

# **A Report on the July 1996 Archaeological Investigations at the Brimstone Hill National Park, St. Kitts, West Indies**

Brimstone Hill Archaeological Project Report No. 1.

Submitted to  
The Brimstone Hill Fortress National Park Society, St. Kitts, West Indies, the Center for  
Field Research (Earthwatch), Watertown, Massachusetts, and the Graduate School,  
University of Tennessee

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## Introduction

Brimstone Hill Fortress on the eastern Caribbean island of St. Kitts was constructed by the British beginning in 1690 and was abandoned by them as a military outpost in 1853. The Fortress, covering over 16 ha (40 acres), is among the largest and most imposing military complexes built by the British in the New World and for this reason is often called the Gibraltar of the West Indies (see Smith 1990, 1992a, 1992b). The Brimstone Hill National Park Society manages the site on behalf of the government of St. Kitts (see Walters n.d.). Although maintenance and restoration have been conducted at the fortress for several decades, until recently there has been little archaeological work at the site. In July 1996, the University of Tennessee initiated archaeological studies at the site.

The history of British settlement and colonial rule is well known from historical records (e.g. Cox 1984; Goveia 1965) and is visibly manifest by the size and imposing character of the Brimstone Hill Fortress. According to documentary and oral history, African slaves constituted the labor for construction and maintenance of Brimstone Hill throughout most of its history. The presence of African slaves at Brimstone Hill can be studied through archaeological investigations. Archaeological studies at Brimstone Hill are thus primarily aimed at discovering and documenting the role that slaves played in the fort's construction and maintenance. Additionally, this work is intended to provide accurate information about the architecture of individual structures used or occupied by slaves so that they can be properly restored for visitation by the public. Further objectives include heightening recognition that the heritage of Brimstone Hill is as much African-Caribbean as it is Colonial British, and to provide the people of St. Kitts a historical context from which to understand and appreciate their own culture.

Archaeological test excavations were conducted in two areas where a map of the fort prepared by British military engineers in 1791 indicates the locations of work or

residential areas used by slaves. The first area is an industrial complex consisting of a well, a lime kiln, the ruins of a lime storage building, and two other buildings of undetermined use. Excavations focused on the ruins of the latter three structures, especially the lime storage building. The work in this area showed that this structure originally had a slate roof which was replaced with a wood or tin roof at a later time. The other two structures had stone and mortar floors with rubble and mortar filled foundations 1 to 2 m high. Their walls were constructed from vertical timbers set about 1 m apart. None of the evidence from these buildings clearly indicates their use as slave residences. Erosion and recent filling may have covered or destroyed evidence for additional slave huts shown on the eighteenth century map.

The 1791 map shows four structures in the second area investigated which is located below the defensive wall or curtain that connects the Orillon and Magazine Bastions on the west side of the fort about 60 m below the hill's summit. No ruins of any of these buildings are visible on the surface and none was located by archaeological test excavations of five one meter units. This work, however, produced a large sample of military and domestic related artifacts. Among these are sherds of Colonoware or Afro-Caribbean ware and fragments of British manufactured ceramics with a variety of geometric patterns scratched on the bottom of the vessels. These marks may represent cosmograms which have been documented in Africa and in New World African slave contexts (Ferguson 1992). Faunal remains include bone buttons and large amounts of debris from their manufacture, strongly suggesting that this was an important activity in this area of the site possibly conducted by slaves. Archaeological studies at Brimstone Hill will resume in this area of the site in the summer of 1997. Test excavations in other areas of the site occupied or utilized by slaves also are anticipated at that time.

## Site Numbers

Archaeological studies require a three dimensional grid (x,y, and z coordinates) in order to record and map individual contexts, such as stone structures and buildings, and to designate excavation units and excavation levels within units. The locations or provenience of artifacts and other debris from human occupation are recorded according to these contexts. In the absence of a previously established uniform grid system covering all of the Brimstone Hill Fortress Park (ca. 16 ha) and lacking the kinds of equipment (e.g. a laser distance meter or total station) for establishing one for the entire park, it was necessary to devise a procedure for identifying individual areas within the park and for placing a grid system at them. Consequently, separate site numbers and independent metric grids were established for recording archaeological contexts and proveniences in the two areas where work was conducted. Independent datum points also were established for obtaining elevations.

Site numbers were identified by three letters indicating Brimstone Hill followed by an arbitrarily assigned number. Thus the site number BSH 1 refers to the first site investigated, consisting of stone building foundations located at the base of the hill along the Park's main access road, about 200 m from the park entrance. The second site number, BSH 2, refers to excavations carried out between the Magazine and Orillon Bastions on the east side of the hill.

## Excavation Methods

In all cases the excavations were conducted using 1 by 1 m squares which were excavated in arbitrary 10 cm levels as measured from a datum point arbitrarily assigned an elevation of 100.0 meters. Excavated sediments were removed primarily with trowels and dustpans and screened through quarter inch mesh hardware cloth.

Recovered artifacts were placed in paper bags labeled with the appropriate provenience information. Virtually all contexts contained large numbers of rocks. Some often weighed more than 10 kg. Most of these represent natural occurrences constituting the sediments of Brimstone Hill. In some cases, however, the rocks represent debris from the preparation of stones used in construction, debris from the deterioration of buildings, or the building stones themselves. The occurrence of these categories were monitored and recorded during the excavations, but because the stones were so abundant or because individual stones were so large, no effort was made to catalog or save them. Associations of materials or other distinctive occurrences were assigned numbers and recorded as archaeological features. Nine features were recorded at BSH 1. One burial was found and recorded at BSH 2. All excavations were backfilled at the completion of the work.

#### Laboratory Methods

Artifact classes recovered from the excavations include ceramic sherds (mostly from English manufactured hollow and flat ware), pieces of glass (primarily from bottles), metal objects (primarily iron nails and personal items such as buttons), stone artifacts, and bone items (including food remains as well as implements). These remains were cleaned by washing in plain water or removing the soil with a brush, after which they were sorted by class and placed in plastic bags or vials. Information identifying the context and provenience of the material was recorded on the container and on a tag which was inserted into it. These data and individual artifact identifications were entered into the computer data base program Paradox<sup>®</sup> for subsequent sorting and further analysis. Most of this work was completed in St. Kitts and the analyzed artifacts were placed in storage at Brimstone Hill. A small amount of material could not be identified either for lack of time or for the absence of appropriate reference books or

comparative collections. These remains were shipped to the University of Tennessee in December 1996 for further study and will be returned to St. Kitts. None of the artifact data is included in this report.

#### Brimstone Hill Site 1 (BSH 1)

The BSH 1 site number is used to designate the Well, Lime Storage Building, Lime Kiln, and the ruins of two other buildings. The Kiln, Well, and Lime Storage Building constitute a complex of structures used in the preparation and storage of lime for the manufacture of mortar which was crucial to construction of the fort. The relationship of the other two structures to this complex is undetermined. All buildings likely date to the major period of expansion and renovation that occurred at the fort in the 1780s and 1790s following the French siege and capture of the fort in 1782 (see Smith 1990, 1992a). Excavations were conducted here because this was an industrial area where slaves worked, and where they may have lived, as suggested by the occurrence of additional structures on the 1791 map. These areas also are presently the focus of plans for restoration and visitor access.

The five structures were designated Structures 1 through 5 in order ascending the hill on the park's entrance road. The Well and the two buildings of unknown use were respectively designated Structures 1, 4 and 5. They are located adjacent to the left side of the road, while Structures 2 and 3, the Lime Storage Building and the Kiln, are on the right hand side of the road. The road runs parallel to the south side of Sandy Point Ghut. In this area of the site the present road closely follows the route of the eighteenth century road which was primary access to the fort at that time. From lowest to highest in elevation the distance between Structures 1 and 5 is about 250 m. Archaeological test excavations were conducted, as described below, at Structures 2, 4, and 5.

Investigations at BSH 1 were conducted using a single metric grid consisting of north and west coordinates. All vertical measurements are referenced to a single datum located at coordinate 131N/274W and arbitrarily assigned an elevation of 100.0 m. . Grid north at BSH 1 is oriented N10°E of magnetic north. All of the structures occur within coordinates 90-135N and 280-450W. Grid coordinates in the vicinity of Structure 1, for example, are 90-100N/440-450W. This structure is at an arbitrary elevation ca. 85.00 m. Structure 5 is at an arbitrary elevation ca. 100.0 m, and it is located within grid coordinates 130-135N/280-285W.

#### Structure 1

Structure 1 is the Well located adjacent to the north or left side of the main entrance road to the fortress. Work on this structure consisted of clearing away the vegetation, obtaining measurements of it, and photographing it. The outside diameter of this structure is 3.4 m while the inside diameter is 2.2 m. The thickness of the wall is ca. 60 cm. A measurement of the current depth of this feature could not be made but it certainly exceeds 5 m. There has probably been considerable accumulation of debris in the well since its abandonment and the feature was much deeper when in use as a water source. A stone platform measuring approximately 5.5 m on a side and approximately 1.5 m wide surrounds the well on the north and west sides. Since no excavations were conducted at this structure, details of the relationship of the platform and well are unknown.

#### Structure 2

Structure 2 is the ruins of the Lime Storage Building located adjacent to the main entrance road approximately 50 m from the Well and approximately 30 m down slope

from Structure 3, the Lime Kiln. Structure 2 measures ca. 9.9 m long by ca. 5.2 m wide; the walls, as measured on the inside of the building, are .47 to 2.32 m high (see Table 1). The standing walls are 60 to 65 cm thick. The only observed opening is a doorway on the north wall which begins 87 cm from the northeast corner of the building. The door's width is undetermined because the north wall is so badly deteriorated. It appears to have been no more than about a meter wide. Excavations show that the structure has a hard-packed mortar floor and that the building originally was roofed with slate shingles. Wire nails recovered from the excavation suggest that the building was roofed a second time in the nineteenth century, using wood or possibly tin sheet metal.

Table 1. Recorded dimensions of Structure 2

Wall	Dimensions (m)		
	Outside	Inside	Maximum Height
North	9.85	8.57	0.47
South	9.90	8.65	2.70
East	5.00	4.00	2.32
West	5.25	3.95	1.95

Test excavations in Structure 2 consisted of three trenches of contiguous 1 meter squares or units (Table 2). The first trench was excavated at coordinates 90-91N/410-414 W perpendicular to the west exterior wall. Building debris and an association of 38 cannonballs were recorded as Feature 1 in this excavation. Stratigraphy in this excavation was recorded along the north profile (91N/409-413W). The second trench, consisting of five units at coordinates 90-95N/407-408W, was used to investigate a transect across the interior of the structure. It

revealed the structure's floor and slate shingles representing roof collapse into the building's interior. These remains were recorded as Feature 2. The west stratigraphic profile of this excavation was recorded (90-95N/408W). The third trench consisted of three units excavated perpendicular to the exterior of the building's north wall at coordinates 96-99N/406-407W. This revealed two superimposed hard-packed mortar

Table 2. One meter units excavated at Structure 2

North Coordinates		West Coordinates		No. of Levels	Beginning Elevation (m)	Final Elevation (m)
84	85 -	414	415	5	85.31	84.60
96	97 -	406	407	5	86.66	86.10
97	98 -	406	407	3	86.65	86.20
98	99 -	406	407	3	86.55	86.20
90	91 -	407	408	8	86.40	85.30
91	92 -	407	408	4	86.09	85.30
92	93 -	407	408	4	85.65	85.20
93	94 -	407	408	3	85.99	85.40
94	95 -	407	408	3	86.66	85.40
90	91 -	411	412	6	86.26	85.40
90	91 -	410	411	7	86.70	85.70
90	91 -	412	413	3	85.98	85.40
90	91 -	413	414	5	86.12	85.20

floors recorded as Feature 3. Stratigraphy of the west wall or 96-99N/407W was recorded for this excavation.

One additional unit was dug at coordinates 84-85N/414-415W in order to locate occupational evidence immediately west of Structure 2. This unit was placed in a comparatively level area where the 1791 map suggests the location of additional occupational features associated with the use of Structure 2, including buildings utilized by slaves for domestic activities. No evidence of slave occupation was found in the excavation. Unfortunately, most of the original surface immediately west of Structure 2, measuring approximately 8 by 12 m, was covered with approximately 1 m of debris dumped here in the 1980s. This material came from a landslide that occurred elsewhere in the fort area. Surface collections and excavations in unit 90-91N/413-414W at the edge of the deposit indicate that it contains abundant early to mid nineteenth century artifacts, which are obviously relevant to the archaeological record of Brimstone Hill but not specifically to Structure 2.

Three features, as described below, were recorded for Structure 2:

Feature 1 includes materials recorded in the 1 by 4 m trench excavated on the west side of Structure 2 at coordinates 90-91N/410-414W at elevations ranging from ca. 85.50 to 85.20 m. The feature primarily records the association of 38 cannonballs each weighing 22.5 lbs (11 kg), which, based on their arrangement, were stacked at this location. Their arrangement also indicates that this association represents only a portion of a larger number of cannonballs stacked against the west wall of the structure. The origin of these objects and the reason for their disposition adjacent to the west wall remain undetermined. In addition, Feature 1 records the lower portion of the structure's west wall and the articulation of rock and mortar rubble with it.

Feature 2 designates the floor and slate roof fall recorded in the 1 by 5 m trench excavated across the interior of Structure 2 at coordinates 90-95N/407-408W and at elevations ca. 85.20-85.30 m. The feature consists of the structures hard-packed mortar floor exposed in unit 92-93N/407-408W and the occurrence of roof and wall fall and its articulation with the interior north and south walls of the building.

Feature 3 represents two superimposed mortar floors lying exterior to the structure's north wall. This feature was exposed in the 1 by 3 m trench at coordinates 96-99N/406-407W. The floors are 5 to 7 cm thick. These floors are probably associated with a porch or verandah that occurred along the length of the buildings north side. The maximum recorded width of the floor was 2.2 m, although both floors are truncated by the current roadway which runs very close to the north side of the building.

### Structure 3

Structure 3 is the Lime Kiln which is located ca. 4 m higher on a comparatively level bench less than 30 m east-southeast of Structure 2. The kiln is a large cylindrical open-topped structure with two supporting buttresses and two draw holes or eyes. A set of steps on the west side ascends to the top of the structure where it was loaded for firing. This building has been previously examined and described by Rollinson (1992). Rollinson conducted no excavations here and no archaeological investigations or measurements were made in the immediate area of this structure in July 1996.

According to Rollinson's research, the structure is either a draw or flare type kiln. Both types were used in the eighteenth century, but without further examination, including excavations, Rollinson could not be sure which type the Brimstone Hill kiln represents. Limestone, which occurs naturally at the base of the hill rather than coral as used in some locations, was fired to produce lime. Observations indicate that coal, which had to have been imported most likely from England, was used to fire the facility. Rollinson also observed a variety of iron hardware in and around the structure.

This building was cleared of vegetation and rubble in the late 1980s so that tourists could visit it. When this was done the debris was pushed over the slope toward Structure 2. This means that a large but undetermined amount of material has buried the original surface, and artifacts found on the slope may have been originally deposited

elsewhere in the area of the kiln. Rollinson (personal communication, July 1996) indicates that there was likely a platform near the draw holes where the fired-lime was crushed and sieved. He believes that a slide or shoot must have been used to deliver the lime down the hill to the storage building where it was kept until needed for mortar.

#### Structure 4

Structure 4 consists of a stone foundation located adjacent to the left or north side of the road approximately 50 m east and upslope from Structure 2. The steep edge of the Sandy Point Ghut is about 2 m north of the building. The north, south, and west walls of the foundation are visible at the surface. Neither probing with a metal rod, nor test excavations produced evidence of the east wall of the building. The building was 4.9 m wide and more than 5.0 m long; the walls are 60 to 75 cm thick and 70 to 85 cm high as measured on the exterior side (Table 3). There is no evidence that the stone

Table 3. Recorded dimensions of Structure 4

Wall	Dimensions (m)		
	Outside	Inside	Maximum Height
North	5.00	4.70	0.85
South	5.00	4.65	0.60
East	- -	- -	- -
West	4.90	3.50	0.70

walls ever exceeded their present height. Notches measuring approximately 11 cm square occur at 82 to 119 cm intervals (mean distance 97 cm) along the exterior walls. There are five of notches along each wall. The walls of the building apparently were

formed by setting vertical timbers into these recesses. No evidence for a doorway or other openings was observed. Shutter hardware from the excavations indicate the probable occurrence of windows.

Archaeological excavations in Structure 4 consisted of two individually placed one meter squares and a trench of contiguous one meter squares 7 m long (Table 4 ) One

Table 4. One meter units excavated at Structure 4

North Coordinates	West Coordinates	No. of Levels	Beginning Elevation (m)	Final Elevation (m)
135 136 - 347 348		6	93.43	92.70
137 138 - 343 344		1	93.85	93.60
137 138 - 344 345		4	93.81	93.30
137 138 - 345 346		2	93.71	93.30
137 138 - 346 347		2	93.61	93.30
137 138 - 347 348		2	93.51	93.30
137 138 - 348 349		8	93.43	92.60
137 138 - 349 350		1	93.36	93.20
137 138 - 350 351		2	93.25	93.00
140 141 - 349 350		3	92.80	92.30

of the single units (140-141N/349-350W) was placed adjacent to the north exterior wall near the building's northwest corner and the other single unit (135-136N/347-348W) was placed adjacent to the south exterior wall at its approximate center. Both units were excavated to the base of the foundation. The 1 by 7 m trench, at coordinates 137-138N/343-351W, was oriented east-west and was placed equidistant from the north and south foundations across the center of the structure. A stratigraphic record

was made of the north profile (138N/343-351W). The building's floor was recorded in this excavation as Feature 4. Feature 5 represents rubble either used to fill and level the building's east end or material associated with a cellar in this area of the structure. Additional excavations would be necessary to confirm the more likely interpretation.

Presently, there are no historical data nor any archaeological materials that indicate the use of Structure 4. There is no indication that it was used as a domestic structure or barracks either by slaves or members of the Brimstone Hill garrison. Its small size and location adjacent to the roadway suggest its possible use in conjunction with monitoring personnel and materials entering and leaving the fort. Another possibility is that it served as an office for personnel who ran the lime kiln. The building's location near the base of the hill suggests, however, that it probably had little strategic importance.

Two features, as described below, were recorded in Structure 4:

Feature 4 is the stone floor of Structure 4. It was recorded in six units at coordinates 137-138N/345-351W at an elevation of ca. 93.38 m. The floor consists of irregularly shaped stones ranging from ca. 0.1 m<sup>2</sup> to 0.75 m<sup>2</sup> in exposed surface area which are set in a mortar matrix. Although only 6m<sup>2</sup> of the floor was exposed and the west interior wall of the structure was not located, there is no reason to suspect that the floor does not cover the entire interior of the building.

Feature 5 represents stone rubble, mortar fragments, and associated artifacts recovered below the stone floor in unit 137-138N/348-349W. This deposit was approximately 60 cm thick. Not enough of this feature was investigated to determine its function. It could represent a portion a cellar or subfloor storage space or a portion of the fill dumped at the east end of the building to bring the floor to grade.

## Structure 5

Structure 5 is located immediately adjacent to the road approximately 70 m upslope from Structure 4. Most of Structure 5 and its associated features have been lost to erosion of the Ghut immediately to the north and by encroachment of the fort's access road. Structure 5 consists of a corner portion of a north oriented foundation wall and two other wall remnants, one which may be part of the structure. The other wall remnant may be related to the structure but not actually part of it. In addition, a small crumbly rock outcrop with a relatively flat surface, recorded as Feature 9, could represent a remnant of a former road bed.

The primary foundation is 3.45 m long, with a corner at the north end formed by a second wall 80 cm long. Excavations on both sides of the wall produced evidence of hard-packed mortar and stone floors (Features 6 and 7) so it is not clear which side of the wall represents the building's interior and exterior. The wall is 30 cm high on the east side and 50 cm high on the west side; the wall is 60 cm thick. On the east side, the foundation has a lip or sill 20 cm wide and 5 cm high. There are four notches along the sill identical in shape and size to those recorded for Structure 4, except that they are more closely spaced at 75 to 90 cm intervals. These surely held vertical timbers that formed the structure walls.

A second stone wall is to the east and oriented perpendicular to the south end of the primary wall. The portion of this wall which is barely visible at the surface is 2.3 m long and 30 cm wide. Excavations were not extensive enough to uncover it or determine whether it articulates with other portions of the foundation. The wall's orientation suggests that it is part of the structure. Parallel to this wall and about 5.1 m from the structures primary foundation is another stone wall which is 7.4 m long and 30 cm wide. It was recorded as Feature 8. Its orientation and relationship to the other

walls suggests that this is probably a retaining wall rather than part of the building's foundation.

The function of Structure 5 is undetermined. It appears comparable in size to Structure 4 and is similarly situated adjacent to the road. For these reasons, it may have served a similar purpose.

Excavations in Structure 5 consisted of a single square (134-135N/283-284N) placed adjacent to the east side of the foundation wall, and three contiguous squares on the west side of the wall (134-135N/284-287W)(Table 5). Feature 6 was recorded in the former, while Feature 7 was recorded in the latter. The stratigraphy of all four walls of unit 134-135N/283-284W was recorded.

Table 5. One meter units excavated at Structure 5

North Coordinates	West Coordinates	No. of Levels	Beginning Elevation (m)	Final Elevation (m)
134 135 - 283	284	4	100.23	99.80
134 135 - 284	285	1	99.73	99.60
134 135 - 285	286	1	99.70	99.50
134 135 - 286	287	1	99.70	99.50

As described below, four features were recorded in association with the excavations of Structure 5:

Feature 6 represents the mortar floor exposed in unit 134-135N/283-284W adjacent to the interior west wall of Structure 7.

Feature 7 is the poorly preserved remnant of a stone and mortar floor exposed in three 1 meter units on the west exterior sided of Structure 5. To the north and

northwest, the floor has been disturbed and removed by erosion, while to the south it has been disturbed by construction/maintenance of the current roadway

Feature 8 is a remnant of a stone and mortar retaining wall approximately 7.40 m long and 30 cm wide. It begins approximately 5.1 m east of the single wall recorded for Structure 5. Given the relationship of the two walls, it is unlikely that Feature 8 represents either an interior or exterior wall of Structure 5. It is possible, however, that the west end of the wall was once attached to the east side of the building.

Feature 9 represents a deposit of highly weathered and friable mortar or limestone at the east end of Feature 8. The surface of the feature is smooth and level and the retaining wall represented by Feature 8 is partly articulated with it. The present road is approximately coincident with its former alignment as shown on most early maps, and it is possible that Feature 9 represents a remnant of one of the early roadways leading to the top of the hill. Feature 9, however, was not sufficiently investigated to confirm this interpretation.

#### Brimstone Hill Site 2 (BSH 2)

The site number BSH 2 is used to refer to the area located adjacent to the stone defensive wall which joins the Orillon and Magazine Bastions on the west side of the Fortress. This area was selected for test excavations because the 1791 site map indicates that an alignment of four structures located here was used by slaves and craftsman. While It does not indicate the specific use of the buildings, their purpose was likely for work rather than residential usage. Temporary or permanent slave residences may have occurred in the vicinity particularly because of its location outside the fort's defensive wall, but none is shown on the 1791 map.

A line of five one meter test pits placed parallel and approximately 4 m from the defensive wall were excavated in this area. Grid north at BSH 2 is oriented 14°N. The

pits were located at intervals of 3 to 10 m (Table 6 ), and were excavated in 10 cm levels to depths ranging from 40 to 100 cm. Vertical measurements were referenced to a datum point at 200N/100W which was assigned an arbitrary elevation of 100.0 m. Stratigraphic profiles were recorded for all four walls of each excavation unit. There is no evidence at the surface for the structures known to have been here in the late eighteenth century, and the excavations encountered no foundation walls or other architectural evidence for the buildings. If not removed or altered at a later date, the building foundations may never have been substantial and it may require larger excavation exposures to detect them.

Table 6. One meter excavation units at BSH 2

North Coordinates		West Coordinates		No. of Levels	Beginning Elevation (m)	Final Elevation (m)
184	185	100	101	6	100.63	99.70
196	197	100	101	5	99.50	98.90
204	205	100	101	9	99.28	98.30
208	209	100	101	4	99.08	98.50
212	213	100	101	10	98.87	97.50

In comparison to BSH 1, work at BSH 2 produced abundant artifacts. There are at least four possible sources for these remains. The 1791 map of the fort shows that there was a barracks above the defensive wall and that it was located less than 10 m from and parallel to it. Soldiers occupying this structure and perhaps other areas of the fort too surely disposed of domestic trash by throwing it over the wall. Second, the fort's hospital was located at the Orillon Bastion. The area around the base of this bastion was used for human burials. Evidence for several graves, including a stone

grave house and two headstones, was detected at the surface and a human burial was encountered in one of the excavation units. Furthermore, material removed during restoration elsewhere at the fort may also have been deposited in this area. Matheson (1987:9), for example, indicates that a bulldozer was used in the 1970s to improve vehicle access to the Orillon Bastion and to build a parking area. The final possible source of material comes from occupation of the area by slaves and craftsman.

There are three classes of recovered remains that probably relate to this occupation. First is the occurrence of sherds of Colonoware (also called Afro-Caribbean and Newcastle ware). Colonoware vessels are known to have been manufactured and used primarily but not exclusively by slaves. Also recovered are fragments of English made ceramics with various scratch marks on the bottoms of the vessels. Although documented more often on Colonoware vessels, these marks may represent cosmograms which are reported in slave contexts in the New World (see Ferguson 1992). Among the abundant faunal remains recovered from the excavations were bones representing all stages in the manufacture of bone buttons. This may have been a major activity carried out in this area of the site.

Only a single feature was recorded in the excavations. This was a human burial recorded in excavation unit 204-205N/100-101W. Most of the grave extends into the east wall of the unit so that only the skull was recovered in the excavation. Preliminary examination suggests that this is an adult male. A racial determination could not be conclusively made during field examination, but the general appearance suggests a European rather than African origin for the individual. It is likely that this burial represents one of the numerous individuals interred in conjunction with the fort's hospital and cemetery at the Orillon Bastion.

While no architectural evidence was recovered relating to the buildings shown on the 1791 map, artifacts recovered from BSH 2 suggest activities by slaves in this area. This area is comparatively level and there is more than enough space here to have easily

accommodated slave residences. There is also abundant material here which is surely attributable to other sources, indicating multiple episodes of disposal over a long time period. The abundance of material makes the identification of slave related artifacts, structures, and occupation floors difficult. Additional excavations, consisting of contiguous squares to form blocks, should help resolve these difficulties.

### Summary

At site BSH 1, there is evidence for five stone structures, three of which were investigated. Structure 2 is the Lime Storage Building. Work here showed that the building had a hard-packed mortar floor and a slate roof. The roof was probably replaced at least once in the late nineteenth or early twentieth century. The building had an exterior porch on the north side where two superimposed mortar floors were uncovered. A cache of cannonballs was exposed on the buildings west side. No artifacts were found to suggest that the building was ever used as a residence or for some other purpose after it was abandoned as a storage facility. No evidence of slave dwellings was recovered adjacent to the structure. If present, such buildings may be covered with landslide debris dumped here in the 1980s. Several other unidentified structures are shown in the general vicinity of the Lime Storage Building on the 1791 map. No evidence for these structures was identified, and it is possible that they were removed by erosion of the Sandy Point Ghut or realignment of the entrance road.

Test excavations at Structure 4 and 5 indicate no original or subsequent use as residences. Although the purpose of the buildings is undetermined the position of both suggest their role in monitoring movement in and out of the fort. Very few artifacts, such as Colonoware sherds, which could be directly attributable to slave occupation were found in the excavations and in fact, almost no evidence for domestic activities were recovered at BSH 1.

Excavations at BSH 2 produced no architectural evidence for the four buildings shown on the late eighteenth century map of the site, where slaves and craftsman worked. Abundant artifacts were recovered here, and three classes, Colonoware, bone button making materials, and English made ceramics with scratched designs representing possible cosmograms suggest the presence of slaves. The archaeological deposits in this area of the fort, however, are very complex because so many sources contributed to their accumulation. Adding to this complexity is the probable occurrence of numerous unmarked human graves in this area.

### General Recommendations

Building stabilization or restoration and access by visitors in all areas of the fortress is an on-going interest. It is very important that plans for conducting such work include thorough and complete archaeological studies. For example, limited archaeological studies conducted at BSH 1 provide important information about the structures and associated material remains found there. It is important that restoration and stabilization of buildings such as the Lime Kiln and Lime Storage Building proceed only after careful and virtually complete study using archaeological techniques. Without archaeological studies, there is the risk of misinterpreting the architecture of a building and restoring it incorrectly. Furthermore, archaeological studies insure that features and artifacts critical to interpreting the use and chronology of a building are not lost or destroyed. Any archaeological studies, of course, should be done in conjunction with appropriate historical and architectural studies. Subsequent restoration should involve architects, historical architects, engineers, and building technology specialists.

Considerable historical research has been conducted on the Brimstone Hill Fortress. What would be of great benefit to further archaeological studies, both in general and specific to the role of slaves at the fort, is to compile a detailed building and

structure inventory. This would consist of a physical description and history of each building, including a chronology of its construction, a description of any subsequent modifications as well changes in its use, and the identification of previous structures at the same location. Smith (1990, 1992b) provides a general outline of the sequence and chronology in which the fort was erected. Except for Smith's (1990) discussion of Fort George, however, specific building histories and chronologies are currently unavailable.

Much data respecting the history of slavery at the fort remains to be collected. These data are directly relevant to archaeological studies, site restorations, and public education. Presently, it is not clearly documented as to how slaves were organized and housed during active periods of the fort's construction as well as during intervening periods of building maintenance. It is believed, for example, that plantation owners were required to provide some if not most of the construction labor used at the fort. If construction and maintenance crews were recruited from local plantations, did they work only on a daily basis, or were there areas designated by the military for long term slave residence? Were slaves who came from plantations located at greater distances temporarily housed in and around the fort, or were they quartered at plantation slave villages near the fort? Did slaves maintain temporary residences in major construction areas or industrial areas such as at stone quarries or lime production areas like BSH 1? Were residences maintained in conjunction with other manufacturing activities such as those at BSH 2?

It is also of interest to determine fluctuations in the labor force which occurred during major building episodes as happened in the 1780s and 1790s. The completion of Fort George, for example, was delayed in 1799 because the military had difficulty obtaining the necessary labor (Smith 1992a:58). In the late eighteenth century, Smith (1992b:37) also indicates:

The vast majority of building was carried out by plantation slaves and "Government Negroes" who lived on the Hill during the period of the works and had their own medical facilities.

Where were their residences and medical facilities? Did the British military maintain its own resident population of slaves at any other time during the fort's use? Similarly, it is important to know how construction and maintenance was met after emancipation occurred in 1834.

It is also known that slaves were formed into military units in the Caribbean (Buckley 1979), and Smith (1992b:33) indicates their presence at Brimstone Hill beginning in the mid 1790s. What was their relationship to white military units and to other slaves engaged in construction and maintenance activities? Were separate barracks and support facilities maintained for them. To prevent their capture large numbers of slaves were brought to the fort during the 1782 French siege. Although present for only a short time, their numbers were large enough that they could have left a lasting representation in the archaeological record. Is this the case?.

There are further questions regarding the internal organization of slave communities. It is known, for example, that plantation slaves were permitted different degrees of freedom to carry out religious, economic, and social activities (Halcrow 1982). To what extent was this true for the slaves who built and maintained Brimstone Hill? If these slaves represented a distinctive community associated with the fort, what was their relationship to plantation slave communities? Locating site areas utilized by slaves for domestic or industrial activities is important in meeting the goal of presenting the Afro-Caribbean history of Brimstone Hill. Such locations may or may not include structures, and if once present, many of these may have been of insubstantial construction and not easily detected by archaeological investigations. This may be the case at BSH 2.

Information relevant to the presence of slaves at Brimstone Hill surely is contained in archives in Great Britain, the United States, and the Caribbean. While archaeological studies guided by current available sources (e.g. Smith's research and the 1791 map of the fort) are valuable and informative, the economy and productivity of

these investigations would surely be enhanced if informed by the kinds of archival research suggested above. The results of historical and archaeological research are seldom fully realized over the short term. Patient and well planned investigations will surely be rewarded when conducted over the course of several years. The potential contribution of the Brimstone Hill project to the people of St. Kitts and to Caribbean scholarship is enormous.

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