ILE DE LA PASSE

REPORT 1

ARCHEOLOGICAL
AND
ARCHITECTURAL
SURVEY

Approaching Ile de la Passe.

Geoffrey and Françoise Summers

CONTENTS

Cover picture: *Approaching Ile de la Passe. (02jv1415)*

INTRODUCTION

Ile de la Passe from the air.
(courtesy of P. la Hausse de Lalouvière, restricted copyright).

ACKOWLEDGEMENTS

We are extremely grateful to Philippe la Hausse de Lalouvière and Premlall Mahadeo, respectively Chairman and Director of the National Heritage Trust Fund, both for setting up the survey and for their tremendous encouragement and enthusiasm. The survey was made possible by a donation from the American Ambassador's Cultural Preservation Fund. We are indebted to Jacques Pitot, Manager of La Croix du Sud, for logistical support. We are also grateful to H. E. Motee Ramdass, Minister of Arts and Culture, whom we were most privileged to escort around the island.

This report is based on a survey of the extant remains on Ile de la Passe that was conducted by Geoffrey and Françoise Summers over ten days in January 2002, supplemented by visits on earlier occasions. A topographic survey was made by the staff of the Surveyor General's office of the Ministry of Lands and Housing, to whom we are most grateful.

We have been fortunate in having access to unpublished archival material that has most generously been made available to us by Dr Marina Carter and by Philippe la Hausse de Lalouvière. We have, as they will recognise, freely made use of this material in developing our ideas and in drawing our tentative conclusions.

We would like to thank the assistants, graduates and undergraduates students from METU for their help: Abdul Razaq Warfa for his major contribution in the preparation of the AutoCAD drawings, Nahide Aydın and Özge Başağaç for doing the tedious photo-rectification and drawings, and Çetin Alataş, Arda Uysal and Fırat Ant for producing some of the graphics.

THE SURVEY

Archaeological and Architectural Survey

This document, *Report 1*, deals with the defences and the structures that are numbered 1 to 31 on Map 6 (p. 15). The order, in so far as it has been possible with multi-phased structures, is roughly chronological. *Report 2, Basic Architectural Survey,* deals only with the standing buildings, complementing the brief architectural documentation given in *Report 1*. Each section contains, in order, a list of materials, a basic description, interpretation, discussion of the date and a note on the present condition. It will thus be seen that this document is a working report the purpose of which is both to facilitate the production of a management plan and also to form a basis for future research design. *Report 3, Management, Development and Research: Recommendations and Proposals,* discusses proposed lines of action.

Survey Methods

The survey was, to the greatest extent possible, confined to non-interventive recording. Records comprise photographs in a variety of media (digital, colour print and colour slide), annotated measured sketches and written descriptions. AutoCAD drawings were subsequently prepared and these form a valuable base for future research. The architectural documentation, in spite of the limits imposed by time and resources, goes well beyond what was originally envisaged. The *Basic Architectural Survey* should, nevertheless, be expanded by a detailed architectural survey of all structures. The program for future research and development that is put froward in *Report 3* includes additional recommendations with respect to complete documentation of all structures.

In carrying out the survey itself rubble was only removed in those very few instances where it was deemed essential in order to obtain a better understanding of the sequence of construction. Vegetation was cut around the base of the three standing French structures, the Powder House, the Storehouse and the Shot Furnace, in order to make photographic records of the stonework with the best possible coverage as a step towards the eventual creation of digital simulations. Some cutting back of vegetation was also conducted in other places, especially at the Upper Battery. More vigorous cleaning was only carried out at two points. The first of these was on the north side of the Shot Furnace, where traces of an earlier wall were made partially visible. The second was at the east end of the British Platform and Ramp (Structure 13), towards the more elevated central portion of the site, where a small part of the wall face was traced. It was quickly discovered that uprooting (as opposed to cutting) vegetation, particularly grass, was destructive because of the way in which both the roots and the stems have penetrated the voids between stones and cracks in concrete.

Surveyors from the Ministry of Lands and Housing making a Topographic Survey. The Sokkia Total Station is set up on the southern end of the Upper Battery. (02jv0616)

Cutting back the vegetation around the Shot Furnace. (02jv1022)

Materials

Most of the extant structures are built of stone, either fossilised coral and sandstone or basalt. "Coral" or "fossilised coral" is used throughout this report to mean the fossil coral and calcareous sandstone bedrock that was hewn from the island itself for building material. The island is composed of aeolian sand dunes that were subsequently submerged by rising sea levels, and on which a coral reef then grew, during which time the sand became calcareous. When the sea level again fell the island was left above water and the coral became fossilised. We are grateful to Pierre Baissac, Director of the Mauritius Wildlife Foundation, for this information which comes from an ongoing study. For archaeological and architectural purposes this variation in the rock has meant that there is considerable difference in the hardness and stability of the cut building stone. Basalt, the only other building stone, was all brought to Ile de la Passe from the mainland.

Lime mortars, of various types and qualities, were used for all French and also for some of the earlier British construction. Argamasse is here used for French renderings of waterproof lime mortars containing crushed brick. Later British work utilised "Portland" cement and concrete made with "Portland" cement and basalt aggregates. Basalt chips were used because there is no gravel on Mauritius. Throughout this report the term iron has been used for iron and/or steel and asbestos for asbestos cement sheets.

All measurements are metric. For British structures measurements are also given in feet and inches.

Laboratory Analysis

A few samples of lime mortar were taken for laboratory analysis. The Restoration Department of the Faculty of Architecture at the Middle East Technical University at Ankara has the necessary facilities and expertise to make a comprehensive study of the different types of lime mortar and cements, and is willing to undertake such research. In future field-seasons samples should be systematically collected from each of the different structures. Analyses of the composition of binders and renderings will be essential for the proper matching of materials to be used for conservation and restoration. A specific budget and agreement would have to be formally agreed with METU.

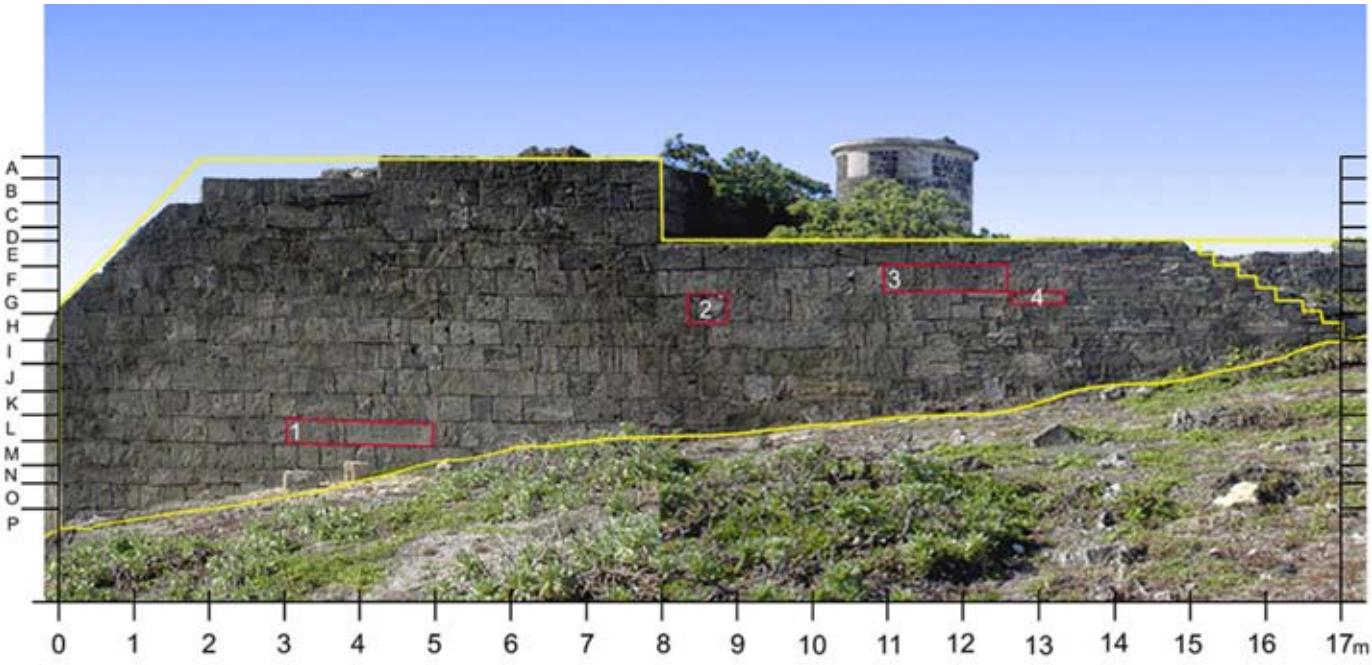
Recording Graffiti

Paper squeezes were made of some of the graffiti in order to assess the utility of this method of recording and interpretation for any future program of research in the field. The method works very well on the hard basalt but is much less appropriate for the deep-cut lettering on the coarser and softer blocks of fossilised coral.

A JVC digital camera using a high-resolution option was found to be the most appropriate technique for recording graffiti on the coral blocks. Stretches of wall can be photographed and assembled in Photoshop. These pictures can be zoomed on a screen and will also produce good quality prints. Photo-rectification techniques permit prints of the inscriptions to be made to scale as well as the making of accurate drawings. Although all drawings will have to be finally checked on site, once recorded a significant proportion of the work can be done back in the office during or between seasons of fieldwork.

Making a squeeze of a graffiti on the Storehouse. This particular graffiti apparently depicts Regimental crossed flags and crown. (02jv0716)

Graffiti on the seaward face of Wall F2. Digital photography with a high resolution camera will produce excellent images that can be enhanced on screen or used to make good prints. Production of scale drawings will require time and patience, but need not be done during the short field season. (02jv0222)



GRAFFITI	No.	LOCATION	
		Course	Distance axis
	1	L	3.00m
	2	G	8.35m
	3	F	11.00m
	4	G	12.60m

Panoramic photograph of a wall and a Table showing the axial location system used to refer to the lower left corner of each individual inscription.

Archival Material

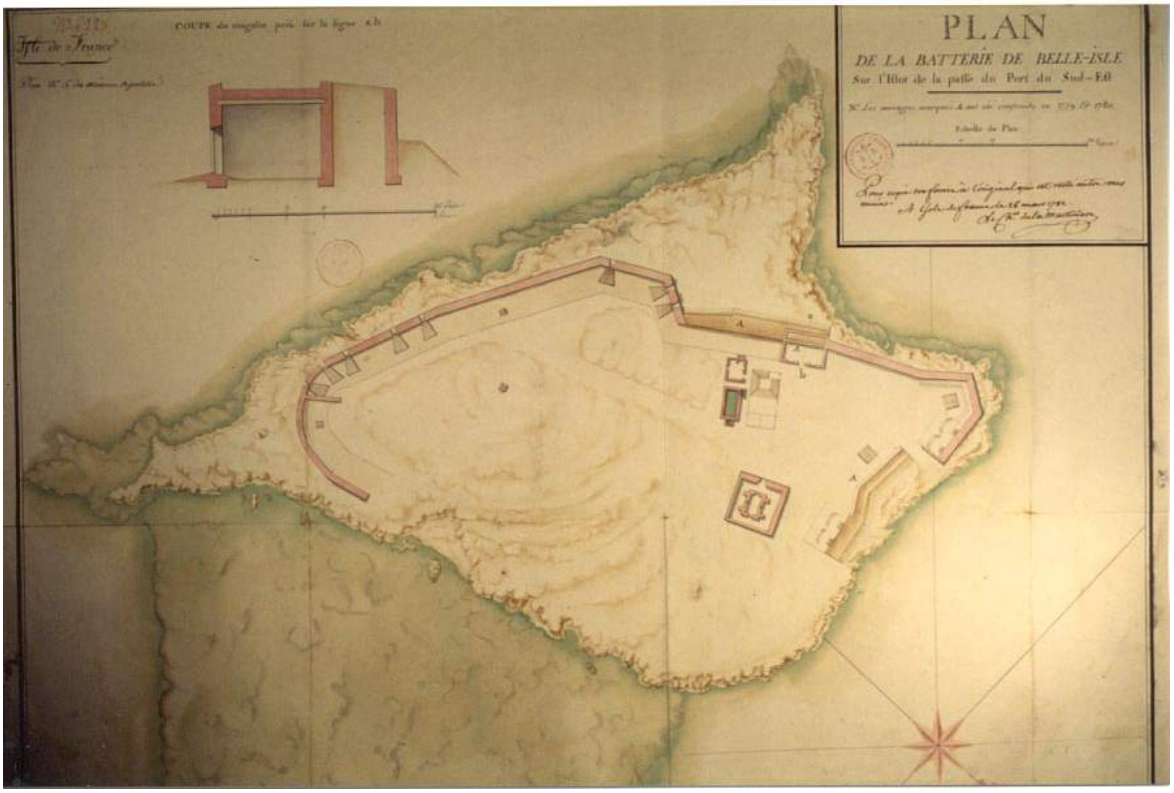
Frequent reference is made to four early maps that have been available to us. Of these three that date from the French period have been published in Hausse de Lalouvière, P. la 1998 "Ile de la Passe – the Key to the Indian Ocean", in P. la Hausse de Lalouvière (ed.) *Coastal Fortifications – Fortifications Cotieres: Proceedings of an International Conference on Coastal Fortifications held in Mauritius, 18th to 21st June 1996,* Heritage, Tamarin (hereafter PHL). These three maps are reproduced below in chronological order. The fourth map is lodged in the office of the Surveyor General and is dated 1891. Each of these maps contains its own particular problems. With regard to the French maps, it is unclear as to what actually existed and what was being proposed. The British map of 1891 is rather sketchy and has the North Arrow misplaced!

We have been privileged to be able to consult unpublished material from British and Mauritian archives that has been compiled by Dr. Marina Carter and Philippe la Hausse de Lalouvière. These records have been of particular help for the period from 1810 to *c.* 1900. Further archival research for all periods is required, and it might be thought that delving into in the British archives for the 20th Century would be especially rewarding.

No restoration of, or alteration, to any structure should be undertaken before an exhaustive program of archival research has been completed and the results have been made available to planners, architects and administrators. This approach would ensure that any program of action is carried out to the highest possible standard.

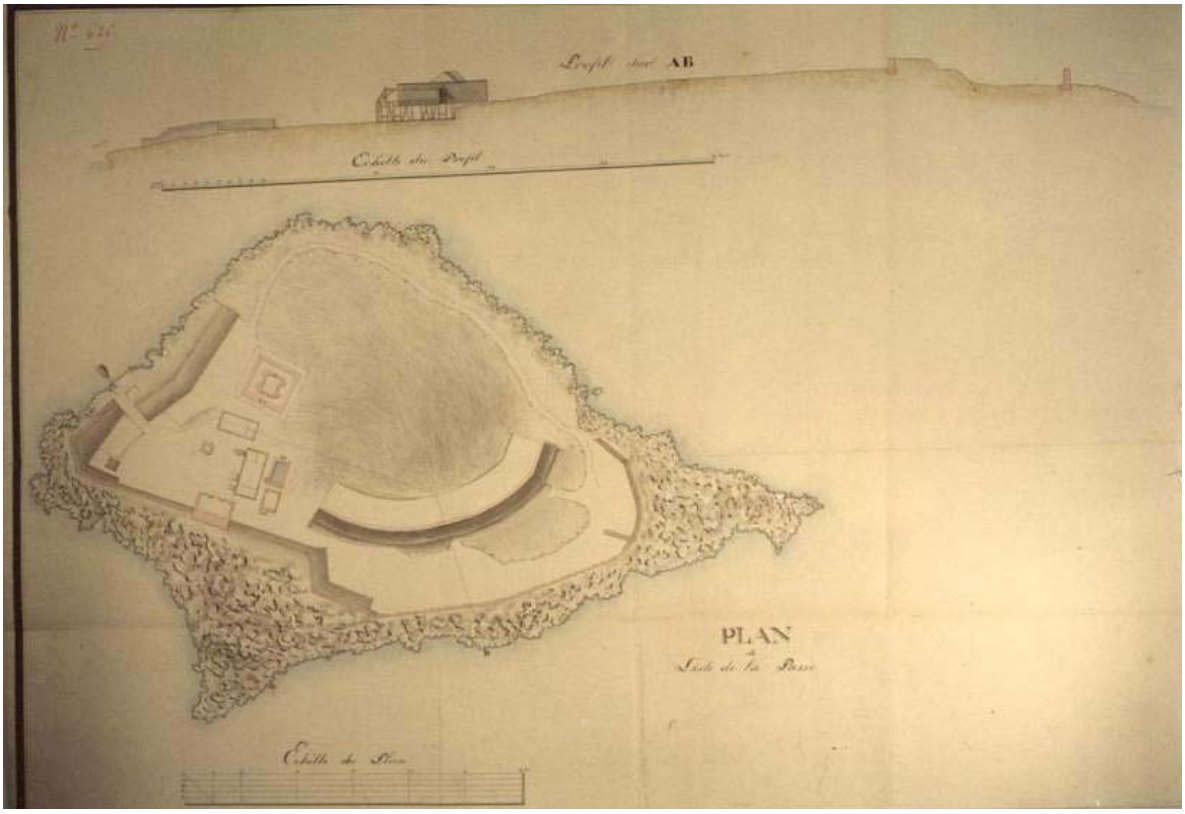
Map 1

'Plan de la batterie de Belle Isle sur l'Islot de la passé du sud est' (20 gros canons, 6 gros mortiers de bronze). Dépôt des fortifications colonials IDF 7C/640. Hausse de Lalouvière 1998, 63, 67 n.13. A copy of this map is on display in the National History Museum, Mahébourg.



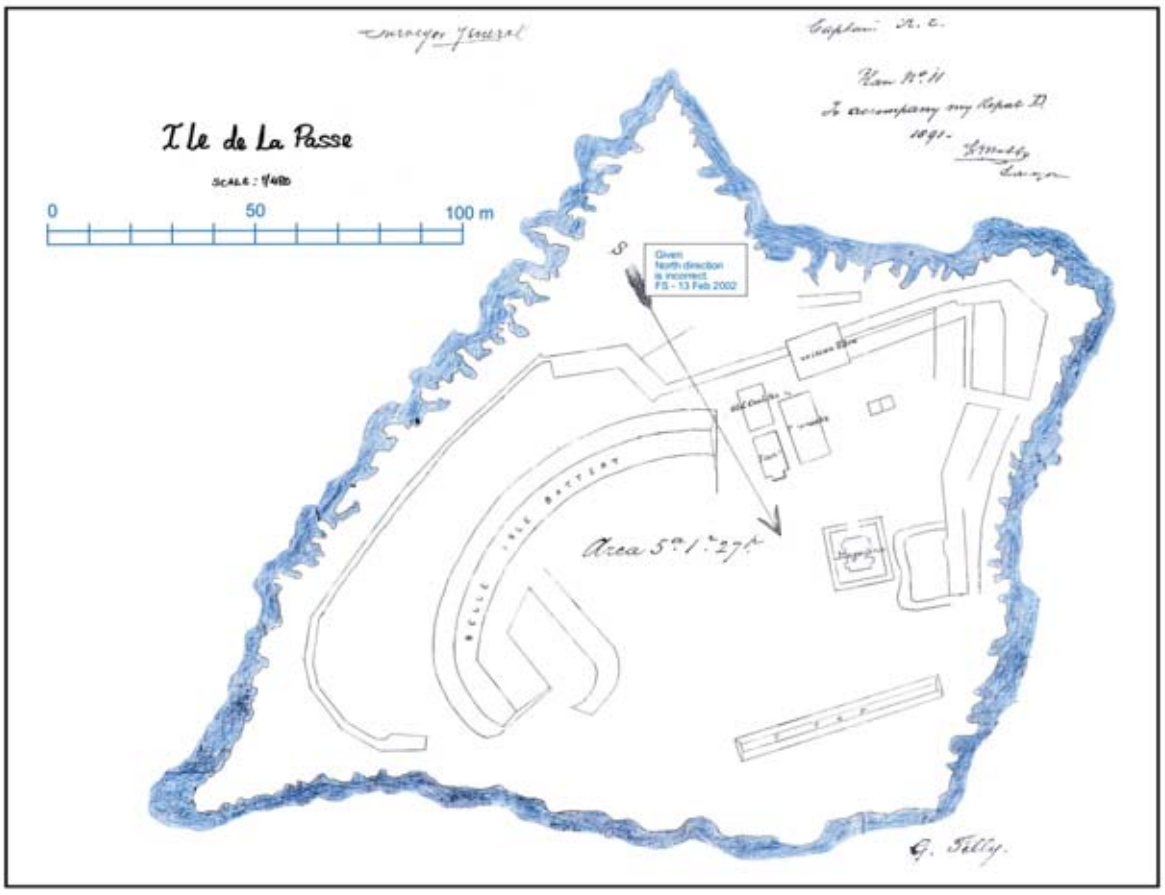
Map 2

Dépôt des fortifications colonials IDF 7B 623. Hausse de Lalouvière 1998, 63, 67 n.14. Nida, ibid. *1998, 45. The design of Chevalier de la Martinière reduced to eight cannons.*

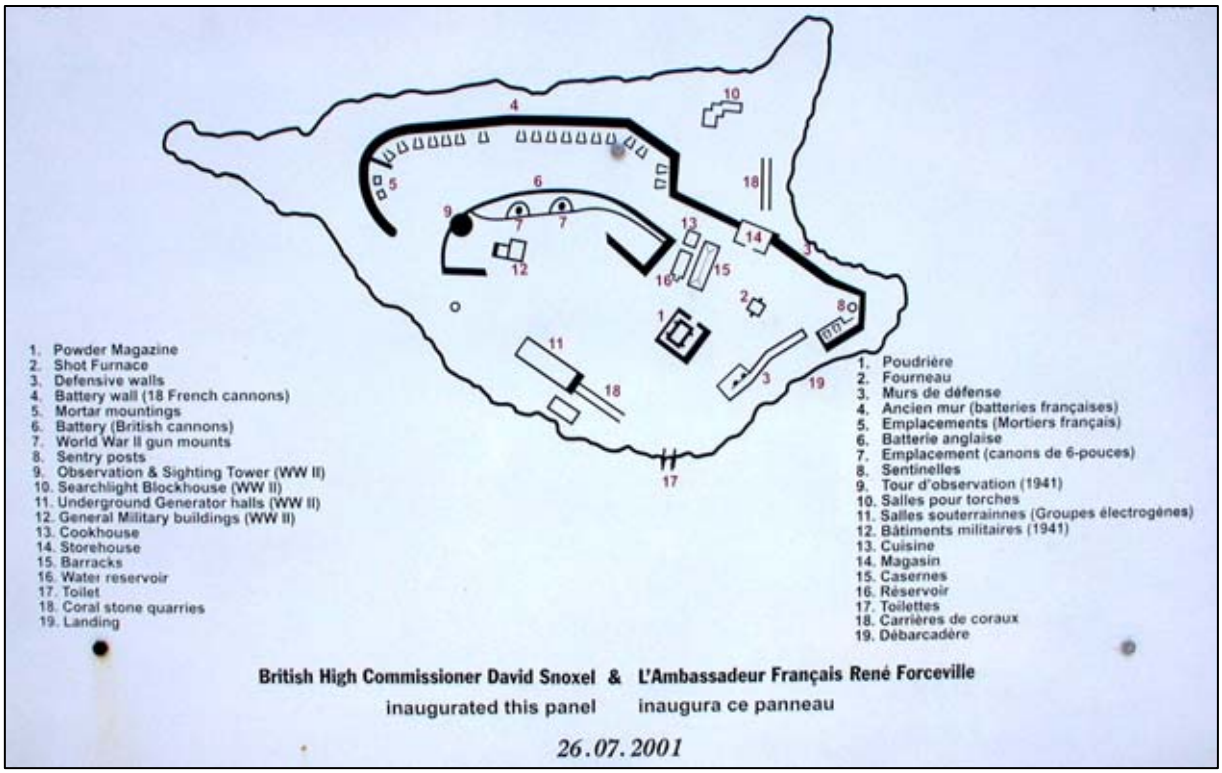


Map 3

Dépôt des fortifications colonials IDF 7B 638.
Hausse de Lalouvière 1998, 63 bottom, 67 n.15.



Map 4
Map from the Office of the Surveyor General dated 1891 (with new metric scale).



Map 5
Part of the public display panel on Ile de la Passe. (01jv0122)

THE MAIN CONSTRUCTION PHASES

It should be noted that this tentative summary of phases is based on the evidence obtained from the 2002 archaeological and architectural survey combined with Maps 1 to 4 and such archival material as has kindly been made available to the authors. Further archival work and archaeological investigation will undoubtedly lead to considerable addition and refinement.

There are, in addition to a possible Dutch jetty, five discernible building periods:

1. Early French with several phases;
2. French additions with phases;
3. British 19th century that are difficult to identify within the extant remains;
4. British buildings erected after the 1891 map but, apparently, before 1940;
5. British Second World War installations of the 1940s.

The First French Scheme

Archival documentation suggests that the earliest French defences were designed and built by Charpentier de Cossigny, and which were in existence by the 1750s. These structures, according to Charpentier de Cossigny's own description (PHL 59) included:

1. A Battery for 20 cannons and 4 large mortars.
2. A large rock-cut and plaster-lined Cistern that was filled by the collection of rainwater run-off.
3. The Powder Magazine and enclosing wall.
4. Accommodation buildings.

It is, however, likely that the real situation is more complex. In so far as can be seen from the published plans to hand (Maps 1-3) these works included very considerable modifications to the topography of the islet, viz:

- The cutting from the coral of a permanent, smooth, landing place on the protected leeward side where there is sufficient depth of water for large boats to approach. This remains today the best point of access, although it is not easy unless the sea is very calm. None of the French plans of the islet show staging or mooring installations extending into the sea (but note the slender evidence for an earlier Dutch landing jetty described below).
- The levelling of a large rectangular area at the north on which the powder house, storage and accommodation buildings were erected and the cistern was constructed.
- A wide, sloping, open passage running directly from the landing place to centre of the battery. Construction of the later Upper Battery entailed filling in a large part of this corridor.
- Levelling of the large half oval for construction and operation of the Lower Battery.
- Defensive stone walling around the north-west corner (Wall F), bordering the level area and abutted by structures along the east side.

All of these modifications of the terrain involved cutting away the sandstone and coral that would have been used as building material.

French Additions and Modifications

The following list is based on Map 2.

1. Addition of Wall E and the Storehouse, which was an integral part of these Western Defences, between the Lower Battery and Wall F.
2. The North Defences and the North Battery.
3. Modifications to the Lower Battery.
4. Erection of additional sundry storage and accommodation buildings.

French records indicate that there were some twenty 18-pounder and two 24-pounder cannons together with six 12-inch mortars in 1795.

The Second French Scheme

This scheme, according to Map 3, involved abandonment of the main existing battery and its replacement by a shorter and more elevated battery on the highest part of the islet. The Hot-Shot Furnace belongs, apparently, to this phase; hence its location. If metric measurement is an indication, the two sentry lookouts (Structures 8 and 9) also date to this late French period.

Records indicate that improvements to the defences of Ile de la Passe were made by Decaen in 1806 (the year that Mahébourg, which he had founded as the new port serving the south of Mauritius, was renamed Port Impérial). British records of the capture of the islet in 1810 list four 24-pounders, nine 18-pounders and three 13-inch mortars. When the British used the French guns, six exploded on firing. The British used two 24-pounders, nine 18-pounders, two howitzers and three mortars.

Undated French

There is a large rock-cut feature, tantalisingly labelled a "ditch" on the 1891 map, in which the WW II Underground Generator Halls (Structure 7) were built. Although this impressive feature does not appear on French maps there are some reasons (set out below) for thinking that it might predate the British period.

British Modifications and Additions 1810-1850

Graves from the “Battle of Grand Port” in 1810 with a single inscribed headstone have been located.

The 1891 map, Map 4 above, is of great help, although it is sketchy and contains very obvious errors (such as the direction of the North Point). Structure 13, on the high central part of the islet behind the Upper Battery, clearly belongs to this period. Other French structures are known, from archival evidence, to have been reused and were probably modified during this period, but physical evidence is slight.

British Buildings Erected after 1891 and before World War II

There are three buildings that appear to date to this enigmatic period, the Observation Tower, the Central Building and the Western, Searchlight, Building (Structures 10 - 12). The materials, basalt and basalt ashlar, concrete and lime mortar, and concrete tie blocks, together with the quality of the workmanship, seem to indicate circumstances other than WW II. The three buildings appear to have formed all or part of a unified defensive scheme that perhaps should be seen against the background of the Great War (WW I). Research in the archives will surely find some records concerning the construction of these substantial and not inexpensive stone-built military structures.

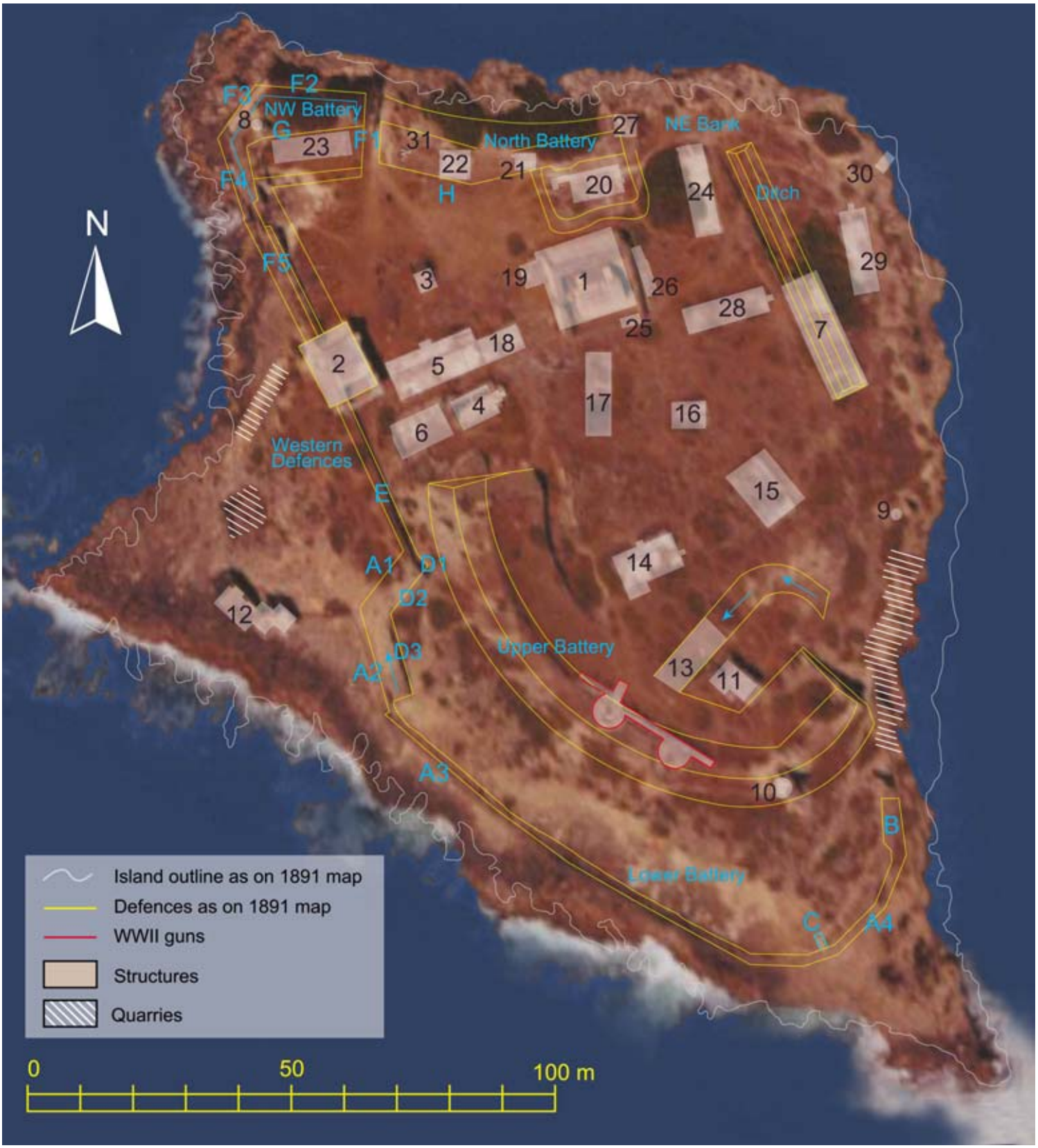
British Installations of the Second World War

Typified by concrete, reinforced concrete and cement, pre-cast cement blocks and steel frames together with asbestos cement sheeting and imperial measurement. The French Store House was re-roofed and partitioned with reinforced concrete, new windows were inserted, and four concrete plinths for generators were installed together with a cement floor into which were set covered ducts for cables. Underground Generator Halls, entirely made of concrete were erected in an earlier, French period, rock-cut feature. The Observation Tower, Central Building and Western Building were modified as part of an aiming system connected to the two large guns which were positioned on the Upper Battery. Light structures (14 to 30) with asbestos walls and roofs supported by iron frames were used to accommodate 100 Mauritian soldiers commanded by white officers. Today these and various related buildings are largely represented by the remains of raised platforms and cement floors.

LIST OF THE MAJOR PHASES OF CONSTRUCTION

1. Possible Dutch jetty (largely beneath WW II Structure 30).
2. Early French together with suggested sub-phases:
   2a. The Lower Battery, Powder House, Barracks, Cook House and the Cistern.
   2b. The North-Western Defensive Wall (Wall F)
   2c. The Storehouse, Western Defences, North-West Battery and the North Battery.
   2d. Perhaps the Sentry Posts.
3. Later French: the Upper Battery and associated modifications. This construction was apparently unfinished at the time of the "Battle of Grand Port" in 1810.
4. Undated French. The rock-cutting in which the WW II Generator halls were built.
5. British 19th Century.
   Graves from the "Battle of Grand Port" in 1810 with headstone.
   Most of the graffiti.
   Perhaps the platform and ramp shown on the 1891 map and identified as Structure 13 in this survey. Perhaps also the wide emplacement beneath the Observation Tower (Structure 10).
6. British standing structures not on the 1891 map that appear to pre-date WW II in origin: the Observation Tower, the Western, Searchlight, Building and part of the Central Building (Structures 10 to 12).
7. British WW II: reuse of the Upper Battery, all standing structures, the Barracks, the Storehouse, the Cook House and the Cistern. New Structures: 7 and 13 to 30.

The Landing Point with the Ministry of Lands and Housing Surveyors arriving in the Croix du Sud speedboat. One side of an iron carriage for a French mortar lies on the shore. (02dpjv0611)



Map 6

A map of Ile de la Passe created from an aerial photo stretched over the 1891 plan.

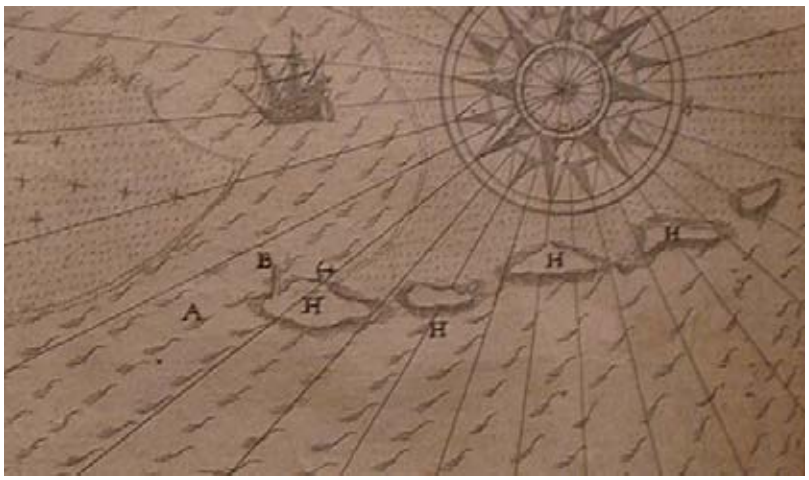
DUTCH

In the Dutch period, from 1638 to1710, Ile de la Passe was called “Fortuyns Island”, after Capt. Cornelis Jansz Fortuyn (Berthelot, L. 2000, *Mahébourg: Ville Virtuelle,* Stanley, Éditiones de l’Océan Indien: 65). It controlled the approach to Fort Frederik-Hendrik.

DUTCH MAP

The earliest Dutch map to show any features on Ile de la Passe that we are aware of is from “La Flotte de Warwijck le Port Sud-Est” (The fleet of Van Warwijck in the South East Port) in the Begunende Voortgang (n.d.) which shows the discovery of Mauritius in 1598. A prominent marker, probably a tree trunk, is shown on the western side of the island. This early representation of the island and the solitary tree trunk, that was presumably erected by the Dutch, is of interest because it strongly suggests that the vegetation cover on Ile de la Passe was not particularly high. This conclusion would appear to be fully compatible with the small size and exposed position and also with the observation that there is very little natural build up of soil.

“La Flotte de Warwijck le Port Sud-Est” clearly showing the pass and the chain of coral islets on the reef.



Detail showing the marker, perhaps a tree trunk, on the eastern side of Isle de la Passe and the anchorage on the leeward side.

An Early Jetty

Description

On the north-eastern side of the island, to the east of the Landing Point, are two iron rails projecting over the sea that are known to have supported toilets during World War II (Structure 30). Closer inspection reveals that the choice of this particular location for the toilets was influenced by the existence of an earlier rock-cut platform that is now partially obscured by concrete. In front, i.e. on the seaward side, of the platform are remains of at least four rectangular holes that were cut right through the overhanging rock. Associated, but rather more enigmatic, rock-cutting can be discerned a little further to the south-east.

The cuttings in the rock below the World War II toilets (Structure 30) taken from the sea at low tide. The concrete platform and iron rails rest on an earlier rock-cut platform. (02jv1515)

Interpretation

Similar neat cutting and utilisation of the coral bedrock has not been observed elsewhere on the island. The obvious function of the vertical rectangular holes that have been cut through the rock would be to house squared beams that formed part of a mooring system, probably a jetty.

Date

There is no firm archaeological evidence as to the date of the rock-cuttings, except that they predate the World War II concrete. The lack of associated features behind and the nature of the cutting could be used to support an argument that this feature is of a different period to anything else. This feature may, therefore, be the remains of a jetty the construction of which the Dutch commander Cornelis Gooyer thought was a priority (according to Berthelot, L. 2000, *Mahébourg: Ville Virtuelle,* Stanley, Éditiones de l'Océan Indien: 65). If so, this would be an exciting discovery that adds a new dimension to the archaeology of the island. It should, however, be stressed that there is no certain proof of this identification.

Present Condition

There is no concern beyond the relentless action of the sea.

FRENCH

The French ruled Mauritius between 1715 and 1810. By the middle of the Eighteenth Century Ile de la Passe had become very heavily defended. In this section of the *Report* the batteries and associated defences are described in roughly chronological order, after which each of the military buildings is discussed in turn.

THE LOWER BATTERY

Description

This is the main battery of the earlier French phase of defensive construction as shown on Maps 1 and 2. The battery overlooks and commands the entrance to the pass. Most of the top and the inner face of the Lower Battery was dismantled when the Upper Battery was constructed, as can be seen on Map 3. Before the demolition an addition had been built at the eastern end (Wall B). At, apparently, the same time as the demolition, the northern end of the battery was widened by the addition of Wall D that retained a platform approached by a ramp. In the course of these alterations some of the original cannon emplacements were blocked.

The main sweep of the Lower Battery (Wall A) from the south-eastern spur of the island. The top of the battery wall was originally higher, but it was demolished to the base of the cannon emplacements when the Upper Battery was constructed. (02jv1806)

It may be fairly assumed that the level area behind the Battery was surfaced, as seems to be indicated on the early maps, because the heavy cannons could not have been moved over the soft fossilised coral bedrock without causing rutting which would have restricted mobility. There is today no trace of any surface anywhere within the levelled area. Although the surface of the bedrock might have been somewhat smoother than it now is, it is very difficult to imagine that the area was sufficiently smooth and level. Wooden decking, of which no trace remains, might perhaps be a possibility.

A minimum of five phases of construction can be distinguished:

1. Building of the lower battery wall, Wall A, and the creation of the level area behind.
2. The addition of Wall B at the eastern end.
3. Construction of a cross-wall, Wall C.
4. The addition of a buttress on the outer, seaward, side together with, apparently, some repointing of the outer face.

5a. Robbing of the top of the wall to the level of the base of the emplacements together with the face stones from most of the inner side of the main wall (Wall A).

5b. The construction of a platform and ramp at the northern end which entailed the building of Wall D and the blocking of cannon emplacements.

There is no evidence that might indicate the chronological order of phases 2 and 3. The early maps French (Maps 1 and 2) both show Walls B and C, indicating that they predate the robbing of the main wall.

There are a few graffiti on the outer face, one from 1945, the others badly eroded.

The Lower Battery, Wall A

For the purposes of description the Lower Battery main wall has been divided into four consecutive sections, A1 to A4, beginning with the north-western extremity. All four sections were constructed together as a single operation.

Materials

What survives of the main battery wall, Wall A, is constructed entirely from cut blocks of fossilised coral bonded with off-white lime mortar. The walling is coursed for substantial sections, each course being of a different height. Where necessary small squared blocks were let in so as to retain regularity in the courses. There are some traces of repointing with a mortar containing crushed brick (see *Buttresses* below).

The stone blocking of the cannon emplacements in stretches A1 and A2 contains occasional basalt blocks that were, it seems, reused from elsewhere.

The Construction of Wall A

The construction of the main wall was carried out in two distinct stages. Construction coincided with the creation of a broad and level area immediately behind, together with the rock-cut passage from the Landing Point, that is now very largely obscured by the Upper Battery. The fossil coral that was removed during these operations would, in all probability, have provided sufficient stone for most or all of the construction.

The junction Wall A2 and A3 showing how the upper part and inside face of A3 was demolished up to the now the ruinous ramp and platform supported by Wall D. The roughly levelled area behind the Lower Battery can also be seen. (02jv1904)

Firstly a footing, some 2.20m in width, was constructed directly on the uneven coral surface. The height of each course decreases from the base to the top, ranging from 0.70m for some base stones to as little as 0.10m for the level top course. The height of the footing at the south-eastern end, A4, is 1.70m for a total of 6 courses. The footing does not extend to the north-western end but, as the level of the bedrock rises, it peters out some meters to the east of the end of stretch A3.

Secondly, the upper wall was added. Wall A4, where still extant at the south-eastern end measures some 1.90 - 2.00m wide and *c.* 1.10m in height, and has a flat top. At a point that cannot now be precisely determined, but which must have been at or to the east of the junction of stretches A4 and A3 and the south-easternmost cannon emplacement (which, although no longer extant, is shown on the French plans) the wall rose in height. The curve of the line of the upper wall is slightly closer to a true arc than that of the footing, so that the width of the offset on the outer, seaward, face varies considerably. In places the offset is as much as 0.30m wide, but at some points on the curve the face of the foundation is flush with the face of the upper walling. At the eastern extremity, where Wall A4 was extended by the addition of Wall B (below), the footing was *c.* 0.46m longer than the upper walling on the inner side, but only 0.12m on the seaward face. Variation in the width of the offset, similar to that just described on the outer face of battery, presumably existed on the inner side of the wall. The inner faces of both the footing and the upper wall are, however, very poorly preserved. Only along stretches A1, A2 and the western extremity of A4, where the offset measures 0.30m, can both faces of the wall be clearly seen.

The junction of the main wall of the Lower Battery, Wall A at left, and Wall B showing the butt joint, broken by the insertion of the fourth stone from the bottom, and the offsets. (02jv1807)

At the north-western extremity Wall A1 is abutted by an additional wall, Wall E, that connects it to the Storehouse. The end of Wall A1 is also abutted by an inner wall, Wall D1. The space between Wall D1 – 3 and Wall A1 – 2 is filled with fossilised coral rubble to form a ramp and a platform. The blocking of the cannon emplacements in A1 and A2 would have been inserted before the dumping of the rubble fill which might otherwise have spilled out.

With regard to the main stretch of the battery wall, A3, no features can be seen anywhere along the inner, landward, side, nor along the top. The inner side is almost totally ruined, being only well preserved at its south-eastern end where it is abutted by Wall B, and has been demolished to the level of the base of the cannon emplacements. It does not appear that it will be possible to ascertain the precise position or number of cannon emplacements, still less of any alterations or adaptations.

The present appearance of the inner face of Wall A3 – A4, together with the absence of any discernible features, such as cannon emplacements, is not due to ageing and decay because there is no fallen rubble. It therefore seems highly reasonable to assume that the inner facing stones of Wall A3 and all but the very end of A4, together with stones from any emplacements as may once have existed, were robbed for reuse in later construction. At the north-western end the inner faces of stretches A1 and A2 were protected by the construction of a platform that involved the blocking up of the emplacements, the addition of Wall D and by the insertion of rubble fill between Walls A1 - 2 and D1 – 3. The construction of this platform presumably took place before, or at the same time as, the robbing of the top and inner side of A3 – 4. Because Wall D3 can be seen to slope upwards to the north, and also because the bottommost stone at the southern end of Wall D3 is clearly a shaped stone that was taken from the inner side of a cannon emplacement, a strong case can be made for suggesting that the alterations were all part of one large and integrated scheme which, presumably, centred on the construction of the Upper Battery.

Cannon Emplacements

A total of five cannon emplacements are partially preserved in Wall A, two in Wall A1 and three in Wall A2. All were blocked except the southernmost in Wall A2, which was partially demolished when Wall D was constructed and the stone rubble fill of the platform was introduced. The central and northern emplacements in Wall A2 are perhaps completely preserved, whereas both of the emplacements in Wall A1 have been partially destroyed some time after the construction of the platform.

The emplacements appear to be of more or less standard dimension. The central emplacement in Wall A2 is symmetric: width at front 2.35m, width at back 0.65m, width of wall 1.9m (2.00m at base), length of narrow opening 0.65m, length of splayed sides 1.75m, height of blocking from base of emplacement to original wall-top 0.90-0.95m.

The surviving half of the emplacement in Wall A2 and the rubble fill of the platform. (02jv1905)

The partially preserved emplacements appear to be of very similar dimensions. An exception is the northernmost emplacement in Wall A2 where the north side and, correspondingly, the south side of the narrow inner opening, are more splayed. This purposeful asymmetry would have permitted a greater angle of traverse to the north. The width of the opening of this particular emplacement is 2.45m (rather than 2.35m).

The Present Condition of the Lower Battery Wall

At the north-western end the first part of the main wall, Wall A1, which is aligned northeast ─ south-west, is incompletely preserved although the positions of the two cannon emplacements can be clearly discerned. Both of these emplacements are filled with later blocking and could be fully revealed.

Wall A makes a turn to the south before turning again to run south-east. The stretch of wall between the two angles, Wall A2, appears to be largely preserved in its entirety and can be seen to have contained three cannon emplacements, of which two and a half are still extant, together with their later stone blocking. The southern half of the southernmost of the extant emplacements was demolished together with all of the emplacements and the inner face of the main stretch of wall, A3.

The top of Wall A1-2, together with the cannon emplacements therein, could be cleaned to reveal more detail. Any such cleaning should, of course, leave the blocking in place, and would need to be followed by consolidation and some deterrent to frequent foot traffic.

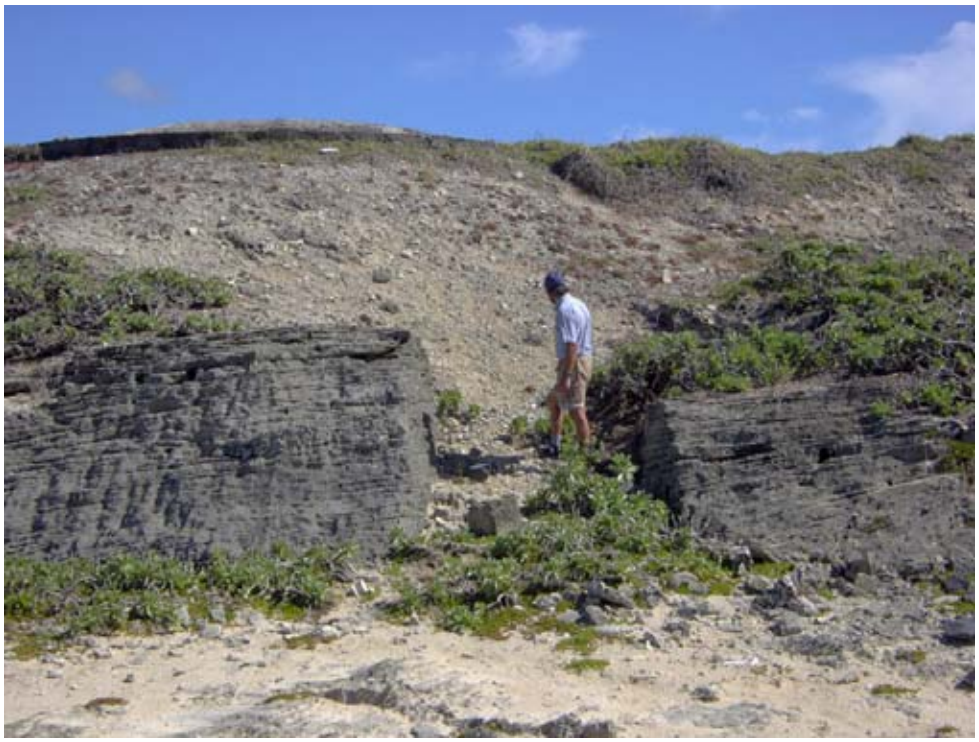
The outer face of the Lower Battery Wall A 3, showing the need for repair, with the Upper Battery behind. (02jv1822)

Some stones from the lowest course of the outer face have become displaced and ought to be reset or replaced. In one place the sea has broken through the fossil coral beneath the wall. While there does not appear to be any immediate danger, these two breeches are a potential threat, especially if an increase in the number of visitors significantly adds to the load of human traffic that crawls through the openings. Otherwise the entire structure, including the very irregular and broken inner face, would appear to be stable. Indeed, the rough and uneven nature of this particular face is, in itself, a considerable deterrent to walking along the top of the battery.

The Level Area behind the Battery

Artificial levelling is shown on the earliest French plan (Map 1) and connected to the Landing Point by a rock-cut passage the southern end of which, 2.10m wide, can still be seen. Presumably the fossilised coral that was removed in the course of levelling was used in the construction of the battery. It is unclear how smooth the surface of this area was, but it might well be imagined that it was somewhat smoother than it is at the present time. Also, it is impossible to tell if the entire area was levelled during the course of the initial construction, or was extended southwards at the time when Wall B was added, or when other projects were being undertaken.

No features or installations have been identified, this in spite of the fact that most of the rock surface is today bare.



The cutting, now partially filled by the rampart of the Upper Battery that may perhaps be the end of the passage shown on Map 1. (02jv1901)

Platform and Ramp at the North-Western end of the Lower Battery: Wall D, Cannon Emplacement Blocking and Platform Fill

Materials

Wall D and the blocking of the cannon emplacements are composed of cut coral blocks. The emplacement blocking contains two visible basalt blocks and there is another basalt block at the base of the corner of stretches D1/D2. Some or all of the basalt stones are spolia. The bonding is off-white lime mortar. The platform fill is fossilised coral rubble.

General Scheme

The addition of this platform represents a major modification to the original battery and would have been carried out before or at the same time as the construction of the Upper Battery. Wall D has been subdivided into three stretches: D1, running north-west – south-east and forming the north limit to the addition; D2 running parallel to Wall A1 and D3 running parallel to Wall A2.

Wall A3 of the Lower Battery was demolished down to the level of the bases of the cannon emplacements, none of which, as described elsewhere, can now be located. In addition, and presumably as part of the same operation (although this cannot be proven on present evidence), the inner face of Wall A3 was also quarried for stone. This demolition extended as far as the southern side of the southernmost emplacement in A2, the remainder of Wall A2 and A1 being left undamaged. The cannon emplacements in A1 and A2 were carefully blocked with coral blocks and occasional basalt blocks, some or all of which were spolia. Wall D2 and D3, which runs parallel to Wall A1 and A2 and then turns ninety degrees to meet the northern end of Wall A1, was constructed at the same time as the blocking and from similar materials. At the southern end both wall D3 and the rubble fill sloped upwards to form a ramp.

The Construction of Wall D

Wall D3 is 1.10m wide. The base stone on the outside corner at the southern end is shaped and was clearly taken from a cannon emplacement, quite possibly the very same emplacement that was half demolished and partially blocked so as to form the opposite side of the ramp. At this southern end both faces of Wall D3 were built of large cut coral blocks, presumably spolia. Here, and for its entire length, the exposed (landward) face of Wall D1-3 was slightly battered – the batter amounting to no more than 0.10m over the maximum height. The now exposed inner side of Wall D3 at this southern end has collapsed, but its original length can be seen to have been a little more than 3.00m. Thereafter the wall lacks a proper inner face and narrows to around, firstly, 0.85m and thereafter is gradually further reduced to 0.60m in width. In this two faced southern section the stone courses slope upward as, perhaps, did the wall top, thus reflecting the slope of the ramp that it retained.

Wall D3, with Wall A behind. The large block at the base of the southern end of Wall D3 has been reused from an earlier cannon emplacement. (02jv1906)

The Present Condition of Wall D and the Ramp

The southern end of Wall D3 is in a poor state and requires consolidation and, on the inner side, rebuilding with the original stones that now lie fallen. The ramp too is eroding and in need of stabilising, perhaps through the addition of more rubble.

The South-Eastern Extension of the Lower Battery: Wall B.

Materials

Cut coral blocks with a capping course of dressed basalt facing stones, all bonded in an off-white lime mortar.

The Construction of Wall B

Wall B abuts the eastern end of the Lower Battery, thereby extending Wall A4 further to the south until it terminates with a short stretch of return terrace walling that was only ever as high as the offset of the main wall.

The end of Wall B showing the sloping top edged with basalt coping-stones, the offset and the low return terrace wall. (02jv1618)

Wall B is 2.00m in width with an offset on the seaward side that is 0.27m wide at the join and 0.15m wide at the south end. The wall rests on unlevelled fossil coral and is of very similar construction to the wall of the Lower Battery. At the southern end, where the return is at an obtuse angle, the stones are nicely cut. As with Wall A, Wall B was built in two stages, wider footings on which the upper wall was then erected. A level course of narrow stones forms the top of the offset, except at the join where there is a well chosen large block, and appears to have also formed the top of the return. Dimensions at the southern end are: height to top of offset at front, 1.40m; total height at front, 2.50m; height of upper wall at front, 1.10m; height of upper wall at rear, 1.40m. There is thus a slope of 0.30m towards the sea. Only the southern, outer, face of the lower return wall is extant. The end of the return is damaged, but the level of the coral and the extent of rubble suggest that no stones are missing from the lower courses.

Where Wall B butts against Wall A4 it encases the end of the earlier wall. The two walls are flush at the top where the straight butt joint is clearly visible. At this point the top of Wall B is flat, no longer sloping upwards from the seaward side in the way that it does for most of its length. The offsets on the seaward face of the two walls are also at precisely the same level. On the outer side the joint is vertical except for the fourth stone from the base, which is the third stone from the base of the Wall A4, that was inserted to form a strong bond between the two walls. The insertion of this particular stone, the face of which was carefully cut at the correct angle, would have entailed the removal of a stone from the Wall A. On the inner side of the join, where Wall B is partially broken, the face of the earlier wall and wider footing can be clearly seen.

The inner face of Wall B and its junction with Wall A. (m02jv0914)

The topmost course of Wall B facing stones, including those at the southern end, is of basalt. The width is *c.* 0.30m or slightly less, and the stones appear to be 0.10 – 0.20m thick. The top faces are well dressed but the leading edges are not, which, because they slope towards the sea, has resulted in a rough, angular edge. There is no sign of any clamping, these basalt slabs being only held in position by the lime mortar. Much of inner face of Wall B, like that of Wall A, has been robbed of stone for reuse in later construction elsewhere.

The Present Condition of Wall B

A small number of stones have become dislodged from the lowest course at the front. More seriously, much of the basalt from the top is missing. We were informed that some basalt slabs had been taken from here in the recent past. Urgent remedial action is needed. The low return at the south end is very ruinous and would derive some benefit from cleaning and consolidation.

Basalt coping stones on wall B. (m02jv1702)

The Inner Cross-Wall: Wall C

Materials

Coral in cut blocks of various sizes, coral rubble, basalt waste (*c.* 0.20 x 0.18 x 0.12m), and basalt chips in a matrix of lime mortar.

The Construction of Wall C

A wall, in approximately the same position as Wall C, is shown on the early French plans (Maps 1 and 2). The line of north-east face is clear, but no dimensions are obtainable without considerable cleaning. The eclectic building materials used in the construction are, unless there has been some repair, of particular interest.

The Present Condition of Wall C

The wall only stands one or two courses and is very ruinous. Cleaning to obtain more details would be advantageous, but would also require a program of consolidation if it were not to result in rapid obliteration of what remains.

WESTERN AND NORTHERN DEFENCES

General Description

The western defences of the French period include all of the defensive works between the western side of the Landing Point and the northern end of the Lower Battery, i.e. Wall F to G, the Storehouse (Structure 2), the North-West Battery and all of the associated banks and berms. The sequence appears to be, as set out in detail under the individual discussions, the Lower Battery (Wall A), Wall F, Wall E and the Storehouse (Structure 2), Wall G, Wall D and the Platform (as described above). It is not possible to establish the chronological relationship between Walls D and G, although both apparently belong to a late stage that would seem to connected with construction of the Upper Battery. The construction materials and techniques used for Wall F are very distinctive and differ markedly from those of the Lower Battery.

The overall conclusions, which must remain tentative until further more detailed research has been conducted, can be easily summarised. Following the construction of The Lower Battery (Wall A) the North-Western Defences, comprising Wall F, were built to protect the Landing Point and the sector of the islet which faces the inner part of the pass. This scheme left a long gap (perhaps partially covered by the western ditch or quarry) between the end of Wall F5 and Wall A1. This gap was filled by the construction of Wall E and the Storehouse (Structure 2). This entire scheme appears on Map 2. When the Lower Battery was abandoned in favour of the more elevated Upper Battery it would appear that Wall D and the platform which it retained was constructed. Wall G and the North-West Battery, if the difference between Maps 2 and 3 have been properly interpreted, also belong to a late phase. The major conclusion to be drawn is that the construction of the defences was an ongoing process with many phases of modification and improvement, each of which have their own characteristic building styles.

The following sections of the report proceed from south to north, rather than in strictly chronological order, because there remain many uncertainties concerning the precise chronological relationships between the various features. Continuing along the shoreline leads to the Northern Bank and Battery, and Wall H. Further on the North-Eastern Bank and Walling stretches along the shoreline and a "Ditch" runs in a NNW-SSE direction.

Wall E, Berm and Bank between Structure 2 and the Lower Battery

Materials

The wall is built of cut coral blocks and off-white lime mortar. The bank comprises loose fossil coral rubble.

Description

At its southern limit Wall E butts against the northern extremity of Wall A. Its structural relationship with Wall D is not discernible although, on other grounds, Wall D is thought to be later. At the north end Wall E is bonded into south-eastern wall of the Storehouse (Structure 2). This bond can presumably be taken to indicate that Wall E and the Storehouse were constructed together. Although it is possible that Wall E was secondary and, therefore, that it was let into the Storehouse, the change in the angle of slope in Wall E as it nears the building, as well as the lack of a batter at the junction, are strongly suggestive of a single build.

The outer, landward, face of Wall E is battered some 0.10m except where it is bonded into the Storehouse. The more or less regular courses of stone slope upwards to the south, approximately parallel with the land surface and then slope downwards in a similar manner until a meter or so south of the Storehouse where, besides evening out to loose the batter, the courses become level. The wall is only some 0.60m wide and has no good face on the inner side, which is completely concealed by the bank heaped against it and which the wall was

constructed to retain. There is a berm along the top of the bank. The Bank extends on the seaward side of the Storehouse.

One of the early maps, Map 2, apparently shows an outer retaining wall, but there is no evidence that such a wall was constructed.

Present Condition

In need of slight repair, most essentially at the junction with the Storehouse (Structure 2) where a modern track is causing rapid erosion. When the WW II reinforced concrete roof of the Storehouse was recently demolished some of the debris was sensibly piled up in the corner to retard further damage and erosion where the footpath traverses the wall.

Wall E with the berm and bank beyond. (02jv0312)

The junction of Wall E and the Storehouse (Structure 2). The two walls are bonded together but camp fires that have been frequently lit in the corner over recent years have caused serious deterioration of the stone. (02jv1924)

The vertical joint between Walls D1 and E. Note the difference in masonry styles and the change in the horizontal angle of the upper courses of Wall E. (02jv1911)

The inner face of part of Wall E showing how the courses of stone run parallel to the slope of the ground. Some of the graffiti from the 1840s are visible. (02jv1916)

The Storehouse, Structure 2

Materials

Coral blocks, basalt ashlar quoins and roof drain, coral rubble fill of the rear "casemate" wall, lime mortar, lime mortar with crushed brick (argamasse) sealing the top of the rear "casemate". WW II: reinforced concrete, concrete and cement.

Description

The Storehouse is fully integrated into the Western Defences. The building itself, Structure 2, is separately described in a later section of this Report. It is, however, apposite to point out here that the Storehouse was an integral part of the French western defences that it was apparently built, together with Wall E, in order to fill the gap between Wall F and the Lower Battery. One important peculiarity of the building is the very thick "casemate" construction of the rear wall. Additional defensive properties were provided by the extension of the bank on the outer, seaward, side of Wall E along the entire rear wall of the Storehouse. The outer face of the Storehouse rear wall is the only external wall face on the islet which has clearly been rendered with lime mortar. The rendering was added after construction of the bank, as can be seen at the northern end where the bank has been washed away.

The bank against the inner side of Wall F extends right up to the north-west end of the Storehouse.

Wall F5 at left showing the rebuilding and extension, with a drain at the base, in a very different style. The upper part of the rear wall of the Storehouse, at right, shows how the face was rendered with lime mortar above the top of the now vanished bank which once protected the lower part. (02jv0201)

Discussion

The original south-eastern end of Wall F, as shown on Map 1, was broken and rebuilt (in a clearly different style) so that it was bonded into the Storehouse. The internal bank and berm was either added at this time or was dug away and rebuilt.

It is striking that the Storehouse was designed as defensive building that was bonded into the pre-existing defensive wall (Wall F). The "casemate" construction of the back wall, together with the additional bank, demonstrate the strong measures that were taken to protect the building from cannon shot.

The French plan, Map 2, contains a sectional drawing that clearly indicates a flat roof which would not have been a visible target from the sea.

Wall F, the Internal Berm and Bank

Materials

Small, irregular basalt stones for the external footing, trimmed basalt quoin stones on the external face at the northern corners, cut slabs of fossilised coral for the wall faces, fossilised coral rubble wall core, lime mortar.

The Berm and Bank, where cut through by the sea, is composed of fossilised coral rubble. The base of the cut through the Bank is now obscured by a protective pile of broken WW II reinforced concrete from the Storehouse roof.

Description

Wall F has, for the purpose of description, been divided into five sections, F1-5, from the Landing Point to the Storehouse. The wall is, nevertheless, all of one build except at the south-eastern end where it was extended to bond with the Storehouse.

Construction

The wall is of two phases. Phase 1 is the construction of the main wall, Wall F1 to F5; Phase 2 is the rebuilding of the southern end which is an integral part of the Storehouse (Structure 2). In addition there is a basalt buttress against the outer face where the sea has broken through, very similar in all respects to the buttress against Wall A of the Lower Battery.

The footings, which are slightly wider than the wall itself, sit directly on the very irregular bedrock. The outer side of the footing is composed of irregular basalt stones which are roughly coursed, with the face slightly battered. The stones are generally less than 0.20m on any one side. Only at the three northern corners (F1/F2, F2/F3 and F3/F4) are there ashlar quoin stones of basalt. The inner face of the offset is constructed of slab-like fossilised coral blocks in the same manner as the upper walling. The upper walling is characterised by neatly coursed ashlar of narrow face stones set on edge. The method of construction is clearly seen in the breech. The ashlar courses on the outer and inner faces correspond, so that after each course had been laid the core of the wall was filled with loose rubble and some lime mortar. The mortal forms a level at the top of each course, as though it had simply been poured in.

Wall F showing the external basalt footings founded directly on the irregular bedrock and the layered rubble construction of the wall core. (02jv0208)

Wall F1, which forms the western side of the "gate" from the Landing Point is 0.62m wide. The other stretches of the wall, F2 to F5, are 2.25 wide with an additional offset on the seaward side of 0.15m and 0.10 on the inner side, making a total width for the foundation of 2.50m at the breech. Wall F5 on the southern side of the breech comprises the full ten original courses of face stones for a height of 2.45m plus two face stones on the offset inner side and basalt facing on the outside, measuring an additional 0.95m. The total height at this point is thus 3.40m.

In the second phase, according to the evidence provided by Maps 1 and 2, the southern end of F5 was pulled down in order to bond the wall with the Storehouse (Structure 2). This later piece of walling has a drain constructed of basalt at the base. Like the south-east wall of the Storehouse, this rebuild of the end of Wall F5 was rendered with the same lime mortar as was used for the bonding. In this respect, it is curious that the mortar rendering on the south-east side of the Storehouse did not extend below the top of the external bank. The rendering on the extension of Wall F5, on the other hand, together with the position of the drain at the base, indicate that there was no external bank in this position when the rendering was applied.

The north-western end of the bank against the outer wall of the Storehouse must, therefore, have been retained in some way.

The Landing Point and the North-Western Defences showing the ashlar basalt quoins of Wall F1 and F2, the basalt footings and the overhanging vegetation. At centre foreground is a cannon set upright as a mooring post. The stepped Structure 31 at top left was a British flagpole base. The top of the North-West Sentry Post is at top right. The Storehouse is in the middle distance. (02jv0701)

Discussion

Although Wall F is of impressive and strong appearance, particularly at the outer corners where there are basalt quoins, the actual construction of the wall is suggestive of considerable haste. The distinctive construction technique is not seen elsewhere on Isle de la Passe. Wall F can therefore be seen to represent a major and distinctive phase of fortification.

Date

The southern end of Wall F5 is clearly broken away and extended by the construction of the Storehouse (Structure 2). Map 1 together with archival material, places the construction of Wall F early in the French period, but it was presumably erected after the construction of the Lower Battery.

The date of the internal Berm and Bank is unknown. A bank around the inside of the northern angle is shown on the earliest map (Map 1) and the existing bank appears on the earliest map to show the storehouse (Map 2).

The date of the breech is not clear, but it is not indicated on the sketchy 1891 map (Map 4). The WW II drain that once ran through the break to the sea demonstrates that there was a hole in the wall by the early 1940s.

The corner of Wall F3 and F4 showing the need for repair and erosion of the coral blocks. Immediately in front of the footings is the rock-cut trench that once contained the additional basalt of the external buttress. The North-West Sentry Post stands above. (02dpjv0216)

The end of Wall F was broken where the ashlar face stones step down, and it was rebuilt when the Storehouse was constructed. The bushes are growing on the high bank behind the wall. (02jv0201)

The Present Condition of Wall F

Stretch F5 has been broken through by the sea. While this breech provides an interesting section through the wall, showing its construction, it is certain that remedial action is a priority. Consolidation of the base of the wall on the south side of the breech is very urgently required, and could be accompanied by consolidation of the broken southern edge and further protection of the rampart behind. The north side of the break appears to be more stable, not least because the bedrock is higher here. It would appear that seawater flowing out is causing as much or more damage than waves from the front.

There are a few other places where repair to the outer foundation would be prudent. Especially important is the need to underpin the corner by the Landing Point.

Some action is also needed to protect the North-Western Battery (Wall G and the Platform fill) as described in a later section.

The top of stretch F2, and also the top of G, is overgrown by large and attractive bushes which hang down over the outer face. Advice is required on the extent to which this growth is damaging the walling and, thus, whether or not it should be cut back and poisoned. The bushes do prevent visitors walking along the wall and must also provide some protection from the elements to the outer face.

The south side of the breech in Wall F showing the offset and the urgent need for consolidation. The inner Bank and Berm has now afforded some protection by the piling up of concrete debris from demolition of the Storehouse roof. (02jv1001)

The North-West Battery: Wall G, Platform, and Internal Bank

Materials

Coral blocks, coral rubble and basalt ashlar.

Description

Wall F stretches 1 to 4 were strengthened by the addition of a broad platform on the inner side. The platform was supported by Wall G, which butts against Wall F1 and which runs parallel to walls F2 to F4, although in a sweeping curve rather than in angled sections.

The base of the wall, where visible, appears to have been built on a pre-existing bank that is partially built up. The lowest course or courses of Wall G all appear to be of basalt ashlar.

At the southern end, just to the north of the breech in Wall F, large basalt ashlar blocks have been displaced by the sea and the coral rubble fill of the ramp and platform is visible. Behind, i.e. to the south, of the platform is a flat level area which is largely obscured by a WW II building platform (Structure 23). Erosion on the inner side of this bank has revealed a small fragment of coral and lime mortar wall. Part of this inner bank can be seen to be artificial but it is certainly possible that the core is bedrock.

The North-West Sentry Post (discussed below) was built on top of the platform.

The North-Western Platform looking north from the breech in Wall F. The rock-cut trench for the Buttress is at left. The face stones and mortared rubble core of Wall F can be seen. The loose rubble fill of the ramp platform retained by, Wall G runs beneath the North-West Sentry Post. 02jv1212)

The breech in Wall F and the broken end of the Wall G retaining the Ramp leading to the top of the North-Western Platform. Note the fine basalt ashlar of Wall G and the eroding rubble fill of the platform. The piece of concrete at bottom right is part of a WW II drain that, together with the displaced basalt blocks, has been thrown into its present position by the sea. (02jv1003)

Discussion

The maps appear to confirm the visual impression that Wall G originally terminated just to the north of the breech in Wall F. The base of Wall G rose up from this point, presumably retaining a ramp rather than a set of stairs because of the need to move guns into position on top, and also because there are no traces of stone stairs. The absence of a bank behind Wall F at its most vulnerable point (as indicated by the external buttress and the fact that here the wall has been broken) is presumably to be explained by the necessity of having a ramp leading up to the top of the North-West Battery.

Maps 1-3 show various schemes for weapons in this position that have not been identified. This is in part because the top of the platform is very overgrown and also because of the WW II construction of a building platform (Structure 23) on the inner bank.

Date

The platform was constructed after Wall F and before the erection of the North-Western Sentry Post. The maps show that the inner bank, below Structure 23, is also French.

Present Condition

The southern end of Wall G and the fill of the ramp is slowly eroding. The basalt blocks could be repositioned and the ramp reconstituted. Although some reconstruction is not in itself urgent there would be some logic in combining measures here with more urgent consolidation of Wall F. Vegetation is discussed under Wall F.

External Basalt Buttresses

Construction of the Buttresses

At the one point, towards the centre of the Lower Battery, the sea has cut into the coral bedrock and approaches the face of the battery wall (Wall A). Also, at the north-west of the island, again where there is almost no bedrock beyond the defensive walls, Wall F has been smashed through. In both of these two places low buttresses of basalt blocks bonded with hard pink mortar and tied together with iron clamps were built in rock-cut trenches.

The clamps each measure 0.40 by 0.04m (ratio 1:10); the length of the bent ends, which is obscured, approximates to 0.04m. Basalt and coral chips were jammed between the basalt blocks and the edge of the cut around all four sides, the whole being set in hard pink mortar. There is no indication that the buttress ever rose above the top of the coral cut, in which case it would have terminated below the base of the battery wall and would, therefore, have been designed to strengthen the bedrock.

Traces of what is possibly the same distinctive pink mortar on the face of the battery wall (Wall A) itself might indicate selective repointing.

The Date of the Buttresses

The construction of the Buttresses obviously post-dates the building of Walls A and F and presumably pre-dates the replacement of the Lower Battery by the Upper Battery. The date of the robbing is impossible to judge.

Materials

Basalt cut blocks with dressed front faces, basalt and fossilised coral chips, pink lime and crushed brick mortar, iron bar clamps – presumably set in lead.

The Buttress against Wall A

At the former location a trench some 5.80m in length, 0.80m wide and 0.80m deep was cut into the coral at the foot of the wall. The lowermost two courses of faced basalt stone-work that still survive in this trench, the uppermost course comprising six stones. The original height is uncertain, although there is clear evidence - the remains of mortared rubble - for one additional course. The basalt was tied with iron bar clamps set, presumably, in lead.

The Buttress against Wall A. (01jv0211)

The Buttress against Wall F

The buttress against wall F is similar in almost every respect, only the iron bar clamps, 0.34 by 0.03m, being somewhat smaller (there are too few complete examples for this to be significant). A trench, 0.95m wide was cut into the fossilised coral bedrock in front of the wall from the corner of F3/F4 to some distance south of the later breech. Extending a little further to the south there appears to be a narrower trench the inner side of which was not cut back flush with the face of the footing. This latter feature suggests a curtailment of an original plan.

There is again no indication that the basalt ever extended higher than the top of the trench, so that only the base of the footing was covered. It is therefore clear that the intention was to prevent the sea from eroding away the bedrock and thus undermining the footing (rather than supporting the footing itself). Very little is left in position but there are sufficient, if meagre, traces of pink lime mortar to make it highly likely that building was completed along the entire main trench. It seems a fair assumption that, if construction was completed, most of the basalt has been robbed at some subsequent period, presumably, because of ease of access, only after the breech was made in Wall F or for construction of the Western Building.

At high tide the buttress in front of Wall F is washed by the sea. (02jv1211)

The Present Condition

At the first of the two buttresses just described one basalt block has been dislodged and ought to be reset before it ends up in the sea. If a suitable mix could be found there would be a case for some additional consolidation. The iron clamps will continue to slowly decompose and have already lost any structural utility. What little is left of the second buttress appears to be stable.

The Northern Bank and Battery, Wall H

Materials

Cut fossilised coral and rubble, off-white lime mortar.

Description

Partially obscured by bushes and, on the inner side, by WW II building platforms (Structures 20-22) and seating for a flagpole (Structure 31). What can be seen is a sinuous coral wall (Wall H) with a berm and steep bank on the outer side. The east wall and the north-east corner can be seen, but little else. The uppermost course of blocks, from just to the west of the WW II stairs to the eastern limit of the surviving face, has been chamfered.

The landing Point with the west end of Wall H, at right, showing modern concrete underpinning and the flag emplacement, Structure 31, above. (02jv0410)

Discussion

It is not easy to reconcile the extant remains with the early maps because so much has been obscured by WW II construction. The general scheme is, however, reasonably clear.

Present Condition

The walling at the western end has been rebuilt on at least one occasion and some of the original walling has been underpinned with modern concrete. Further consolidation of the late repair is required.

The front, northern side, of the bank that faces the sea is heavily overgrown. This vegetation serves to protect the bank and should not be disturbed without very good cause. A track across the wide eastern end is today used as the major path from the Landing Point to the eastern side of the island. Careful delineation of the walling would doubtless reveal more of the plan and might very possibly produce evidence for emplacements. The bank, however, is fragile and prone to erosion so that any investigation needs to be accompanied by restoration of the bank where foot passage is eroding a channel and by consolidation or re-routing of the track.

The need for repair. (02jv0110)

Wall H with WW II Structure 22 on top. The top edge of the uppermost row of stones is chamfered. (02jv18)

The North-Eastern Bank and Walling

Materials

Fossilised coral blocks, fossilised coral rubble, presumably walling was once bonded with lime mortar.

Description

A low rubble bank at the north-eastern corner of the island with stone walling at the east and also at the west. At the western end, where it makes a sharp turn, the walling is quite substantial and appears to butt against the Northern Battery. The western limit is partially obscured by WW II Structure 27 and associated drainage channels. A little to the east, where the later channel runs across the line, face stones can be seen.

The low North-East Bank is situated behind the WW II toilets and in front of Structure 24. The depression in the bank marks the footpath to the toilets. To the right is end of the North Bank with the return of Wall H in front of which are fragments of a WW II concrete drain. (02jv1515)

Discussion

Appears to have been something of a half-hearted afterthought. Perhaps the scheme had not been completed, or even begun, by the time of the battle in 1810.

Present Condition

There are tracks across the bank to the WW II toilet (Structure 30), but the main track along the eastern side of the island keeps inside the bank. The current condition is thus stable.

The Ditch

Material

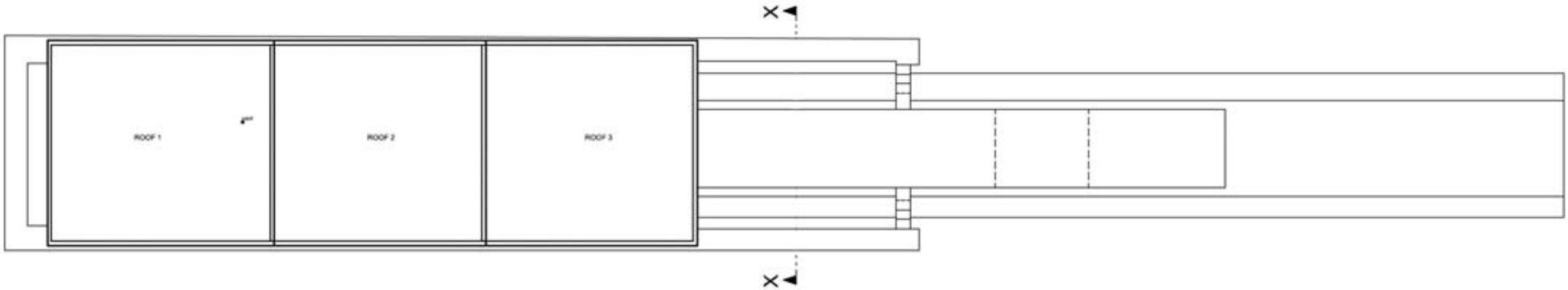
Cut into the fossilised bedrock. The southern half contains three interconnected underground Generator Halls from WW II, although the southern end of the rock cutting is visible and appears to have been little altered. WW II materials are described under the section on the Generator Halls.

Description

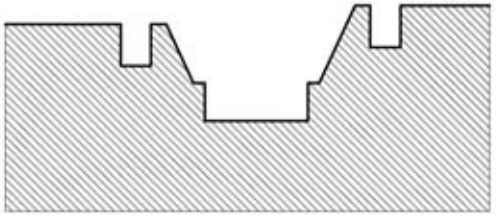
A large rock-cut feature on the eastern side of the island. The cutting extends into upstanding rock. is V-shaped with a square-cut trench at the base, aligned approximately north – south. The slightly sloping entrance is at the northern end There is a regular rock-cut channel around the southern half, together with the central, opposed, stepped slots that extend to the base of the cut. The lower parts of the slots were reused in WW II, but were clearly cut at the same time as the channel. The base of the trench does not appear to be level or flat and it is possible, although some excavation would be needed to confirm the observation, that there are a series of basin-like partitions.

There area few graffiti on the sides that are at least as early as the 1840s.

The Rock-Cut Feature from the top of Underground Generator Halls. The stepped slot in either side is just in front of the figure in the foreground. Structure 26 is at left and the low North-Eastern Bank, traversed by a WW II track to the Toilets, (Structure 30) lies behind. (02jv2210.



SECTION XX



DITCH

The Rock-Cut Feature looking towards the entrance to the Underground Generator Halls. The rock-cut channel at the top on either side is almost totally obscured by vegetation. (02cn0417)

Discussion

This large and deep cutting is shown on the 1891 sketch-map as a "Ditch" and it is represented as a V-shaped ditch with a square-cut trench at the base. Neither the stepped cuttings in either side nor the rock-cut channel around the southern half of the top are depicted and the map, which was drawn when the feature was not half obscured by later concrete halls, gives no other details. It is difficult to know what to make of the fact that this large feature is not shown on any of the three early maps.

Graffiti seem to indicate a date earlier than the 1840s. The scale of the cutting and workmanship are surely French.

Both the function and the date are enigmatic. Stone cut from this feature would have been used for building, although the primary function could not have been as a quarry. This observation implies that the date of the cutting ought to be the same as the date of a major phase of construction. Since this feature is not shown on the early maps an argument could be made for thinking that it was part of some grand scheme which went together with the construction of the Belle Isle Batterie (i.e. the Upper battery). Unfortunately, however, this argument is weakened by the absence of this feature from the latest of the three early maps. On the other hand, this particular map does not inspire complete confidence and, with special pleading, it could be suggested that the cutting of this feature postdates the map and predates British capture of the island. In this respect it could be pointed out that the neither the Sentry Posts nor the Eastern Defences are shown on the map in question.

The floor is apparently not all on the same level, but confirmation of this, as well as revelation of the precise nature of the base, requires cleaning and perhaps limited excavation. The rock-cut channel around the southern half, together with the central, opposed, stepped slots, appears to have been cut to retain some sort of cover. The character of the channel is very much in keeping with the character of the entire feature. There is no visible evidence that the feature was unfinished.

It might be suggested that the main feature was unfinished and that the channel and slots might possibly represent later, possibly British, utilisation of an earlier rock-cut feature. It would be difficult to disprove this hypothesis, although the application of Ocam's Razor would lead to it being discounted in the absence of positive evidence. Although speculation as to the intended function is, perhaps, fruitless, the term "Ditch" on the 1891 sketch-map is tantalisingly suggestive.

Tentative Conclusion

Perhaps in origin a massive defensive ditch that formed part of some uncompleted scheme. Surely utilised as a semi-subterranean store, the southern half of which was at some undetermined time covered with a flat roof of some kind.

Present Condition

The major long-term concern is the deterioration of the WW II reinforced concrete Generator Halls. The cutting itself is stable.

The Quarry or Ditch on the West Side

Materials

Cut into the fossilised coral bed-rock.

Description

A rock-cut trench with flat base and straight sides, more or less regular.

The Quarry or Ditch with the corner of the Storehouse at left and the Western or Searchlight Building in the background. There is a larger irregular quarry, barely visible, between the end of the Ditch and the Building. In WW II the cables from the Storehouse Generators to the Searchlight Building were laid along the Ditch. (02jv1213)

Discussion

Surely the fossilised coral that was cut from this feature was used for building. However the regular trench-like form suggests that the primary function was perhaps intended to be defensive. The trench is unlikely to have been for a wall foundation because all other visible walls (pre-WW II) are built directly on the uneven rock surface. As it is the trench would not have formed much of a barrier, even though its defensive position does not require explanation. To suggest that it might have been unfinished smacks of special pleading, not least because a quarry in this position would surely have predated completion of the defensive circuit.

Present Condition

Stable.

Other Quarries

There are two large quarries in which evidence for the stone-cutting techniques can still be seen. One is on the western edge of the island immediately north of the Western Building. The second, larger, quarry is at the south-eastern edge of the island and partially submerged at high tide. Additionally, traces of rock-cutting and quarrying can be detected almost everywhere.

The large quarry on the south-eastern side of the island at low tide. The corner of the Upper Battery wall is at the extreme left and the Western Sentry behind. (02vj1623)

THE UPPER BATTERY

General Description

The Upper battery is the most impressive and the most important monument on Ile de la Passe. It is argued below that the Upper Battery is of French origin, probably dating to the early Nineteenth Century. Archival material, including Map 3, suggests that it was probably unfinished when the islet was lost to the British at the start of the 'Battle of Grand Port' in August 1810. The British map of 1891 (Map 4) calls the Upper Battery the 'Belle Isle Battery'. Alterations were perhaps made by the British later in the Nineteenth Century and again, perhaps, in the First World War. More substantial additions were made in World War II. Nevertheless the original French design is entirely clear and almost all of the French work has survived, much in its original position. This section of the report is chiefly concerned with the Upper Battery of the French Period, later alterations being described in later sections under the appropriate period.

Upper Battery or 'Belle Isle Battery'

Materials

Cut fossilised coral blocks and rubble, basalt ashlar in the emplacements, off-white lime mortar and iron fittings.

Description

A magnificent sweeping battery that affords a clear view over the entrance to the pass and to the entire pass itself. The essential part of the Battery comprises a large bank with a broad berm on top a wide level area behind. Distributed at more or less regular spacing were, apparently, 11 cannon emplacements. The inner side of the rampart was retained by a stone wall into which pairs of angular alcoves were set at each emplacement. The two ends of the rampart were retained by huge terrace walls, here labelled the North Wall and the South-East Wall. The level area behind the rampart was also terraced, the terrace fill being retained by the Terrace Wall that, apart for a level section in the centre, ran parallel to the inner wall of the battery. The battery was approached by a broad ramp leading up from the cluster of buildings on the lower area to the north and by a flight of broad basalt steps at the south-eastern end.

North Wall to First Emplacement	1.83
First Emplacement	2.70
Wall	5.45
Second Emplacement	2.70
Wall	5.45
Third Emplacement	2.66
Wall	5.46
Fourth Emplacement	2.70
Wall	5.60
Fifth Emplacement	2.40
Ninth Emplacement	2.45
Eleventh Emplacement	2.45
Wall	4.90

Table giving spacing and widths of the cannon emplacements on the Upper Battery where these can be measured. Measurements are in metres.

The sixth and eighth emplacements are beneath those belonging to WW II while only the capping slabs of the seventh are visible. The tenth emplacement was adapted at some later period (as described elsewhere below). The triangular niches are each about 1.10m wide, 0.50m deep and 0.68m high; the space between them being 0.30m. The capping stones and centres are basalt ashlar.

The North Wall and Rampart of the Upper Battery. The angle of slope is 45º, the berm (missing two top stones at left) is 6.00m wide and the terrace 10.0m. (02jv0612)

The South-East Wall of the Upper Battery with broken steps and terrace wall at right. The later Tower is on top and the end of the Lower Battery is at left. (02jv1608)

The South-East Wall and Rampart of the Upper Battery showing the stone cut to fit the different angles and the capping of the wall tops. (02jv1620)

Construction of the rampart entailed the filling in and levelling up of earlier ramps and passages. Some of these earlier cuttings are shown on the early maps and traces, as mentioned earlier, are still visible. It is not easy to estimate how much of the core of the rampart is composed of bedrock, nor the extent to which the 45º slope at the front of the rampart involved the cutting back of the bedrock. It is, however, clear that there was a considerable amount of fill at both ends, and especially at the northern end. This rampart fill was retained by large walls that were carefully built from cut fossilised coral blocks. The berm on the top of the rampart was 6.00m wide (exactly 5.90 at the North Wall). The Terrace behind is 10.00 wide (exactly 9.83 at the North Wall) and the battery wall at the back or inner side of the berm is 1.25m in height. The height of the corner of North Wall and the Terrace Wall is 4.40m. The greater part of the berm is preserved to within few centimetres of its full original height. From its corner with the North Wall the Terrace Wall remains parallel to the battery wall and the stone courses remain horizontal as the base rises (i.e. the courses do correspond to the slope of the ground as they do, e.g., in the earlier Wall E). Towards the centre of the inner side of the battery the ground level is on a par with the flattened top of the bedrock, so that there was no reason to extend the terrace wall. To the east of the terrace wall the rising ground has been roughly levelled to from a broad ramp. It is not known if the ramp was once surfaced in any way, although its present unevenness might suggest that the work here was not fully completed.

At the south-eastern end the retaining wall makes a turn around the front of the rampart, the base of which is thus, for a short distance, held back by walling. This plan was adopted because the land here drops away with the result that it would not have been possible to either retain the desired slope of the bank, nor to have passage around the front of the base. The topmost stones of the sloping, angular walls were precisely cut to fit. Here, and also at the north end, the wall top was capped and sealed with flat stones. Access to the terrace at this south-eastern end was by way of a broad set of 10 basalt steps. Some of the basalt has been dislodged and the lowermost steps are now buried. Each step measures about 1.30 by 0.25m with 0.15m risers. The corner of the Terrace Wall on this side has basalt quoins.

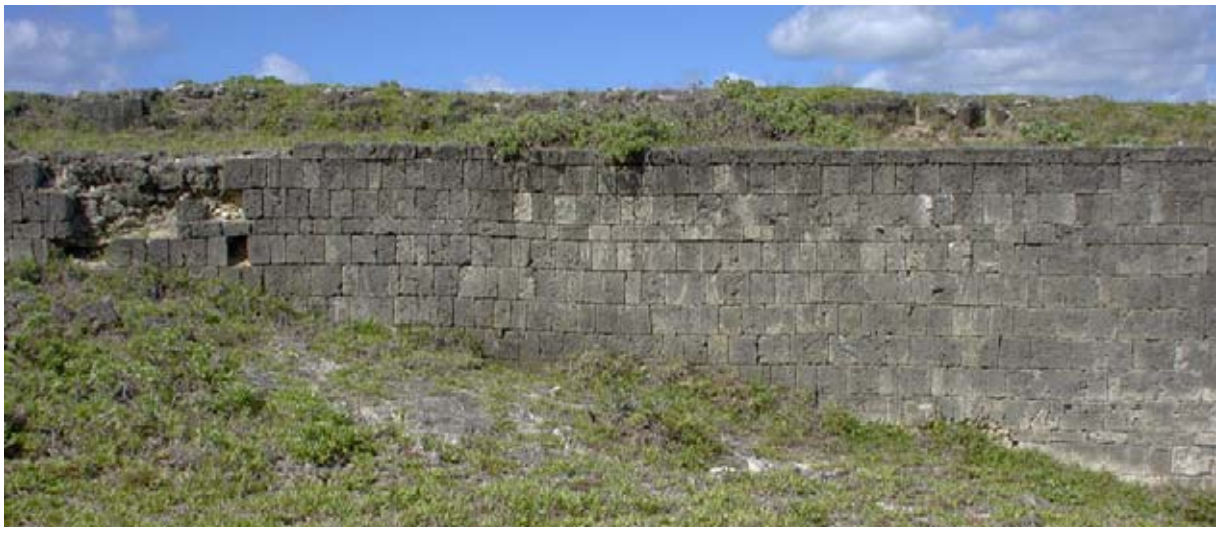
As to the wall of the battery itself and the emplacements within it, little more can be said before a program of cleaning and restoration is undertaken. The line of the wall as well the number and position of the emplacements are not in any doubt and there are no other features from the original scheme now visible. There do not appear to be any features associated with the installation of cannons remaining in place on the top of the battery where there was one more course of coral rubble above to basalt capstones of the niches than now survives.

Discussion and Date

The purpose of the Upper Battery needs no explanation. Its construction would have involved a very considerable expenditure of labour: fossilised coral had to quarried from the bedrock and most probably from the upper part and inner face of most of the Lower Battery, basalt had to be brought to the island where it would have cut and finished, and the rampart with its great retaining walls was built up. Demolition of the upper walling of the Lower Battery would also have provided a clearer view, preventing boats from creeping close to the shore under its shadow. The construction of the casemate at the northern end of the Lower Battery (Wall D etc.) and the building of the Shot Furnace would all appear to have part of a strengthening of the defences and were presumably different elements of a unified scheme.

A French date for the Upper Battery would seem to be confirmed by Map 3 and by the absence of any records for such considerable building activity in the British archives. Further, it is highly improbable that the British would have been in a position to inaugurate construction on such a scale following their capture of Mauritius.

The Terrace Wall of the Upper Battery showing the corner with the North Wall. (02jv2003)



The central section of the northern stretch of Terrace Wall. The Battery Wall and Cannon Emplacements are above. (02jv2004).

An extension of the picture above showing the need for repair. (02jv2005)

One of the emplacements with triangular niches divided and capped by basalt ashlar. Note the displaced stones in front and WW II concrete at left. (02jv0409).

Ashlar basalt pivot stone with iron fittings. (02jv0406)

Present Condition

Overgrown with grass that requires cutting back (not uprooting) in order to reveal details of the emplacements and the dislodged emplacement stones, pivot stones and so forth.

Much could easily be replaced in original positions and the stonework of the inner battery wall could be repointed. There are other places where some slight repair would be advantageous, such as the replacement of the displaced basalt steps on the staircase at the south-east end and repair to the face of the northern stretch of the Terrace Wall.

The addition of an emplacement and the construction of the Observation Tower (Structure 10), together with the WW II additions, have caused surprisingly little damage. There are tracks down the bank, clearly of WW II origin, e.g. running to the Western, or Searchlight, Building (Structure 12), which visitors should be discouraged from using and where some consolidation of the rampart would be advantageous.

The fill of the earlier cuttings beneath the rampart might perhaps offer the best opportunity for the recovery of archaeological material pertaining to the eighteenth century. Targeted excavation would reveal more of the earlier cuttings as well as yielding such material as may have thrown into the rampart or have been covered by it. Such excavation would, however, need to be backfilled in such a way as to ensure that the aspect of the rampart was not altered and also that no new erosion is set in train.

STRUCTURES BUILT BY THE FRENCH

The Powder House, Structure 1

Materials

Original

Cut blocks, roof slates and rubble of fossilised coral, basalt ashlar, off-white lime mortar, pink lime mortar with crushed brick for vault and roof, iron fittings, internal lime mortar rendering.

WW II

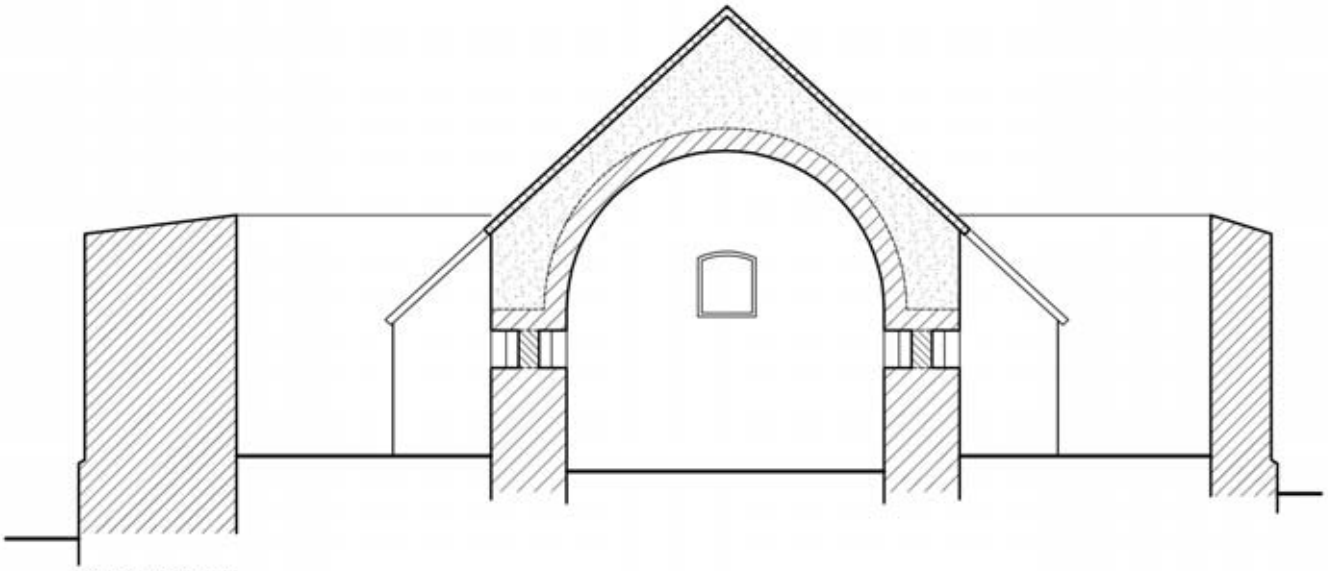
Concrete, cement and iron fittings.

The Powder House from the Upper Battery. (01jv0304)

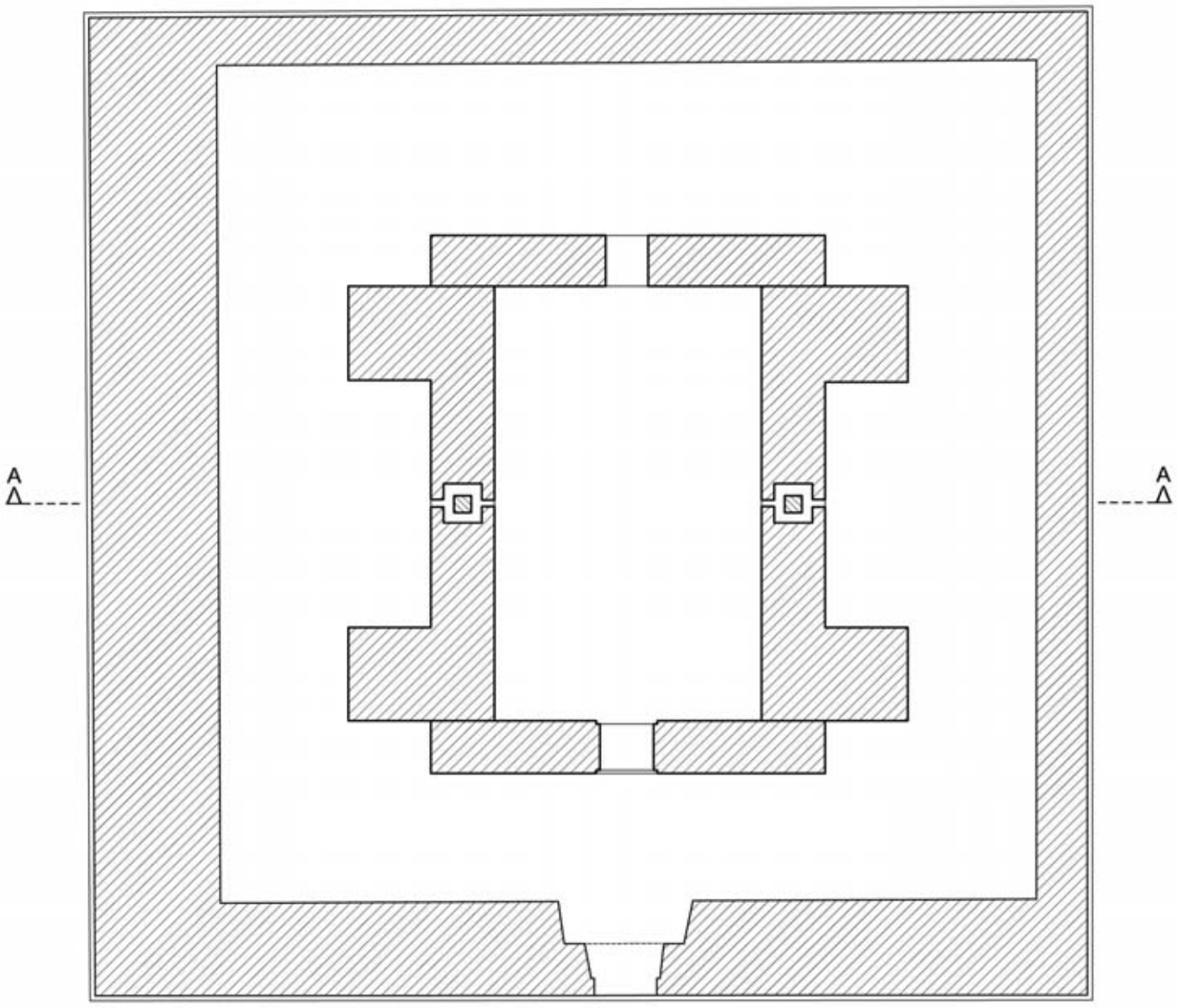
Description

The Powder House, located on an artificially levelled area in the centre of the northern, protected, part of the island, is the finest building on Ile de la Passe. The Powder House itself was provided with additional protection in the form of a protective enclosure wall. There was a single axial entrance, via doors with low arches, in both the surrounding wall and the Powder House itself.

The dimensions were, apart from the different widths of the enclosure wall, clearly intended to be symmetrical, although there is some slight irregularity in the execution. For convenience the measurements given below are in round figures. The building itself is rectangular, measuring 8.45 by 6.20m and covering an area of 52.50m^2. The ratio of length to breath is approximately 3:4. Internal dimensions of the single room are 6.84 by 4.20m, making an area of 28.72 m^2. The end walls are 0.80m wide and the load-bearing sidewalls are precisely 1.00m wide. The maximum internal height is 4.25m, half of which is accounted for by the barrel vault (although the original floor may have been just a few centimetres lower). The total external height to the top of the roof, which is pitched at an angle of about 45º, is 6.00m. The long sidewalls that bear the load of both the barrel vault and of the pitched roof were given additional strength by the means of buttresses, each 1.50m wide and 1.30m deep, at either end. The sidewalls, buttresses and barrel vault were constructed first, followed by the erection of the two end walls. This order of construction explains why the buttresses are not, as might have been expected, located in the same position as the basalt arches in the vault. The vault and the roof are bonded with waterproof pink lime mortar mixed with crushed brick (argamasse), whereas plain lime mortar was used for the walls. There are traces of pink mortar that represents repointing of wall faces in various places.



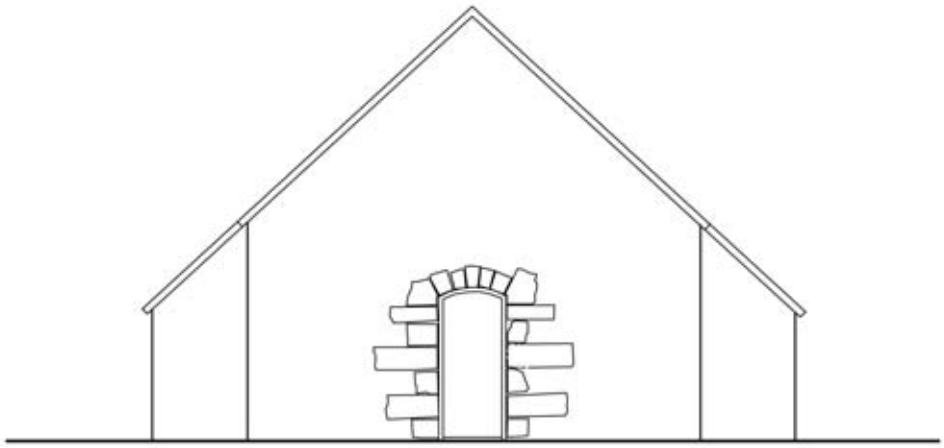
SECTION AA



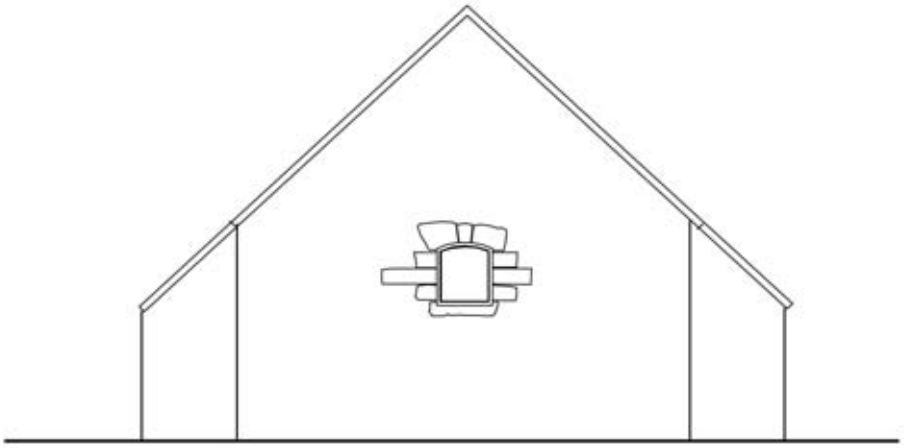
PLAN

STRUCTURE 1 - POWDER HOUSE

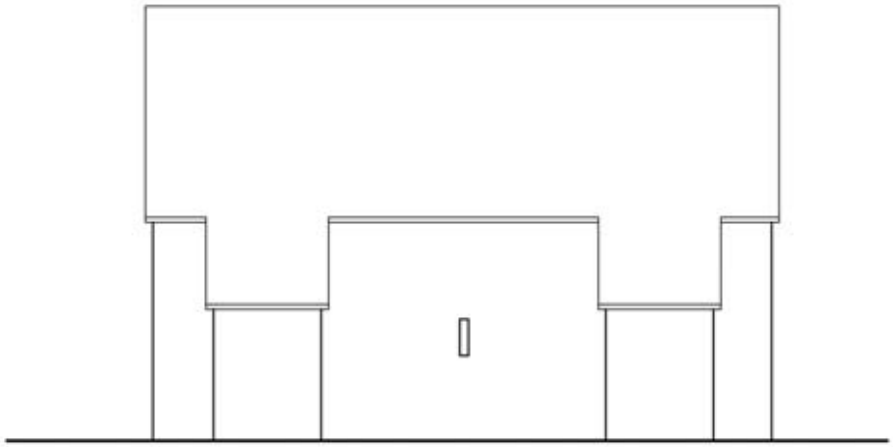
0 1 2 3 4 5 m



FRONT ELEVATION



REAR ELEVATION



SIDE ELEVATION

STRUCTURE 1 - POWDER HOUSE

0 1 2 3 4 5 m

The Powder House was entered via a door with a low arch and 0.05m rebates on the inner and outer sides. The original basalt threshold is still in place but the present floor is made of WW II concrete. The door is 0.83m wide and 1.95m high. At the opposite end is a central window, once fitted with twelve iron bars, measuring 0.75 by 0.75m with an arched top that rises a further 0.10m at centre. The only other openings were two complex vents, one in the centre of each of the sidewalls, that enhanced the circulation of air while keeping out both damp and dangerous sparks. Basalt ashlar with drafted edges was used to frame the door and the window as well as for all quoins and in the construction of the vents.

The axial alignment of the enclosure wall and powder house doors and the rear window. Note the low arches and WW II concrete surface. (01jv0620)

Measuring the window. (02jv0704)

Basalt was also used for the construction of two symmetrically placed arches that give support to the barrel vault. The rest of the vault is constructed of neatly cut coral blocks that were trimmed and shaped to fit around the basalt. The space between the vault and the pitched roof is presumably filled with crushed coral. The roof itself is made of coral slates covered with an argamasse rendering that has often been patched.

Details of the barrel vaulted ceiling showing the two sides of a basalt arch, the cutting of the fossilised coral blocks to fit and support the basalt during construction, and the use of waterproof lime mortar mixed with crushed brick for the vault. Some of the graffiti carved into the coral by British soldiers in the 1840s are visible. The walls are rendered below the springing. (01jv0601 & 0602)

Basalt and coral construction showing the coral roof slates. (01jv0416)

The high, protective, enclosure wall has a sloping top. The front measures 15.60m and the north side 15.40m, giving an area of 240.24m^2. It may be reasonably assumed that the architect's intention was to make a square enclosure in which the Powder House would have been centrally placed. The execution of this plan, however, fell a little short of precise symmetry. The enclosure wall was 0.80m wide at the rear and the south sides but on the more vulnerable north side it was 1.90m and at the front 1.50m in width. The top of the enclosure wall is bevelled to aid drainage.

On the southern side the enclosure wall is founded directly on bedrock, but where the rock falls away there is an offset foundation that retains terrace fill.

Discussion

The Powder House is depicted on the earliest of the maps (Map 1) and it may thus be assumed that it formed part of a very early, if not the first, scheme of French defences of the island. On the other hand, neither the assertiveness of the plan nor high quality the workmanship display any hint of experimentation.

Present Condition

In excellent condition, only requiring a minimal amount of repointing and some slight repair, especially at the corners of the roof. At two points the slanting top of the enclosure wall was levelled in order to seat water tanks for the WW II showers and washing facilities (Structures 25 and 26).

Of longer term concern is the slow erosion of the faces of the coral blocks and the resultant loss of the graffiti. There do not appear to be any preserved archaeological deposits, inside or against the enclosure wall, that are associated with this structure.

The slanting top of the enclosure wall was levelled in order to seat water tanks for the WWII showers. (02jv1111)

The Storehouse, Structure 2

The present state of this prominent standing structure, which is identified as a Storehouse on early maps, is described in detail in the *Basic Architectural Survey*. The main concern in this archaeological report is the place of this building within the French scheme of defences. In the 19th Century it was, according to the archives, used for some time as a prison. In World War II it housed electricity generators, for which purpose the interior was partitioned, re-roofed and provided with a revamped door and new windows. Detailed descriptions of these WW II alterations will be found in a separate section of this report.

The Storehouse from the Upper Battery. (02jv0308)

Materials

Original

Fossilised coral, basalt ashlar for quoins at the front corners, the frames and sills of the door and of the two windows as well as at either end of the roof drain. The walls are built of cut coral blocks bonded with off-white lime mortar that appears also to have been used to render the external wall face above the rubble bank on the seaward side. Fossilised coral rubble filled the casemate, the top of which was capped with lime mortar containing crushed brick (armagasse). The earlier floors are concealed or replaced by WW II concrete.

WW II

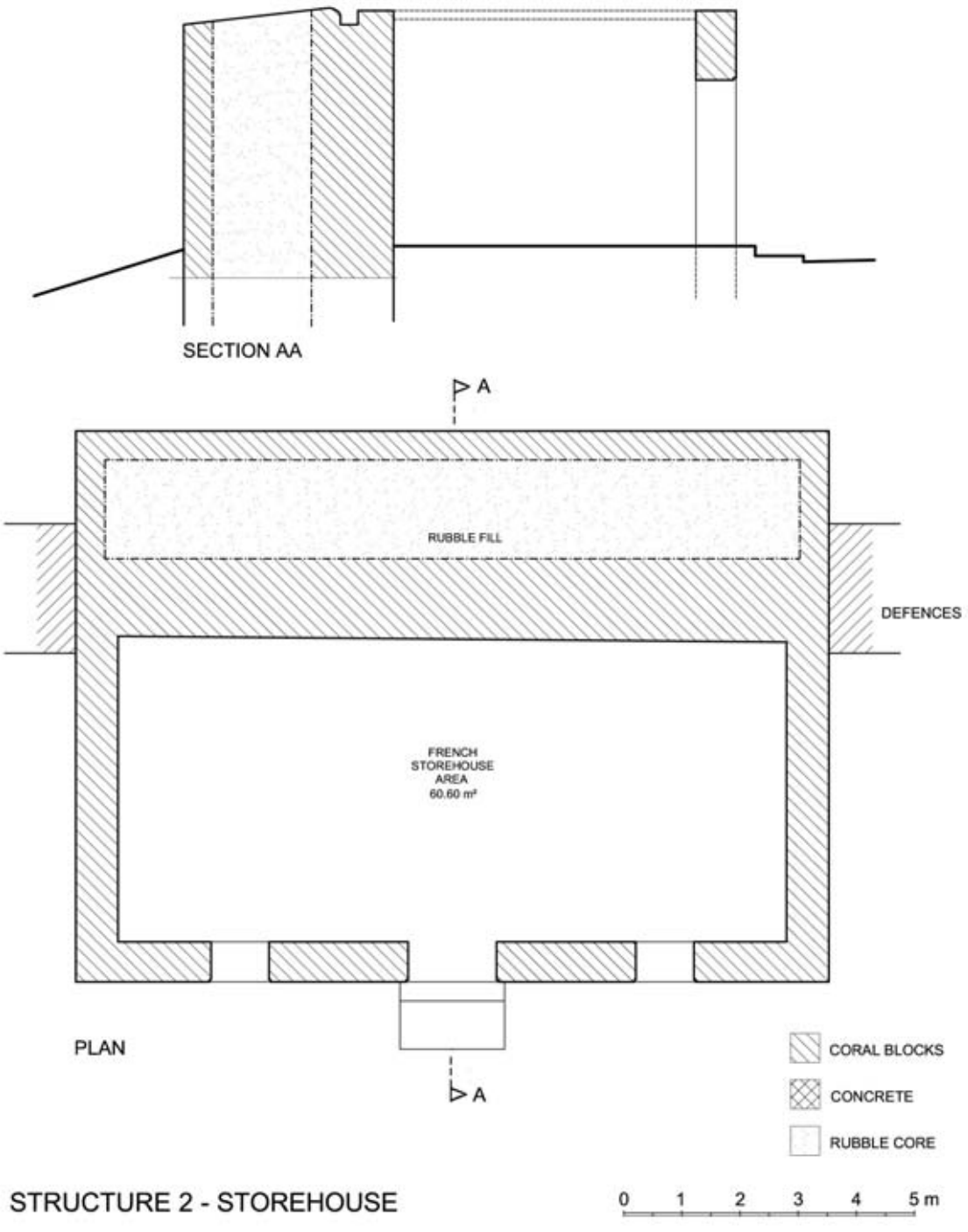
Reinforced concrete roof and partitions, concrete plinths, concrete floor, cement rendering around door and windows, iron fittings.

Description

The Storehouse was one of the most important buildings put up in the French period. It was incorporated into the system of defences on the western side of the island where it was added, as described earlier, to the end of Wall F and was, apparently, bonded with Wall E. Restoration of this striking building, which retains much of its original architectural force in spite of later alteration, must be a major priority in any scheme of development.

The storehouse was originally a simple, high, single-storey, rectangular building of some pretension. In plan the building is not quite a true rectangle. Internal dimensions are 11.50 by 5.35m, making 61.5m^2. The height from floor to ceiling would have been about 3.90m, or a little less if there had been a raised wooden floor. External measurements are 12.95 by 9.50m, covering a total area of 123m^2. That the total area is double the size of the floor space is explained by the 3.60m wide "casemate" that forms the heavily protected back wall on the seaward side. The walls are 0.65m thick and the fill of the casemate 2.30m thick. The roof was, if our interpretation of the architectural section on Map 2 is correct, was flat.

Reconstruction of a flat roof is not in conflict with the position of the large vents at the top of the sidewalls, the top of the casemate and the arrangement of basalt quoins on the front façade. There is no evidence for any division of the internal space or roof support, although the span of some six meters is on the large side for a simple flat roof, nor is division shown on Map 2. The top of the casemate, once sealed with watertight pink lime mortar mixed with crushed brick, slopes away from the building at an angle of some 8 degrees. There is a well-constructed drain, with shaped basalt blocks at either end, at the back of where the roof would have ended.



The façade of the Storehouse as it looks today. (02jv0114)

The front façade was symmetrical, having a large central door flanked by a single large window on either side, as shown below in the tentative reconstruction. Drafted basalt was used for the quoins of the front façade. In WW II the central door was revamped and new pairs of windows replaced each of the original openings. Nevertheless it is possible to gain a very good idea of the original architectural scheme by examining the drafted basalt flanking the original door and still surviving as lintels for the windows. The door, which was 1.95m wide, would have been provided with a basalt threshold. The width is such that the door perhaps had an arched top rather than a lintel. The original windows would have been close to 1.00m in width. Large central vents at the top of each of the sidewalls, 0.75m wide and 0.50m deep, are now filled with concrete.

Tentative reconstruction of the façade of the Storehouse as built by the French.

The lower part of the back wall of the casemate on the seaward side is a substantial terrace wall that still retains the levelling material. This terrace wall was concealed and protected by a continuation of the bank and berm that ran in front of Wall E. Above the top of the berm the outer face of the rear wall was rendered with lime mortar

The Storehouse was added to end of Wall F which was partly demolished and rebuilt, with a drain at the base, with the result that the building was bonded into the rebuilt section of wall. On the southern side it appears that Wall E of the Western Defences is bonded into the Storehouse, as described in the relevant section of this report.

Discussion

The casemate, together with the grandeur of the front façade, suggests that the original purpose was as a store for weaponry (other than barrels of gun-powder) and equipment. It is of particular note that this imposing and important building was conceived of as an extension or addition to the pre-existing defences themselves, rather than being built behind a protective wall. Later use as a prison would surely have involved some division of the internal space.

Present Condition

The current state of this fine building is discussed in detail in the *Basic Architectural Survey*. Briefly, the WW II reinforced concrete roof needs to be replaced and a decision has to be taken about the safety of the partition walls.

The rear of the Storehouse. The terrace wall retaining the foundation was protected by a bank and berm which has washed away below the rendering on the left. (02jv012).

South side of the Storehouse showing the roof drain, the blocked vent and Wall E with the berm on the left. Part of the broken WW II roof has been piled in the corner to limit further damage from fires. The drain at right is WW II. (02jv0121)

The south side of the Storehouse, Wall F5 and the internal bank. Note the roof drain, the blocked vent and the sloping top of the casemate. (02jv011).

The Shot Furnace, Structure 3

Materials

Early Phase

Fossilised coral foundations.

Main Phase

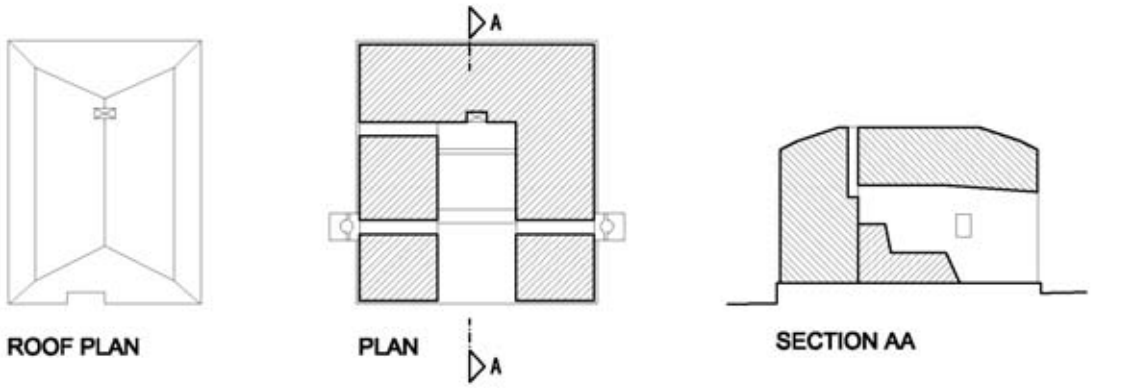
Basalt ashlar (including spolia), basalt rubble, red bricks, lime mortar, lime mortar with crushed brick (argamasse), iron.

Description

Pre-Furnace

Fragments of the bottommost course of earlier walling in fossilised coral were discovered. These fragments are on the same orientation as the furnace. One fragment partially underlies the west wall where it has been obscured by recent concrete underpinning. Another fragment underlies at least the western portion of the north wall. The largest fragment was discovered projecting northwards from the north wall of the furnace just a few centimetres from its eastern limit. This piece of wall was 0.70m wide and survived for a distance of 1.80m. The single course of stone rests directly on the bedrock. A fourth piece of wall, or what appears to be wall, lies partially below the east wall of the furnace at the south end and extends but a short distance. There are no floors, surfaces or *in situ* archaeological deposits associated with these walls which appeared as soon as the weeds were cut back and the base of the furnace itself was cleaned with a brush for photography. The extant remains are very slight and fragile.

The Shot Furnace from the north-west with an earlier wall foundation projecting from the back wall at bottom centre. (02jv1207)



STRUCTURE 03 - SHOT FURNACE

0 1 2 3 4 5 m.

The Furnace

The furnace building itself is complex and the interior is somewhat precarious, making detailed study, e.g. of the brick bonding pattern of the chimney, a dangerous operation without the insertion some shoring. The plan is simple but above the single course plinth, which is founded on bedrock and, perhaps, the scant remains of earlier stone footings, the sidewalls taper upwards. The hip roof has a bent pitch.

The front of the structure has suffered some destruction, so that the original form and some of the features are difficult to reconstruct. It is clear, however, that the front of the furnace was not symmetrical.

The interior of the structure requires very careful cleaning and recording. It is a reverberating furnace in which heat was reflected heat back into the centre. The basic system enabled cold cannon balls to be rolled into the rear of the furnace from the back left, by means of a chest-high a conduit. Oddly, the stone base of the conduit appears as though it slopes away from the chamber, perhaps to enable raking out, but the iron work on which the cannon balls would have rolled has almost totally disappeared. The precise mechanism by which the cannon balls were worked through the furnace chamber until they rolled out onto the cantilevered receptacles on either side is unclear. There is a considerable amount of iron *in situ* within the chamber, although it is highly corroded and rather fragile. Very careful cleaning, immediately followed up by conservation measures, would reveal much. The red hot balls would have rolled along the stone channels and come to rest in the cup-shaped receivers, from where they would have been carried to the battery. The transverse grooves in the receivers were, presumably, for the insertion tongs or levers that would have been needed to ease the hot balls onto panniers of some kind.

The purpose of the furnace was to generate sufficient heat to make the iron cannon balls red-hot. Charcoal would have been the usual fuel and bellows would have assisted the creation of sufficient draft. The rectangular chamber had a vaulted roof and there was a chimney at the back. The chimney and a part of the furnace was lined with red bricks, but it has not yet been ascertained if the entire vault of the chamber had, as might be expected, a brick lining. A little of the brick is still in its original position and, although most has been lost, the imprints of some the bricks have survived in the mortar. There is also a recess in the front edge of the roof, the purpose of which has not been ascertained.

Much of the basalt, particularly that used in the base, appears to be spolia. Some basalt blocks bear clamp marks and other features from their previous use. The angled quoin stones, the stones of the conduits and the inner furnace, and cantilevered receptacles, all exhibit the highest quality of the mason's skills. The masonry is chinked.

The front and east side of the Shot Furnace with a fragment of an earlier structure at the front right. Note the opening at the front of the roof, the single course of offset footings and the drafted margins of the basalt ashlar. (02jv1023.

The west side of the Shot Furnace showing the cantilevered receptacle and the higher opening behind into which cannon shot was placed. The form of the roof can be clearly seen. The concrete posts are modern. (02jv1118)

The overall dimensions of the Structure are: 3.40 by 3.90m at the base and 280 by 3.90 at the top, the height of walls is 2.25m. The width of the chamber is 1.16 and the total length 2.70m. The smallish deep red bricks measure 20 or 21 by 9 by 4cm.

Each of the three conduits are 21cm wide, which implies that the largest cannon ball cannot have had a diameter greater than 20cm. The cannon ball receptacles have a diameter of 12cm.

Discussion

The earlier walling supports the interpretation, based on other grounds, that construction of the Shot Furnace took place late in the development of the French defences on Ile de la Passe. There are no indications as the nature of the buildings or structures to which the earlier walls belonged, except to note that the foundations are narrow.

Other grounds for suggesting a late date for the construction of the furnace include:

1. The absence of the furnace on Maps 1 and 2.
2. The use of basalt ashlar spolia with the remains of iron clamps set in lead, the extremely fine and sophisticated masonry, especially the cantilevered shot receptacles, which were surely the products of an accomplished and experienced workshop.
3. The position of the furnace in relation to the Upper Battery (not the Lower Battery of an earlier phase).

The existence of an earlier shot furnace associated with the Lower Battery might be postulated, but there is no evidence. It is suggested that the existing shot furnace, therefore, was constructed when the Lower Battery was replaced by the stronger and more advanced Upper Battery. A French (rather than a later British) date for the construction appears to be indisputable on documentary evidence. It would be interesting to know, however, if the British intended to reuse the furnace for hot shot after 1810 and, indeed, whether it was subsequently used for any other purposes.

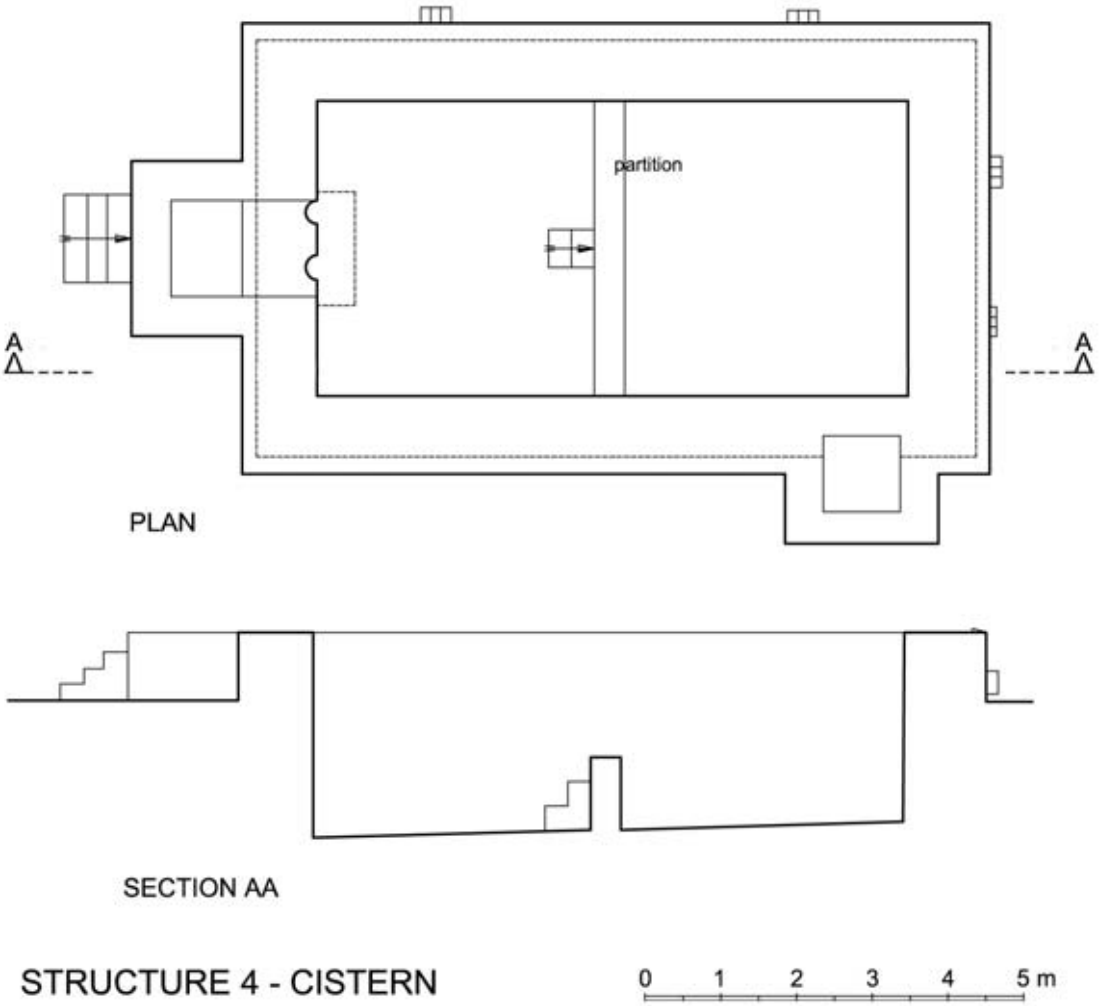
The Hot Shot Furnace is perhaps the most interesting monument on Ile de la Passe because of the dramatic function that it was designed for. It also raises a number of questions, on which historical research might throw much light, concerning the practicalities of its use. In addition to very careful cleaning and recording of the existing structure, as a prelude to restoration, future archaeological research might investigate such questions as the provision of fuel and shot. Architectural investigations into the thermal properties of the bricks and mortar would also be of very considerable interest.

Present Condition

The Reverberating Shot Furnace is in very urgent need of protection and, in the longer term, of expert restoration. It is possible that further cleaning around the furnace would shed useful light on the earlier structure(s), even though the bedrock is so very close to the modern ground surface, with the result that little if anything will have survived. The authors of this report are attempting to create a virtual reality model of the furnace as a first step in drawing up proposals for restoration. Further recommendations will be found in the *Basic Architectural Report.*

The Cistern, Structure 4

The Cistern with the Barracks (Structure 5) behind, part of the Cookhouse (Structure 6) to the left and Structure 18 at right. From the top of the Upper Battery. (02jv0318)



Materials

Original

Basalt, red fired brick, lime mortar with crushed brick, lime mortar rendering.

Early British

Shingle roof (from archives).

World War II

Portland cement repair and, according to the evidence of ironwork, a new surround and roof.

Description

There is no natural source of fresh water available on Ile de la Passe apart from rain. It is not, therefore, surprising that the earliest map (Map 1) shows the large, rectangular cistern which has survived down to the present day with little alteration. The cistern, which is shown on the French plans as being open, was fed by rainwater from the roof of the Barracks (Structure 6). British archives for 1837, however, state that there was a shingle roof and give the capacity was 11,000 gallons (41.64 cubic meters).

In so far as it is possible to see, the only alterations to the original French cistern have been the blocking of the four holes to the overflow spouts, relining if the interior and the addition (or replacement) of some kind of surround in or before WW II. It is not possible to tell if the low internal partition was an addition or an original feature.

The cistern is largely dug into the bedrock but a wide surround of coursed basalt with ashlar quoins stands some 0.70m above the ground. The base slopes down from the south-west to the north-east end. The cistern is divided into two equal halves by a low partition with a central stair of two steps on the lower side. Water was extracted from the centre of the north-east end where the is a sump set into the floor and a pair of semi-circular recesses from top to base which presumably housed a the piping for a pump. The only other internal feature which could be seen is a large basalt slab in floor at the east corner which would have taken the force of incoming water pouring from the inlet sump above. It is possible that the interior lining is brick bonded with a waterproof lime mortar mixed with crushed brick. There were originally four overflow outlets, two on the long south-east wall and two on the south-western side. These overflows are surprisingly low and were later blocked, but there is no indication that the surround was heightened. The inflow, which would have been fed by piped drainage from the roof of the Barracks, protrudes from the north-west wall and contains a square sump. There is also a sump or drain behind the pump or lifting device in the centre of the north-east end, accessed by way of a flight of three steps. Precisely how the system of lifting water operated, and the exact function of the associated sump, are uncertain but perhaps the sump was somehow used as a filter.

Discussion and Dating

The cistern appears on the earliest of the plans and is obviously one of the first undertakings. It was maintained and probably relined more than once in subsequent periods. Preventing stagnation of the water clean would have been a concern, and periodic cleaning would have been necessary. It is not known how often the cistern was actually full, nor the rate at which the French garrison would have used the water. It would seem unlikely, however, that the cistern was normally used for drinking water.

The cistern with about 20cm of water. (02jv2001)

The east end of the Cistern. (02jv2101)

The west end of the Cistern. (02jv1403)

The Barracks, Structure 5

Materials

Some traces of the raised coral foundation or the French building can be seen underneath the later, WW II building platform.

Description

Remains of the raised platform of the French Barracks, Structure 5, can be seen beneath the WW II concrete. The old French map shows it as a long and narrow building and its size can be approximately measured as being 6.50m by 17.00m, which corresponds very closely with the WW II platform.

Later Barracks (Structure 6) were built over the French Barracks. (m02jv0402)

Discussion

Shown on maps 1 and 3 as building with a pitched hip roof, and known from the British archives to have been a two-storey building, presumably timber framed, with a shingle roof. The plan given on Map 2 does appear to have been built.

Old Cook House, Structure 6

Materials

No traces of the French building foundation can be discerned underneath the later building platform.

Description

The Cook House is shown on the old French maps but the earlier remains are completely obscured by the later building.

The French Cook House lies under the later building remains. (02jv0404)

The North-West and the East Sentry Posts, Structures 8 and 9

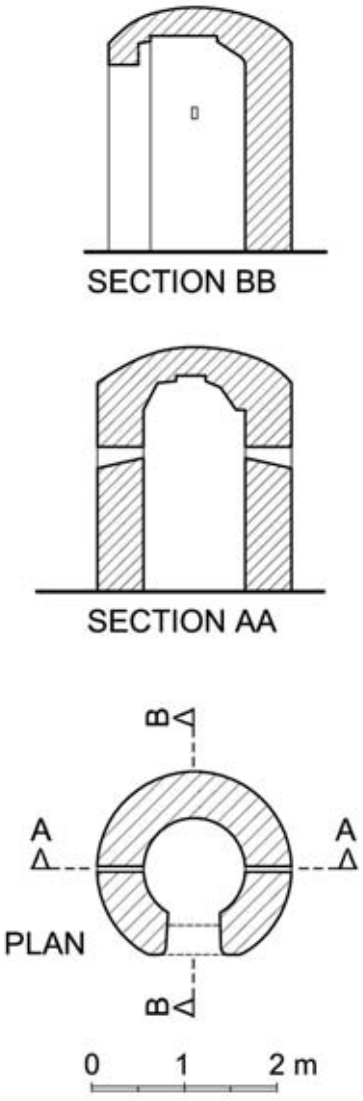
Materials

Cut fossilised coral together with, in the North-West Post, basalt walls and roof. The doors have roughly trimmed basalt lintels. The blocks either side of the doors are nicely cut at the correct acute angle. Off-white lime mortar.

Description

The two are very similar, both being 2.00m in diameter with walls 0.50m wide and internal diameters of exactly 1.00m.

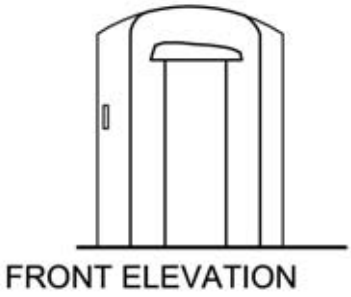
The North-West Sentry Post (Structure 8) is cylindrical, 2.60m in height with a single door that faces north-eastwards towards the Landing Point. The door width is 0.55m and the height 2.00m. The roof is corbelled.

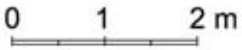


STRUCTURE 8
NW SENTRY POST

The North-West Sentry Post, at left, atop the defences, showing recent damage to the door. (02jv0217)

The East Sentry Post (Structure 9) differs slightly in that it has a flattened front above which the corbelled roof reaches its highest point. Both post boxes have a single doorway and opposed ventilation slits.





STRUCTURE 9
EAST SENTRY POST

The East Sentry Post founded on bedrock. (02jv1605)

That the small vertical slits with sloping sills were intended for the circulation of air, rather than for observation, is clear in the case of the eastern post where the vent on the landward side fails to provide any view, and yet further evidenced by the good draft that they provide. The axis of the ventilation slots in the East Post must have been designed so as to catch breezes but not the full impact of the prevailing wind. There are no indications of hinges or fittings for closable doors. The roofs are slightly raised at the centre, the North-Western example being conical. No proper floor now exists and there is no indication (on the lower internal course of stone) that a laid floor ever existed.

Discussion and Date

Although not identical, these two sentry posts are so very similar that they were surely built at the same time. The North-West Post is founded directly on the rubble fill of the North-Western Battery and therefore belongs late in the sequence of French Building activity. The metric measurements suggest French rather than British work, as does the cut coral. There are graffiti that probably date to the 1840s. These posts do not appear on any of the four maps, presumably because by 1891 there were no longer considered to have any utility.

Present Condition

Blocks have very recently been pulled out of the north side of the door in the North-West Post. These need to be mortared back into position as a matter of urgency. Otherwise there is no immediate cause for concern.

Unlocated Features from the French Perıod

There are a number of structures and features that appear on the two French maps of the island that it has not been possible to trace. Indeed, it is very uncertain as to which, if any, of these structures were actually built. There are two exceptions. The first is an enigmatic fragment of lime-mortared coral wall that is mostly buried in the bank behind the North-West Battery, and the second is represented by fragments of coral walling that project from beneath the Shot Furnace.

Further archaeological work might also reveal open working and storage areas, such as those that would have been associated with the preparation of lime mortars and the trimming of basalt.

Coral walling projecting from beneath the Shot Furnace. (02jv1102)

BRITISH

The British took over the island from the French in 1810 and finally granted Independence to Mauritius on the 12th of March 1968. This period is here subdivided into three as described below.

BRITISH - 1810 TO 1891

The period covered in this section begins with the British capture of Mauritius in August 1810 and terminates with the Surveyor General's map of Ile de la Passe which is dated 1891. The starting date is, obviously, of historical significance. The graves of those who died in the initial engagement and the fire that took place the following day bear remarkable, and poignant, testimony to those events. The terminal date would seem, in historical terms, to be arbitrary. The 1891 map has written on it "Plan No. 11 To accompany my Report D". If "Report D" can be found it might very well throw light on the circumstances surrounding the drawing of this map and its particular significance. The 1891 map does not, however, show the three buildings that are fully discussed in the next section of this Report.

It is known from archival and published records that there was a British military presence on Ile de la Passe from 1810, although it had apparently been abandoned for some time before it was visited by Pike in the 1860s.

"After the capitulation of the Isle de France, the barracks were occupied for some years by a garrison, but they have long been abandoned." P. 324

"…a small house that I took to be the Commandant and soldiers' quarters. Two very large iron mortars, a broken gun-carriage, and an iron sixty-eight pounder, to which we made our boat fast, were all the warlike implements we saw on the island. In close proximity to this house was the magazine, with a strong high wall built around it. The arrangement for heating shot was very curious, and the whole work spoke of ancient times. Room was made seaward in the rock for guns *en barbette*, but I am of the opinion that as a fort of defence it would be worth nothing now-a-days" (Pike, N., 1873, *Sub-Tropical Rambles in the Land of the Aphanapteryx,* Sampson Low, Marston Low, and Searle, London, p. 328.)

Any remains of British work from this period, apart from that detailed below, has been obscured or replaced by reuse of structures during WW II.

Graves and Headstone

A single grave, apparently with the head at the east, is clearly visible on high level area to the north-east of the Powder House. The grave comprises a roughly rectangular area edged by a single level of unhewn stones that have clearly been deliberately placed. A reused basalt slab bearing an inscription now lies face down between the grave and the corner of concrete foundations from a WW II structure. The three line inscription reads the 86th Rgt, as reported by Pike (*op.cit.* 328-29):

"In the middle of the island were many graves; and I noticed the names of some of the brave 86th, who fought in the desperate engagements previously mentioned. …… Some kind-hearted fellow of the present regiment had placed a new head and foot-stone at one of the graves, and rudely carved on it: 'The 86th Regiment'."

Standing by the lower corner of the Grave from which the Headstone, now laying face down in the grass, apparently came. Structure 18 is in the foreground and the Underground Generator Halls (Structure 7) lie beyond. (01vj0102)

The Headstone: the broadly cut **86** *is clear whereas only cursive* **g** *of the more faintly cut* Reg^{t} *is obvious in this photograph. (01jv0107)*

The 86 is very clear, being broadly and deeply cut, but the cursive script used for the lettering is rather superficial. The height of the 8 is 10.5 cm.

Other graves appear to have been moved a few meters further to the north-east, or to have been refurbished, in WW II, but few are now discernable.

A second feature that appears to be a grave which was cleaned and relined or, perhaps, relocated in WW II. (01vj0115)

Discussion

When the islet was taken by British forces five British and three French soldiers were killed. This was followed by 16 more deaths caused by a fire. How many of the deceased were buried on the islet is unknown, but it seems safe to presume that the total of eight killed in the initial fight would have been swiftly buried, as would the 16 killed by the fire. It is possible that the victorious French re-interred their own on the mainland. There might, therefore, be as many as 24 graves in total. The British War Graves Commission has no records relating to Ile de la Passe (P. la Hausse de Lalouvière, pers.comm.)

Present Condition

There is now a threat to the inscribed headstone which has, for the interim, been left face-down exactly in the same place as it was when rediscovered. Ideally the headstone should be replaced at the head of the grave once its security can be assured.

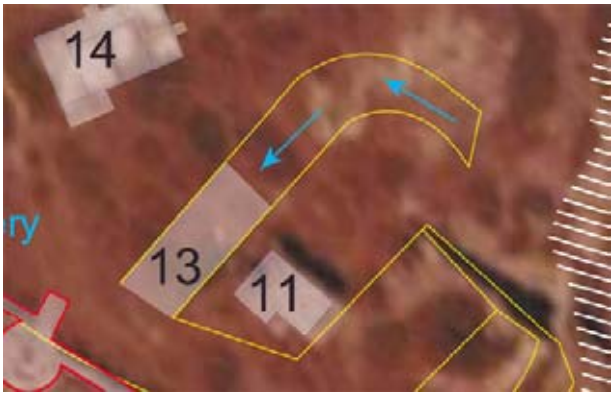
The Platform and Ramp, Structure 13

Materials

Fossilised coral wall faces and rubble fill.

Description

Fragments of terrace wall face that apparently belong to the east, west and north sides of what appears to be a platform. The original form of this structure was altered at a later date in order to create a broad and level path to the Observation Tower and related structures.



Structure 13 as drawn on the 1891 map.

Interpretation and Date

This feature is shown on the 1891 map. There is archival material concerning money spent for the construction of platforms that it might, perhaps, be tempting to associate with this feature. The precise function, which was obviously related to British upgrading of the Upper Battery, is enigmatic.

The Platform of Structure 13 from the Upper Battery with the Central Building at right and the roofing of the Underground Generator Halls beyond. (01jv0204)

Present Condition

Of the wall faces much is overgrown and a considerable portion is covered by rubble that has derived from erosion and also from the creation of the later pathway. Cutting back vegetation and clearing some of the rubble would make for greater visibility, but would need to be followed up by some consolidation. As elsewhere, pulling grass out by the roots dislodges the stonework. It is possible that careful cleaning on the top of the platform would uncover contemporaneous and/or later features.

Alteration to the Upper Battery

Description

At the point where the Upper Battery changes angle, and where it also commands the entrance to the pass, there now stand the Tower that is described in the next section. The base on which the Tower was constructed is at a considerably lower level than the extant top of the Upper Battery which is otherwise preserved to something approaching its full original height. It can thus be seen that the Tower was constructed in a pre-existing gap. On the eastern side this gap is demarcated by a row of later pre-cast hollow cement blocks and an abrupt end to the coral block face of the French Battery wall. On the west, the edge of the gap is splayed and edged with basalt blocks.

The base of the Tower constructed in the earlier emplacement. (02jv0912)

Discussion and Date

It appears that the later Tower was constructed at a lower level because there already existed a wide emplacement. The use of basalt on only one side might be taken to indicate that the emplacement was widened when the tower was constructed. Whether or not the present east side of the gap is original, it appears to be highly probable that the western side has more or less survived in its original form. The basalt would appear to have been reused from an earlier French emplacement in this position that was, it would be very plausible to assume, similar in form and construction to the other French emplacements in this battery. It could be argued, therefore, that this wider and lower emplacement represents some significant modification to the armament that was installed at this point some time before the construction of the Tower (which is known to be later than 1891).

Present Condition

Cleaning would reveal more details and might perhaps reveal the base of the emplacement on the east side. Further revelation of the basalt would confirm the interpretation, given above, that these stones were reused from the upper part of a French Cannon emplacement. It would be prudent to include some measures for consolidation, especially of the coral walling on the west side, in any program of investigation. At the same time it would be advantageous to redirect foot traffic so that visitors do not walk along the top of the battery to the east.

BRITISH 1891 to 1940

This section concerns the three standing structures that are not shown on the 1891 map and which almost certainly pre-date WW II reoccupation of Ile de la Passe by British forces. Further archival research will surely reveal the context for these three structures together with information pertinent to their intended function. Study of the material and constructions make it certain that the three structures, the Tower, the southern half of the Central Building and the Western Building were built at the same time, presumably as part of a cohesive system of defence. Because of this the materials and construction techniques of the three buildings are described together before the provision of more detailed description of each individual building. Reuse of, and modifications to, each of these buildings in WW II, together with an assessment of their present condition, is reserved for the section of this report concerned with WW II standing structures.

General Characteristics of Three Buildings

Materials

Original

All walls are composed of basalt, including curved blocks for the Tower and shaped keystones for the Western Building vents, apparently bonded with lime mortar. Basalt ashlar quoins at the base of the Western Building might be spolia. Concrete bases and distinctive pre-cast concrete blocks. The concrete might very well be made from lime rather than Portland cement, something that could be tested. Wooden joists and floorboards (of which almost nothing now remains). There is no evidence as to the materials and form of the original roofs.

WW II

Reinforced concrete, coral rubble for the roof of the Tower, cement rendering and screeds, cement repointing (in a distinctive style), iron beams and fittings, whitewash on the Tower. Pre-cast concrete hollow blocks, of Portland cement, that different size from the earlier tie blocks.

Construction Techniques

All three buildings have concrete bases. The walls of all three structures are 18" (1'6" or 0.46m) wide and composed of basalt rubble bonded with sandy (lime) mortar and faced with basalt. Additional structural strength by the inclusion of pre-cast tie blocks made of cement of concrete, measuring 9" by 12" by 18" (0.23 by 0.30 by 0.46m). Wooden beams supported tongue-and-groove floor boarding in the Tower.

The Observation Tower, Structure 10

A 16' (4.88m) tall circular observation tower, 13' (4.0m) in diameter, located at the best vantage point on the island, precisely where the Upper Battery makes a sharp turn and on top of a wide emplacement from the previous phase of defensive construction. In this section description will be restricted, in so far as it is practical, to the original form of the Tower. WW II reuse and adaptation is reserved for the next section of the report. The current condition of the building is described in the *Basic Architectural Survey*.

The Observation Tower showing some of the alterations made in WW II. (02jv0416)

The tower was of two stories with a single doorway at ground level. The upper floor had a broad opening that provided a splendid view of the pass and the approaches to it. Below this opening is a lower and narrower opening, the precise nature of which is currently obscured by WW II blocking. On the opposite side are two large windows, also blocked in WW II, which would have provided a clear view over the lagoon and the reef to the east. There is no evidence for either the original form of the roof, or for the materials of which it was made.

The Tower is built directly on a concrete base (apparently lime concrete and basalt aggregates). This base also formed the floor. The walling is, apart from the tie blocks, entirely of basalt. The larger stones that were used for the lowest two courses and also for the window and door quoins (in so far as the latter can be seen projecting beyond WW II cement rendering) were ashlar, cut so as to conform to the curvature of the tower. The wall is constructed of basalt face stones with cores composed of basalt rubble and what appears to be a sandy lime mortar (rather than Portland cement) that, whatever its composition, is rather soft and crumbly. The wall was erected in stages, the top of the lower stages being indicated by the inclusion of pre-cast concrete tie blocks and the level top of the course of stone. There are no tie blocks in the upper stages because the ashlar quoins of the openings performed the same function.

Inside: a vent capped by a pre-cast concrete tie block and flanked by shaped stones. The cement rendering formed a skirting above the timber floorboards. (01jv0920)

The floor comprised wooden joists supporting tongue-and-groove floorboards. The floor was put in place before the next stage of wall was erected. Fragments of wood still survive. Traces of what appears to have been iron rungs and rail can be seen immediately to the left of the door, but it is not known if these are original or whether they replaced a different form of (?wooden) stairs.

The Central Building, Structure 11

The single storey Central Building, which stands on level ground behind the Upper Battery with its (later) roof just lower that the top of the rampart, was built in two stages. The earlier, south-eastern half, Room 1 on the plan in the next section of this report, comprises a single room with a single door on the western side. The Building was some 8' (2.50m) in height and measured 13' by 13' (4.00 by 4.00m) making 169 ftsq (16m^2) with walls 1'3" (0.39m) thick. The building stood, like the Tower, on a concrete base. It can also be observed that the present size of the window is a result of the later WW II remodelling which has left an uneven edge to the concrete sides where stones were removed. In WW II adaptations included addition of another room and a concrete roof.

This small structure closely resembles the Tower in other respects, being built in the same way and with the same materials, including the characteristic precast concrete tie blocks. Here too the form of construction of the original roof is unknown although, as it was intended to be hidden behind the Upper Battery, it would surely have been flat rather than pitched.

The original phase of the Central Building comprised a single room built of basalt ashlar with concrete tie blocks. The addition was uncoursed with pre-cast quoins. (02cn0423)

Basalt ashlar and concrete tie blocks characterise the first building phase of the Central Building. The concrete window surround is WW II. (02jv0204)

The Western or Searchlight Building, Structure 12

This single storey building has also been called the Searchlight Blockhouse, a name that reflects its reuse and adaptation in WW II. It is located at the centre of the western side of the island and faces south-west with an unrestricted view of vessels coming in through the pass.

The building, as can be seen on the plan in the following section, comprises three rooms, Room 2 and 3 being of similar size and proportions, each with an external door together with a narrower interconnecting door. Room 1, to the southeast is staggered, so that it is really a kind of double room the two parts of which are of similar size and proportion, although there is only a single exit at the most sheltered position. The staggered plan provided a wider angle of view than would have been afforded by a more simple linear design.

The Western or Searchlight Building, Structure 12. (02cn0427)

Although the materials and building techniques that were used in this building were of the same kind as those used in the two structures just described, particularly the wall construction that is typified by a crumbly mortar and the very deliberate placement of pre-cast concrete tie blocks, there are additional features of some note.

The walls of the building are supported by slightly wider, offset, footings that also retained a rubble and concrete platform. The quoins of the footings, but not of the building itself, are of ashlar (perhaps cannibalised from earlier buildings on the site). Of particular note are the angled vents that kept out water and shrapnel but allowed the circulation of air. The vents on the long walls are each caped by a basalt keystone while those on the shorter sidewalls have large lintel stones. The original roof was surely flat, although no trace appears to remain. It would most probably have been supported by wooden joists

General Discussion of the Three Buildings

The use of cut and shaped basalt, e.g. the curved blocks at the base and flanking openings in the Tower and the vents in the Western Building, in combination with the (apparent) use of lime mortar together with rubble for the core of the walling, would surely indicate a date earlier than WW II. The tower would undoubtedly have been for observation. That the observation was in large part, if not entirely, of a defensive nature can very probably be adduced from the position and plan of the Western Building.

BRITISH 1940 TO 1945

Ile de la Passe was refortified by the British during WW II. This is not the place to discuss the strategic logic that lay behind the military presence on the island, which have been addressed in a recent book (Jackson, A. 2001, *War and Empire in Mauritius and the Indian Ocean*, Palgrave, Basingstoke and New York), nor the wider political social implications. It is, however, pertinent to note that the island was garrisoned for 100 men, all coloured troops from Mauritius, commanded by white officers.

It is also noteworthy that the earlier military structures, particularly the Powder House and the Shot Furnace, but also the Batteries, were very largely respected and maintained. It is to the credit of the officers in charge that they understood and appreciated both the importance and the value of the earlier military architecture on Ile de la Passe. This understanding and respect was surely inspired as much by the monuments themselves, in conjunction with the sense of history that they invoked, as by any policy that may have emanated from London.

One major difference between the structures that were put up or modified in WW II and those from earlier periods is the temporary nature of the former. This difference was, for whatever reasons, conceptual. Eighteenth and early nineteenth century monuments were designed and constructed as parts of long term defensive strategies at periods when Mauritius was of central importance to European colonial interests in the southern hemisphere. WW II defences, it could perhaps be argued, were not intended to last much beyond the duration of the war itself.

The Upper Battery with Observation Tower and the Central Building which formed part of an aiming system in WW II. The concrete platform links the two horseshoe-shaped gun emplacements, of which part of the southernmost can be seen. The stones just visible to the immediate right of the concrete are the facing of the earlier French battery. (01cn0131)

The WW II installations on Ile de la Passe are, from an archaeological standpoint, divisible into three. The first category comprises a pair of large guns and related installations on the Upper Battery. The second category includes the solid stone built structures to which reinforced concrete roofs were added. These are the Tower, the Central Building and the Western, or

Searchlight, Building, together with the Storehouse Generator Building, as well as the purpose built Underground Generator Halls. The Tower and the Western Building, also called the Searchlight Blockhouse, and probably the Central Building were part of an electronic aiming system. The third and last category comprises platforms and other structures that were built of stone and concrete with cement floors and iron frames for walls and roofs made of asbestos cement sheeting. Of these platforms three structures, the Barracks, the Cook House and the Cistern, which had been in existence since the eighteenth century, were revamped. One other platform, Structure 17 immediately to the south of the Powder House, might (because it lack pre-cast cement quoins) mask an earlier structure.

Defences

The physical remains of WW II defences include the concrete platform and some iron fittings for two large guns, with shell cabins beneath, placed on the Upper Battery. The three earlier buildings, Structures 10 to 12, comprising the Observation Tower, the Central Building and the Searchlight - or Western - Building, were part of an integrated system that was intended to detect enemy boats or submarines, and would have permitted the gunners to take aim. The searchlights in particular were powered by generators which were positioned on opposite sides of the island, in the Storehouse (Structure 2) with its thick seaward wall, and in the Underground Generator Halls (Structure 7) built into an earlier rock-cutting. The guns were never fired in defence and the lack of oil and grease associated with the generator plinths suggests that they were only run for very limited periods, presumably restricted to tests and exercises.

The Upper Battery

Materials

Concrete, cement and iron.

From the southern spur of the island the Upper Battery can be seen rising above the surviving stonework of the Lower Battery. The Observation Tower was modified in WW II. (02cn0331)

Description

No weaponry now remains but the concrete emplacements and some of the iron mechanisms for two large guns are extant. There are 11 cabins for shell canisters, now empty and doorless, built against coral face of the earlier battery. Access to the emplacements from the rear of the battery was by way of a set of wide concrete steps and the top of the rampart was made smooth and level by the laying of a 100 foot long and 4 foot wide concrete base. At the southern end of the base a set of steps descends into what must be a small store that is now full of rubble. Two circular iron cylinders, perhaps for lights, were sunk into the northern end of the battery. Of these only the northernmost is fully extant. A third such installation was probably sunk into the top of the battery at the other extremity where there is now a circular depression of

similar proportions. There are several tracks leading down the face of the rampart that clearly owe their origin to foot traffic between the Battery and the Western, Searchlight, Building.

It would seem that when the emplacements and related equipment was installed on and behind the battery the walling of the pre-existing French Battery was purposefully left intact in so far as that was compatible with the reuse of the rampart.

The WW II Upper Battery with the emplacements for two large guns and the shell cabins which were constructed behind and on top of the earlier French work. (02cn0420)

The southern gun emplacement and shell cabins of the Upper Battery. (02jv2019)

The northern gun emplacement and steps with shell cabins to the right. (02jv2016)

The southern gun emplacement on the Upper Battery. (01jv0205)

The north end of the Upper Battery with the cylindrical iron feature. (02jv0618)

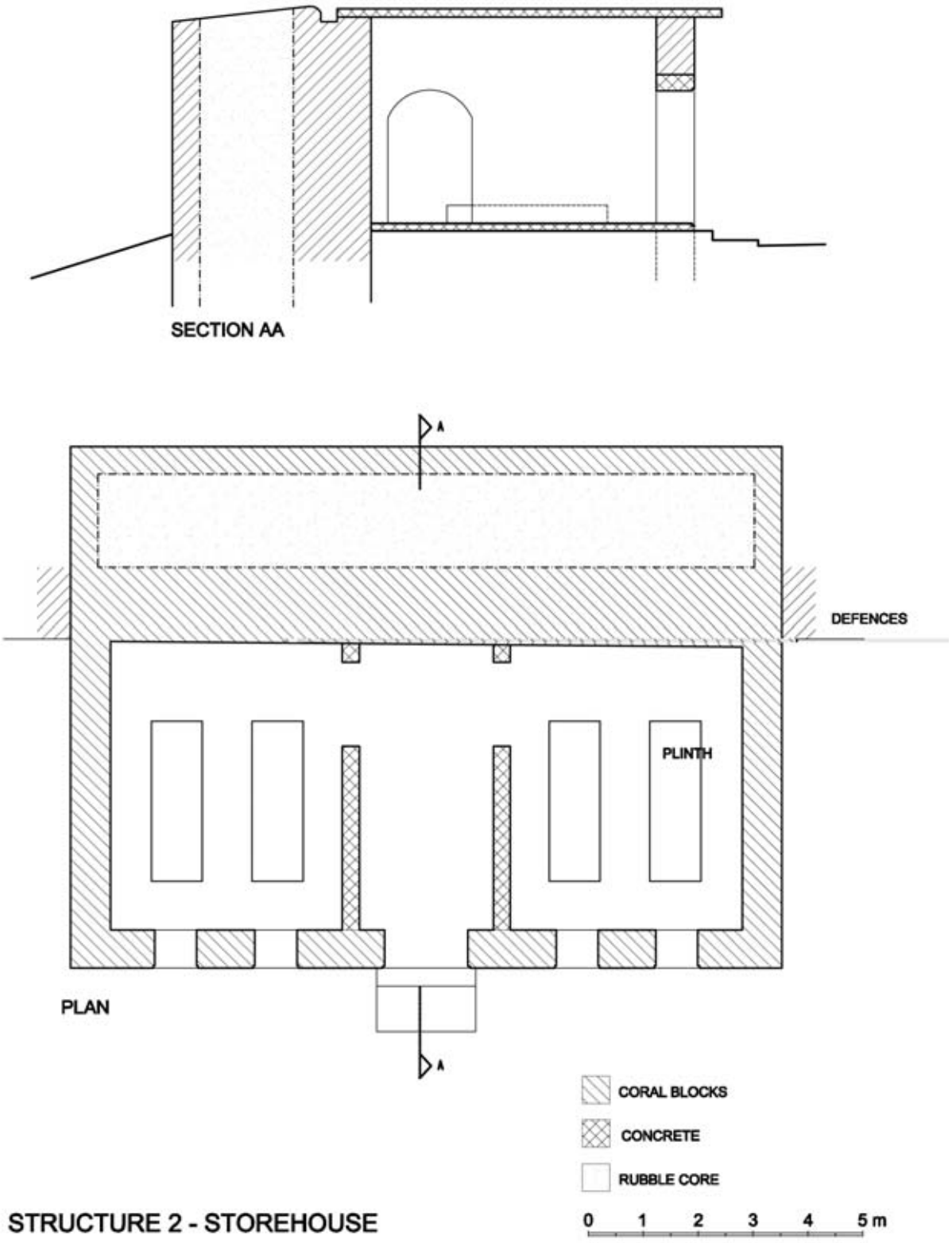
Present Condition

The ironwork is in a poor state. Of the three cylinders in the top of the battery only the northernmost remains and this is in urgent need of consolidation if it is not to disintegrate. The concrete is solid and stable with very little cracking.

The Storehouse Generator Building, Structure 2

Materials of WW II

Reinforced concrete, concrete and Portland cement.



The Storehouse Generator Building showing WW II modifications to the façade that entailed raising the door and replacing single windows with pairs in such a way that there was a new window in front of each generator. The basalt lintels to the original French windows can be seen. A new reinforced concrete roof was added and four openings were made at the level of the electric cable ducts in the new floor, one of which can be seen to the right of the door below the corner of the window. (02jv0114)

Description

Alterations were made to the old French Storehouse which had more or less survived intact. The large interior space was divided into two rooms, each entered from the back via round-arched openings from a central hall, by the construction of two reinforced concrete partition walls. A flat slab roof of reinforced concrete was added to a concrete or cement capping to the earlier stone walls. A new concrete floor containing cable ducts was laid and in each of the two rooms a pair of concrete plinths for electricity generators was built. The central door and flanking windows in the front façade were reframed and probably enlarged. Wide openings in the top course of the side walls, presumably air vents from the original construction, were filled with concrete. Four holes, one for each of the cable ducts, were made in the base of the front wall.

Squeezes drying on one of the generator plinths. One of he cable ducts runs through the door. (02jv0809)

The Storehouse Generator Building showing the southern reinforced concrete partition with the arched door and the roof, both added in WW II. (02jv0810)

Present Condition

The roof of the southern room has been largely removed. In general the remainder of the roof and the two partition walls are extremely dangerous. The French structure, on the other hand, is in very good shape. This structure is a major priority for conservation and restoration. Recommendations have been set out in the *Basic Architectural Survey*.

Most of the concrete roof has been removed in the southern room of the Storehouse. (02jv0811)

The Underground Generator Halls, Structure 7

Materials

Concrete and reinforced concrete.

Description

The Underground Generator Halls were built in the "Ditch" on the north-east side of the islet, so as to be hidden from view. The reinforced concrete structure comprises three contiguous halls, each the same size and with the same layout of concrete plinths. Vertical grills along the top of the side and rear walls provided outlets for fumes and offer a small amount of natural light. The flat roofs step down from back to front and there is a circular (?ventilation) hole in the lowest. The rock-cutting in which the halls were constructed has sloping sides, so that the floor area is considerably less than that of the roof.

Each hall contains two transverse concrete generator plinths which are apparently identical to those in the Storehouse (Structure 2). The rock sides are rendered with well finished Portland cement.

The Underground Generator Halls, Structure 7. The ventilation grills can be seen in the shadow of the roof. (02cn0415)

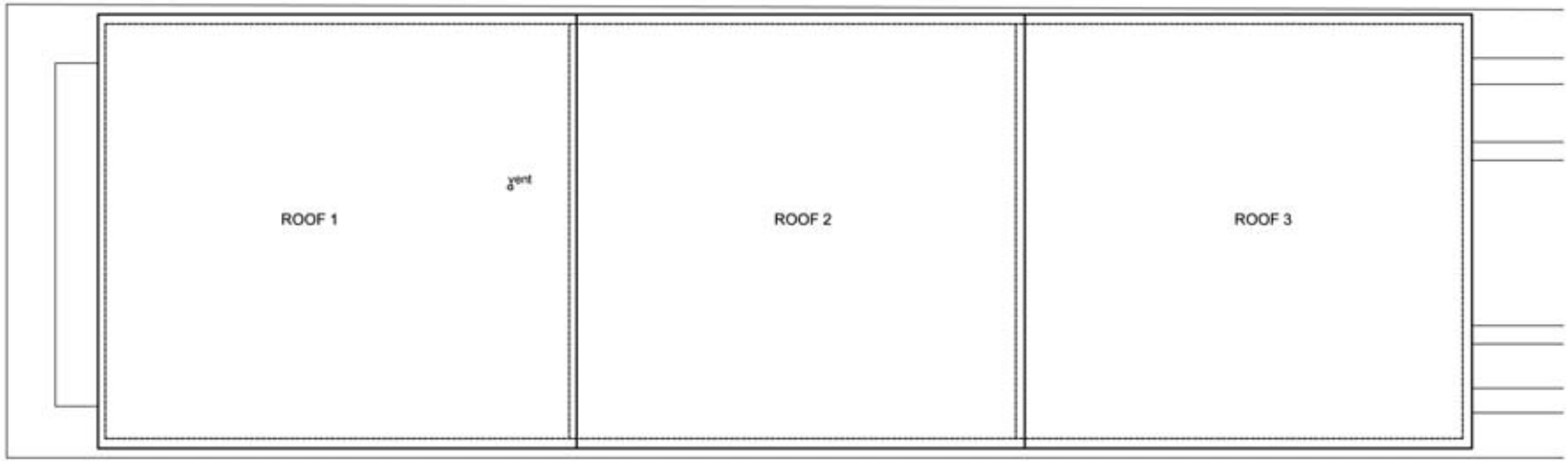
Description	***Dimensions***		*Area*	
	metres	**feet and inches**	**m^2**	**sq ft**
Overall roof	22.62 by 7.13	74'5" by 23'4"	161.3	1741.8
Roof 1	7.88 by 7.13	25'10" by 23'4"	56.2	606.8
Roof 2	7.38 by 7.13	24'3" by 23'4"	53.5	577.5
Roof 3	7.36 by 7.13	24'2" by 23'4"	53.3	576.0

Discussion

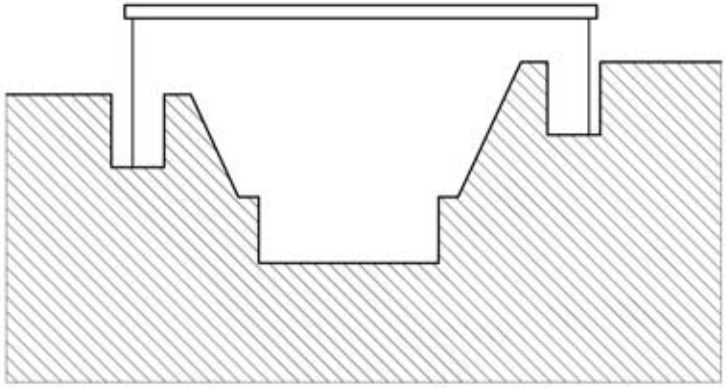
Known to have been used for the generation of electricity for the WW II searchlight and aiming system.

Present Condition

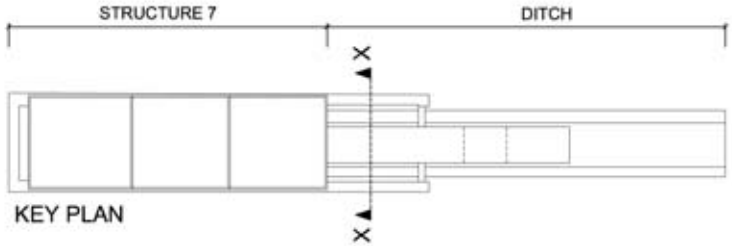
Fouled and marred by recent graffiti, the structure is also somewhat dangerous because the reinforcement in the concrete is corroding and, as it does so, splitting away pieces of concrete, especially from the underside of the roof.



PLAN



SECTION THROUGH DITCH



KEY PLAN

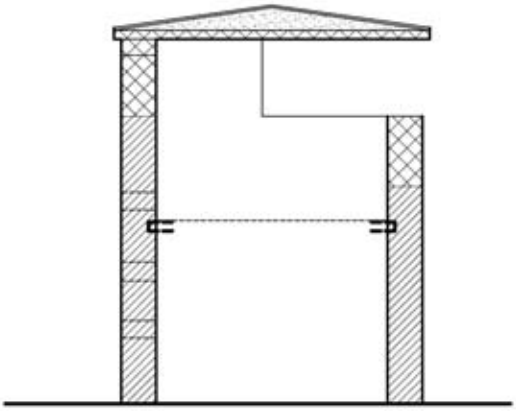
STRUCTURE 7 - GENERATOR HALL

0 1 2 3 4 5 m

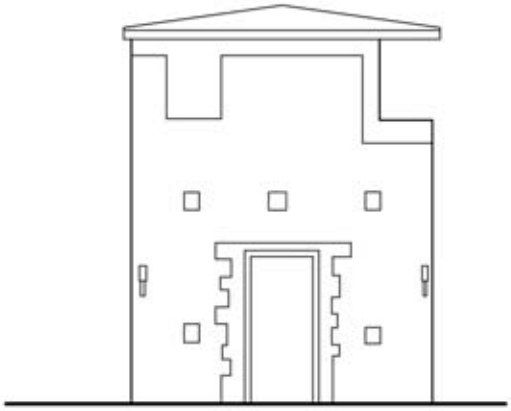
The Observation Tower, Structure 10, during WWII

Materials of WW II

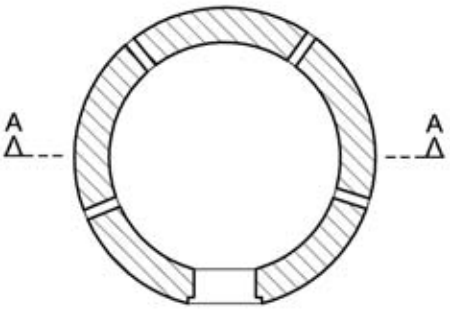
Reinforced concrete roof and lintels, concrete or reinforced concrete blocking, cement, iron rails and fittings, fragments of wooden fittings and whitewash or paint.



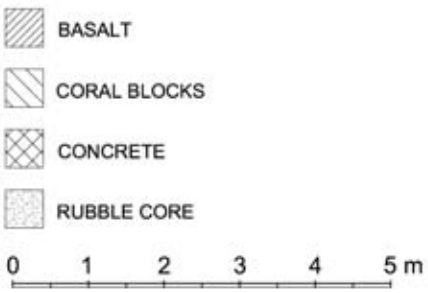
SECTION AA



FRONT ELEVATION



PLAN



STRUCTURE 10 - OBSERVATION TOWER

Description	***Dimensions***		*Area*	
	metres	**feet and inches**	**m^2**	**sq ft**
External diameter	3.98	13' 1"	12.4	134
Internal diameter	3.06	10'	7.4	79.4
Floor to ceiling height	4.83	15' 10"		
Floor to first floor	2.41	7' 11'		
Wall thickness	0.46	1' 6"		
Door	0.82 by 1.95 high	2' 8" by 6' 5"		
Window	1.02 high	3 4" high		
Vents	0.20 by 0.14	8" by 6"		
Tie blocks	0.23 by 0.23 by 0.46	9" by 9" by 1' 6"		

Description

Considerable alterations were made to this circular structure which appears to have retained its original function as an Observation Tower. A new cement floor was laid and areas immediately outside the Tower were also cemented. On the east side pre-cast cement hollow blocks, of the same distinctive type as those used in other WW II structures, have been laid so as to retain the bank of the old rampart. A reinforced concrete ring beam was constructed on top of the basalt walls to support a reinforced concrete roof. This roof was provided with added support in the form of two iron rails, one of considerably greater size than the other. The flat slab roof was capped with a cone of fossilised coral rubble, coated with a screed, which would have deflected both rainwater and the sun's heat. The original windows on the east side and the lower central opening on the west were blocked. At the same time as the blocking the wide opening at the upper level and the single door were reframed and all of the external stone-work was repointed in the same distinctive raised style as was used for the Central and Western Buildings. All of the blocking, rendering and repointing appears to have been carried out at the same time using the same cement mix. The door and shutters no longer exist.

The outside has been partially or totally whitewashed, or given a thin coat of white paint, extensive traces of which remain on the southern side.

Present Condition

The roof has partially collapsed, cracking the upper part of the walling on the east side, and is now extremely dangerous. There is neither door nor shutter, with the result that the wind and rain sweep in. The main stone wall of the tower, however, appears to be structurally sound.

Of the wooden beams and floorboards, and other wooden and iron fittings on the interior wall on slight traces survive.

In the *Basic Architectural Survey* the Tower has been singled out as having great potential as an attraction, and recommendations have been made for its consolidation and refurbishment.

The Observation Tower with WW II blocking below the wide window. (01jv0203)

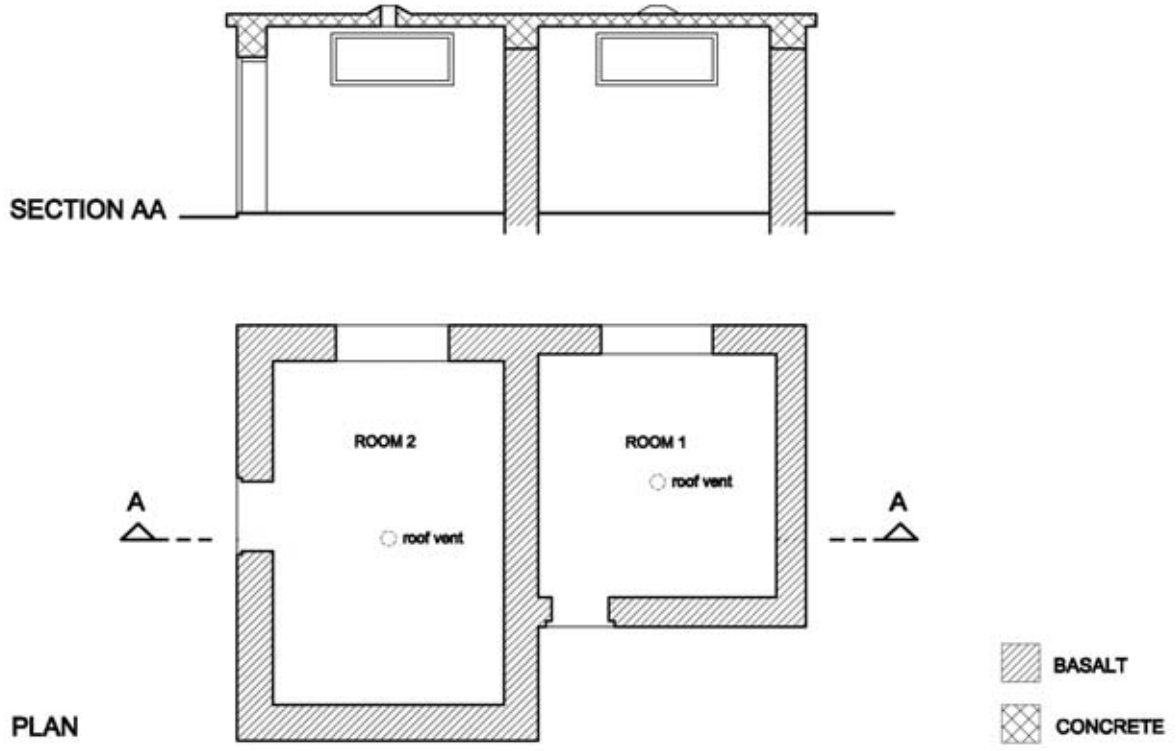
The upper windows, blocked in WW II, the construction stages and the original precast tie blocks. (02jv0415)

The bottom course of large shaped basalt blocks sits directly on the concrete base. Large shaped stones also flank the vents. The WW II roof has collapsed. (02vj0913)

The Central Building, Structure 11

Materials of WW II

Basalt, pre-cast concrete hollow blocks, reinforced concrete, concrete, Portland cement, ironwork.



Description	***Dimensions***		*Area*	
	metres	**feet and inches**	**m^2**	**sq ft**
Overall maximums	7.50 by 5.51	24' 7" by 18' 1"	41.3	446.3
Room 1	3.14 by 3.22	10' 4" by 10' 7'	10.1	109.2
Room 2	3.05 by 4.55	10' by 14' 11"	13.9	150
Floor to ceiling height	2.58	8' 6"		
Wall thicknesses Room 1 Room	 0.38 0.48	 1' 3" 1' 9"		
Door, Room 1	0.76 by 1.95 high	2' 6" by 6' 5" high		
Door, Room 2	0.92 by 2.01 high	3' by 6' 7"		
Windows Cill height	1.47 by 0.56 high 1.76	4' 10" by 1' 10" 5' 9"		
Tie blocks	0.30 by 0.30 by 0.38	1' by 1' by 1' 3"		
Hollow blocks	0.61 by 0.40 by 0.30	2' by 1' 6" by 1'		

Description

This standing, single storey building is located just to the south of the Tower. It stands on a low level surface with the roof more or less level with the top of the battery rampart. The precise function is unknown although the materials and construction techniques, as well as the location and the footways, show that in both the original scheme (discussed in the previous section of this report) and in WW II, it formed part of an integrated defensive system connected with the Tower and the Western, or Searchlight, Building.

The building in its present form comprises two rooms with no connecting doorway. The southern room, as described in an earlier section, was added to and altered in WW II. The northern room was a new addition built of uncoursed basalt masonry bonded with cement. The quoins of this additional room are composed of the standard, pre-cast concrete, hollow blocks. When the new room was constructed both room were given ring beams and a single slab roof made of reinforced concrete. The southern room possesses a wide window on the east side and a door in the north-west corner, both of which were reframed with reinforced concrete and rendered with cement. Outside, the earlier masonry was repointed in the same raised style already noted for the Tower. The northern room has a door in the north side but is otherwise featureless. There are no internal fittings apart from a central eight-inch iron pipe in the roof of each room.

Present Condition

The entire structure is currently stable. The iron reinforcement in the slab roof, and to a lesser extent in the lintels, is badly corroded. As metal corrodes it expands, thereby causing the concrete to break up, and looses its strength. At some point in the future it will be necessary to take some appropriate action to preserve (or replace) the roof.

The west side of the Central Building showing the earlier walling on the right and the addition on the left with pre-cast cement blocks used as quoins, and the uncoursed masonry style. The entire building was given a ring beam and new roof and the earlier doorframe was revamped. (02jv0402

The east side of the Central Building showing the additional room, in a different style, on the right and the two large WW II windows. (02jv0404)

The north side of the Central Building with the Observation Tower behind. (02jv0405)

The south side of the Central Building. (02jv0403)

The Western, or Searchlight, Building: Structure 12

Materials of WW II

Reinforced concrete, concrete, Portland cement, iron fittings, fragments of wood (from concrete shuttering).

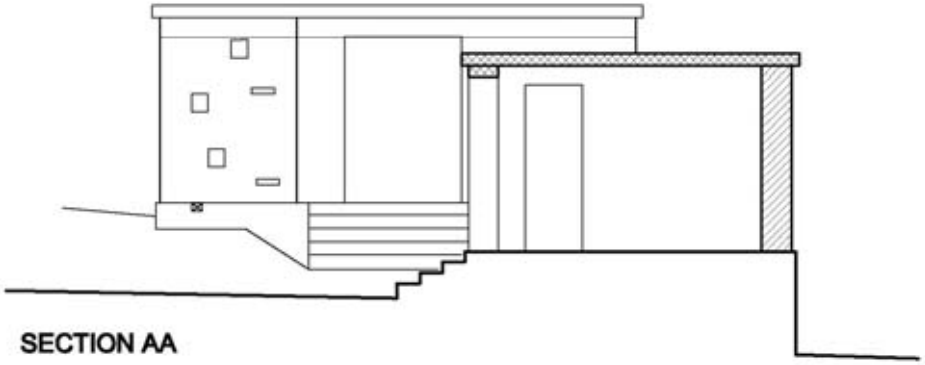
Description

This building, already described in an earlier section of this report, was altered and adapted in WW II. As with the two previous buildings, adaptations included the addition of ring beams to carry a slab roof of reinforced concrete, the partial blocking of the windows, the relining of doorways and a raised style repointing of the exterior wall faces. In addition, there was a new concrete floor with electric cable ducts set into it. The ducts are identical in form to those in the Storehouse Generator Building and the Underground Generator Halls. Where cable ducts terminate towards the centre of each room there is an eight-inch iron pipe in the roof.

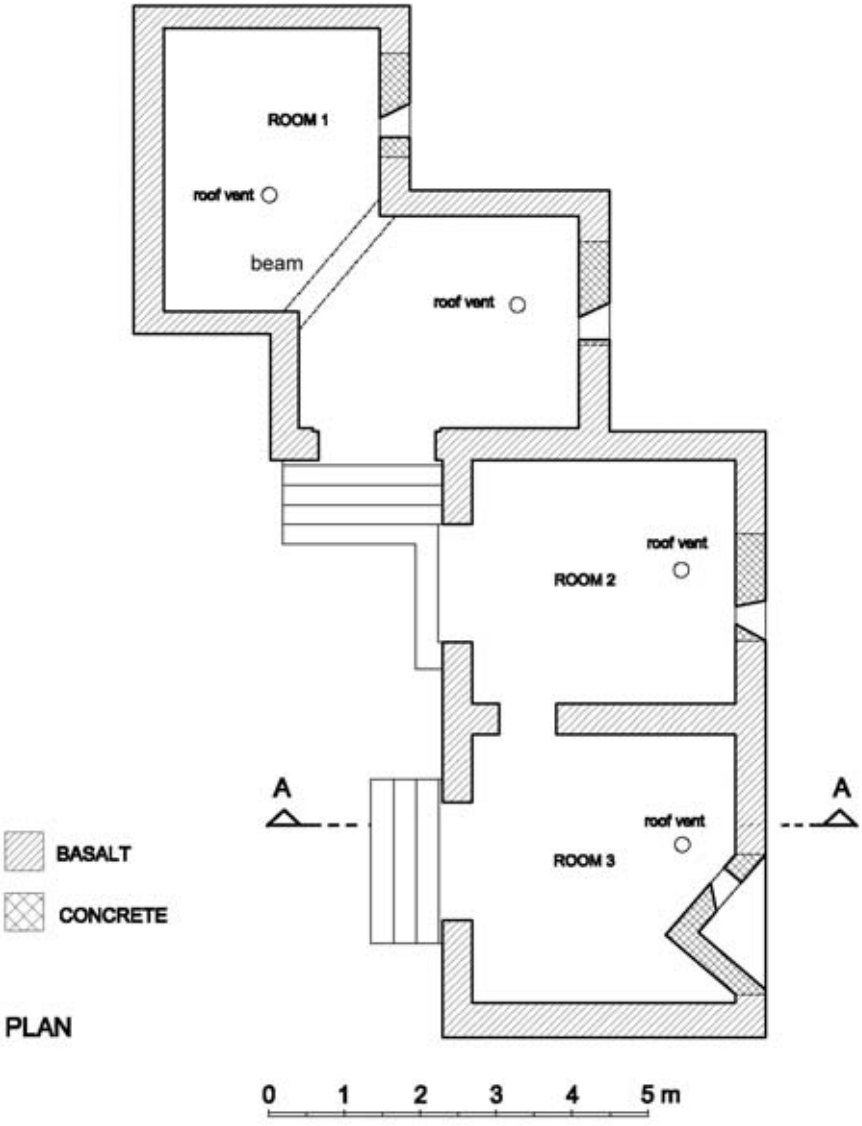
Present Condition

Apart from a small amount of repointing and repair, which it might be expedient to carry out in the very near future, the building is stable. As with other WW II structures it will, at some point, be necessary to take some appropriate action to preserve (or replace) the roof.

The Western, Searchlight, Building - Structure 12 - showing its commanding position covering the pass. (02jv0310)



SECTION AA



STRUCTURE 12 -SEARCHLIGHT BUILDING

Description	***Dimensions***		*Area*	
	metres	**feet and inches**	**m^2**	**sq ft**
Overall (max.)	8.33 by 13.64	27' 4" by 44' 9"	61.5	664.0
Internal area			43.1	1129.7
Room 1			19.6	212.1
Room 2	3.22 by 3.47	10' 7" by 11' 5"	11.2	120.6
Room 3	3.55 by 3.47	11' 8" by 11' 5"	12.3	133.0
Floor to ceiling	2.45	8'		

The Western, Searchlight, Building - Structure 12. Note the pattern of pre-cast concrete tie blocks and the keystones over each of the vents in the original structure. In WW II a ring beam, reinforced concrete roof, concrete steps and a new floor containing ducts for electrical wires were added. The walling was repointed and the openings on the seaward side were greatly reduced. (02jv0419)

The Western, Searchlight, Building from the north-west. The WW II concrete steps were made in situ. (02jv2114)

The Western or Searchlight Building from the north-east. (02jv0521)

The Western, Searchlight, Building (Structure 12) from the west showing WW II modifications to the original windows. (02jv0902)

THE WORLD WAR II BUILDING PLATFORMS

The WW II structures that are discussed in this section of the Report were more or less standard units, constructed in more or less the same way from the same materials. These structures provided accommodation and basic amenities for officers and men together with storage for equipment and supplies.

The buildings were of a temporary nature, the superstructure being taken away and the fittings removed following the end of the war. Almost all that remains today are the solid platforms on which the buildings once stood. Nevertheless many details, including adaptations which were made to some structures, can be traced. The function of most of the structures is not known, although in some instances there are obvious pointers. It is known that the accommodation was planned for around 100 coloured troops from Mauritius commanded by white officers. Doubtless further research in the archives and the continued collection of oral histories will be rewarding.

For the purposes of the survey the structures were numbered in continuation of the numerical sequence used for earlier structures. The sequence runs from 14 to 31 and proceeds from the highest central part of the island to the northern edge. Measurements are given in metres and also in imperial units (feet and inches).

The Cistern or Tank (Structure 4) which was, as can be seen from the bevelled cement surround on the top, reused in WW II. Part of the Cook House (Structure 6) is in the foreground and the platform for Structure 17 is at centre. (02cn0401)

General Characteristics

Materials

In the catalogue that follows Materials are only noted where they differ from the standard materials that are described in the following paragraph.

Concrete, pre-cast concrete hollow blocks measuring 2' by 1' by 1' with 6" by 6" voids, solid pre-cast concrete blocks used for steps, basalt walling, Portland cement pointing, screeds and renderings, iron framework set in concrete, occasional iron rails or posts, timber posts that no longer survive but the positions of which are indicated by holes, asbestos cement sheets - both flat and corrugated. All of these materials were brought to the island and all but the basalt would have been shipped across the ocean.

Construction Techniques

The structures stood on raised level platforms retained by terrace walls constructed from uncoursed basalt walling bonded with cement. The corners almost always comprise pre-cast hollow concrete blocks used as quoins. In most cases there was an iron frame, the ends of which were set in concrete within the basalt terrace walling. Cement screed floors were laid against the walls and partitions, which were of asbestos cement sheeting. The position of doors and partitions forming rooms are nearly everywhere visible. Most structures were approached by steps and a few had verandas. Structures 6 and 26 have low walling.

Rusty remains of iron pins can be identified on some of the structures. Most of the building platforms were made of uncoursed basalt with precast concrete corner blocks. (02jv2215)

Structure 22, on the North Platform, from the east. Precast concrete corner blocks and the concrete in which the metal pins were set can be observed. (02jv2217)

General Observations

Accommodation and Mess

Structures 17, 28 and 29, three building platforms of very similar form and size with doors in each of the short walls, were most probably the dormitories for the ordinary troops. Structure 24, although of similar size and proportions, has internal partitions that are suggestive of a difference in function. There are also slight differences that set Structure 17 apart from Structures 28 and 29, which could perhaps be taken to suggest that it was the earliest of these structures to be erected. The more centralised position of 17 might be an additional pointer. The older French Barracks, Structure 5, was originally a two-storied building. In WW II it was rebuilt as a single storey and, in view of its proximity to the kitchen (Structure 6) was surely used as the mess.

Perhaps Structures 14 and 15 were superior accommodation for officers, who would have been provided for by their own kitchen (Structure 16). This interpretation too might be confirmed by oral history or research in the archives.

Structure 18 at bottom left, Structure 19 and Ramp against the enclosure wall of the Powder House to the left of the doorway, the steps with quarter-landing lead to Structure 20 with part of Structure 21 on the extreme left. Part of Structure 17 is at right and the Showers Cubicles (Structures 25 and 26) are by the far corner of the Powder House enclosure wall. (02jv0316)

Kitchens

Two kitchens have been identified, Structures 4 and 16. Structure 4 reused the original French Cook House, whereas Structure 16 was new. It is tempting to suggest, on the basis of the locations, that the Structure 4 was for the troops and Structure 16 for officers, an interpretation that oral history might be able to confirm.

Showers, Washing Facilities and Toilets

As might be expected, considerable effort was made to ensure that there were toilet and washing facilities which would not become foul and hazardous. These facilities needed to be sufficient for upwards of 100 men and officers, and it might be wondered if the shower cubicles, in structures 25 and 26, and perhaps additional showers in 27, would have been sufficient in number and adequately supplied with water for 100 troops. It is probably correct to assume that there were additional shower facilities, of a more temporary nature, on the eastern edge of the islet. Some evidence of this might be found in the ephemeral lumps of concrete and remains of iron that remain *in situ* along the eastern edge of the island, not far above the water. Concrete drains that originated at the kitchens led directly to the sea.

Other Buildings

Structures 20 to 23 were presumably connected with administration, whilst 1, 18, 19 and 24 were presumably for storage.

Logistics of Supply

Food, drinking water, fuel for cooking and for machinery, building supplies and general hardware would all have come by boat from the mainland. Provisions for 100 men plus officers would probably have required daily supply.

Reuse of Earlier Structures

Standing structures were all reused, with differing levels of adaptation and alteration. The Powder magazine (Structure 1) was given a new rendering and floor inside, as well as and new concrete external surfaces to aid drainage. Although Structure 19 was built against the front of the enclosure wall, the wall itself was not damaged. Only where the top of the enclosure wall was flattened to accommodate water tanks was there any alteration to the original. In contrast, the Storehouse (Structure 2) was completely remodelled, only the shell of the outer walls being retained. Structures that were not required were left unharmed or, as most probably in the case of the Shot Furnace (Structure 3), repaired. Even the installation of the new guns was carried out with little damage to the earlier battery.

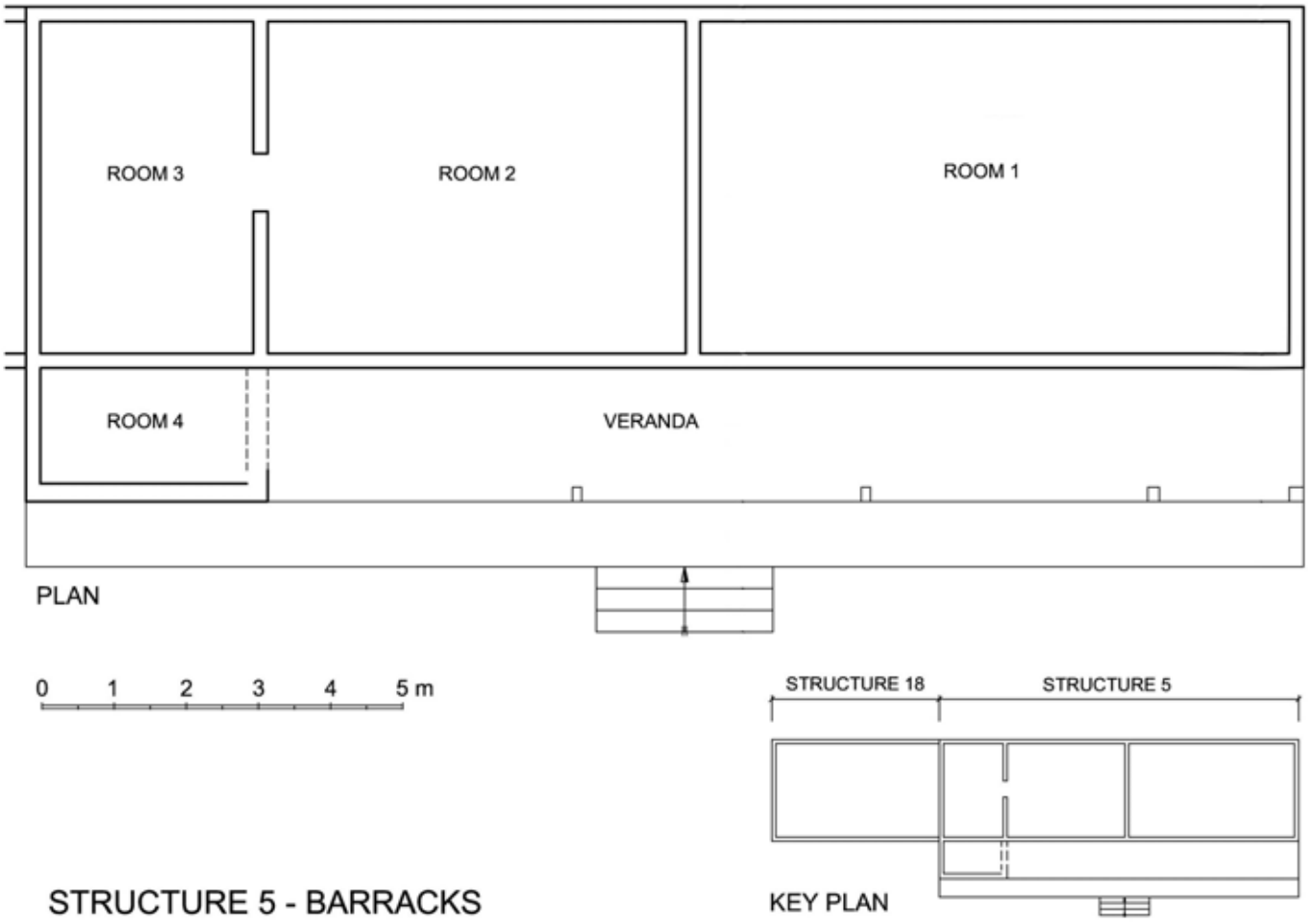
Two new windows replaced single opening which is indicated by the surviving basalt lintel and sill. The door was also remodelled with a concrete lintel and sides. (02jv0115)

Barrack Building Platform, Structure 5

Location

Structure 5 as seen today is a WWII building platform built over all, or a large portion, of the earlier Barrack building which was originally of French origin. What appears to have been an entirely separate building, Structure 18 was added to its north-eastern end. Structure 5 stands in close proximity to the Cistern and Storehouse.

The Barracks (Structure 5) with Structure 18 at right and part of the cistern in front. (02jv0318)



Description	*Dimensions*		*Area*	
	metres	**feet and inches**	**m^2**	**sq ft**
Overall	17.70 by 6.65	58' by 22' 6"	137.18	1,305
Room 1	8.46 by 4.60	26' 9" by 15'	37.45	146.23
Room 2	5.79 by 4.60	19' by 15'	26.58	287.06
Room 3	2.95 by 4.60	9' 8" by 15'	13.54	146.23
Room 4	2.95 by 1.60	9' 8" by 5' 3"	4.58	49.46
Total room area			82.15	887.22
Veranda	14.35 by 1.85	6' by 47'	26.55	282
Door width	0.80	2' 7"		
Steps	2.44 x 30 x 0.145	8' x 1' x 6"		

Description

The rectangular platform was approached from the front by a wide central flight of three steps, totalling 3ft in depth, that gave onto a single 3ft wide terrace running the whole length of the platform. The main structure comprises four rooms, each of different size, the smallest of which was partitioned off from one end of the veranda. Only the central door between Rooms 2 and 3 has been located.

There are no pre-cast blocks used as quoins because the platform encloses the earlier coral base.

The Barracks (Structure 5) with Structure 18 behind, from the south-west. (02cn0402)

Discussion

In earlier periods this structure is known to have been two-storied, but in WW II it was reduced to a single floor. Although the earlier designation "Barrack Building" has been retained, it seems much more probable that this structure served as the Mess in WW II.

There was no direct access to Structure 18, built against the north eastern end, and there is no evidence to that this addition was intended to have the same function. It was not possible to determine the position of most of the doors.

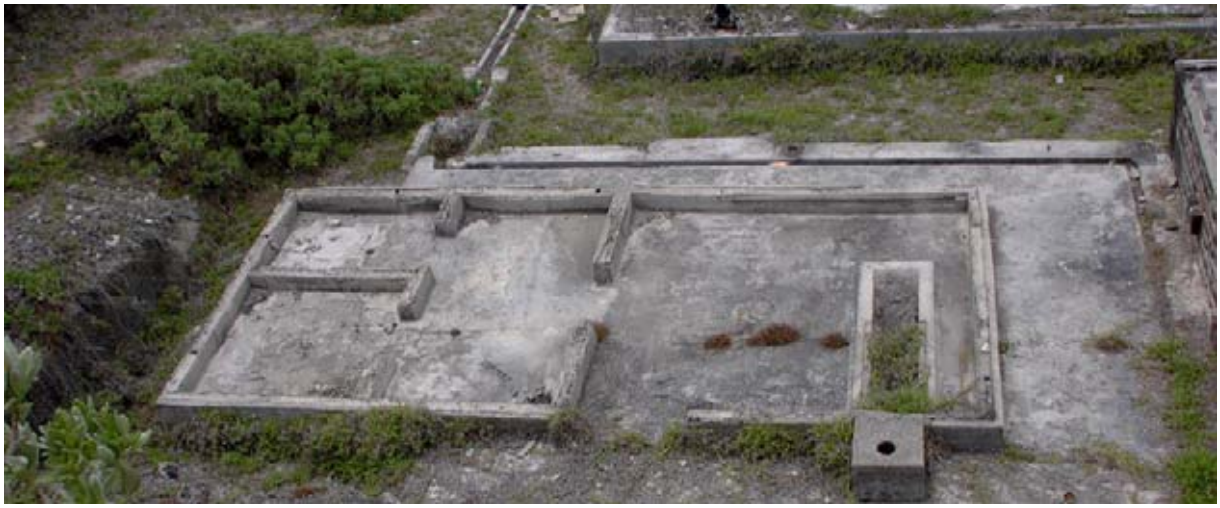
Present Condition

Floors are fragile and peeling off. Vegetation should be discouraged from growing into the cracks but should not be pulled out because this will cause further damage.

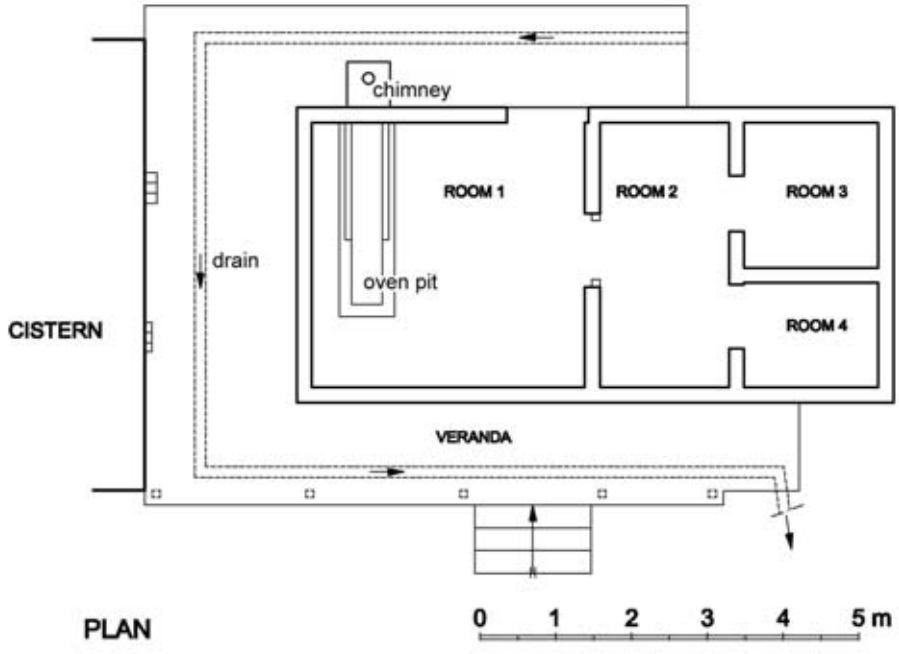
The Cook House, Structure 6

Location

Structure 6 is labelled 'Old Cook House' on the 1891 map. It was part of a complex of structures, along with the Barracks (Structure 5) and the Cistern (Structure 4) that were originally constructed for the board and lodging of troops in the French period, and which retained their original functions together with the essence of their original forms down towards the middle of the 20th century. It is overshadowed by the high northern wall of the Upper Battery. In the section that follows only the WW II version of the structure is described, although it is understood that the function, position and form of the building had long been established.



The Cookhouse - Structure 6 - and drain with the end of the Barracks behind. This Structure retained both its form and its function from the earliest French period, as seen on the maps. The oven and a base for an iron chimney are seen at left and the only external door was from the back. Hygiene was improved by the addition of a concrete surround and good drainage. Note the drain with its sump at to, the internal ash pit which was beneath the oven and the external base for the iron chimney pipe. In WW II the only entrance was in the rear wall. (02jv0317)



STRUCTURE 6 - COOK HOUSE

Description	*Dimensions*		*Area*	
	metres	**feet and inches**	**m^2**	**sq ft**
Overall	7.87 by 3.89	25'10" by 12'9"	30.61	330.59
Room 1	3.60 by 3.49	11'10" by 11'5"	12.56	135.65
Room 2	1.70 by 3.49	5'7" by 11'5"	5.93	64.04
Room 3	1.92 by 1.77	6'3" by 5'9"	3.40	36.72
Room 4	1.37 by 1.77	4'6" by 5'9"	2.43	26.24
Total room floor			24.3	262.65
Veranda width	1.36	4'6"		
Rear surround	1.35	4'5"		
Steps	1.53 x 30 x 0.145	5' x 1' x 6"		
Drain width	0.15	6"		
Room 1 doors	0.98-1.03	3'3"-3'5"		
Other doors	0.74-0.85	2'5"-2'9"		
Oven pit	2.75 by 0.41	9' by 1'4"	0.39	1.62

Description

The surviving rectangular building platform was divided into four rooms (see plan and dimensions above). This building is unusual in not having standard pre-cast concrete hollow blocks used as quoins. There was a concrete surround with a central drain on three sides, the front of which was a roofed veranda approached by a central flight of three steps at the front. There was only one entrance into the building, at the rear inner corner of the kitchen. The largest room, Room 1, was evidently the kitchen which contained an oven built over a sunken ash-pit, added to which was an external metal chimney set into a concrete block. Room 2, which runs the entire width of the building, was accessed via a central door from the kitchen itself, and had openings into Rooms 3 and 4.

The concrete wall bases were raised, a feature that is otherwise only seen at Structure 24. The partition walls are the same width, 8" (0.20m), as the outer walls.

There is a sump in the drain immediately beyond the concrete surround.

There are traces of walls and floors, some of WW II date and others perhaps earlier, behind the back of the concrete surround that are obscured by vegetation and that require careful cleaning and consolidation.

Discussion

Clearly used as a Cook House in WW II, as it had been, according to the archival material, since its construction by the French in the eighteenth century. The absence of precast concrete quoin blocks is to be noted. It appears that the WWII building plan follows that of the original structure, to which a wide concrete surround was added, with an integral drain to assist cleaning. The only door is at the rear, leading to the suggestion that there was probably some form of hatch for serving via the veranda on the front. Oral history might shed light on the precise arrangements.

Present Condition

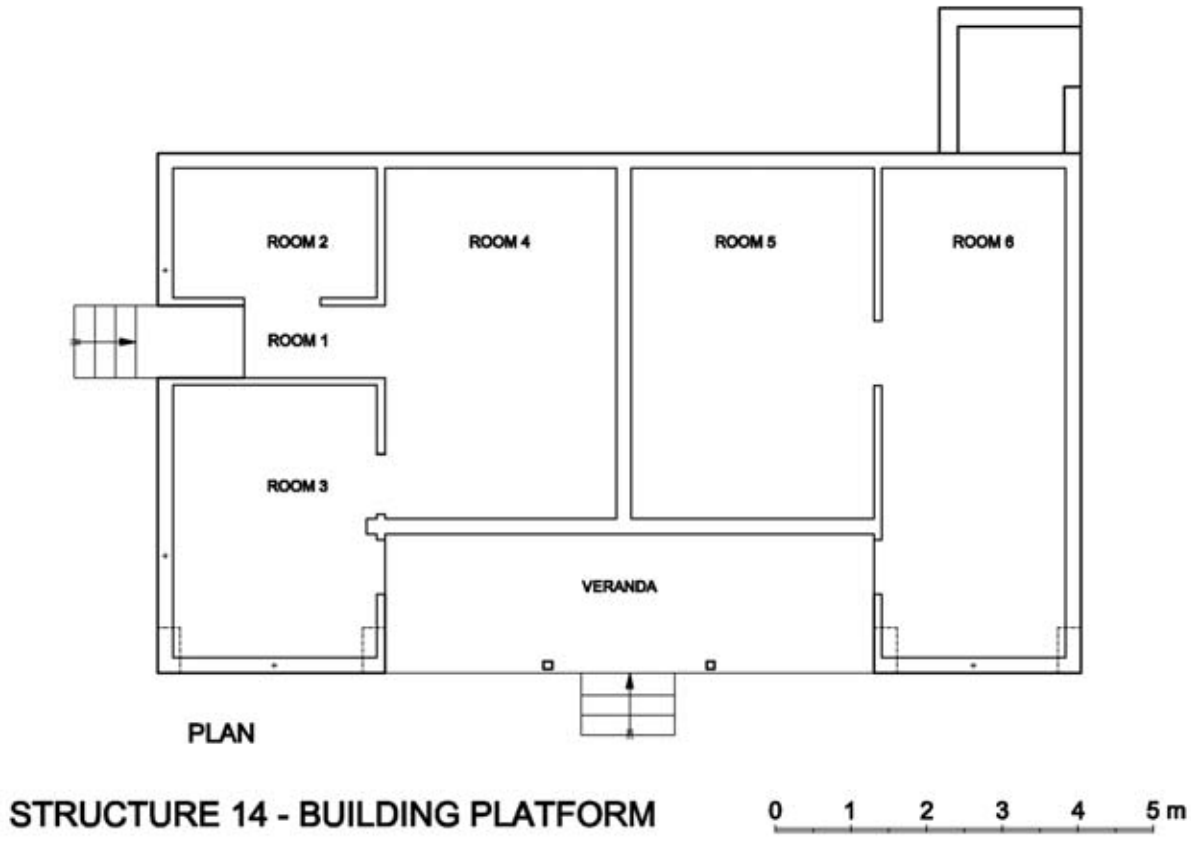
Requires removal of the vegetation and perhaps some patching or repair. Earlier and contemporaneous walling and floor to the south needs to be carefully revealed and studied.

Structure 14

Location

Structure 14 is located just below and to the north of the highest part of the island. It faces north-west, so that the veranda is in the lee of the prevailing wind.

Structure 14 at centre with Structure 15 at left. The top of the East Sentry Post is visible behind Structure 15. The Platform and Ramp (Structure 13) and the Central Building (Structure 11) lie behind Structure 14. (02jv0314)



Description	*Dimensions*		*Area*	
	metres	**feet and inches**	**m^2**	**sq ft**
Overall	12.20 by 8.80	40' by 28' 10"	107.36	1,158.49
Room 1	2.70 by 0.96	8' 10" by 3' 2"	1.89	20.41
Room 2	2.70 by 1.83	8' 10" by 6'	4.64	50.11
Room 3	2 70 by 3 90	8' 10" by 12' 10"	9.75	105.30
Room 4	3.05 by 4.64	10' by 15 2"	14.15	152.82
Room 5	3.21 by 4.64	10' 6" by 15' 2"	14.89	160.81
Room 6	2.43 by 6.48	7' 11" by 21' 3"	15.75	170.10
Veranda	6.46 by 1.84	21' 2" by 6'	11.89	128.41
Floor area			63.41	1,159.49
Extension (Rm 7)	1.87 by 1.92	6' 2" by 6' 4"	3.59	39
Room 7 floor	1.40 by 1.67	4' 7" by 5' 5"	2.34	25.25
Front steps	1.23 x	4' x 1' x 6"		
Side steps	0.96 x	3' 2"x 1' x 6"		
Doors	0.72 to 0.86	2' 4" to 2' 10"		
Wall width	0.20	8"		
Partition width	0.10	4"		

Structure 14 showing the additional room on the south-west corner at right. (02cn0429)

Description

The overall plan is that of a symmetrical winged building with a central veranda on the front approached by a central flight of three steps. The symmetry was broken by a side-entrance, also approached by steps, on the northeast and the tripartite division of that side of the building into Rooms 1 to 3. This plan appears to have been original. Both sides of the building can be entered from the veranda. The clear absence of a connecting door between the two central rooms is striking. The internal partitions in each of the two halves of the building are unusually narrow.

A small roofed space, with posts set at angles to perhaps hold light materials, was added to the back right of the building. The floor of this addition is at a lower level.

Discussion

A standard building divided into two equal but not identical parts. The addition at the back was, perhaps, a shower, although no drain can be seen and door is a long way from the other entrances. The plan looks rather residential, as though it might perhaps have provided accommodation for officers. It is possible that the two sides had different functions and / or that the functions changed over time.

Present Condition

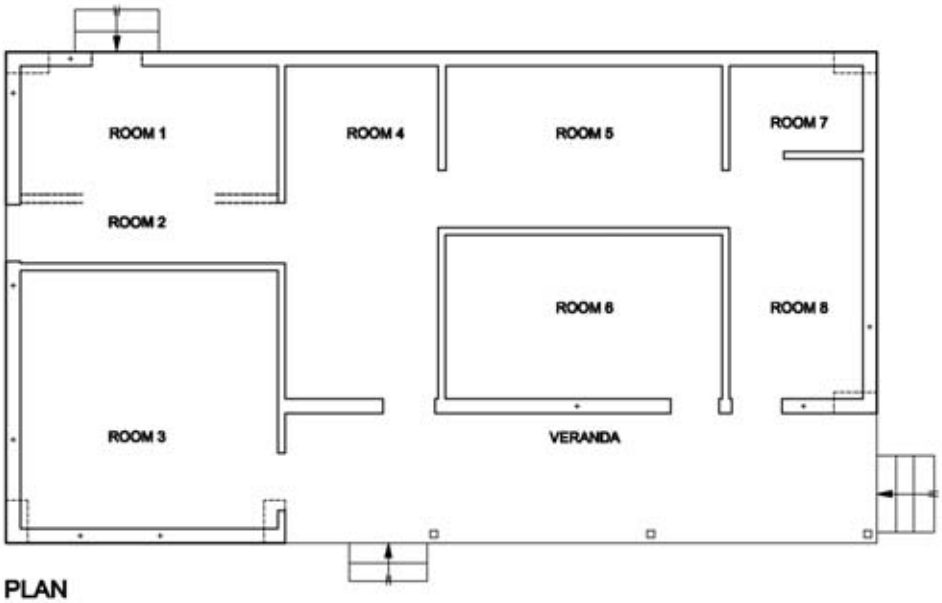
Some vegetation and resultant cracking.

Structure 15

Location

Structure 15 is located on the eastern side of the island between the Underground Generator Halls and Structure 14. It faces north-east, affording a fine view over the lagoon from the veranda which is in the lee of the prevailing wind.

Structure 15 with the Underground Generator Halls behind at left and the East Sentry at right. (02cn0419)



PLAN

STRUCTURE 15 - WWII BUILDING PLATFORM 0 1 2 3 4 5 m

Description	*Dimensions*		*Area*	
	metres	**feet and inches**	**m^2**	**sq ft**
Overall	12.20 by 6.88	40' by 22' 7"	83.94	906.51
Room 1	361 by 192	11 10" by 6' 4"	6.50	70.20
Room 2	361 by 0.84	11 10" by 2 8"	3.23.	34.88
Room 3	361 by 3.61	11 10" by 11 10"	13.03	140.72
Room 4	2.14 by 4.66	7' by 10' 2"	9.97	107.68
Room 5	3.88 by 2.27	12' 8" by 7' 5"	8.79	94.93
Room 6	3.88 by 2.29	12' 8" by 7' 6"	8.90	96.12
Room 7	1.87 by 1.20	6' by 4'	2.24	24
Room 8	1.87 by 3.36	6' by 11'	6.28	66
Total Room Area			58.94	634.53
Veranda	8.29 by 1.82	27 ' 2" by 6'	15.09	163
Wall width	0.20	8"		
Partition wall width	0.10	4"		
Doors	0.68 to 0.85	2' 3" to 2' 9"		
Front Steps	1.08 x 0.30 x 0.15	3' 6" x 1' x 6"		
Side Steps	1.08 x 0.30 x 0.15	3' 6" x 1' x 6"		
Rear Steps	0.70 x 0.30 x 0.15	2' 3" x 1' x 6"		

Description

This rectangular building is a larger and more complex structure than number 14, although it might, perhaps, be thought to display some of the same characteristics. The main access to the building was by way of the veranda which was approached via flight of steps at the short north-western end and by a two steps at the south-eastern end. Four doorways led off the veranda: one was the only entrance into the large, square Room 3; another, also the only door, led to the north-west corner of the rectangular Room 6; the remaining two doors were situated either side of Room 6, leading into Rooms 4 and 8. An external doorway on the south-eastern side of the building led into a hall, Room 2, and thence to Room 4. Yet another external entrance, at the back corner, led into Room 1 and may have been its only means of entrance. In essence, then, the building can be divided into two unequal parts: the larger, behind the veranda on the north-west, being a series on interconnected rooms around Room 6 which itself could only entered from the veranda. A back hall, Room 2, ran between two more discrete rooms, numbers 1 and 3.

Discussion

Circulation around the larger, north-western, portion of the building was relatively free and open with interconnected rooms around Room 6. Rooms 3 and 8 each have three doors, whereas Rooms 1 and 3 were somewhat more isolated. The plan and the location have an air of superiority that might perhaps be suggestive of exclusive use by officers. This highly subjective interpretation could perhaps be confirmed by research in the archives.

Present Condition

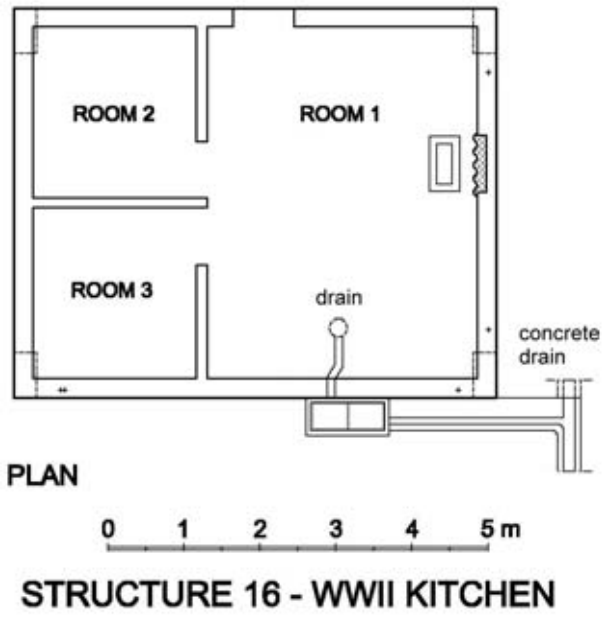
Some vegetation and resultant cracking.

Structure 16, Kitchen

Location

Structure 16 is terraced into the slope below Structures 14 and 15. It is an almost square building platform for a kitchen.

Kitchen (Structure 16), showing the sump for the drain, with Structure 14 behind. (02cn0418)



STRUCTURE 16 - WWII KITCHEN

Description	*Dimensions*		*Area*	
	metres	**feet and inches**	**m^2**	**sq ft**
Overall	6.35 by 5.15	20' 10" by 16' 11"	32.70	353.19
Room 1	3.56 by 4.65	11' 8" by 15'	16.55	178.74
Room 2	2.15 by 2.27	7' by 7' 6"	4.88	52.50
Room 3	2.15 by 2.25	7' by 7' 5"	4.84	52.27
Floor area			26.27	283.51
Wall width	0.24	1' 10"		
Partition width	0.15	6"		
External door width	0.81	2' 8"		
Internal door width	0.75 - 0.76	2' 6"		

Description

This roughly square building has a single entrance in the centre of the south, front, wall that leads into a corner of the kitchen itself, Room 1. Partition walls divide the eastern third of the building into Rooms 2 and 3 that mirror one another. The position of the stove is indicated by the rectangular channel in which it was seated and also by the stub of corrugated concrete, once faced with asbestos sheeting, that remains *in situ,* and also by the now fallen remainder that lies immediately beyond. The position of the sink(s) is clearly given by the position of the drainage hole in the centre of the north side of the main room. Outside is an elaborate double sump, originally covered with grills, that separated and retained solid waste.

Special Features

The block of concrete at the rear of what was most probably the oven and chimney, most of which now lies fallen outside the building, and the elaborate sump and drainage are peculiar to this structure.

Discussion

Clearly served as a kitchen, in addition to Structure 6. It is possible that this smaller and less elaborate kitchen may have served officers who were accommodated in Structures 14 and 15. Perhaps oral history might be able to refute or confirm this tentative suggestion. The exceptional drainage system was presumably designed to prevent foul waste from the kitchen being carried further down the system where it would have affected the showers and washing facilities. There must be a joke here about the officers mess!

Present Condition

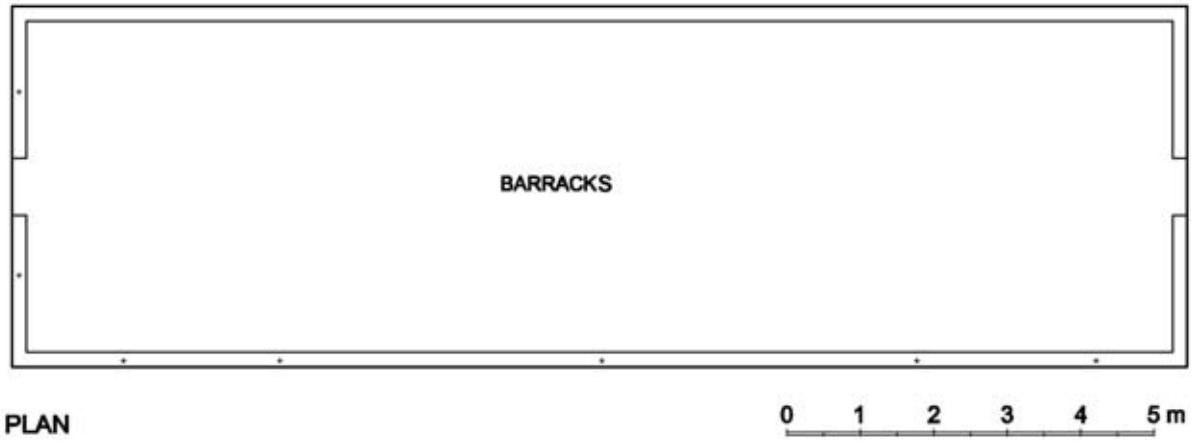
The concrete floor and partition slots are being broken by vegetation.

Structure 17

Location

Structure 17 is on level ground south of the Powder House, orientated north ─ south.

Structure 17 from the south-east, looking across Structure 18 to the Shot Furnace. The Cistern is on the left with the Storehouse beyond. The North-West Sentry Post is in the middle distance and the Powder House at left. (02jv2216)



STRUCTURE 17 - BUILDING PLATFORM

Description	***Dimensions***		***Area***	
	metres	**feet and inches**	**m^2**	**sq ft**
Overall	16.00 by 4.91	15'6" by 16'1"	78.56	845
Floor	15.60 by 4.51	51'2" by 14'8"	70.36	757
Door Width	0.70.	2'8"		

Description

This large rectangular platform has a single central door at either end. The dark hue of the floor sets it apart from the other platforms of similar size and form. Metal pins can be identified along the perimeter wall but pre-cast concrete corner blocks have not been noted, perhaps because the ground has been levelled and the platform not raised very high.

Discussion and Date

The difference in the floor material might possibly suggest a different phase of construction. The central location might perhaps indicate that this was one of the first WW II platforms. The plan is strongly suggestive of a barrack block.

Present Condition

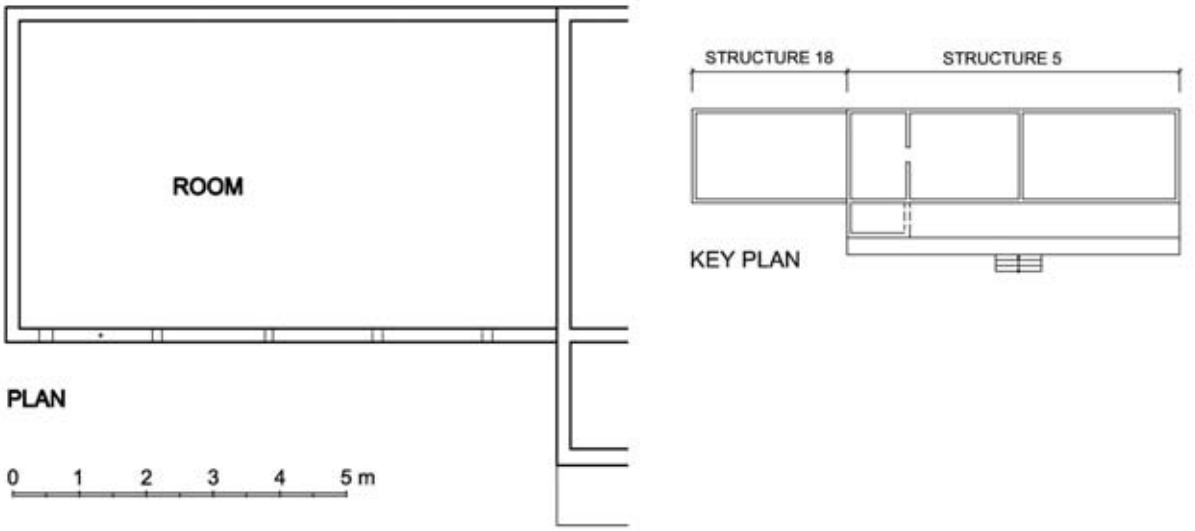
Stable.

Structure 18

Location

Structure 18 is an addition to Structure 5, as shown on the key plan.

Structure 18 was butted against the east end of the Barracks (Structure 5). Structure 18 differs from other WW II platforms in having had vertical iron rails, since removed, that supported the superstructure. (02cn0405)



STRUCTURE 18 - BUILDING PLATFORM

Description	***Dimensions***		***Area***	
	metres	**feet and inches**	**m^2**	**sq ft**
Overall	8.25 by 5.00	27' by 16' 5"	41.25	444.5
Floor	8.05 by 4.60	26' 5" by 15'	37.03	399.92

Description

Structure 18 is butted against the existing wall of Structure 5. This wall was seemingly shared by the two buildings. The foundations incorporated large iron posts or rails, only indicated on the front wall on the plan, that were levered out and taken away when the superstructure was removed.

Special Features

Post holes remain clearly seen along three sides of the platform perimeter.

Discussion and Date

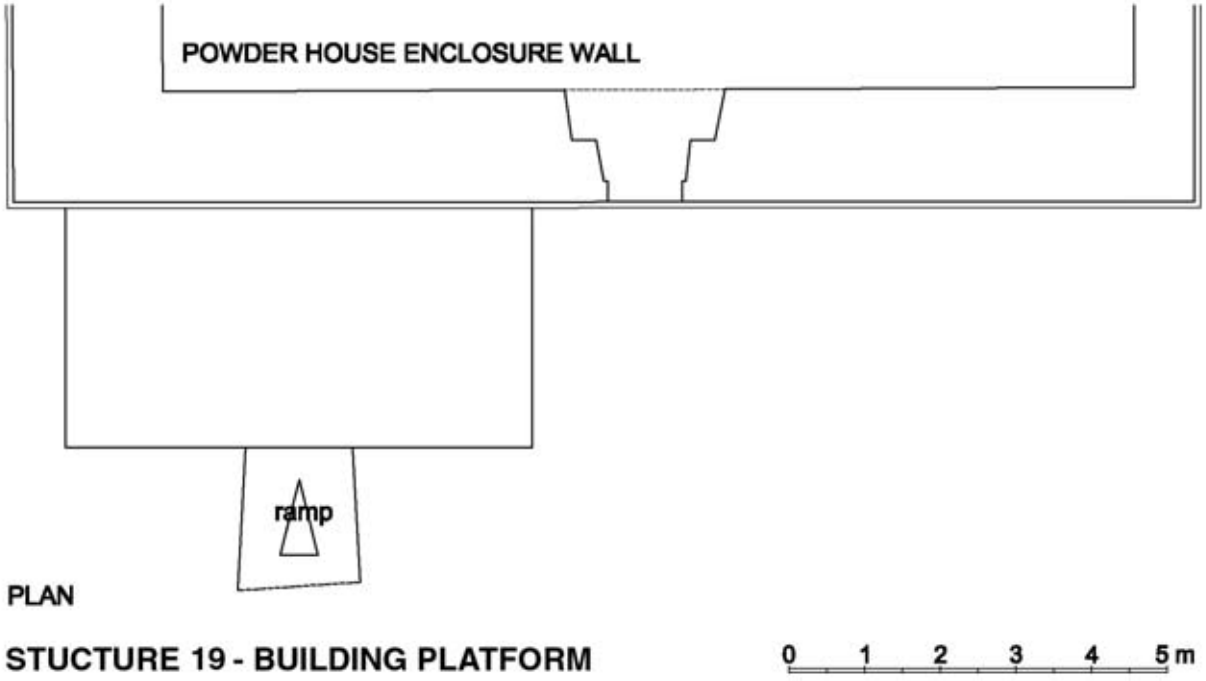
There is no evidence as to the position of the door(s), although is seems fairly certain, from the unbroken channel of the wall base, that there was no direct access into Structure 5. Structure 18 was clearly an addition to Structure 5.

Structure 19

Location

Structure 19 is the rectangular building platform built against the northern end of the Powder House front enclosure wall.

Structure 19 built against the enclosure wall of the Powder House. Two of the concrete settings that held the iron frame for the superstructure can be seen in the front, one immediately adjacent to the ramp an one by the near corner. (02cn0406)



Description	***Dimensions***		***Area***	
	metres	**feet and inches**	**m^2**	**sq ft**
Overall	6.17 by 3.16	20' 3" 10' 4"	19.50	210.57
Ramp width at top	1.42	4' 8"		

Description

The length is twice the width. The platform is approached by a broad and slightly splayed central ramp. The ramp surface is scored to aid traction.

Discussion

The ramp, with its scored cement surface, suggests that the structure was used to store heavy equipment or provisions that may have been oily or greasy, although there is no obvious staining of the concrete.

Present Condition

The floor and the ramp are both cracking.

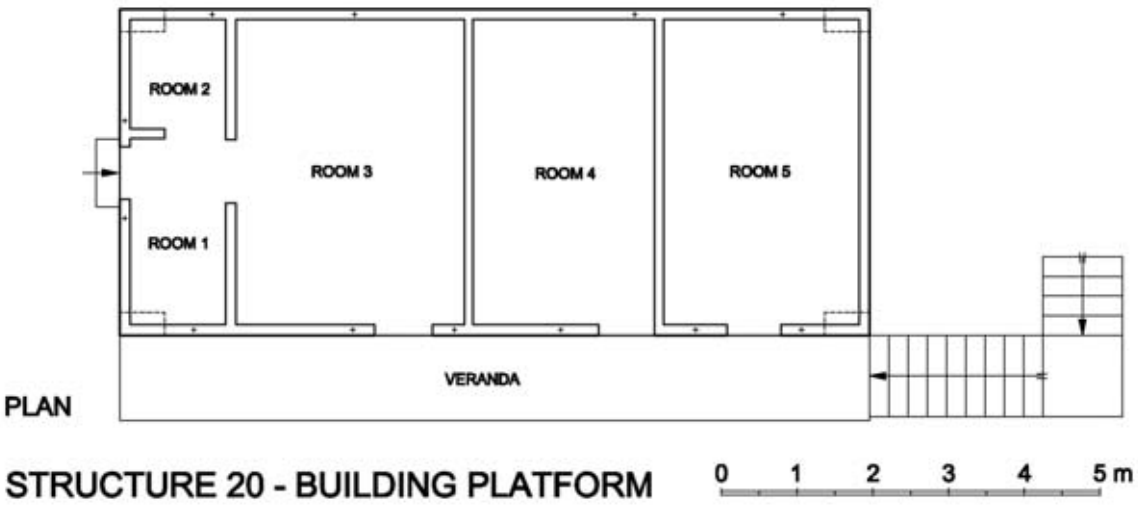
Structure 20

Location

Structure 20 is on the high ground north of the Powder House and south of the North Battery.

The steps leading up to Structure 20. (02jv1320)

Structure 20 from the north-west. (01cn0331)



Description	*Dimensions*		*Area*	
	metres	**feet and inches**	**m^2**	**sq ft**
Overall	9.90 by 5.45	32' 5" by 17' 10"	53.90	582.71
Room 1	1.26 by 2.46	4' 2" by 8' 1"	3.09	33.48
Room 2	1.26 by 1.45	4' 2" by 4' 9"	1.83	19.763
Room 3	3.01 by 4.04	9' 10" by 13' 3"	12.16	131.33
Room 4	2.40 by 4.04	7' 10" by 13' 3"	9.70	104.76
Room 5	2.60 by 4.04	8' 5" by 13' 3"	10.50	113.40
Total room area			37.28.	402.62
Veranda	9.90 by 1.13	32' 5" by 3' 8"	11.19	120.85
External door width	0.71 to 0.76	2' 4" to 2' 6"		
Side door width	0.85	2' 9"		
Internal door width	0.84	2' 9"		
Steps	1.08 x 27 x 20	3' 6" x 2' 3" x 8"		
Lower Stair flight	2.12	7'		
Upper Stair flight	3.33	11'		

Description

This large rectangular platform is divided into five rooms with a veranda along the entire north side. The west end of the veranda is approached by a flight of steps, made of pre-cast concrete blocks on a basalt base with a quarter-turn landing floored with cement. The base of the west end of the bank on which the platform sits was protected by a rough wall of rubble that is now very overgrown.

The rooms have been numbered from east to west. Rooms 1 to 3 form an interconnected functional unit whereas Rooms 4 and 5 are discrete.

Room 1 is entered via a single door in the centre of the east wall. There is one step in front of the entrance which appears as though it might have been a little wider than the external doors into Rooms 3 to 5. Room 1 connects with Room 2 and, via a wide central door, with Room 3.

Room 2 is a practically square space that was partitioned off from Room 1.

Room 3 is the largest room in the building. It connects with Rooms 1 and 2 via a central door in the east wall and directly with the veranda by means of a narrower door towards the west end of the north wall.

Rooms 4 and 5 differ slightly in size and in the position of the doorways that open onto the veranda, that in Room 5 being central and that in Room 4 being located at the west corner.

The Veranda has a floor at a lower level than the rooms that open from it.

Discussion

The stepped approach, the veranda and the absence of direct communication between Rooms 3, 4 and 5 might perhaps suggest that this building was administrative (rather than a depot or residential structure). Rooms 1, 2 and 3 evidently form a functional unit, and the doors here are wider than those on the veranda. There are no visible utilities (such as drains) or fitments. There is surprising lack of uniformity and standardisation in the widths of the rooms and the position of doorways which is perhaps explained by the standard units of the iron frame, as can perhaps be discerned from the positions of the iron on the plan.

Present Condition

Vegetation is causing the floors and partition slots to break up.

Structure 21

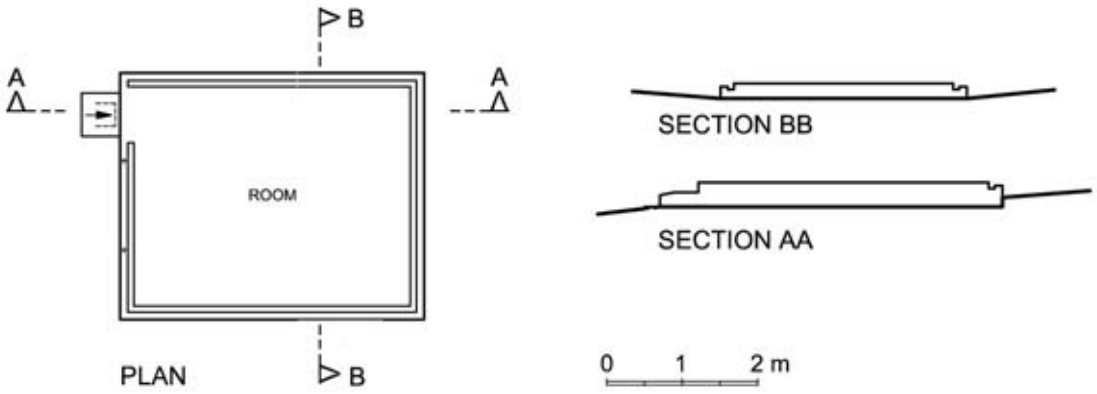
Location

Structure 21 lies on the top of the Northern Bank close to the east end.

Description

This smallish, almost square platform has a single door at the north end of the west wall. Entrance was by way of a step that was also sump once covered by a metal grill or grate (but there is no obvious drain). The sunken wall slots are not seen on other building platforms.

Structure 2: the step to the doorway, at bottom left, was a sump originally covered by a metal grill. The sunken wall base is not seen on other platforms. (02cn0410)



STRUCTURE 21 - BUILDING PLATFORM

Description	***Dimensions***		***Area***	
	metres	**feet and inches**	**m^2**	**sq ft**
Overall	4.02 by 3.66	13'2" by 12'	14.71	158.87
Floor	3.29 by 2.91	10'10" by 9'6"	10.69	115
Door	0.73	2'5"		
Front wall width	0.15	6"		
Side wall width	0.19	$7^1/_2$"		
Step	0.51 x 61	2' x 1'8"		
Grill width	0.30	1'		

Discussion

There is no evidence as to function, although the unusual arrangement of a step-cum-drain outside the door ought to provide a clue.

Present Condition

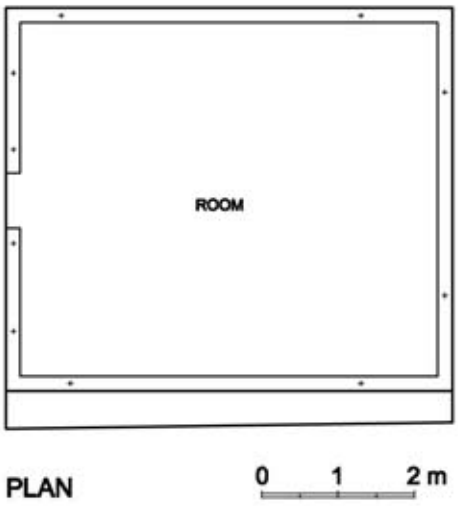
The floor is cracked.

Structure 22

Location

Structure 22 is located on the top of the Northern Bank close to the centre.

Structure 22 with Structures 21 and 20, with the stairs, behind. The WW II steps onto the top of the earlier platform are at bottom right and the doorway into the single roomed building can be seen in the centre foreground. (02cn0409)



STRUCTURE 22 - BUILDING PLATFORM

Description	*Dimensions*		*Area*	
	metres	**feet and inches**	**m^2**	**sq ft**
Overall	5.87 by 5.06	18' 3" by 16' 7"	29.70	320.78
Room	5.49 by 4.68	18' 0" by 15' 4"	25.58	275.34
Wall thickness	0.15	6"		
Door width	0.81	2' 8"		
Step	0.89 x 0.58	2' 11" x 1' 11"		

Description

This almost square platform has a central single door, reached by one step, in the west wall. The building is approached from the south by a flight of six WW II steps built of basalt spolia that are built against and cut through the topmost course of the French period Wall H, but which are not contiguous with the step directly in front of the door. The walls are narrower than normal and appear to have been built of flat rather than corrugated asbestos cement sheeting.

Staircase leading on to the Structure 22. (02jv1015)

Special Features

The circular impressions of a metal bucket with a 9" diameter base can be seen on the floor.

Discussion

There is no evidence as to function.

Present Condition

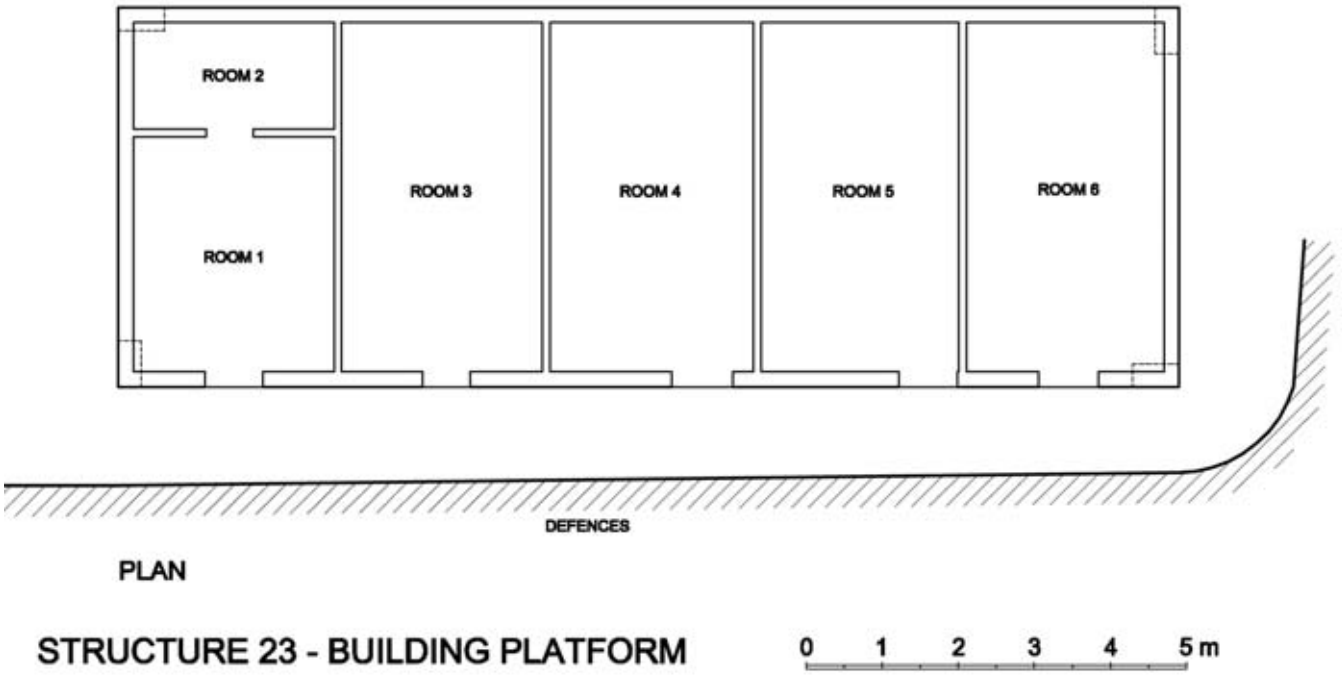
The floor is cracking.

Structure 23

Location

Structure 23 is on the berm of the large bank of the North-West Battery.

Structure 23 with the North-West Defences and the North-West Sentry Post behind. Doorways into the building were from the concrete passage between the platform and the earlier stone wall to the right and not where the two modern steps have been put. The two iron mortars were placed on the WW II platform a few years ago by the Mauritian Special Forces but the sides of the iron carriage on which one of them was seated remains by the landing Point. (02cn0407)



Description	*Dimensions*		*Area*	
	metres	**feet and inches**	**m^2**	**sq ft**
Overall	13.96 by 5.00	45' 9" by 16' 5"	69.80	753.84
Room 1	2.64 by 3.10	8' 8" by 10' 2"	8.18	88.34
Room 2	2.64 by 1.40	8' 8" by 4' 7"	3.70	39.96
Room 3	2.64 by 4.60	8' 8" by 15' 1"	12.15	131.22
Room 4	2.68 by 4.60	8' 9" by 15' 1"	12.33	133.16
Room 5	2.60 by 4.60	8' 6" by 15' 1"	11.96	129.17
Room 6	2.60 by 4.60	8' 6" by 15' 1"	11.96	129.17
Total room area			60.28	651.02
Concrete passage width	1.30	4' 3"		
Wall width	0.20	8"		
Partition width	0.10	4"		
Door width Room 1	0.76	2' 6"		
Door width Room 2	0.62	2'		
Door width Room 3	0.63	2'		
Door width Room 4	0.81	2' 8"		
Door width Room 5	0.77	2' 6"		
Door width Room 6	0.79	2' 7"		

Description

This rectangular building platform comprises five standard rooms, each of very similar dimensions. The southern, rear, third of the room at the eastern end, nearest to the only entrance to the entire range of rooms, was partitioned off and entered via a narrow central doorway. Each room is entered by a single doorway leading from the external concrete flooring. The doors are centrally placed in three of the rooms, but not in rooms 4 and 5, perhaps because of the position of the iron framework. There are no interconnecting doors except that between the unit that was partitioned into rooms 1 and 2. The rooms are almost twice as long as they are wide, and the doors are narrow.

The building faces onto the blank wall of the earlier North-Western Battery, Wall G, and the corridor-like space between Wall G and the front of the Structure is floored with concrete. At the west end of the concrete there is an abrupt drop which, whether or not it was partitioned off, would have impeded access from this direction. It is possible that the concrete standing was roofed, although it is difficult to see how this could have been achieved with standard prefabricated sheets.

The two steps onto the platform have been recently created to aid moving the iron mortars.

Discussion

The entrance to the building was protected and unusually restricted. There is no evidence as to the function of the building, nor of any of the rooms within it, although it can hardly have been used for accommodation.

Present Condition

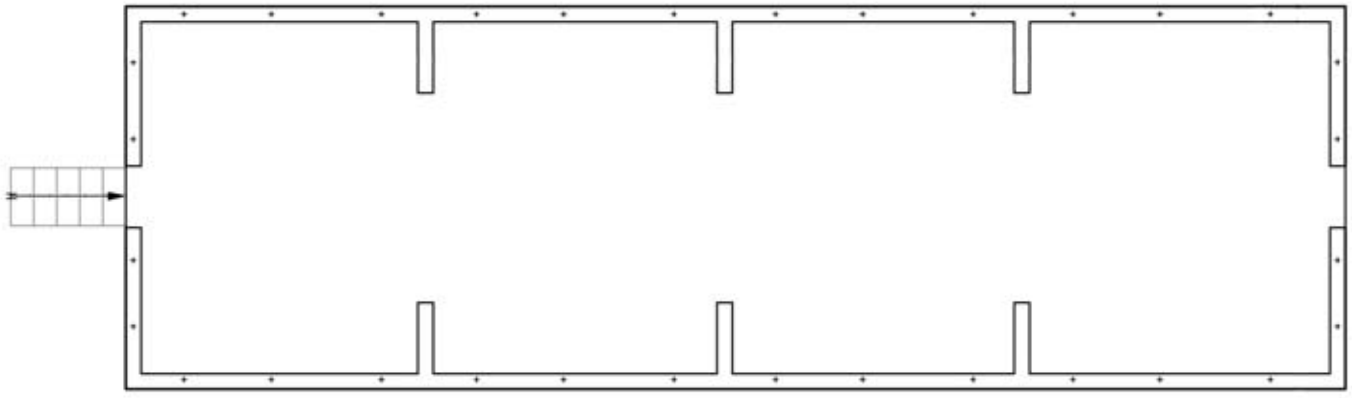
The floors and partition slots are breaking up. The two eighteenth century iron mortars have been placed on the structure in recent years. In terms of conservation there is no obvious reason to move these heavy weapons again.

Structure 24

Location

The most north-easterly of the large platforms, Structure 24, is the built base is terraced into a slope.

Structure 24 from the south-east with the North Battery behind. The solid low walling is only seen here and at the Cook House (Structure 6). There are central doors at either end and short partition walls on each side. The patches of concrete in the basalt terrace wall housed the base of the iron frame. (02jv2209)



Description	***Dimensions***		***Area***	
	metres	**feet and inches**	**m^2**	**sq ft**
Overall	16.15 by 5.06	53' 0" by 16' 8"	81.72	882.57
Floor	15.75 by 4.67	51' 8" by 15' 04"	73.55	794.37
Wall height	0.25	10"		
Wall width	0.20	8"		
Partition width	0.165	$6^1/_2$"		
Partition length	1.14	3' 9"		
West width	0.76	2' 6"		
Steps	0.76 x 0.30 x 0.165	2' 6" x 2' x $6^1/_2$"		

Description

This large, rectangular, terraced, building platform is orientated approximately north-south. There is a single, central, door at each end. The northern door is approached by a flight of five pre-cast concrete steps on a basalt base. Low concrete walls, possibly made from pre-cast concrete blocks, divide each side into three alcoves of equal size. The metal frame is symmetrical.

Structure 24 has a flight steps up to the north door. Note the use of pre-cast concrete hollow blocks for quoins and solid blocks for steps. The upper part of the rock-cut wall of the large, earlier, Ditch can be seen behind with the roofs of the Underground Generator Halls at the southern end. (02cn0412)

Special Features

The raised walls are only seen on one other structure, the Cook House (Structure 6), and the partition walls that form alcoves are unique to this building.

Discussion

There is no direct evidence regarding the function of this large structure. The shallow alcoves perhaps preclude barracks, especially since this is the sole building with regular, raised, internal partitions. The high steps and narrow doors would be inappropriate in a depot designed to store heavy equipment or materials.

Present Condition

Stable, although there is some cracking of the floor and alcove walls. The west side is attractively obscured by bushy vegetation.

Structure 25, Shower Cubicles

Location

Structure 25 was built on level ground at the east end of the southern side of the Powder House enclosure wall.

Description

This pair of contiguous shower cubicles had a drain that fed into the main drain running from the Kitchen (Structure 16) to the sea. This same drain also served Structure 26 and 27. A portion of the angled top of the Powder House enclosure wall at the rear of the shower units was levelled in order to seat water tanks.

The Showers, Structure 25, and drain, at the south-east corner of the Powder House Enclosure Wall. Part of Structure 26 is at right. (02jv2208)

Present Condition

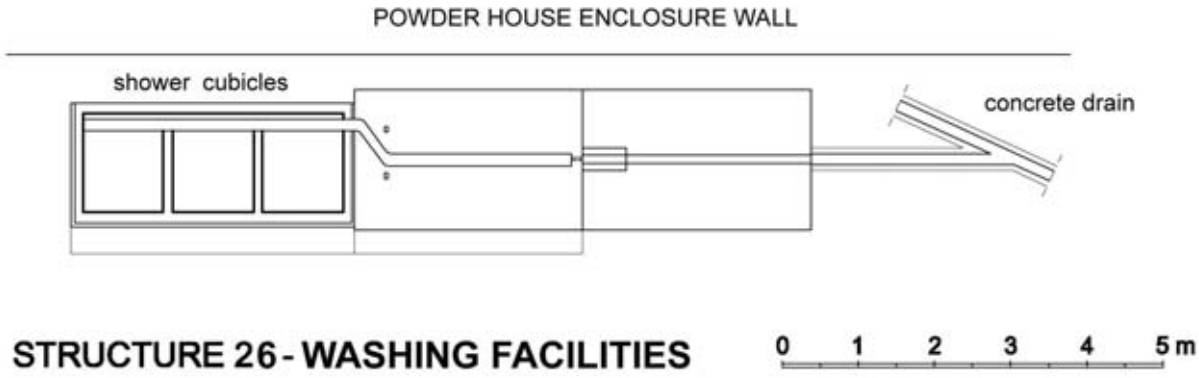
The floor is starting to break up.

Structure 26, Shower Cubicles and Washing Facilities

Location

Structure 26 is on level ground behind the rear enclosure wall of the Powder House.

Washing Facilities, Structure 26, by the east wall of the Powder House Enclosure. (02jv2207)



Description	***Dimensions***		***Area***	
	metres	**feet and inches**	**m^2**	**sq ft**
Maximum	2.17 by 9.73	7' 1" by 31' 10"		
Cubical unit	1.99 by 3.73	6' 6" by 12' 3"	7.42	80
Cubicles each	1.30 by 1.06	4' 3" by 3' 6"	1.38	14.88
Unit 2	2.17 by 3.00	7' 1" by 9' 10"	6.51	70.31
Unit 3	1.86 by 3.00	6' 1" by 9' 10"	5.58	60.26

Description

Structure 26, part of the washing facilities provided during WWII, consists of two shower cubicles above two rectangular rooms, all served by the same internal drain. The main drain running down from the Kitchen (Structure 16), into which the internal drain feeds, ran between these units and the rear enclosure wall of the Powder House. Behind the structure a section of the angled top of the Powder House enclosure wall was flattened so that water tanks could be installed. Note that the cubicles, here with sloping floors, are of different form to those in Structure 25. There were presumably wash-stands and sinks either side of, or astride, the central drain in the lower part of the structure.

Special Features

Sloping floors to the cubicles and carefully made drains, all of which reduced the risk dirty water accumulating. Water would have been pumped up to the tanks on the wall behind where the sun would have warmed it.

Present Condition

Well preserved.

Structure 26, looking towards Structure 16, showing how the drain from the kitchen served both buildings. (02cn0414)

Structure 27, Washing Facility

Location

Structure 27 is at the east end of the North Battery.

Structure 27 is buried in the vegetation at the base of the earlier coral block wall of the North Battery. Stones were probably removed from the top of the wall at right so as to accommodate a water tank. The main drain can be seen in the middle ground at right and Structure 30 is in the foreground. (02jv1513)

Description

Structure 27 is the northernmost feature served by the concrete drain that runs from the Kitchen (Structure 16), past the Shower Cubicles and Washing Facilities (Structures 25 and 26) to the sea. The concrete base and drain that perhaps had only a flimsy superstructure. A water tank was probably seated on the earlier end wall of the North Battery where stones have apparently been removed for this purpose.

Dimensions

Approximately 3.00m, or 10 feet, square

Discussion

Almost certainly a shower or showers.

Present Condition

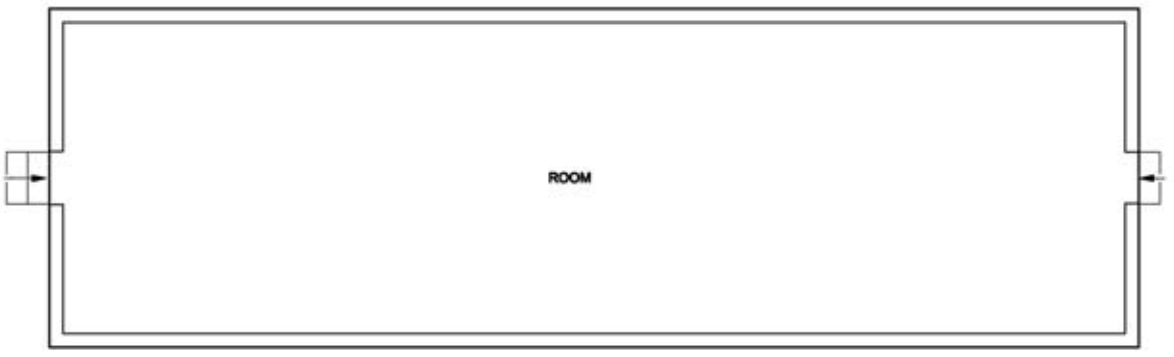
Heavily overgrown, but many details are preserved beneath the vegetation.

Structure 28

Location

Structure 28 lies on a level area between the Underground Generator Halls and the Powder House.

Structure 28 from the top of Structure 7 (Underground Generator Halls) to the south-east with Structures 25 and 26 and the Powder House behind. Part of the North Battery and Structure 24 is at right. (02jv2215)



Description	***Dimensions***		***Area***	
	metres	**feet and inches**	**m^2**	**sq ft**
Overall	16.15 by 5.03	53' 00" by 16' 6"	81.23	877.33
Floor	15.75 by 4.62	51' 10" by 15' 2"	72.77	783.30
East Door	0.79	2' 7"		
West Door	0.76	2' 6"		
Steps	0.77x 0.32 x 0.15	2' 6 1/2" x 1' 0 1/2" x 6"		

Description

A low, rectangular, building platform that has one central door at either end. Pre-cast concrete blocks were used for a flight of two steps at the east end and a single step at the west. The platform is orientated WSW − ENE.

Pre-cast concrete blocks have been used at the corner of the building platform. (02jv2215)

Discussion

The large single room with a door at either end was most probably a barrack building.

Present Condition

Vegetation is cracking the floor.

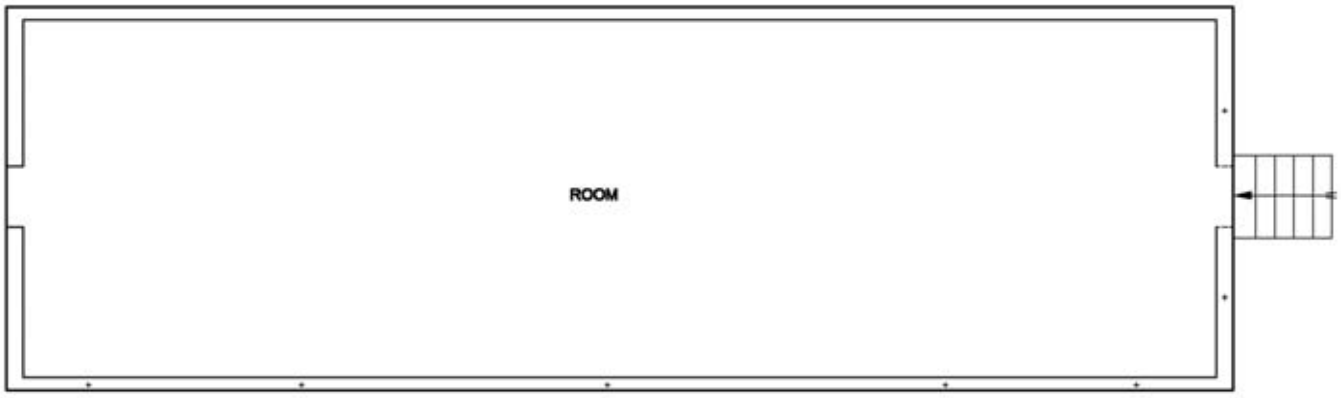
Structure 28 with the Underground Generator Halls at left and the East Sentry Post at centre. (02cn0413)

Structure 29

Location

Structure 29 overlooks the sea on the eastern side of the island and is orientated approximately north - south.

Structure 29 from the north. (02jv2214)



PLAN

STRUCTURE 29 - BUILDING PLATFORM

0 1 2 3 4 5 m

Description	***Dimensions***		***Area***	
	metres	**feet and inches**	**m^2**	**sq ft**
Overall	16.12 by 5.03	52' 10" by 16' 6"	81.08	875.70
Floor	15.68 by 4.69	51' 5" by 15' 5"	73.54	794
South Door	0.80	2' $7\frac{1}{2}$"		
Steps	1.08 x 0.30 x 0.15	3' 6" x 1" x 6"		
East door to NE corner	1.12	3' 8"		

Description

This rectangular, terraced platform has a single door at either end. The north door was placed west of centre so as to avoid the necessity of steps. The south door is approached by way of five steps made from pre-cast concrete blocks.

Discussion

The large single room with doors at either end perhaps suggests a barrack block.

Present Condition

Overgrown along one side, the cement floor is cracking.

Structure 30, The Toilets

Location

Structure 30 is overhanging the sea on the east side of the island.

The Toilets, Structure 30, above earlier rock-cutting. A length of displaced concrete drain is in the centre and the low North-Eastern Bank at right. (02jv2222)

Description

Structure 30, a concrete platform into which were embedded iron rails that project over the sea, is known to have suported toilets during WW II. There are earlier rock-cuttings beneath and in the immediate vicinity which are described elsewhere. A track leading to the structure eroded a passage through the North-Eastern Bank.

Materials

Concrete, cement and iron rails.

Dimensions

The total unit is approximately 3.10 by 4.50m, or 10 by 15 feet. The rails are 6" by 3".

Discussion

It is known from oral reports that WW II toilets overhung the sea, supported on the iron rails.

Present Condition

The iron is slowly rusting away.

OTHER STRUCTURES AND FEATURES

A small structure, built by the British, possibly during the pre WW II period is likely to have been a flagpole base. Another much smaller concrete flagpole base was found in the centre of the island.

Structure 31, The Flagpole Base

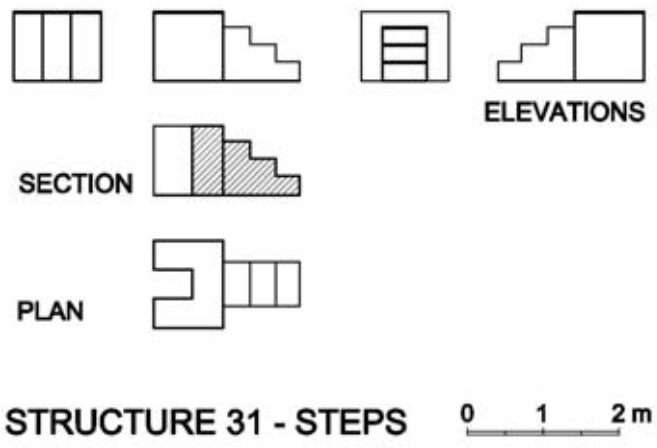
Materials

Cut basalt blocks and possibly lime mortar which was later covered by a Portland cement mix.

Location

Structure 31 is on the top of the earlier North Battery immediately to the east of the entranceway from the Landing Point.

The Flagpole Base, Structure 31, above the Landing Point. (02jv0101)



Description	*Dimensions*	
	metres	**feet and inches**
Podium	0.91 by 1.15	3' 0" by 3' 9"
Podium height	0.91	3' 0"
Recess Length	0.51	1' 8
Recess width	0.38	1' 3
Stairs	1.01 x 0.59 x 0.23	3' 4" x 1' 11" x 1' 9"

Description

A podium approached by three steps on the east side and a rectangular housing that was, presumably, for a flagpole.

Special Features

The treads of the steps are rendered in the same Portland cement as has been used for the distinctive pointing of the masonry. Flags flown here were intended to be seen from the approach to the Landing Point and the mainland shore rather than from the Pass.

Discussion and Date

The distinctive pointing is paralleled by the repointing of the Observation Tower, the Central Building and the Western, Searchlight, Building. The rectangular cut, but un-smoothed, basalt, on the other hand, is more in keeping with the earlier style of masonry at the three structures just mentioned. It would appear, therefore, that this podium was probably constructed in the earlier phase and re-pointed in WW II. This hypothesis could, confirmed, by examination of the mortar behind the cement pointing.

Present Condition

One corner is undercut and some of the cement has been lost.

Small Flagpole Base

One more flagpole base was noted in the centre of the island. The block measures 30cm by 28cm and its depth is 48cm. It contains an iron sleeve for a pole, 10cms in diameter, on the central axis of the longer side.

CONCLUSIONS

Cultural Resource Management

This very descriptive report is intended to provide the basic underpinning of any plans for further research and, particularly, for the development of the island's great potential as a focal point in the Cultural Heritage of Mauritius. In this respect, the report is to be used in conjunction with both the *Basic Architectural Survey* and the set of *Recommendations* that accompany it.

The outstanding priorities are the Storehouse and the Observation Tower. Both clearly require urgent action in order to ensure both visitor safety and the preservation of the buildings. In addition, as this preliminary study makes clear, many of the remains are fragile and could rapidly disappear without the implementation of an excellent management plan.

Historical Conclusions

Two major new historical conclusions can be drawn from this preliminary study. Firstly, the development of the defences on Ile de la Passe during the entire period of French rule went through very many more phases, as evidenced by the different construction techniques that were used for particular elements, than had been previously realised. The precise dating of each of these elements requires further research, both in the field and in the archives. Secondly, it has become clear that the Upper Battery was built by the French before Mauritius was taken over by the British in 1810.

Several major problems have been isolated, but not solved. Of these the most tantalising is the date and function of Ditch in which the Underground Generator Halls were built in WW II. Another problem is the identification of British structures that predate the 1891 map. Perhaps the problem of most outstanding importance is the date of the three British Buildings that post-date 1891 and pre-date the Second World War, namely the Observation tower, the Central Building and the Western or Searchlight Building.

Future Research

Plans are being drawn up, and funding sought, for further research at Ile de la Passe which would further elucidate and perhaps solve some the questions that have been raised and which would, at the same time, initiate a program of consolidation and preservation. Central to these plans is the full cleaning, recording, and preservation of the French emplacements in the Upper Battery. Next in the order of interest is the early British platform and ramp (Structure 11). In the longer term there is a need for cleaning, recording and consolidation of the WW II remains, but implementation of any major work in this area will need to be integrated into a wide scheme of Cultural Resource Management.

Pirogues regularly take visitors to the islands. (02cn0213)