Ceramics at the First Baptist Church of America

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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 created 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 examines 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. (FLMNH) 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 just “earthenware”, as “terra cotta”, or most common of all “pottery” (FLMNH). 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. (FLMNH). Although the composition of earthenware can vary widely, an average mixture consists of 25% ball clay, 28% kaolin, 32% quartz and 15% feldspar (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) 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. (FLMNH) 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. (FLMNH). 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. (FLMNH) 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 blueish tinged. (FLMNH). 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. (FLMNH)

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. (FLMNH) 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 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) (FLMNH). 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 (FLMNH). 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 blueish cast (FLMNH). Because ironstone is a heavier, and sturdier ceramics, 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 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 (FLMNH).

Hardpaste porcelain also referred to as "Bone China" was produced mainly between 1830 and 1900 (FLMNH). 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 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 (FLMNH).

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" (FLMNH). 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 (FLMNH). 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 (FLMNH).

Lab Methods: Ceramics

Excavating and Washing:

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 etc) 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 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 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 we 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 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 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 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 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 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, indicating 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.

Trench	SU	Weight of SU Assemblage (g)	Coarse Earthenware	Refined Earthenware	Stoneware	Ironstone	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

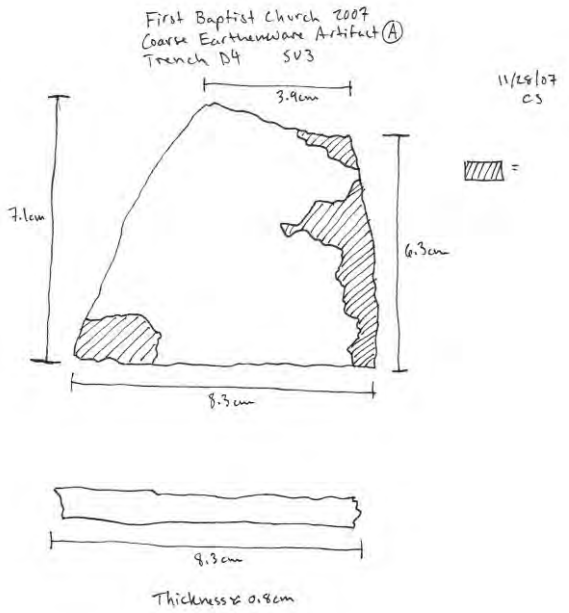
	8	30.0	12	48	0	0	0
D3	1	3.5	1	0	0	0	0
	2	0.7	0	0	0	0	1
	3	7.6	1	3	0	1	0
	4	3.4	3	1	0	0	0
D4	1	0.5	0	1	0	0	0
	2	16.0	3	11	0	0	0
	3	62.2	6	11	0	0	1
	4	6.2	5	10	0	0	0
	6	8.4	6	5	0	0	0
	8	0.6	0	3	1	0	0

Type of Ceramics by Sherd Count:
Total Sherd Count: 378 Sherds (100%)
Coarse Earthenware: 87 Shereds / 23%
Refined Earthenware: 273 Sherds / 72.2%
Stonware: 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:

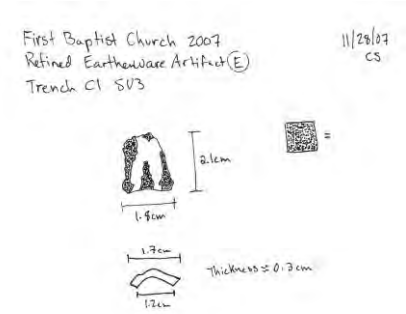
Artifact A: Trench D4 SU3: Brown Salt Alkaline Glaze
Artifact B: Trench D2 SU5: Unglazed
Artifact C: Trench C2 SU7: Unglazed Redware
Artifact D: Trench D3 SU1: Unglazed Redware E: Trench D2 SU3: Lead Opaque Glazed Redware
Artifact F: Trench D2 SU2: Unglazed
Artifact G: Trench C1 SU3: Brown Lead Opaque 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



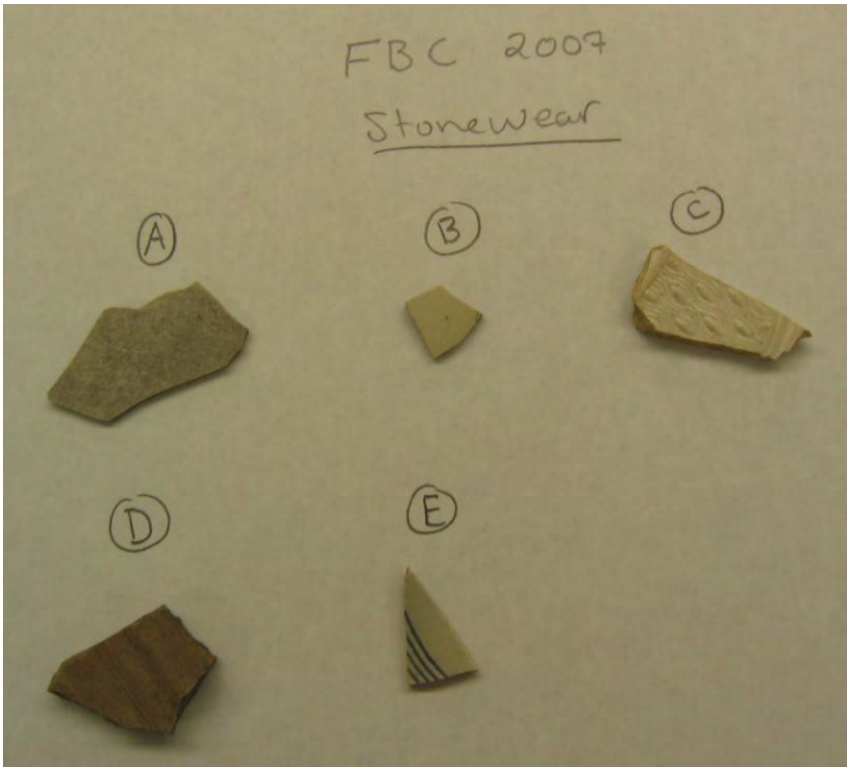
Refined Earthenware Assemblage:

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

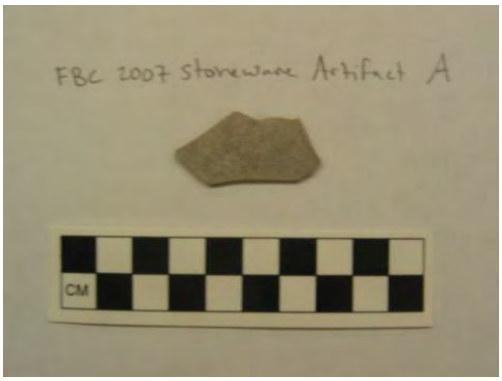


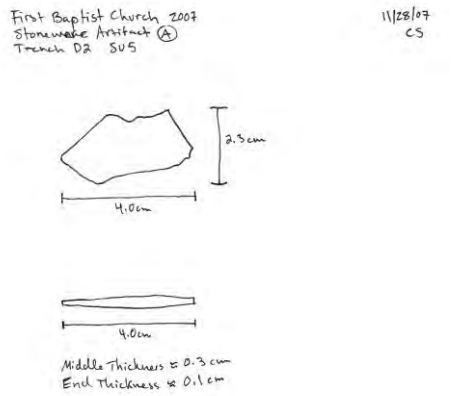
Stoneware Assemblage:



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

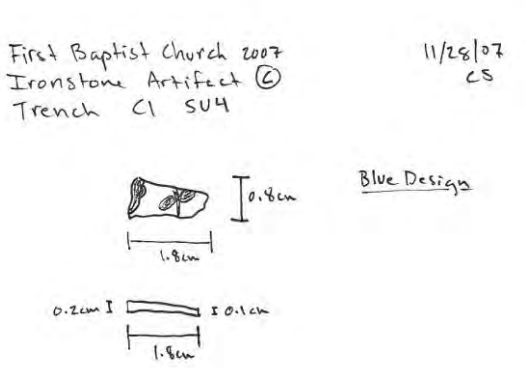
Artifact E: Trench D1 SU5: Gray with Incised Blue Bands (filled with Cobalt Blue Oxide); Salt-glazed



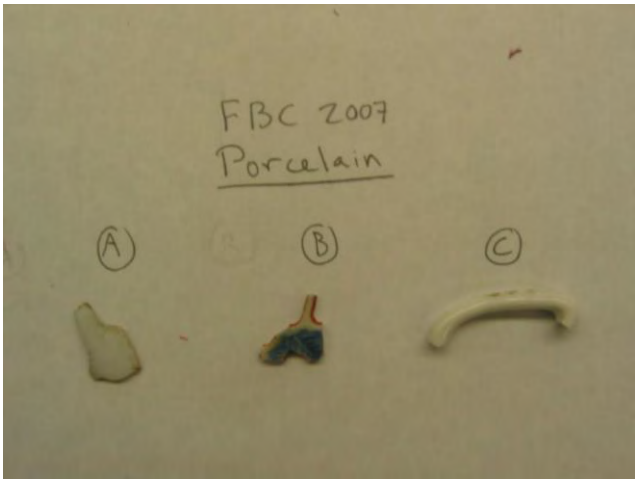


Ironstone Assemblage:

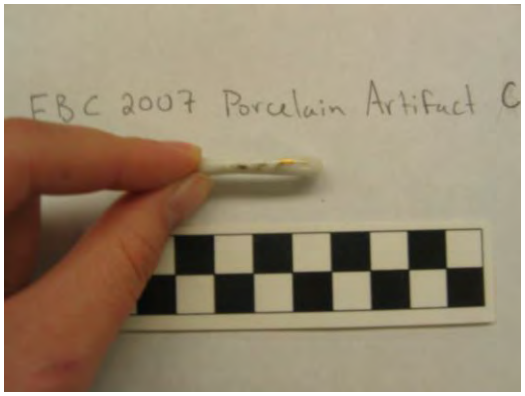
Artifact A: Trench D3 SU3: Hand Painted Blue
Artifact B: Trench D1 SU7: Hand Painted Blue
Artifact C: Trench C1 SU4: Hand Painted Blue



Porcelain Assemblage:

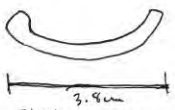


Artifact A: Trench D4 SU3: White, Very Thin
Artifact B: Trench D3 SU2: Blue Design, Red Edges; Possibly Lead-Glazed; Piece of Lattice-Edged Plate
Artifact C: Trench D1 SU3: Handle of a Teacup with Gold-gilding

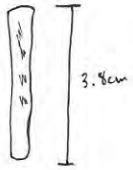


First Baptist Church 2007
Porcelain Artifact (c)
Trench D1 SU3

11/28/07
CS



Thickness ≈ 0.4cm



Remnants of Gold Gilding

Width ≈ 0.4cm

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