830s and is still produced today. The paste is normally white to off white colored, thin, hard, and compact. Whiteware is commonly glazed with clear lead glaze, leading the background to appear pure paper white. Occasionally blue tints may also be added to the glaze, causing an appearance similar to that of pearlware (“Introduction,” 2004). Creamware also originated in England and was produced from 1762-1820. Creamware is made up of white to light cream-colored, slightly porous (although still thin, hard, and compact) paste. Creamware often has a creamy yellow surface glace when copper is added to a transparent lead glaze. In spots where the glaze pools the creamware can give a yellow or greenish tint (“Introduction,” 2004). The third major type of refined earthenware, Pearlware, also originated in England and was produced in the sixty year time period between 1780 and 1840. Like creamware it has a thin, hard, compact paste and is often lead glazed. The glaze is most often white to faint bluish (caused by the addition of cobalt blue oxide to the glaze). Where the glaze pools, pearlware often appears blue. Pearlware produced after 1810 had a paste that was whiter and heavier than earlier pastes. This ware also had a harder lead glaze that ranged in color from almost clear to deeply bluish tinged ("Introduction," 2004). Decorated pearlware vessels were much more common than undecorated vessels. Many of the undecorated sherds of pearlware discovered are most likely chipped pieces from larger decorated wares ("Introduction," 2004).

STONEWARE

Stoneware originated in England. Stoneware was produced between 1720 and 1770. The defining attributes of stoneware a thin, light grey or white, vitreous (glasslike) and dense paste. Stoneware is almost always glazed with a salt-glaze and can be decorated with press molding, slip casting, incising, and over-glaze painting or transfer printed designs ("Introduction," 2004). Unlike lead glazes, which are prone to chip off of many of the ceramics found in archaeological digs, salt glazes are not subject to fracturing and chipping off. While stoneware is denser and harder than refined earthenware it can sometimes be difficult to tell the two pastes apart. In my work with the ceramic assemblage from the First Baptist Church I discovered that the most reliable way to differentiate between stoneware and refined earthenware is not to look at the level of porosity in artifacts but rather to compare the colors of the paste and too look for evidence of chipped glaze.

IRONSTONE

Ironstone is a common nineteenth century utilitarian ceramic. Ironstone is considered part of the general category of English 'Stone China'. Some other names that refer to ironstone include 'Undecorated White Granite Ware' and 'Undecorated Ironstone,' after Mason's Patent

Ironstone China (which was a specific brand of stone china patented in 1813) ("Introduction," 2004). Decorated ironstone dates between 1805 -1840. Undecorated ironstone became common after 1840, and most of the granitewares and ironstone pottery before 1840 were decorated with styles such as transfer printing, painting, enameling or some combination or variation of these ("Introduction," 2004). Ironstone was originally produced in England during the period stretching between 1840 and 1930. Ironstone consists of a paste that is white, thick (because of its utilitarian purpose), and almost vitrified. Occasionally ironstone has a bluish cast ("Introduction," 2004). Because ironstone is a heavier and sturdier ceramic, it would have been ideal for tableware in situations that put a lot of stress on their dishes such as hotels and hospitals.

PORCELAIN

Porcelain was introduced to America (from China) during the late 17th century (Nelson and Marino, 2006). Porcelain is a ceramic made by firing clay in the form of kaolin at temperatures that range from 1,200 °C to1, 400 °C (Burton, 1906). The toughness, strength, and translucence of porcelain are attributed to the formation of glass within the ceramic body when the ceramic is fired at such high temperatures (Burton, 1906). Porcelain was originally named after the Italian word for little pig, *porcella,* because of its similarity to the white, shiny cowry shell that went by the same name. The cowry shell was originally named after a little big because the curved shape of its upper surface resembles the curve of a pig's back (Burton, 1906). Properties associated with porcelain include low permeability and elasticity; high strength, hardness, glassiness, durability, whiteness, translucence, resonance, brittleness; high resistance to chemical attack and thermal shock (Burton, 1906). For the purposes of trade, the *Combined*

Nomenclature of the European Communities defines porcelain as being "completely vitrified, hard, impermeable (even before glazing), white or artificially colored, translucent (except when of considerable thickness) and resonant." However, the term porcelain lacks a universally agreed definition and has "been applied in a very unsystematic fashion to substances of diverse kinds which have only certain surface-qualities in common" (Burton, 1906). Porcelain is used to make tablewares and kitchenwares as well as decorative pieces, fine art and tiles. Porcelain's high resistance to the passage of electricity makes porcelain an excellent insulating material and it is widely used for high-voltage insulators. Surprisingly it can also be used in dentistry to make false teeth, caps and crowns (Burton, 1906). There are two main types of porcelain that would be likely to show up at the First Baptist Church of America and these consist of hardpaste porcelain and softpaste porcelain. English soft-paste porcelains were largely replaced by Bone China (a variety of hard-paste porcelain) by the early 19th century ("Introduction," 2004).

Hardpaste porcelain also referred to as Bone China was produced mainly between 1830 and 1900 ("Introduction," 2004). In hardpaste porcelain it is nearly impossible to distinguish the glaze from the body of the porcelain because the glaze is applied before the porcelain is fired and becomes incorporated into the body itself (Nelson and Marino, 2006). The decorated bone china generally has over-glazed polychrome enamel and gilded designs. Floral patterns are also common, but a wide variety of design motifs can occur ("Introduction," 2004).

Softpaste porcelain was produced in England between 1745 and 1800. Softpaste porcelain is a "hard, compact, chalky-appearing and somewhat vitrified white paste that is softer and more granular than Asian porcelains" ("Introduction," 2004). Softpaste porcelain is covered with transparent lead or feldspathic glaze that, unlike hardpaste porcelain, does not completely fused with the glaze, appearing as a thin layer when a cross-section of the porcelain is examined

("Introduction," 2004). The decoration techniques associated with softpaste porcelain include underglaze hand painting, in a dark blue, in contrast to the bright cobalt blue of Chinese porcelains. Blue transfer printed designs also appear on some softpaste porcelain artifacts ("Introduction," 2004).

EXCAVATION AND WASHING METHODS

Ceramics are often chemically durable but very materially fragile and therefore must be handled both very carefully in the field and in the lab. High temperature fired clay (such as ironstone and porcelain) which is made of mostly stable silicates and oxides does not tend to break down in even very acidic soil, but fired clay objects on the ground are "subject to physical breakage as a result of freezing and thawing, root growth, plowing, or careless handling by people" (Hester et al., 1997). Low temperature fired clays are more difficult to deal with, because although they may reach a stable existence while buried, they tend to deteriorate once their environment is significantly altered (Hester et al., 1997). Because of physical fragility of both high and low temperature fired ceramics, archaeologists in the field should take much care to refrain from using damaging metal tools or digging carelessly. When cleaning the artifacts, high temperature fired ceramics can be washed with warm water and gently brushed with a toothbrush. To prevent further damage on low temperature fired ceramics, they should not be fully submersed in water, but should rather be kept in an environment with humidity relatively equal to that of the soil they immerged from (Hester et al., 1997). On an archaeological site it is important to recover *all* ceramic pieces regardless of the condition they are in or their immediately perceived value. A single shard of ceramic material may seem tiny and pointless but it could either be a part of a larger collection or a type not currently catalogued (Shopland, 2006).

ANALYSIS METHODS

Analysis of ceramic artifacts can be a very intricate, complex endeavor. Small, chipped pieces often present difficulties in identifying not only glazes and design motifs, but often pastes themselves can be problematic to differentiate. For example, to the untrained eye (like me) the pastes used in refined earthenware and stoneware can appear very similar. Small things like the colors or the manner in which the glaze chips or does not chip often make the huge distinction between one type of ceramic and another. Once a ceramic assemblage has been obtained the next step in the archaeological process is classification. There are three main types of establishing ceramic typology. These methods include *intuitive typology*, *type-variety typology, and quantitative typology* (Sinopoli, 1991). Intuitive typology is the most common and often most successful means of classify ceramics. Intuitive typology involves placing the sherds on a table and sorting them into similar piles. Although definitive criteria are used to differentiate the sherds, the specific criteria are seldom made explicit during the sorting process (Sinopoli, 1991). Type-variety typology arose in response to the proliferation of ceramic types in the southwestern United States during the 1950s. In an effort to keep archaeologists from naming their own artifacts without regard to regional classifications, Gifford, Wheat, and Wasley established a system to account for regional and local discrepancies. In the type-variety system the ‘type’ refers to a broad class of ceramics indicated by a small number of basic diagnostic characteristics, and works well to account for regional trends. The ‘variety’ consists of the more intricate variations within ceramics and tends to be confined to a smaller, more local geographic region (Sinopoli, 1991). Quantitative typology is "constructed and evaluated using statistical techniques in the analysis of two more variables" (Sinopoli, 1991). What this means is that archaeologist will start with a ceramic assemblage and then use the broadest distinction available to sort the ceramics into two or three groups. The archaeologist will then use more specific sorting characteristics as they sort the ceramics into more and more subgroups.

DATA ACQUISITION AND DATA TYPES

Important information to consider when examining ceramics assemblages includes the weight of the entire assemblage and individual pieces, the geographic distribution of the assemblage, the hardness, color, glaze, decorations and designs present in the assemblage.

APPROPRIATE CONSERVATION

One of the most important aspects of ceramic conservation is the post data-acquisition storage of the ceramic assemblage. For museum curators, ceramics can be a very inconvenient material. Ceramic assemblages can be bulky and heavy and composed of hundreds or even thousands of little pieces of ceramic, all which tend to be physically fragile (Orton et al., 1993). Standard methods of storage for ceramic assemblages include paper bags, plastic bags, cardboard boxes, specialized storage units (such as racks of wooden or metal drawers), and cupboards and display cases (Orton et al., 1993). Because ceramics tend to be relatively chemically durable, extra special measures involving light or temperature are not required. As in the preservation of many archaeological artifacts, the extremes in temperature or humidity should be avoided.

IMPORTANCE OF CERAMICS TO NEW ENGLAND ARCHAEOLOGY

Ceramic assemblages provide three main sources of knowledge in archaeological situations. Ceramics allow for dating evidence, distributional evidence (for example relating to trade), and evidence for social function or status (Orton et al., 1993). These three knowledge centers are based on the assumption that every ceramic piece was made or used at a specific time, made at a certain location, and used for certain purposes (Orton et al., 1993). Ceramics are used for dating evidence because of the fact that paste and decoration styles correlate so closely with historical time periods and development. The distributional evidence ceramics give is dependent on the knowledge of the origin of the ceramic as it relates to the location at which the ceramic was found. Evidence of social function or status is directly related to the quality of the ceramic, what it would have cost to create it, and the practical purposes it could have served. In essence would it be something used by the upper, lower or middle class and in what context would different ceramic types be used.

RESULTS OF THE FALL 2007 EXCAVATION AT THE FIRST BAPTIST CHURCH OF AMERICA

The ceramic assemblage for the First Baptist Church in America gives evidence for a wide variety of social functions and church/meeting house members with varying socio-economic status. The types of ceramics discovered were not restricted to any one level of quality. However the highest percentage of ceramics discovered at the site was refined earthenware, suggesting that the majority of the people utilizing church property were of the middle class. The presence of certain types in different stratagraphic levels also aided in dating other artifacts found at similar depth across the site.

Table 9.1: Ceramic Artifacts from the First Baptist Church Excavation Fall 2007

Trench	SU	Weight of SU Assemblage (g)	Coarse Earthenware	Refined Earthenware	Stoneware	Ironstone[22]	Porcelain
C1	1	0.2	0	1	0	0	0
	2	1.0	2	2	0	0	0
	3	6.9	3	1	0	0	0
	4	2.0	4	0	0	1	1
C2	1	1.6	0	2	0	0	0
	2	3.5	0	5	0	0	0
	3	8.7	4	12	1	0	1
	4	2.2	2	4	0	0	2
	5	2.8	0	0	1	0	0
	7	12.8	1	0	0	0	0
	10	0.2	0	1	0	0	0
D1	1	0.5	1	0	0	0	0
	2	12.6	0	1	1	0	0
	3	6.3	3	3	0	0	1
	4	3.9	1	5	0	0	0
	5	7.2	4	5	1	0	0
	6	2.3	3	1	0	0	0
	7	1.7	1	1	0	1	0
	8	0.5	0	0	2	0	0
	9	1.6	1	0	0	0	0
D2	2	3.5	1	1	0	0	0
	3	10.6	2	17	0	0	0
	5	18.3	13	3	1	0	0
	7	16.2	4	70 (15 of useful size)	0	0	0
	8	30.0	12	48	0	0	0
D3	1	3.5	1	0	0	0	0
	2	0.7	0	0	0	0	1
	3	7.6	1	3	0	1	0
	4	3.4	3	1	0	0	0
D4	1	0.5	0	1	0	0	0
	2	16.0	3	11	0	0	0
	3	62.2	6	11	0	0	1
	4	6.2	5	10	0	0	0

[22] Editor's Note: Further analysis has determined that all ironstone found in the 2007 assemblage is, in fact, thick bodied, possibly lower-grade porcelain.

	6	8.4	6	5	0	0	0
	8	0.6	0	3	1	0	0

Type of Ceramics by Sherd Count:
Total Sherd Count: 378 Sherds (100%)
Coarse Earthenware: 87 Sherds / 23%
Refined Earthenware: 273 Sherds / 72.2%
Stoneware: 8 Sherds / 2.1 %
Ironstone: 3 Sherds / 0.8%
Porcelain: 7 Sherds / 1.9%

Distribution of Ceramics by Weight:
Weight of Entire Assemblage: 257.2g (100%)
Trench C1: 10.1g / 3.8%
Trench C2: 31.8g / 12.3%
Trench D1: 36.6g / 14.1%
Trench D2: 69.6g / 27.0 %
Trench D3: 15.2g / 5.9%
Trench D4: 93.9g / 36.9%

Coarse Earthenware Assemblage

Figure 9.1: Coarse Earthenware Artifacts Representative of the 2007 Assemblage

Artifact A: Trench D4 SU3: Brown Salt Alkaline Glaze
Artifact B: Trench D2 SU5: Unglazed
Artifact C: Trench C2 SU7: Unglazed Redware
Artifact D: Trench D3 SU1: Unglazed Redware
Artifact E: Trench D2 SU3: Lead Opaque Glazed Redware
Artifact F: Trench D2 SU2: Unglazed
Artifact G: Trench C1 SU3: Brown Lead Opaque Glaze on one side, Pale Blue Lead Opaque Glaze on the other side
Artifact H: Trench D1 SU3: Redware; Side 1: Brown Tin-enameled Lead Glaze, Side 2: Brown Tin-enameled Lead Glaze with Silver Metallic Overlay

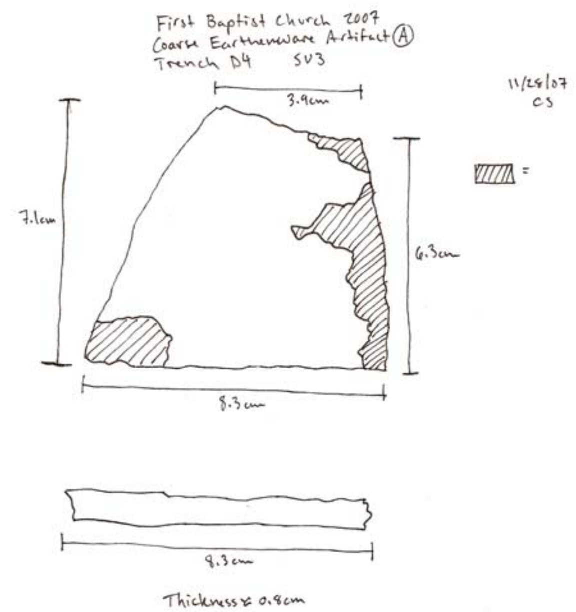


Figure 9.2: Line Drawing of Coarse Earthenware Artifact A

Refined Earthenware Assemblage

Figure 9.3: Refined Earthenware Artifacts Representative of the 2007 Assemblage

Artifact A: Trench D2 SU3: Pale Green, Lead Transparent Glaze
Artifact B: Trench D2 SU8: Cream Colored, Lead Transparent Glaze with Dark Gray, Transfer-printed Cavettos/Floral Designs
Artifact C: Trench D4 SU3: Lead Transparent Glaze with Hand-painted Flow Blue Decoration
Artifact D: Trench D1 SU4: Creamware with Lead Transparent Glaze and a Molded, Hand-pained Blue Rim
Artifact E: Trench C1 SU3: Brown, Lead Opaque Glaze
Artifact F: Trench C2 SU5: Brown Transfer Print Decoration, Uncertain Glaze Type

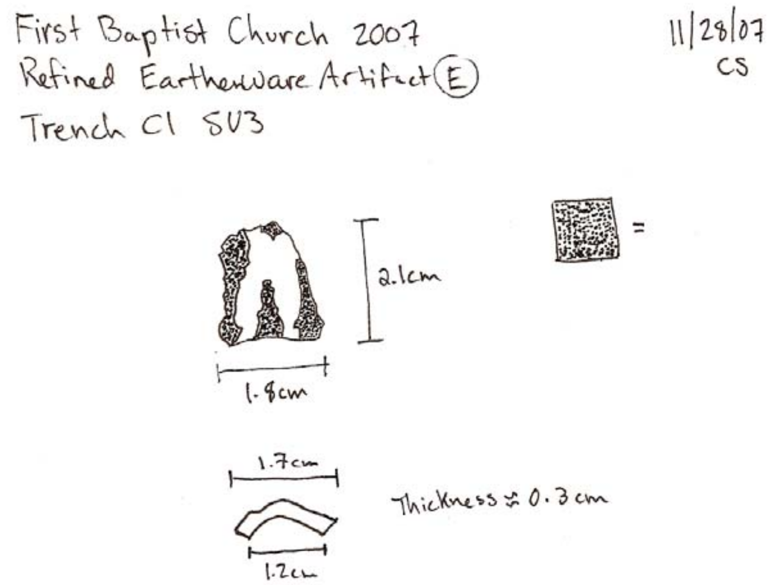


Figure 9.4: Line Drawing of Refined Earthenware Artifact E

Stoneware Assemblage

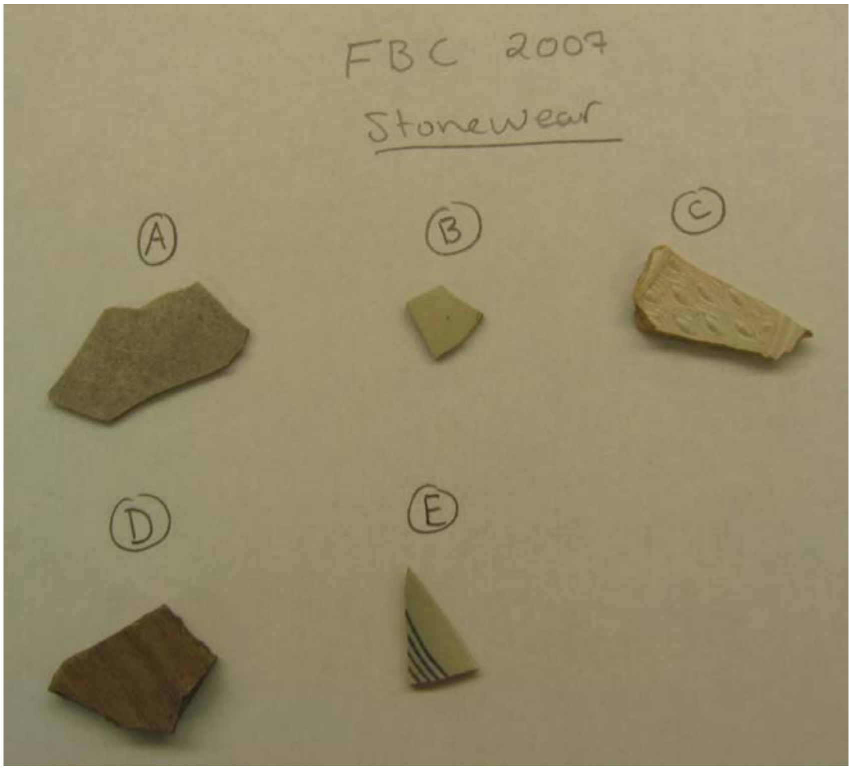


Figure 9.5: Stoneware Artifacts Representative of the 2007 Assemblage

Artifact A: Trench D2 SU5: Gray, Salt-glazed
Artifact B: Trench D4 SU8: Cream Colored, Salt-glazed
Artifact C: Trench C2 SU5: Cream Colored, Salt-glazed with Molded Pattern; Production Date Range 1720-1770
Artifact D: Trench D1 SU2: Brown with Reddish Tinge; Salt-glazed
Artifact E: Trench D1 SU5: Gray with Incised Blue Bands (filled with Cobalt Blue Oxide); Salt-glazed

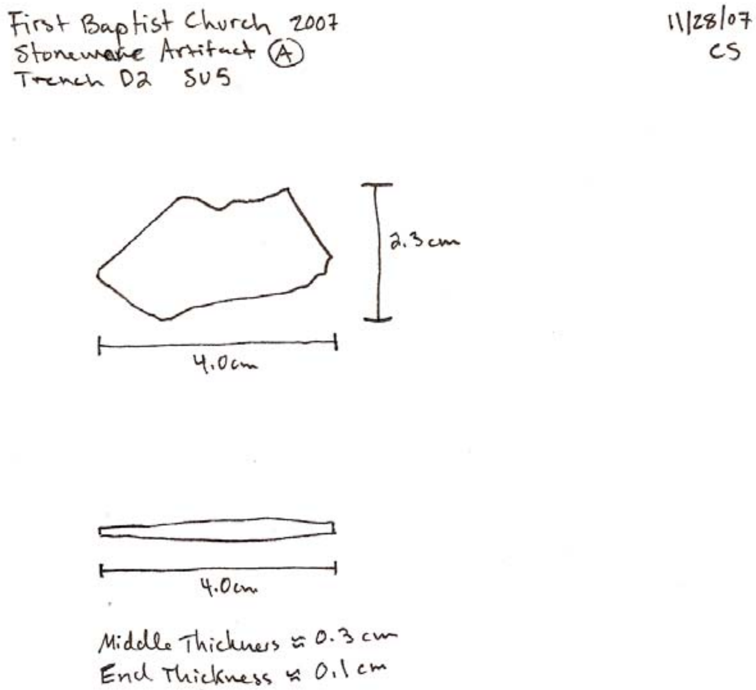


Figure 9.6: Line Drawing of Stoneware Artifact A

Ironstone[23] Assemblage

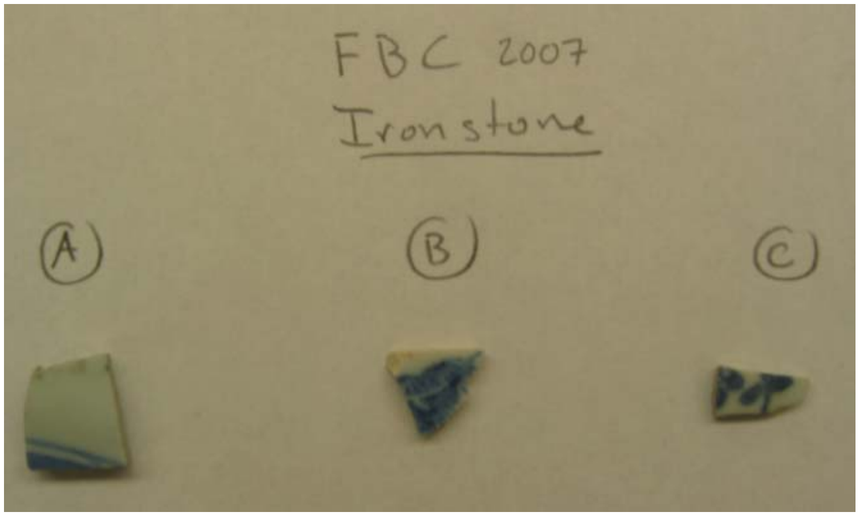


Figure 9.7: Ironstone Artifacts Representative of the 2007 Assemblage

Artifact A: Trench D3 SU3: Hand Painted Blue
Artifact B: Trench D1 SU7: Hand Painted Blue
Artifact C: Trench C1 SU4: Hand Painted Blue

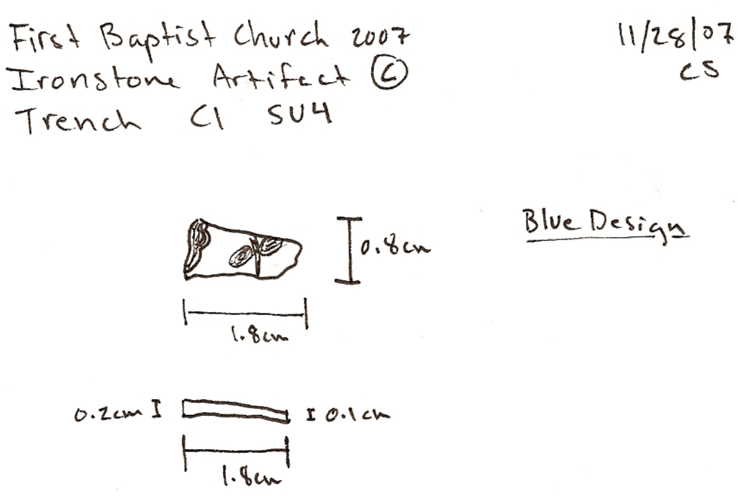


Figure 9.8: Line Drawing of Ironstone Artifact C

[23] Editor's Note: Further analysis has determined that all ironstone found in the 2007 assemblage is, in fact, porcelain.

Porcelain Assemblage

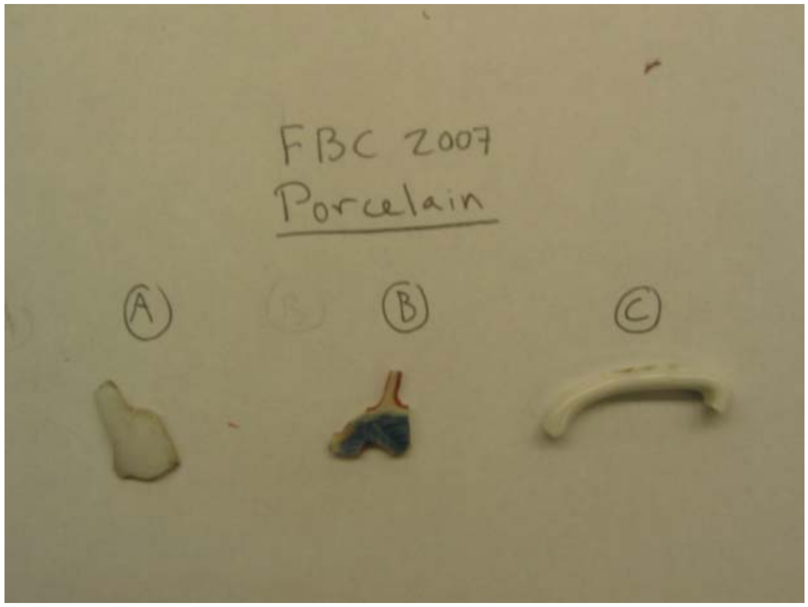


Figure 9.9: Porcelain Artifacts Representative of the 2007 Assemblage

Artifact A: Trench D4 SU3: White, Very Thin
Artifact B: Trench D3 SU2: Blue Design, Red Edges; Possibly Lead-Glazed; Piece of Lattice-Edged Plate
Artifact C: Trench D1 SU3: Handle of a Teacup with Gold-gilding

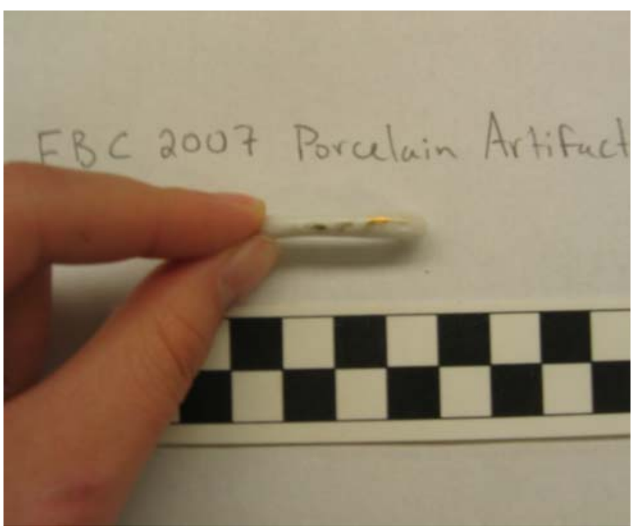


Figure 9.10: Detail of Gilding on Porcelain Artifact C – Teacup Handle

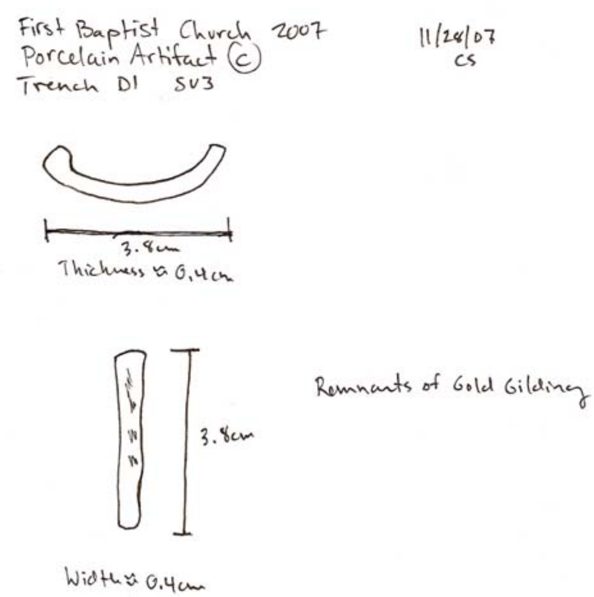


Figure 9.11: Line Drawing of Porcelain Artifact C – Teacup Handle

Works Cited

"Introduction to Ceramic Identification." 2004. Historical Archaeology. The Florida Museum of Natural History. 12 Dec. 2007. <http://www.flmnh.ufl.edu/histarch/gallery_types/ceramics_intro.asp>.

Burton, William. Porcelain, its Nature, Art and Manufacture. London: Batsford, 1906.

Hamer, Frank and Janet Hamer. The Potter's Dictionary of Materials and Techniques. London: A & C Black Publishers Ltd., 1991.

Hester, Thomas R., Harry J. Shafer, and Kenneth L. Feder. Field Methods in Archaeology. New York: McGraw-Hill, 1997.

Nelson, Zachary, and Katherine Marino. "Churchyard Archaeology: Archaeological Investigations at the First Baptist Church in America." 2006.

Orton, Clive, Paul Tyers, and Alan Vince. Cambridge Manuals in Archaeology: Pottery in Archaeology. Cambridge: Press Syndicate of the University of Cambridge, 1993.

Shopland, Norena. Finds Manual: Excavating, Processing, and Storing. Stroud, Gloucestershire: Tempus Publishing Ltd, 2006.

Sinopoli, Carla M. Approaches to Archaeological Ceramics. New York: Plenum Press, 1991.

Chapter 10

Brick by Brick: An Analysis of the Bricks of the First Baptist Church Excavation

Stephanie Harris

Bricks are not typically considered on a daily basis. We know that they exist, but do not pay attention to their presence. Although bricks tend to fall into the background of our lives, they actually play a very crucial part in our day-to-day activities. Bricks are everywhere: under our feet, in our fireplaces, among the walls in which we live. At the First Baptist Church of America in Providence, Rhode Island, bricks were crucial throughout the building's construction periods and evolution. Although it might be assumed that bricks were solely used for construction, this was often not true, as will be proved later on. Bricks were incorporated into social activities as well; hence, we can often learn about the people and cultural practices embodied in the use of bricks. First I will provide a brief history of the church, focusing on construction, as well as a short description of how bricks are made. I will then describe and interpret the brick artifacts from the First Baptist Church site.

BACKGROUND

Roger Williams founded the First Baptist Church in America in 1638 along with about twenty other people, becoming the first congregation of the church. Unfortunately, Roger Williams did not get to see the first meetinghouse before he died, as it was not constructed until 1700 at what is now the corner of North Main and Smith Streets. This original structure was quite small, only about 20 by 20 ft in area. After membership continued to increase, a new meetinghouse 40 by 40 ft square was subsequently built in 1726 next to the original structure.

The current meetinghouse, which we know well today, and which was the site of our archaeological excavation, was not constructed until 1774-75 at Benefit and Thomas Streets. Joseph Brown, brother of John Brown who was on the committee of the church, was the chief architect for the current meetinghouse. A man named Zephaniah Andrews was most likely the master mason for the project, since he had built University Hall and later did the brickwork for John Brown's own house (Isham, 1925: 12). It is unclear, however, how much of the structure was made of brick and how much of timber. From an artist's rendition of the meetinghouse in 1789, however, it appears that at least the base of the church was constructed of brick (Figure 10.1) (Lemons, 2001).

Other alterations were made to the church throughout the nineteenth century. For example, in 1832 the pews, pulpit, and aisles were altered to their present form today. In 1834 an organ was installed, and in 1838 a baptistery was added to the First Baptist Church Meetinghouse. Several other construction phases have taken place throughout the First Baptist Church's history, but most likely do not coincide with the brick samples that will be analyzed in this paper (Lemons, 2001: 46).

Religious functions no doubt took place at the First Baptist Church throughout its use, but many social gatherings happened there as well. Sewing clubs, outdoors picnics, clambakes, and holiday festivities are just a few of the activities that probably took place on the church grounds over the years. Through the study of artifacts excavated at the site, we can begin to understand some of the religious and cultural practices that took place at the church.

MANUFACTURING PROCESS OF BRICKS

Clay has been the principal material of bricks "since the earliest times" (Gurcke, 1987: 3). There exist two types of clay – primary and secondary. Primary clay is that which is formed deep within the earth's crust and is eventually exposed on the ground and distributed through weathering. Secondary clays are made up by four different subgroups: alluvial clays, glacial clays, lacustrine and marine clays, and windborne clays. Bricks are often made of clay plus other materials, such as organic materials and inclusions like quartz and mica. The brick manufacturing process is made up of five steps: mining (also called 'winning'), preparation, molding/forming, drying, and firing/burning.

Winning is simply the process of obtaining and mining the clay for use through four different methods: surface/open-pit mining, underground mining, hydraulic mining, and dredging. In the nineteenth century, and probably even earlier, the most common practice for mining clay in America and England was simply digging by hand in shallow pits. However, as the demand for bricks became greater, clay pits necessarily became larger. The next step of the manufacturing process is preparation, which could take up to several years to complete. First the clay is weathered, left out during winter months to be mellowed by the cold; the main goal of this process is to rid the clay of some of the soluble salts that can later result in a white scum on the outside of the bricks. The next phase of preparation is tempering; water and other materials must be added to the clay and distributed evenly in order to make the clay plastic enough or so that it can burn properly.

Next comes the stage of molding, which "consists of forming the clay mass into something that very closely resembles the shape of the final product" (Gurcke, 1987: 13). Although several different processes for molding bricks exist today, until about the mid nineteenth century, most bricks were made by hand in wooden or ironclad molds. Even making bricks by hand required skilled workers, hence the need for a master mason like Zephaniah Andrews. Two kinds of molding processes for handmade bricks were soft-mud and stiff-mud. In order for soft-mud bricks to be removed from the mold after they are struck, a lubricant is required; makers of handmade bricks normally utilized either water or sand as this necessary lubricant. As a result, two types of bricks were produced – water-struck bricks and sand-struck bricks; naturally, one has a much rougher appearance due to the use of sand, and the other type has a smoother surface with wavy undulations from the water. In the stiff-mud process, on the other hand, less water is added to the clay to result in a stiffer paste. A factor of both soft and stiff-mud bricks was that they lacked sharp edges; a machine called a repress was invented that applied pressure to bricks to make them smoother with sharper edges. However, this process caused the price of these bricks to rise since more labor was required to make them.

The next step in the manufacturing of brick is drying, which simply consists of trying to remove moisture from the bricks. If not enough moisture is removed, the bricks will be destroyed when fired in the kiln. Bricks made through different processes require different amounts of drying time; naturally, because stiff-mud bricks are made with less water to begin with, they require less drying time than soft-mud bricks. The final step in the brick-making process is firing, or burning. It is in this step of the process that the brick obtains its final color, shape, and durability. Very high temperatures, up to 2,200 degrees Fahrenheit, are required in vitrification, the last stage of the burning procedure. After burning is completed, the bricks are allowed to cool for 48 to 72 hours; even cooling is an important part of the process, because if the kiln is opened too soon while the bricks are cooling, they could possibly be damaged. Several types of kilns are utilized in the burning process, such as scove/field kilns, clamps, down-draft kilns, and continuous kilns. Low or high firing temperatures, as well as oxidizing and reducing atmospheres, in the kiln can determine the final color of a brick. The amount of oxygen present in the kiln at the time of firing can affect how the final brick looks – if there is extra oxygen in the kiln, the resultant color of the brick tends to be a bright and clear color, while a reduction of oxygen induces a more dull, grayish color in bricks. Also, certain metal oxides can be mixed with sand to color the outsides of bricks purposely; for example, cobalt oxide can be utilized to create blue bricks. The brick manufacturing process is a complicated one, and the bricks that are produced as a result can vary greatly due to small factors that are changed during the manufacturing procedure (Gurcke, 1987).

THE SAMPLES

Across the six excavation trenches dug at the First Baptist Church site, D1, D2, D3, D4, C1, and C2 (Figure 10.2), pieces of brick were pretty common throughout most. No complete bricks were found, nor was any evidence discovered of any brick stamp or maker's mark. After excavation, all brick fragments were washed in lab, left out to dry, and then separated from the rest of the artifacts in the collection. The majority of the brick fragments discovered were no more than a few centimeters in length, basically rendering them undiagnostic (especially if they were pieces from the interior of a brick). Because hundreds of these small pieces found could have originated from the same brick, the quantity of brick distributed across the site was instead measured by weight in grams. All pieces of brick were weighed by trench and SU (stratigraphic unit) and graphed in order to more clearly see the distribution of bricks across the site (Figure 10.3). As can be perceived in the graph, trench D2 SU8 contained by far the largest amount of brick on the FBC site. The next highest weights of brick (but nowhere near as high as D2 SU8) were C2 SU4 and D4 SU3 and 5. The location of these trenches in relation to the church meetinghouse can be viewed in Figure 10.2, along with last year's excavation trenches as well. Interestingly, the unit with the greatest amount of brick fragments, D2 SU8, also included some of the largest fragments. Some of these fragments, as well as a couple from other layers, were chosen because not only were they the largest pieces but also seemed to be the most diagnostic. From the hundreds of pieces discovered all together at the FBC site, six sample fragments were chosen for closer study. Three sample pieces were chosen from D2 SU8, two from D1 SU8, and one from D4 SU3. These samples seem to present an array of different brick types, sizes, and colors.

Sample 1 (Figure 10.4) is a reddish brick fragment with two of the faces of the brick intact. This fragment appears to show the entire width that the brick once had, about 8.5 cm. The length of the piece is 9 cm, and the height ranges from about 4.0-4.5 cm. This brick shows some evidence of burning, which will be interpreted later on. The interior of the fragment appears to have few inclusions, and has a reddish color mixed with spots of brown that look like mud. A common trend among many of the brick fragments from the site, this piece is smooth on one of its flat surfaces and rough and sandy on its opposite surface. The presence of a sandy, rough surface indicates that this piece may be a part of a sand-struck brick, a type made by hand.

Sample 2 also comes from D2 SU8 and has evidence of burning (Figure 10.5). The fragment is 11 cm long, 8 1/8 cm wide (full width) and a height that ranges from 4.5 to 5 cm. Colonial American bricks from the eighteenth century tend to be about 22 cm in length, 10.2 cm in width, and 6.7 cm thick (Hume, 1969: 81). Hence, the brick sample is slightly smaller in the dimensions that we are sure of, its width and thickness (the case is similar with Sample 1). This brick also has one surface that is rough and sandy and an opposite surface that is smoother. The presence of smooth and rough sides on fragments of brick makes it difficult to determine how the brick may have been made, but it is possible that this fragment may have been part of a water-struck handmade brick due to the similarities between its smooth side and other examples of water-struck bricks.

Sample 3 was discovered in trench D1 SU8. This fragment has two straight edges, seemingly making up the width of the brick (Figure 10.6). The fragment's longest axis is 9 cm, the width of the original brick. The piece has a maximum width of about 6.5 cm and a height of about 6 cm. These measurements come closer to that of the standard eighteenth-century brick than those of Samples 1 or 2. This brick was relatively rough on all sides, and hence may have also been a sand-struck brick. A section view of the fragment reveals a sort of oval abnormality that looks quite intriguing and was perhaps the result of some sort of large inclusion in the brick.

Sample 4 also originated from trench D1 SU8, and was chosen for study because it was a corner piece (Figure 10.7). The thickness of the fragment is 4.5 cm, the length is 15.5 cm (unsure whether this is the full length of the brick), and its width is 4.5 cm. Following the trend, this fragment also has a smooth surface and a rough surface; one new characteristic, however, is the presence of faint horizontal striations on the smooth side of the brick. If the brick is a stiff-mud brick, these striations are usually a result of the cutting process; if the brick is a soft-mud brick, the lines are the result of the striking process (Gurcke, 1987: 104-110). It is difficult to determine which type of brick this fragment may be, but its surface seems to more closely resemble that of a struck soft-mud brick.

Sample 5 was chosen for examination primarily because it was an excellent example of inclusions. Sometimes, inclusions can be analyzed to determine the source of the clay but this can often be quite difficult. This sample was approximately 9 cm in length and was also located in D2 SU8.

Found in trench D4 SU3, Sample 6 is lighter in color and also probably relatively younger than the other samples. The fragment is about 9 cm long, 10 cm wide, and also shows clear striations on its surface. This sample is most likely a piece from a stiff mud brick due not only to the sharpness of the cuts on the surface but also because it lacks hard, sharp edges (Gurcke, 1987: 109). Since no pipe stem dates exist for this trench, it is difficult to obtain an accurate date for this sample. It is known, however, that this fragment was discovered in a trench that possessed many construction materials such as metal and slag. This area simply may have been a sort of trash pile in which extra materials were discarded.

DATING IN RELATION TO THE CHURCH'S HISTORY

As previously stated, the First Baptist Church has undergone many structural changes and periods of construction. Although some of the samples chosen for study have been potentially identified as certain kinds of brick, this does not provide much information in the way of dating, as these processes have been utilized for many years. Ivor Noel Hume also points out "the fallacy of trying to date a building by its brick sizes," and since there are no complete bricks present to study, this method cannot be utilized anyway (Hume, 1969: 82). Since bricks themselves are often so hard to correctly analyze and date, it is often more productive to examine how they were used and laid as a guide. However, thanks to the presence of other artifacts in situ with the brick fragments, we can potentially date different SU layers of trenches. Pipe stems were found in trenches D2, C1, and D1 and dates were obtained for these by measuring their bore sizes. D2 SU7 was found to date between 1750 and 1800, so it is possible that the brick samples that were discovered in D2 SU8 date to around this time period or perhaps a little earlier. Interestingly, in last year's study it was established that pipe fragments from trench B2 found 50 to 60 cm below the surface dated from about 1680 to 1720. Since trench B2 is so close in proximity to D2 and because D2 SU8 was also about 50 to 65 cm below the surface, it is quite possible that these two layers correspond to each other. Hence, the brick samples from D2 SU8 could potentially be put in the time bracket from 1680 to about 1750 or 1800. The same methodology can be applied to the brick samples from D1 SU8, since we have obtained the pipe stem date of 1720-1750 for D1 SU6. By the law of superposition, we can assume that D1 SU8 likely is older than SU6, and so perhaps dates to an earlier time. However, D1 SU8 was also begun at 50 cm below the surface, and so could potentially correspond to the same depositional layer as D2 SU8 since they are both located at the same depth below the surface.

If these dates were indeed somewhat accurate for the brick samples from SU8 of D1 and D2, this would place the fragments at around the time that the current meetinghouse of the First Baptist Church was constructed (especially since pipe stem dates tend to err in the earlier direction) in 1774-5 (Hume, 1969: 301). As far as is known, the land on which the current meetinghouse was built was vacant except for an orchard at one point in time (Isham, 1925: 3). Hence, it is unlikely that these bricks could be related to the construction of some other building. Not much is known about the amount or kinds of bricks used in the original construction of the meetinghouse. Where did these bricks come from? In Barrington, Rhode Island, bricks had been made since the seventeenth century by hand, and in 1847 commercial production of bricks began. Such companies as the Narragansett Brick Company, the Nayatt Brick Company, and the New England Steam Brick Company all perpetuated the Barrington brick business throughout the nineteenth and into the twentieth century. Considering the close proximity of Barrington to

Providence, it might have been natural for bricks from this location to be used in the construction of the First Baptist Church. However, all bricks made at Barrington were marked with the stamp of the company at the time, and no such stamps were discovered on any of the brick fragments from the site (Mason). It is also possible that bricks were imported from England, since “the single most lucrative commercial venture was the importation of manufactured goods from England and the Continent” (Sanderson and Woodward, 1986: 43). But, it is difficult to prove this notion in any real way. However, if it is true that the brick samples from D1 and D2 SU8 were left behind as a result of the construction of the current meetinghouse, the Revolutionary War could have gotten in the way both with trade with England and within the colonies. If Providence, which depended greatly on maritime commerce, was cut off from trade with England, more focus may have been put on manufacturing bricks locally.

CONSTRUCTION AND MORE: HOW BRICKS WERE USED

Since even the most diagnostic samples of the brick artifacts from the FBC site are difficult to successfully identify, it is also worthwhile to study the ways in which the community of the First Baptist Church utilized these bricks. Obviously, a large part of the usage of bricks at the church site was in construction. Through pictorial evidence, it is known that at least part of the original structure of the current meetinghouse was made of brick. An engraving by Samuel Hill done in 1789 depicts the foundation of the meetinghouse as constructed of brick (Isham, 1925: 18). Brick was often favored because it outlasted timber, and was easier for a single man to handle. A major focus when utilizing brick in construction was creating the strongest building, accomplished through different styles of brick bonding, or how the bricks were interlocked. Different patterns of brick bonding were created by laying bricks either lengthwise (stretchers) or widthwise (headers) in layers called courses (Noble, 1984: 30). The Flemish bond (Figure 10.8) was most widely used in the eighteenth century (Hume, 1969: 84) but the American bond (Figure 10.9), which was the cheapest and quickest to lay because most of the bricks were laid lengthwise, began to gain acceptance in the late eighteenth century (Noble, 1984: 30). Much evidence exists that this was one of the popular styles of brick bonding in Providence around the time when the current meetinghouse was built. In Hill's rendition of the meetinghouse, he clearly illustrates bricks laid out in the American style of bonding (Figure 10.1). Whether this was an accurate observation or just drawn from the artist's memory, it is still interesting to consider. Located at the base of College Hill is the Old Brick Schoolhouse, built in 1769. When the exterior walls of the building are examined closely, it appears that the bricks of this structure were also laid in the American bonding style (Figure 10.10). Another structure on N Main St., built by John Updike in 1799, also seems to have utilized this strong bonding pattern (Figure 10.11). Even the bricks in the exterior walls of the church today are in the American bonding style. Perhaps Zephaniah Andrews, as master mason of the construction project, saw the benefits in utilizing the American bonding style when laying bricks. Considering that Joseph Brown, chief architect, was also one of the leading men in architecture as well as commerce at the time, it is possible he was one of the earlier proponents of the American bonding style. Brown and his colleagues might have been proud to display this new method of construction in the walls of the brand new meetinghouse. Unfortunately, no bricks were found in situ in the form of a wall, so we can never know for sure in what pattern the bricks were laid. Most likely, the bricks found in excavation were discarded as extras or damaged bricks that were not needed in construction (considering where they were found).

An inevitable question, however, is why were there so many bricks located in trench D2, so far away from the church building? It is true that this location could simply have been a discard pile in the construction process, but there is also another possible explanation. In the northeast corner of the D2 trench, some of the brick fragments were arranged in one-fourth of a circle. Along with this arrangement, many shell fragments and porcelain sherds were also found. Some of the brick samples found from this SU also showed evidence of burning. Considering the history of social activities during colonial times in New England, it is quite possible that around the area of D2 was the locale for a clambake or some similar social gathering that involved food. Perhaps the ring of bricks created the outline of a fire pit, much in the same way that many people create fire rings today. If this observation were true, we would have even more proof of the social activities that took place on the grounds of the First Baptist Church. Events like clambakes were times for socializing and seeing old friends, and the cooking of communal food promotes the notion of community and sharing. Surprisingly, bricks are in fact a part of this tradition, and add another piece to the story about the lives of ordinary people who came and went at the First Baptist Church.

In conclusion, although the bricks from the First Baptist Church excavation site are difficult to interpret individually, as an assemblage they still reveal much about the church's past. From construction methods to social gatherings, bricks were the background framework for where events took place and how meals were cooked. Although bricks may seem like just blocks of clay to some, within them is held the history of past peoples and how they lived in and around the First Baptist Church in America.

Figure 10.1: Drawing of meetinghouse, 1789, Samuel Hill.

Figure 10.2: Location of Excavation Trenches at the First Baptist Church

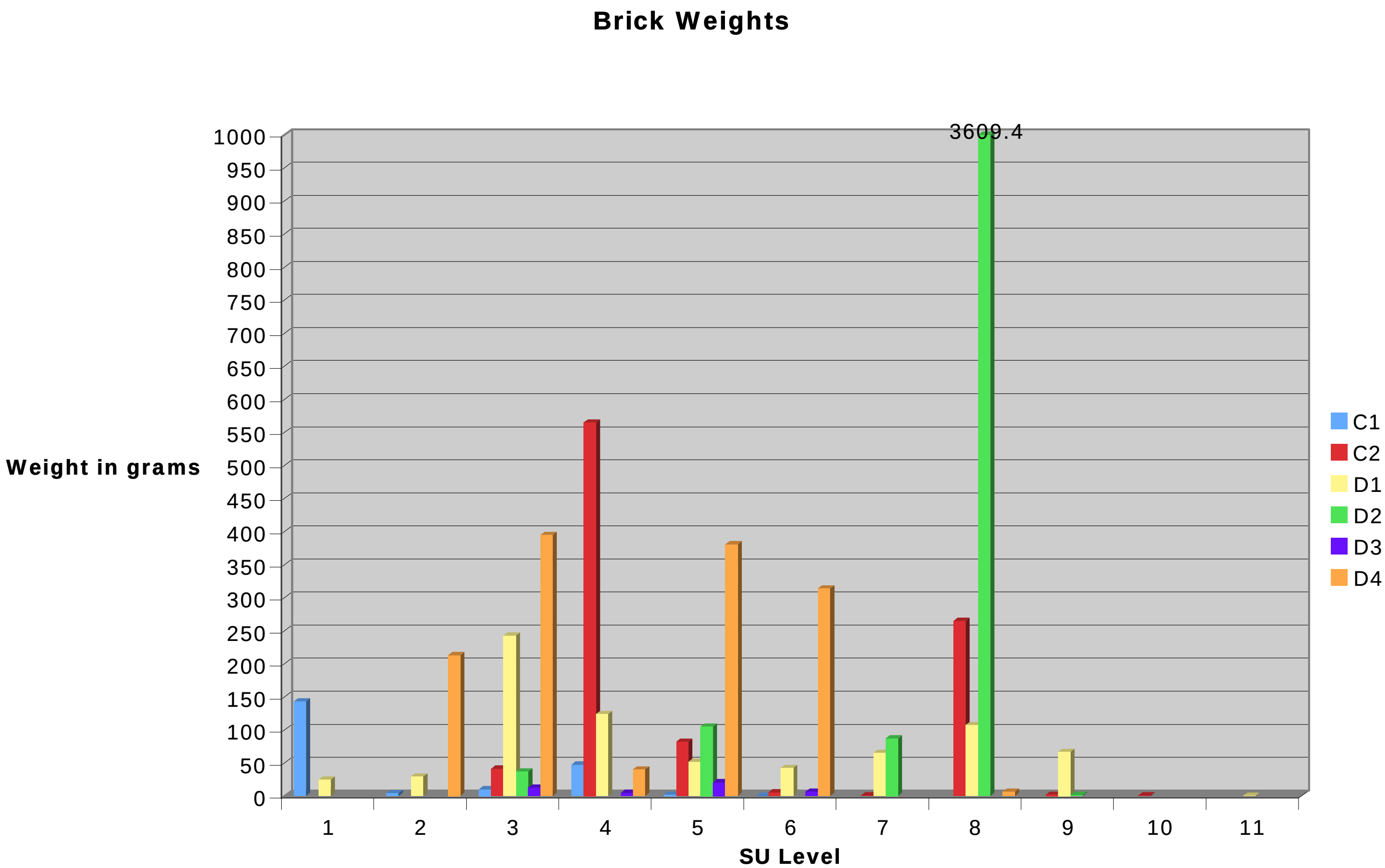


Figure 10.3: Graph of Brick Weights (Sod Removal is SU Level 11)

Figure 10.4: Sample 1 – D2 SU8

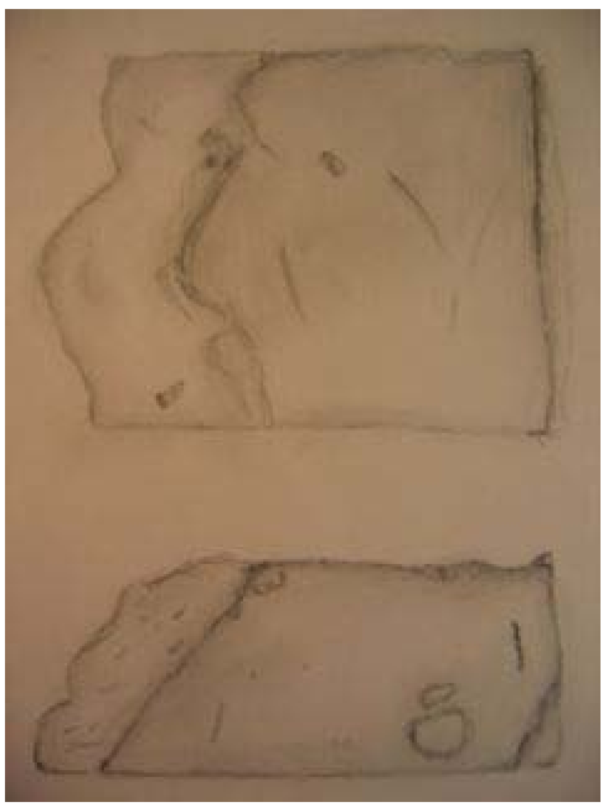


Figure 10.5: Sketch of Sample 2

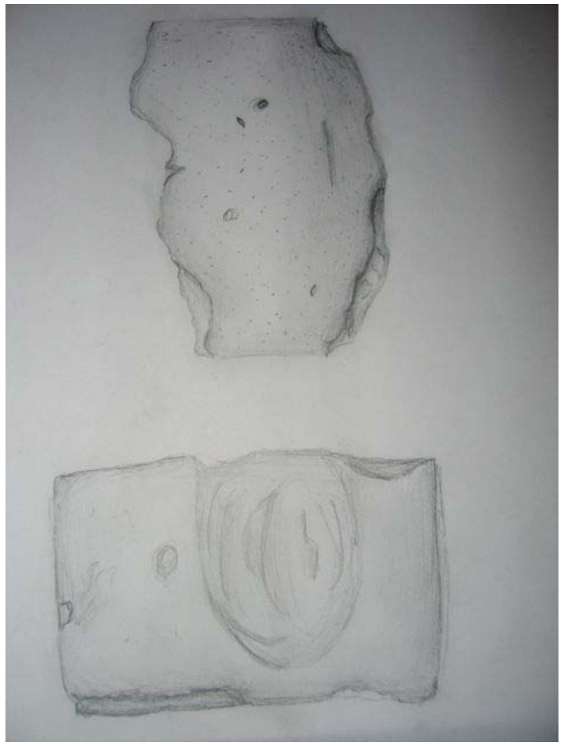


Figure 10.6: Sketch of Sample 3

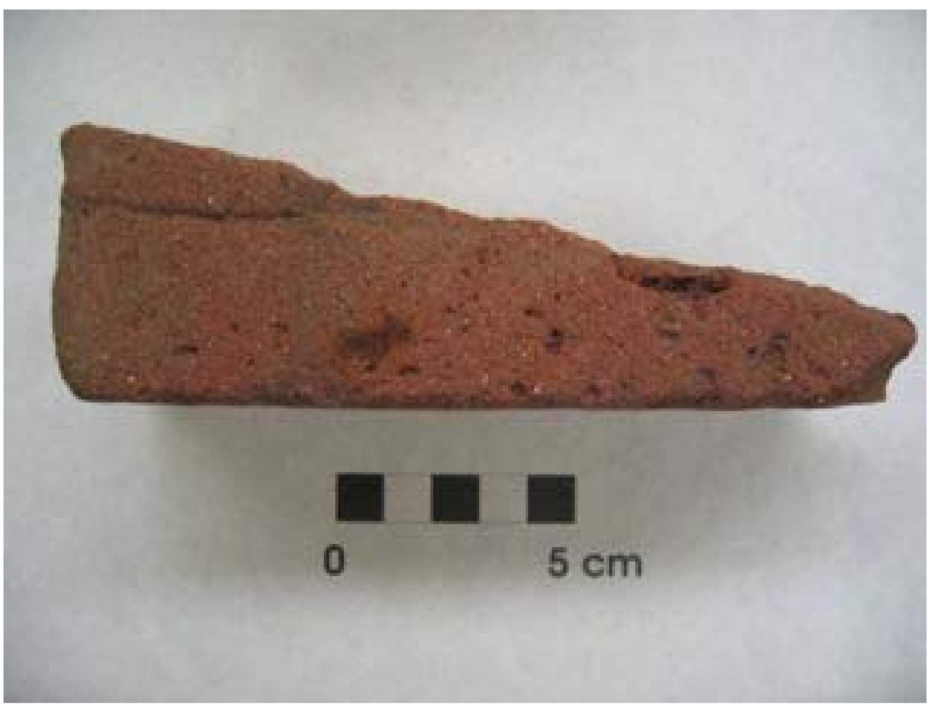


Figure 10.7: Sample 4 – D1 SU8

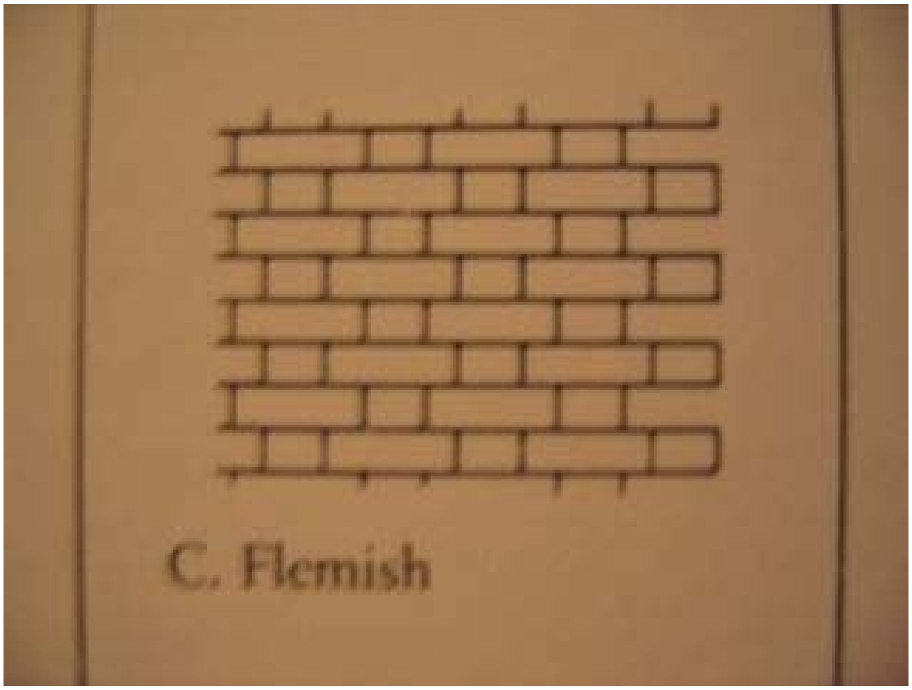


Figure 10.8 Flemish bonding style

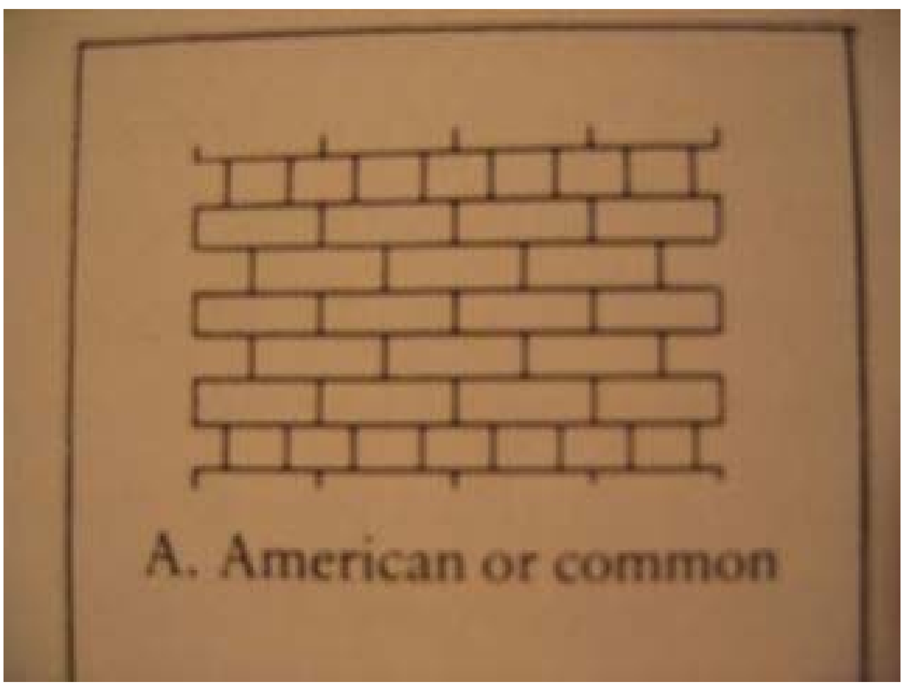


Figure 10.9: American bonding style

Figure 10.10: Old Brick Schoolhouse

Figure 10.11: Building by John Updike

Works Cited

Gurcke, Karl. Bricks and Brickmaking: A Handbook for Historical Archaeology. Moscow: The University of Idaho Press, 1987.

Hume, Ivor Noel. A Guide to Artifacts of Colonial America. Philadelphia: University of Pennsylvania Press, 1969.

Isham, Norman M. A History of the Fabric: The Meeting House of the First Baptist Church in Providence. Providence: The Akerman-Standard Company, 1925.

Lemons, J. Stanley. First: The First Baptist Church in America. Rhode Island: The Charitable Baptist Society, 2001.

Mason, Ken. "History of the Barrington Brickyard." The Official Website of Barrington. 11 Dec. 2007. <http://www.ci.barrington.ri.us/town/brikyard.htm>.

Noble, Allen G. Wood, Brick, and Stone: The North American Settlement Landscape. Amherst: The University of Massachusetts Press, 1984.

Sanderson, Edward F. and William McKenzie Woodward. Providence: A Citywide Survery of Historic Resources. Rhode Island: Rhode Island Historical Preservation Commission, 1986.

Chapter 11

Kaolin Pipes at the First Baptist Church

Cindy Swain

Clay pipes were common personal items used for smoking tobacco. When tobacco became extremely popular in the early 17th century, clay pipes became increasingly popular. At this time, smoking was actually known as 'drinking' because the smoker quickly gulped large quantities of smoke into his mouth, rather than taking long draws as is the practice now (Deetz, 1996: 28). Pipes were easiest lit by using a candle, but embers also worked well. Tongs were made to lift embers specifically for that purpose throughout the 17th and 18th centuries, and embers were often kept in small chafing dishes or earthenware braziers (Hume, 1969: 309).

Clay pipes were cheap to produce - to make a gross, or 240 pipes, only cost 2 shillings - and therefore were available to all economic levels of society (Alexander, 1983: 239). However, differences eventually arose between socioeconomic classes in terms of what types of pipes were used. Long-stemmed pipes, sometimes measuring 18 inches, were favored by the upper-classes, while short-stemmed pipes, or 'cutties,' were signifiers of the working class, in the late 19th century (Cook, 218). While pipes were made of other materials, such as metal or meerschaum, clay was by far the most popular. White clay pipes were common in New England, while in Virginia and other Southern colonies, pipes were often made with mottled tan clay, which was often associated with either Native American or African manufacture (Deetz, 1996: 245).

A pipe consisted of a mouthpiece, a stem, a heel, and a bowl. The mouthpiece, starting in the 18th century, could have a green or brown lead glaze, or a red wax covering about an inch long, but most pipe mouthpieces were unadorned (Hume, 1969:302). The stem varied in length throughout the centuries. In the late 16th century, the average pipe stem measured no more than 3.5 inches, but by 1675, the average length had grown to about 11 inches. In increased still further to reach 13 inches in the mid-18th century, but in the second half of the 18th century, many pipes had reverted to about 9 inches. Manufacturers commonly made pipes of short, middling, and long lengths simultaneously. The heel was the broadened base of the bowl so that the pipe could rest on a flat surface. Sometimes, the heel was replaced by a spur, a small nub that helped one's grip, or the heel was missing altogether (Hume, 1969:297). Early bowls were mostly plain, but by the 19th century, decorations and patterns on the bowls had become common (Hume, 1969:303).

These pipes were made by rolling clay into a stem and forming a bowl, using a mold. The mold could include special features such as imprints of the maker's mark, or stamping a pattern on the bowl. While the clay was in the mold, a piece of wire was pushed through the stem. The wire was generally only just longer than the pipe stem (Alexander, 1983:239). Most of the pipes found in North American colonial and early American sites are English manufactured, but Dutch pipes are also found, along with French, Belgian, Canadian, and American pipes (Alexander, 1983: 242).

While pipes' primary functions to their contemporary societies were smoking tobacco and represent the users' tastes, class, and perhaps political stance, depending on the stamping on the bowl, pipes are used by archaeologists for dating. Pipes are useful for this purpose partly because of their great frequency on sites. This is due to the fact that pipes were extremely cheap to buy, so if a person dropped his pipe in the lawn, he might just leave it there, whereas if he dropped a brass snuffbox or another more valuable object, he might stop to look for it. Pipes, made of clay and having long, thin stems, are also fragile. Most pipes in the Colonial and early

American period came from abroad, and rough handling on these voyages resulted in many being broken before the pipes were even used (Berthiaume, 110:2006).

Pipes also have many potential dateable features. Bowls were first used for dating. Their diameters could provide a rough date. Bowls increased in size over time, perhaps because of the greater availability of tobacco. However, comparatively few whole bowls were found on sites (Deetz, 1996: 27-28). Also, bowl molds were homemade and specific to each pipe manufacturer. While the trend of smaller to larger bowls hold true, no accurate sweeping statement can be made in terms of a specific date, since bowls varied so much between cities of origin and even individual pipe-makers in each city. Furthermore, this measurement only holds true for English pipes, and as noted above, pipes of other nationalities do occur, which can skew the measurement of the whole sample (Hume, 1969: 302).

Jean Harrington, in 1954, noticed that the bores in pipes grew smaller and smaller between the 17th century and the late18th century, resulting in the following chart dating bore sizes to time ranges (Deetz, 1996: 28):

Table 11.1: Bore to Date correlations.

Diameter (inches)	Dates
9/64	1590-1620
8/64	1620-1650
7/64	1650-1680
6/64	1680-1720
5/64	1720-1750
4/64	1750-1800

Lewis Binford contributed even more to Harrington's theory by creating a straight-line formula to find the mean date of pipe stems at a site, regardless of sample size:

$Y=1931.85 - 38.26X$

Y equals the mean date for the assemblage, and X is the mean hole diameter for the assemblage. 1931.85 is the theoretical date for which the stem hole would disappear, according to Harrington's theory, and 38.26 is the number of years between each 1/64 inch decrease. The mean bore diameter is found by multiplying each measurement (4/64, 5/64, etc.) by the number of fragments with that measurement. Then, by adding the products of each measurement together and dividing by the total number of fragments, one can find the mean diameter size.

Pipe stems occur in greater frequency on sites, and unlike with bowls, a measurement of the bore can be made without a whole specimen. Deetz relates the decrease of bore size with the lengthening stem and increase in bowl size. He said that the bigger bowl allowed for more tobacco to be smoked at once, making the bowl hotter. The stem lengthened to keep the hot bowl farther away from the mouth, and that the lengthened pipe stems required a smaller bore (Deetz, 1996: 27-28). Hume, however, says that the stem length had no relation to bowl size, but does provide an explanation for why the long stems required a smaller bore. The wire creating the bore is pushed through solid clay while the stem is still in the mold. When the stems were short, a thicker wire was able to go through. However, once the stems became longer, thinner wires were needed because the thick wires had a tendency to stick through the sides of the stem. He notes, however, that this explanation is problematic given the fact that pipe manufacturers generally made multiple sizes of pipes simultaneously (Hume, 1969: 297). Since a small piercer was able to go through small, middling, and large stems, while a large piercer was not, pipe manufacturers might have wanted to simplify production by only using one piercer, the narrowest one being the lowest common denominator.

Alexander, however, finds much fault with Harrington's system, upon which Binford's formula is based. Harrington presumes that the bore size is uniform throughout the stem, but

Alexander notes that this is often not the case. Some pipes are found with the bore smaller at the mouth piece than the bowl. Also, irregularities can be found in the stem itself, since a lack of clay in the mold might create small holes, or clay bits might have fallen into the bore when the wire was removed. If only a fragment of the stem was found and measured at such an irregular point, the data would be thrown off. Alexander also notes that Harrington's original sample, on which the dating system is based, included only 330 fragments. However, Audrey Noel Hume, after working on excavations at colonial Williamsburg, said that between 900 and 1000 fragments are necessary for stable data (Alexander, 1983: 236-237).

Alexander also questions the use of the bore as a plausible measurement. First, he says that it is known that the clay used to make pipes eventually wore down features in pipe molds, such as the makers' marks or patterns, and these needed to be replaced. It is not unreasonable, he says, to extend this and say that the clay also wore down the wire used for piercing. A good worker could produce between 360-450 pipes per day. If a stem is 12 inches long, and a piercer were thrust in 12 inches, and withdrawn another 12 inches, then in a year, the piercer would pass through 81 miles of clay. This would undoubtedly strip some of the wire away and cause the diameter of the bore to decrease, therefore making the measurement, while still probably very close to the original diameter of the wire, a little on the small side. Alexander also calls into question whether or not the diameters of the piercers themselves, regardless of variations based on usage, were standardized throughout Harrington's time periods. At excavations at the Caleb Pusey House, pipe stems with four different diameters were found at a single site, all from a single manufacturer which was in business from 1660-1720. This shows that the manufacturer must have used 4 different sized piercers in a 60 year period. Not only does this directly disagree with Harrington's dating table, but it also questions whether piercers of different widths were used simultaneously (Alexander, 1983:239-240).

There are a good number of examples where Harrington's and Binford's theories are supported, and others that call those theories into question. A few points should be made when considering the usefulness of these theories: they are only meant to work for English pipes. Pipes of other origins should be separated from the data before applying the theory. When pipes have bores of two different measurements at each end, the entire fragment should be discarded, since picking one or the other could skew the data. These theories should always be considered in the context of the site and other data. Ivor Noel Hume said, "With regard to the stem hole diameter observations which you submitted to me…I must admit I am often worried by the ever-increasing tendency to let statistics substitute for logic (Alexander, 1983: 242)."

Other features, such as makers' marks and initials, can provide accurate dates or development sequences for pipes (Alexander 1983, 235). In later pipes, the place of origin can provide a useful *terminus post quem.* In 1891, the United States passed the McKinley Tariff Act, which required that all items imported to the United States be marked with the country of origin. Pipe-makers then began stamping pipes with the country of origin rather than the city (Cook, 206).

Because of pipes' usefulness in dating, they should be recorded meticulously when found in the field. Their exact depths and locations should be noted, as well as any artifacts in context. Pipe fragments can be treated like pottery sherds in the lab. They can be washed and scrubbed with a soft brush. They can also be bagged in the field immediately (Berthiaume, 2006: 112).

Nine pipe fragments were found in the 2007 season of the excavations at the First Baptist Church in Providence, Rhode Island. Four of these were pipe stem fragments, and 5 were bowl fragments. Three of the bowl fragments, were parts of only one side of the bowl, but the other two bowl fragments were more complete and the bowl shape was evident. In these two, the bore can also be seen. One of the bowl fragments had a pattern stamped onto it (Figure 11.1).

The pipe stem fragment found in trench CI, SU3, had a bore measuring 5/64". It was found between 18.5 and 28.5 cm deep. According to the Harrington Dating system, that dates this pipe between 1720-1750. The fragment was 7/32" wide and 25/32" long. It weighed 0.93 grams.

Three pipe fragments were found in trench D2. A pipe stem fragment was found in SU 3 between 20 cm. and 27 cm. The bore on this fragment measured 4/64" and dates to 1750-1800 by the Harrington system. The pipe stem fragment was 7/32" wide and 23/32" long and weighed 0.7 grams. The end of this fragment was noticeably darker. The coloration was not due to a difference in the clay, but some residue that had covered the pipe stem. Two fragments were found 40 cm. deep in SU 7. They both are bowl fragments, and they fit together perfectly. The larger fragment, which gives the general shape of the bowl, also contains the bore (Figure 11.2). The bore was 4/64", corresponding to Harrington's date of 1750-1800. The bowl also had a heel, and a small raised rectangle. This piece measured 13/16" wide and 1 17/32" long and weighed 5.5 grams. The smaller bowl fragment had no diagnostic markings. It was ½" wide and 21/32" long, weighing .7 grams.

One bowl fragment was found in trench D3 between 20 cm and 30 cm deep. This was a fairly small bowl fragment, only 21/32" long. It had no markings which would help date it. This fragment weighed .9 grams.

Trench D1 produced three pipe fragments. The first was found in Su 3 between 20 cm and 30 cm. This fragment was a large bowl piece and had a bore 4/64" in diameter, putting it in

Harrington’s 1750-1800 range. It had no heel or spur. The bowl weighed 5.6 grams and measured 3/8” in width and 1 1/8” in length (Figure 11.3). A pipe stem fragment was found in SU 5. It was between 40 cm. and 54 cm. deep. This fragment was slightly darker clay than the other fragments. The bore was 5/64”, making it slightly older than the SU 3 fragment, by Harrington’s reckonings, at 1720-1750. The stem fragment was ¼” wide and 23/32” long and weighed 1.0 grams. The third fragment was another stem fragment, found in SU 6, between 45 cm and 50 cm deep. This stem fragment was much thicker than all the other fragments. It was 3/8” wide and 1 1/18” long, yet it weighed 2.6 grams. The bore of this fragment was 5/64”, dating it to the same range as the SU 5 pipe stem fragment.

A patterned bowl fragment was found in trench D4. It was between 22 cm. and 30 cm. deep, in SU 4. This fragment was much thinner than the other fragments, stem or bowl. It measured 3/8” wide and 15/32” long, yet it weighed only .2 grams. The pattern on the fragment was impressed into the clay during the molding process. The pattern was very small lattice work, in a strip. About half of the fragment is left plain with a clear border between the pattern and the plain section (Figures 11.4 and 11.5).

The sample of nine fragments is too small for the Binford straight-line formula to provide accurate or stable data. All of the fragments that, according to Harrington’s system, dated to 1720-1750 were found below those dating to 1750-1800. However, a coin whose earliest date is 1899 was found in trench CI SU 6, at a depth of 50 cm. to 72 cm. This is far later than any of the pipes date. The discrepancy may be a result of the Harrington dating system, some of whose shortcomings are discussed above. The Harrington system does not date after 1800, although clay pipes were still used long after this date.

Pipes were very widely used throughout all levels of society. Unfortunately, nothing can be known about the length of the stems from which the fragments came. Often, different length stems were associated with particular social classes. Shorter pipes were common among working class men, partially because they could be smoked while working. Longer pipes were used mostly by upper class men in more leisurely situations (Cook, 216). Since these pipes are of ambiguous lengths, they tell us nothing about the type of people that used them.

The presence of pipes, however, does speak to the fact that the First Baptist Church lawn served some kind of social function. Men did not smoke pipes during church services, so they must have smoked them either before or after services, or at other social gatherings on the lawn. These could have included outdoor lectures, outdoor services during the summer, or church picnics. Pipes would have been smoked at such social functions, since they were an intergral part of social life in other non-religious spheres. Taverns even often kept clay pipes for their patrons' use, sanitizing them for the next customer by heating them in a fire (Hume 1969, 312).

There is also a possibility that the people smoking pipes were not church members at all, but simply members of the community. The church yard today is used by many as a park or a shortcut to walk through, and there is evidence that it was used as such in the past as well. According to Tyler Lucero, the church voted to ask neighbors to keep their children off the lawn, but this shows that there must have been people on the lawn in order for the church to ask them to stop. Also, the church later voted to use the church lawn as a public park, complete with benches. This would have been an ideal place for men to sit and smoke pipes.

These nine fragments were distributed throughout five of the six trenches. The distribution shows that people used the entire lawn, not just the walkways or the places nearest to the door. If pipes were dropped or broken all throughout the church yard, there must have been some activity there outside of the normal path of traffic to and from the church.

The recovery of pipe fragments can be extremely useful, since pipe fragments can shed a great deal of light on a site. They have the potential to date it, and give information about the site's inhabitants' class, politics, lifestyles, and origin. While the nine fragments discovered at the First Baptist Church in 2007 were not particularly informative as to their individual users, they did speak somewhat to the community at large and how it utilized the lawn of the First Baptist Church. They not only back up information gained from the study of written records, but add a new dimension to it, speaking to details such as smoking habits which are absent from such writings.

Figure 11.1: Pipe Fragments

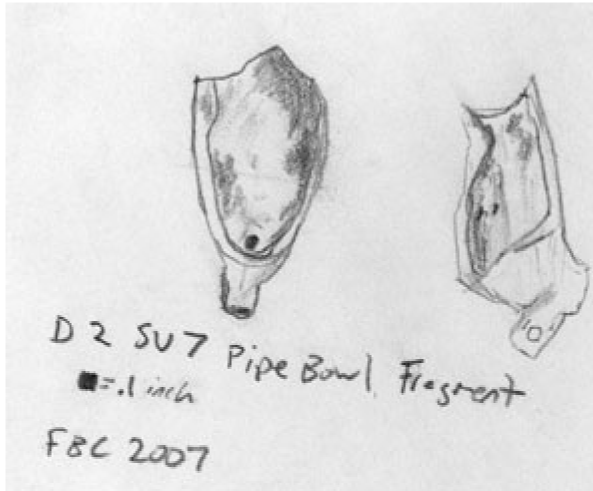


Figure 11.2: D2 SU7 Pipe Bowl Fragment

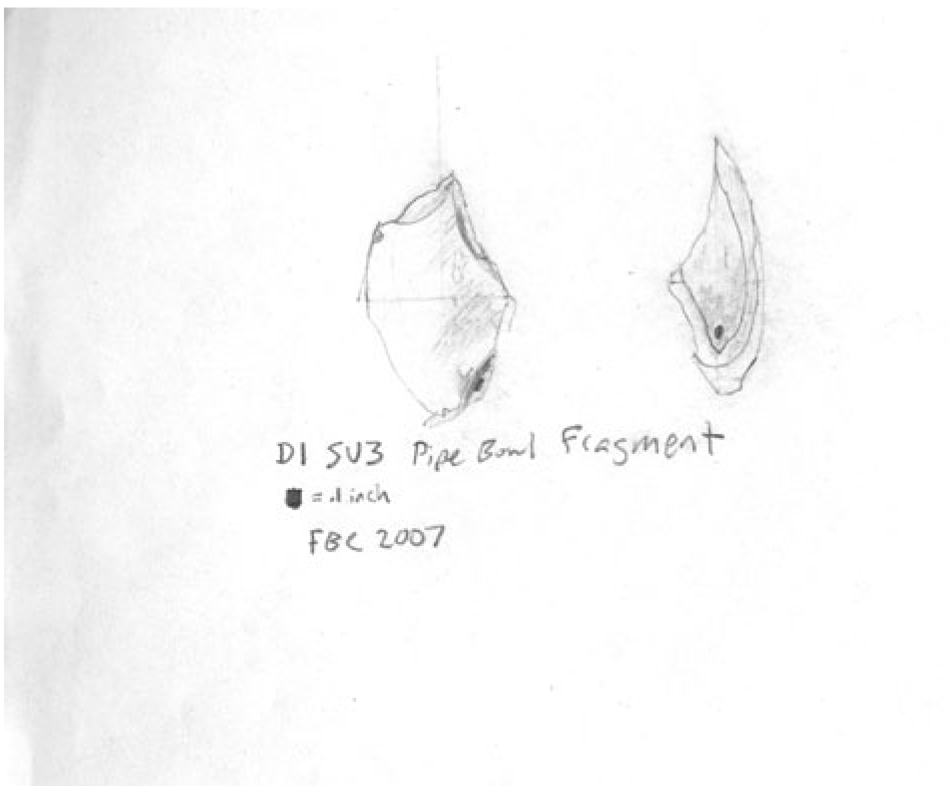


Figure 11.3: D1 SU3 Pipe Bowl Fragment

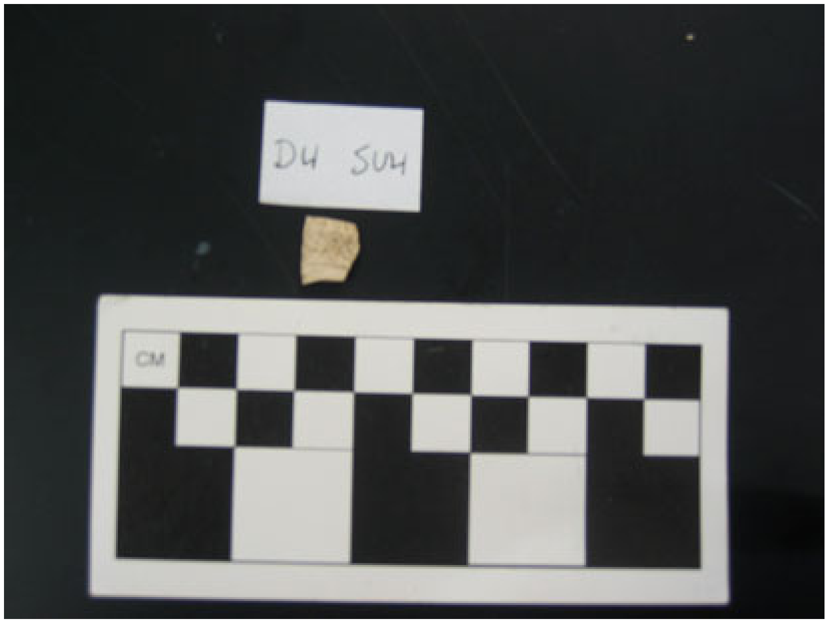


Figure 11.4: Decorated Pipe Bowl Fragment

Figure 11.5: Drawing of Decorated Pipe Bowl Fragment

Works Cited

Alexander, L.T. "More Light on the Theory f Dating Clay Pipes by Measuring Stem Hole Diameters." The Archaeology of the Clay Tobacco Pipe. Ed. Peter Davey. Oxford: BAR International Series, 1983. 235-244.

Berthiaume, Jenna. "Human Personal Items from The First Baptist Church." Churchyard Archaeology. Eds. Zachary Nelson and Katherine Marino. Providence, RI: Brown University, 2007.

Cook, Lauren J, "Descriptive Analysis of Tobacco-Related Material from the Boott Mills Boarding Houses." Interdisciplinary investigations of the Boott Mills, Lowell, Massachusetts. Ed. Mary C. Beaudry. Boston: National Park Services, 1987-1989. 187-207.

--- "Tobacco-Related Material and the Construction of Working-Class Culture." Interdisciplinary investigations of the Boott Mills, Lowell, Massachusetts. Ed. Mary C. Beaudry. Boston: National Park Services, 1987-1989. 209-229.

Deetz, James. In Small Things Forgotton: An Archaeology of Early American Life. New York: Anchor Books/ Doubleday, 1996.

Hume, Ivor N. A Guide to Artifacts of Colonial America. New York: Vintage Books, 1969.

Chapter 12

Faunal Remains at the First Baptist Church

Whit Schroder

A large number of members of the First Baptist Church were congregated on the east lawn of the grounds for a special picnic celebration. While children chased after a stray dog that often found itself begging for food at such events, the more sensible adults discussed current events: the terrible assassination of President Garfield, the recent invention of a convenient little device called a telephone, the British colonial wars in Africa. But most of all, the people focused on the food: oysters, clams, chicken, sheep, and the special main course – turtle. The refuse was discarded farther from the church, near Main Street, on the western lawn. The less polite guests tossed their trash off the side of the stairs before entering the south end of the church.

Almost 150 years later, two students from Brown University enrolled in an archaeological field work course were excavating the trench D1 on the fourth day of digging. After only an hour, they discovered a special find: the season's first animal bone.

The excavation of selected areas of the lawn of the First Baptist Church that took place during the 2007 season produced a much smaller quantity of faunal remains than the previous year. While the students enrolled in the archaeological field work class during the 2006 season discovered 220 bone fragments, this year's students recovered a total of 15. In addition, 405 pieces of shell were excavated last year, whereas this year the team found 148. These discrepancies are not surprising, however, because eight test pits were dug last year, while six were dug this year. And obviously, the distribution of animal remains is not even across an archaeological site. To what animals do these remains belong, and how were they used? What can we learn from such remains about the people who used them? The answer lies in zooarchaeology, the study of faunal remains in archaeology.

THE STUDY OF FAUNAL REMAINS

Zooarchaeology, sometimes known as archaeozoology, or the study of faunal remains, differs from the more well-known field of paleontology in that the latter focuses on the study of prehistoric life forms, while the former involves the study of animal remains from any archaeological site. Paleontology and zoology study animals, while zooarchaeology examines animal remains in order to understand better the interactions between humans, animals, and the environment.

As its name suggests, zooarchaeology is inherently an interdisciplinary field, combining such diverse topics as biology, ecology, and, of course, archaeology (Reitz and Wing, 1999: 1). Essentially, faunal remains can be examined by experts from a broad group of fields, but some archaeologists tend to rely on the historic interpretation of animal remains, while biologists focus on the scientific aspect of material studied. Both techniques are common and equally valid, but this study at the First Baptist Church approaches the remains from a more archaeological perspective.

SHELLS

The first and most common faunal remains excavated at the First Baptist Church were shells. Shells have been culturally significant to the Northeastern region for centuries and remain an important part of the New England diet today. During the Pre-Columbian era, Native Americans perfected the technique of baking clams but even until the 1700s also used the shells

– especially those colored purple – as currency and jewelry, called *wampum*, which still make-up Native American art today. In fact, the Latin name for a quahog shell is *Mercenaria mercenaria*, meaning "money." Thus, such an exchange of shells can provide insight into Native American trade routes. Shells "have also been used as chronological indicators and for interpretations of climate, environment, and season of site occupation" (Luff, 1984: 45). The discovery of shells can allow archaeologists to reconstruct the general subsistence of groups, temporally and spatially.

Today, however, since the founding of the colonies, shells have largely lost their aesthetic and monetary values but still remain an integral part of the New England diet. Whereas Native Americans often exchanged shells over long distances, today, in Rhode Island, many fancy restaurants pride themselves in serving chowder cooked with clams taken from a body of water no more than ten minutes away from the establishment. Many techniques for cooking clams, in fact, were developed by Native Americans. By digging pits, heating rocks and seaweed, placing the clams in the pit, and covering the trench with a top to contain the steam, Native Americans first created the clam bakes (Neustadt, 1992: 15). Colonists soon adopted the clam bake, and it became the most common form of cooking clams starting in the 1700s and remains a popular New England dish for festive occasions today.

The two categories of shells that are commonly excavated at archaeological sites in Rhode Island and New England are oyster shells and clam shells. These two shell types are usually easily distinguishable. Oyster shells (Figure 12.1) tend to be more fragile and have a much more rough texture. The surface of an oyster shell is highly calcified. Also, the growth rings on an oyster are much less uniform than they are on a clam shell (Figure 12.2). While the growth rings on a clam shell run roughly parallel to each other, the rings on an oyster are wavy and rough. The shapes of the two types of shell also differ (Bernstein, 1993: 59-60). Oyster shells are much more elongated, and the *fossa*, or apex, is located to one side. The fossa of a clam is usually closer to the center of the shell (Figure 12.3).

Clam shells can be subdivided further into two individual species. The difference between the two types depends mainly on strength. First, the hard-shell clam, or quahog, has a thicker shell than a soft-shell clam (*Mya arenaria*), or steamer (Figure 12.3). In addition, the two subcategories of clam shells can be discerned by shape. The quahog tends to be rounder, while the soft-shell is typically more elliptical. The fossa is also shaped differently between the two clam types. Because soft-shell clams are so much thinner, the chance of an intact shell surviving in the archaeological record is small, so often, without a complete example, a quahog or soft-shell is almost impossible to identify. Although shells can have a variety of hues, most commonly white and purple, color is not a reliable means of identification.

SHELL DATA FROM THE FIRST BAPTIST CHURCH

Unfortunately, the shells discovered from the First Baptist Church during the 2007 season are all fragmentary, most weighing less than one gram. Some, however, are large, most notably the oyster shell, weighing 33 grams, from the test pit D1 and stratigraphic unit (SU) 3 (Figure 12.1).

The first step in collecting data from shells, as with any artifact, is cleaning. Because shells are extremely fragile, they should not be washed in water. In fact, very little cleaning is required. At the most, a shell should be gently brushed with a toothbrush, and often shells are rarely cleaned. Then, shells are counted and weighed. The difficulty in counting shells is that most fragments are small and may correspond to the same shell. For this reason, note that when writing the number or quantity of shells, what is truly meant is number or quantity of shell fragments. Because of this ambiguity, shells should also be weighed because the total mass of shell fragments is more useful for comparative purposes than considering the quantity of different-sized shell fragments.

Once weighed, the shells can then be divided into categories and sub-categories of species, based on the technique described in the previous section. Once oysters, quahogs, and soft-shell clams have been identified, the diet of those who used the mollusks can be better reconstructed.

A total of 148 shell fragments were uncovered during the 2007 season of excavation at the First Baptist Church. These shell fragments together weighed 219.7 grams. Of these shells, 49 belonged to clams, 37 to oysters, and 62 were inconclusive because their growth lines were faded, the shells themselves were too dirty or burnt, or the fragments were simply too small for analysis. The 49 clams weighed 87.1 grams and the 37 oysters weighed 113.3 grams, meaning that about 57% of the shell fragments belonged to clams based on count, while about 57% of the shell fragments belonged to oysters based on mass. The largest concentrations of shells were discovered in trenches D1 and D2, suggesting possible sites for picnics or refuse piles (shell middens). Unfortunately, the clams could not be subdivided further into quahog or soft-shell because the shells were so fragmented that their shapes could not be reconstructed. However, one interesting clam shell, probably a quahog, recovered from trench D2 and SU 9, is colored similarly to a purple shell from the Rhode Island archaeological site Cocumscussoc near Wickford (Figure 12.4). Purple quahog shells, again, were, and are still, used by the Narragansetts and Wampanoag as jewelry. Because the purple shell at the First Baptist Church was discovered in the deepest stratigraphic unit of the test pit D2, beneath a pipe from SU 7 possibly dating between 1750 and 1800, its potential use as *wampum* is an interesting idea to consider.

Another interesting shell fragment from trench C1 and SU 6 appears to have been burnt. Some other examples of these burnt shells were found in other test pits (D1 SU 4). These shells (Figure 12.5) may simply be dirty, or they may have been discolored by acidity of certain soils. However, the burnt coloration could have also been the result of clam bakes, although, the fact that most of the clams excavated from the First Baptist Church would have been used in clam bakes raises the question of why only a few clam shells appear burnt.

Finally, a different type of shell was also uncovered from the grounds of the First Baptist Church. This fragment from trench D1 and SU 9 belongs to a turtle shell (Figure 12.6). The fragment is so small that species identification is difficult. However, the design on the shell resembles the carapace of an Eastern Painted Turtle (*Chrysemys picta*), although many turtle shells look similar. A turtle would have been a choice food item and likely provided food for all members of the First Baptist Church on a special occasion.

BONES

In addition to shells, a small number of bones were discovered on the church's lawn. Bones are the most rigid organs in an animal's body, serving not only the functions of movement, support, and protection of other organs, but also the production of blood cells and minerals crucial to the survival of an animal. Because of their strength and rigidity, bones are valuable to archaeology as being the most likely parts of the body to be preserved for over a span of time. Bones can provide information allowing the identification of a species, as well as the age, sex, diet, and cause of death. Radiometric dating can also be performed on bone or other organic material to assign a chronology to a site. The examination of bones, especially those of humans, raises many ethical questions that are inherent in the study of something that was alive at one time. Thus, the analysis of bones can attempt to solve repatriation issues that are particularly important all over the world, particularly so in New England.

The study of animal remains, however, is a less political field. Animal remains can provide insight into a culture's diet and agriculture. Age and sex profiles of a collection of animal bones can give archaeologists information regarding animal husbandry and its demographics; whether animals were used for milk, wool, or meat, for instance. Most important, the study of animal bones can help describe the question that zooarchaeology attempts to answer: how people interacted with and used animals in the past.

THE IDENTIFICATION OF BONES

Although bones survive relatively well in the archaeological record compared to other organic material, those recovered are, like the shells discussed above, highly fragmented. The more fragmented a bone, the less information can be gleaned from it. However, "all bones, even the smallest fragments, may be identified given sufficient training in osteology" (Binford and Bertram, 1977: 125).

Osteology, the scientific study and identification of bones, is one of archaeology's most valuable subdisciplines. Osteologists are equipped with two ways of describing a bone. The first, species identification, involves identifying not only the type of bone but also the specific animal to which it belongs. Species identification is usually ideal, especially to zooarchaeologists who attempt to reconstruct the human uses of certain animals. The second osteological procedure, fragment description, merely characterizes the general type and size of bone. When studying the “later stages of the taphonomic [fossilization] process […] fragment description rather than identification may be more appropriate” (O’Connor, 2000: 36). Fragment description is also employed by those who are not fortunate to have had ‘sufficient training in osteology.’ Needless to say, the procedure used in this study is the latter, though wherever possible, likely species are suggested.

The proper starting point when analyzing bone is not immediately attempting a species identification but rather recognizing what part of the anatomy to which the fragment belongs (O’Connor, 2000: 40). The simplest parts of the anatomy to identify in the field and lab are parts of the skull, the mandible, and the long bones (humerus, femur, etc.) (Wolniewicz, 2001: 1). Once the type of bone has been identified, the size of the animal can be surmised. When a bone is complete, the description can be anatomically specific (section – distal epiphysis – and type of bone – humerus), but because bones are often fragmented, the identification can be fairly vague (such as, long bone shaft fragment). The size of an animal can be difficult to reconstruct because, obviously, not all animals of the same species are the same size, and size depends on maturity. Teeth can be especially helpful in determining the age of an animal, as well as adaptations (carnivore or herbivore, for example) (O’Connor, 2000: 41).

The epiphyseal plate can also be useful in finding the age of an animal. The epiphysis is a rounded end of a long bone (humerus, femur, etc.), thus each long bone has two. The two epiphyses are discerned from each other based on proximity to the head (Klein and Cruz-Uribe, 1984: 15), thus, the closer epiphysis is aptly named proximal, while the farther one is described as distal. The shaft between the two epiphyses is known as the diaphysis, although even professional osteologists often use the simpler term “shaft” when discussing long bones. The epiphyseal plate, or growth plate, located between the epiphysis and the shaft, is a line of cartilage that slowly begins to be replaced by bone as an animal matures (O'Connor, 2000: 92-96). In humans, the epiphyseal plate is fused to the bone between the ages of 17 and 25. If the epiphysis is fused, then the animal has fully matured and, thus, reached its full size. When size is determined, the bone can be compared to known specimens and diagrams.

BONE DATA FROM THE FIRST BAPTIST CHURCH

Like the shells, all of the bones excavated from the test pits this season are fragmentary and most are unidentifiable. Some bones, however, are large enough to be attributed to a species (note that attributing a bone to a species is not the same as conclusively identifying a bone as belonging to an animal). Of the 15 bone fragments recovered, six can be narrowed down to likely species.

When excavating bones from the First Baptist Church, students had to be especially careful to prevent breaking of the bones. Fresh breaks that occurred during excavation can be distinguished from old breaks that took place during death or burial of the animal. New, fresh breaks reveal bone that was not in contact with the soil and are, thus, lightly colored, while old breaks remained in contact with the soil and would be the same color as the rest of the bone. After excavation is complete, the bones must be cleaned. As with the shells, however, the preservation of the bone is more important than the removal of all dirt. Bones can then be counted and weighed. Again, the mass of bone fragments can be more useful for comparative purposes than the number of bone fragments, as many small fragments of a bone may correspond to the same bone.

Bones were found only in three of the six trenches: C1, D1, and D2, all in relatively deep stratigraphic units. Many of the bones were too small for complete analysis. Bones were attributed to species by comparison with the collection at the RISD Nature Lab and the collection of mammal bones at the Joukowsky Institute. Richard Wolniewicz' *Field Guide to Shells and Bones of Mammals of the Northeastern United States* and Simon Hillson's *Mammal Bones and Teeth: An Introductory Guide to Methods of Identification* were useful because the books contained actual-size pictures and drawings, respectively. Lisa Anderson, an archaeozoologist and graduate student at Brown University also examined some of the bones and offered her insight.

Seven of the small bone fragments could not be reconstructed into larger bones. One of these small fragments found in trench C1 and SU 4 is spongy (Figure 12.7), a characteristic of the epiphyses. Based on the size of the fragment, about 1 centimeter long, the bone can be attributed to the epiphysis of a long bone of a small mammal. Three other fragments from trench D1 and SU 4 (Figure 12.8) have this same spongy characteristic and are also parts of epiphyses, possibly one or two epiphyses from a single long bone of a medium-sized mammal (the largest of the fragments is more than 2 centimeters long). One small fragment of bone was found in trench D2 and SU 5 (Figure 12.9). Looking at the inside of the bone, it clearly belongs to a long bone. Based on its shape, it is likely from the section of bone between the epiphysis and shaft, known as the metaphysis, and the fragment's size corresponds to that of a small rodent. In trench D2 and SU 8, a fragment of the shaft of a long bone of similar size was discovered (Figure 12.10). A much larger but still unidentifiable fragment was uncovered from test pit D1 and SU 5 (Figure 12.11). A small fragment that belongs to the same bone was found in the same stratigraphic unit. The color of the break shows that it occurred during excavation. These two fragments together make up part of the shaft of a long bone of a medium-sized mammal.

None of these fragments is complete enough for better identification, but one fragment from trench D1 and SU 4 has a long section of shaft associated with most of the epiphysis of a long bone and two smaller fragments (Figure 12.12). After comparing the bone to diagrams, Lisa Anderson was able to identify the bone as a distal humerus of a medium-sized mammal, most likely a dog. Again, the breaks occurred during excavation.

Another interesting bone was found in test pit D2 and SU 7 (Figure 12.13). This bone proved difficult to analyze, as it went through a variety of possible identifications. First, the bone was thought to be a section of a scapula or pelvis. Unfortunately, neither the RISD Nature Lab nor the Joukowsky Institute had a collection of scapula. When compared to pictures and diagrams, the bone appeared to be a fragment of the *glenoid fossa* of a scapula, where the humerus connects to the shoulder. The size seemed to be that of a white-tailed deer (*Odocoileus virginianus*). However, the glenoid cavity, where the epiphysis of the humerus is attached, appeared too small when compared to other diagrams. Lisa Anderson suggested that the fragment may be part of a vertebra. However, identification becomes difficult because the fragment is not bilaterally symmetrical. The fragment does seem to match somewhat the collection of thoracic (lower) vertebrae of sheep-goats in the Joukowsky Institute. Therefore, the fragment likely belongs to the dorsal (concave) end of a thoracic vertebra of a sheep-goat or similarly-sized mammal.

A fragment of long bone from trench D1 and SU 9 (Figure 12.14) differs from the other bones discovered at the site in that it belongs to a bird, rather than a mammal. The bone is hollow and light-weight, an ideal adaptation for flying. Although the bone is the right size of a rib, it is too straight. The bone can be attributed to the shaft of a long bone of a domestic bird, possibly a chicken.

CONCLUSION

Although the anecdote that begins this chapter on the analysis of faunal remains from the First Baptist Church is not entirely factual, one can imagine such a scene taking place throughout the church's long history. The remains of shells (oysters and clams) and bones (belonging to at least four different species) were discovered in large concentrations in two test pits. These areas may have been refuse piles or locations of picnics. Textual evidence supports the idea that members of the church engaged in such festive celebrations, and even today, the church is a center for the local community: a place to gather and connect with people with common beliefs, as well as an educational tool, where a class can learn how to properly perform archaeological field work. Though we may never truly understand what past people believed, we can at least understand the things they used and how these objects were valued. In the case of faunal remains, we can examine a bone and connect with the past, reminding ourselves that these people were just like us and enjoyed sharing time with friends and family. Through the study of animal remains, we learn how people interacted with animals and their environment, and we understand a little more the culture of people who, as long as archaeology exists, will never be forgotten.

Figure 12.1: Oyster shell from D1 SU 3

Figure 12.2: Clam shell fragments from D1 SU 4

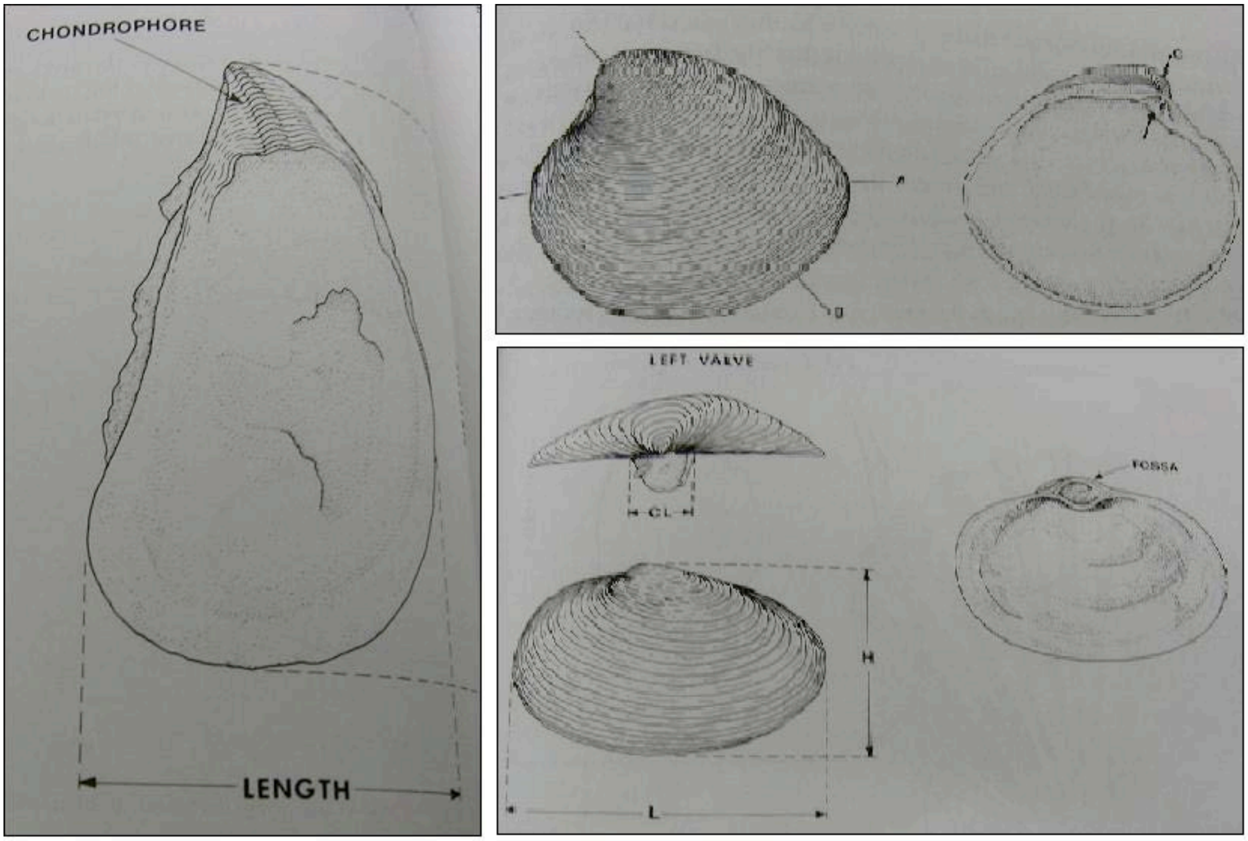


Figure 12.3: Diagrams of an oyster shell (*left*), a hard-shell clam (*top right*), and a soft-shell clam (*bottom right*). (Bernstein 1993: 59-60)

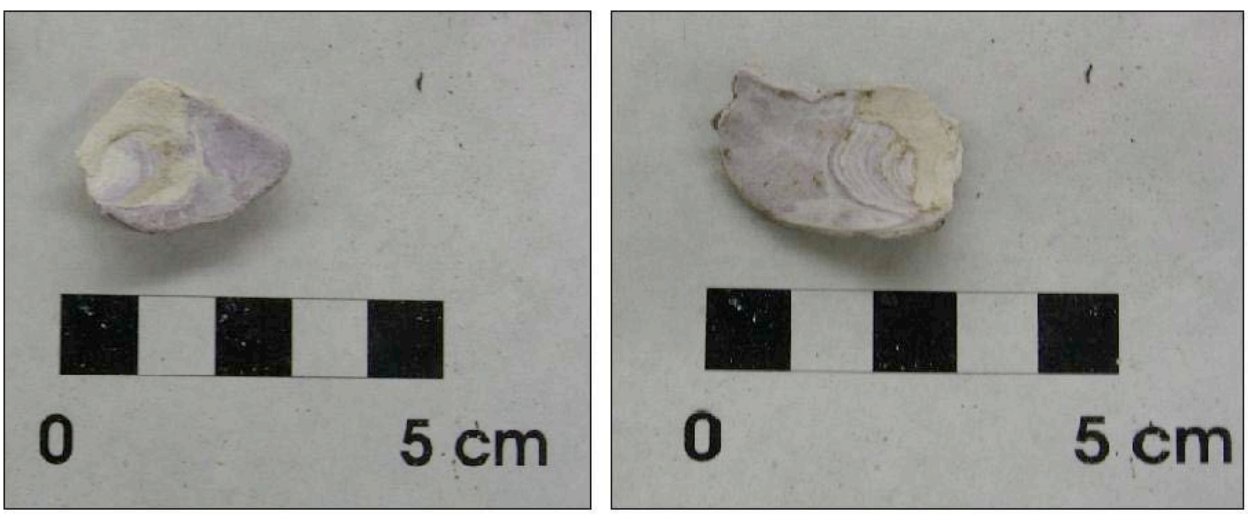


Figure 12.4: A purple shell from D2 SU 9 resembles a *wampum* shell from Cocumscussoc RI 375 N540 E585 Level 3

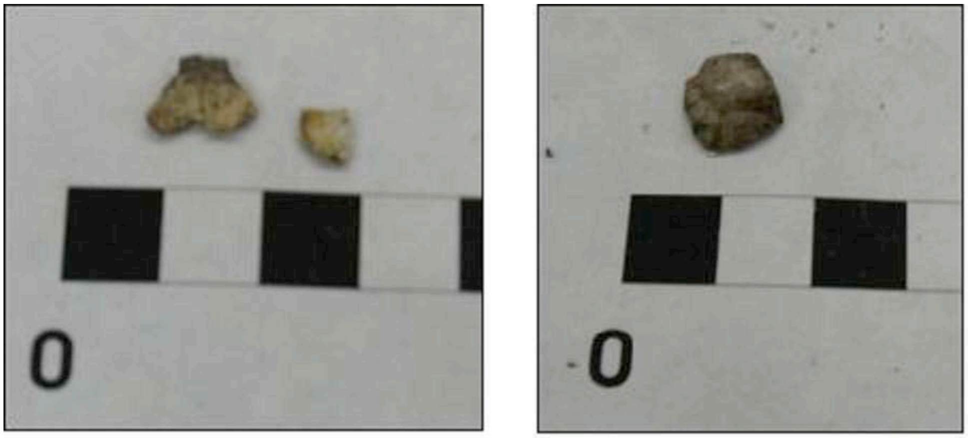


Figure 12.5: Discolored shells (probably clams) from C1 SU 6 (*left*) and D1 SU 4 (*right*)

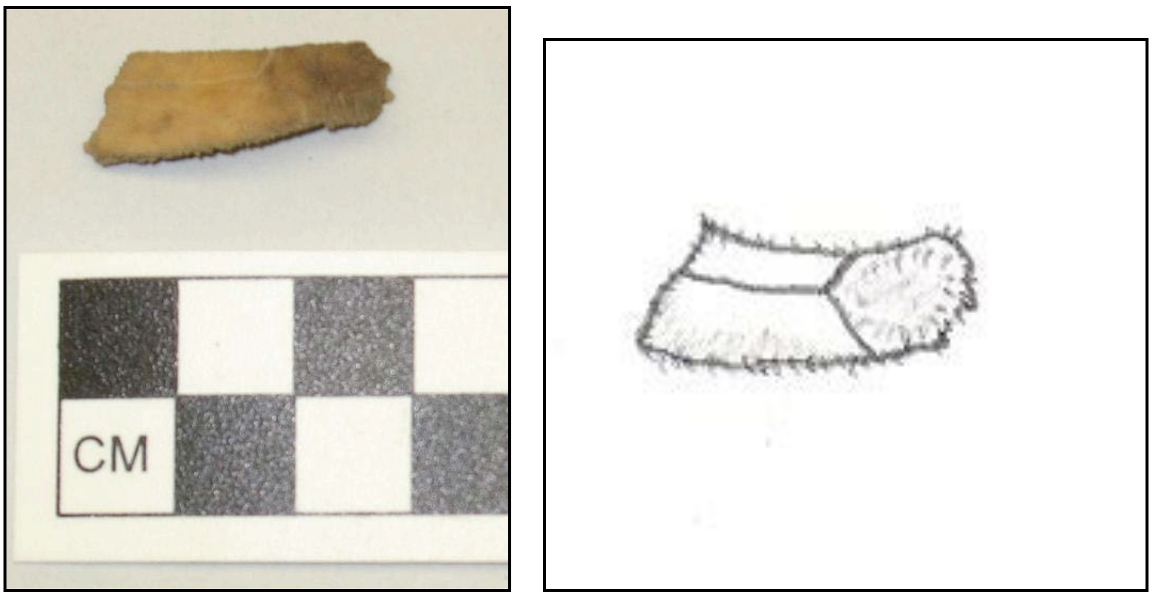


Figure 12.6: Turtle shell from D1 SU 9

Table 12.1: Summary of Shell Recovered from the 2007 First Baptist Church Excavation

Trench	SU	Quantity	Mass (g)
C1	1	4	2.1
C1	3	2	0.2
C1	5	2	6.2
C1	6	2	0.7
C1 Total		10	9.2
C2	5	2	1.4
C2	6	1	0.1
C2	7	5	7.6
C2 Total		8	9.1
D1	1	5	2.6
D1	2	1	0.7
D1	3	2	33.6
D1	4	3	2.4
D1	5	17	22
D1	6	14	7
D1	7	5	1.9
D1	8	5	0.8
D1	9	3	4.5
D1 Total		55	75.5
D2	1	2	0.1
D2	3	5	23
D2	5	10	15.8
D2	7	4	11.2
D2	8	42	66.4
D2	9	4	2.9
D2 Total		67	119.4
D3	5	1	0.4
D3 Total		1	0.4
D4	4	1	1
D4	6	3	4.3
D4	8	3	0.8
D4 Total		7	6.1
TOTAL		148	219.7

Table 12.2: Distribution by Species of Shell Recovered

Trench	SU	Number of Clams	Number of Oysters	Mass of Clams (g)	Mass of Oysters (g)	Inconclusive
C1	1	4	0	2.1	0	0
C1	3	0	0	0	0	2
C1	5	2	0	6.2	0	0
C1	6	2	0	0.6	0	2
C1 Total		8	0	8.9	0	4
C2	5	2	0	1.4	0	0
C2	6	0	0	0	0	1
C2	7	1	0	5	0	4
C2 Total		3	0	6.4	0	5
D1	1	0	0	0	0	5
D1	2	1	0	0.7	0	0
D1	3	0	1	0	33	1
D1	4	2	0	9.5	0	1
D1	5	11	2	13.7	6.7	2
D1	6	0	0	0	0	14
D1	7	0	1	0	1.1	4
D1	8	1	0	0.4	0	4
D1	9	1	0	4	0	2
D1 Total		16	4	28.3	40.8	33
D2	1	0	0	0	0	2
D2	3	0	1	0	21	4
D2	5	0	4	0	14.3	6
D2	7	4	0	11.2	0	0
D2	8	16	26	29.2	33.1	0
D2	9	1	0	2.6	0	3
D2 Total		21	31	43	68.4	15
D3	5	0	0	0	0	1
D3 Total		0	0	0	0	1
D4	4	0	0	0	0	1
D4	6	0	2	0	4.1	1
D4	8	1	0	0.5	0	2
D4 Total		1	2	0.5	4.1	4
TOTAL		49	37	87.1	113.3	62

Figure 12.7: Fragment of an epiphysis of a small mammal from C1 SU 4.

Figure 12.8: Spongy fragments of epiphyses of a medium-sized mammal from D1 SU 4

Figure 12.9: Epiphysis of a small mammal from D2 SU 5

Figure 12.10: Epiphysis of a small mammal from D2 SU 8

Figure 12.11: Long bone shaft of a medium-sized mammal from D1 SU 5

Figure 12.12: Distal humerus of a dog-sized mammal from D1 SU 4

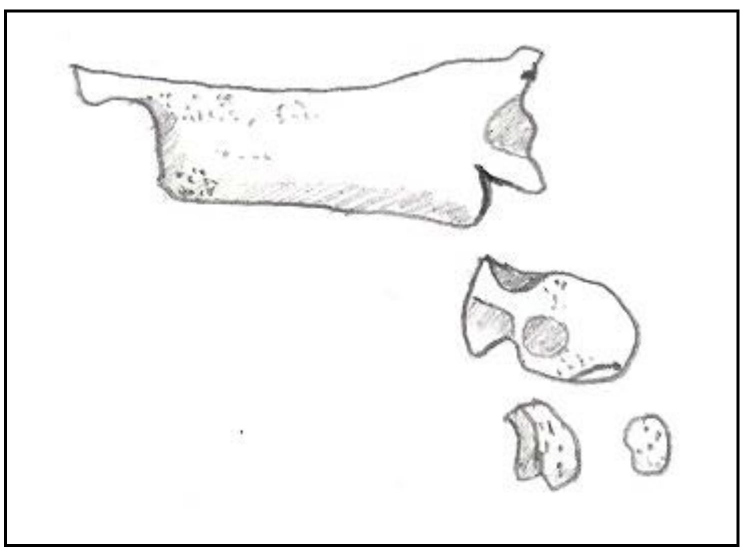


Figure 12.13: Thoracic vertebra of a sheep-sized mammal from D2 SU 7

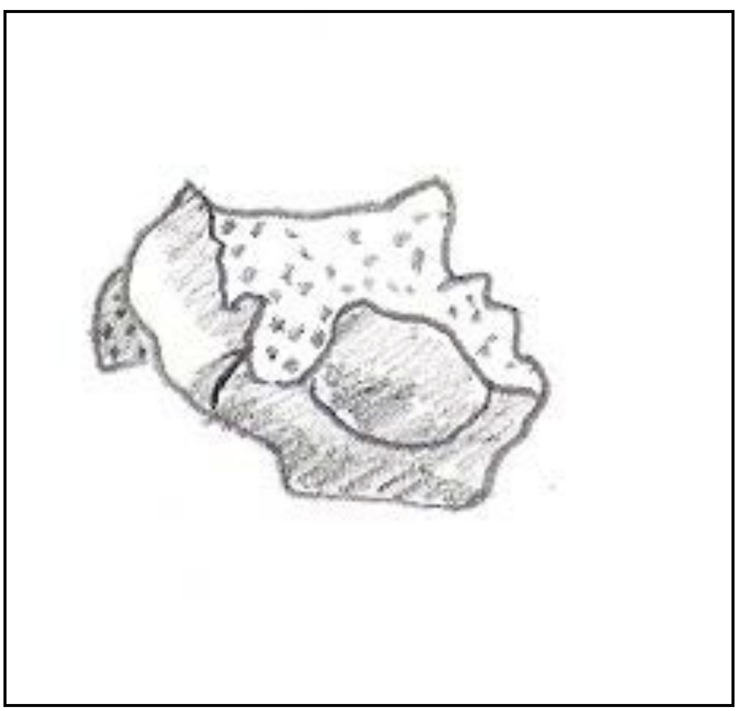


Figure 12.14: Fragment of a long bone of a domestic fowl from D1 SU 9

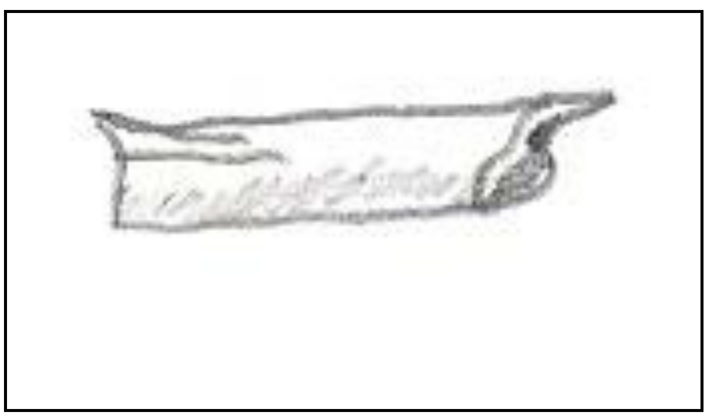


Table 12.3: Bone Recovered from the 2007 First Baptist Church Excavation

Trench	SU	Quantity	Mass (g)	Comments
C1	4	1	0.3	Very small epiphysis
C1 Total		1	0.3	
D1	**4**	**4**	**11.6**	**All from same humerus**
D1	4	3	1	Spongy epiphyses
D1	4	1	0.3	Small/Ambiguous
D1	5	2	1.3	Same bone -- long bone shaft
D1	**9**	**1**	**1**	**Small/Hollow Bird Long Bone**
Total		11	15.2	
D2	5	1	0.6	Very small epiphysis
D2	**7**	**1**	**4.8**	**Vertebra (pelvis, scapula?)**
D2	8	1	0.5	Small long bone fragment
D2 Total		3	5.9	
TOTAL		15	21.4	

Works Cited

Bernstein, David J. Prehistoric Subsistence on the Southern New England Coast: The Record from Narragansett Bay. San Diego: Academic Press, 1993.

Binford, L.R. and J.B. Bertram. "Bone Frequencies and Attritional Processes." For Theory Building in Archaeology. Ed. L.R. Bertrand. New York: Academic Press, 1977. 77-153.

Klein, Richard G. and Kathryn Cruz-Uribe. The Analysis of Animal Bones from Archaeological Sites. Chicago: The University of Chicago Press, 1984.

Hillson, Simon. Mammal Bones and Teeth: An Introductory Guide to Methods of Identification. Cambridge: Cambridge University Press, 1996.

Luff, Rosemary-Margaret. Animal Remains in Archaeology. Aylesbury: Shire Publications Ltd., 1984.

Neustadt, Kathy. Clambake: A History and Celebration of an American Tradition. Boston: The University of Massachusetts Press, 1992.

O'Connor, Terry. The Archaeology of Animal Bones. College Station: Texas A&M University Press, 2000.

Reitz, Elizabeth J., and Elizabeth S. Wing. Zooarchaeology. Cambridge: Cambridge University Press, 1999.

Wolniewicz, Richard. Field Guide to Skulls and Bones of Mammals of the Northeastern United States, Vol. 2: The Long Bones. Topsfield, MA: Published by the Author, 2001.

Chapter 13

Human Personal Items and Coins at the First Baptist Church

Michelle Charest

It could be argued that all the archaeological remains discovered at the First Baptist Church site can in some way be termed human artifacts. After all, by nature archaeology is the study of the material remains of past human existence – be they building materials, drinking vessels, or remains of a great feast. There is, however, a particular subset of archaeological remains that speak to a much more personal interaction with those peoples of the past. These are the items which were held close to the people who used them, from the clothing they wore daily and on special occasions, to the precious items that lived within their pockets. This chapter will address the significance of the personal items recovered from the 2007 excavation at the First Baptist Church of America (FBC).

FABRIC

Six pieces of fabric were recovered during the 2007 excavation of the First Baptist Church. All of the recovered fabric was found in trench D3 SU3, and appears to have originated from the same larger piece of fabric (Figure 13.1). This was woven fabric which appears to have been dyed to a black, brown or drab green color (Figure 13.2). It is, however, difficult to determine the exact original color of the fabric as it may have been altered by its tenure buried in the earth near the FBC. A burn test was conducted on a stray thread that had detached from the recovered sample. The results of this test – the production of burning hair smell and a low smoldering flame – indicated that this fabric was wool.

Detailed examination of the pattern of weaving in this fabric reveals a four-end even 2/2 twill pattern (Seiler-Baldinger, 1994: 90) (Figure 13.3). Twill is a very common weave for wool fabrics, characterized by a somewhat looser thread binding when compared with other weaving patterns. The result of this weaving pattern is a series of symmetrical diagonally-running ribs. Further, it has been determined that the fabric was woven with worsted wool thread which has be processed to produce a finer, less 'hairy,' hand than woolen thread (Hopkins, 1953: 30). Fabric such as this has been incredibly common throughout the history of wool fabric production – a rather simple weave (twill) and a very common processing technique (worsted). While the fabric recovered is fairly fine, it would likely have not been worn close to the skin as a shirt or undergarment. Instead, it is likely that this fabric was part of a dress, coat or trousers.

Unfortunately, there is no clear date associated with the stratum in which the fabric samples were found. The lack of date combined with such a historically commonplace weave and material makes it rather difficult to draw any specific conclusions about the site with relation to this fabric. We are simply able to determine that there was a person wearing some sort of clothing on the FBC property at some time in the past. This is not a startling conclusion considering the site is a public place in the center of a busy city.

PIN

A metal straight pin was recovered from D1 SU5 (Figure 13.4). This same stratigraphic unit also contained a pipe stem which allows us to estimate an approximate date of 1720-1750 for this stratum (see Chapter 11). As this trench is immediately adjacent to the FBC, the possibility of stratigraphic disturbance is entirely possible and thus this date range should be considered far from concrete. It is certain, however, that this pin was not buried recently (Figure 13.5).

Historically, straight pins have served a variety of purposes, though largely functioning as a means of fastening two pieces of fabric together. Although it is quite standard in archaeological contexts to associate straight pins with the activity of sewing, this by no means represents the limits of their use (Beaudry, 2006). Within the time frame of human occupation of the FBC site, straight pins may have been used to create closures for clothing, such a breeches and doublets for men, and women's dresses. They may have alternately been used to fasten baby clothing (Beaudry, 2006:14). Nevertheless, straight pin type descriptions provided by Beaudry (2006:24) indicate that this pin would be best categorized as a common sewing pin and more specifically as a *middling* or *long white* pin. While it is certainly possible that this pin was being used as a fastener, is it also just as likely that this straight pin represents the activity of sewing, which was a common occurrence at the First Baptist Church during the late 19th and early 20th centuries when a sewing school for girls was held weekly in the basement of the meeting house (Lemons, 2001).

It is also interesting to consider the possibility that this pin may actually be a *mourning* pin. Mourning pins were pins used during the Victorian era that were intended to be worn as a part of mourning dress (Beaudry, 2006:25). They were originally varnished or blackened in some way so that they would blend appropriately with mourning dress. While such pins do not appear to have been located in any archaeological contexts, this may be a result of their loss of distinctive characteristics due to deterioration from extended time in soil. Nevertheless, the presence of a mourning pin just outside the entrance of a church seems to be a rather appropriate archaeological find.

A BUTTON AND A FASTENER

A single button was recovered from C2 SU2 (Figure 13.6). No date has been associated with this stratigraphic unit. This button is a small (1.1cm diameter) white glass button with four holes, a sunken panel on the front and a convex back (Hume, 1969:91). A similar button was recovered during the 2006 excavation of the FBC in A3 20-30 cm below datum, although the A3 button was approximately 1.25cm in diameter (Figure 13.7). Unfortunately, despite any similarities, the button from A3 was also not dateable due to its extremely common form. Glass buttons have, however, become less common over the years, which suggests that this button was not recently deposited.

It is reasonable to assume that this button would have been used as a clothing fastener. Due to its very plain and undecorated nature, it is suggested that this button would not have been worn conspicuously in any way, and more than likely served a utilitarian function. However, as this button is made of glass, it is of higher material quality than some other buttons such as wood. Perhaps this button would have been the simple unnoticed closure of an everyday white shirt. Perhaps it was part of a woman's church-going trousseau.

A brass 'eye' from a hook-and-eye fastener was also recovered from D1 SU1 (Figure 13.8). The hook-and-eye fastener has been around since at least the late eighteenth to early nineteenth centuries. It was not until the 1830s that the copper closures began to be made of brass like the one found this field season (Kiplinger, 2001). Brass has been used on and off ever since and thus the composition of this artifact is not particular useful for dating purposes. Furthermore, the hook-and-eye fastener has been a popular one throughout its history, being used up to the present day. And although the hook portion of the hook-and-eye has undergone some significant changes over the years, the eye portion appears virtually identical to the original form. Thus, while this artifact indicates that some form of clothing was being worn at the church – not a surprise – there is little more specific information which can be gleaned from this eye.

BEADS

Two beads in total were recovered during the 2007 excavation at the First Baptist Church. A white glass bead was found in C1 SU3 which measures 0.5cm wide, 0.6cm in diameter with a hole of 0.3cm diameter (Figure 13.9). This bead appears to be a drawn bead - also referred to as a tube, cane or hollow cane bead – which is created by first drawing molten glass into a long tube, then allowing the tube to cool before breaking it apart into smaller units (White, 2005: 81). While many drawn glass beads are also decorated with lamp work or various other additions of colored glass, this bead is entirely plain.

One of the difficulties of analyzing glass beads from archaeological contexts is that due to their lack of distinguishing features, glass beads are very difficult to date and source (Hume, 1969:54). Thus, it is necessary to rely on other contextual information to surmise any remotely specific details related to this glass bead. A pipe stem fragment was also recovered from the same stratum as the glass bead. The pipe stem bore measurement of 5/64 suggests a date of 1720-1750, following the Harrington method, associated with this stratum (see Chapter 11). Although this would seem to suggest that the bead was deposited in temporal proximity to these dates, the accuracy of this date is in question.

It is virtually impossible to determine a date for this bead which in turn makes it difficult to make any guesses as to its use. It is possible that this could have been a trade bead if it does date to an earlier time period. This glass tube bead appears to be faintly reminiscent of a wampum bead at first glance, which may help to associate it with the category of trade bead. Alternately, this bead could have been used for anything from decorating clothing to serving as a jewelry component from any time period up to the present day.

The second bead recovered was, in fact, a pearl or faux pearl bead found in C2 SU1 (Figure 13.10). There is some question as to whether or not this is an authentic pearl. There are a number of tests that can be employed to determine the true nature of a potential pearl – unfortunately this bead does not clearly fall on either side of the line. First off, there does not *appear* to be any glass, plastic or chipable coating present in this bead, which would instantly discount it as a fake. Another test of a pearl's mettle involves rubbing a pearl against one's teeth. If the pearl feels gritty, it is real; if the pearl feels smooth, it is fake. This pearl does not have a particularly gritty or smooth feel. Furthermore, there is no flaking at the drill hole and the drill hole does not particularly rise up or sink in due to the drilling, which is an indicator of fakeness. The drill hole appears to be more real than fake, but does not clearly align with either the real or fake distinction. One of the difficulties of identifying this bead by drill marks is that this may be an older pearl bead, in which case the techniques used to drill the bead might not have been as precise as might be seen when using modern tools and instruments. The above listed identification techniques are those that can be completed using non-specialist equipment. It is certain that more expert examination would reveal a conclusive identification.

Regardless of the determination of real or fake, the pearl bead would have likely been used to elicit the same effect in its use. The pearl may have been a jewelry component or it may have been embroidered onto a piece of clothing. The result would have been a conspicuous display of the pearl – categorized as a gemstone – potentially combined with others in kind. Since this pearl was found in SU 1 (0-10cmbs) it would seem unlikely that this pearl dates to the distant past. However, secondary deposition, erosion of archaeological strata, or shallow strata could have easily explained the presence of an older pearl. Proximity of the source trench to the street may also suggest that this pearl might not have even originated from a person utilizing the FBC property.

BOTTLE STOPPER

A small glass bottle stopper was recovered from D4 SU6 (Figure 13.11). Glass stoppers are composed of three parts: the shank, which is inserted into the neck of the bottle; the finial, which tops the stopper and grasped while removing the stopper; and the neck, which is the transition between the finial and the shank (Society for Historical Archaeology, 2007). The recovered glass stopper features a ground glass shank. Ground glass stoppers were first used in the mid 1720s, reaching America by 1790 (Berge, 1980:49). The serious use of glass stoppers in the United States, especially with regard to food storage, did not begin until the 1840s and 1850s (Society for Historical Archaeology, 2007). Glass stopper shanks were ground in order to roughen their surface so as to achieve a closer seal with the interior of the bottle neck. Established glass stopper typologies would classify the shape of the stopper as a flat head or 'handmade' stopper (Berge, 1980: 48). Although it is very difficult to date glass stoppers using type information without the additional data provided by their associated bottles, it is suggested that this stopper is likely to date to the second half of the nineteenth century.

Glass stoppers were most commonly used with bottles that were meant to be refilled, reused, or utilized over a long period of time as bottles with glass stoppers were typically two to three times more expensive than those without (Society for Historical Archaeology, 2007). Such glass stoppered bottles included perfume bottles, pharmaceutical and chemical bottles, alcoholic beverage decanters, inkwells, and some food items. Based upon the shank diameter of the recovered stopper (0.25-0.4cm) it seems most likely that this stopper was associated with a perfume or scent bottle. Perfume bottles were the smallest bottles associated with personal toiletry. They were typified by very small orifices which served to retard the flow of perfume through the opening of the bottle, and were closed by ground glass stoppers in particular (Bray, 1995:274). A very simple example of a perfume bottle that could have been associated with this stopper can be seen in a collection of perfume bottles recovered from the underwater excavations of the 1865 riverboat wreck of *The Bertrand* (Figure 13.12) (Switzer, 1974:43).

It may be noted that some sort of red paint or coloring has stained the upper shank and neck of the stopper. This may indicate that the stopper was originally painted, or alternately that the bottle had been painted or colored and the staining represents the transfer of coloring during use. If this is so, the perfume bottle would have appeared much differently than the plain glass bottle of *The Bertrand*. Yet regardless of the level of ostentation of the perfume bottle, its context should be considered as well. It is rather odd that a perfume bottle would be found at the First Baptist Church, as it is really an item that would remain at home. Its presence, however, could represent a desire to either maintain one's complete sensory image in public, or perhaps a desire to mask unpleasant scents of one's surroundings – much as a posy would be used.

Although a scent or perfume bottle is the most likely bottle from which this glass stopper originated, there is the possibility that the red coloring could be the remains of ink from a stoppered ink bottle. Nevertheless, the coloring is concentrated at the top of the shank and entirely absent at the bottom where one would expect to find more ink. Furthermore, the narrow interior neck diameter of the bottle associated with this stopper would likely be too narrow to be conveniently used as an ink bottle. Still, while the presence of an ink bottle – even if the coloring on the stopper does not represent bottled ink – seems to be more appropriate for the FBC site than a perfume bottle, it is also curious to consider that any glass stoppered bottle would not seem to have a tight enough seal to be appropriate for travel. This would seem to confound most explanations for the presence of this bottle stopper other than the possibility of secondary deposition.

A MARBLE

A fragment of a broken glass marble was recovered from D1 SU2 (Figure 13.13). Based upon dates suggested by a pipe stem recovered from the stratum below the marble, this marble can be dated to any time following 1750 (see Chapter 11). Glass marbles were first created in the mid-nineteenth century in Germany associated with the invention of marble scissors in 1846 (Weber, 2005). Due to the extreme fragmentary nature of this artifact, it is difficult to make any determination as to the specific classification of this marble. It can be surmised that this was a clear glass marble with a red, white, and blue swirled center, approximately 2cm in diameter. The clear swirl pattern is similar to the style seen in the marbles produced in Germany in particular (Figure 13.14), though it is difficult to make any true guess as to the original pattern.

The existence of this marble at the FBC site truly speaks to the presence of children at the First Baptist Church. Of course, it is no surprise that children were visiting the church along with their parents. However this marble is a pertinent reminder of this class of individuals – children – which are often under-represented clearly in the archaeological record. This marble may indicate that there were children playing at the First Baptist Church, but the marble may also represent a precious item cherished by a child. Perhaps a beautiful object or a proud trophy of a past game, carried in her pocket wherever she may have traveled. This marble fragment may thus represent a tragic loss for a small child.

COIN

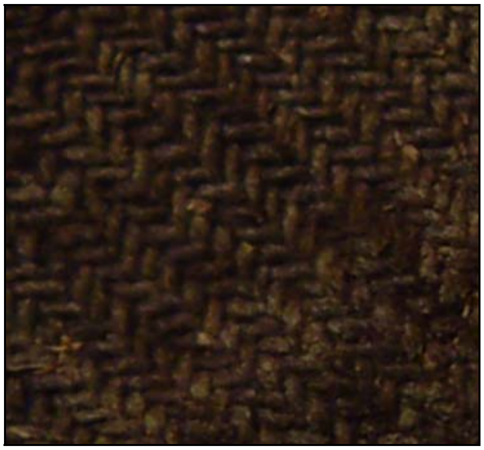
Finally, an 1899 Indian Head one-cent coin was recovered from D3 SU3 (Figure 13.15). This coin represents the only concretely dateable artifact recovered during the 2007 field season. The Indian Head cent was produced by the United States Mint from 1859 to 1909 as the standard one-cent coin in circulation (U.S. Department of the Treasury). A total of 1,849, 648,000 pieces were produced indicating that there was nothing out of the ordinary about this coin at the time – it represented one cent, nothing more. It may be worth noting that this coin appears to be in ‘very good’ to ‘fine’ condition according to standard coin grading scales. This relatively good condition indicates that this coin may not have been in circulation for very long before being deposited – years as opposed to decades. If this is true, it is likely that this stratum may date to just around the turn of the twentieth century.

CONCLUSION

While a variety of personal items were identified during the 2007 excavation of the First Baptist Church, there appears to be little in the way of specific dates and contexts of use that can be associated with these objects. What can be determined from this collection of artifacts, however, is the fact that the people who used the FBC site were relatively 'ordinary' people, fairly representative of the average populace of Providence – a reasonable expectation for the First Baptist Church community. And although this might not suggest any surprising conclusions about the use of the First Baptist Church property, this is not the only potential function of such data, to illicit controversy. Instead, this artifact collection has successfully served to inject a sense of individuality, of character, of personality to the seemingly distant faces of the past. Personal items such as these are what really allow us to connect with the past and perhaps to allow us to think differently about our own interpretations of that which came before.

Figure 13.1: Fabric Recovered from D3 SU3

Figure 13.2: Detailed Sample of Fabric Recovered from D3 SU3



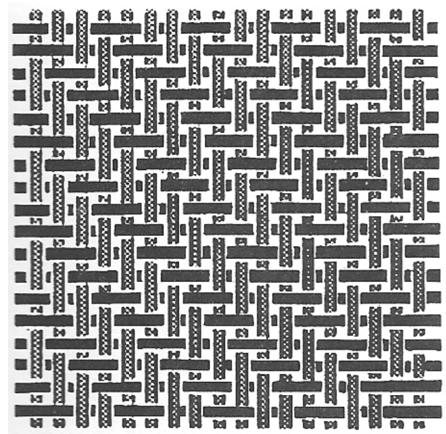


Figure 13.3: Twill Weave - Fabric Detail and Weaving Diagram (Seiler-Baldinger, 1994:90**)**

Figure 13.4: Straight Pin Recovered from D1 SU5

Figure 13.5: Comparison of FBC Straight Pin (left) with Present Day Straight Pins (center & right)

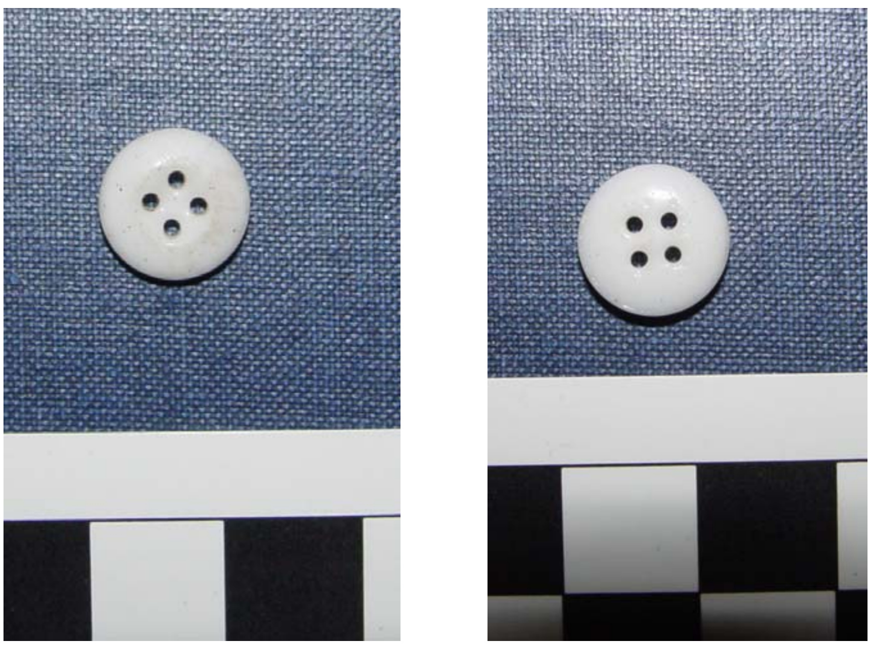


Figure 13.6: Button Recovered from C2 SU2 – front (left) & back (right)

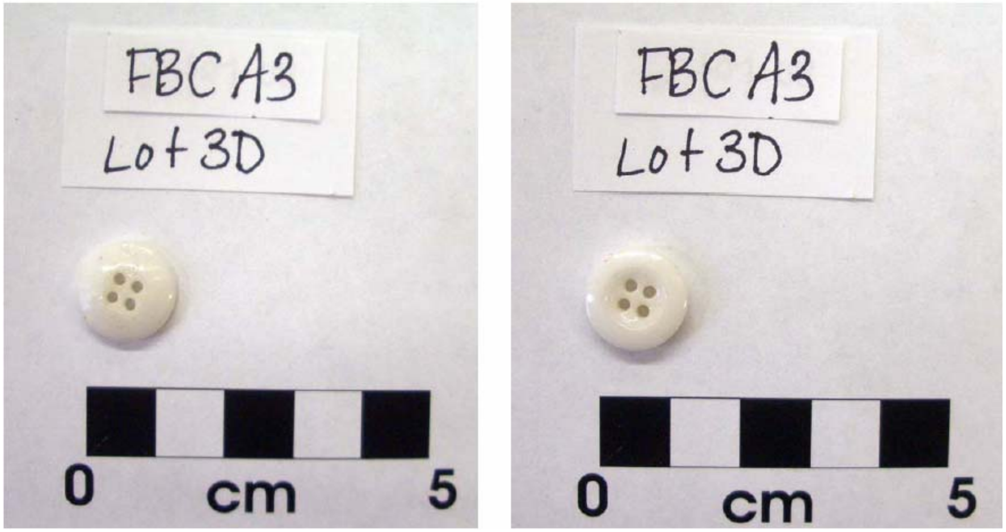


Figure 13.7: Button Recovered During the 2006 Excavations from A3 20-30cmbd (Nelson and Marino 2006)

Figure 13.8: 'Eye' of Hook-and-Eye Fastener Recovered from D1 SU1

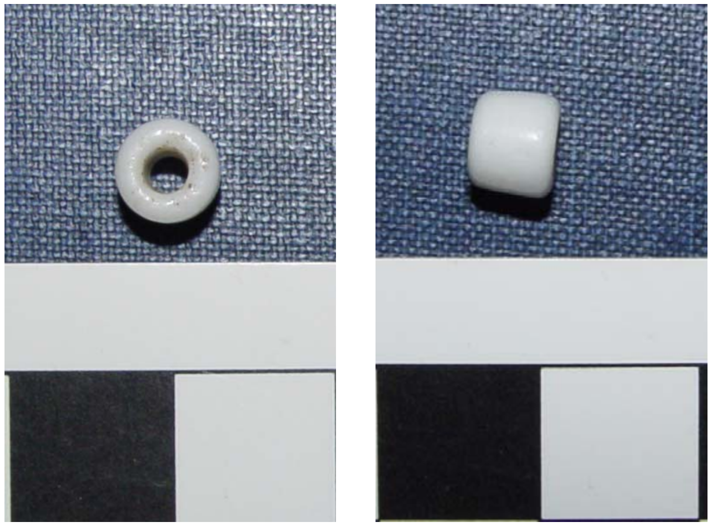


Figure 13.9: Glass Bead Recovered from C1 SU3

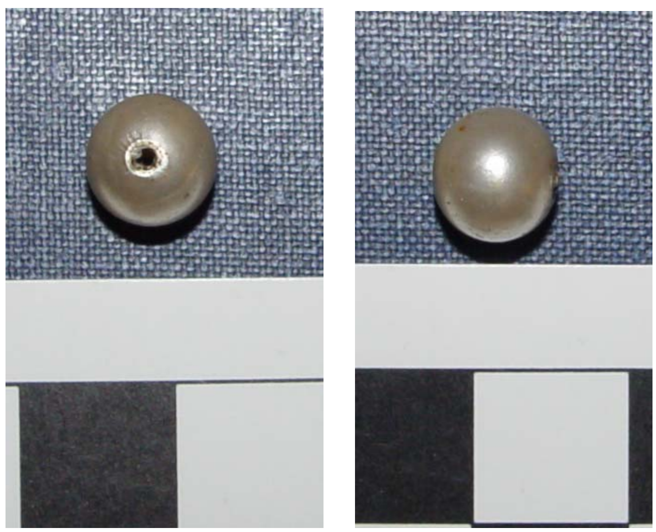


Figure 13.10: Pearl Bead Recovered from C2 SU1

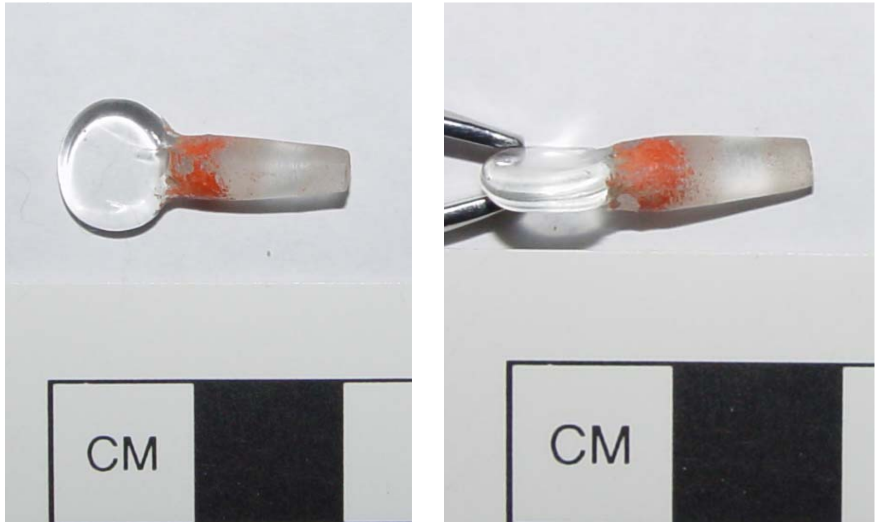


Figure 13.11: Ground Glass Stopper Recovered from D4 SU6

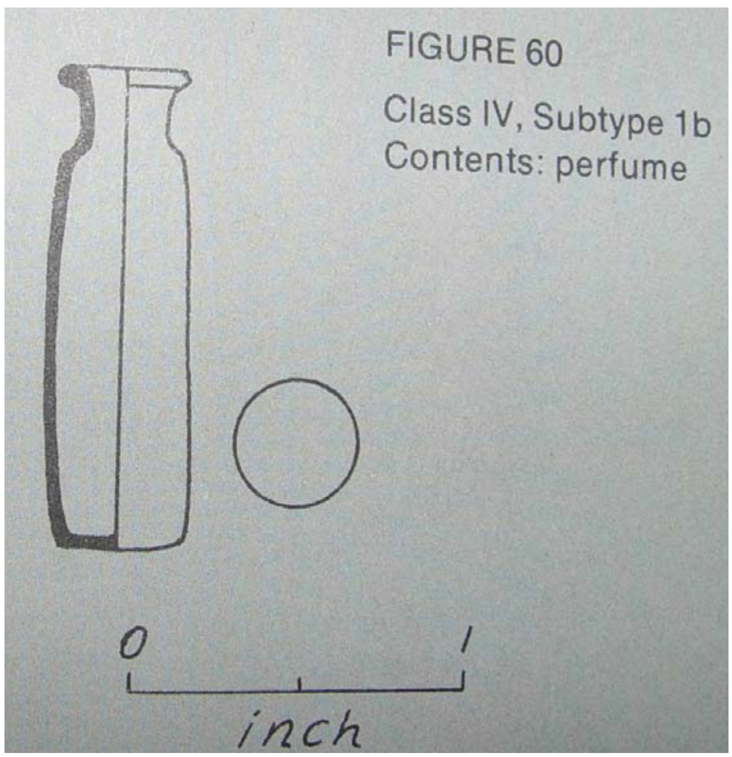


Figure 13.12: Drawing of Perfume Bottle from *The Bertrand* (Switzer, 1974:43)

Figure 13.13: Marble Fragment Recovered from D1 SU2

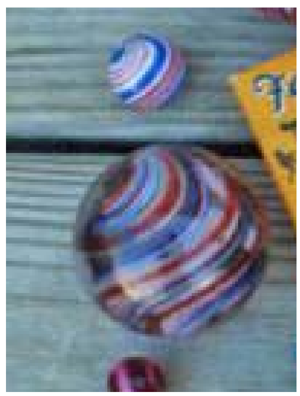


Figure 13.14: German Marble Similar in Style to Recovered Marble Fragment ("Identifying Marbles," 2007)

Figure 13.15: Indian Head One-Cent Piece Recovered from C3 SU3

Works Cited

"Identifying Marbles." 2007. Buymarbles.com. 24 Mar 2008 <http://www.buymarbles.com/marble_id_2.html>

Beaudry, Mary C. Findings: The Material Culture of Needlework and Sewing. New Haven: Yale University Press, 2006.

Berge, Dale L. Simpson Springs Station: Historical Archaeology in Western Utah. Utah State Office Bureau of Land Management, 1980.

Bray, Charles. Dictionary of Glass: Materials and Techniques. London: A&C Black, 1995.

Hopkins, Giles E. Wool as an Apparel Fiber. New York: Rinehart & Company, Inc., 1953.

Hume, Ivor Noël. A Guide to Artifacts of Colonial America. New York: Vintage Books, 1969.

Kiplinger, Joan. Dec/Jan 2001. "Those Wonderful Gizmos Which Hold Us Together." Fabrics.net. 24 Mar 2008 <http://www.fabrics.net/joan101.asp>

Nelson, Zachary, and Katherine Marino. "Churchyard Archaeology: Archaeological Investigations at the First Baptist Church in America." 2006.

Seiler-Baldinger, Annemarie. Textiles: A Classification of Techniques. Washington: Smithsonian Institution Press, 1994.

Society for Historical Archaeology. 2007. "Historic Glass Bottle Identification & Information Website – Types of Bottle Closures." SHA.org. 24 Mar 2008 <http://www.sha.org/bottle/closures.htm>

Switzer, Ronald R. The Bertrand Bottles: A Study of 19th-Century Glass and Ceramic Containers. Washington: National Park Service, 1974.

United States Department of the Treasury. "Indian Head Cent." USTreas.gov. 24 Mar 2008 <http://www.ustreas.gov/education/fact-sheets/currency/indian-head.shtml>

Weber, Travis. 2005. "The Marble Report." WeberGlass.com. 24 Mar 2008 <http://www.weberglass.com/index.php?act=viewDoc&docId=17>

White, Carolyn L. American Artifacts of Personal Adornment, 1680-1820: A Guide to Identification and Interpretation. New York: Rowman & Littlefield Publishers, Inc., 2005.

Chapter 14

GIS Utilization in Archaeology: Artifact Distribution at the First Baptist Church

Nicole Poepping

Analysis of depositional patterns of objects found during archeological digs using Geographic Information Systems (GIS) can be a powerful tool to understand the evolution of land use, human and plant biology, trading networks, and cultural interactions specific to that area. Not only is it a powerful analysis tool, it creates useful and intuitive visuals which are helpful for understanding the logistics of the dig itself, from trench locations and depth of trenches to artifact locations. GIS was utilized in the First Baptist Church Dig for artifact deposition modeling, specifically looking at twelve artifact classes within the seven trenches. These images provide information about artifact concentrations throughout each trench and soil layer, allowing an understanding not only of the number of each type of artifact at each trench but also what soil layer in which they were located.

Background Information

To understand the outputs and functions of GIS it is first important to understand how the program itself works. GIS is formally defined as "a computer system for capturing, storing, sharing, displaying, managing and analyzing data and associated attributes which are spatially referenced to the earth (or other planetary bodies)" (Carlson, 2007). This program is different from other information systems including Traditional Computer Aided Drafting (CAD), graphic design programs, and remote sensing programs. What makes it unique is that it associates and "image" with attribute information which is all spatially (geographically) referenced. There are several different software packages that can be utilized in GIS, but the one most often used is ArcGIS. There are three levels of functionality with ArcGIS: ArcView, ArcEditor, and ArcInfo... ArcInfo is the most advanced software package with a variety of geoprocessing tools and editing tools.

Within GIS there are several different file formats. The two most common are vectors and rasters. Vectors are discrete geographic features represented by a built collection of points, vertices and arcs (lines). An example of a vector file would be a line file representing the boundaries of a dig site or a point file that represents the locations of trenches and/or artifacts. A raster is a geographic feature across an entire area represented by a continuous set of “pixels” or “cells” (Carlson, 2007). A good example of this might be a file that is color coded by elevation contours, land use, or an aerial photography of a site. Both vector and shapefiles are saved in folders with at least three individual files associated with them, with separate files that contain information about the shape of the file, the records (attributes) associated with the file, and the coordinate system. There are often additional components of a GIS file, but the number and type is highly dependent on the type of information being utilized.

The wide range of file types and tools available in GIS make it ideal for cross-disciplinary use. Although traditionally applied to geological research, within the past decade GIS has started to be utilized in the public health sector, development programs, ecology, least distance mapping for schools and law enforcement and most applicable to this paper, archaeology. Some examples include using GIS to determine areas most suitable for affordable housing units or Brownfield remediation, areas of gentrification in cities, changes in mortality rates or specific health conditions over time in rural villages, and the effectiveness of public policy changes over a defined area. In archaeology GIS has been used extensively over the past ten years. It has classically been utilized to map and organize artifact data along with identify unique site attributes in the scope of a large geographical area.

There were several reasons for using GIS at the First Baptist Church dig. First, because archaeology involves study of the spatial dimension of human behavior over time and all archaeology carries a spatial component, GIS was the most suitable program for analyzing the artifact data recorded for each trench and soil layer. Secondly, GIS is a cost effective, accurate, and fast tool for processing data and Brown University has an effective support team and a large server dedicated to GIS work along with the most advanced GIS software package available. Lastly, use of GIS in archaeology not only provides an easy way to acquire, catalog, and visualize data, but it also has the potential to change the way an archaeologist thinks about a space and can help put information into the context of the surrounding geology and historical land use patterns.

Several programs were utilized to complete this research project. Because the raw artifact data was processed and cataloged using Microsoft Excel, this program was often used. ArcMap and ArcScene, two different Geographic Information System (GIS) programs were used for the bulk of the analysis. Google SketchUp and Google Earth were used as secondary sources of information and for modeling purposes.

At the site of the FBC six points were recorded, one in the center of each trench, using a GPS unit. These points were recorded as point shapefiles. Once collected, these points were imported to an ArcMap document along with an aerial photograph of the FBC and the area surrounding it. Six polygons oriented N-W were created around the points to represent the actual size of the trenches in the field. A final polygon shapefile of the property outline was created for use in ArcScene.

To create meaningful data to assign to each of the eight polygons, raw data containing individual entries for each artifact was reformatted and organized by trench ID and artifact class. The artifact classes were defined as bone, brick, ceramic, chalk, charcoal, coal, glass, metal, organic, other, plastics, and shell. The six different excel tables, one for each trench, created throughout this process were imported into GIS and then joined with the corresponding trench polygon. This allowed detailed information about artifact class totals and aggregate totals to be visible in the attribute table of each trench polygon.

Once this was completed the trench polygons and the corresponding trench data were imported into ArcScene along with several new map layers to create a more visually meaningful image. First a digital elevation model (DEM) model was added. This DEM was created using an elevation point shapefile from the RIGIS database. Then the outline of the FBC property was added for reference. Lastly, a model of the FBC was added. This model was created using Google SketchUp and pictures of the FBC taken in the field. Once completed the model was imported into ArcScene as a 3-D symbol for a point (a point shapefile) representing the center of the building and was then scaled up to its actual size. The base heights for all of these layers were obtained from the height of the DEM to ensure they were visible and topographically as accurate as possible. All layers were projected in Rhode Island State Plane (ft).

The layers were then copied into eight different ArcScene documents which contained information regarding the different artifact classes and the total of all the artifact classes. The primary analysis tool used for analysis of each document was the extrusion calculator. Each trench polygon was extruded according to a value in its attribute table using the calculator, creating a bar that extended vertically upward from the trench at a height that represents the number of artifacts defined by the calculator. Through this process over one hundred images were generated that represented artifact totals for each artifact class and soil layer at each trench and the total number of artifacts found at each trench.

Although nearly 120 images were created for this research, only the total number of each artifact type per trench and the total number of artifacts at each trench will be analyzed here. The other images will be used at the discretion of the head archaeologists of the dig for more in-depth research.

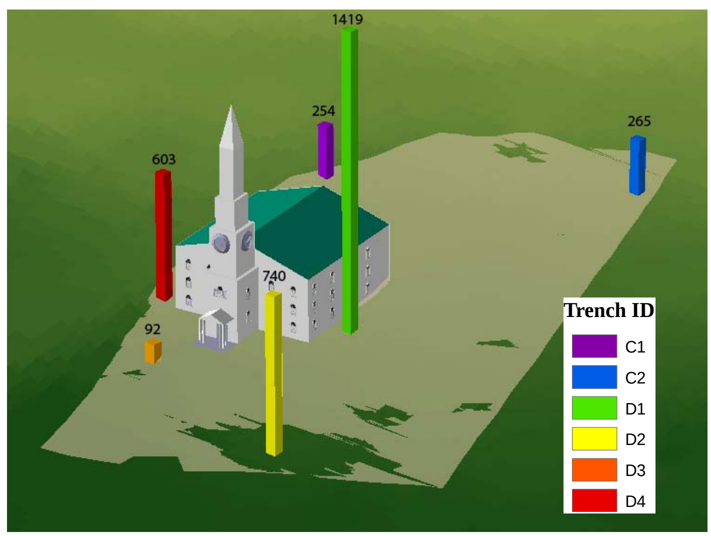


Figure 14.1: Total number of artifacts found in each trench

Figure 14.1 represents the total number of artifacts found in each trench. There were high concentrations of artifacts in trenches D1, D2, and D4 with the lowest concentrations at sites C1 and D3. Within the trenches with the densest artifact concentrations were brick, ceramic, glass and metal (Figures 14.2, 14.3, 14.4 & 14.5).

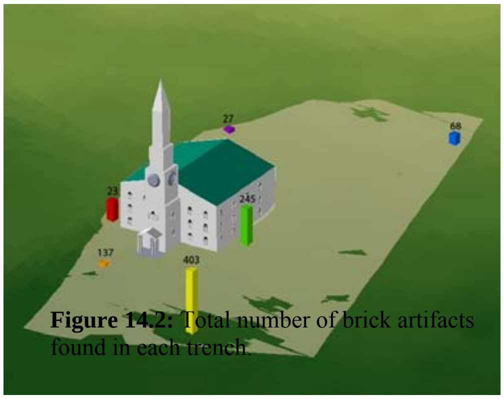


Figure 14.2: Total number of brick artifacts found in each trench.

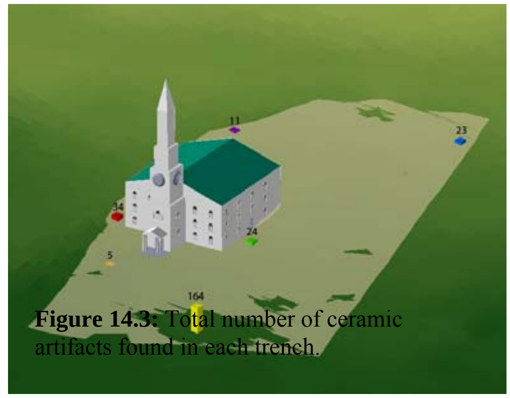


Figure 14.3: Total number of ceramic artifacts found in each trench.

Figure 14.4: Total number of glass artifacts found in each trench

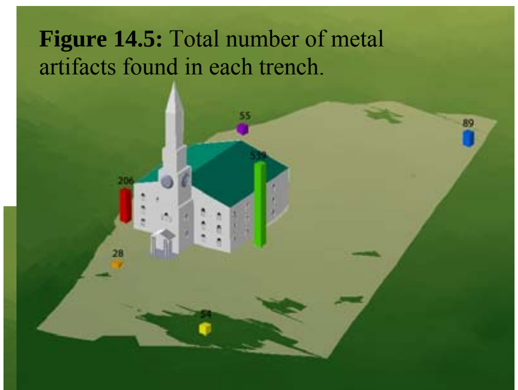


Figure 14.5: Total number of metal artifacts found in each trench.

Figure 14.6: Total number of bone artifacts found in each trench

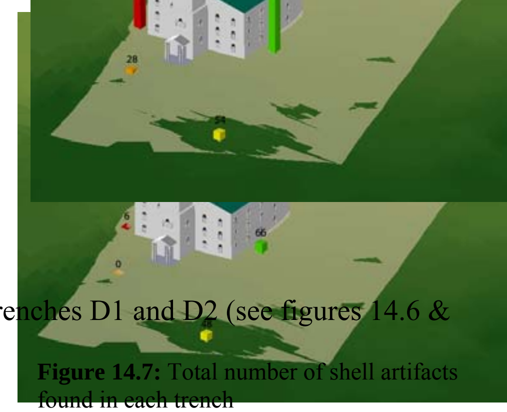


Figure 14.7: Total number of shell artifacts found in each trench

Other images reveal concentrations of bones and shell at trenches D1 and D2 (see figures 14.6 & 14.7).

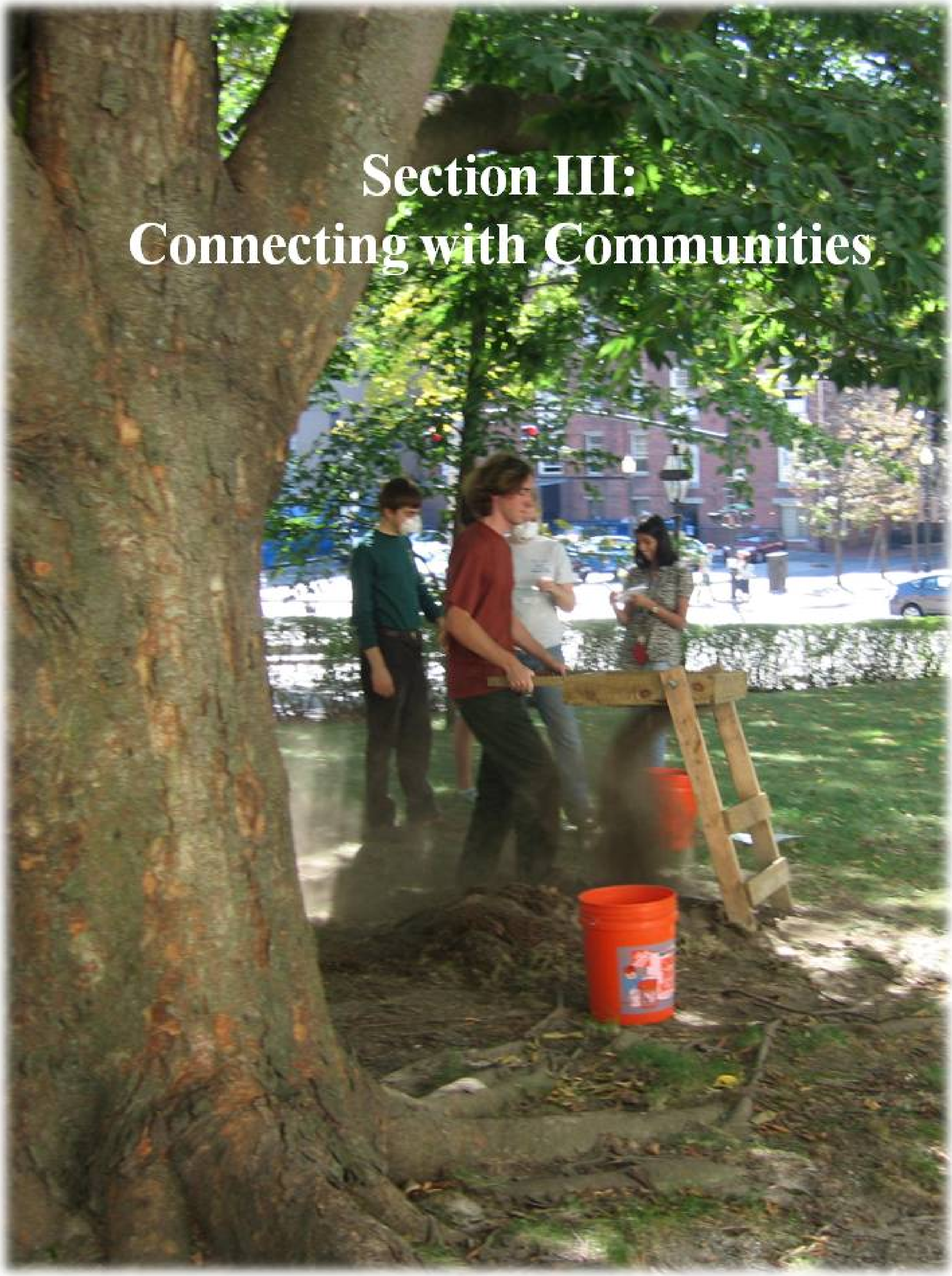
These images have the potential to be in several different ways to further understand the distribution of artifacts at the FBC dig. First, comparisons of artifact classes between soil layers would be helpful to understand which artifacts are concentrated in certain soil layers. This would aid archaeologists' and students' ability to determine date ranges for artifact deposition. Other uses would be to determine areas that seem to have a number of a specific artifact of interest to the head archaeologist and do further excavations at those sites, publish the images in literature for the First Baptist Church and/or other publications.

GIS is a powerful modeling and analysis program for use in the archaeological field. At the First Baptist Church dig GIS was utilized to create 3-D visuals of the site, trench locations, and artifact distribution. These images, along with the attributes assigned to these trenches in the GIS document, provide useful insight into the use of the FBC throughout time. These images also serve as a base model for future use of GIS in archaeology at Brown University, and can be used for published materials available to the general public.

Works Cited

Carlson, Lynn. Defining GIS and Introduction to Geospatial Data File Formats. Lecture. Introduction to GIS. Brown University. 11 Sept., 2007.

Section III: Connecting with Communities



Chapter 15

"Mother Church": Understanding Providence's First Baptist Church as a Social Institution in the Larger Community Through Analysis of the Historical Record

Tyler Lucero

As we delicately removed diverse vestiges of bygone days from the soil underneath the lawn of the First Baptist Church in Providence, Rhode Island – a piece of a marble, a pin, a kaolin pipe-bowl fragment – it became evident that the earth on which we stood had been well-trodden by several groups of people in the past. Indeed, the artifacts seem physical echoes of the footsteps of an entire community, converging on the site to worship but also to play, learn, and debate. The archaeology of the site leads us to suspect that the church and its grounds were a social focus of Providence's historically diverse population.

Thumbing through the literature on the First Baptist Church in Providence, one finds that we are not alone in this suspicion: those who took up the subject of the building's and the congregation's past before us were led to similar conclusions. Writing a history of his congregation's "beloved" meetinghouse in 1929, Arthur E. Watson proudly declared that for many years, "notable gatherings took place within the walls of this building, … a suitable place to express the sorrows, the joys, and the hopes of the entire people" (Watson, 1929: 9). His enthusiasm seems a testament to the church's role beyond its primary religious function in his life and the lives of those that came before him. Similarly, in his 1896 history, Henry Melville King – pastor of the First Baptist Church between 1891 and 1906 and thus in a good position to assess the role of the institution in community life around the turn of the century – depicts the meetinghouse as "the mother church", a focal point around which the social culture of Rhode Island revolved (King, 1896: 5).

Watson's "entire people" should not be taken to include only the members of the Baptist congregation that converged on the site every Sunday to worship; to do so would be to ignore a great deal of the facility's historical complexity. Surely the continuous congregation of Baptists bred a collective tradition – including a social culture – which the members shared on the church grounds, the site of their convergence. However, several lines of evidence suggest that we should not view our archaeological finds as merely the vestiges of Baptist churchgoers' comings and goings. Hints that the artifacts we uncovered are the product of community-wide inclusion in a social network that centered on the meetinghouse abound. In fact, some of the artifacts, when viewed in light of Baptist historical practices, imply that the church's social influence transcended the limited religious community that gathered there on a regular basis; the nine kaolin pipe fragments that were removed from the site during the excavation could be easily be construed to support the notion that some members of the congregation smoked tobacco, but the fact that 18th and 19th Century Baptists eschewed the "excesses of tobacco" (Leonard, 2005: 234) renders such a conclusion somewhat foolish. Indeed, with 18th and 19th century Baptists generally insisting that tobacco-smoking "'defiled' the human body, which was the 'Temple of the Holy Ghost'", the presence of tobacco pipe fragments dated to the 18th and 19th centuries in the churchyard can only be explained by the presence of individuals who did not strictly adhere to the Baptist aversion to tobacco on the site. Such evidence indicates that in investigating the historical record, we should search for the ways in which the church became the center of a social network that included people existing outside the limited Baptist community.

Evidence from the historical record compounds the archaeological evidence's suggestion that the church's social function often transcended its role as a religious institution, attracting non-churchgoers onto its premises. Of this historical evidence, the pastor's account of the church services held on the meetinghouse's lawn during the summer from 1908 to 1915 is particularly relevant to our examination of objects taken from trenches around the churchyard. On 30 June 1908, the pastor indicated that

> the number present at the service held on the [First Baptist Church's] lawn last Sunday evening must have reached nearly one thousand. … It is remarkable that the largest and in many ways the most impressionable audience [to be] addressed in this city should have
> assembled outside the church on the lawn. (in Dinneen, 1958: 25)

Among the reported thousand attendees "spread out on the natural amphitheater rearing up the slope to Angell Street" and "in the gallery crowd hung over the fence on Benefit Street", there must have been several non-church members; even if the pastor's attendance estimate for the outdoor service on 28 June 1908 was exaggerated, records confirm that 900 people attended a similar service on 27 June 1909, at a time when the congregation of the First Baptist Church included no more than 600 devout churchgoers (Ibid. 27). Attendance at the outdoor services in excess of the devout, regular attendees' numbers – in addition to the fact that many of the people that arrived on a summer day to attend an outdoor service left without following the pastor into the meetinghouse to hear the remainder of the sermon after it began to rain (Ibid. 28) – indicates that many of the people that converged on this site existed outside the standard religious community that the building boasted. Similarly, the "order of exercises" for the "Municipal Celebration of the Eightiet [sic] Anniversary of American Independence" held at the First Baptist Church on 4 July 1856 indicated that the event featured a "large choir of students from the several public schools" ("Municipal Celebration…" 1856, 1); it is hard to imagine that all the members of this "large choir" of singers pulled from Providence's public schools – as well the parents that probably would have accompanied them to this celebration on the site – were of Baptist faith and attended the church regularly. Indeed, though the Baptists were a major religious group during much of Rhode Island's colonial and national history, the state's strong traditions of religious toleration meant that Providence's population was still considerably diverse. Perhaps it was this spirit of tolerance that allowed a religious institution like the Baptist meetinghouse to become the center of social life for "the entire people" of the Providence community that the historical and archaeological record seem to indicate that it was. In any case, this collection of evidence indicates that our archaeological finds should be seen as the accumulation of a larger community's activity. Moreover, it compels us to delineate not just the ways in which the church was socially significant to the members of the congregation, but to the larger community that were brought unto its premises.

While the historical record does not pinpoint the origin of any of the artifacts we uncovered – there is no record of a clambake that may have produced the shells uncovered during the excavation, for example – the record clearly bolsters notion that the Baptist church has been one of the major centers of Providence's public sphere, bringing diverse groups of people within the churchyard space to partake in varied events. Specifically, this "house of God" served the larger Providence community as a municipal center where citizens and representatives came together to negotiate local and national issues, as an educative institution where community members young and old were primed for a changing world, and a cultural forum where "the sorrows, the joys, and the hopes of the entire people" found expression.

From the historical record, the First Baptist Church's function as a site where community consensus was sought is salient. The church's location within a half-mile of the seat of the state government in part led to the church's status as a municipal gathering place;

in a sense, the geography of this religious focal point allowed it to be used as common ground between the governors and the governed. Accordingly, the meetinghouse became a place for the Providence community to reflect upon and express collective sorrow for the untimely death of a national figure: city dwellers were “invited to meet the members of the General Assembly of the State House in Providence on Monday, September 26th, 1881 at 1:30 P.M. for the purpose of attending the State memorial service in the First Baptist Church” (“James Abram Garfield…”, 1881: 1). Watson refers to a similar event “at the death of Washington” (Watson, 1929: 9). While we have no indication as to how well the former service was attended nor even how many of the elegant invitations were distributed, that the contemporary Rhode Island Secretary of State J. M. Addeman would deem the First Baptist Church an appropriate, commonly recognized site for the people to share in their common grief indicates the municipal conception of the meetinghouse in the public’s eye. It is here, too, that residents came together to navigate their world’s “timely topics” in a “Current Events” class (First Baptist Mutual Benefit Association, 1896: 1). Repetition of the church’s “municipal celebrations of American Independence” implies their success; moreover, featuring children from “the several public schools” as indicated earlier, these events were likely to have brought people from all streaks of Providence life to celebrate a common heritage. Rotarians held meetings there in the 1920s along with other non-sectarian groups like the Knights of Pythias (Dinneen, 1958: 57). Hosting “a large group [strongly] debating on the [late-19th Century] Venezuelan question” in January 1896 and a “mass meeting … to discuss the East Side transportation problem” on 19 June 1910 (Dinneen, 1958: 20), the walls of Watson’s beloved building heard the community’s municipal complaints, qualms, and triumphs as well as its “sorrows, … joys, and … hopes”.

This is not to say that the First Baptist Church became a political battlefield: to make such a claim would be to misrepresent the place of the church in the life of the Providence community. Indeed, even if "many Baptist women joined [the Women's Christian Temperance Union] founded in the 1870s" and Baptists pushed for the election of one of their own as President by voting for the Prohibition Party in the 1896 presidential election (Leonard, 2003: 222), the historical record available to me does not preserve any of this late-19th century temperance activity at the First Baptist Church in Providence. In this way, the meetinghouse does not seem to have been an institution controlled by an interested religious faction as much as it was a neutral place where many of the opinions of the day could be reconciled; this, in all likelihood brought diverse people to its doors. Even as an abolitionist fervor swept other Baptist congregations throughout the North on the eve of the Civil War and became what some would call "the most divisive issue of nation and church in the nineteenth century" – even bringing "schism to the Baptists in 1845" (Patterson, 1976: 143-144) – the records of the First Baptist Church I accessed were silent on the First Baptist Church's position in the "acrimony". Surely the members of the congregation generally supported the movement to secure the "ultimate extinction" of the practice of human bondage that was "contrary to the world of God" (Leonard, 2003: 185-187), but their silence on the issue in the historical record indicates that the church did not let its private beliefs interfere with the building's role as a common ground on which all members of the Providence society came together to reconcile their surely varying opinions. In saying the meetinghouse was a municipal institution, we should not think that the building became a partisan stronghold. Indeed, though Francis Wayland – prominent President of Brown University between 1827 and 1855, the pastor of the First Baptist Church from 1857-1858, and so-called “first citizen of Rhode Island” (Phillips, 2000: 16) – “denied the appropriateness of slavery, based on the Enlightenment idea of human freedom”, he sensed that for abolitionism to infiltrate the Baptist machinery would compromise the Church’s position in the society and its own unity (Leonard, 2003: 187). He encouraged the Triennial Baptist Convention – the first unified national Baptist church – to eschew abolitionist fervor and thoughtfully debated with Baptist slavery advocate Richard Fuller in a series of letters, admitting that “the right of holding slaves is clearly established in the Holy Scriptures” (Furman in Brackney, 1983: 219) while firmly asserting its questionable morality and its danger to church unity (Leonard, 2003: 187). We can assume that the church in Providence at his reigns maintained a similar ambivalence toward this contemporary political issue. While the congregation quietly took advantage of the installation of the church’s organ in 1834 to remove the ignominious gallery reserved for “the use of slaves and colored freed men” (Dinneen, 1958: 19), the general lack of documentation on the church’s relation to the abolitionist and temperance movements in which Baptists generally played a large role suggests the non-partisan, municipal status of the meetinghouse in the Providence community, opening its doors to all allow debate for those of all creeds.

As the First Baptist Church became a forum for charting the public course in a modernizing world, so too did it become a place were citizens young and old were given the tools to chart the public course and negotiate the industrializing, urbanizing, and modernizing landscape. Of course, as early as 1764, the state government had entrusted the duty of “forming the rising generation to virtue, knowledge, and useful literature” and “preserving in the community a succession of men duly qualified for discharging the offices of life with usefulness and reputation” to the Baptists in sanctioning their charter for the institution that would become Brown University ("An Act for the Establishment…" in Brackney, 1983: 133). In fact, the church was built in the explicit intention that it would become an institution in which the community would come together annually to celebrate success in education, as the Charitable Society's charge of "[investigating] the affair of building a meeting house, for public worship of Almighty God and also for holding [Brown's] Commencement in" attests (Isham, 1925: 1). Though the congregation boasted only 108 members in the early 1770s (Dinneen, 1958: 17), the Charitable Society painstakingly raised the money to construct a meetinghouse with a capacity of 1,200 specifically to accommodate the crowd at Commencement (Watson, 1929: 13) Indeed, for approximately 230 years, the church and its lawn has been an annual focal point for the celebration of Brown's graduates and their families. As the crowd has become increasingly diverse with the university's modern, liberal internationalization and financial aid policies bringing students with more varied experiences, so too might we expect that the archaeological evidence in the lawn to become more diverse with time. The church's connection with Providence's historically most prominent educational institution – from hosting Commencement services to inviting a "Brown University Quartette" to play at their events in the early 20th Century until February 1908 (Dinneen, 1958: 20) to inviting the Alumni Association to meet in the facility in June 1900 (Vose, 1900: 1) – has bolstered its status as a communal, non-partisan social focus.

However, the church's status as an educative institution was not only secondary. Hosting several "well attended" lectures on such diverse topics as "Electricity, the Telegraph, Coleoptera, or Beetles, Alaska, Minerals of the West, and Banking" – and all within the month of January 1896 – the church functioned as a place were knowledge was disseminated of its own accord (Baptist Mutual Benefit Association, 1896: 1). "Demonstrations of the phonograph" in the meetinghouse acquainted the community with the recent technological innovations of their time (Ibid. 1), and student forums such as the "Neighborhood Night" on 29 January 1910 attended by "about a hundred local boys and girls … at the meetinghouse for a talk on Burma" (Dinneen, 1958: 27) served to catalyze international thought in a generation that would see the devastating effects of two global conflicts in the early 20th century. "[Giving] the arguments in support of the theory that Rhode Island owes part of its geological formation to prehistoric glaciers" in a February 1896 talk at the church entitled "Ice and its Forms" (Ibid. 4), a lecturer used the meetinghouse of the First Baptist church as a platform to access the Providence population and inform them of new scientific theories about the world of which they were a part. A "successful class in wood carving" was also ongoing at this time in the mid-1890s (Ibid. 1) Admittedly, it is ambiguous as to who attended some of these events, but the Mutual Benefit Society's labeling some of the events they described as "neighborhood nights" implies that the "large crowds" in attendance were at least in part drawn from beyond the devout Baptist churchgoer community. Likewise, while the First Baptist Sabbath School, boasting an average attendance of 308 in 1896, was initiated in 1819 to perpetuate Baptist religious beliefs and practices amongst the congregation's younger members, by the 1890s a writer in the church monthly encouraged parents to "encourage interest" in the school within the community (Ibid 5). Indeed, "in a day when there [were] few free public schools, the Sabbath schools served a useful purpose", spreading literacy to those children whose parents had few other options, even in the city (Leonard, 2003: 172-173). The Sabbath School library offered a convenient and extensive repository of knowledge for the young churchgoer or weekly school-attendee ("Catalogue…", 1852: 1). Moreover, presenting its learning in events like "the [1895]

Christmas Sunday evening concert [that] almost filled the vestry" (First Baptist Mutual Benefit Association, 1896: 5) – the Sabbath School became a source of pride for the congregation that its organizers encouraged members of the congregation "to bring friends" to the 1896 Sabbath School Easter concert [so that] we shall surely fill that large auditorium" (Ibid. 5). Coming together to observe the seventy-fifth anniversary of their Sabbath School with a "historical discourse" by Pastor Henry King and a celebration on 3 June 1894 ("Minutes of the Proceedings…", 1894: 3), those present were in fact celebrating the First Baptist Church's role as an educative institution within the larger Providence community.

The historical record indicates that – like other religious establishments in antebellum New England – the First Baptist Church in Providence provided a unique forum for women to express their opinions and exercise social power in the public sphere. Lawes' chapter on "Women, Sewing, and the Antebellum Sewing Circle" points out that sewing circles – like the one "in the vestry of the First Baptist Church" ("Fifth Festival…", 1865: 1) – allowed early 19th Century women a distinct opportunity to "express interests and concerns that embodied community, gender, and class loyalties" (Lawes, 2000: 45). Just as the thoughts that circulated in sewing circles provided the impetus for women's engagement in missionary, abolitionist, and municipal reform activity elsewhere – as evidenced in the formation of the Centre Missionary Sewing Circle, the Worchester Anti-Slavery Sewing Circle, and the Worchester's Female Reading and Charitable Society in Worchester, Massachusetts (Ibid. 47) – the sewing school at the First Baptist Church in Providence perhaps functioned as a social foundation for the other operations that women collectively conducted out of the church, like its Female Mite Society ("From the Female Mite Society…", 1838: 1). Moreover, because the program for their "Fifth Festival" on 11 May

1865 advertises “refreshments for the children” and lists a singing of the Union battle song “Mine eyes have seen the glory” (also known as the “Battle Hymn of the Republic) less than one month after the surrender at Appomattox (“Fifth Festival…”, 1865: 1), the Sewing School at the First Baptist Church seems to have expected families at this event to celebrate their work and sought to make it a basis for patriotic commiseration. That women could command the attention of a large majority of people and preside over a politically charged event in the public sphere at this time in American history is a testament to the church’s function as a unique social place for women. The church’s primary function as a religious institution made it conducive to allowing women a unique degree of “influence and autonomy” (Hansen, 1994: 160). A foreign observer’s comment on the function of churches for women in antebellum New England speaks to this surmise:

> It is in the churches and the chapels of the town that the ladies are to be seen in full costume; and I am tempted to believe that a stranger … would be inclined … to suppose that the places of worship were the theaters and cafes of the place. (Trollope in Lawes, 2000: 45)

Housing the meetings of a “Young Ladies’ Improvement Society” “to promote the social acquaintance of the ladies of the church” every Tuesday at 7 o’clock in the mid-1890s – at which the members pursued “embroidery” and “Tennyson” (First Baptist Mutual Benefit Association, 1896: 6) – the church served as ground on which 19th century women could confidently and communally navigate “the sorrows, the joys, and the hopes” of their sometimes suppressed lives. We should understand it as such as we analyze the artifacts taken from the churchyard.

In a time before mass communication, events held at the First Baptist Church – perhaps intended primarily for the members of the congregation – offered a break from the monotony of everyday life for non-churchgoers; church social events were entertainment in a world before amusements were pervasive (Hansen, 1994: 142). Nevertheless, even after the radio entered onto the American technological scene, enough people outside the devout, churchgoing crowd must have been interested in hearing the sermons to warrant their broadcast through WEAN starting in September 1923 (Dinneen, 1958: 39). Of course, the pre-radio community interest in the purely religious function of the church manifests itself in the attendance records for the outdoor summer services between 1908 and 1915. Still, the church offered many entertaining events outside its religious services that caused community members to converge on this space. Checkers-tournaments held in the auditorium in the mid-1890s seem to have caused quite an excitement for the "young men" of the area (First Baptist Mutual Benefit Association, 1896: 1). In addition, the performance of Adelaide Patterson's original pageant commemorating and rhapsodizing the Baptists' 300 years of involvement in Rhode Island life in 1938 spoke to a heritage that all of the Providence community shared, and thus, this event could have attracted a diverse audience ("Faith Triumphant…", 1938: 1); in any case, the advertisement for this and other events featuring the prolific pageant-organizer Patterson was reportedly extensive (Dinneen, 1958: 31).

As pageants held in the church celebrated the Providence community and probably brought its non-Baptist citizens onto the site, live music in a time before the phonograph (which would later be demonstrated within the walls of the church) lured diverse people to converge there. Early Baptists shunned music in conjunction with religious services and even events held in "the house of God", but the Baptist churches in Newport and Providence became the first to welcome music into their meetinghouses (Leonard, 2003: 185). Before the installation of the Providence First Baptist Church's organ in 1834, the meetinghouse was the seat of a vocal music community, hosting a singing school – a "Baptist Musick Society" –

and housing an oratorio concert given by the local Philharmonic Society and "members of several other choirs" on 5 June 1834 (Dinneen, 1958: 4, 16). A publicly-advertised oratorio concert was held in the meetinghouse on 5 August 1823 ("Oration to be Performed…", 1823: 1), and "a chorus of 150 voices" that included "members from other choirs" also converged on the church in 1880 for the Oratorio's presentation of "The Seven Sleepers" ("Seven Sleepers…", 1880: 1). In this way, even before the church was the site were Margaret A. Gardner became the first woman in Providence to give a series of organ recitals (Dinneen, 1958: 17) and the Sabbath school orchestra drew an audience that "almost filled the vestry" for a performance in 1894 (First Baptist Mutual Benefit Association, 1896: 5), the meetinghouse had established itself as place were the Providence community could come to together escape the quotidian and take part in musical entertainment.

A pin and a sewing circle, a marble fragment and a June 1910 proposal to "turn the lawn into a park … for the children of the neighborhood" (Dinneen, 1958: 20), a kaolin pipe-bowl fragment and an atypically large crowd assembling on the lawn to hear a sermon given by the tobacco-eschewing Baptist pastor: the archaeology and the history of the First Baptist Church in Providence, Rhode Island seem to compliment one another and concur as to the centrality of the site to the social life of "the entire people" in the larger Providence community. Indeed, facilitating the municipal, cultural, and educative needs of the growing city, the church became much more to the Providence community than a meetinghouse "for public worship of Almighty God." With the church's bell ringing at sunrise, noon, and nine o'clock every day between its completion in 1775 and a date well into the mid-twentieth century (Watson, 1929: 20), the Providence community literally and effectively lived, worked, and played at a pace measured by the meetinghouse.

Works Cited

"An Act for the Establishment of a College or University within this Colony, February, 1764." Brackney 133-134.

Brackney, William H., ed. *Baptist Life and Thought, 1600-1980: A Source Book*. Valley Forge, PA: Judson Press, 1983.

"Catalogue of the Sabbath School Library." January 1852. Rider Collection: Box 155, No. 19. John Hay Library, Brown University, Providence, RI.

Dinneen, William. *Music at the Meeting House, 1775-1958*. Providence: Roger Williams Press, 1958.

"Faith Triumphant: A Pageant of Three Centuries of Baptist History in Rhode Island." 1938. Broadsides Collection: HB15606 RI. John Hay Library, Brown University, Providence, RI.

"Fifth Festival of the Sewing School in the Vestry of the First Baptist Church." 11 May 1865. Broadside Collection: RB1340 1865. John Hay Library, Brown University, Providence, RI.

First Baptist Mutual Benefit Association. *The Endeavor*. February, March 1896. Rider Collection: Box 409, No. 3.

"From the Female Mite Society of the First Baptist Church and Society of Providence, to the Female Members of Baptist Churches of Rhode Island." 1838. Broadsides Collection: B1852 RI. John Hay Library, Brown University, Providence, RI.

Furman, Richard. "An Exposition of the Views of the Baptists Relative to the Coloured Population of the United States, in a Communication to the Governor of South Carolina." Brackney 219-220.

Hansen, Karen V. *A Very Social Time: Crafting Community in Antebellum New England*. Berkeley, CA: University of California Press, 1994.

Isham, Norman M. *The Meeting House of the First Baptist Church in Providence: A History of the Fabric*. Providence: The Akerman-Standard Co., 1925.

"James Abram Garfield, President of the United States, died September 19th, 1881." 26 September 1881. Broadside Collection: RB717 1881. John Hay Library, Brown University, Providence, RI.

King, Henry Melville. *The Mother Church: A Brief Account of the Origin and Early History of the First Baptist Church in Providence*. Philadelphia: American Baptist Publication Society, 1896.

Lawes, Carolyn J. *Women and Reform in a New England Community, 1815-1860*. Lexington, KY: The University Press of Kentucky, 2000.

Leonard, Bill J. *Baptists in America*. New York: Columbia University Press, 2005.

----. *Baptist Ways: A History*. Valley Forge, PA: Judson Press, 2003.

"Minutes of the Proceedings of the Seventy-Fifth Anniversary." 3 June 1894. Rider Collection: Box 305, No.5. John Hay Library, Brown University, Providence, RI.

"Municipal Celebration of the Eightiet [sic] Anniversary of American Independence." 4 July 1856. Broadside Collection: RB978 1856. John Hay Library, Brown University, Providence, RI.

"Oratorio to be Performed on August 5, 1823, at the First Baptist Meetinghouse." 5 August 1823. Rider Collection: Box 109, No. 43. John Hay Library, Brown University, Providence, RI.

Patterson, W. Morgan. "The Americanization of the Baptists." *Baptists and the American Experience*. Ed. James E. Wood. Valley Forge, PA: Judson Press, 1976. 137-152.

Phillips, Janet M. *Brown University: A Short History*. Providence: Brown University Office of University Relations, 2000.

"Seven Sleepers: An Oratorio, to be Performed by the First Baptist Choir of Providence, Assisted by Members of Other Choirs Forming a Selected Chorus of 150 Voices." 1880. Rider Collection: Box 25, No. 13. John Hay Library, Brown University, Providence, RI.

Vose, James G. "An Oration Pronounced Before the Alumni Association of Brown University in the First Baptist Church, Providence, RI." 19 June 1900. Harris Collection [microform]: FH B6 01017.6. John Hay Library, Brown University, Providence, RI.

Watson, Arthur E. *Angell's Apple Orchard, 1774-1929*. Providence, RI: The Akerman-Standard Co., 1929.

Chapter 16

Meetinghouse & Church: The Influences and Motivations Behind The Architecture of The First Baptist Church in America

Scott Kunstadt

For anyone with an interest in the history of Providence, Rhode Island's First Baptist Church in America one of the best and most informative places to look is one of the most obvious. If you want to learn about the church then literally, look at the church. (Figures 16.1&2) Constructed in 1775, the building that presently houses the congregation has sat in witness to two hundred and thirty-two years of the history of the Providence Baptist community. It has stood through resignations, denouncements, conflicts, theological change, demographic fluctuations, membership explosions and implosions, renovations, restorations, and hurricanes. Through it all there were a number of additions and changes made to the architecture of the building, each of which reflected the opinions, beliefs, and practices of the people who sponsored and installed them at the time. While not all of these phases remained explicitly visible in the present structure after the restoration of 1957 (which is itself an important and enlightening milestone in the architectural history of the church), through various sources we can nonetheless study them.

In his contribution to the report on the fieldwork executed as part of a class at Brown University during the fall of 2006 (to which the present collection is a sequel), Cody Campanie examined some of this architectural and historical information (Campanie, 2007). This paper will endeavor to expand and contribute to his findings by revealing additional architectural precedents and sources for the design of the 1775 structure and also by exploring further the significance of some of the changes and modifications made to the building as the congregation grew and developed.

Though the chronology of the church's development has been well studied and documented elsewhere, a brief summary of key dates, names, and events is necessary for the later discussion of the building's architecture. The history of The First Baptist Church in America (FBC) begins with Roger Williams, the enigmatic founder of Rhode Island. Williams was forced out of the Massachusetts and Plymouth colonies for agitating against the Puritan Congregationalist orthodoxy and fled with his life in danger in 1636, eventually making his way to the head of the Narragansett Bay with a small band of followers and founding Providence. Williams led the few families in religious matters, holding services in his home. In 1638, after more members had joined the settlement and brought with them other outcast theological ideas, Williams converted to the Baptist faith, and together with the rest of the settlement established the first Baptist church in America. He quickly became disillusioned, and withdrew from organized religion altogether, but the congregation he had helped to create continued on without him.

By 1771, when James Manning, the president of Rhode Island College (later renamed Brown University), which had just relocated to providence the year before, became the twelfth pastor, the church had already been in its second building for almost fifty years and was beginning to feel the constraints of the space. Erected in 1726, the 40 x 40 foot structure had replaced the FBC's first meeting house, which was built in 1700 and was 20 x 20 feet square. In addition to the gradual growth of Providence through the 18th century, there were two major contributors to the church's expanding congregation: the aforementioned relocation of the Baptist seminary Rhode Island College nearby, and the growth in religious fervor whipped-up by the first Great Awakening that swept the country during the first half of the century. The connection with the college would be pivotal in the development of the church. Not only did it provide a population of young members, but the Brown family who had helped to support the college would also serve as critical patrons to the church. They donated money, time, and many of the elements that were added to the church. The FBC had become a central institution in the life of Providence, not only religiously, but also in the civic and political realms as well.

A new home for the congregation was clearly in need, so in 1774 a lottery was taken-up to raise funds and Joseph Brown was placed in charge of the design committee. Brown was a professor at the college and an expert in mathematics and astronomy (Pierson, 1986: 137). Along with the assistance of expert craftsmen, he consulted books, treatises and other churches, making a visit to Boston with the professed mission to "view the different churches" (Benes, 1979: 28). The plan that Brown produced, and which he handed over to James Sumner, a master carpenter from Boston who was in charge of the actual construction of the church, laid out "one of the loveliest eighteenth-century churches in America" (Pierson, 1986: 140).

The building was square, with a 80 x 80 foot auditorium, a gallery on three sides, a gabled roof, and a belfry rising to a steeple from atop a pavilion that jutted out from the west side of the building. There were entrances to the auditorium on all four sides of the building, although the door in the base of the tower led to a set of stairs that went up one storey because of the grade of the site. At the time of its construction, the church was "the biggest building project in New England" (Lemons, 1988: 36). The square worship space could hold 1400 people in its pews, fully a third of the total population of Providence in those years.

One of the most direct and well-documented architectural influences on the 1775 design was the English architect James Gibbs. His Book of Architecture was published in London in 1728 and became one of a few source books for architectural details and ideas that found widespread circulation in the colonies. Although included in the stylistic category of the Georgian style, Gibbs' architecture is not a true brand of high English Formalism. (Figure 16.3) He blended different strands of influence into a unique conglomeration: the 'expressive richness" of the English Baroque of Sir Christopher Wren and the 'purity and separateness" of English Palladianism (Pierson, 1986: 112). (Figure 16.4) Pierson lays out Gibbs' style thus:

> Gibbs shows a preference for such ornamental features as quoins, heavy rustication, pilasters, and balustrades, all of which were anathema to the Palladians and tend to give his illustrations a Baroque richness which is more akin to the style of Wren than to the severity of the strict Palladian doctrine (Pierson, 1986: 114).

Gibbs' architectural style straddled two generations of thought, building the later on top of the earlier foundation rather than starting with a blank slate. In addition to the direct formal characteristics that the FBC's building borrows from Gibbs, this mode of blending old and new forms and ideas is also a part of its inheritance. The 1775 building was one of the first in the wave of new religious houses in Providence and all of New England that displayed the trend of "the meetinghouse, as the saying goes, 'becoming a church'" (Smith, 1989: xvii). Most of the other religious houses of this type came after the Revolutionary War and in the first decade of the nineteenth century before Greek Revivalism was popularized.

We know of Brown's heavy quotation from Gibbs' book through first-hand primary sources. The Providence Gazette from 10 June 1775 gives exact details, stating that the FBC's tower and spire were taken from "the middle Figure in the 30th Plate of Gibbs designs" (Benes, 1979: 28) (Figure 16.5). Apparently, Brown transferred the plan for the church in pieces like the page from Gibbs' book to Sumner, who was then tasked with combining the elements and executing the project. Further elements that appear in Brown's design without precedent in the type of building exemplified by "Old Ship" (discussed below) are the Palladian window on the tower and above the pulpit (which is a replacement of the original). (Figures 16.1 & 16.2) This grouping of a round-topped arch and two flanking rectangular windows was not an element of the traditional meetinghouse. Neither is the Doric columned portico at the base of the tower, the emphasis on monumentalizing the gables into dentilated pediments, or the keystone arches that frame the portico and the pulpit.

However, in as much as the FBC is composited of Gibbsian quotations like tower and spire from the his book, the way that the parts are connected and arranged is a distinct reflection of the many other influences which played on Brown. The tower of Gibbs' St. Martin-in-the-Fields in London rises from atop the pediment of the church, projecting from the roof. The FBC tower on the other hand is a self-contained unit attached to the side of the main building; it rises as a single continuous, uninterrupted whole from the ground to the sky. This feature can be traced to the nearby churches in Boston that had been constructed in the first third of the century, and which Joseph Brown would have visited on his exploratory mission.

Although the FBC's 1775 building was one of the first "churches" in the sphere of New England religious architecture, it still relied heavily on its predecessors in the meetinghouse tradition. The first houses of worship that the puritan colonists constructed were actually general-purpose buildings that were, literally, used for meetings, whether about economic, political, domestic, civic, or religious matters. "As a building type, [the American meetinghouse] had no know counterpart in English church history, and it may be viewed as the only original architectural invention of the English colonies" (Pierson, 1986: 55).

The only surviving example of this American invention is the "Old Ship" meetinghouse in Hingham, Massachusetts, which dates from 1681. (Figure 16.6) The existing structure displays the effects of many alterations, but the essential character of the building was restored in 1930. The original building, in the generic meetinghouse style, was roughly square, forty-five by fifty-five feet (the square plan is the most common for a true meetinghouse) with a hipped roof rising in four sloping pitches, one on each side. The entrance and pulpit were aligned with one another across the shortest length of the building (so that they were centered on the long walls) in order to minimize as much as possible the strength of the central aisle and any hints at procession or "popery." The windows were rectangular with diamond-patterned leaded glass, and arranged in two regular rows, plus one more window above the pulpit. These rows provided light for the balconies which ringed the inside of the building on three sides as well as the main level of pews on the ground floor.

The FBC's first two buildings adhered to the meetinghouse type. Both were exactly square, as noted above, being first 20 feet and then 40 feet per side. Brown maintained this tradition in his design for the 1775 building as well. His plan called for a meeting-space that was 80 foot square, and likewise he retained the central alignment of pulpit and entrance, specified two rows of windows ringing the building, included a gallery on three sides of the auditorium, and placed a window above the pulpit. "Old Ship" did have a belfry at the center of the roof, but no large tower and spire like Brown's design. The two buildings also share the characteristic New England use of wooden clapboard siding rather than brick, or as was much more common in England, stone.

The FBC was perhaps not as truthful as “Old Ship” in its use of materials. While Gibbs’ designs were intended to be constructed out of stone, and his St. Martin-in-the-Fields was, Brown’s FBC is framed in New England timber. Brown followed Gibbs’ preference for quoined corners and placed them on every corner of the building, tower included, even though they and the building were all made of wood. Furthermore, “an early description [from 1780] tells us that the spire was originally painted in imitation of grained stone” (Pierson, 1986: 139).

When Brown made his trip to Boston to scout for architectural ideas, one particular church built in the 1720s (and its own respective inspiration) likely had a great impact on his design. Old South Meetinghouse was begun in 1729 and finished the following year. (Figure 16.7) The congregation’s previous building had followed the “Old Ship” mode of a square, hip-roofed structure, but perhaps because of the threat of fire in a crowded city like Boston it was made in brick rather than wood. The 1729 building which replaced that one was nearly square, had galleries on three sides, and two rows of windows along the outside walls like the old meetinghouse plan, but it was radically different from any previous meetinghouse.

Congregational Old South drew its influences most heavily from the Anglican Old North church, built in 1723 for the second Anglican parish in Boston. (Figure 16.8) The puritans had only allowed Anglicans to settle in Boston since 1688. The new 1723 church was their first opportunity for a permanent home. “For guidance in its design its founders naturally looked to London for inspiration” (Smith, 1989: 56) and found it most forthcoming in the work of Sir Christopher Wren. “The most distinctive Wren features of the exterior are the tower and spire” (Pierson, 1986: 98). Being the most distinctive, it was also the feature that Old South most obviously copied from their Anglican neighbors.

The 1729 meetinghouse shares the use of a square, mostly unadorned tower with steeple on top attached to the west end of the building, "in absolute contradiction" to the traditional cross axis of the meetinghouse-style block-building; "while the interior retained its traditional meetinghouse character…the exterior took on all the appearances of a Wren-type Anglican church" (Pierson, 1986: 103). Adding to this Anglican appearance was the use of sash windows with rounded tops rather than the old rectangular leaded-diamond window type. One further holdover from the meetinghouse type places Old South in even more bridging position between Old North and the FBC. Unlike Anglican churches and the later FBC, the designers of Old South retained the entrance in the side of the building, rather than moving it to the base of the tower. Old South provides a direct precedent for the kind of architectural tradition-mixing between conflicting and opposite congregations that so strongly characterizes Brown' 1775 FBC church. Not only does it borrow the idea, but even the exact form of attached tower and arched windows in which this landmark change had been executed.

Not only did Brown follow the architectural developments pioneered in the Old South church, the congregation was probably motivated by a similar competiveness. By 1774 Providence's population was already gaining momentum on the course that would eventually take it from being doubled by Newport's in 1760 to the opposite situations in 1820 (Lemons, 1988: 38). Newport began its Anglican Trinity Church in 1725 and finally topped it with a spire in 1741. (Figure 16.9) Like Old South, the designers of Trinity (led by Richard Munday, carpenter) based their church on the earlier Old North, or Christ Church, in Boston. However, in this occasion it is a much more appropriate source, since both congregations were Anglican. Trinity is virtually identical, the main difference being its construction material: wood rather than stone.

With the two examples of Old South and Trinity Church in mind, it is easy to blend the two and see where the main features of Brown's FBC design originated. Old South provided the precedent of appropriating the architectural tradition of another Christian sect, while Trinity Church demonstrated the feasibility, and successfulness, of executing the Anglican pattern in wood.

One of the few complaints about the new church was a direct consequence of Brown's adaptation of Anglican style features instead of following the established meetinghouse model. While meetinghouses like "Old Ship" had always had their entrance and pulpit aligned on a central axis, the fact that this sometimes crossed the shorter length of the building, as well as the effect of having galleries above the entrance helped to diminish the strength with which this axis read. However, in the new FBC "the aisle and pew arrangement provoked some controversy in the congregation" (Lemons, 1988: 36). (Figure 16.10)

Perhaps because of the grand size of the auditorium, the central axis that ran between the box pews connecting the main entrance through the tower with the pulpit read too strongly and too easily conjured-up thoughts of processions and parading. To diminish the effect, the congregation developed the habit of entering through the two side doors instead. Furthermore, once the opportunity arose with the renovations of 1832 the box pews were replaced by long pews that filled the space, creating two secondary aisles. (Lemons, 1986: 62). (Figure 16.11) This eliminated the problematic center aisle, and also the cross aisle (probably to take advantage of the space for more seating).

While the FBC's fist two buildings reflected its adherence to a distinctly "indigenous" method of construction and worship by their close observance of established meetinghouse guidelines, the 1775 project was clearly looking towards sources of visual meaning outside of New England's historical religious and vernacular building traditions. This shift reflects the changes that were taking place in the makeup of the FBC community and the accompanying religious ideology. "With James Manning as its leader, the old Baptist church of Providence stepped into the widening stream of the Baptist movement" (Lemons, 1988: 32). Though the church would not shift to the "Free-Will" doctrine from its Calvinist roots until after the second Great Awakening well into the nineteenth century, the affects of the first surge in the 1740s still led to a relaxing of many of the strict Puritan prohibitions that had carried over to the Baptist movement.[24] James Manning was in favor of singing during worship (Lemons, 1988: 26), while even thirty years later one congregation member objected to accompanying the chorus with a base viol by declaring that "to use a fiddle in the house of God would be a *base viol*ation of the sacredness of worship" (Lemons, 1988: 63).

The new church was not the finest, biggest, and most progressive in New England by accident. It reflected the faith and optimism of its builders…[and] the booster spirit of the leading men of the town" (Lemons, 1988: 38). It was conceived not simply as a place to worship, but as a symbol for the growing importance and ambitions of the town, a statement to other congregations and towns, like Providence's neighbor Newport which had completed its Anglican church in 1741 with a great spire. Like the Old South Meetinghouse that Brown would have visited in Boston it was more than a house of worship:

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[24] Calvinists believed that Christ's death only provided salvation for a select group of people (thus Calvinist Baptists were sometimes called "particularists" because only a particular group of people had been given the possibility of eternal salvation). "Free-Will" Baptists believe in general or universal atonement.

> In spite of their Puritan background, the Boston merchants…were ambitious and highly competitive; and since their meetinghouse was as much expressive of their material success as it was of their spiritual strength, it was unthinkable to them that they should be outdone by their Anglican neighbors…it was an assertion of personal and civic pride (Pierson, 1986: 105).

Joseph Brown's design decisions were guided by more than simple mechanics of Baptist ceremony or architectural aesthetics. His design for the FBC's new 1775 building reflect a conscious appropriation of styles from building types "anathema" to the traditional puritan and Baptist meetinghouse. The construction of the new building was a concerted effort by the community to realize the beginnings of their hopes and dreams for the town, and the congregation in the world that was soon to come into being with the start of the Revolutionary War.

Figure 16.1: The exterior of the FBC circa 1868 **Fig. 16. 2:** The restored Interior of the FBC, including later 1832 pews

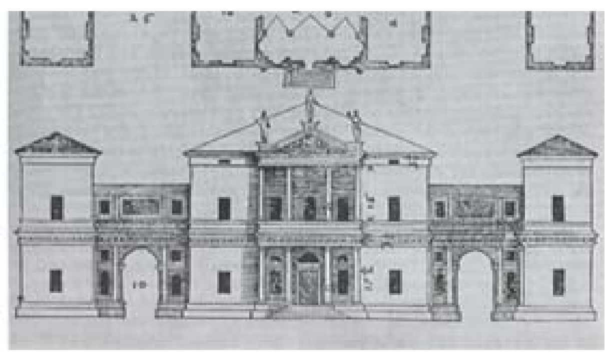

Figure 16.3 English Formalism by William Kent **Figure 16.4:** True Andrea Palladio

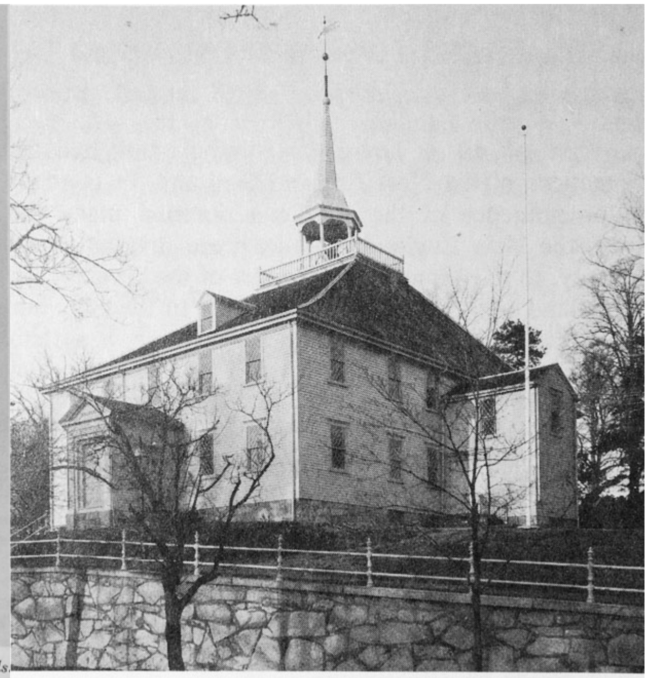

Figure 16.5: Gibbs' three steeple designs

Figure 16.6: "Old Ship" Meetinghouse

Figure 16.7 Old South Meeting House

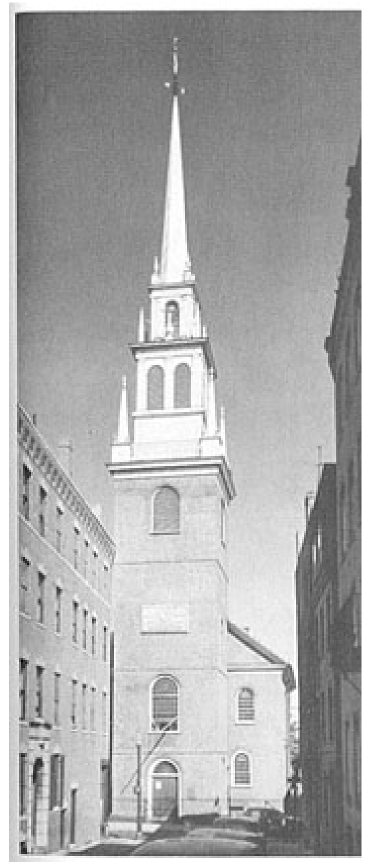

Figure 16.8: Old North Church

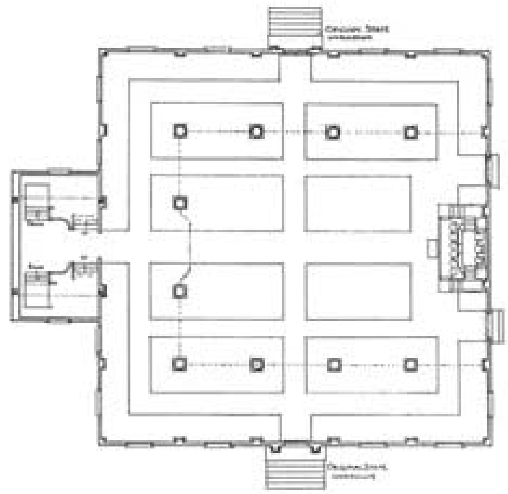

Figure 16.9: Trinity Church

Figure 16.10: Early plan of FBC with two central aisles

Works Cited

Ed. Benes, Peter. New England Meeting House and Church: 1630-1850. Boston: Boston University Press, 1980.

Benes, Peter & Zimmerman, Phillip D. New England Meeting House and Church, 1630-1850 : A Loan Exhibition at the Currier Gallery of Art, Manchester, New Hampshire. Boston: Boston University for the Dublin Seminar for New England Folklife, 1979.

Campanie, Cody. "Standing Artifacts: New England Church Architecture." in Ed. Nelson, Zachary and Marino, Katherine. Churchyard Archaeology: Archaeological Investigations at the First Baptist Church in America: Report of Field Investigations at the First Baptist Church in America, Providence, Rhode Island, undertaken August-December, 2006. 2007.

Conser, Jr., Walter H. Sacred Spaces: Architecture and Religion in Historic Wilmington. Preservation North Carolina: Bellaby Mansion Museum, 1999.

Eberlein, Harold Donaldson. The Architecture of Colonial America. Boston: Little, Brown, and Company, 1915.

Donnelly, Marian C. The New England Meeting Houses of the Seventeenth Century. Middletown, Conn.: Wesleyan University Press, 1968.

Lemons, J. Stanley. The First Baptist Church in America. Charitable Baptist Society, 1988.

Mazmanian, Arthur B. The Structure of Praise, A Design Study: Architecture For Religion in New England From the 17th Century to The Present. Barre, Massachusetts: Barre Publishers, 1973.

McLoughlin, William G. Rhode Island: a Bicentennial History. W. W. Norton: New York, 1978.

Pierson, William Harvey, American Buildings and Their Architects: Volume 1, The Colonial and Neoclassical Styles. New York: Oxford University Press, 1986.

Sinnott, Edmund Ware, Meetinghouse & Church in Early New England. New York: McGraw-Hill, 1963.

Smith, G. E. Kidder. The Beacon Guide to New England Houses of Worship : An Architectural companion. Boston: Beacon Press, c. 1989.

Chapter 17

Designing an Exhibit for Artifacts Excavated at The First Baptist Church in America

Dan Bailey

As archaeologists, we have an obligation to share our findings with the general public and those whose heritage is directly connected to our research. One of the most effective ways to fulfill this obligation is through the display of artifacts and results in an exhibit. The task of designing an exhibit for the artifacts recovered from the First Baptist Church is a creative and subjective, but nonetheless challenging, process. In developing a final design choices must be made regarding how the past should be presented, while always considering that the final product should be enjoyable and interesting. A number of factors must be considered throughout the process of designing an exhibit. Perhaps the most important of these factors are consideration of the exhibit's intended audience and the development of a cohesive theme or message that unites the artifacts contained in the exhibit. In this case, the exhibit's intended audience is the general public, and the overarching theme will be a presentation of the artifacts as a view of the individuals who used the church grounds in the past.

Before an exhibit's theme can be developed, an interpretive approach to the material culture to be displayed must be determined. Pearce (1996: 156) identifies three principal approaches to the interpretation of objects appearing in an archaeological exhibit: objects as artifacts; objects as signs and symbols, or "messages which create social distinctions"; and objects as meaning, or "physical embodiments of ideological statements." Pearce (1996: 156) goes on to point out that in the setting of an exhibit it is difficult to separate an artifact's identity as a sign and symbol from its ideological meaning. Pearce (1996: 157) also identifies a fourth and somewhat different interpretive approach that involves the presentation of artifacts as "visible authentication of the historical narrative." In order to create an engaging and informative exhibit, the display of the artifacts recovered from the First Baptist Church will draw on a combination of all four approaches. Since the artifacts date from the historical period, information from historical sources will be presented alongside the artifacts. In general, artifacts will be presented as windows into the lives, beliefs, and actions of the people who used the church in the past.

The exhibit is intended to be viewed by the general public, including Brown students, Brown faculty and staff, community members, and anyone else who may be interested in our work at the First Baptist Church. As such, the exhibit should be comprehensible to everyone, regardless of whether the viewer has any archaeological knowledge. Moreover, the exhibit should present artifacts and information in a way that engages a general audience. Perhaps the best way to appeal to a general audience is to present the exhibit as a view of the people behind the artifacts. The exhibit will focus on day-to-day activities at the meetinghouse and the lives of average community members. Hopefully the viewer will be able to relate to these themes since the fundamental social interactions that unite the congregation and the College Hill community have not changed drastically over the last several centuries.

The overall theme of the exhibit will be a historical view of the First Baptist Church Meetinghouse as a community gathering place, and public space for religious, social, educational, and entertainment events. The artifacts and a small amount of primary source material will be presented to provide a cohesive picture of the First Baptist Church congregation as a community united not only through religion, but also through social interaction. More broadly, when the Meetinghouse is viewed as a central public space that hosted community events and attracted non-church members, the artifacts reflect the diversity and lives of the wider College Hill community. Hopefully, the exhibit will provide the viewer with a glimpse of the diversity and social relationships that defined this community throughout its history. Artifacts will be chosen that depict the many different types of people who gathered at the church and the activities that they pursued there.

Personal effects that were uncovered at the site will be particularly important in conveying these ideas. Particularly, the presence of children (and families) will be shown through the display of a number of marbles found at the site. These artifacts may reflect the active children's Sunday School hosted by the church through a number of decades. Similarly, a pin found at the site may be evidence of a ladies' sewing group held at the church for a number of years during the 19th century. Additionally, the display of various ceramic fragments from the churchyard will provide evidence of the socio-economic diversity of the congregation. Judging from the large amount of fine ceramic ware found in the churchyard, it seems that congregants generally brought their finest tableware to church (we can only assume that they did so out of respect for the sacredness of the church and perhaps to assert their social status among their neighbors). The accidental breaking and subsequent discarding of this tableware must have been a cause for great distress at the time, but allows us to uncover a sample of the ceramics used at the church. There are wide variations in the quality of ceramic found in the churchyard, from fine porcelain, to everyday refined earthenware. This variation may roughly reflect socio-economic diversity in the congregation and the surrounding community: a wealthy family's finest tableware may be porcelain, while the best tableware a family of lesser means could afford might be refined earthenware (Deetz, 1996: 75). Additional personal effects that will be displayed include clay pipe fragments, a comb fragment, coins, and glass bottle fragments.

Faunal remains found at the church will also be presented to provide evidence of communal eating at church events. A number of clam and oyster shells found in the churchyard will be presented alongside an 1898 advertisement for a clambake at the Hornbine First Baptist Church in Rehoboth, MA. Although the advertisement is not from the First Baptist Church in America, it is from a nearby (directly across the border from Providence in Massachusetts) Baptist church and provides a historical explanation for the shellfish remains found in the churchyard. Animal bones found in the churchyard over the last two digging seasons will also be displayed. Although the bones have not been conclusively and specifically associated with a species, they came from several mid to large sized mammals. The presence of the bones suggests that meat was prepared and served at the church, presumably during social functions. It will be noted that most faunal remains found in the churchyard can be reasonably associated with eating at social events such as picnics.

Over the course of two seasons of excavation at the First Baptist Church, far more artifacts were uncovered than could be displayed in an exhibit. While each artifact provided information about the site, and conclusions were drawn about the site through the analysis of entire assemblages of artifacts, the majority of the individual artifacts were fairly mundane. In order to create an engaging exhibit, artifacts were chosen that were the finest examples of their type. More importantly, artifacts were chosen that exemplified and clarified the overall theme of the exhibit. To this end several types of artifacts, including brick, asphalt/slag, coal, and nails, were omitted entirely. Although a representative sample of the artifacts will not be displayed, in cases where relevant information was obtained using the entire assemblage, information about the assemblage will be provided. For instance, in the portion of the exhibit displaying ceramics, the claim is made that people brought their finest tableware to church. In order to exemplify this claim, not only will the display include a range of ceramic types, but labels will also note that plain earthenware was the least common ceramic type found at the site. Since the artifacts in the exhibit are the result of an historical archaeological excavation, a small amount of relevant primary source material will also be included in order to reinforce interpretations of the artifacts. In general, any historical primary source material used will be directly related to the artifacts.

The exhibit will be housed in a four-shelved display case located in the ground floor lounge of the Joukowsky Institute at Brown University. The bottom shelf will contain faunal remains, the lower middle shelf will contain ceramic artifacts, the upper middle shelf will contain personal effects, and the upper shelf will contain the exhibit title, introduction, and pictures of the First Baptist Church. Considering that many artifacts are quite small, efforts must be made to ensure that each artifact is readily visible to the viewer. To this end, artifacts will not merely be laid flat at the bottom of each shelf. Although the exact logistics of the display have not been finalized at this time, the artifacts will most likely be placed at an upward angle, facing toward the viewer. Overall, the exhibit should be inviting and easy to understand. In reality, most viewers will be passersby with only a few minutes to devote to the exhibit. Therefore, the text should be as easy to read as possible, meaning that "sentences are short [and] normal word order is preferred" (Ekarv, 2004: 202). Ravelli (2006: 94) also recommends a more "personal and informal" text for use in exhibits rather than a "heavily written, technical text." This does not necessarily mean that the ideas behind the text need to be simple. Additionally, to make the text as easy to read as possible Frey's guidelines for text layout will be followed where possible: all text will be in a sans serif font, headings will be between 54 and 72 point, copy text will be 36 point, and captions will be between 18 and 24 point (Frey, 2006: 130). In general, text will be as concise as possible and will avoid restating what is already apparent from looking at the artifacts (Frey, 2006: 134).

What follows is the entire text of the exhibit with accompanying photographs of objects where available. Sources used in the exhibit text include: Hume 2001; Lemons 2001; Deetz 1996. Special thanks is also due to Tyler Lucero for locating the quotes used in the exhibit, all of which are from primary source documents unless otherwise noted.

Churchyard Archaeology: The First Baptist Church in America as a Community Gathering Place Through Time

"[The First Baptist Church] was a suitable place to express the sorrows, the joys, and the hopes of an entire people."

-Arthur E. Watson,
from a 1929 history of the First Baptist Church

Figure 17.1: --

The First Baptist Church in America was founded in 1638 by Roger Williams in Providence, Rhode Island. The artifacts displayed here were found during two seasons of archaeological excavation on the grounds of the First Baptist Church meetinghouse, built in 1775. Throughout its history, the people of the College Hill neighborhood have gathered at the First Baptist Church to mourn the death of George Washington, to celebrate the end of the Civil War, to attend classes in "embroidery" and "woodcarving", and lectures on "electricity, banking, the telegraph, Alaska, and glaciers", and to celebrate "the Eightiet [sic] Anniversary of American Independence." Clearly, the meetinghouse functioned as a religious, social, municipal, educational, and entertainment center for the entire community. The artifacts displayed below provide an intimate look at the lives, beliefs, and day-to-day activities of the people who gathered at the church.

CERAMICS

Most of the ceramic fragments displayed here originally belonged to pieces of tableware such as plates, saucers, and cups, and show that eating at church social events was common. A large amount of fine tableware fragments were found in the churchyard, suggesting that church members brought their finest to church. In early America, high quality ceramics were a mark of success and social status. Therefore, we can learn about the diversity of the congregation and the College Hill Community through time by looking at the range in the quality of ceramics found. The ceramics shown here range from everyday earthenware to expensive, imported porcelain and demonstrate that a socially diverse group of people used the church grounds.

Fine Tableware and Special Items

Figure 17.2: Tableware used in exhibit.

Just as people today wear their best clothes to church, church members in the past brought their finest tableware to church social events. Displayed here are some of the finest examples of tableware found in the churchyard: (from left to right) part of a teacup of hand-painted European porcelain (1800-1850); part of a plate of hand-painted European porcelain; a reconstructed pearlware knob from the lid of a sugar bowl, decorated with a blue transfer print and made in England (1807-1840).

Porcelain

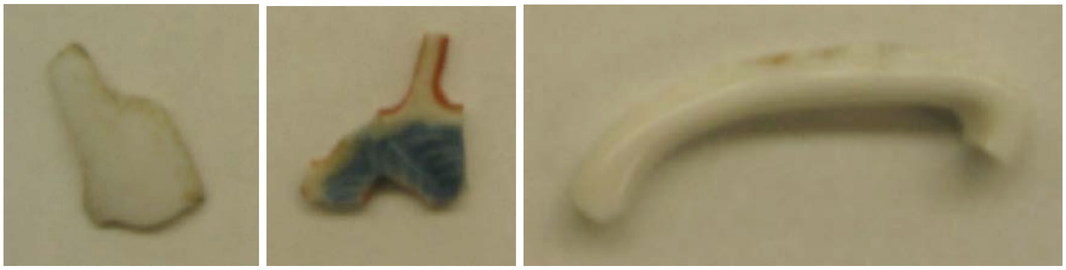

Figure 17.3: Porcelain in exhibit.

Porcelain fragments: (from left to right) a small piece of thin, white porcelain; part of a glazed lattice-edged plate; the handle of a teacup with some residual gold gilding visible. Porcelain is the finest and most expensive ceramic ware and generally would have been available only to wealthy church members.

Ironstone[1]

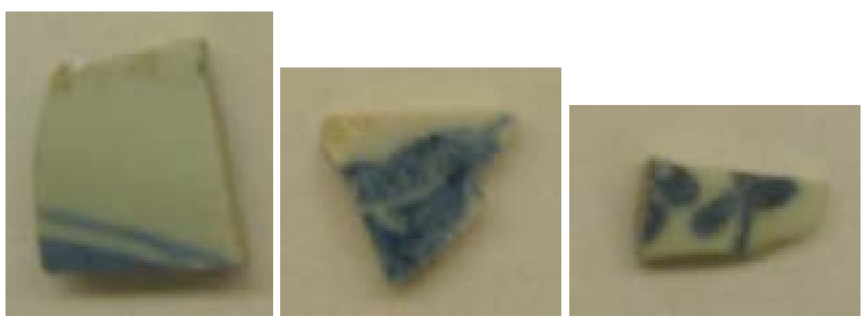

Figure 17.4: Ironstone in exhibit.

Three small examples of blue-glazed ironstone. Ironstone is a durable ceramic first produced in the early 19th century.

[1] What was initially identified as Ironstone in the lab during December of 2007 may in fact be cheap porcelain according to a later assessment by Michelle Charest. This exhibit was designed and mounted before such identification and so the designation of "Ironstone" remains in both.

Stoneware

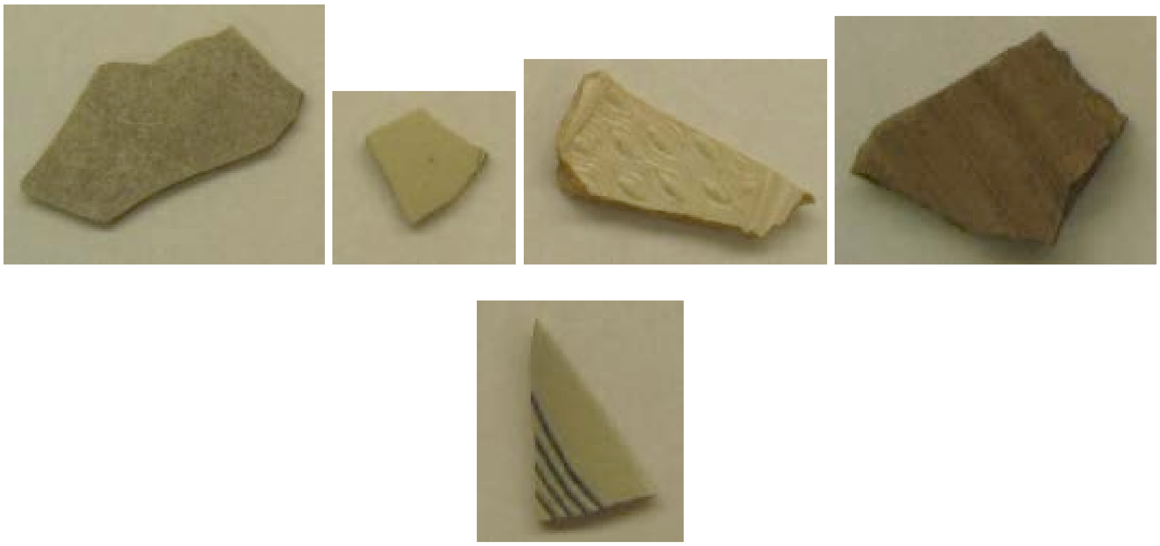

Figure 17.5: Stoneware in exhibit.

Stoneware was a durable, affordable alternative to porcelain. The stoneware shown here is plain, with little decoration, and so would have been affordable for a family of modest means.

Refined Earthenware

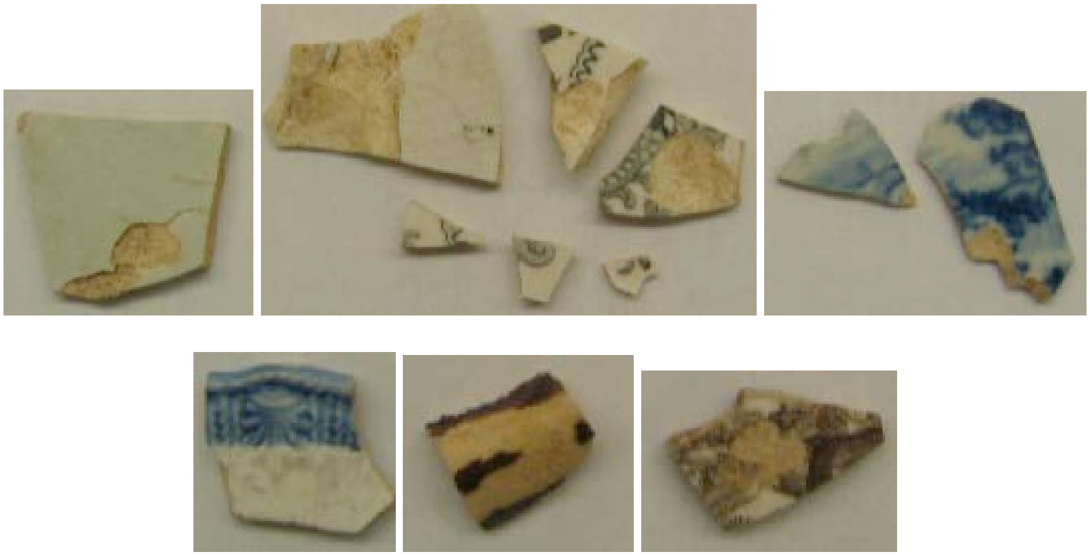

Figure 17.6: Refined Earthenware in exhibit.

Earthenware is one of the poorest quality ceramic wares. The examples shown here are refined, meaning the exterior was glazed and decorated, giving the outward appearance of fine tableware. The designs on most of the above examples were made using the inexpensive transfer printing technique, invented in 1751. The presence of refined earthenware in the churchyard suggests that some church members could not afford higher quality tableware.

Earthenware

Figure 17.7: Earthenware in exhibit.

Plain earthenware is a coarse, porous, and poor quality ceramic, but it was the most common day-to-day ceramic during the colonial and early American periods. The above examples of earthenware are mostly undecorated and represent the least expensive tableware found at the site. Plain earthenware was the least common ceramic type found on the church grounds, suggesting that everyday tableware was not frequently used at church functions.

FAUNAL REMAINS

A large amount of shells and animal bones were recovered from the church grounds. These remains provide us with information about what was eaten at church social events, and also indicate that organized social events like picnics and clambakes were common and important to the congregation.

Shells

Figure 17.8: Shell in exhibit.

(From left to right): clam shell; oyster shell; an 1898 advertisement for a clambake at the Hornbine Baptist Church in Rehoboth, located just over the border from Providence in Massachusetts. The clambake was originally a Native American activity, but became a New England tradition during the colonial period. As shown by the 1898 advertisement, New England churches commonly held clambakes, and the shells found at the First Baptist Church are probably from a church clambake.

Animal Bones

Figure 17.9: Animal bones in exhibit.

Animal bones (from left to right): a cow tooth; a rib from a mid to large sized mammal; fourteen bone fragments found in a single 100cm x 100cm x 10cm section of soil. Although these bones have not been conclusively associated with a specific species, they came from several medium to large sized mammals, such as pigs, deer, and cattle. The bones suggest that meat was prepared and served at the church, probably as part of a church picnic.

PERSONAL ITEMS

Personal items found at the church provide us with an intimate glimpse of the lives of past community members. The majority of personal effects recovered were small items that would have been easily lost and readily forgotten. The large number of small personal items recovered shows that the First Baptist Church Meetinghouse was used by a great number of people and functioned as a community gathering point throughout its history.

Marbles

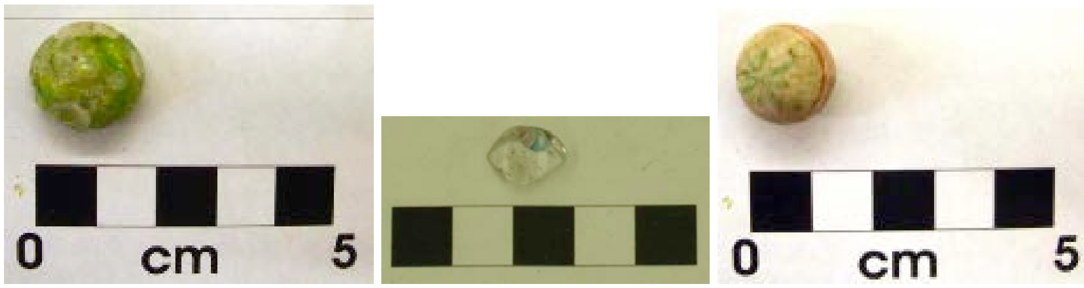

Figure 17.10: Marbles in exhibit.

(From left to right) Two broken glass marbles; a china marble with pinwheel design (ca. 1846-1870). The children who played with these marbles in the churchyard were alternately welcomed by the church and seen as a nuisance: at an 1810 Church meeting there was a “request of neighbors that they keep their children from the meetinghouse yard”; a century later in 1910 there was a proposal “to turn the lawn into a park with benches for mothers and children of the neighborhood.”

Pin

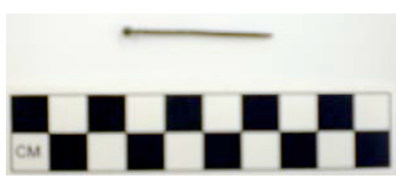

Figure 17.11: Pin in exhibit.

Sewing pin. This pin may be associated with a ladies’ sewing group that met at the meetinghouse during the 19th century. The pin and the sewing group show that the meetinghouse was also a social space for women and children: an 1865 “order of exercises” for the “Fifth Festival of the Sewing School in the vestry of the First Baptist Church in Providence” proclaimed “Refreshments for Children!”

Buttons

Figure 17.12: Buttons in exhibit.

Buttons are easily lost, so it is not surprising that a number of buttons were recovered around the Meetinghouse. The buttons shown above represent the range of buttons found: from simple white glass buttons to intricately designed metal buttons.

Coins

Figure 17.13: Coins in exhibit.

U.S. coins: (from left to right) A 1935 Mercury-type dime, a 1918 Lincoln Head, Wheat Ears cent, an 1899 Indian Head cent.

Clay Tobacco Pipes

Figure 17.14: Pipe fragments in exhibit.

Pipe stems and bowls: (from left to right) stem (1750-1800); stem (1720-1750); stem (1720-1750); stem (1720-1750); bowl (1750-1800); bowl (1750-1800). Between the 17^{th} and 19^{th} centuries pipes were the most popular means of smoking tobacco. Clay pipes were inexpensive and fragile, so it is unsurprising that several pipe fragments were found on the church grounds. The presence of the pipes suggests that people often gathered in the churchyard to relax and socialize.

Miscellaneous Personal Items

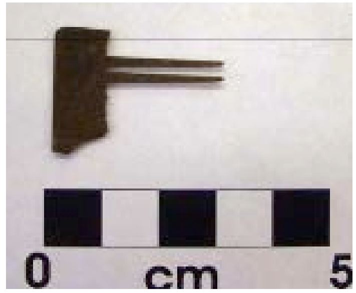

Figure 17.15: Human personal items in exhibit.

(From left to right): a comb fragment; a glass stopper that may have come from a perfume bottle or medicine vial.

Glass

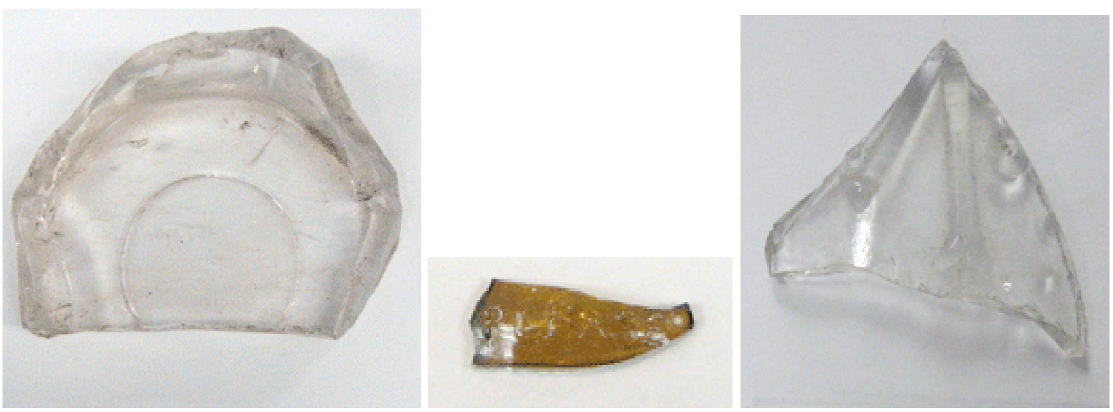

Figure 17.16: Glass from exhibit.

(From left to right): an octagonal bottle base; an amber shard reading “PLEASE”; a shard with part of a raised “M” visible. Glass was among the most common artifacts encountered at the First Baptist Church. These shards come from jars, bottles, or vials and may also be associated with church picnics.

Table 17.1: Catalogue of Items Included in the Exhibit

Personal Items
Pipe Fragments:
Bowls, D2:7, D1:3
Stems, D2:3, D1:5&6, C1:3
1899 Indian Head Cent, C1:6
1918 Licoln Head, Wheat Ears Cent (B4:3 2006)
1935 Mercury Head Dime (A2:1 2006)
Broken Glass Marble, D1:4
Broken Glass Marble (B1:4 2006)
China Marble (B1:4 2006)
Glass Stopper, D4:6
White Glass Button (A3:3D 2006)
Intricate Metal Button (A4:8 2006)
Triangle Design Button (B2:4 2006)
Comb Fragment (A3:2B)
Pin, D1:5
Octagonal Bottle Base, C1:2
Amber "PLEASE" Glass Fragment, D4:2
Clear "M" Glass Fragment, D4:4

Ceramics
Porcelain (3)
Canton Porcelain (B4:5 2006)
Ironstone (3)
Stoneware (5)
Refined Earthenware (6)
Coarse Earthenware (8)
Porcelain Teacup Fragment (B4:4 2006)
European Porcelain (B2:2 2006)
Reconstructed Pearlware Sugar Bowl Knob (B2:2 2006)

Faunal Remains
Clam shell (B2:7 2006)
Oyster shell D1:3
Cow tooth (B2:7 2006)
Rib bone (B2:7 2006)
Collection of bones (14) found in (B2:7 2006)
Hornbine Baptist Church Clambake Advertisement: Hay Library Broadsides, 1-SIZE B1834 MA

Works Cited

Deetz, James. In Small Things Forgotten: An Archaeology of Early American Life. New York: Anchor Books/Doubleday, 1996.

Ekarv, Margareta. "Combating Redundancy: Writing Texts for Exhibitions." The Educational Role of the Museum, edited by Eilean Hooper-Greenhill. London: Routledge, 2004, 201-205.

Frey, Bertron Schwarz. Designing Exhibitions: A Compendium for Architects, Designers and Museum Professionals. Basel: Birkhäuser, 2006.

Hume, Ivor Noel. A Guide to Artifacts of Colonial America. Philadephia: University of Pennsylvania Press, 2001.

Lemons, J. Stanley. First: The First Baptist Church in America. Providence: Charitable Baptist Society, 2001.

Pearce, Susan M. Archaeological Curatorship. London: Leicester University Press, 1996.

Ravelli, Louise J. Museum Texts: Communication Frameworks. London: Routledge, 2006.

Chapter 18

Digital Initiatives Utilized by the Archaeology of College Hill Project

http://proteus.brown.edu/archaeologyofcollegehill/Home

Katherine Marino

Archaeologists interact with several types of groups. While the bulk of this report has focused on groups of the past and the material remains that they have left in the yard of the First Baptist Church in America, in this chapter I would like to shift the focus to the communities of the present, and more specifically to how the Archaeology of College Hill Project is using a wiki, a remotely updateable webpage, and other digital means to connect with people in the here and now.

The project has three main foci: to expand the archaeological knowledge about College Hill and the FBC, to teach field methods to new archaeologists, and to foster a greater awareness among the community of Providence of their heritage and past and what role modern archaeology can play in the discovery thereof. The wiki was utilized in such a way that it answered all three of these needs.

The wiki, a website whose programming interface is akin to Microsoft Word, was decided upon as the platform of choice because it allows multiple users access to update it from any computer in the world. For us this meant that the students themselves could conveniently log in and change the website to reflect their own ideas and personalities.

Further, people unaffiliated with the project were able to log on and post comments and interpretations to the site.

That the students have a say in the wiki seemed to be of vital importance. In order for the greater community of Providence to become interested in the site we felt that there needed to be a human side to it, and by placing photographs of the field team in action in weekly updates on the wiki, showing their expressions – contemplative when filling out a notebook, excited when showing off a prize find, or annoyed when digging in the gloaming, the human side of the project is highlighted.

All too often on archaeological digs what is happening in the here and now is ignored as unimportant. People's experiences of a site, however, are just as relevant to the archaeology, as are the Munsell readings of the soil, albeit not quantifiable. As Cornelius Holtorf points out in his article "Notes on the Life History of a Potsherd," (2002) the mental state of an archaeologist has a great deal with what is recovered on a site and how that is classified from that point on. There is an aspect of archaeology which is very dependent on the modern practitioner, not only on her methods and objectives but also on her state of mind.

Further the memories and experiences created by interacting with the archaeology of a place are a part of that place's archaeology. SU forms and field notes often fail to take adequate record of these, and though the website makes no claim at recording these comprehensively or in any systematic way, nevertheless some idea of them does get recorded on it. This is in contrast to a final publication which often is very narrow in scope and limited to only the raw data and considered interpretations. In our discipline personal experience is distanced from professional publications, as it rightfully should be in any social science, however the wiki provided our class an opportunity to expand beyond the typical final publication and enrich the public's knowledge of the First Baptist Church site in a low cost, easily updatable form with the potential ability to reach millions and which in no way detracted from the final analysis.

The basic way in which the wiki worked was that every week updates were made to it by the field director, Katherine Marino, in the form of a personal narrative of events on site. This included information of both a technical nature such as specific happenings in trenches (i.e. we dug 30 cm) and more anecdotal observations such as "the tree fell over in the huge windstorm last night" with a picture linked to the felled tree. The most common postings were about members of the team such as "Cindy got filthy today on site in her quest to unearth more shells in D2." To supplement these observations a selection of pictures were also posted weekly. This allowed the audience to become familiar with the trenches, the team personally and the conditions of archaeology in the fall in New England. Looking through the pictures from week to week you can actually see the seasons changing, starting from a bright summer like day in early September all the way to the dark cold days of late October where the team is bundled up and sifting in the dark. It goes a long way to dispelling the overly romantic vision of archaeology popularized by Indiana Jones – yet replaces it with something just as appealing in a more realistic way.

Throughout these field notes links were then inserted so that whenever something was listed which was listed elsewhere on the site, a link was created and both pieces of information were brought together on a new page. For instance in the notes for September 17th, the faux pearl in trench C2 is mentioned. C2, the trench name has been made a link, which when clicked takes one to a log of pictures from the trench including a picture of said pearl as well as providing new links to the notebooks, stratigraphy, maps and other pictures of that trench. In this way the person using the wiki is able to craft their own interaction with the site. Unlike a traditional final report, often the only information available about a season at a site, the wiki is not linear and does not encourage the person interacting with it to follow any one path. By actively choosing where she wants to go next the person viewing the site is forced to think about what they are looking at, to engage with the information. The person interacting with the wiki has an active stake in the information they are receiving, unlike a book from which they can passively receive whatever comes next. It is hoped that this active engagement and concomitant personal investment with the site fosters greater interest in the project as a whole.

Further, unlike a final report, the wiki, which is bounded neither by budget constraints nor the idea of what is professionally appropriate to publish, allows for much more actual information to reach the public. This comes in the form of actual images of the notebook entries, original SU forms and other data. In this way it is a convenient way to archive information and share it with team members as well as give the greater public a "behind the scenes look" at aspects of archaeology which are never featured in other popular outlets such as movies (Indiana Jones) and Discovery Channel specials.

The potential for the wiki to connect with a larger audience than would read the final report is not limited to the lay public. The platform has the potential to provide professional archaeologists with information that may be of interest almost as soon as it is uncovered. To that end we scanned in our SU forms each week as they were completed. There is a map of the property with all the test trenches marked and as analysis occurs each student posts their data as she acquires it. That is, rather than say only in the final report that there were 10 grams of porcelain we set up a page on porcelain where weight, count, photos and other relevant information is posted. By making the raw data available we are hoping to get feedback from both the lay and professional communities, thus fostering a dialogue on the understanding of the site. It is hoped that the multiplicity of voices will encourage a better interpretation (or interpretations) of the site.

One interesting aspect which we added to the wiki this year is a weekly log entry by each student about their experiences on site. This is required, but can range from the purely technical (today I dug in D2 for 20 cms) to the tangential (I found this button today that reminded me of a button I had when I was a kid…). The goal is to encourage familiarity with the wiki on the student's part and to make the project more human, more understandable to the community.

A second digital initiative which is to be posted on the wiki is a final documentary. In this piece each student speaks for about 5 minutes about their experiences on and their conclusions about the site. It was hoped that each would bring his or her own unique style to this. At the end each segment is patched together into a cohesive movie and presented to the church along with the final publication. In future when the book is no more than a collection of essays the DVD documentary will preserve the essence of what it was like to work on the Archaeology of College Hill in fall 2007. In our own way, we are creating the archaeology of the future as we unearth that of the past.

And so the Archaeology of College Hill field school at the First Baptist church in its second field season of fall 2007 has acted as a pivot point between two communities of people. While we have unearthed the material residues of the past which allow us to comment on the social activities of former communities, we have also been equally and actively engaged with connecting with the communities of the present. Archaeology is not an isolated academic field which one can practice in a lab divorced from the world around you. It is only in uniting the communities of the past with those of the present that an archaeologist finds true success. It is in this respect the field school was successful. In order to teach good archaeology it was the belief of those involved in this field school, that one has to also teach that an archaeologist has an ethical responsibility not only to the past the present or posterity, but equally to all three. The field school emphasized this on a daily basis and by first uncovering the past and then by utilizing the wiki to archive the results for the future and to disseminate them to the groups of the present, can be considered a successful model for other field schools and archaeological projects to emulate.

Chapter 19

Final Thoughts and Conclusions

Katherine Marino

In September 2007 thirteen students from Brown University and two graduate student archaeologists headed down to the First Baptist Church on a sunny afternoon to learn how to excavate. After eight weeks in the field and a further four analyzing our finds in the lab, the conclusion can only be that the class was a success. The students, through their own efforts and the guidance of their instructors have all become capable archaeologists, having mastered the techniques of excavating, mapping and measuring used on most sites. The first objective of the field season, to train student archaeologists in field methods has thus been accomplished.

They have also each produced an essay on an aspect of the dig, the collection of which is presented in this volume. It is through this second action that the other main goals of the class, to help shed light on the history of Providence and to foster a mutually respectful and invested understanding of the shared history of Providence among the various communities that inhabit it, has been further advanced toward achievement. There is now a lasting testament, which can be disseminated to wide audiences, about what we have uncovered at the First Baptist Church. In this way we have made a step toward including the greater Providence community, and indeed the world at large, in our work. This is not the only such step we have made in this direction. The wiki is a wonderful venue which has allowed us to present archaeological process as much or more than product, and provide an example of how archaeologists approach and work through a site. It has also allowed us to disseminate our data in forms and amounts unthinkable in traditional print. Perhaps most usefully, it allows the user, however remote from Providence proper, to forge his own personal relationship with the site and the team by his non-linear and active navigation through the website.

While all of this is important and all of it has contributed to making the project what it is, the questions must still be asked: What did you find? What conclusions did you reach? What can you tell me now that I did not know before? To these, I may briefly point the reader to the preceding essays, or may answer with equally terse, but just as loaded answers. We found the material remains of over 200 years of human activity on the spot. We have concluded that these remains, when read by the light of the historical record and known Baptist social practices, attest to the integral and integrative nature of the FBC in the history and formation of Providence as we know it. And finally, we may not be able to tell a new story, but we can bear witness through the material we have uncovered to the fact that the FBC has been a fixture in the history and development of Providence. It has stayed true to the then-novel vision of one of its co-founders, Roger Williams, that church and state should be separate, but despite this it has always provided a space where the concerns of men, whether spiritual, civic, intellectual, social or economic, could and can be addressed. As such, varied communities of people have come to find a use for the meeting house and its grounds, and it is traces of these various people that this dig has uncovered.

Of course, in the spirit of our greater project of including a diverse array of people and ideas, we invite you, the reader, to contribute your own voice to the dialogue and to come to your own conclusions…