Documenting Dockyard Discoveries
by Dr. John R. Triggs

Background to Project

Readers were first informed of the archaeological investigations being carried out at Casemate Barracks in MARITimes, Vol. 21, No. 1, 2008, in an entire issue devoted to the revitalization of this most imposing example of dockyard architecture. Since that time work has continued at Casemates and in spring of this year, investigative excavation under the direction of Dr. Edward Harris revealed the archaeological remains of a tunnel, cobblestone road, and other 19th century structures in the Lower Ordnance Yard (Edward Harris, *Heritage Matters*, June 12). At the time of discovery the ruins were photographed and then left untouched until such time as they could be more carefully documented by trained archaeologists.

Figure 1 View of the blocked tunnel entrance, north end, shortly after discovery in June 2009. The bricks were removed to gain access to the tunnel which runs below the Lower Ordnance building.

Enter Dr. Lisabeth Robinson, of Western Reserve Academy, Ohio, and myself, who were called to the task by long-time colleague, Dr. Harris. The proposal was to document the discoveries by completing scale drawings, taking comprehensive digital photographs, and ultimately producing publishable quality graphics. Always eager to do archaeology in Bermuda, we jumped at the chance to work on the project, and before we knew it we found ourselves at the bottom of a two-metre deep trench, in the hot sun, without the hint of a breeze, drawing the cobblestone street and walls stone by stone – in other words, as archaeologists we felt right at home.

One may wonder why this level of detailed recording is necessary. Wouldn't a series of photographs suffice? The answer is that in the eyes of an archaeologist architectural remains represent a special type of artefact – an archaeological monument if you will – that must be accorded the same treatment as a traditional 'buried' archaeological site. In this sense, the archaeological process consists of excavation and discovery, systematic documentation, interpretation, publication and dissemination.

Excavation and Discovery

Excavation methods vary depending on the nature of the site. For example, factors such as scale, period, depth, and level of disturbance, will often dictate whether a site should be subjected to manual or machine excavation. After having excavated in Bermuda for more than 20 years on different types of sites I can say that I have used every tool from the dental pick and mason's trowel (5 years of excavation at the Grove, 2004-2008) to a backhoe (Bastion E, 2007)

Figure 2 Machine excavation of the Lower Ordnance yard to remove the deep fill between the 'North Building' and the tunnel entrance. 'Johnny' Bernard supervising, Andrew Harris excavating.

and even a bulldozer and backhoe in tandem (at Fort Cunningham, 1991 and 1992). Casemates represents a site that because of its depth and scale, and later disturbances, requires mechanical equipment for excavating the metres-deep layers of fill in the Lower Ordnance yard. Despite the somewhat unrefined methodology, the trained eyes of the archaeologist, coupled with the skill of the machine operator, can differentiate the significant from the mundane and separate the fill from the features. A good archaeologist working alongside machines will document photographically the finds as they are made and, equipped with a working knowledge of the history of the site, will be able to interpret features as they are found, thereby preventing the destruction of significant archaeological remains. Such was the case in January 2009 when volunteers working at Casemates discovered a tunnel and a cobblestone street.

Figure 3 Dr. Lisabeth Robinson drawing the cobblestone street with the aid of an expedient grid.

Documentation
Documentation of the finds is done during field work through digital photography, the aim of which is to create a record of the work in progress, and to provide some context to the finds by taking shots of the surrounding architecture or landscape. A formal record of the archaeological finds is made after discovery when time allows for a more thorough recording of features both photographically and by measured drawing. The final step should include a survey of the site within the context of its overall setting. All methods of documentation together comprise the archaeological archive, the purpose of which is the preservation of the monument in paper and digital form. In cases where the actual remains cannot be preserved, the archaeological archive is meant to be a lasting record, which may be studied or referred to at some later date.

Formal field photographs aim to document the finds in an 'as found' state, after they have been manually cleaned to expose all variations in stonework for the discernment of colour, mortar differentiation, and construction details. A scale and north arrow is featured in each photograph and an attempt is made to reduce distortion by having overlapping photos. Tagging each image with date and time is greatly facilitated now with digital technology.

Measured drawings are arguably the most important records in the archive. Done at a suitable scale - 1:10 for details and 1:20 or 1:50 depending on the size of the monument to be recorded – a scale drawing differs from a photograph in that it is interpretative, rather than a passive record of the remains. A photograph does not speak to the viewer. The best time for interpretation is when you are in the field with all the evidence accessible and visible before your eyes. Training someone to draw a masonry wall stone by stone is not in itself a difficult task, but learning to 'read' the architecture for clues as to construction style and technique, and looking for evidence of the evolution of the structure by noting modifications and repairs, does require some practise. A good measured drawing produced in the field should be covered with annotations because it is the archaeologist's translation of the life-history or the architecture.

Interpretation
Once completed, the records of the archaeological archive are studied in conjunction with various pieces of documentary evidence to provide context for the architectural remains. For example, using maps and photographs, construction dates and demolition dates might be established, as well as insight into building function and changes in function through time. Also, these documents can sometimes provide context for the monument by situating it within the larger complex of which it was a part.

Publication and Dissemination
As is the case with all field projects, it is the archaeologist's responsibility to publish the findings after the work is completed. Too often the records in the archaeological archive languish in files and filing cabinets as unpublished field notes. The goal should be to convert the field drawings into publishable images accompanied by the interpretations arrived at through the archaeological process. A professional cartographer is the best person to produce such drawings. Fortunately, for this small-scale project, Pamela Schaus, from the Department of Geography and Environmental Studies at Wilfrid Laurier University, has produced the finished drawings, two of which are included here. Dissemination of information through publication is important not only as a means of keeping academic colleagues up to date, but also as a way to engage public interest. For the interested reader work of this kind fosters heritage awareness and the need to investigate and preserve archaeological monuments. Each discovery, no matter the scale, increases our knowledge and provides us with a better understanding of the larger historical drama that is of interest to all who are intrigued by the past.

Dr. John Triggs is an Associate Professor of Archaeology and Classical Studies at Wilfrid Laurier University, Waterloo, Ontario, Canada. He recently completed a 5 year study of the Grove, site of Governor Daniel Tucker's mansion house, constructed 1617, home to several generations of the Tucker family for almost two centuries. He has worked on various projects in Bermuda since 1988.
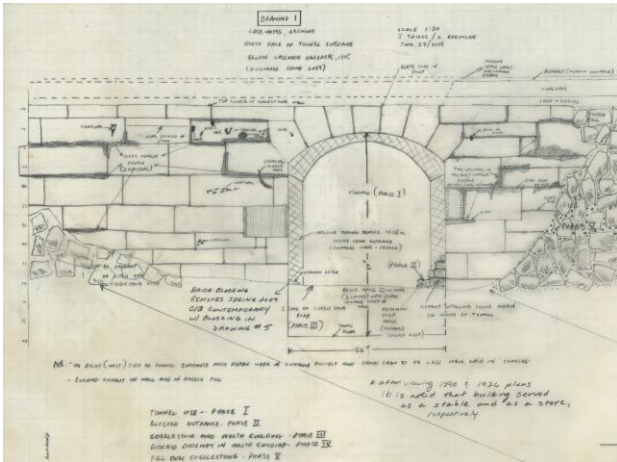
Figure 5 Measured and interpretative drawing of tunnel north terminus (Phase I).

Figure 6 Photo of north terminus and wall, Phase I, with Stable/Store building in foreground (Phase III) and blocked doorway to right (Phase IV).

Figure 7 View of cobble street (Phase III) with tunnel on left (Phase I) and Stable/Store on right (Phase III) with blocked entrance (Phase IV). Fill in foreground and background is Phase V.

The north terminus of the tunnel running below the Lower Ordnance building discovered in June 2009. The south end of the tunnel was discovered by XL volunteers in 2008. Edward Harris believes the tunnel to date to the earliest years of the dockyard. It is supposed that the tunnel ran below a defensive ditch pictured on an 1818 plan and shown on an 1828 sketch (see Harris Heritage Matters article June 12, 2009). During the recent recording of the tunnel, and another building referred to as the North Building used as a Stable/Store, five Phases were defined:

Phase I   Tunnel Construction – pre-1818

The stonework is Bermuda hard-stone laid in neat, finely pointed courses, or ashlar style. Original pointing is visible as are two periods of subsequent repair indicating a long period of use. Two stones flanking the tunnel entrance are unusual in that they have fine, chiseled grooves on the face and borders unlike the other stones making up the wall. Such fine workmanship can be found on other Bermuda military architecture, most notably the Commissioner's House. These may have been scavenged from an earlier building.

Phase II Tunnel B and Filled

At some point in its history the tunnel was partially filled with rubble and the north entrance blocked with yellow brick. This may have occurred in 1845 during the construction of the Lower Ordnance yard building, a time when the ditch shown on the 1828 sketch would have also been filled and no longer used.

Phase III Stable/Store Construction, Cobblestone Street

Another building was constructed opposite the discontinued tunnel and a layer of fill two feet deep (50 cm) was added in the space between the two buildings. A cobblestone paving was laid creating a lower 'street' below the Lower Ordnance Yard parade level. This was probably done shortly after the infilling and blocking of the tunnel in 1845.

Phase IV Stable/Store Doorway Blocked

The doorway of the Stable/Store which opened onto the lower cobble street was blocked with stones from a demolished building as indicated by the paint and plaster showing on the exterior face. In 1926 the building is labeled as a Store on a map of that date, and in 1956 as a Gate House for the prison.

Phase V Filled Over

The final phase is a deposit of rubble and sand which filled the lower street level up to the Ordnance Yard parade level, burying the lower level of the Stable/Store and hiding the north tunnel entrance from view.
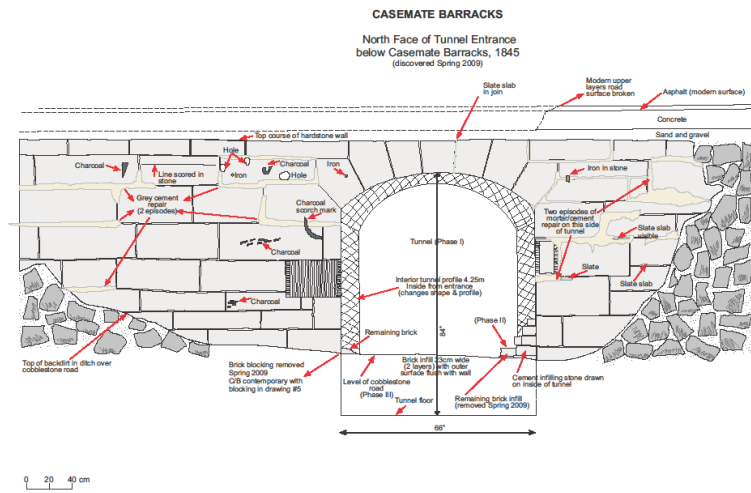
Figure 8 North face of tunnel, 'as found' drawing with field notations digitized for publication.
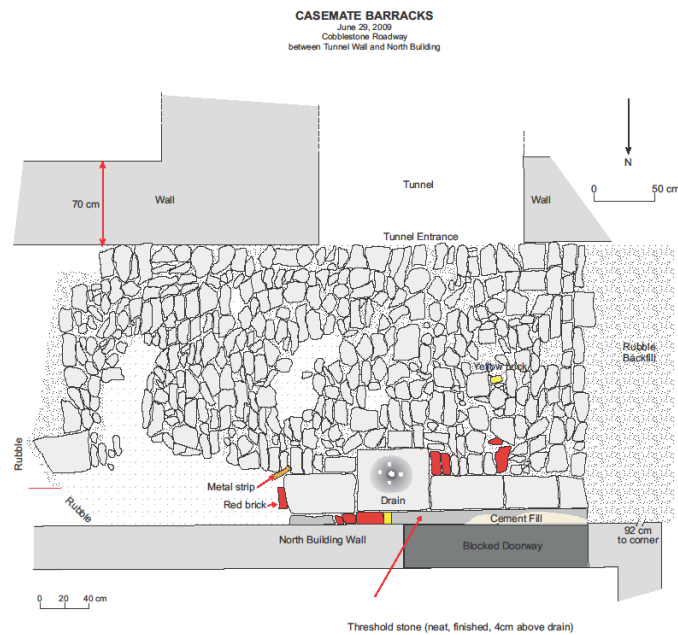

Figure 9 The cobblestone street, Phase III, drawn by Lisabeth Robinson.   All notations are as recorded in the field and the drawing represents the 'as found' condition of the features.

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Figure 10 Casemate Barracks and the Lower Ordnance Yard buildings, constructed 1845, shown in this 1848 Illustrated London News watercolour. The tunnel may have been filled (Phase II) during the construction of the Ordnance building. The North Building recorded during the most recent field work may be the trapezoidal structure at the lower right.
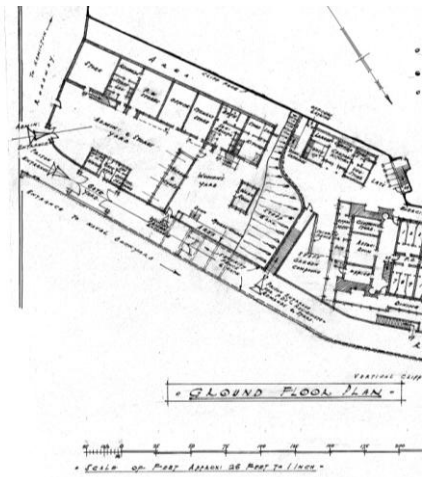

Figure 12 Plan of the proposed Casemates prison, 1956, showing the North Building labeled as a Gate House.

Figure 11 An 1895 view of Casemates with the Lower Ordnance Yard building and the 'North Building', recorded in July. This was used as a stable in the 19th century, a storehouse by the 1920s, and finally as a gate house for the proposed Casemates prison in the 1950s.