ARCHITECTURAL AND ARCHAEOLOGICAL STUDIES AT ILE DE LA PASSE

MAURITIUS

REPORT ON THE 2003 SEASON OF FIELDWORK

Submitted to the National Heritage Trust of Mauritius

Figure 1: The 18th century French Powder House. (03jv3406)

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PROJECT

Architectural and Archaeological Studies at Ile de la Passe, Mauritius
The Archaeology, Architecture and Conservation of an Historic Islet.

The 2003 season

Earthwatch participants

Team 1 (19 January to 2 February):
Ian Bainbridge, Bradley Braun, Jonathan Howe, Roger Lucas and George Weiss.

Team 2 (2 to 16 February):
Faye Hogan, Judith Palmer and Wendell Zipse.

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Aylin Ağar, Özge Başağaç and Çiğdem Uysal.

Figure 2: Team 1 disembarking on the islet. (03jv1215)

Research Site

Ile de la Passe guards the entrance through the coral reef into Grand Port at the south-east of Mauritius. Control of this coral islet was the key to control of the Indian Ocean from the early 18th century until 1810. The islet, pivotal in the last Napoleonic naval victory against the British at the "Battle of Grand Port", boasts some of the most impressive surviving examples of French military architecture in the southern hemisphere. Later British military installations are of considerable importance for the heritage of Mauritius and of interest to students of colonial history.

Figure 3: Team 2 and local workers awaiting the speedboat. Ile de la Passe can just be seen on the horizon at the extreme right. (03jv1812)

1. INTRODUCTION

The 2003 season of fieldwork on Ile de la Passe concentrated on further documentation of the built structures, recording the graffiti, addressing particular problems of chronology and interpretation, and trials with materials methods of architectural conservation and restoration.

The final week of a projected four-week season of fieldwork was interrupted by Cyclone Gerry, with the result that is was necessary to extend the expedition into the start of a fifth week in order to bring the planned program of work and research to a fully satisfactory conclusion. As a consequence fieldwork, which was inaugurated on Monday January 20, ran up to and included Wednesday February 19.

The team comprised the authors of this report, who were the Principle Investigators, together with two teams of volunteers from the *Earthwatch Institute.* Each team participated for two weeks, the first team comprising five volunteers and the second three. Local workmen were employed to clear vegetation, to clean up the islet and to undertake essential consolidation and conservation work as well as to make trials with architectural restoration using appropriate materials.

Much of the work has been carried out slowly and with considerable caution as the Principle Investigators continued to gain an understanding of the materials and of the depositional history of the archaeological material. Conservation and limited restoration has been very largely experimental and has, at the same time involved getting across some of the basic concepts concerning Heritage Sites to the workforce as well as learning ourselves about traditional materials and working methods from local artisans.

On Thursday January 30 we were most pleased to host a visit by Professor Vijaya Teelock and her team of staff and students from the Maroon Cave Project. Mr Premlall Mahadeo, Director of the National Heritage Trust (NHT), also took this opportunity to observe the progress that has been made. On Friday January 31 The Chairman of the NHT brought program makers from MBC TV to Ile de la Passe to film a program for children.

Figure 4: The Director of the National Heritage Trust, Mr Premlall Mahadeo, and the group from the University of Mauritius visiting the islet. (03jv1320)

2. SCOPE OF THE REPORT

This Report closely follows the order of the scheme of work that was set out in the *Details of the First Campaign* as appended (Annex III) to the Contract between the authors of this Progress Report and the NHT. Detailed results from each of the issues to which research was directed during the course of the 2003 season are hereby provided, together with assessments of the work undertaken and recommendations for future undertakings. There are, in addition, three appendixes as described below.

Appendix I lists the boxes of material that were deposited at the Mauritius Institute.

Appendix II sets out recommendations for aspects of conservation and preservation of extant features at the base of and adjacent to the Observation Tower should refurbishment of this key monument be undertaken. These recommendations were originally presented to the NHT together with the *Fourth Progress Report.*

Appendix III comprises an annotated and illustrated list of plant species that were identified by Dr Ashok Khadun of the Mauritian Wild Life Trust. This study was made before any vegetation was cut back or removed in order to reveal architectural and archaeological remains.

Appendix IV is a printout a page from "A Glossary of Victorian Military Terms" from the *Palmerston Forts Society* (PFS) web page. This same terminology has been employed throughout this report.

The short report requested by the Earthwatch Institute, the main sponsor of the 2003 season, has been prepared and a copy is submitted under separate cover. Versions of this short report have also been submitted to the two other sponsors, Phoenix Camp Minerals and Harel Mallac Electronics, and will be used for further fund raising.

3. TERMS AND REFERENCES

This Report retains the sequence of naming and numbering recognisable built structures and features according to the designations given in Summers and Summers (2002), *Ile de la Passe Report 1: Archaeological and Architectural Survey* (presented to the NHT). Terminology for the component parts of the defensive structures on Ile de la Passe is in the process of being standardised according to terms that are clearly defined on the excellent web site of the *Palmerston Forts Society* at

http://users.argonet.co.uk/users/dmoore/index.htm

and particularly in the section entitled "A Glossary of Victorian Military Terms".

http://users.argonet.co.uk/users/dmoore/gloss.htm

Periodisation also follows that established in the 2002 Reports, the earliest being the French Period up to 1810, followed by the early British, the British construction of the Observation Tower, Central Building and the North-West Building in the late Nineteenth or early Twentieth Century, and the World War II Installations.

Our own insights have been amplified by the assiduous archival research which has been made by Dr Marina Carter. We are extremely grateful to Dr Carter for so generously sharing with us the rich fruits of her labours. In this Report we have striven to avoid reproducing Dr Carter's as yet unpublished results, but we fully acknowledge that they have had influenced our own conclusions in many ways.

4. MAPS

The topographic map commissioned by the NHT from A. S. Calloo, sworn surveyor, in 2002 now provides a base map for all studies. Ten stations set in concrete will be used as reference points in future surveying. The map itself is tied to the National Grid and an arbitrary height of 100m above sea level has been given to Station A.

All of the building plans presented in the 2002 report have now been transferred onto this new base map. It must however be noted that the site plan produced for the 2002 report, before the surveyor's map was available, was based on magnetic north and should now be realigned to match true north.

Figure 5: Site plan of Ile de la Passe based on magnetic North as presented in the 2002 report.

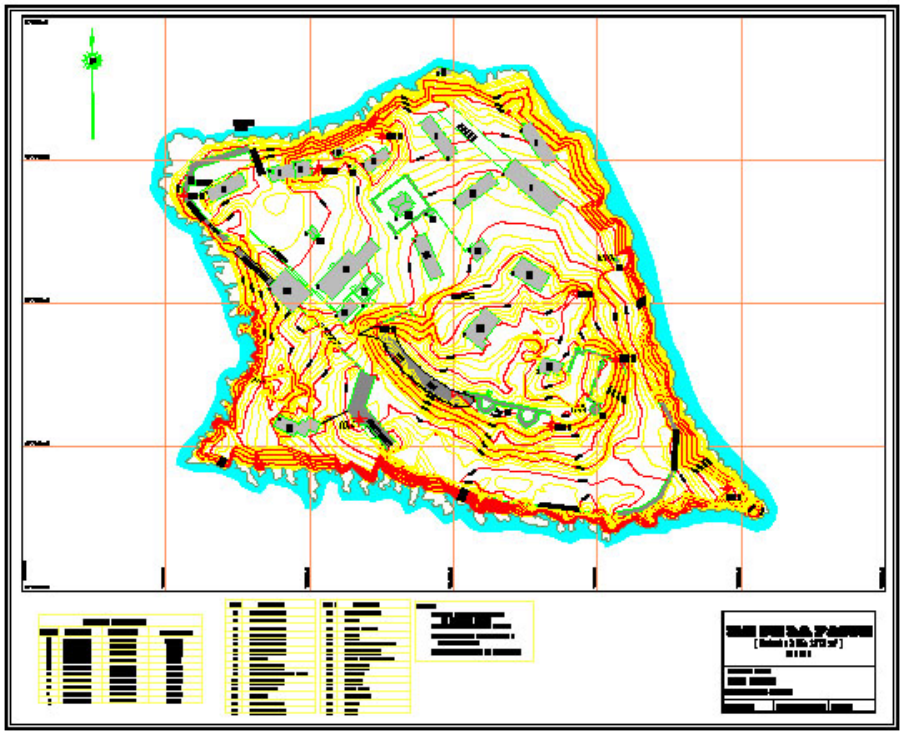


Figure 6: AutoCAD generated site plan of Ile de la Passe prepared in September 2002 by A.S. Calloo, sworn surveyor.

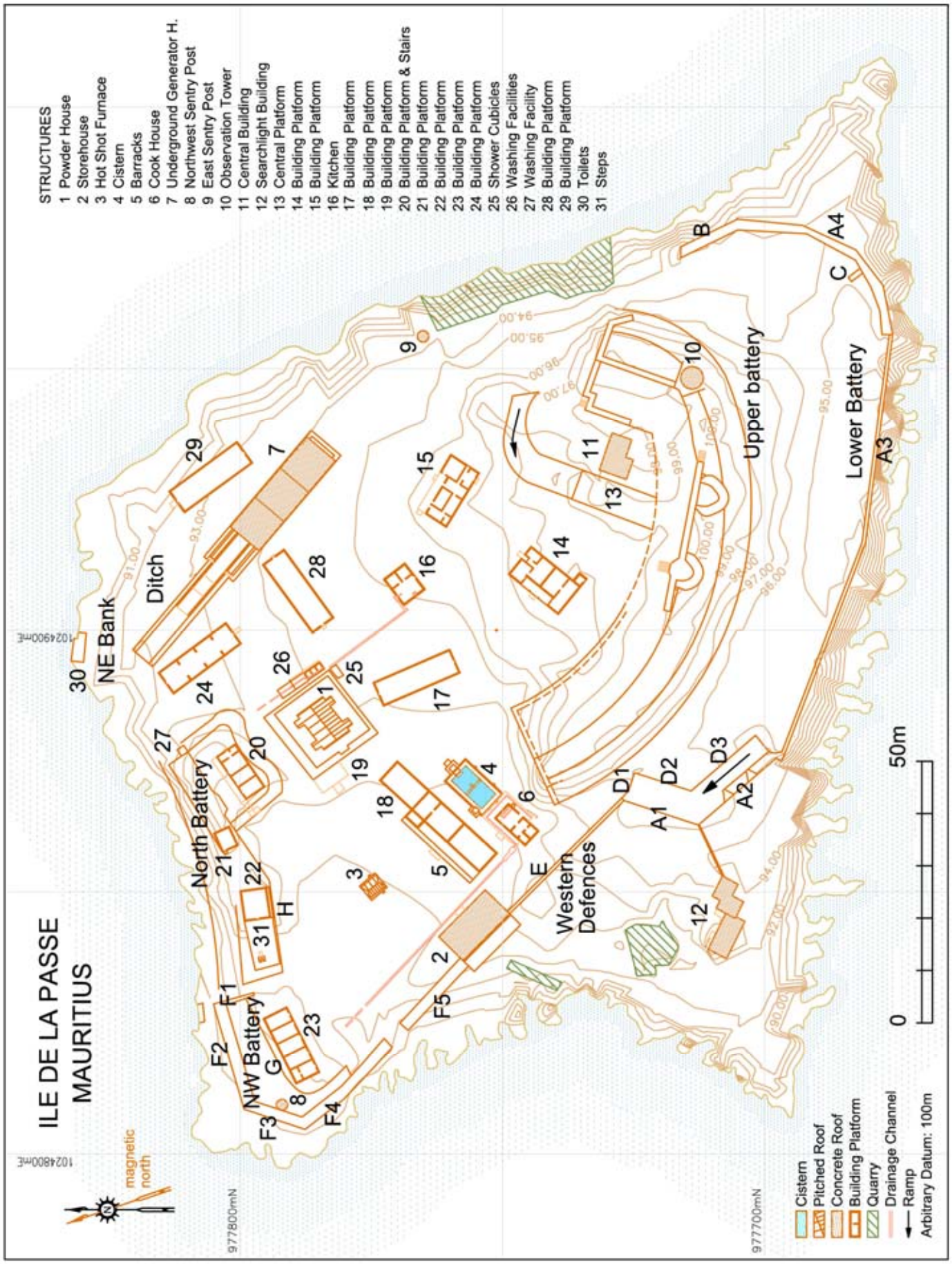


Figure 7: Map of Ile de la Passe combining the topographic survey and building plans.

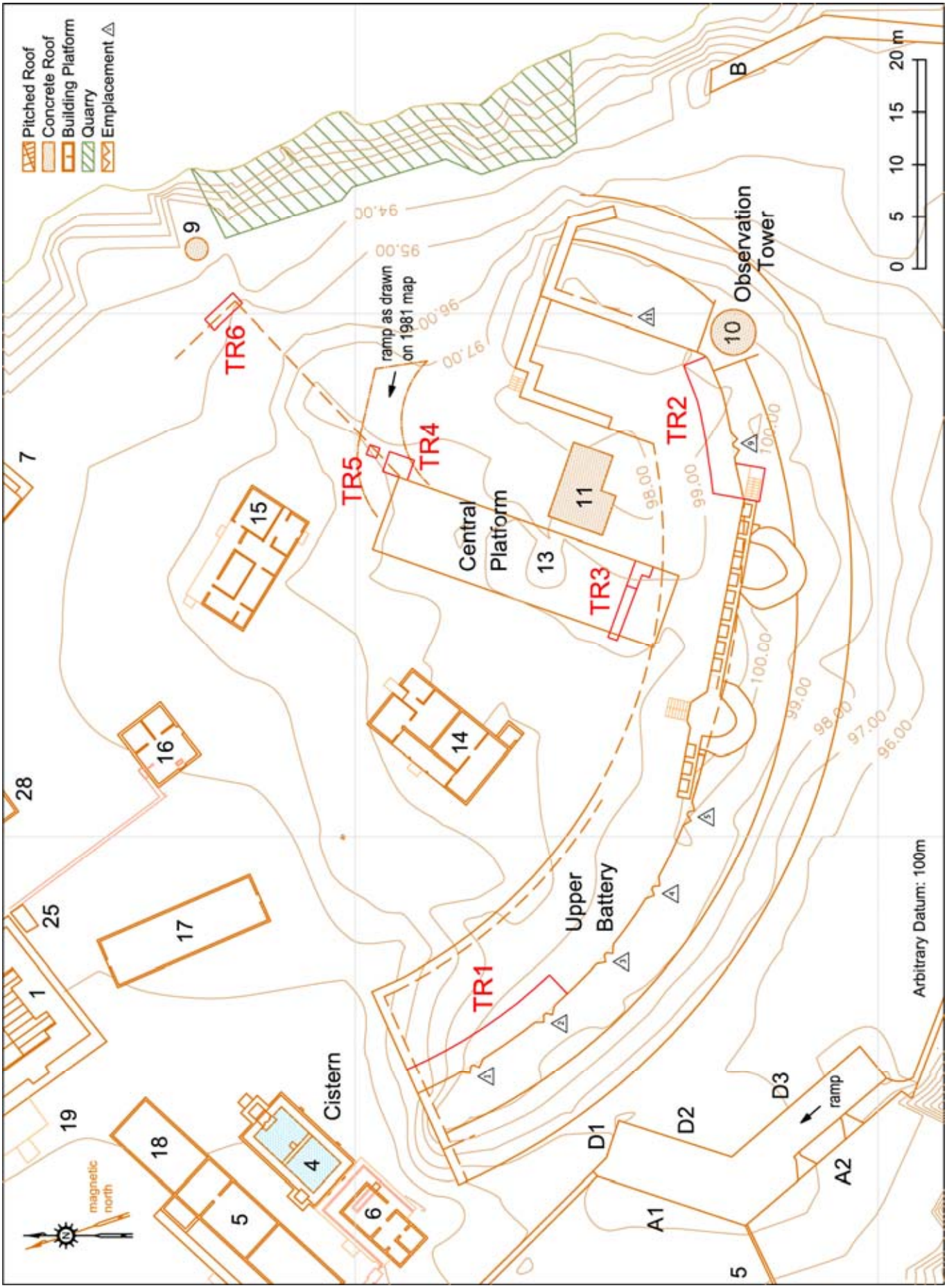


Figure 8: Plan locating the clearance trenches at the Upper Battery and Central Platform.

5. THE CONDITION OF THE ISLET AND ITS MONUMENTS AT THE START OF THE 2003 SEASON

Between the end of the 2002 season and the start of the 2003 campaign a considerable amount of rubbish had accumulated on Ile de la Passe, much of it the result of camping on the islet during the Christmas and New Year period. Good intentioned attempts had been made to pile rubbish up and some of it, although by no means all, was in sacks and bags. Generally the islet was not in such a foul as condition as it had been at the start of the first campaign in 2002.

Of particular concern, however, was further damage done to standing structures as a result of cooking-fires having been lit against walls and inside buildings. While the extent of this damage is not in itself disastrous, the accumulative effect is considerable and will soon result in the loss of graffiti, some of which have considerable historical importance for Mauritius. Besides this loss, fire damaged wall faces will be both difficult and expensive to repair.

On Wednesday February 19 the islet was left free of recent rubbish.

Figure 9: Barbecues lit inside the hot shot furnace seriously endanger the already damaged structure. (03cn0207)

6. OVERVIEW OF RESULTS ACCORDING TO ANNEX III OF THE CONTRACT WITH THE NATIONAL HERITAGE TRUST OF MAURITIUS

This summary of progress and results precedes fuller and more complete documentation of the work that was done on a structure-by-structure basis.

Figure 10: Standing structures are in need of conservation and restoration. (03jv0506)

1. Recording of standing architectural monuments

Digital photographs and measured sketches have been made for photo-rectification and architectural studies of the North Wall of Upper Battery as well as of the Upper Battery Parapet Wall, the World War II Shell Cabins and the features between the Shell Cabins and the Observation Tower.

The photographic record, measured drawings and written descriptions of the Underground Generator Halls were completed.

2. Mapping ramparts

This aspect of the research was written into the scheme of research some months before the NHT commissioned a highly accurate map that has been made by a Mauritian firm of professional surveyors, A. S. Calloo. This excellent map, of which both a hard copy and a digital version were provided, should be fully adequate for post fieldwork studies such as Geographic Information Systems (GIS) Viewshed Analysis of the batteries. The new map will also provide an excellent base from which to draw up management plans for walkways and footpaths together with the positioning of new facilities.

3. Uncovering and cleaning gun emplacements and other remains.

As far as the 2003 season of fieldwork is concerned, this highly successful aspect of the scheme of research has been completed. Details of the results are presented in a separate section of this Report. In addition to extensive written notes, plans and sections were drawn to scale while measured drawings of elevations were made to permit photo-rectification.

4. Limited exposure of remains through the clearance of vegetation and rubble.

This aspect of the work consumed the greater part of the available time and energy. Following consultation with Dr Ashok Khadun, Botanist and Island Restoration Manager with the Mauritian Wildlife Foundation, it was possible to cut back and remove such vegetation as obscured walling, graffiti or other features in the full confidence that no rare endemic species would be harmed. Indeed, it was rewarding to be able to begin the process of eradicating unwanted exotic species from the islet, a task that we would like to continue more methodically in future seasons. An illustrated list of plant species is appended to this report.

The principle objectives in the 2003 field season were to clean away vegetation, fallen debris, accumulated rubbish and wind blown sand so as to uncover sections of the inner face of the Upper Battery Parapet Wall and Gun Emplacements, parts of the Central Platform and the sides of the large Ditch on the north-western side of the islet. Care had to be taken in removing the vegetation because pulling plants out of walling together with their roots tended to dislodge masonry. In general, therefore, growth was cut back with hand clippers (sécateurs) or by machine rather than being uprooted. Modern broken glass, of which there are large quantities, is a potential hazard to hand cutting. Every attempt was made to avoid cutting or chipping the pieces of asbestos sheeting that are scattered everywhere.

A mechanized grass cutter was also used to trim the grass around the base of the monuments that had been cleaned last year. This procedure not only enhances the look of the islet in itself, but it also discourages visitors from throwing rubbish, such as tins and bottles, into the long grass.

Detailed descriptions of precisely what was cleared are given in the relevant sections hereafter while the management of stone rubble and sand piles is fully dealt with in the section of this report concerned with conservation and restoration. In summary, most of what was removed was either neatly stacked for reuse in future conservation efforts or spread out so as to appear as unobtrusive as was practicable. In the case of the Central Platform nearly everything that was removed was replaced after documentation of exposed remains so that, apart from making the edges of the wall tops visible, the original aspect of this feature was little altered.

5. Full examination of the enigmatic "Ditch" and its associated features

Vegetation was cut back along both sides of the ditch so as to expose fully all of the graffiti. In addition, the channels and their stepped terminations were partially cleaned. It was decided to strike a balance between the more usual archaeological practice of total cleaning - for the sake of clear and complete photographs - and the preservation of some of the rather attractive vegetation. Another factor in the decision to leave most of the vegetation along the top of the north-eastern side of this feature was the physical barrier that it provides against accidental stumbling into the Ditch.

A full photographic record was made of the graffiti. No new features were discovered but the measurements recorded in 2002 by scrambling through bushes and undergrowth were checked and found to be correct and, as related in the relevant section of this report, some headway was made in furthering our understanding of some of the outstanding questions.

6. Recording graffiti

Systematic recording of graffiti began with the tall North Wall of the Upper Battery and the external walls of the Storehouse. As related above, the graffiti in the Ditch were also photographed and studied. There are, however, a great many more to record and collate, not least in and around the Powder House. No pre-British examples have been found and very few (if any) appear to have been cut earlier than the late 1850s. Further, as yet no graffiti have been discovered that might be firmly associated with the construction of the Observation Tower and its companion structures some time between the late Nineteenth Century and the World War I.

One major concern associated with recording graffiti is the time needed after work in the field to process digital images and to transcribe each individual graffito. We ourselves

would be happy to pass on a copy of the digital photograph archive in order for this study to be made by a competent expert.

7. Limited emergency conservation using lime mortars to replace key blocks of stonework

Good progress was made at the northern end of the Upper Battery. It is essential to understand two crucial concerns:

1. Everything that has been done is reversible. In this respect it should however be realised that the restoration of standing structures, such as the Observation Tower and the Storehouse, will not and cannot be reversible. This is in part because the original materials used in World War II have undergone irreversible physical change and also because there are structural issues to be addressed. The pre-World War II Upper Battery does not, however, have problems of the same order (although the World War II Shell Cabins will need some attention in the near future).

2. The conservation undertaken in 2003 was experimental in nature.

Decisions on the day-to-day mixtures of lime mortar with red earth brought from the mainland coastal area as well as with sand were to a large extent guided by the local artisans who were employed and who proved to be greatly experienced. It was also learnt that these same skilled men could measure and saw blocks of coral to fit precisely where they might be required. With close supervision and the growing realisation that quality rather than speed are of the essence in this particular type of work, a great team can be speedily built.

In general Emplacements 1 and 2 have been partially restored and consolidated as well as the intervening and adjacent stretches of the parapet wall. Fallen stones have been set back in their original positions in the very few cases where it was obvious from whence they had fallen. Otherwise stones were selected and set in a way that mimicked as nearly as possible the original character of the wall. At the Emplacements new stones had to be cut for the angles, and indeed occasionally to fill gaps. This was done with a simple wood saw. Newly cut stone is, however, gleaming white. Experiments with ways of artificially ageing the newly cut surfaces are in hand and will continue at Ankara. The length of time taken by the natural processes that make the cut coral stone grey is not known but it is of interest that when new the battery walls, and the stone buildings, would have been gleaming white.

Figure 11: Basalt blocks fallen from the emplacements were set back in their original position. (03jv1610)

7. THE UPPER BATTERY

Clearance and recording of structures

The principle objectives of work on the Upper Battery in the 2003 field season at Ile de la Passe were firstly to clean away fallen debris, accumulated rubbish and wind blown sand so as to uncover sections of the inner face of the battery and secondly to undertake limited restoration with appropriate materials. Clearance was begun at the northern end for two reasons, firstly because, apart from a small channel connected to the iron cylinder atop the northern end of the embankment which was presumably for an electric cable to a searchlight, there were no indications of post Napoleonic alterations and, secondly, because this end of the battery is not generally visited and is thus less prone to erosion and damage.

Figure 12: Clearing the northern end of the Upper Battery.(03cn0411)

Figure 13: Cutting back vegetation on the Upper Battery. (03cn0134)

Restoration with lime mortars

Limited restoration involved the production of lime mortars mixed with red earth and sand. Where necessary new coral blocks were shaped and fitted. The intention is to replicate, in as far as is practically possible with the resources available, the original materials. The low Parapet Wall of the Upper Battery is an excellent monument on which to experiment with these materials and methods and to train local artisans in the basic concepts underlying the restoration of ancient work (rather than the building of new walls) because work can easily be monitored and materials which prove to be less than fully satisfactory over time can be easily replaced at a future date.

Larger scale restoration in future seasons will require new coral blocks. New blocks could be quarried from the islet itself or, preferably but at greater expense, from some source on the mainland. The NHT will have to address this issue in the near future.

Figure 14: Lime mortar was prepared with 'red earth' brought from the mainland. (03jv1602)

Figure 15: New blocks of coral were cut from the quarry and shaped to replace missing ones. (03jv1716)

Recording Methods and Techniques

Perhaps the most impressive piece of walling on Ile de la Passe is the North Wall of the Upper Battery that was constructed towards the end of the French period. This tall and well-built wall retains the bank and also the broad Platform behind the parapet wall. The north face of the North Wall has been recorded by digital photography while sufficient control points for photo-rectification have been very accurately measured.

Digital photographs of the later graffiti on this same North Wall of the Upper Battery have also been taken in systematic fashion.

As to work on the Parapet Wall and Gun Emplacements, the first task was to remove vegetation, which was very largely grass. This operation entailed carefully pulling out the growth by hand and, where the roots could be seen to penetrate gaps between stones that were *in situ*, cutting back with clippers so as not to dislodge original masonry.

The next stage was to articulate fallen stones that had at least one worked face by carefully removing sand and shapeless stone rubble. Fallen stone blocks were then planned at a scale of 1:20, individually numbered and marked with a permanent marking pen before being neatly stacked for eventual replacement. Coral blocks were given a single set of running numbers, basalt was given a separate series of numbers prefixed B.

No surface of any kind was encountered behind the Parapet Wall, but it was clear that there had been a levelling of sand and coral rubble (most of the coral being smaller than a fist) which was presumably tamped down to form a level a base for wooden decking on part of the Platform. It was discovered that this clean material originally covered the bottommost course of stones in the Parapet Wall, although the upper part of this layer was found to be greatly disturbed be roots, burrows and human activity. It was therefore decided that the uppermost part of this levelling would be removed in order to expose the topmost 5cms of the lowest course of masonry. This procedure permitted accurate recording of the bonding pattern while at the same time providing sufficient information for the wall face to be adequately drawn without recourse to the more drastic measure of exposing the base of the walling.

Figure 16: Sketching the north wall of the Upper Battery to note measurements for photo-rectification. (03cn0117)

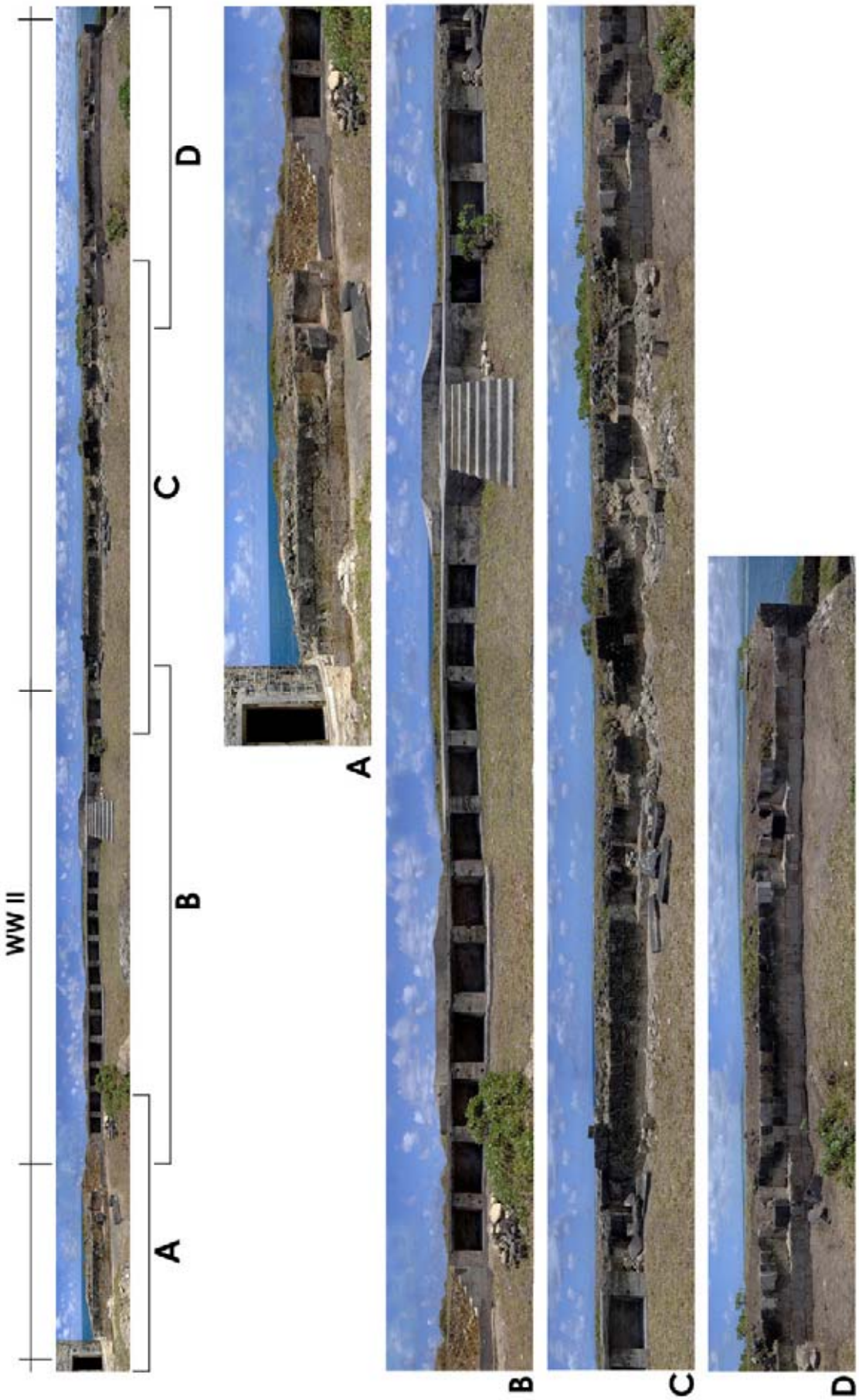


Figure 17: Panorama of the Upper Battery after clearing and restoration.

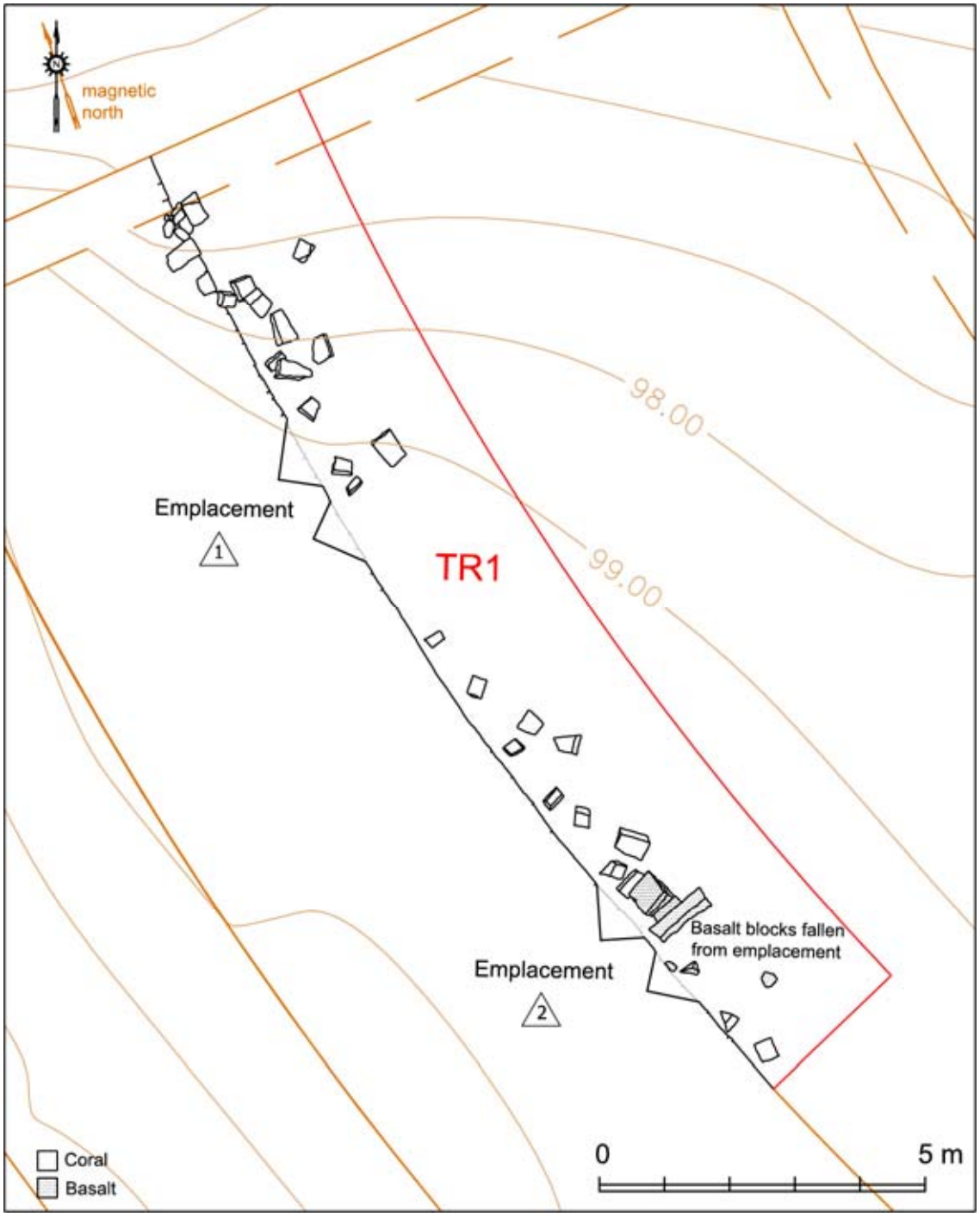


Figure 18: Trench 1 at the northern end of the Upper Battery.

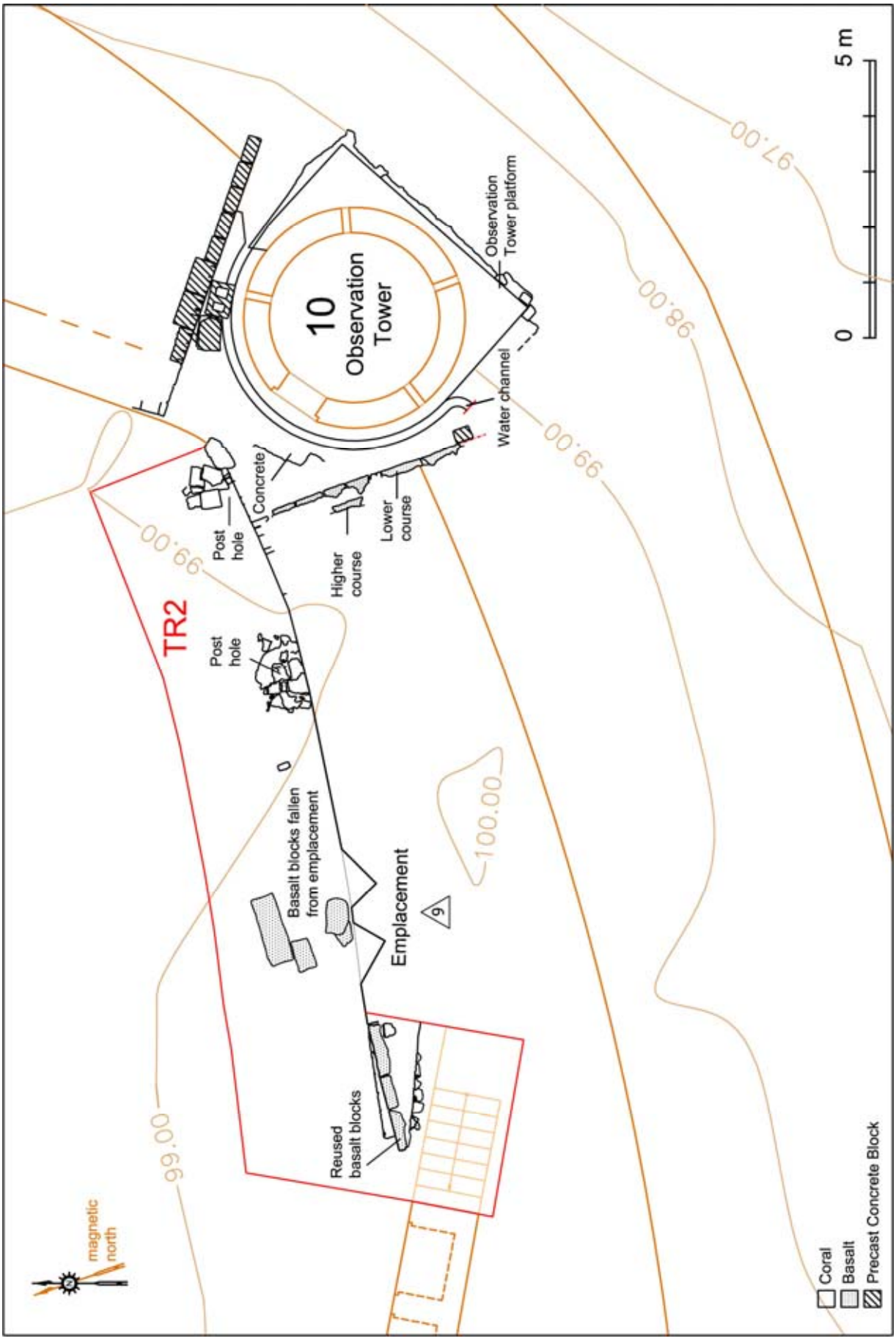


Figure 19: Trench 2 and the area around the Observation Tower.

The French Battery

The North Wall, which retains the north end of the entire battery (both the bank and the platform) drops to a lower elevation at the point where it meets the inner face of the battery, but the two walls were not bonded and the stone courses of the two walls do not correspond (Fig. 21). Although the junction of the two walls was found to be disturbed, apparently by the insertion of a World War II cable duct, it was readily apparent that end face of the higher portion of the North Wall was extended southwards by a single stone and also that the Battery Wall was butted against the North Wall. There is no back (south) face to the North Wall. East of the line of the Battery Wall the top of the North Wall indicates the level of the original surface of the platform.

Figure 20: The north end of the Upper Battery after the long grass had been cut back. (03jv0209)

Figure 21: After clearance it was evident that the Parapet Wall of the Upper Battery was not bonded to the North Wall. (03jv1101)

The Parapet Wall

The total height of the Parapet Wall appears to have been five courses. The lowest two courses were largely covered by recent debris and accumulated sand although most or all of the bottom course was originally covered by the coral rubble makeup of the platform. The niches comprised two courses covered by basalt lintels. The face of the Parapet Wall is built entirely of cut coral blocks, the use of basalt being restricted to the lintels and the front of the engaged piers of the emplacements. Each course displays considerable regularity and it is notable that a large proportion of the stones are taller than they are wide and are laid in such a way that vertical joints are staggered. On the other hand, the nature of the stone is such that widths of the blocks necessarily varies and, consequently, there is no regular bonding pattern.

The Platform behind the Parapet Wall

The bottom course of the wall was covered by a layer of clean sand and small pieces of coral. Where it has been investigated the top of this layer was found to have been disturbed by later activity as well as by the natural agencies of roots and burrowing animals. It has to be assumed that this layer formed a firm and level base for some more robust material, presumably wooden decking, although no trace has been found. Because this layer is a part of the original construction it has been left intact, with only the uppermost few centimetres, which were very disturbed, being cleared away in order to reveal the top of the lowest course of masonry.

Figure 22: The stretch of Parapet Wall either side of Emplacement 1 has regular courses and staggered vertical jointing, although there is no bonding pattern. (03jv0208)

Figure 23: On the right side Emplacement 5 the fifth course comprises basalt lintels locked in place by coral blocks cut to fit. (03jv0603)

The Emplacements

The original emplacements are numbered from north to south. In so far as can be seen, each of the original emplacements was of the same design and constructed in the same way. In plan each emplacement comprises a pair of triangular niches separated by a central engaged pier. The bottoms of the niches are uneven and rough, suggesting that they were perhaps furnished with wooden sills. The front of the piers and the lintels are of basalt, the lintel being made up of one long stone positioned at the centre with a shorter stone on either side. In the most complete example, Emplacement 11 located at the south end, there is some surviving coral rubble set in lime mortar above the lintel. The function of these niches is not entirely clear, although there is no reason to question that assumption that cannons were positioned behind them.

Some of the emplacements were altered and adapted.

Emplacement 1

Although no basalt survives at northernmost emplacement, what is almost certainly the lower of the two shaped stones that made up the front of the central pier was uncovered in the shallow scoop on the top of the bank in front. There is no indication as to where the remainder of the original basalt has gone, nor is there any evidence that might indicate the date of its removal. If alterations were made to Emplacement 1 no traces now survive. In this respect it should be noted that there was no indication that blocks were ever set into the top of the layer of clean sand and coral which formed the top of the Platform behind the Parapet Wall.

Figure 24: Emplacement 1 after removal of vegetation and recent debris. (03jv0206)

Emplacement 2

Of the original basalt only the lower block of the pier survives and this has fallen from position. As with Emplacement 1, the whereabouts of the other blocks is unknown and there is no evidence as to the period of their removal. At Emplacement 2, however, there are substantial remains of an impressive basalt installation behind the central pier. This installation has been disturbed in recent times, as evidenced by tin cans, so that not only are none of the blocks in their exact original position, but some seem to have been removed altogether. Standing behind the central pier and separated from it by a gap of some 0.10m is a very large block, square in plan with a simple central iron fitting set in lead. This impressive block, though now tilted slightly to the north, is very close to its original position. The upper portion, which has well smoothed faces on which the hammer marks can be clearly seen, stood some 0.20m above the level layer of sand and coral into which it was set. The lower portion of this same stone was but roughly trimmed. Lying immediately to the south of the

squared block, no longer in its original position, is a rectangular stone, similarly worked, which evidently lay flat and was most probably part of a surround. Beneath this flat block is yet another faced basalt block which has clearly been moved from its intended position.

Determining the precise function of this installation will require further research. For the moment all that can be said is that the great weight and size of the central block is such that it would surely have been designed to support a heavy piece of artillery.

The tooling marks on the stones in this installation appear to be courser than the best workmanship seen on the basalt in the niches, suggesting perhaps a somewhat later date. There is no particular reason to think that lintel stones of Emplacement 2 were removed when the installation was set up, rather than at some still later time.

Figure 25: Emplacement 2 after removal of vegetation and before restoration. (03jv0216)

Figure 26: Emplacement 2 after restoration. (03jv2709)

Emplacement 3

Emplacement 3 was not investigated in detail during the 2003 season, although the grass was cut back to reveal the tops of the basalt stones behind. Here too there is a massive installation was set close behind the central engaged pier between the niches. In this instance, however, the fitting that is set into the top of the squared block is larger, more complex and comprises several elements.

Figure 27: Emplacement 3 as revealed after grass was cut back. (03jv2711)

Emplacement 4

Further vegetation clearance also revealed fallen basalt blocks and lintels behind Emplacement 4.

Figure 28: Fallen basalt blocks and lintels lie in front of Emplacement 4. (03jv2713)

Emplacement 5

Emplacement 5 (Fig. 23) is the last visible emplacement to the north of the concrete WW II battery and is the most fully preserved on this side of the later installation.

Emplacements 6, 7 and 8

Of the three emplacements obscured by the World War II battery only tops of the basalt lintel stones of Emplacement 7 can now be seen immediately in front of the concrete.

Emplacement 9

The first emplacement to the south of the World War II concrete battery was labelled 9 after calculations proposed an estimate of three more emplacements to be concealed behind the later concrete structure. Emplacement 9 was cleared of grass and rubbish but the two basalt blocks from the central engaged pier and the long central lintel stone lie where they have fallen. As yet the two smaller lintel stones have been located. The collapse would seem to be recent because the fallen stones would have presented obstacles to the movement of soldiers manning the World War II equipment. It is not yet known whether or not there are or were installations similar in character to those behind Emplacements 1 and 2.

Figure 29: Fallen basalt blocks as found. (03jv0603)

Figure 30: The two central basalt blocks of Emplacement 9 were successfully put back in their original position. (03jv3511)

Emplacement 10

It is almost certain, as reference to the plan makes clear without the need for detailed justification, that there was an emplacement where the Observation Tower now stands.

Emplacement 11

The south-eastern stretch of Parapet Wall contains the most fully preserved Emplacement in which all of the basalt blocks and lintels remain in place. The uppermost course of coral is cut to fit the end of the lintels on each side. Chipped basalt is piled up on top of the lintels. This emplacement is protected by a later bank of coral chips that was thrown up against the face of the Parapet Wall.

Figure 31: Emplacement 11, preserved and partially obscured by a later bank. (03jv2814)

The World War II Concrete Platform and Steps

The final phase of the Upper Battery involved the construction of the WWII concrete platform and steps. The structure, on which two large guns were mounted, was measured and photographed.

At the southern end of the World War II Battery a flight of seven concrete steps could be seen descending below the top of what appeared to be the Bank (Fig. 32). The steps were cleared but were not found to lead anywhere. It would seem that, whatever purpose these steps were constructed to serve, there was a rapid change of plan and they were buried so as to make the top of the battery level. Perhaps this solution was more practical than building a retaining wall to hold back the bank above them. In any event the filling was retained by three large, reused blocks of shaped and faced basalt, each with a central iron fitting set in led, set on edge. It seems possible that these blocks once formed the horizontal edge of a curvilinear installation of which no other trace has been recognised.

Figure 32: The WWII concrete steps with the basalt feature. (03jv1201)

Figure 33: The WWII concrete platform and shell cabins. (03jv3607)

8. THE CENTRAL PLATFORM

Archival Records

Dr Marina Carter has most kindly made available to us a copy of her unpublished Report entitled *Historical Study of Ile de la Passe*, dated June 2002. Page 37 of this excellent Report contains a copy of a sketch map drawn by Lieutenant Robert Smith and entitled "British Amendments to the Ile de la Passe Fortifications, 1811" [PRO WO 71]. This map, which we had not previously seen, depicts a long and narrow 'platform' aligned roughly east-west and located to the east of the Upper Battery. Interestingly, this feature is not shown on the plan showing works completed after 1782 [DFC/VII/626] published Hausse de Lalouvière 1998, 63 bottom (reproduced in Carter *op.cit.* and also in our own *Ile de La Passe Report 1: Archaeological and Architectural Survey* (presented to the NHT in 2002) p. 10 Map 3). This evidence would suggest that the Central Platform was built during the French period, sometime after 1782 (and before 1810). It should however be pointed out that the earlier of these two maps does not pretend to be a complete and comprehensive survey.

On an unpublished map from the Office of the Surveyor General, dated 1891 (Summers and Summers *ibid* p. 11 Map 4) this same feature is apparently shown with an extension to the south (note that the North Point on this map is wrongly orientated). It was this scant archival evidence that led us to think that this Central Platform or Ramp was perhaps British in origin.

A third map [IDF 7B 623], of the early French period (Hausse de Lalouvière 1998, 63; Nida 1998, 45; reproduced in Summers and Summers *op.cit.* 10 Map 2) shows an installation for a Flag Pole in approximately the same location.

Investigations at the Central Platform

This enigmatic feature (Fig. 8), which was termed "the early British ramp and platform" in the *Details of the First Campaign,* was targeted for particular attention in the 2003 season.

Figure 34: The South East corner of the Central Platform. (03jv1211)

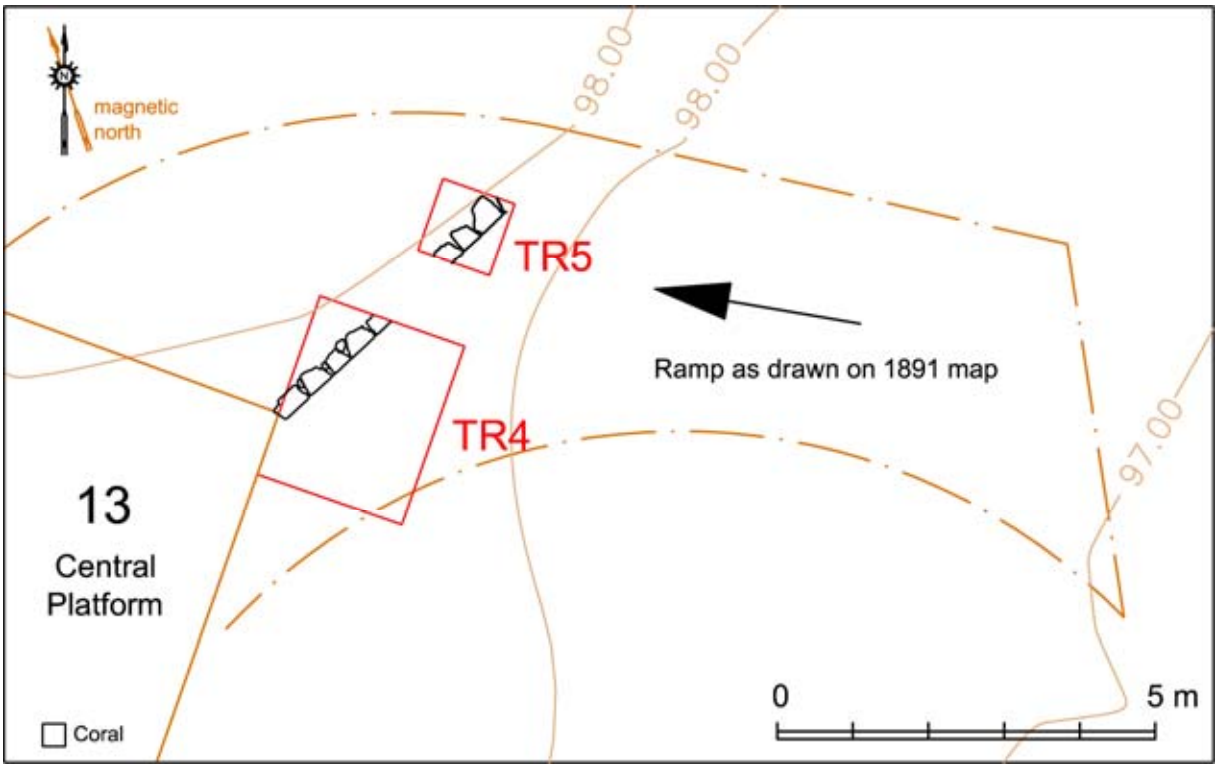


Figure 35: Plan showing the north-east corner of the Central Platform and the extension to the north-east as revealed in clearance Trenches 4 and 5.

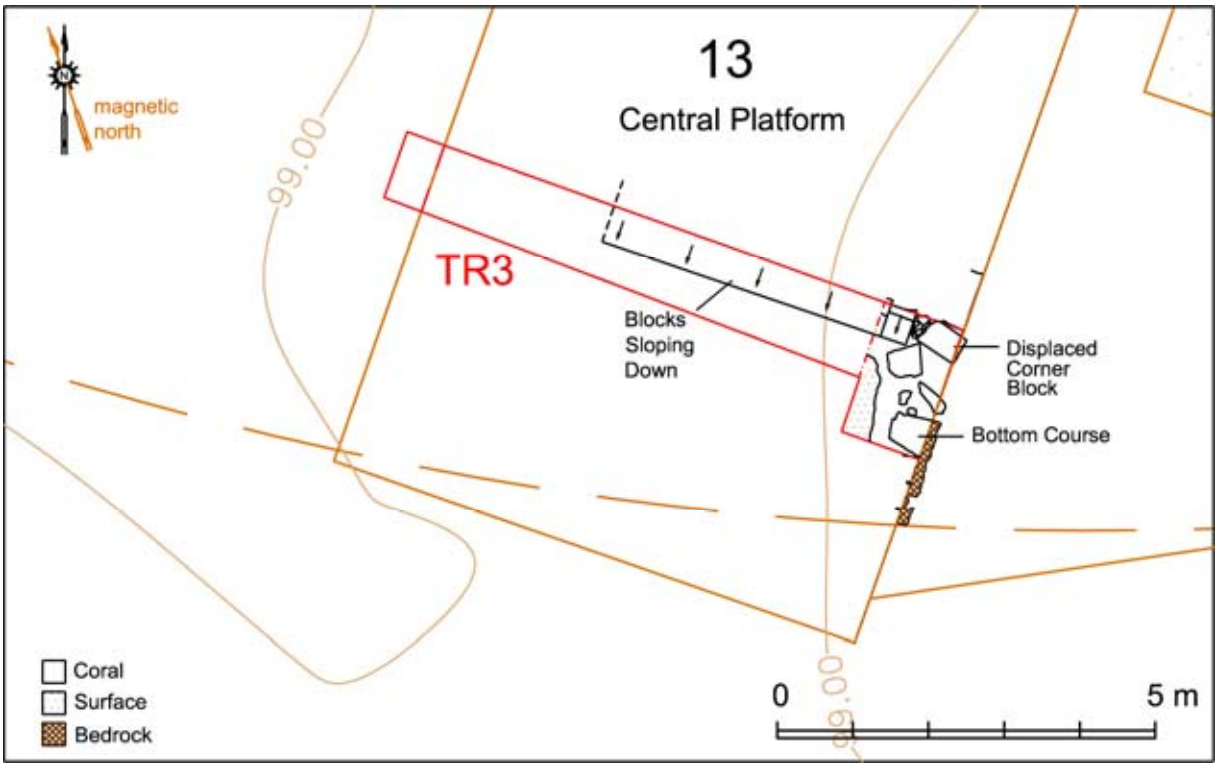


Figure 36: Plan of the Central Platform showing details of the features in Trench 3.

Surface Indications

The Central Platform was briefly described in our 2002 Report where it was designated 'Structure 13'. A part of the southern wall towards the western end had suffered some damage and, it was thought, had partially collapsed. In 2003 careful cleaning was initiated at this point (the south-eastern end of Trench 3, Figs 8, 34 and 36) with a view to undertaking some remedial conservation work. The line of north-western wall face could also, at the opposite end of the same Trench, be traced although it was apparent that the character of the masonry was considerably poorer than that of the southern face.

Also in 2002 a short stretch of wall face had been seen at the north-eastern end (Trench 6 on Fig. 8).

It was also readily apparent, before the commencement of the work in 2003, that there had been a path to the eastern end of the Central Building cut through the Central Platform and that there had been one or more phases of levelling and dumping associated with one or both of the two phases of the construction of the Central Building which had modified the contours of the earlier feature.

The Western Sector, Trench 3

It has been established that no wall face has survived at the south-western end. Where the damage had been done to the south-eastern wall face it was quickly established that there were a minimum of two phases of construction.

The earliest recognisable phase appears to have been cut through clean levelling material, comprising sand and lumps of coral stone which is, in all probability, to be associated with the construction of the Upper Battery Platform. In this first phase the western end was constructed from large cut coral blocks and incorporated large thin coral slabs to level the courses. The wall face, which rests on uneven bedrock (in the normal fashion at Ile de la Passe), was found to turn north-westwards.

Further, the south-eastern wall face of this earlier phase of construction appears to comprise a single course of large masonry blocks caped with a coping at an angle of 45° (Fig 37). The reason for this coping (which resembles one side of a vault) has not yet been established. At a location approximately midway between the north-west and south-east faces the coping appears to turn north-eastwards, but investigations here have not yet been completed. It seems as though it might be possible that this early phase will prove to be the built base for a flagpole that is depicted on the early French map which was described in the previous section.

As an extension of this same operation a 1.00m wide portion of the north-western wall face has been exposed. This rough face, built or fieldstones, does not rest on bedrock but, rather, on rubble.

Figure 37: This angled face of coral blocks could prove to be the base for the flagpole depicted on an early French map. (03jv2502)

Trenches 4 and 5: the Eastern Angle and Junction

The surviving top of the south-eastern wall face was cleared in order to prove that the Platform did indeed extend across the line of the later pathway. To this end a 1.00m wide strip was cleaned but the clearance was not extended to the base of the wall because it was thought to be unnecessary to risk disturbing material which might prove to be *in situ*. A little distance further to the east, beyond the bank against the wall face, the line of the wall was once again exposed, in Trenches 4 and 5, and the point where it turned to the south-east was determined. Matters at this junction turn out to be considerably more complex than had been expected.

Figure 38: Edge of platform or ramp revealed in Trench 5.

Here the earliest structural phase which was uncovered is, as it seems reasonable to assume although it has yet to be proven, the same as the earliest phase in Trench 3 and comprises large cut blocks of coral. One unusually big block has every appearance of being the north-eastern corner stone of the rectangular Central Platform, not least because the addition running to the north-east is abutted against it. Close examination, however, reveals a significant lump of mortar adhering to the eastern face of this same stone, perhaps suggesting that the wall once continued further in that direction or that there was some additional associated feature. It is not known how far down the face this early walling extends, although it might be thought very likely that it rests directly on bedrock given the massive nature of the masonry at this location. A surface of grey sand runs against the wall face, which it was considered appropriate not to penetrate as part of an operation that is targeted towards clearance. This surface, which was easily traced, slopes steeply to the east and north-east, reflecting the slope of the underlying rock.

Directly on top of the grey sand surface just described, and heaped against the face of the Central Platform wall, is a layer of very loose yellow sand and coral rocks which deepens sharply to the north and east. This levelling material would appear to be a dump or levelling on which the secondary wall, i.e. the extension running to the north-east- was directly built. This wall can be seen to line up precisely with the large corner stone at the southern end of the east wall which was partially exposed in Trench 6. Where it has bee n exposed this extension would seem to be poorly built, comprising smallish uncut stones, all be they neatly set with a straight face. There is a very considerable drop in level between the wall as exposed and the north-east corner, a circumstance that it was not possible to examine in 2003 because its resolution would probably involve the excavation of a very considerable amount of rubble. Before this is undertaken there would need to be a plan for the preservation of exposed remains and a decision taken on the general policy of removing and perhaps replacing banks in order to expose earlier remains.

In a third phase the contours of this feature were greatly modified by the dumping of material that was related levelling for the construction and extension of the Central Building and also connected with the creation of the path already alluded to.

Although not all of the problems associated with this central platform and its extensions have been resolved, it is considered that a carefully planned excavation would be required in a future season, and that this should be preceded by an approved program of consolidation, backfilling and dumping spoil.

9. CLEARING OPERATIONS AROUND MONUMENTS

The Area Around the Central Building

In the area around the Central Building the vegetation was cut back, several sacks of accumulated rubbish was disposed of and displaced building materials were put aside for future restoration programs. Although no new discoveries were made, this work has very greatly enhanced the general appearance of this area.

The Powder House, Hot Shot Furnace, Storehouse, Barrack Building, Kitchen and Cistern

Similar cleaning and gardening operations were undertaken in this area of the islet, including the removal of much really foul material from the cistern for which we particularly thank the workmen. The extent of recent damage, particularly to the cistern, has been made clearer.

Figure 39: Rubbish being removed from the cistern. (03jv1615)

10. RECORDING OF STANDING ARCHITECTURAL MONUMENTS

Underground Generator Halls and Ditch

Digital photographs, measured sketches and architectural studies have been made of the Underground Generator Halls and the Ditch in which they were constructed. This study has revealed a number of features in the design of the Generator Halls that had not been previously documented. These features include details of the design of the double vents around the top of the exterior walls of the structure and the large internal vents in the interior dividing walls. It is of considerable interest that while the plinths on which the generators were bedded were of standard design, the design and construction halls themselves display a degree of flexibility and a willingness to adapt an existing feature that is not always thought to be characteristic of military activity.

Figure 40: The Underground Generator Halls and the Ditch were cleaned and vegetation was cut back. (03jv2908)

It has become apparent that the large channel which was cut around some two thirds of the top of the Ditch, the north-western end of which terminates in opposed stepped slots, possesses three additional pairs of stepped slots that were regularly spaced. When the Generator Halls were constructed these slots were utilised for the dividing walls between each hall and for the front wall. These observations explain the lengths of the halls.

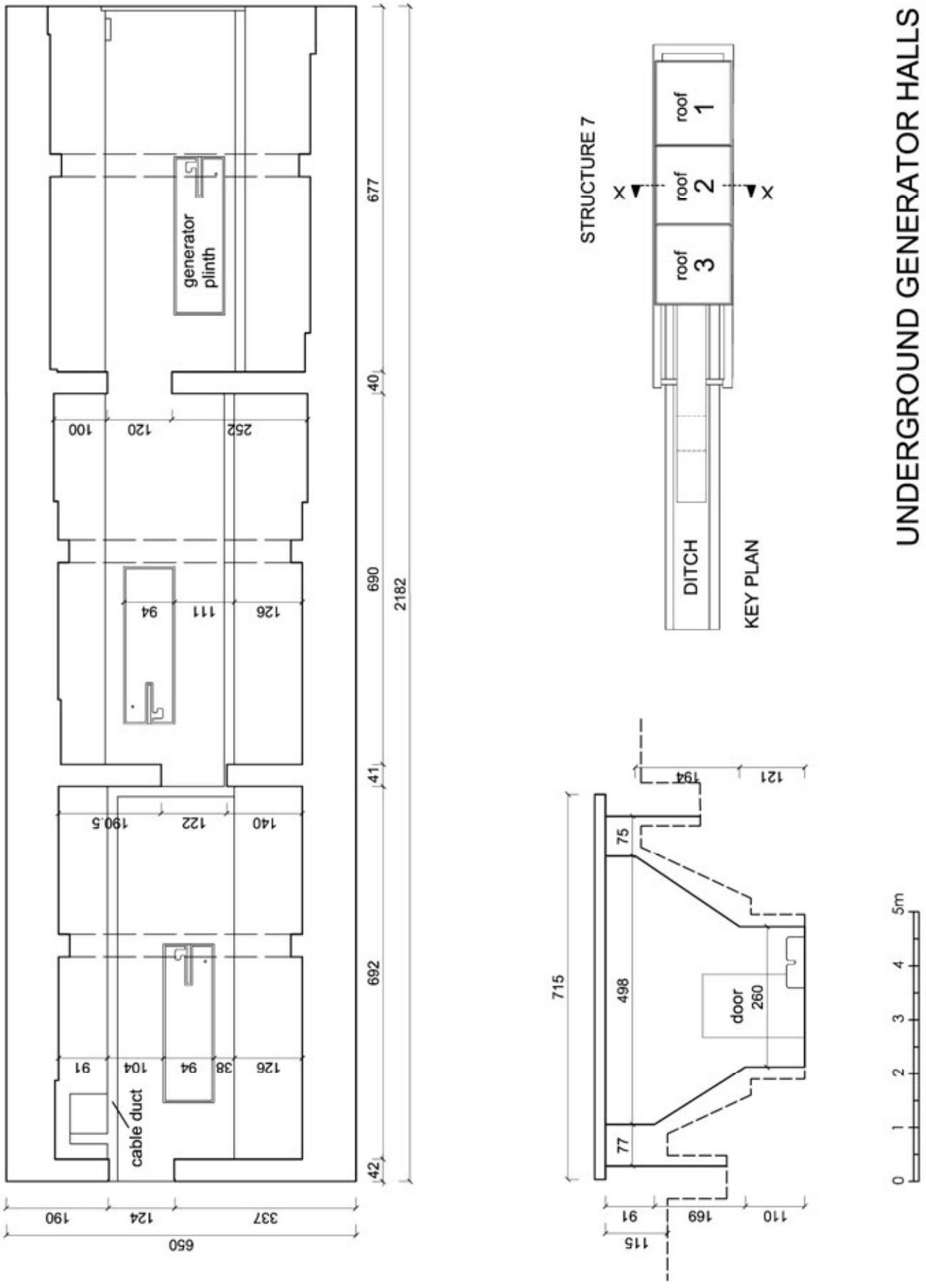


Figure 41: Plan and section of the Underground Generator Halls.

We are still inclined to the view that the channel and stepped slots predate the World War II construction. This opinion is based on two pieces of evidence, firstly that construction of the back (south-eastern end) of the generator halls did not utilise the slot and, secondly, that the channel and the slots at the north-western end were not used. These particular features would thus appear to provide evidence for a transformation of the Ditch into underground rooms of some kind before the construction of the World War II Generator Halls. If this earlier scheme was completed there would, on the basis of the stepped slots, have been a fourth room immediately to the north-west of the World War II building, in which case these World War II Halls would have constituted a replacement of the earlier scheme on a reduced scale. Implicit in this interpretation is the idea that the channel and stepped slots were cut at a later time than the ditch itself and that they represent the adaptation of an earlier unfinished defensive feature to new uses. It had been hoped that the evidence derived from revealing and studying the graffiti (as described in more detail below) would have shed light on the dating of the various elements, but this has not turned out to be the case. It is not proven, therefore, that the graffiti of the 1860s pre-date the cutting of the channel and stepped slots. On the other hand, there is but one slender piece of evidence that might be used to build an argument in favour the scheme suggested here. This evidence comprises the not inconsiderable amount of what appears to be broken up pieces of pre World War II (?lime) concrete in the immediate vicinity of the Generator Halls. This material would appear to have come from some demolished structure and it is perhaps plausible to suggest that it was derived from an earlier roofing of the ditch.

As to the possible date of this putative earlier roofing of the ditch, it might not be beyond the bounds of reality to speculate that the most likely context is the "mystery period" around the turn of the 19th or the early 20th century when the Observation Tower, the Central Building and the North-West Building were erected as part of a unified scheme of defence.

It is to be hoped that cleaning and excavation of part of the fill in the base of the Ditch will shed more light on these interesting matters in a future season.

Figure 42: Rock-cut channel and stepped slot, possibly associated with a pre World War II roof. (03jv2903)

11. RECORDING GRAFFITI

The North Wall of the Upper Battery

Systematic recording of graffiti on the North Wall of the Upper Battery was completed and the examples used to establish a recording technique and database which will be used for future documentation.

Figure 43: The North Wall of the Upper Battery with the Cistern in the foreground. (03cn0118)

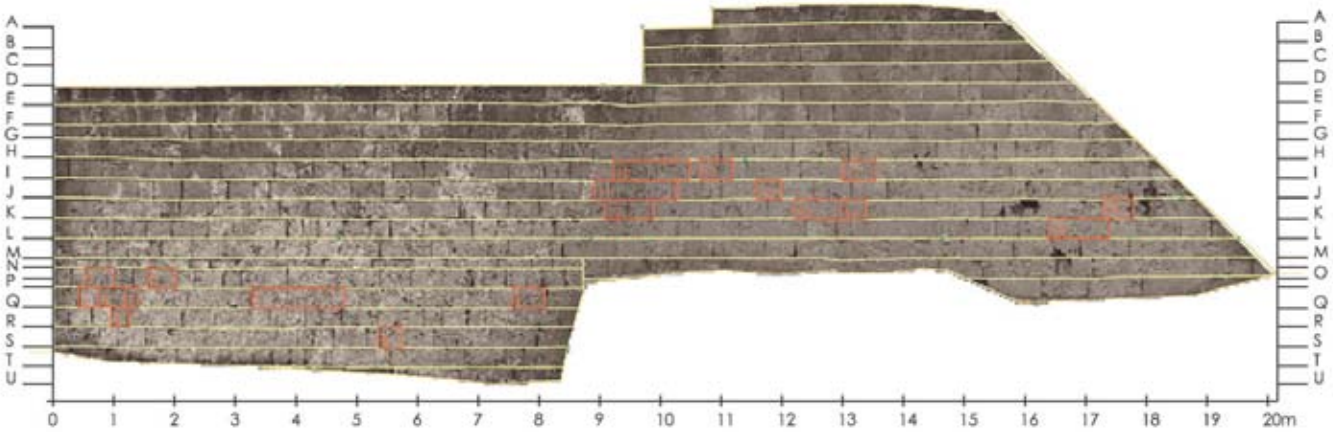


Figure 44: The North Wall of the Upper Battery reconstituted from a mosaic of rectified photographs for identification of graffiti.

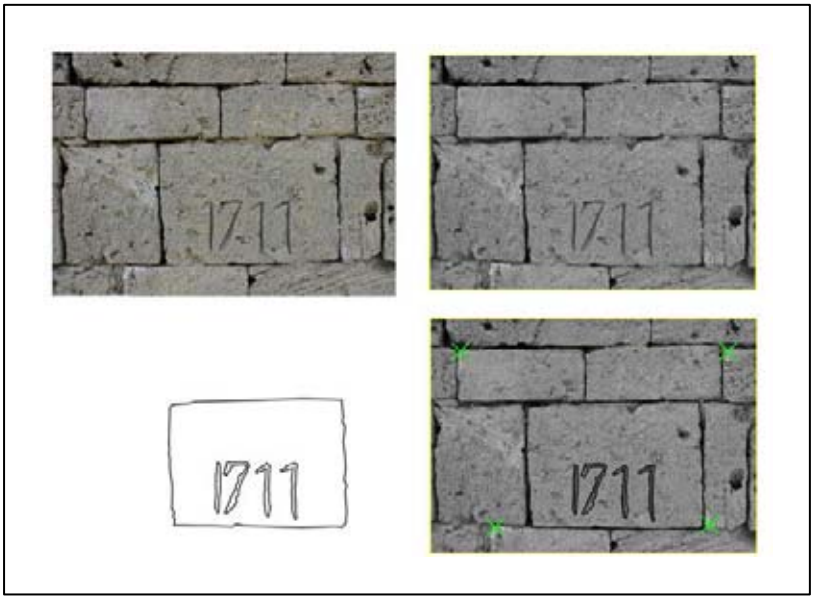


Figure 45: Digital photo, rectified digital photo, rectified image in AutoCAD, drawing of the graffito (clockwise from top left).

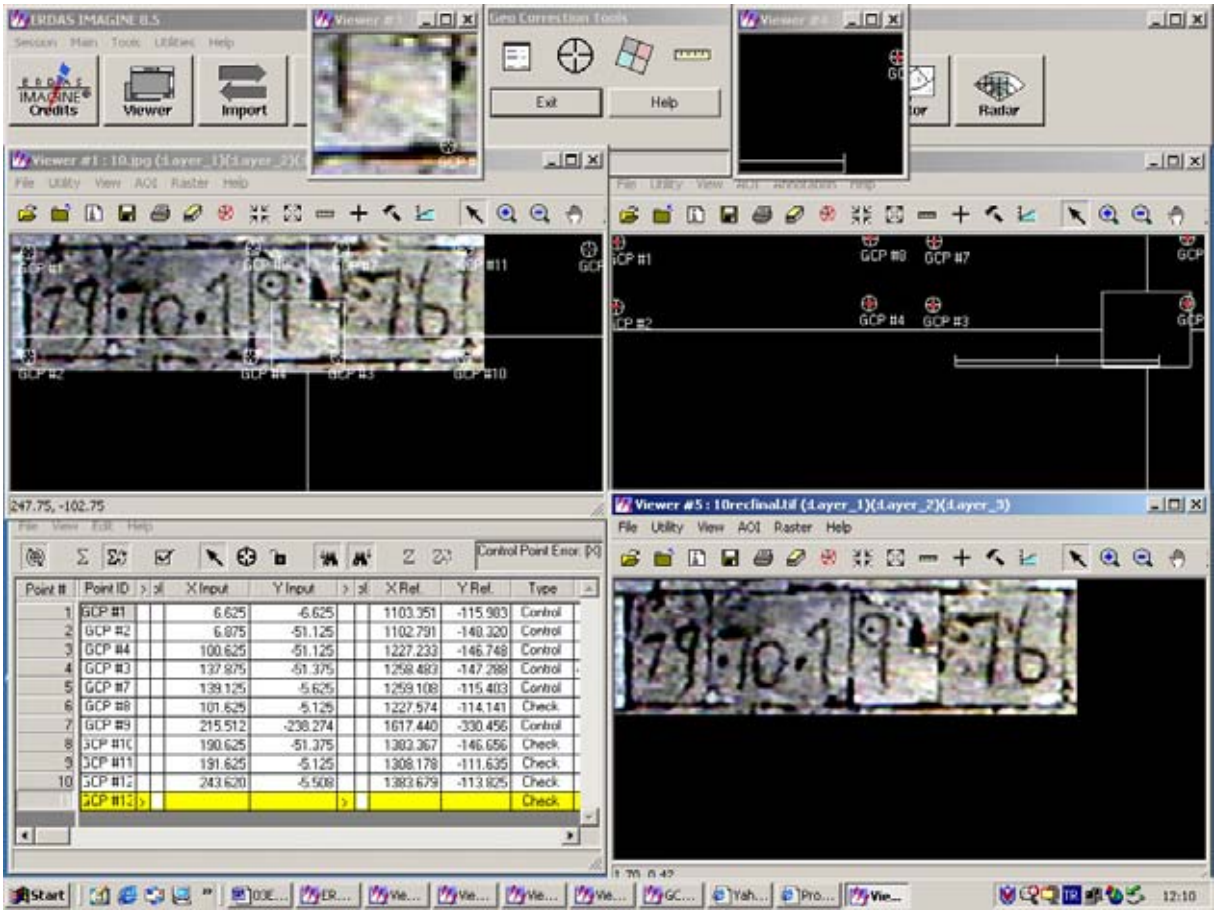


Figure 46: The graffiti database and photo rectification in ERDAS Imagine software.

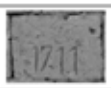
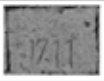
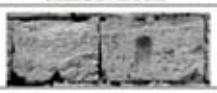
	GRAFFITI LOCATION		DIGITAL PHOTO	RECTIFIED IMAGE/DRAWING
No.	Course	From Axis		0 50 100cm
1	P	0.52m		
2	Q	0.43m		
3	Q	0.76m		
4	Q	1.19m		
5	R	0.96m		
6	P	1.55m		
7	Q	3.26m		
8	S	5.36m		
9	Q	7.56m		
10	I	9.22m		
11	J	8.93m		
12	K	9.08m		
13	I	10.65m		
14	J	11.59m		
15	K	12.22m		
16	K	12.98m		
17	I	12.99m		
18	L	16.39m		
19	K	17.29m		

Figure 47: An Excel table, a preliminary step in the creation of a database, displaying the graffiti on the North Wall of the Upper Battery.

The Storehouse

The external walls of the Storehouse were studied and a photographic record was made of the significant graffiti.

Figure 48: Noting the location of graffiti on the external walls of the Storehouse. (03jv2011)

The Ditch

The newly revealed graffiti in the ditch were photographed and confirmed that the earliest recognisable writing dates from the British occupation.

Figure 49:Graffiti were found to be well preserved where protected by overhanging vegetation. (03jv3517)

Figure 50: In the sides of the ditch many of the graffiti follow the sloping strata of the rock. (03jv3605)

Figure 51: Construction of the World War II Generator Halls, at left, covered many graffiti. (03jv3603)

13. ARCHAEOLOGICAL AND HISTORICAL CONCLUSIONS

The evidence revealed through archaeological investigation at Ile de la Passe fulfils a number of vital roles. Firstly, the immediacy of the material remains with which archaeology is concerned brings a freshness and vitality to the historical and archival records. The buildings and remains of buildings together with the gun emplacements, mortars and more mundane fragments of military occupation are in themselves evocative. Architectural and archaeological studies continue to fill in gaps in the archival record, such as the sequence of structural phases associated with the Central Platform. At the same time studies are providing tangible evidence for the various schemes that were drawn up by military architects, some of which were never built while others were unfinished.

On very major area of interest is the documentation of the changes in the design of the batteries in the French period. These changes are indicative of the importance that some French strategists attached to Ile de la Passe and demonstrate that the defences were continually strengthened and improved. The replacement of the Lower Battery with the stronger and more elevated Upper Battery strongly reflects the rapid developments that were taking place in naval warfare and coastal defences in the Eighteenth Century. New types of guns and ammunition required different types of battery and new kinds of emplacement. The investment in the Upper Battery at Ile de la Passe represents a very considerable investment of both money and manpower. There is much scope for further research here.

It is readily apparent that carefully targeted small-scale clearance and excavation can resolve many problems. Further work at the Central Platform should elucidate its structural history, provide some evidence for dating the various phases and might aid in the interpretation of its uses. It is possible that cleaning part of the Ditch might reveal some clue concerning the date at which it was dug, and it would certainly be worth the effort of trying even if no good evidence is forthcoming. With regard to the batteries, it might be expected that the excavation of one half of one of the block emplacements in section A2 of the Lower Battery (Fig. 7) will document the design changes between these installations and those on the Upper Battery.

Historical records, particularly Eighteenth and Nineteenth century maps, show a number of buildings between the Storehouse and the Powder Magazine which are not apparent on the ground. Targeted excavation would be most useful and might perhaps begin with the investigation of fragments of extant walling that seem to be preserved in later banks in the north-west corner of the islet.

On a more negative note, there do not seem to be archaeological deposits that contain the kinds of rubbish and detritus that forms the bread and butter of most archaeological research. It might readily be imagined that waste would have generally been dumped into the sea. In this respect, it is known that the World War II latrines were suspended over the water. Excavation will undoubtedly provide some fragments of interest, but it does not seem likely that there will be sufficient material for detailed studies of diet or other aspects of daily garrison life.

There might be some chance that excavation of holes and crevices in the bedrock, particularly where there has been preservation beneath banks, could provide important faunal evidence from periods before the first human occupation. Such investigations would require the enlistment of specialists.

Figure 52: Ile de la Passe and neighbouring islets at sunset.

14. PUBLIC OUTREACH

On Monday February 17, at the invitation of Professor Vijaya Teelock and in conjunction with the NHT, Geoffrey gave a public lecture at the University of Mauritius entitled "The Archaeology of Landscapes and Monuments: New perspectives for the 21st century". This event was well attended and has been reported on MBC television. It was also pleasing to see a two page spread on the Ile de la Passe Project, written by Jean Claude Antoine, in *Le Week End* for February 18.


patrimoine 38

Inventaire à l'île de la Passe

patrimoine 39

Figure 53: Le Week End.

15. ACKNOWLEDGEMENTS

First of all we would like to thank the National Heritage Trust of Mauritius, who allowed us to continue the work on Ile de la Passe after the initial survey season that the Trust initiated in 2002. We are particularly grateful to the Chairman, Philippe La Hausse de Lalouvière, the Director, Mr Premlall Mahadeo, and his staff for their interest, enthusiasm and support.

The 2003 study was made possible thanks to the grant from the Earthwatch Institute. A generous contribution from Phoenix Camp Mineral Ltd permitted the employment of local labor for the cleaning and clearing operations as well as the first trials with architectural restoration. Harel Mallac Electronics Ltd loaned a computer, essential for the digital recording, processing and archiving of data facilitated our work during the season. Villa Le Guerlande and Coral Dive Ltd agreed to special rates.

Our gratitude also goes to all those whose contribution made the 2003 season possible, and to our family and friends without whose generosity and hospitality the season would not have happened.

APPENDIX

RECOMMENDATIONS CONCERNING REFURBISHMENT OF THE OBSERVATION TOWER ON ILE DE LA PASSE

Geoffrey and Françoise Summers

This appendix concerns actions that might be taken in the event of the restoration or refurbishment of the Observation Tower at Ile de la Passe. The recommendations made here are restricted to external features and elements around the base of the Tower. It is, however, essential to undertake structural conservation and restoration work on the roof and the upper sections of the Tower at the soonest possible opportunity if this great asset is to be preserved for future enjoyment. Our recommendations are intended to preserve as many of the features of the building as might be compatible with the large-scale structural restoration that will have to be done.

Figure A: Features at the base of the Observation Tower. (03jv1009)

The features referred to are visible on Figures A-C and on the plan that is presented as Figure 16 in the main Report

1. The World War II cement screed surface and surrounding drain (Figs A & B, and the "water channel" on Fig. 16) should be retained if this can be made compatible with other constraints. We see no reason why the existing surface need be removed and the existing cement appears to be in excellent condition. If there are to be large-scale building works it might be very advisable to cover the surround and drain with sand or some other suitable material to protect it from scaffolding feet and falling concrete.

2. The edging or surround at the back (south-east) and the rear sections of the sides of the original (lime and basalt chip) concrete should be repaired. The original surface, on which the Tower is founded, ought to be preserved.

3. A new surface will be needed in front (north-west) of the central section of the surrounding drain. This surface should cover (and thus protect) the French period Parapet Wall and the eastern post-setting all of which can be seen in Fig. A. We would suggest that, as far as is possible, that this new surface should replicate and visually resemble the World War II cement screed.

4. On the north-west side of the Tower the displaced basalt blocks, comprising three no longer in position plus a fourth now on the floor inside the Tower itself, should be used to rebuild the upper course of the World War II retaining wall shown on Fig. B and labelled "Higher" and "Lower" courses on Fig 16. In conjunction with this measure, the bank ought to be partially restored by the addition of new material placed behind the reinstalled basalt.

5. On the north-east side of the Tower the fallen World War II precast hollow concrete blocks should be put back in their former position and the bank behind reconstituted (Fig. C). We note that there are additional precast blocks, both tie blocks from the period of the original construction of the tower and hollow blocks from World War II, at the foot of the bank behind the tower. It would be advantageous if some of these blocks could be reused in any refurbishment of the World War II retaining walls and the earlier rampart fills.

Figure B: Displaced basalt blocks, the basalt retaining wall and the eroded bank on the north-west side of the Observation Tower. (03jv0915)

Figure C: World War II precast hollow concrete blocks were used to retain the bank on the north-east side of the Observation Tower. The two fallen blocks seen here, together with others now lying at the foot of the bank, could be put back on the retaining wall. (03jv0913)

GLOSSARY

http://www.argonet.co.uk/education/dmoore/index.htm

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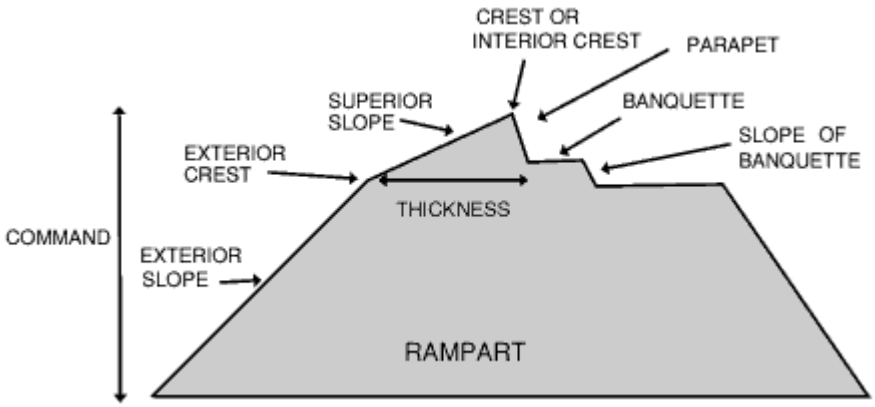
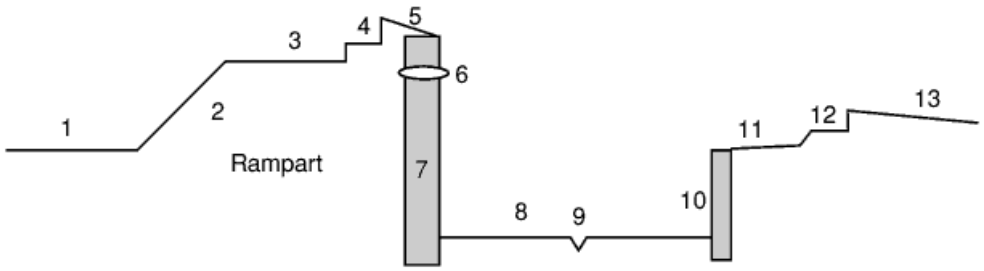
A Glossary of Victorian Military Terms

Section through a Rampart



Section through a Ditch



1. Parade	6. Cordon	11. Covered Way
2. Talus	7. Revetment of Escarp	12. Banquette
3. Terreplein	8. Ditch	13. Glacis
4. Firing Step	9. Cunette	
5. Parapet	10. Revetment of Counterscarp	

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