

Wilfrid Laurier University

## Scholars Commons @ Laurier

---

Archaeology and Heritage Studies Faculty  
Publications

Archaeology and Heritage Studies

---

2007

### Fort Bruere 'Ill laid out and wers Executed.' Archaeological Investigation at Bermuda's Last Homegrown Fort

John R. Triggs

Wilfrid Laurier University, [jtriggs@wlu.ca](mailto:jtriggs@wlu.ca)

Follow this and additional works at: [https://scholars.wlu.ca/arch\\_faculty](https://scholars.wlu.ca/arch_faculty)

---

#### Recommended Citation

Triggs, John R., "Fort Bruere 'Ill laid out and wers Executed.' Archaeological Investigation at Bermuda's Last Homegrown Fort" (2007). *Archaeology and Heritage Studies Faculty Publications*. 6.  
[https://scholars.wlu.ca/arch\\_faculty/6](https://scholars.wlu.ca/arch_faculty/6)

This Article is brought to you for free and open access by the Archaeology and Heritage Studies at Scholars Commons @ Laurier. It has been accepted for inclusion in Archaeology and Heritage Studies Faculty Publications by an authorized administrator of Scholars Commons @ Laurier. For more information, please contact [scholarscommons@wlu.ca](mailto:scholarscommons@wlu.ca).

# Fort Bruere 'Ill laid out and wers Executed.' Archaeological Investigation at Bermuda's Last Homegrown Fort

John R. Triggs, PhD  
Associate Professor,  
Department of Archaeology and Classical Studies,  
Wilfrid Laurier University,  
75 University Avenue W.,  
Waterloo, Ontario, Canada N2L 3C5

*ABSTRACT: The close of the American Revolution signalled the beginning of Bermuda's role as a naval dockyard and it was at that time that plans were made for strengthening island defences. While there are many surviving examples of 19th-century fortifications, there are fewer remains of older permanent fortifications and even less is known of the impermanent field positions constructed by the local population. Fort Bruere, a small fascined fort on a hilltop in Tucker's Town, is one such fort for which little is known historically and for which archaeological excavation has the potential to provide additional information on what is one of the last truly Bermudian forts. Archaeological and documentary research serves to identify the site as a unique surviving example of a rare type of Bermudian fortification undeserving of its contemporary description. In a larger perspective the investigation contributes to our understanding of the development of fortifications in Bermuda during the transitional period between the close of American Revolution and the arrival of the Royal Navy.*

## INTRODUCTION

Over a period of 10 days in December 2005, an investigative excavation was carried out at a site tentatively identified as Fort Bruere located on private property in Tucker's Town, Bermuda (Figs. 1 and 2). Three areas were investigated: the interior and parapet of the fascined Fort, the Powder Magazine, and the Barracks/Cookhouse. Due to the limited time available for the excavation the initial goals of the work were limited to assessing the archaeological integrity of the fortification, identifying associated features, determining and confirming the

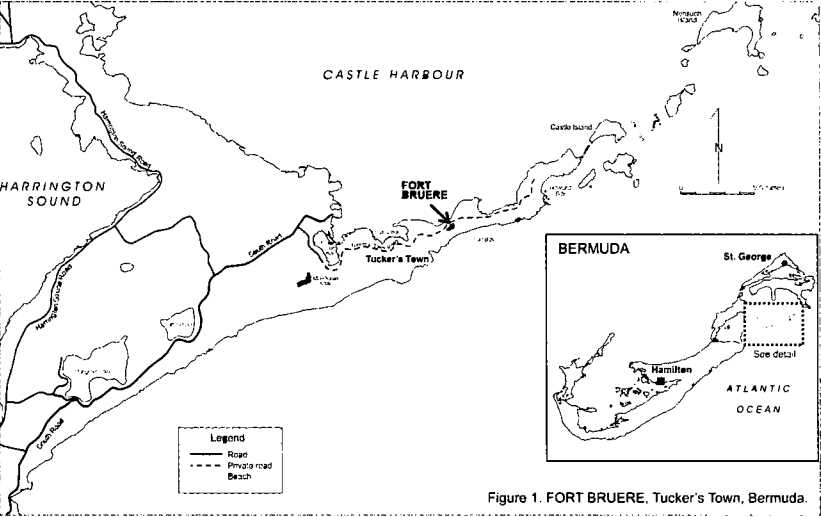


Figure 1. FORT BRUERE, Tucker's Town, Bermuda.

*Fig. 1: Fort Bruere, Tucker's Town, Bermuda*



*Fig. 2: Aerial view with surveyed features*

historically documented date of occupation, and recovering artifacts useful for investigating the day-to-day activities of the occupants. Artifacts and architectural features recovered during the excavation revealed that the archaeological remains on the property date to the late 18th century and further, that the remains have witnessed little disturbance since their discontinued use and abandonment. Archaeological and documentary research supports the identification of the site as Fort Bruere. Moreover, the archaeological evidence suggests that the fort was not necessarily deserved of the reputation rendered it by late-18th-century military engineers. This issue aside, the site is undisputedly a significant heritage resource representing a unique surviving example of a rare type of Bermudian fortification.

## HISTORICAL BACKGROUND

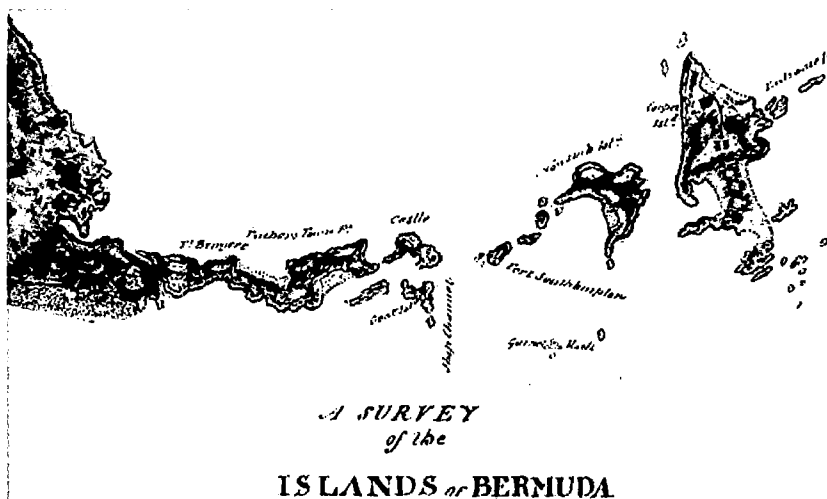
Fort Bruere is mentioned specifically in two separate accounts in 1783 by Simon Fraser, Royal Engineer [R.E.], and Capt. Andrew Durnford, R.E. The last battery to be built by native Bermudians, the fort was perhaps never finished as originally designed. According to Fraser:

This Battery Appears to me but of little consequence, as the Ground on the Opposite side is much higher, And of course must command it, that seems to have Accured to the Governor & Assembly, for about half a mile further in on the land, they have Begun a Work of fashines [Fort Bruere], on the Highest ground there, but like all the publick Works, belonging to these Islands, is given over before tis half finished, most of the Designs of this kind here, being ill laid out, and wers Executed, from this bad management, the people are discouraged, from voting money for publick uses.<sup>1</sup>

In the same year Durnford expressed similar sentiments about the poor design of the fort:

The Castle and Tucker's Town Point are Separated by a Channel full of sharp Rocks about 150 yards over, and the Point is above half a mile long forming the West [*sic*. South-east] Side of Castle Harbour and is a Succession of Hills. A small Oval Redoubt was begun during the War on the Top of the highest of these Hills, at about a Mile from the Castle, in order to prevent an Enemy's approaching this Point, and to command some Small Bays near it. This Work was intended for a Barbette Battery, but being placed injudiciously and raised in the front so high as to cover an enemy at the foot of it, I am of the Opinion, A Redoubt is necessary at this Place for the purpose above mentioned, but that this Work should be leveled, and the Redoubt more retired.<sup>2</sup>

It is thought that this plan was never carried out and that Fort



*Fig. 3: Detail of a Survey of the Islands of Bermuda, by Capt. Andrew Durnford, R.E., dated 1793*

Bruere fell into ruin in the years following the American Revolutionary War.<sup>3</sup>

This supposition is based on a 1793 survey of Bermuda forts by Capt. Durnford who mentions the fort and also identifies it on an accompanying plan (Fig. 3) but does not attach any significance to the site as a defensive position.<sup>4</sup> Durnford's sentiments and observations concerning the inadequacies of Bermudian fortifications in general are echoed in other surveys carried out in 1798<sup>5</sup> and 1806,<sup>6</sup> both of which contain no reference to Fort Bruere. An earlier report of fortifications in 1779–80<sup>7</sup> also contains no mention of the fort although this is presumably because it had not yet been constructed. Despite the omission of Fort Bruere these reports do contain useful information on the state of fortifications in Bermuda in the years prior to and following the American Revolution.

It is clear from Lt.-Colonel Robert Donkin's report in late 1779 that the Bermudas were in dire threat of being lost unless, the immodesty of the statement notwithstanding, *his* defence plan were put into place. The 'proper posts' were in ruins at that time, but for the 'trifling expense of 1,000 guineas' the defences could be put into a state that would repel an invasion, or as was widely feared, an assault from within by those sympathetic to the American cause.<sup>8</sup> The primary harbour defences at King's Castle and Fort Southampton were in neglected states, the former without a Guard house, ammunition and with the guns resting on rotten carriages. The construction of barracks for 200 (King's Castle) and 30 (Southampton) men was recommended as well as a cistern for the supply of fresh water at Southampton Fort, and a

new battery of six 24-pounders. Existing guns were described as “flakeing [*sic*] into scales” due to the salt water. Additionally, it was recommended that a force of 300 men was to be distributed at various existing redoubts on the islands, east and west ends, and new redoubts to be constructed where needed. Significantly, the height of land commanded by Fort Bruere is not mentioned. At the time of writing four companies of the Royal Garrison Battalion were stationed in Bermuda. These were augmented by a reinforcement of 129 men brought by Lt.-Col. Donkin.

Almost 20 years later, the 1798 report on the state of fortifications to the west of Ferry Reach is illuminating in the details it provides on the design of the forts, redoubts and breastworks, ordnance, and gun platform construction. In all, 20 fortified positions were described, most of which are forts with guns mounted *en barbette* (n=14) and only two with embrasures. For forts with embrasures Col. Jennings recommended that the openings should be filled with earth and stone and the barbette battery walls should be enlarged and strengthened. A single redoubt was described as being constructed of palmetto logs with embrasures. Gun platforms, where described, are almost equally split between wood (cedar planks) (n=7) and stone (n=8). In his recommendations, Col. Jennings called for all gun platforms to be constructed of cedar planks spaced one inch apart, to be raised on blocks six inches off the stone to prevent decay. Forty-two pieces of ordnance were reported in 1798. The most common calibre was the 9-pounder, followed by the 6-pounder, although there was a wide range of calibres employed on the island (Table 1). Clearly, Donkin’s call to deploy 24-pounders made two decades before had not been heeded. Several cannons were noted as being “very old and rust-eaten” and recommendations were made for fitting all the forts with a common 6-pounder calibre. The purpose of converting to a common calibre was to facilitate the supply of ammunition from two common magazines built to service all south-coast fortifications.

The 1806 report is particularly useful in that it provides information on the state of all fortifications in Bermuda almost 25 years after the close of the American Revolution. Twenty-eight forts, batteries, and breastworks are mentioned in this document. Of these the most common is the breastwork, which is comprised of a stone wall of 8-inch and/or 10-inch stones with a rubble core. These were located mostly along the South Shore and employed cannons firing *en barbette*. In fact, barbette batteries and positions (n=21) are three times more numerous than forts with embrasures (n=7). The most common artillery piece mounted in Bermuda at this time was the English-manufactured 12-pounder, followed by almost equal numbers of 18- and 9-pounders. However, the range of artillery pieces is considerable (Table 1), and, as well, small numbers of Dutch and French pieces were deployed at

**Table 1 ARTILLERY PIECES IN BERMUDA: 1783, 1798, 1806**

<i>Shot Size</i>	<i>1783<sup>a</sup></i>	<i>1798</i>	<i>1806</i>	<i>Non-serviceable ordnance 1806</i>	
36-pdr			2 (French)		
24				6	
18		1	5	20	2
12		2	5	40	1
9		4	13	19	4
6		14	11	10	3
4		8	6	6	2
3		2			
Unspecified	18				
8-in Howitzer			1		
Field guns					
8-in Howitzer			2		
6-pdr			8		
Total	47	42	114	12	

a few positions. These were mounted most often on stone gun platforms but a large number (n=9) had platforms of wood (pine/cedar planks on cedar sleepers) or no platforms at all. Purpose-built magazines were present for most of the individual positions, although in some cases positions in close proximity shared a common magazine. "Moveable magazines" were used extensively for storage of shot and powder within the often damp and poorly constructed permanent magazines which were not sheathed with brick or planks. In seven cases, magazines were cut out of the natural rock. In addition to the magazines located to the rear of the positions, several types of structures were also mentioned in connection with the various defensive locations: dwelling houses/barracks, kitchens, guard houses, store-houses and a single watch house.

It is clear from the evidence presented above that the politically turbulent and uncertain period following the American Revolution up to the first decade of the 19th century was also a militarily transitional one as regards Bermuda fortifications. Prompted by the events of the continental war, there was clearly a desire on the part of the Colonial administration to take stock of the fortifications and ordnance with a view towards making improvements where deemed necessary. Durnford's and Fraser's surveys of 1783 make it clear that some of the earlier 18th-century forts and batteries were in need of improvements and that others were of little use, particularly some of the smaller south coast batteries. Of the 47 pieces of ordnance recorded, the most common calibre appears to have been the 6-pounder, followed by the

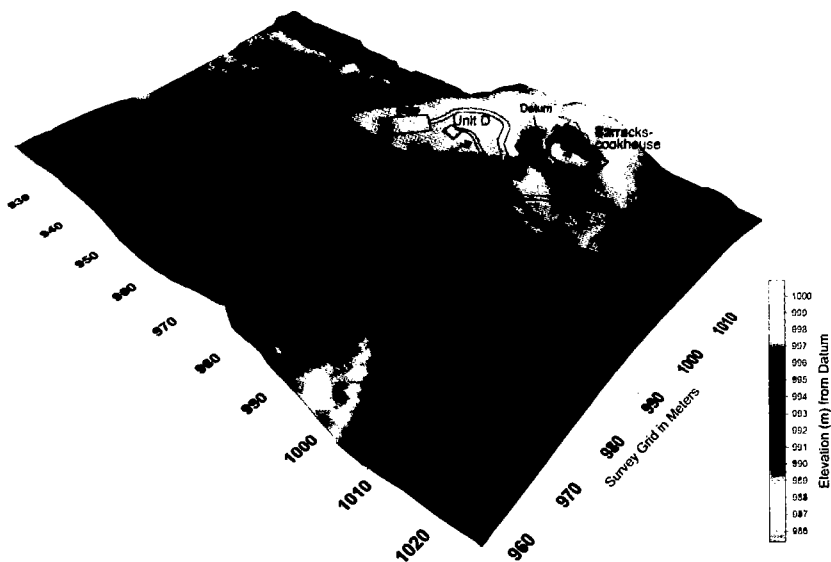


Fig. 4: Orthographic perspective of site area showing features investigated

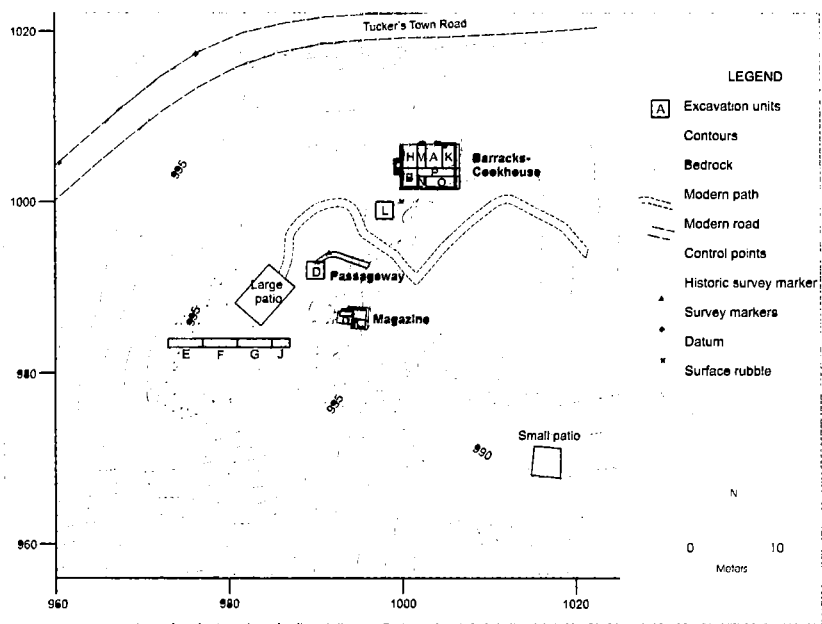


Fig. 5: Contour map showing excavation units and areas investigated



4-pounder. Most defences at this time were *en barbette* batteries. All were built of stone, some mortared, others of un-mortared rubble, and only two fascine breastworks existed of which Fort Bruere stands as one of these rare examples. Fifteen years later, the general size of the ordnance had increased to favour 9-pounders, although a considerable number of 6-pounders was still in existence. Recommendations, made in 1798, for *en barbette* batteries with wood gun platforms appear to have been ignored, as in 1806 a greater number of forts still had parapets with embrasures and stone gun platforms. Also, the general trend for the size of ordnance to increase is evident as 12-pounders were twice as numerous as the next smaller and larger calibres.

By examining these contemporary accounts it is possible to hypothesise about certain aspects of Fort Bruere for which information is unavailable in the documentary record, and for which archaeological investigation has yet to reveal. When Fort Bruere is viewed in historical context, it seems clear that there would have been little impetus to improve the fort in the years following the 1783 survey. It represented a fort thrown up in haste due to the exigencies of the American Revolution, perhaps without sufficient consideration of the strategic value of the position as noted by Durnford in 1783. Also, in relation to the other stone forts and batteries, the fascined work was a rare type of little defensive value. If guns were ever mounted at Fort Bruere (there is no mention of this being done) one can imagine that these would have been small calibre—probably 6-pounders—mounted on wooden carriages running on either stone or wooden platforms.

## EXCAVATION METHODOLOGY

During the 10-day field investigation a total of 15 excavation units of varying size, comprising an area of just under 60 square metres, were laid in (Figs. 4 and 5). A stratigraphic excavation methodology was employed, and post-excavation analysis used the Harris Matrix<sup>10</sup> for the construction of the occupational history of the Barracks/Cookhouse. Digital photographic recording was employed exclusively and images were later merged to produce composites of all excavation areas, particularly the long exploratory trench on the hilltop. In addition to the *objective* photographic documentation, measured drawings were also produced to complement these and to serve as *subjective* interpretative records of all architectural and structural features. Topographic mapping of the site area and specific features was carried out using a laser-guided total station transit. Thousands of points collected over the 10-day period have been used to produce the topographic map and orthographic projection in Figs. 4 and 5, respectively. The site as a whole was divided into three excavation areas: the hilltop Fort, the Powder Magazine, and the Barracks/Cookhouse.

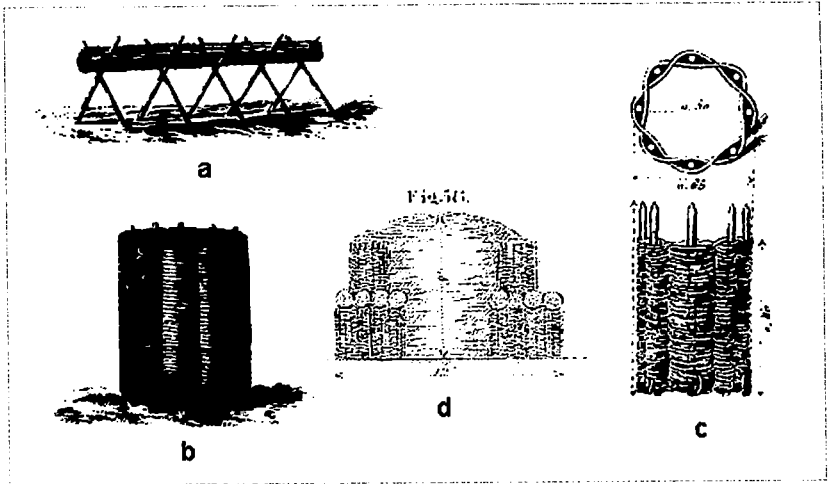


Fig. 6: Various depictions of fascines and gabions: (a) gabion from Joshua Jebb Sieges Duties Plate VII, 1857; (b) gabion from J. Laisne Aide-Memoire Portatif Chapter VIII Plate 1, 1837; (c) gabion from Joshua Jebb Sieges Duties Plate VII-02, 1857; (d) gabions and fascines from Mahan, D. H. A Treatise on Field Fortification, Fig. 58, pp. 59, 1861

## THE FORT

Fort Bruere sits atop the highest outcrop on Tucker's Town peninsula. At an average elevation of about 25 metres above MSL (Fig. 2) this position served the strategic role of providing a landward defence for the Castle Island fortifications, and also to cover the small bays on both the seaward and harbour side of the peninsula. As noted above, the earliest surviving account of the fortification is by Simon Fraser in 1783 who described the fort as having been constructed of fascines. In the same year, Andrew Durnford further related that these fascines had been raised so high as to allow an opposing force to advance below the line of fire. These early descriptions have proven useful in interpreting existing archaeological features at the site. During a visit in 1994, Edward Harris and Norman Barka noted a linear distribution of small rubble along the west side of the hilltop and following the natural curve of the hill on the south side.<sup>11</sup> In 2005, prior to excavation in this area, the same distribution was visible, although partially obscured by vegetation. After clearing vines and undergrowth it became evident that the stones followed the upper contours of the hill, suggesting that these may represent vestiges of the original 'fascined fort' referred to by Fraser and Durnford.

Fascines, most commonly associated with field fortifications in a military context, are bundles of brushwood (1–2 ins diameter) of varying length (6–20 ft depending on the availability of material), tightly bound together with wire or withes (Fig. 6a).<sup>12</sup> These were often



*Fig. 7: Digital composite overhead view of the exploratory trench showing the two rubble deposits from deteriorated fascines on either end separated by the expanse of bedrock forming the interior of the fort*

combined with gabions—wicker baskets about 2 ft 9 ins to 3 ft in height and about 2 ft diameter (Figs. 6b, 6c)—which when placed vertically and filled with earth, could be combined with horizontally-laid fascines to create a parapet (Fig. 6d).<sup>13</sup> In the case of Fort Bruere, the absence of compactable earth in the area appears to have prompted the substitution of stone rubble as fill within the wicker baskets. If so, it is thought that the line of stones visible on the ground surface along the brow of the hill may represent the original fascined work, which has deteriorated *in situ* and which has not been disturbed for more than two centuries.

To investigate this feature, a 14 x 1m trench was laid in running in an east-west orientation across the hilltop intersecting the east and west edges of the hill at an oblique angle [Units E, F, G, and J]. Over a period of several days excavation in this area confirmed the hypothesis that the stones were indeed related to the fort. Definable distributions of rubble were found in both ends of the trench separated by an expanse of bedrock floor with virtually no rubble present (Fig. 7). At the west end of the trench, where stones were first visible on the ground surface, excavation revealed that the deposit was over one metre in depth with smaller-sized stones overlying a bedding of larger stone rubble. Although the line of stones was intersected at an angle, the linear distribution was approximately two to three metres wide. At the east end of the trench, excavation revealed a similar line of rubble which was not visible prior to excavation and which was buried only a few centimeters below the surface (Fig. 8). These also defined a linear feature about three metres in width. Both lines of stones at each end of the trench were separated by a distance of about six to seven metres in which only a few, isolated larger stones were found on top of the natural bedrock below the sand fill. The natural bedrock floor was exposed below about 60 cm of sand that had presumably collected in the 'trap' formed by the two adjacent lines of stone on opposing sides of the hilltop.

Evidence that the stones represent the original line of fortifications



is suggested by the small number of 18th-century artifacts found among the rubble at the west end of the trench and in the sandfill between the two lines. Fragments of 18th century ceramics; *e.g.*, blue-painted tin-glazed earthenware, white salt-glazed stoneware, and porcelain, in addition to a flat iron, and three musket flints and fragments were recovered from the trench (Fig. 9). The recovery of these artifacts from within the rubble provides strong evidence supporting the hypothesis that the rubble concentrations represent the original fascined work that has remained in a relatively undisturbed state since the construction of the fort in the late 18th century. Based on the width of the rubble distribution (three metres) it appears that the fascines deteriorated *in situ*, such that the stones inside the fascines dispersed laterally on both sides of the original placement. This appears to have happened over a prolonged period of time since some of the rubble fill from the fascines was found on bedrock and also within the sand deposits adjacent to and contiguous with the main body of rubble, although at different levels.

## THE POWDER MAGAZINE

This structure is located on the east face of a rock outcrop that bisects the study area dividing it into two, roughly equal, east and west halves (Figs. 4, 5). Protected by a natural overhang, the entrance to the magazine chamber is visible as a small alcove that has been quarried out of the soft stone bedrock at the lowest ground level along the cliff face (Fig. 10). The difference in elevation between the top of the slope, where the steps to the hilltop battery are located, to the base of the alcove, is about 3 m. The alcove itself measures about 1.6 by 1.9 m (about 5 x 6 ft) in area and about 3.9 m (12 ft 6 ins) in depth as measured from the top of the artificially cut surface down to the base of the alcove floor (Fig. 11). Although several stones were found within the alcove, buried beneath more than a metre of wind-blown sand, the original access to the floor level of the entranceway and magazine proper was probably by wooden steps. This is suggested by the seemingly haphazard arrangement of large stones that, although apparently forming a set of rudimentary steps, are thought to be too randomly placed to have been the original entranceway staircase. Instead, it is suggested that

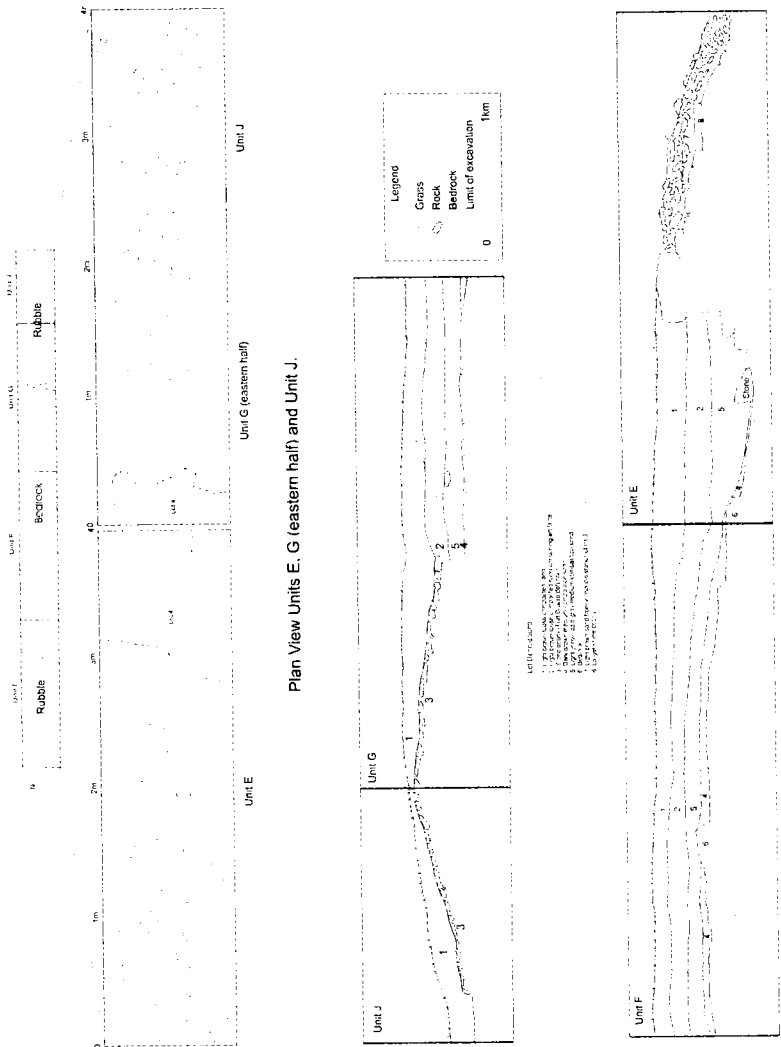
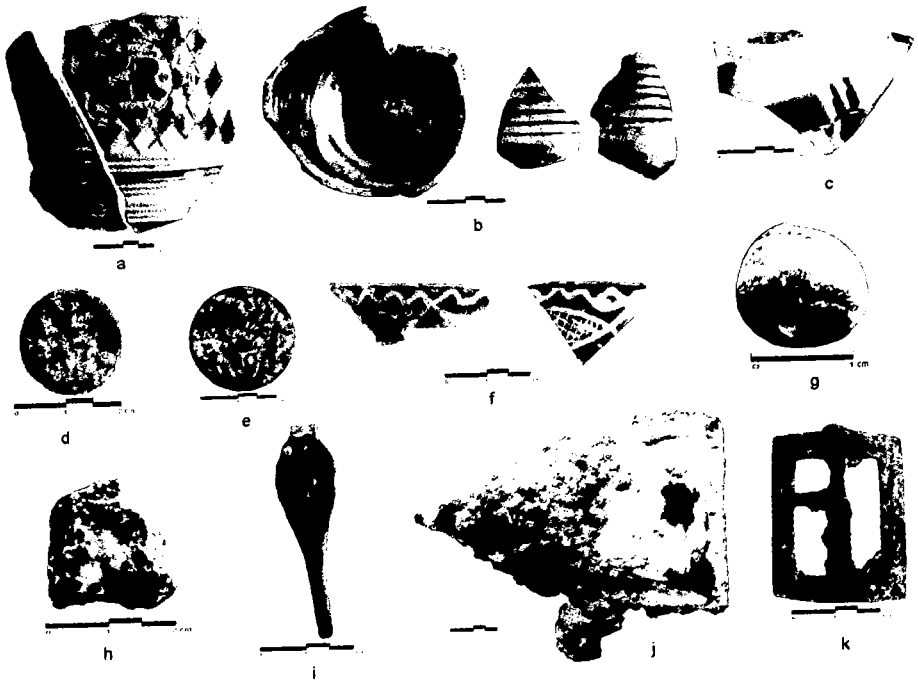


Fig. 8: Profile and plan views of the Fort exploratory trench



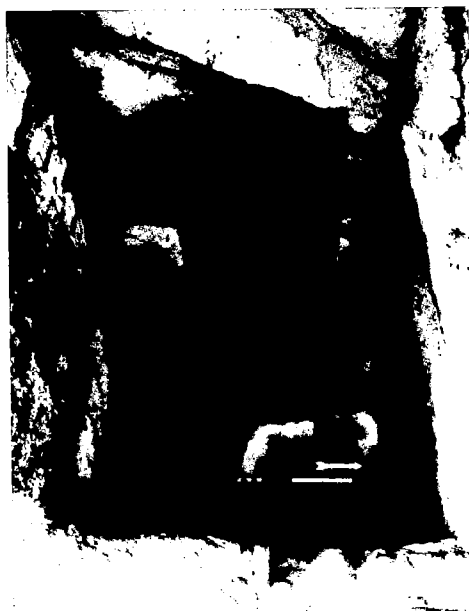
*Fig. 9: Selected artifacts recovered from various units: a) Rhenish stone-ware with 'GR' armorial pattern [Kitchen midden]; b) Bristol slipware [barracks/cookhouse]; c) painted tin-glazed earthenware [fort]; d) Royal Provincials regimental button, pewter [barracks/cookhouse]; e) 80th Regiment button, pewter [barracks/cookhouse]; f) etched stemware glass (shaded blue for emphasis, original is clear) [kitchen midden]; g) wire-wound blue glass 'Dutch' bead [magazine]; h) honey-blonde gun flint [fort]; i) trigger guard from pistol [barracks/cookhouse]; j) flat iron [fort] (k) brass buckle [cookhouse/barracks]*

these were laid at a later date when the chamber no longer functioned as a powder magazine but was still used for other purposes. Evidence of the wooden staircase may be present in the form of small, irregularly shaped niches, presumably for timber supports, cut into the sidewalls of the magazine alcove.

Clearing away the wind-blown sand from the interior of the magazine and the alcove consumed the first day of work on site and much of the second day. Sand that had drifted down into the magazine was removed bucket-by-bucket and screened through ¼ inch wire mesh to recover artifacts. As noted above, the greatest depth of sand was found in the alcove and entrance area outside the magazine chamber where it reached a depth of more than one metre. Prior to excavation the actual doorway to the magazine, quarried out of the natural stone, was



*Fig. 10: View of powder magazine showing rock overhang and alcove below*



*Fig. 11: Overhead view of alcove in front of powder magazine after clearing away over 1 m of sand*

visible as an opening about 1.3 metres in height above the sand layer making it necessary to stoop upon entering the interior. After clearing away the sand, the full dimensions of the doorway were exposed at 1.8 m (5 ft 9 ins) high by 0.95 m (3 ft) wide (Fig. 12). This sand fill followed a gentle slope into the magazine where it covered the natural stone floor to a depth varying from about 40 cm at the entrance to about 10–15 cm at the rear of the chamber.

The interior of the chamber itself measures about 3.3 m (10 ft 6 ins) long by 2.9 m (9 ft 4 ins) wide (greatest width) and approximately 2 m (6 ft 5 ins) in greatest height (Fig. 12). Vertical side walls and a slightly arched ceiling were created by chiseling the soft stone bedrock as indicated by tool-marks visible on all flat surfaces (Fig. 13). The magazine resembles the 18th-century descriptions of similar structures by Andrew Durnford and Simon Fraser, in that planking was apparently not used to sheath the sides and the interior was anything but dry. Given the close correspondence with contemporary descriptions, as well as the communication of the structure with the hilltop

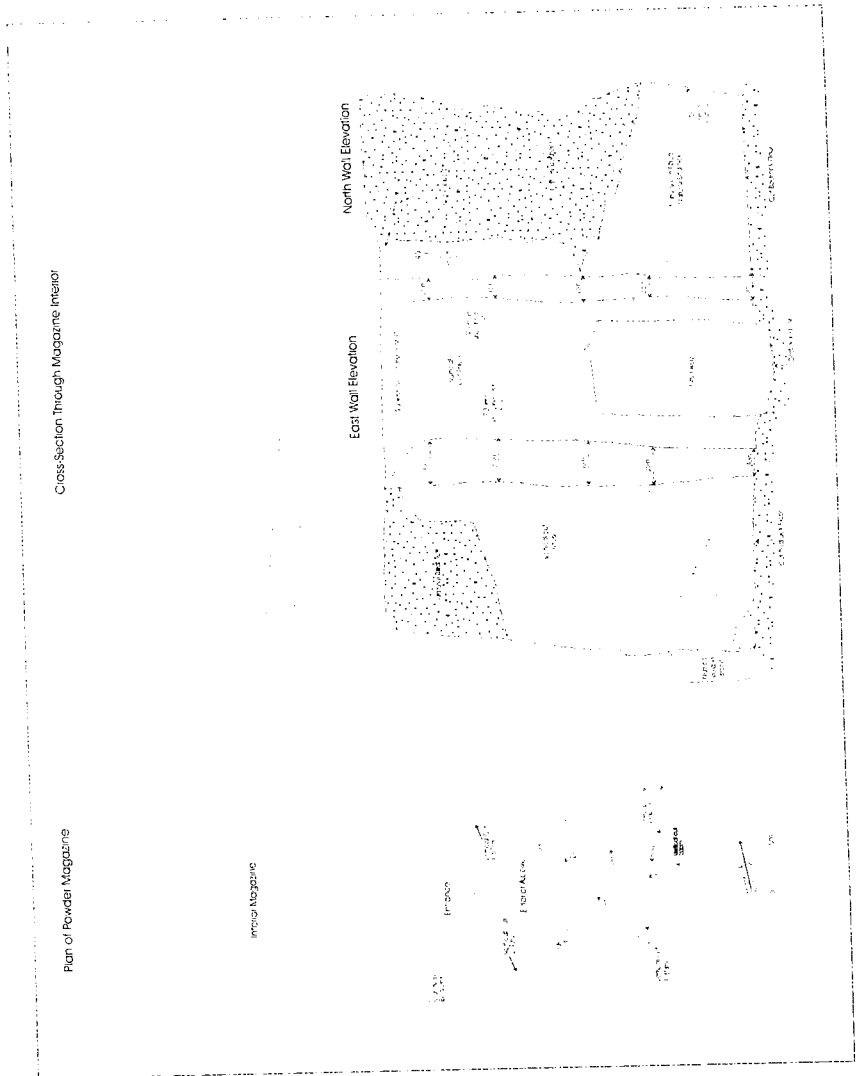


Fig. 12: Measured drawing showing plan, elevation and cross-section of powder magazine





*Fig. 13: Interior of powder magazine showing chisel marks and graffiti on walls*



*Fig. 14: Excavating the passageway from the magazine to the Fort*

fort by way of a passageway leading from the face of the same cliff to the battery above (Fig. 14), its function seems obvious. More importantly, however, the covered position of the magazine at the base of the slope behind and below the battery itself, points to a well-conceived use of the natural landscape to which the fort and ancillary structures were adapted.

The passageway connecting the magazine to the hilltop battery was first documented by Drs. Edward Harris and Norman Barka during a site visit in 1994. At this time a vertical cut 60 cm wide was noted in the east face of the rock outcrop upslope and to the north of the magazine. This hypothesised passageway connecting the lower magazine with the upper battery is pictured in Harris.<sup>14</sup> In the latest investigation, excavation of the feature by pick and shovel over a period of one-and-a-half days soon revealed that the narrow passageway continued for a distance of about six metres running upslope where it would have originally opened onto the natural bedrock surface of the fort interior [Unit D]. The parade or interior of the fort would have been the area encompassed by the line of fascines which



*Fig. 15: Unit D at the end of the passageway. Note the steps cut from the bedrock at left*



*Fig. 16: The Barracks/Cookhouse fireplace and area prior to excavation*

formed the parapet around the circumference of the hill. The passageway is characterised by neatly cut vertical walls which rise about one metre in height above a flat, inclined natural bedrock floor. A few metres from the upslope end three steps have been cut to facilitate access and egress (Fig. 15). Clearly, the purpose of the passageway was to provide communication between the magazine and the battery but in a protected or 'covered way' below the line of sight. As with the magazine itself, the adaptation and modification of natural features to suit the requirements of a militarily defensive position point to a well-conceived plan and execution that contradicts the contemporary description of the fort as '*ill laid out and wers executed.*'

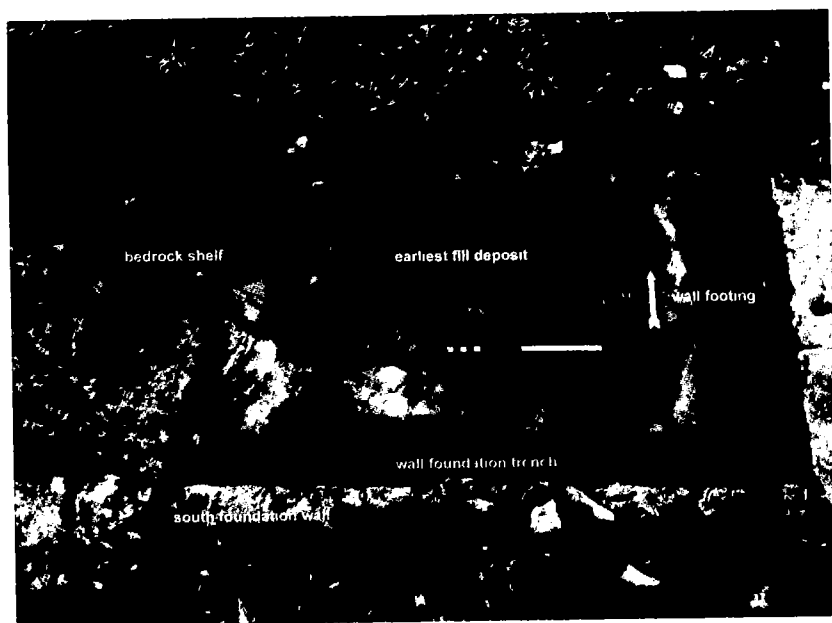
The few artifacts recovered from the powder magazine were intriguing in that they were unlike other assemblages found in other contexts. At the rear of the magazine, a natural cavity in the floor appears to have acted as a trap for artifacts that may have been washed down into the lowest part of the interior chamber [unit q]. One artifact of particular interest was a hand-made, wire-wound blue glass bead, or 'Dutch bead,' of the type commonly associated with the 16th- and 17th-century slave trade (Fig. 9). This was found together with a relatively large number of fish bones, smaller numbers of mammal bone, scrap lead, a musket flint fragment, and iron scales such as the type described by Donkin in 1779 in connection with the eroding cannons. Unfortunately, the context in which the artifacts were found prohibits an interpretation of the items other than to suggest that they represent a collection of items whose association is spurious—an association resulting from natural, as opposed to human, agency.

## THE BARRACKS/COOKHOUSE

Evidence of this structure was visible prior to excavation as a masonry wall and fireplace built on top of a natural stone foundation that had been quarried out of the native bedrock (Figs. 16, 17). Prior to excavation, the presence of a fireplace suggested the structure may have represented a cookhouse/kitchen, although the date of the building and the association with Fort Bruere remained to be substantiated. Three test excavation units [Units A, B, and C] were placed on the inside of the structure adjacent to the north, west and south walls in an exploratory investigation aimed at determining the depth of deposit within the structure, date of construction, duration of use, and function. Based on the findings from these exploratory units, namely, that the depth of soil over bedrock was not substantial, a decision was made to excavate the entire interior of the structure in the time that remained.

In the preliminary excavation, during the first two days on site, the natural bedrock was exposed in the southwest corner of the building adjacent to the west wall and fireplace. In this area, bedrock was covered by about 20–25 cm of sandfill which sloped slightly to the

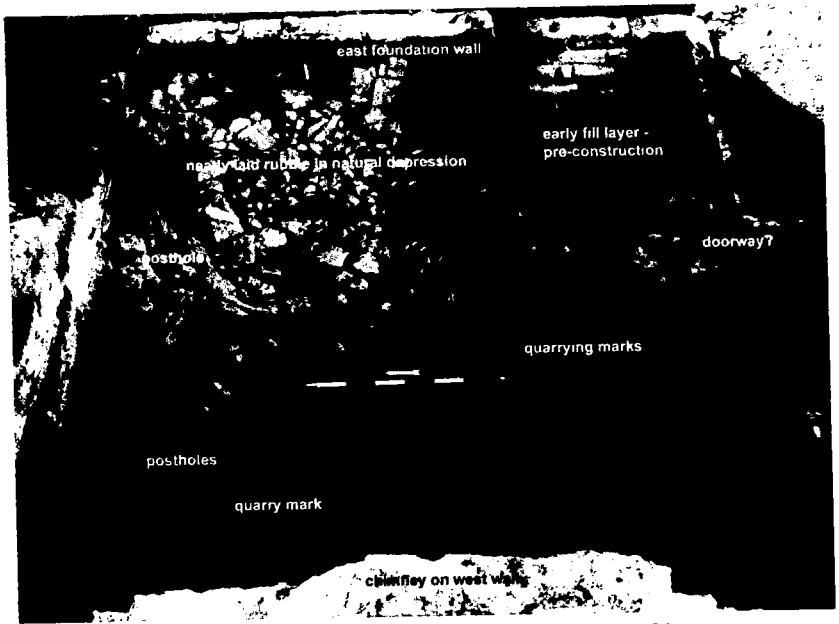




*Fig. 18: Overhead view of unit C showing foundation walls and presumed doorway on south side of Barracks/Cookhouse*

east following the natural contour of the bedrock. Bedrock was found in the other excavation units at a similarly uniform depth, with the exception of unit C. Here a natural break in the bedrock surface resulted in a difference in elevation such that the east half of the unit was about 40 cm lower than the west section (Fig. 18). This uneven surface or cavity was filled with sand which was deposited prior to the building's construction. Also of interest was a neatly laid rubble deposit found in units A, K, M, and P. The careful placement of stone rubble in what was presumably a natural declivity in the bedrock, created a rudimentary pavement, or level surface, on the interior of the structure (Fig. 19). Other features revealed in the bedrock floor on the interior of the structure were quarrying marks found in units B, C, H and N (Fig. 20). In these locations, vertical grooves in the bedrock clearly outline three stone blocks that were initially cut but never removed, probably because the surrounding excavation/quarrying had reached the desired interior floor level.

The east side of the building is defined by a wall, four to five courses in height. The exterior face of the wall is constructed of neatly cut blocks which rest on a course of sill stones laid perpendicular to the wall stones (Fig. 21). On the exterior of the building the stones are plumb and true, while on the interior no effort has been taken to create a neat face. The reason for the difference in construction can be attributed to the fact that the exterior wall was visible above ground



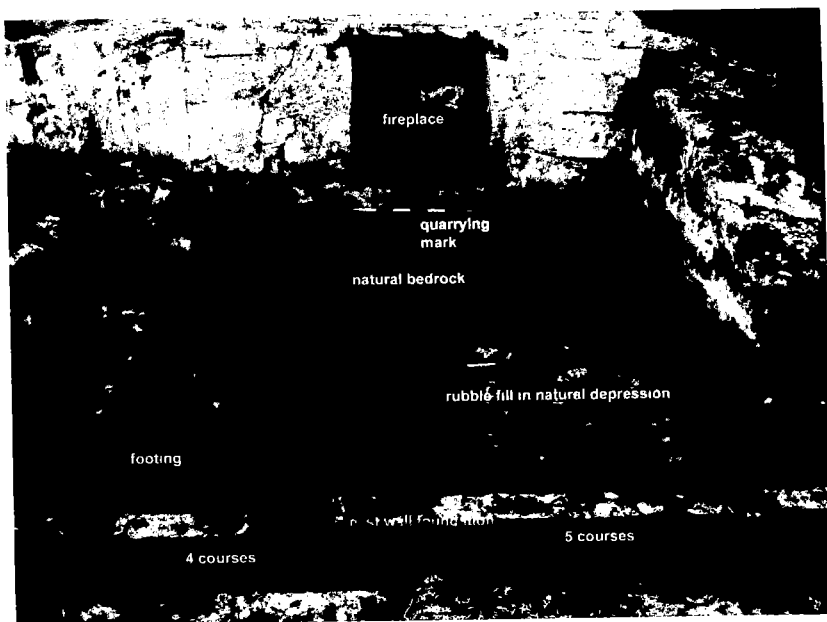
*Fig. 19: Overhead view of Barracks/Cookhouse. View looking east*

level while the interior stones would have been below floor level inside the building. The interior floor level would have been at least as high as the highest projecting surface of bedrock which was located in the southwest corner of unit C. Also, in this location, some small cut stones laid in the natural bedrock suggest the presence of a doorway threshold.

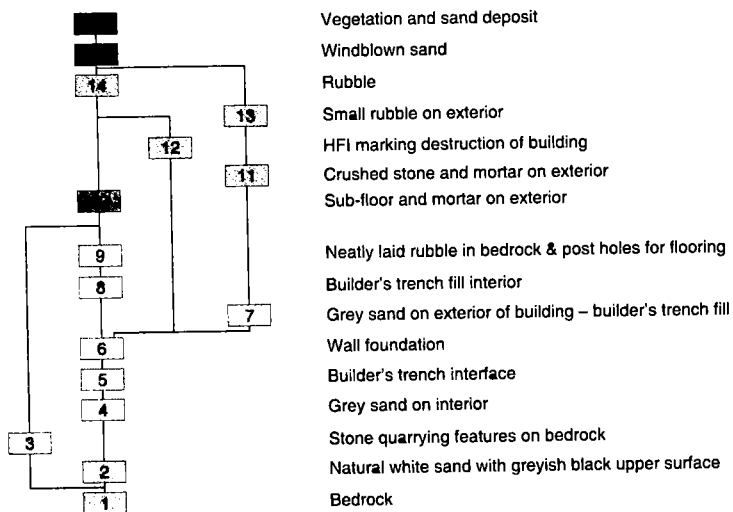
In order to lay a wooden floor on the interior, it would have been necessary to level the planks by raising the north section of the floor to the same level as the south side where bedrock was higher by a few centimetres (Unit C). Evidence for floor construction, and the levelling that would have been necessary, may be represented by four post holes which have been excavated into the bedrock on the north side of the building. The theory is that these could have acted as vertical supports for a horizontal sleeper timber since the post holes are in an east-west alignment and parallel with the north wall foundation. Planks laid across such a horizontal sub-floor sleeper would have been oriented in a north-south direction with the south end presumably resting on the bedrock in this area or otherwise tied to the south wall foundation, perhaps through the use of a wooden wall plate. The recovery of several dozen wrought-iron nails from various units within the building interior lends support to the idea that a wooden floor was present during the life of the building, although no traces of the wooden floor itself were found.

## BARRACKS/COOKHOUSE STRUCTURAL HISTORY

The earliest period (brown boxes) is represented by the soft stone bedrock [Phase 1] and a naturally deposited layer of white, windblown sand [2]. This layer is about 10 cm thick on average and is found on the exterior of the structure where it was later cut by the builder's trench [5]. The first two events in Period II (yellow boxes) are the stone quarrying features [3], discussed above, which have been cut into the natural bedrock, and the leveling deposit of gray sand found in unit C [4]. The sand clearly pre-dates the construction of the building, yet the recovery of two smoking pipe stems indicates that the layer



*Fig. 21: Overhead view of Barracks/Cookhouse showing features exposed during the excavation. View looking west*



*Fig. 22: Harris Matrix showing the stratigraphic relationships between the 16 phases of construction documented during the excavation. These have been grouped into five periods of occupation*



was not deposited naturally. Stratigraphic superposition indicates that this cavity or low-lying area was filled in prior to the construction of the building. Although the paucity of artifacts does not allow for a more precise dating of this event, it can be said that the building had not yet been planned at the time the depression was filled in because the builder's trench truncates this layer.

The actual construction of the building is represented by events [5] (the builder's trench interface), [6] (the wall), and [7]/[8] (the builder's trench fill on the exterior and interior). As noted above, the exterior face of the wall presents a neatly constructed face which would have been visible above the buried footing and lower course. Deposition, probably by wind-blown sand after the building was abandoned, has served to bury the lower three to four courses. The next event is the neatly laid rubble deposit on the interior of the building [9] laid prior to the construction of the wooden floor. The floor itself would have been supported on sub-floor sleepers presumably resting on the posts (in units A, H and K), which, set at the same height, would have served to level out the natural irregularities in the bedrock surface.

The occupation and abandonment of the structure is represented by phase [10], a reddish brown sand deposit found throughout the interior with the exception of the west side adjacent to the fireplace where the bedrock is naturally higher. This layer contained a significant proportion of all artifacts recovered from the interior excavation. Items found in the building interior are varied and include construction materials (57 nails), building hardware (a hinge and L-bracket), gunflint fragments, two regimental buttons (the 80th and Royal Provincials), a brass thimble, food bone (over 400 small fragments of bird, fish and mammal), wine bottle shards, an etched glass stemware shard, several varieties of tableware ceramics, smoking pipe bowl and stem fragments (nine pieces).

The most informative artifacts recovered were the buttons and ceramics. Although reliance on 'small finds' for dating purposes can be notoriously unreliable, since these items can find their way into the archaeological record in any number of ways, the two pewter regimental buttons (Fig. 9) do provide a tentative date for the occupation of the Barracks/Cookhouse, between 1776 and 1783. The 80th regiment, also known as the Royal Edinburgh Volunteers, was raised in Edinburgh and arrived in New York in August 1779. They were sent to Virginia in April 1781, and ultimately surrendered at Yorktown in October of that year. They were disbanded in 1783. The Royal Provincials or King's American Regiment was raised in 1776 in New York. It became a British Regular Regiment in December 1782 and was disbanded in Saint John, New Brunswick, in the autumn of 1783.

As with almost any historic period archaeological assemblage, the

artifact class that is most temporally diagnostic is ceramics. Importantly, dates provided by the ceramic assemblage as a whole support the two 'button-dates.' Many of the waretypes and decorative types recovered were popular in the middle decades of the 18th century (Table 2). The latest types recovered, creamware and pearlware, provide a *terminus post quem* for the deposit of 1760 to 1780. However, earlier ceramics such as tin-glazed earthenwares, common in the middle decades of the 18th century, predominate in the assemblage and point to the use of older, outmoded ceramics by the occupants. Several varieties of earthenware and stoneware also provide information on socio-economic status of the ceramic users and broader information on 18th-century ceramic supply in Bermuda. For example, the sample of Chinese export porcelain had a significantly higher purchase price than other, more common earthenwares such as tin glazed and lead glazed wares, pointing to its use by officers rather than soldiers. Also, the variety of waretypes recovered (Table 2) points to a ceramic supply originating in England. This stands in contrast to 17th-century sites in which a wide-ranging trade network involving several European countries is more usual.<sup>15</sup> Other high status items associated with officers include a trigger guard from a flintlock pistol, etched glass stemware, and a decorative brass clothing buckle (Fig. 9).

Continuing with the structural history of the building, the destruction of the Barracks/Cookhouse is marked by [12] the leveling of the north, south and east walls. Rubble resulting from the destruction of the building is found on both the exterior [11]/ [13], and the interior [14]. On the exterior the deposition of this destruction debris raised the ground surface about 30–40 cm, thereby covering the lower courses of the wall. On the interior of the building the walls were razed to the level of bedrock and only a few isolated pieces of rubble were found rather than a continuous rubble deposit.

The final phase in the history of the building is represented by the deposition of wind-blown sand [15] & [16], which in-filled the interior of the building eventually forming a level, grassed area that covered the north, south and east foundation walls. Several artifacts recovered in the sand deposit probably reflect those items discarded during the demolition of the building. These include a wide variety of materials similar to those found in Phase [10] that serve to date the period of demolition and which also provide evidence for the function of the structure. Ceramics recovered from this Phase include 18th-century wares such as Bristol slipware (Fig. 9), white salt-glazed stoneware, tin-glazed earthenware, porcelain, pearlware and blue painted, refined white earthenware. The latest type, blue-painted refined white earthenware, was introduced after 1830, suggesting that the interior of the building may have been exposed as the sand deposit accumulated in the decades after abandonment. With the exception of

**Table 2 CERAMIC TYPES**

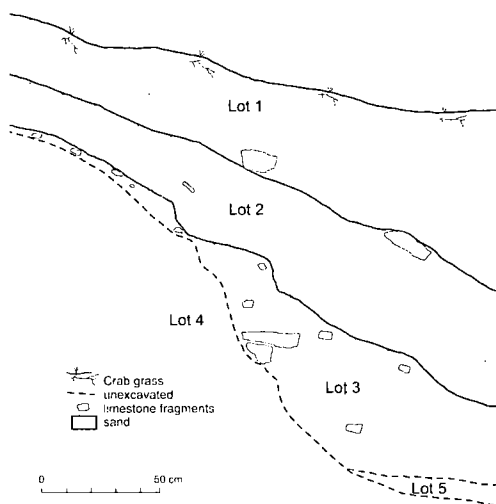
<i>Type</i>	<i>Date range</i>	<i>Mid-range date</i>	<i>Country of</i>	<i>Vessel type</i>
White salt-glazed stoneware—basket weave pattern	1740–1770	1755	England	tablewares: cups saucers, plates
Porcelain	Late 17th to 19th cent.	common in 18th cent.	China	teawares common
Scratch-Blue	1744–75	1760	England	tablewares—cups, saucers, pitchers, punch pots
Bristol slipware	1670s–1770s	1720s	England	wide variety of tablewares, utilitarian wares and decorative pieces
Astbury	1720s–50s	Mid-1730s	England	teapots and cups, bowls, coffee pots
Rhenish stoneware	1720–60	1740	Germany	globular bottles, jugs, tankards
Armorial pattern 'GR' motif	George II			common
Rhenish stoneware	Late 17th cent. to 1770	c.1730	Germany	globular bottles, jugs, tankards
				common
Tin-glazed, blue-painted	1630s–1790s	c.1710s	England	tablewares, teawares and apothecary jars
				most common
Sgraffito	1640–1720	1680	England	plates, mugs
English brown stoneware	1690–c.1780s	Mid-1730s	England	Drinking vessels/ bottles, tankards and jugs common
Jackfield	1740s–60s	1750s	England	tea and coffee services
Creamware	1762–c.1800	c.1780	England	all tableware forms, toiletry and decorative pieces
Pearlware	1779–1820s	c.1800	England	all tableware forms

this late variety most of the sherds recovered are similar to those found in the earlier layer [10] associated with the occupation of the building. Minimal numbers of late 18th-early 19th-century wares such as creamware and pearlware suggest that the structure was abandoned in the late 18th century, probably before the 1790s, by which time these

types had largely supplanted the more popular 18th-century types such as tin-glazed earthenware and white salt-glazed stoneware. The diverse artifact assemblage also includes food-related items such as dark green wine bottle glass, olive green case bottle glass and butchered animal bones in addition to the numerous ceramics. These materials support the proposition that the building functioned as a kitchen. Other items such as gunflint flakes, lamp chimney glass fragments, a bone button, smoking pipe fragments, and a brass drawer pull suggest that the building may have functioned as more than simply a kitchen, but also as a barracks accommodation for soldiers and officers. Certainly, the porcelain, brass drawer pull and etched glass stemware found in Phase 10, are high status items and indicate that officers probably used the structure. On the other hand, the regimental buttons are clearly not from an officer's uniform, and attest to the presence of soldiers in the structure.

Recovered architectural items further provide some clues as to the appearance of the building. The complete absence of window glass argues for some other type of window covering or none at all. Also, the recovery of a wrought-iron door hinge and latch near the south wall of the building suggests that the door may have been situated along this wall. Further evidence for this may be indicated by a cut in the bedrock and the placement of several vertically laid chinking stones adjacent to the middle section of the south wall (Fig. 20). The recovery of dozens of wrought-iron nails from the interior also provides substantial evidence for the presence of a wooden floor as mentioned above. Finally, the structure was probably a single storey in height with a gabled roof on the east and west ends as suggested by the remaining stonework on the west wall adjacent to the fireplace. Here the angle of two remaining cut stones on the upper course of the wall indicates that the pitch was 34 degrees.

Further support for the function of the building as a kitchen is found in a midden deposit on the exterior of the structure in Unit L. Located on the southwest corner of the building, close to the proposed doorway location on the middle of the south wall (Figs. 19 and 20), a midden was found within a deep natural declivity in the bedrock adjacent to the west wall. Here, below almost two metres of windblown sand (Fig. 23), an assemblage of artifacts was recovered that dates to the 18th-century occupation of the building. Over 200 fragments of food bone, mostly fish, followed by almost equal numbers of bird and mammal, comprise the majority of artifacts found. Also of interest, are the shards of etched glass stemware and the Rhenish stoneware sherds that match samples found within the Barracks/Cookhouse. The Rhenish stoneware fragments mend to form a large section of an armorial pattern tankard with a 'GR' motif (Fig. 9). This probably denotes George II (*r.* 1727–60) rather



*Fig. 23: Unit L, the kitchen midden, east profile, showing the depth of fill over bedrock*

than George III, as this imported armorial style was in decline by the 1770s. Other 18th-century ceramic types include tin-glazed wares, and Derbyshire stoneware.

In sum, the archaeological evidence for the Barracks/Cookhouse points to a building that was constructed to take advantage of the natural landscape. Quarried as it was out of the natural outcrop in such a way that it would have been low on the horizon and invisible to a force attacking from the landward side, it was also placed low enough on the land-

scape as to be virtually invisible from the seaward side. In essence, the structure, as with the magazine and the fort, were constructed to take advantage of the natural landscape features while at the same time satisfying defensive requirements. Features and artifacts recovered point to a building whose neat construction exhibits forethought in planning and a certain level of technical skill, as evidenced by the plumb walls, level foundation, and level floor.

## CONCLUSIONS

Several factors combined enhance the heritage value of Fort Bruere. Although deemed to be of dubious defensive value in 1783 due to poor planning and execution, archaeological evidence suggests otherwise. The fort and its associated structures, the Barracks/Cookhouse and powder Magazine, were constructed in such a way as to take advantage of the natural landscape and building materials while at the same time satisfying the requirements of a militarily defensive position. Today the site represents a unique surviving example of a rare type of construction—a fascined work—of which only one other example is known, historically, from this period.<sup>16</sup> It is precisely because Fort Bruere was perceived by contemporaries as being ‘ill laid out and wers executed,’ that the archaeological features have survived for more than two centuries in a relatively undisturbed state. While the description may have sounded the death knell for the fort at the time, it also

served to preserve the fort for posterity. The distribution of rubble from the deteriorated gabions visible on the brow of the hill, and the undisturbed state of the Barracks/Cookhouse are evidence of this benign neglect. The fact that historical documentation on the fort is almost completely lacking, with the exception of the Durnford and Fraser descriptions in 1783, serves to increase the archaeological value of the site.

The excavations conducted to date indicate that artifacts and features are intact within 18th century deposits. In light of this, Fort Bruere has the potential to add to the small collection of archaeologically excavated material culture from other contemporary Bermuda sites. Within a larger context, further investigation at Fort Bruere has the potential to contribute to our understanding of the development of fortifications in Bermuda during the transitional period between the close of American Revolution and the arrival of the Royal Navy when Bermuda served as the pre-eminent dockyard in the Western Atlantic beginning in the early 19th century.

## ACKNOWLEDGMENTS

The author wishes to thank Mr. and Mrs. Ross Perot for their support of the project and for graciously allowing the excavation team to overrun their property for 10 days. Many thanks also to Doug Gibbs and his wife Ann, for their kind support and assistance. I also would like to express my gratitude to the Bermuda Maritime Museum staff and volunteers who assisted in so many ways with the project: Linda Abend, Oswald Crossdale, Jane Downing, Andrew Harris, Rosemary Jones, Frances and Howard Smith, Tramaine Stovell, Elena Strong, Chin Siong Wah, and Jody-Ann Westlake. Thanks also to the Bermuda Maritime Museum Board of Directors and in particular, Trevor Moniz, Chair, for his avid interest in the project. The success of the project owes much to the dedication and professionalism of the team members both on and off site. In particular, I would like to thank Pamela Schaus for her excellent work on the graphics produced for this report, as well as Jonathan Haxell for painstakingly pouring over the survey data point-by-point each evening. The crew, David Barker, Harley Brown, Rachel Brooks, Victoria Brooks, Nadine Kopp, Shan Ling, and Heather Tulloch, were as always professional in manner, dedicated in mind, and exemplary in their archaeological skills. Lastly, I am indebted to my friend and colleague, Edward Harris, for his continued support and collaboration on various archaeological projects in Bermuda over the past two decades.

## APPENDIX A

*Letter from St. George Tucker to General George Washington*

October 23, 1781

"Sir,

I have the honor of addressing your excellency on a subject which appears to me as important to the United States of America as it is interesting to myself as an individual attached to the spot which gave me birth and anxious for the happiness of those friends who still reside there.

It is well known that at the commencement of the present war the Congress was so well persuaded of the attachments of the inhabitants of Bermuda to America and the cause it had engaged in, that their vessels were exempted from capture and permitted to trade freely in every port in America.

That exemption and privileges had continued to this hour but for the practices of certain refugees from America to whom a small part of the Island under the immediate eyes of control of the British government afforded an assylum [*sic*] in spite of the prejudices of animosity of the native inhabitants; by these they have been held in logical devastation [*sic*] as to give rise to a general association not to deal with them on any account whatsoever. Yet the practices of these men have induced America to regard them as enemies whose hearts still unchanged glow with the warmest sentiments of friendship to her; which under every unfavourable circumstance they have dared to avoid, and uniformly confirmed by their conduct. To America they have ever turned their eyes and cherished the hope that she would one day extricate them from that tyranny which she disdained to submit to, and which had been augmented in Bermuda in proportion as a less extensive scope was afforded for the exertion of it in other places. An opportunity favourable to that hope and not less so to the interests of the United States seems to offer at the present conjuncture. The reduction of that Island would open again those resources for supplies of salt to the Continent, the obstruction of which has been severely felt by the inhabitants of this state in particular.

Who, being not so well furnished with Vessels of their own have been obliged to defend on the fortuitous arrival of Bermudians driven either by necessity, or allured by the advantages of our commerce, to brave even the horrors of a prison ship, which many of them have fatally experienced. A capitulation nearly similar to that of Grenada would answer this end. The natives would embrace with alacrity such a neutrality as that capitulation sanctioned to the inhabitants of that Island. The result would be that every port in America would be filled with their vessels laden with that useful commodity so essential to the inhabitants no longer subject to the extortions of warships who prey on the vitals of their countrymen in distress.

I should presume that a fifty-gun ship and three or four frigates with some land forces would accomplish this end in less than three days, there being no garrison in the place except about 300 invalids, and the inhabitants too will disband(?) to shake off the tyranny of Britain to make any opposition to the allies of America.

If what I have said has any weight with your Excellency I would beg leave to suggest some few matters which might be necessary for forming the plan. There is a gentleman of character in Wmsburg at this time which is native and an able and experienced navigator and well acquainted with the coast who would embrace the opportunity of going thither as a pilot with alacrity.

Enclosed is a paper communication to me about three months ago by an officer just then returned from captivity in Charlestown. I beg leave to submit it to your perusal and if it should appear to you to contain anything worthy your attention I am persuaded the writer will think his time happily employed.

I am etc.

St. George Tucker

#### ENDNOTES

1 SRO, Report on the Defences of Bermuda. Simon Fraser 1783, Scottish Record Office GD/50/185/267/12/7, in Edward C. Harris, *Bermuda Forts: 1612–1957*. Bermuda Maritime Museum Press, First Edition, (1997), pp. 89–90.

2 PRO CO 37/38. Andrew Durnford. Report on the Defences of Bermuda, 1783, in Harris, pp. 90–91.

3 Harris, p. 91.

4 PRO MPH 137. A Survey of the Islands of Bermuda by Captain Andrew Durnford, Royal Engineers, assisted by Mr. Henry Lauzun, Draughtsman. 1793. A copy 'corrected from a plan of Gen. Hodgson in 1833 is found in 'The Library of George, 9th Earl of Dalhousie, Governor of Nova Scotia, 1816–19, and of Canada, 1819–28. William Inglis Morse Collection.' Vaughan Library, Acadia University.

5 Bermuda Defence Report submitted by Colonel Jennings, member of Committee of Council and Assembly, March 28, 1798. Courtesy of Edward C. Harris.

6 PRO WO 55/928, Bermuda, December 31, 1806. Report of the state of the Forts, and Batteries Field Ordnance—composing the Ordnance Establishment in the Colony of Bermuda, by Simon Fraser, R.E.

7 Plan for the Defence of the Bermudas, Lieut.-Colonel Robert Donkin, 1780. *Journal of the Society of Army Historical Research*, Vol. 6 (1927), pp. 1–5.

8 Donkin's fears of an insurrection supported by the Americans were not unfounded, as a letter written by General George Washington in 1781



indicates (see Appendix A.) Original in Tucker-Coleman MSS, Swern Library, College of William & Mary, Williamsburg, Virginia.

9 Durnford 1783 report; Fraser 1783 report; 1783 Defence Report. Cited in Harris, pp. 91–92.

10 Edward C. Harris, *Principles of Archaeological Stratigraphy*, Academic Press, New York, Second Edition, (1989).

11 Ibid.

12 Straith, Hector. Introductory Essay To The Study Of Fortification, For Young Officers Of The Army. New Edition. London: Wm. H. Allen, 1858; and J. Laisne, *L'Aide-Mémoire Portatif à L'usage des Officiers du Génie*, Publié par J. Laisne, 1837.

13 For details of construction and specifications, see Mahan, D. H. A Treatise on Field Fortification, Containing Instruction On The Methods Of Laying out, Constructing, Defending, And Attacking Intrenchments, With The General Outlines Also Of The Arrangement, The Attack And Defence Of Permanent Fortifications. Third Edition, Revised and Enlarged. New York: John Wiley, 1861, pp. 59–60; Jebb, Joshua. Practical Treatise on Strengthening and Defending Outposts, Villages, Houses, Bridges, &c., in Reference to the Duties of Officers in Command of Picquets, as Laid Down in the Field Exercise and Evolutions of the Army. Fifth Edition. London: William Clowes and Sons, 1857. pp. 73–75; and Laisne, Aide-Memoire, pp. 503.

14 Harris, pp. 90–91.

15 See John Triggs for a discussion of ceramic types found at the 17th–18th century residence of the Tucker family in Southampton parish in 'Searching for Governor Daniel Tucker's 'Mansion': The First Season of Excavation.' *Bermuda Journal of Archaeology and Maritime History*, vol. 15, (2004), pp. 7–47.

16 The Paget Fascine Battery is mentioned in Andrew Durnford's 1783 survey. See Harris, pp. 124.

APPENDIX B: STRATIGRAPHIC CORRELATION CHART FOR BARRACKS/COOKHOUSE • FORT BRUERE, BERMUDA

<i>Period description</i>	<i>Period</i>	<i>Phase</i>	<i>Stratigraphic Unit Description</i>	<i>Unit</i>				<i>H</i>	<i>K</i>	<i>M</i>	<i>N</i>	<i>P</i>
				<i>A</i>	<i>B</i>	<i>C</i>						
Post-deposition	V	16	Vegetation and sand	1	1	1		1	1	1	1	1
Aeolian deposition and disturbance	V	15	Sand deposit—wind blown	3		2			3	3		3
Building destruction	IV	14	Rubble									
	IV	13	Small rubble and stones on exterior	2		5		2	2	2		3a
	IV	12	HFI for wall foundation			3			7			4
	IV	11	Crushed stone and mortar on exterior		2a	10a			10a		2a	10a
Sub-floor occupation						4			8			7
	III	10	Dark reddish brown sand	4		6			4	4		6
Construction	II	9	Neatly laid rubble infilling depressions in bedrock and post holes	5					5	5		5
	II	8	Builder's trench fill interior			9		4a	11			9
	II	7	Grey sand on exterior of building —builder's trench fill			7			?			8
	II	6	Wall foundation									
	II	5	Builder's trench interface		2	10			10		2	10
	II	4	Grey sand on interior			11			?			13
	II	3	Stone quarrying features on bedrock		4	8						11
Natural						13		4			?	
	I	2	Natural white sand with grayish black upper surface			12						12,12a
	I	1	Bedrock	6	3	14		3	6	6	3	