

# ARCHITECTURAL AND ARCHAEOLOGICAL STUDIES AT ILE DE LA PASSE

## MAURITIUS

### REPORT ON THE 2004 SEASON OF FIELDWORK

Submitted to the National Heritage Fund of Mauritius



*Figure 1. Excavation of Trench TR09 at the Lower Battery. (04jv1103)*

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**ARCHITECTURAL AND ARCHAEOLOGICAL STUDIES  
AT ILE DE LA PASSE, MAURITIUS**

**The Archaeology, Architecture and Conservation of an Historic Islet.**

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## 1. THE PROJECT

### **Architectural and Archaeological Studies at Ile de la Passe, Mauritius**

The project is concerned with the archaeology, architecture and conservation of an historic islet. An extensive survey of the standing monuments, structures and other remains started in 2002. The cutting back of vegetation and clearance of blown sand is revealing hidden features, while targeted excavation (Fig. 1) is helping to resolve specific problems of chronology and identification of functions.



*Figure 2. Ile de la Passe. (04jv3102)*

### **The Research Site**

Ile de la Passe (Fig. 2) 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 18<sup>th</sup> century until 1810. The islet, pivotal in the last Napoleonic naval victory over the British, the "Battle of Grand Port" celebrated on the Arc de Triumphi, boasts some of the most impressive surviving examples of early modern 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.

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### *Earthwatch volunteers*

Team 1 (19 January to 2 February): Mary Aubuchon, Bradley Braun, Vida Dedinas, Alexandra Nicol and George Weiss.

Team 2 (2 to 16 February): Rudy Miner, Lise Poirier, Rosanne Rosen, Mark Rosen and Rodney Supple.

### *Other participants*

Yann von Arnim, Jayshree Mungur and Natalie Summers.

### *METU Research Assistants for post-fieldwork in Ankara*

Aylin Ađar and Nurdan ayırezmez.

## **Volunteers and Visitors**

The participation of volunteers is always appreciated and helps in disseminating to a wider public the importance of Cultural Heritage. Among those who joined the team on site are David Morin, Charlotte Echtner, Isabelle E.Noel, Priscille E.Noel, Marie Helene D'Arifat and a group of school children from L'Ecole du Centre.

On Wednesday February 4 we were honoured by the visit of members of the NHF Board which included the Chairman, Mr Philippe la Hausse, and the (former) Director, Mr Premlall Mahadeo. Dr Vijaya Teelock and 24 first year students from the University of Mauritius, an educational film team of three from the University of Mauritius and a team of four from the MBC visited on that same day.

Trips were organised on other occasions for sponsors and friends all of whom expressed their enthusiasm for the site and appreciation of the progress of work, regardless of rough seas and difficult landings.

On February 10 we also welcomed a group (Fig. 3) from the Step Ahead Primary school, accompanied by Dr. Vijaya Teelock.



*Figure 3. A group from the Step Ahead Primary School disembarking on Ile de la Passe. (04jv1811)*

## 2. ACKNOWLEDGMENTS

First of all we would like to thank the National Heritage Fund (formally the National Heritage Trust) of Mauritius for continuing support of our the work on Ile de la Passe following the initial survey season in 2002. We are particularly grateful to the Chairman, Philippe La Hausse de Lalouvière, the (former) Director, Mr Premlall Mahadeo, and NHF staff for their interest, enthusiasm and support.

The 2004 study was made possible through a grant from the Earthwatch Institute. Donations from General Construction and Phoenix Camp Mineral Ltd contributed towards operational expenses and permitted the employment of local labour for cleaning and clearing. Harel Mallac Electronics Ltd loaned a computer, essential for the digital recording, processing and archiving of data during the season while Gaz Carbonique helped with transport. Jean Claude Farla's skills and knowledge of the bay always guaranteed a good trip to and from the islet (Fig. 4). Villa Le Guerlande agreed special rates. The Coast Guards visited regularly, aiding the removal of rubbish and always willing to help.

Last, but by no means least, our thanks go to all those whose contribution made the 2004 season possible, and to our family and friends without whose generosity and hospitality the season would not have happened.



*Figure 4. A relaxing trip back in the sailing boat was always welcomed by team members after long hours of work on the islet. (04jv2818)*

## 3. SCOPE OF THE REPORT

This Report covers all aspects of the scheme of work that was set out in the *Research Proposal: The 2004 Season* submitted to the NHF. Detailed results from each of the issues to which research was directed during the course of the 2004 season are hereby provided, together with assessments of the work undertaken.

The short report requested by the Earthwatch Institute, the main sponsor of the 2004 season, has been prepared and a copy is submitted under separate cover. This short report has also been sent to other sponsors and will be used for further fund raising. The Acknowledgements, Introduction, Overview of Results, Conclusions, Public Outreach, Future Perspectives and maps of the site appear in both reports.

#### 4. INTRODUCTION

The 2004 season of fieldwork on Ile de la Passe concentrated on carefully targeted excavation aimed at the resolution of specific problems relating to adaptations to the Lower Battery, installations behind the Upper Battery, the Central Platform, the Ditch and features at the north-western corner of the islet. In addition, further documentation of the built structures was undertaken, of which the clearance and recording of a World War Two (WW II) cement floor (Structure 32) above an earlier feature on the south side of the Cistern was the most significant. Finally, further recording of the graffiti was undertaken although this arduous task remains far from complete.

We were most grateful to Mr Yann von Arnim for making an underwater reconnaissance around the islet. All fragments and artifacts recovered by Mr von Arnim have been catalogued and handed to the NHF for deposition in the Mauritius Institute. An illustrated catalogue has been submitted under separate cover.

We are also extremely grateful to Mr Owen Griffiths and Dr Anwar Janoo for their identifications of the small (and unexciting) fragments of animal bones and other organic remains (Appendix II), which have also been deposited in the Mauritius Institute.

The team (Fig. 5) comprised the authors of this report, who were the Principle Investigators, NHT Representative Mr Vickram Mugdon, together with two teams of volunteers from the *Earthwatch Institute*, each of which comprised five volunteers who participated for two weeks. There were, in addition, local volunteers on occasions. Local workmen were employed to clear vegetation, to clean up the islet and to help with heavy excavation work and backfilling.



*Figure 5. Geoffrey at Trench TR9 giving an overview of the aims and objectives to the NHF representative, Vickram, and the Earthwatch Team 1, Mary, Brad, Vida, Alexandra and George. (04jv0212)*

### **The Islet and its Monuments at the Start of the 2004 Season**

Between the end of the 2003 season and the start of the 2004 campaign a considerable amount of rubbish had once again accumulated on Ile de la Passe but, in part because of poor weather over the Christmas and New year period, the islet was not in such a foul condition as it had been at the start of the 2003 campaign. The Coast Guard (Fig. 6) kindly removed many sacks of rubbish for proper disposal on the mainland and by the end of the 2004 campaign the islet was left free of recent rubbish

Of particular concern, however, was that yet more damage had been 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, with the possible exception of the very important Hot Shot Furnace which continues to be used for fires, the accumulative effect is substantial and will soon result in the loss of graffiti, some of which have not inconsiderable historical importance for Mauritius. Besides this loss, fire damaged wall faces will be both difficult and expensive to repair. New graffiti (Fig. 7) standing out as bright white scars on the darkened coral is also to be deplored.



*Figure 6. The Coast Guard collected the sacks of rubbish to dispose of them on the mainland. (04jv2110)*



*Figure 7. Freshly scrawled graffiti by the Landing Place stand out as bright white scars on the darkened coral. (04jv0414)*

## 5. TERMS AND REFERENCES

This Report retains the sequence of naming and numbering of recognisable built structures and features according to the designations given in Summers and Summers, *Ile de la Passe Report 1: Archaeological and Architectural Survey* (presented to the NHT in 2002). 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* (see Appendix IV to the 2003 Report) 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>

*Napoleon's Guns 1792-1815 (2) Heavy and Siege Artillery*, by René Chartrand with illustrations by Ray Hutchins (New Vanguard 76, Osprey, Oxford 2003) is of great value.

Periodisation 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 Dr Marina Carter's research in the archives of Mauritius and also in Europe. We are extremely grateful to Dr Carter for so generously sharing with us the rich fruits of her labours which have, both consciously and unconsciously, influenced our own conclusions in many ways.

There appears to be complete correspondence between the sequence of construction based on architectural and archaeological investigation that has been presented in our previous reports to the NHF and the original records that have been studied by Dr. Carter. Both approaches show that before 1810 there were numerous additions and adaptations made to the defences of the islet. Not surprisingly perhaps, there appear to be certain discrepancies between various proposals and what was actually constructed.

## 6. MAPS

The topographic survey commissioned by the NHT from A. S. Calloo, sworn surveyor, in 2002 provides the base map for all studies. Ten stations set in concrete form the reference points for current and future surveying. The map itself is tied to the National Grid of Mauritius. An arbitrary height of 100m above sea level was given to Station A. This map was updated after the 2004 season of fieldwork (Fig. 8), most notably by the addition of Structures 32 and 33.

Assiduous archival research in London by Earthwatch volunteer Alexandra Nichols has located a map which shows the entire bay together with the islets. An inset shows Ile of Passe (sic) with a list of three recommendations for completions and additions to the defences then existing (Figs 6 and 7). Although this map (Figs 9 and 10), from the National Archives, London, WO 78/71, is undated and unsigned, the inset is the same as the map that was drawn up by the Lieutenant Robert Smith in 1811 which is reproduced on p. 37 of Dr Marina Carter's unpublished report and discussed by her on p. 36. Although this map shows recommendations for additions to the existing defences, there is no evidence that these were ever executed. The "Ditch", tantalizingly, is not shown, nor are the two sentry posts (Structures 8 and 9), but a *fossé* is mentioned in an 1811 inventory by Maingard, quoted by Dr Carter on p. 36.



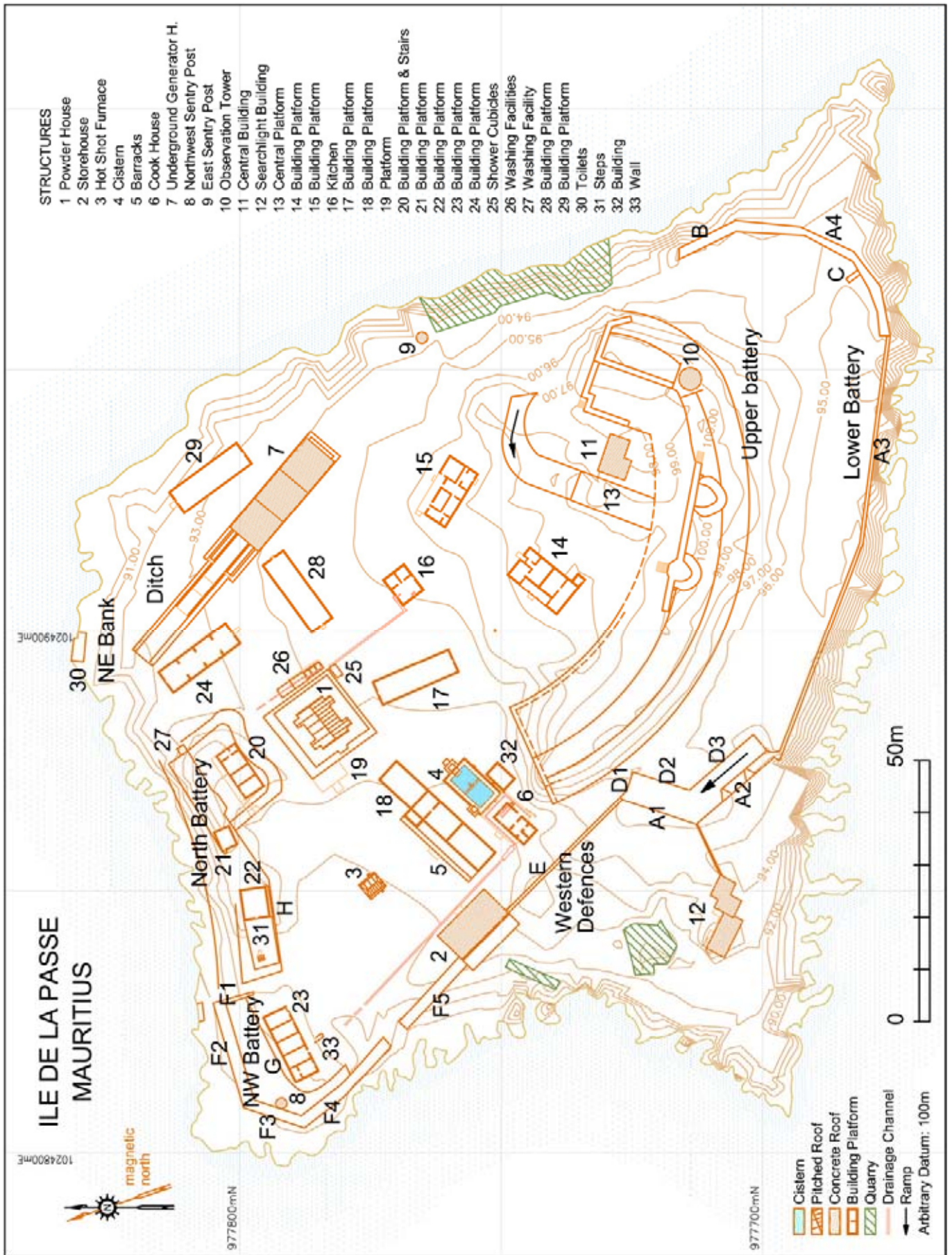


Figure 8. Map of Ile de la Passe showing standing monuments, structures and other features.



Plan  
of  
Grand Port  
and  
Ile of Passe  
de de

WO 78/71



References

WO 79/71

- A. Parapet & Battery proposed to be completed.
- B. Battery to be finished
- C Palisade of inclosure.

Figure 10. Map of Ile de la Passe inset on the map on Figure 9 with recommendations for additional work. (National Archives, London, WO 78/71)

## 7. OVERVIEW OF RESULTS

This summary of progress and results obtained in 2004 precedes fuller and more complete documentation of the work that was done.

### **Recording and Clearing of Standing Architectural Monuments, Structures and Features**

By the end of the 2003 season all standing monuments had been documented but, when appropriate, we continue to add to the digital record, not least as and when photographs are taken in a variety of lighting conditions.

A mechanized grass cutter was 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.

Cutting back the grass around the cistern (Fig. 11) led to the discovery of hidden remains, Structure 32, which were then excavated (trench TR10). Clearing operations at the northern end also uncovered the floor of the corridor with post holes (Fig. 12).



*Figure 11. A grass-cutter with nylon line is ideal for cutting back creeping vegetation. (04jv0205)*



*Figure 12. Clearing between Wall G of the NW Battery and WW II Structure 23 revealed a corridor with post holes, indicating covered access to the rooms. The iron mortars, recently placed on the floor, were measured and drawn. (04jv1201)*

### **Excavations at the Lower Battery, Central Platform and Upper Battery.**

Excavation of trench TR9 at the northern end of the Lower Battery (Figs 1, 5 and 13) revealed the inner face of the original battery wall (A3) and precisely half of the south-eastern blocked gun emplacement. It was unrewarding that no significant discoveries were made.



*Figure 13. Brad at the northern end of the Lower Battery showing the ramp before excavation of trench TR9. (04jv0102)*

At the Central Platform (Structure 13 also shown on Fig. 10) the extension of trench TR3 (Fig. 14), begun in 2003, together with excavation of trench TR7 confirmed that there were a minimum of two phases to this built feature. This result added very considerable weight to the interpretation that we are here dealing with carefully constructed platform that supported flagpoles or masts for signalling.



*Figure 14. Mark and Rosanne excavating in trench TR3. (04jv1808)*



Trenches TR12, TR13 and TR14 were positioned so as to answer outstanding questions with as little impact on the remains as possible.

Trench TR12 (Fig. 17), in the base of the ditch, showed that the feature was never completed but also, somewhat disappointingly, that it had been completely cleaned out in World War II.

Trenches TR13 and TR14 confirmed the dimensions of the channel around the top of the Ditch and provided some support for the idea that this was a secondary feature associated with a roof. It is likely that this channel belongs with the Observation Tower and associated structures, and should therefore be dated to late 19<sup>th</sup> or early 20<sup>th</sup> century.



*Figure 17. Rudy and Vickram, helped by a workman, drawing the top of the stone fill of trench TR12 in the enigmatic Ditch. The entrance to the Generator Hall can be seen in the background. (04jv2021)*

### *Wild Life*

If finds from the trenches were disappointing, wild life was not. A blind snake (Fig. 18), *Rhamphotyphlops braminus*, found in trench TR12, was identified as by the Wild Life Foundation reptile expert Nick Cole. The snake is a common exotic species.



*Figure 18. A blind snake from trench TR12. (04jv1803)*

### **Structure 32 and Trench TR10**

Structure 32 (Fig. 19), adjacent to the Cistern, appears to have a cement floor laid over an earlier structure. Once completely exposed in trench TR10, the remains were photographed and planned.



*Figure 19. Structure 32 uncovered in trench TR10. (04jv2415)*

### **Structure 33 and Trench TR11**

Trench TR11, in the north-western sector of the islet (Fig. 20), was begun because traces of walling could be seen emerging from the eroding scarp. Very limited excavation revealed some evidence of stratigraphy in which burnt features can be seen. Charcoal and bone is also well preserved, although very fragmentary. This area will be a focus of research in 2005.



*Figure 20. Trench TR11 investigated stratigraphy associated with Structure 33 seen in an eroding scarp. (04jv2417)*



### **Essential Conservation and Backfilling**

Essential conservation work (Fig. 21) to prevent further degradation and deterioration was also carried out. The islet attracts many visitors and it is essential that campers are deterred from dislodging stones to use for anchoring temporary shelters.



*Figure 21. The workmen uniting efforts to put back a large basalt block dislodged from the settling tank of the Cistern. (04jv0905)*

At the end of the season most trenches were backfilled (Fig. 22) so as to preserve the built remains as well as to prevent collapse of the trench edges. Wherever exposure of the tops of masonry features was compatible with their preservation their visibility was retained.



*Figure 22. Jayshree overseeing backfilling at the Central Platform. (04jv2304)*

## Recording graffiti

Systematic recording of graffiti (Fig. 23) continued at the Powder House. This represents the greatest challenge because of the restricted distance between the inner faces of the Enclosing Wall and the Powder House itself. A good start was made, but it is clear that systematic coverage will require several stepladders and planks, a number of individuals and not inconsiderable patience and dedication!

To quote from last year's Report: "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."

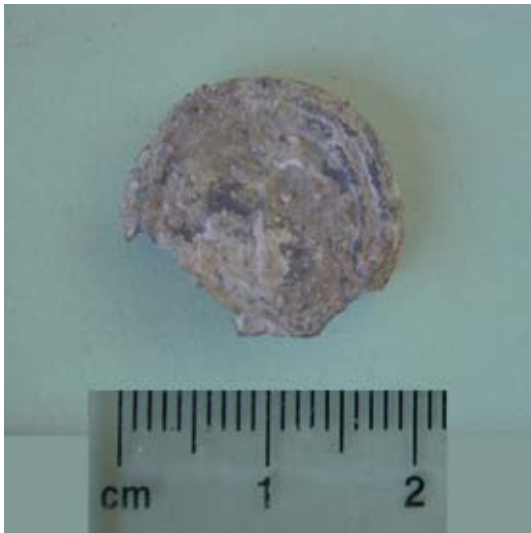


*Figure 23. Rod, Rosanne and Mark measuring control points needed for the rectification of digital photos. Graffiti on the enclosure wall of the Powder House is being recorded and drawn using this technique. (04jv2111)*

## Guns and Finds

The two iron mortars (Fig. 12) and the one extant side of an iron bed were measured and drawn and the carronade, now set upright for the mooring of boats by the Landing Point, was recorded.

No finds from either the surface or from trenches were of particular importance. A French pewter button of well-known type (Fig. 24) was the sole find of significance from trench TR9. Other metal finds catalogued during the 2004 season included several canisters, grape shots, musket balls, bullets, nails and screws. No diagnostic fragments of glass or porcelain from the excavations seem to be as early as the French period. Charcoal and bones were kept for identification and study. All finds were photographed and catalogued.



*Figure 24. Pewter button with embossed anchor from Trench TR9 at the Lower Battery. (04jv4102)*

## The Presentation of Cultural Heritage to a Wide Public

During a normal working day we would have several groups of visitors on the islet. If conditions for disembarking are not too difficult they would land and most of them, whether tourists or Mauritians, would express curiosity about our activities. Guided tours, signposts and leaflets will each have a role to play in an overall heritage management plan.

We were delighted to have among our visitors groups of school children (Fig. 25). Presenting the young generation of Mauritians with aspects of their cultural heritage is essential since the future of sites and monuments will soon be in their hands.



*Figure 25. The group of children from the Step Ahead Primary School showed great interest and enthusiasm for the work taking place on Ile de la Passe. (04jv1822)*

## 8. CLEARING OPERATIONS AROUND MONUMENTS AND STRUCTURES

### The Central Area

In the northern area the vegetation was cut back and several sacks of accumulated rubbish were taken off the islet by the Coastguard. Careful and selective cutting back vegetation greatly enhanced the general appearance of the islet and monuments (Fig. 26) and discourages visitors from throwing rubbish in the long grass.

Cutting back of vegetation along the space between Structure 31, a WW II Platform, and Wall G of the North-West Battery revealed the cement floor of a corridor with postholes that supported a roof and screen (Fig. 27).

Clearance around the Cistern led to the discovery of Structure 32, a WW II building platform with a cement screed floor.



*Figure 26. The northern area of the islet after the grass was cut. The WW II drain running from the Cook House, (Structure 6), was emptied and cleaned. (04jv1401)*



*Figure 27. The corridor at the front of Structure 31 built against the earlier Battery wall. Post holes indicate that it was roofed. (04jv1220)*

## 9. TARGETED EXCAVATIONS

Excavation at Ile de la Passe has to be carefully targeted because the archaeological evidence is scarce and very vulnerable. In 2004, trench TR3 was reopened and extended while eight new trenches, TR7 to TR14, were excavated. A key map (Fig. 28) locates Figures 29, 30 and 31 on which both structures and trenches are indicated.

The detailed summaries that follow begin with work in trench TR9 at the Lower Battery, which was the earliest battery on Ile de la Passe, followed by the Central Platform in trenches TR3 and TR7 and the Upper Battery in TR8. Investigations at the Ditch in trenches TR12, TR13 and TR14 are then described before turning to Structure 32 in TR10 and, finally, Structure 33 in TR11.

At the end of the season all trenches except 13 and 14 were backfilled so as to preserve the fragile remains. It was also necessary to backfill trenches TR9 and TR12 for reasons of safety. In TR9 the ramp was restored to its pre-excavation configuration.

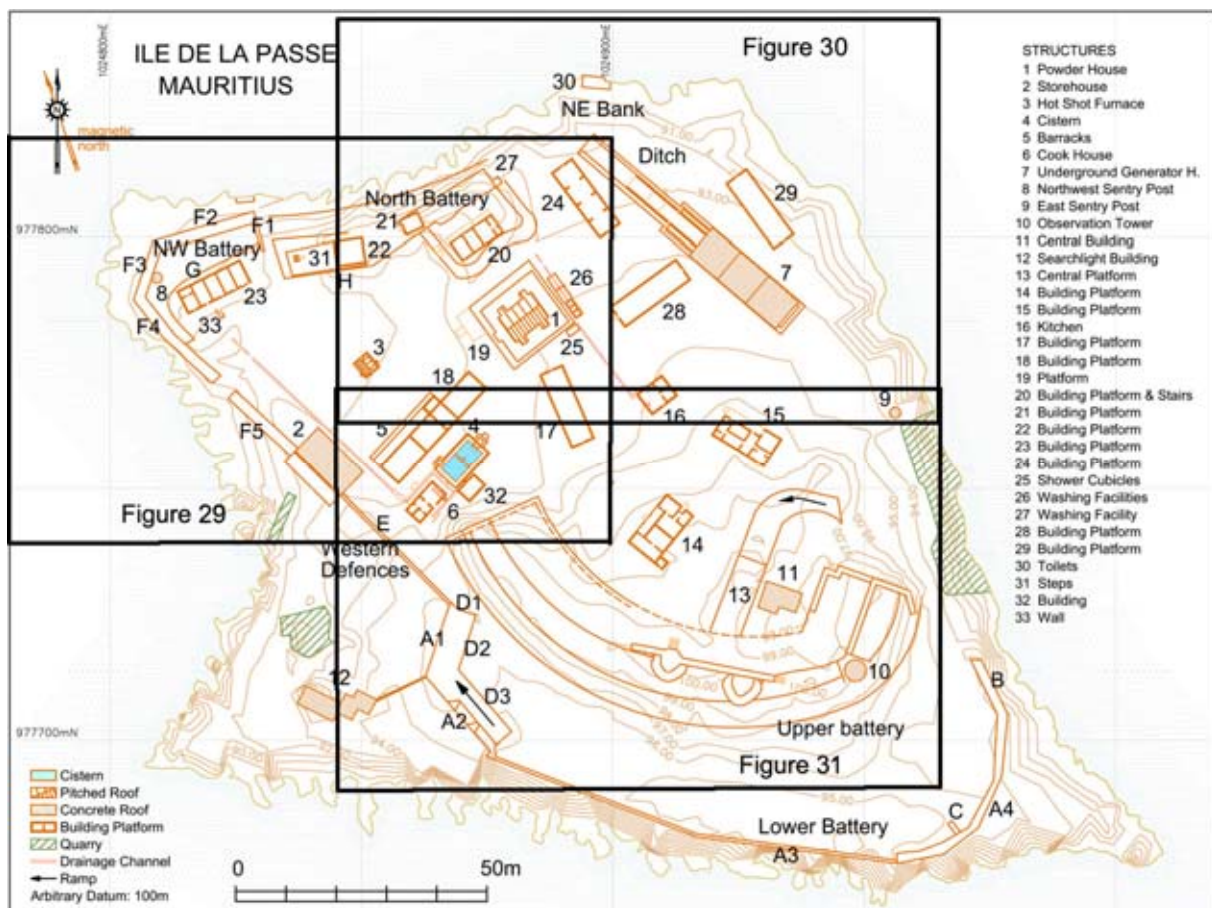


Figure 28. Key plan to show location of figures 29,30 and 31.

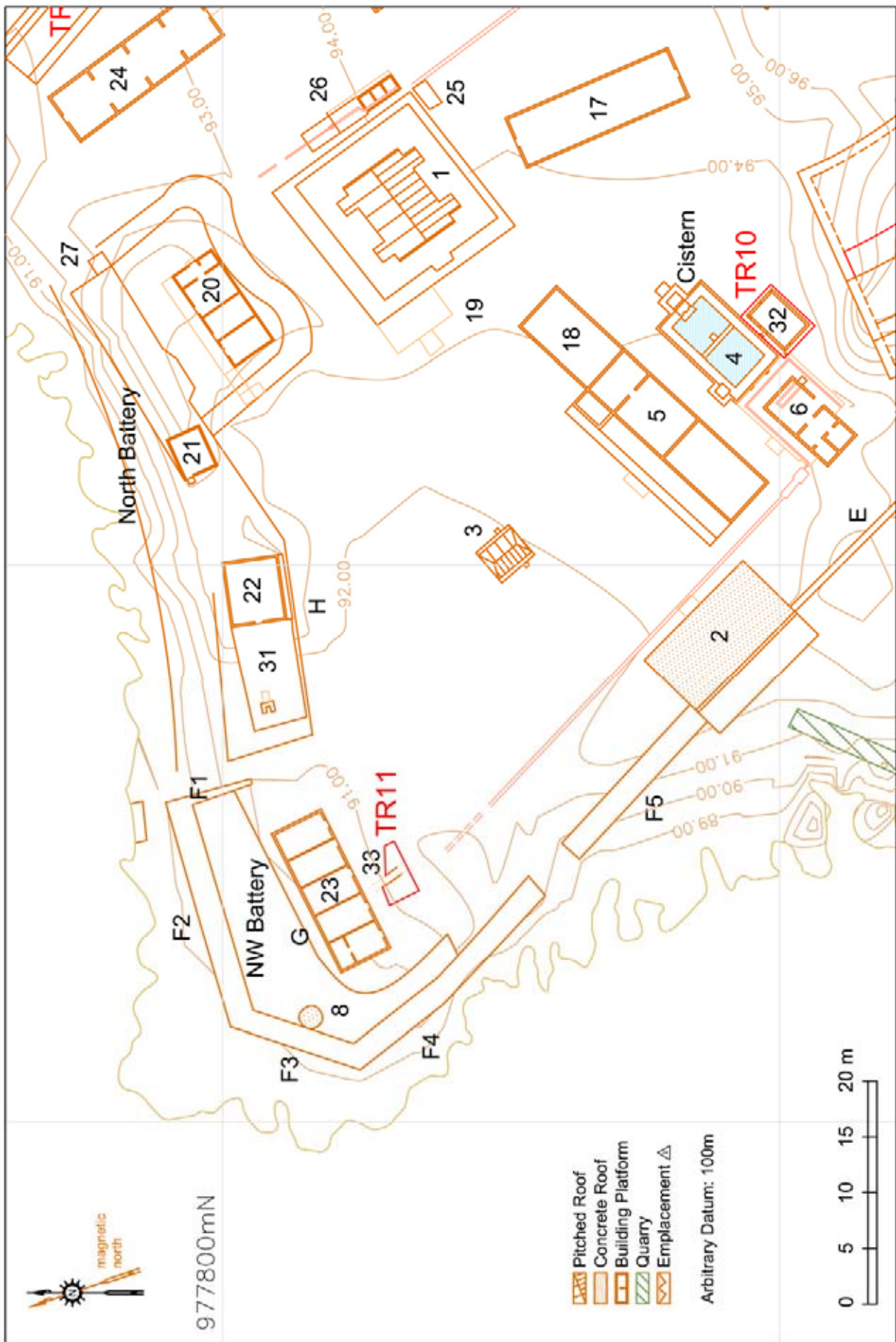


Figure 29. Plan of the north-west area showing location of major monuments and trenches TR10 and TR11.

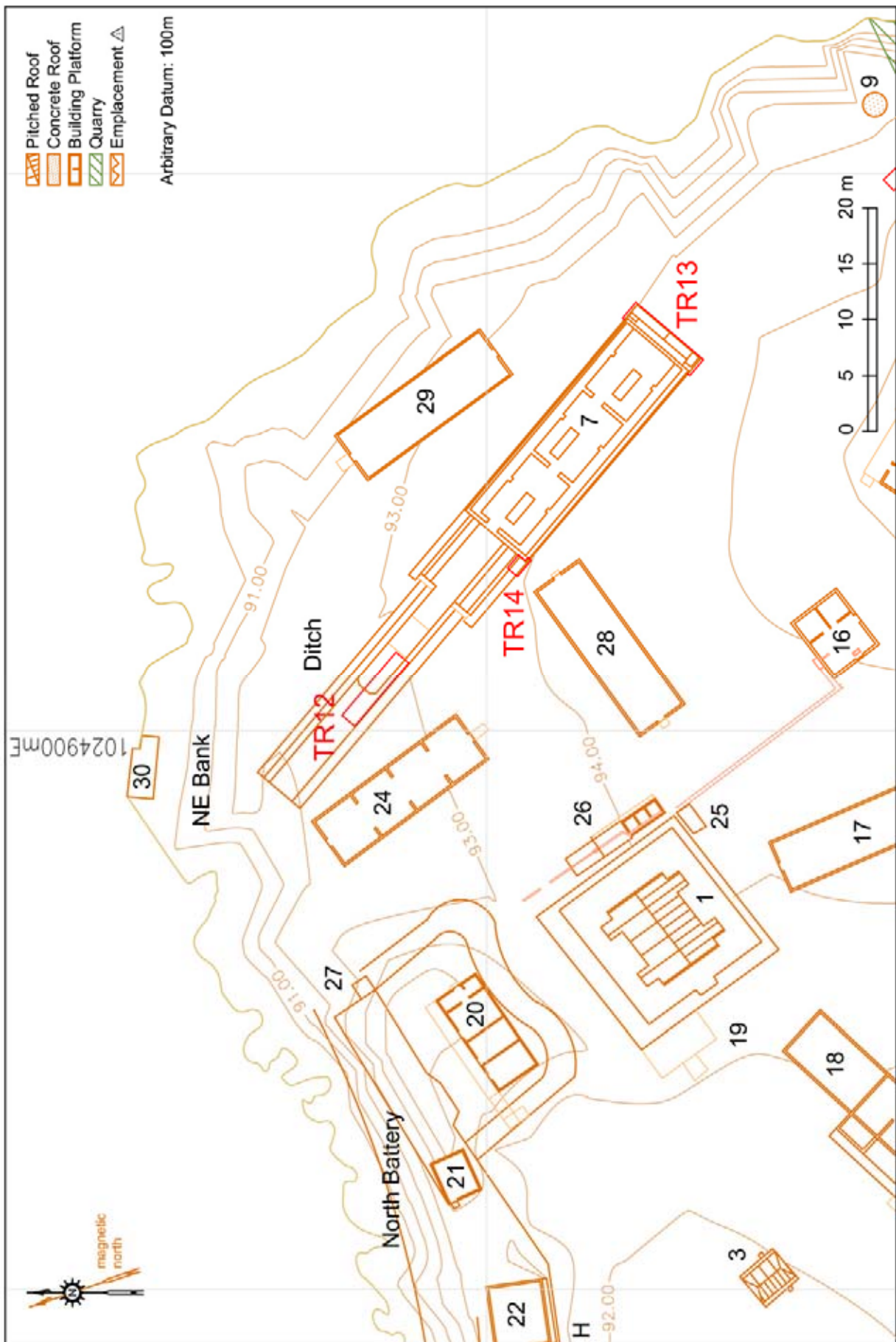


Figure 30. Plan showing the Ditch and location of trenches TR12, TR13 and TR14.

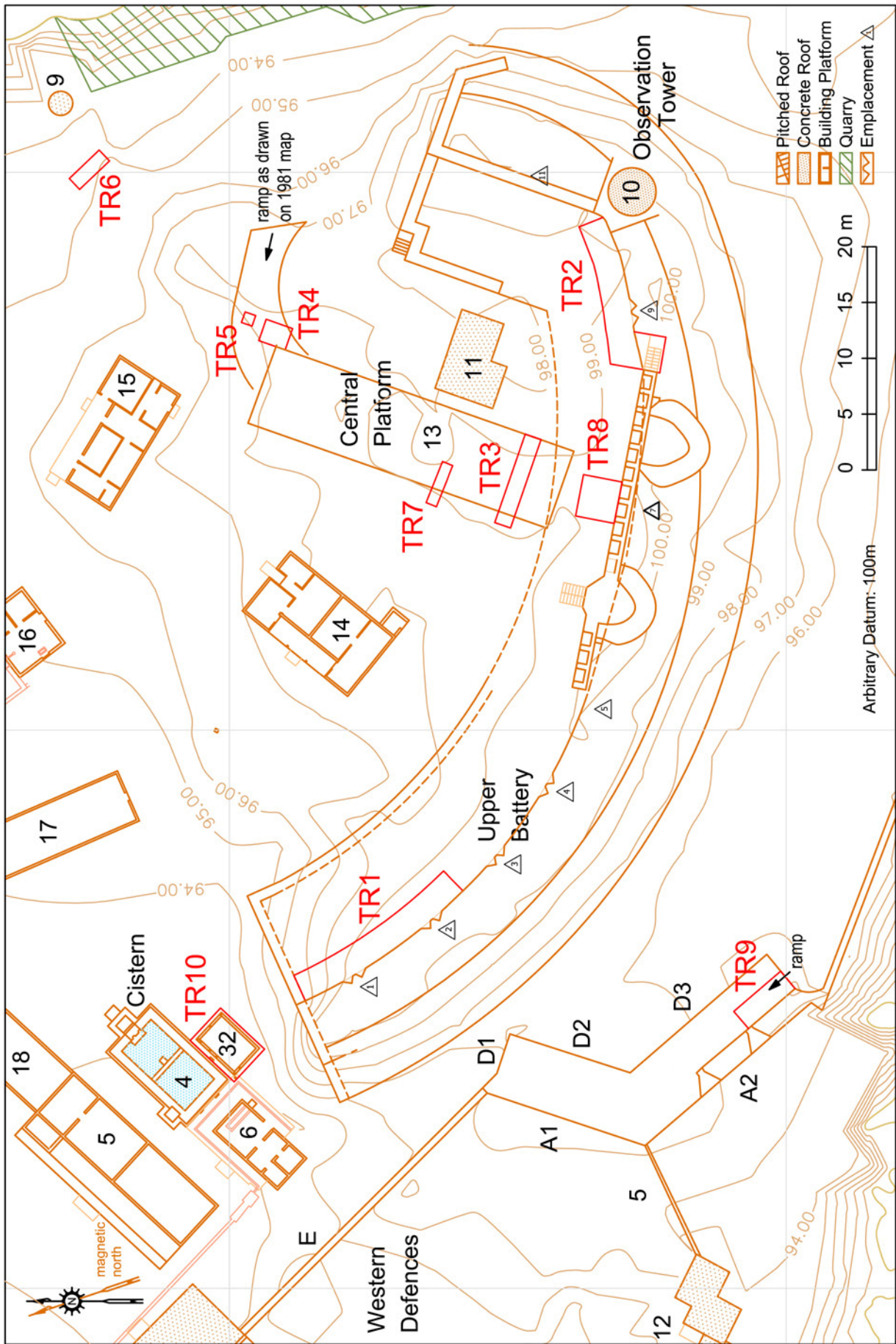


Figure 31. Plan showing the Central Platform, the Upper Battery, the western end of the Lower Battery, adjacent structures and trenches TR1 to TR10.



## 10. THE LOWER BATTERY

It is clear from 18<sup>th</sup> century maps of Ile de la Passe, as described in earlier reports, that the Lower Battery belonged to the initial scheme of defences on the islet. Our work in 2002 demonstrated that the upper part of the Lower Battery, to the level of the sills in the gun emplacements, together with the greater part of the masonry facing on the inner side, have been demolished. It is almost certain that this was done when the Upper Battery was constructed because, left intact, the Lower Battery would have obscured the view from the new installations. At the northern end, however, the parapet wall (A2 on Fig. 31) was retained, the gun emplacements being blocked with lime-mortared masonry while a broad rampart was constructed behind with a retaining wall. The approach to the top of this rampart was by means of a ramp supported by a new wall built of spolia (D3).

### *Trench TR9*

The aims of the excavation in trench TR9 (Figs 1, 5, 13 and 32, 33 and 34) were:

- 1) to confirm the sequence of construction
- 2) to recover material evidence from the rampart fill
- 3) to recover evidence for decking and gun carriages behind the emplacement
- 4) to recover evidence of flora and fauna that predated the first human impact

Of these aims, the first was a complete success, but otherwise all of the excavated material was devoid of finds with the exception of one French pewter button and some non-descript pieces of ironwork.

The slope of the ramp before excavation is clearly seen on the wall face of which was built directly on the undulating surface of the bedrock (Figs 32-34).



*Figure 32. Trench TR9 at the end of the excavation. At front left is the one extant side of the embrasure at the south-east end of Lower Battery Wall A2. Brad, holding the scale, has his right hand on the top of the blocking of the next embrasure which is bisected by the section. (04jv0803)*

The basalt block in the wall face in Figure 33 is in the bottom left-hand corner of the blocking. Wall D3, constructed from spolia robbed out from Lower Battery wall A3 and including a large portion the missing side of the embrasure opposite, is partially seen at left in Figure 32 and more clearly in Figures 5 and 13. The surface on which the guns would have stood can be seen in the section (Fig. 34), but no trace could be found of wooden decking.

The splays of the embrasures, as can be seen in the plan (Fig. 31) are asymmetrical. The angles were carefully calculated to give the crew at each individual gun the best possible angles of fire. The guns in use at this time were not mounted on traversing platforms.



*Figure 33. TR 9 after excavation showing the blocking of the embrasure. (04jv0810)*



*Figure 34. The trench section clearly shows the different surfaces and layers. (04jv0808)*

## 11. THE CENTRAL PLATFORM

Excavation started at the Central Platform (Structure 13) began by emptying out and extending TR3, which had been backfilled at the end of the 2003 season. A 1m wide trench, TR7, 1m wide, was positioned 5m to the north of TR3 in an attempt to locate a flagpole installation shown on the earliest map (Fig. 31).



*Figure 35. George standing on the Central Platform with a 2m scale before the re-excavation of trench TR3. (04jv0115)*

### **Trench TR3**

The results confirmed that there were a minimum of two structural phases, the earlier platform being extended to both the north-west and the south-west. The extension had covered and preserved the carefully cut and fitted coral blocks that formed sloping north-western and south-western sides (Figs 36 and 37).

It was found that only the upper course of the south-west side was bevelled while the entire north-west side was inclined at a shallower angle. There is no ready explanation for these bevelled sides. The extension was found to be of inferior workmanship, the north-western face being constructed of uncut stones (Fig. 38) while the south-eastern face was of poorer workmanship, using smaller stones, than that of the earlier phase (either side of trench TR3 on Figs 35 and 37). The south-western face of the extension no longer exists, perhaps having been cut away when the Upper Battery was constructed or modified.

The excellent quality of the lime-mortared masonry indicates French work, a conclusion completely in accord with the archival evidence as seen, for instance, on the map reproduced as Figure 10. The uppermost edge of the topmost surviving stone on the north-west face is at an angle (Figs 36 and 37), giving reason to think that the platform was originally at least one course higher. No trace remains of the original surface and there is no indication of the original height. The date of the extension is uncertain, and there is no indication as to how the extension relates to the phases revealed in trenches TR4 and TR5 dug in 2003.



*Figure 36. Trench TR3 looking north showing the angled masonry of the earlier phase of the Central Platform. (04jv2314)*



*Figure 37. Mary holding the 2m scale in trench TR3. (04jv0701)*



*Figure 38. Trench TR3 showing the outer face of the north-western extension to the Central Platform. An iron shot can be seen in front of the 1m scale. (04jv0607)*

### **Trench TR7**

In trench TR7 it was found that the structure was completely ruinous (Fig. 39). No trace was found of the flagpole installation shown on the first maps of the French period.



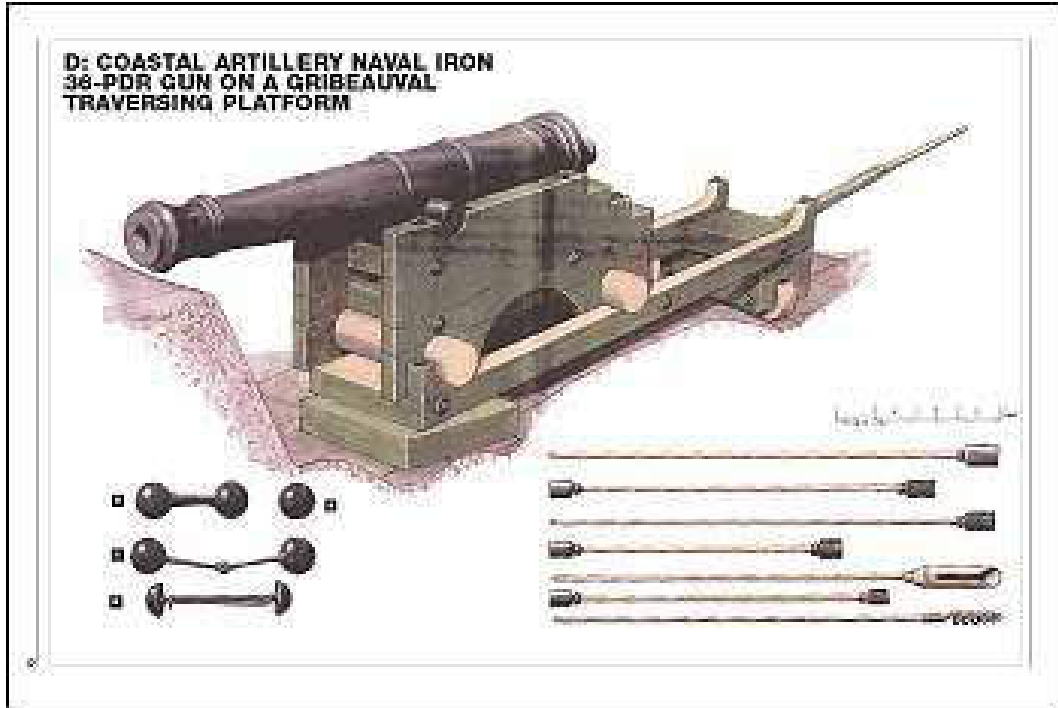
*Figure 39. In trench TR7 the Central Platform was found to be ruinous. (04jv0714)*

### **Results**

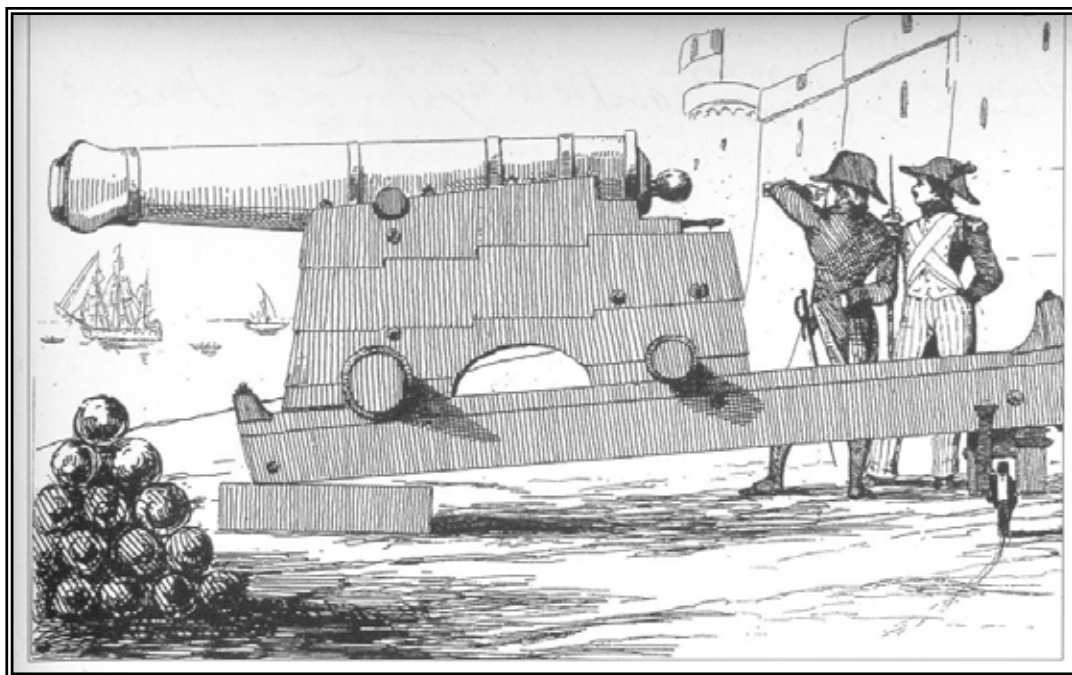
No direct evidence was found concerning the function of this structure. The inclined sides would support the view that the structure was a raised platform rather than a building. The central position on the highest part of the islet might be taken to support the idea that this platform, in both of its phases, was built to support masts for signalling by semaphore. Such a function would represent continuity in use from the flagpole shown on early maps. What happened to the platform in later periods is unknown.

## 12. THE UPPER BATTERY

The primary objective of work on the Upper Battery in the 2004 field season at Ile de la Passe was to look for evidence of traversing platforms and other installations associated with cannons in the Napoleonic period.



*Figure 40. A gun and platform of the type thought to have been used on the Upper Battery. (Illustration by Hutchins from Chartrand 2003)*



*Figure 41. Drawing from Chartrand 2003, p. 47 showing the groove made by the wheel at the rear of the traversing platform.*

### **Trench TR8**

For this purpose trench TR8 was laid out behind Emplacement 7 (Fig. 31). There was found to be very little deposit behind the parapet wall, the coral bedrock being reached very quickly. Evidence came in the form of a curved depression with a radius of 7m, the centre of which is at the centre of Emplacement 7 (Fig. 42). The basalt sill of this Emplacement is extant behind the WW II concrete battery (Fig. 31). This arc, of which the eastern half was excavated up to the point where it is covered by WW II concrete, forms an edge to, or a depression in, a bed of basalt chips and lime mortar and the soft coral bedrock.



*Figure 42. Trench TR8. The scale is 1m long. (04jv2324)*

### **Interpretation of Evidence**

It is thought that this slight but distinct and regular feature, which can be seen curving round from the top to the bottom corner of the trench in Figure 42, was made by the tracking wheel at the rear of a traversing platform. It is not impossible that the arc indicates the position of a wooden rail. It is probable, although unproven, that the basalt chips and lime mortar belong to the French period and are related to the construction of the Upper Battery. This appears to be more probable than a later British date when an iron rail might have been expected. If our interpretation of these remains is correct, we have here evidence for the installation of a Gribeauval traversing platform on Ile de la Passe. This is added evidence, should it have been needed, the defence of Mauritius was considered to be of such import that the very latest weaponry was being installed at the very time of the Battle of Grand Port.

It would appear, from the very scant archaeological evidence which remains, that the western limit of the Central Platform (Structure 13) might have been truncated when the Upper Battery was constructed. If this is indeed the case we would have come some way towards resolving the sequence of construction before 1810.

Incidental evidence was recovered, and assiduously recorded, for later activity - some of which was evidently connected with the installation of cables in World War Two.

### 13. THE DITCH AND UNDERGROUND GENERATOR HALLS

Research at the Ditch fell into three distinct categories. Firstly graffiti carved in the rock-cut sides were re-examined and appear to confirm that none predated 1840. Secondly a trench, TR12, was excavated in the bottom of the Ditch in the hope that there might be some fill not far removed in time to the original cutting. And thirdly two trenches, TR13 and TR14, were laid out to examine the trench-like channel that borders the south-eastern half of the feature.

#### Trench TR12

Excavation in trench TR12 (Figs 43, 44, 45, 46, 47 and 48) confirmed that the cutting of the ditch was abandoned before the scheme was complete. This is demonstrated not only by the different elevation of the flat base of the Ditch, but also by the observation that a portion of the exposed vertical side was also left undressed. Disappointingly, it was revealed that the part which was selected for excavation had been completely cleaned out in the 20<sup>th</sup> century, presumably when the generator halls were constructed within it. There is every reason to suppose that the entire ditch was cleaned at this time, with the result that no early deposits would be found by extending the trench. Pieces of WW II corrugated sheets were found laying directly on the base of the ditch. Most of the fill comprised stone rubble which perhaps came from demolition of some earlier covered structure associated with the channel and, as has been argued in earlier reports, might very possibly belong the scheme of construction that included the original phase of the Observation Tower, the Central Building and the Searchlight Building. Evidence to directly support this interpretation was not, however, forthcoming.



*Figure 43. Rod and Rudy laying out trench TR12 in the ditch with the Underground Generator Halls behind. The trench was positioned to investigate the step in the base of the Ditch and excavation was made on the south-eastern side because there was evidence than a WW II cable had been laid on the other. (04jv1410)*



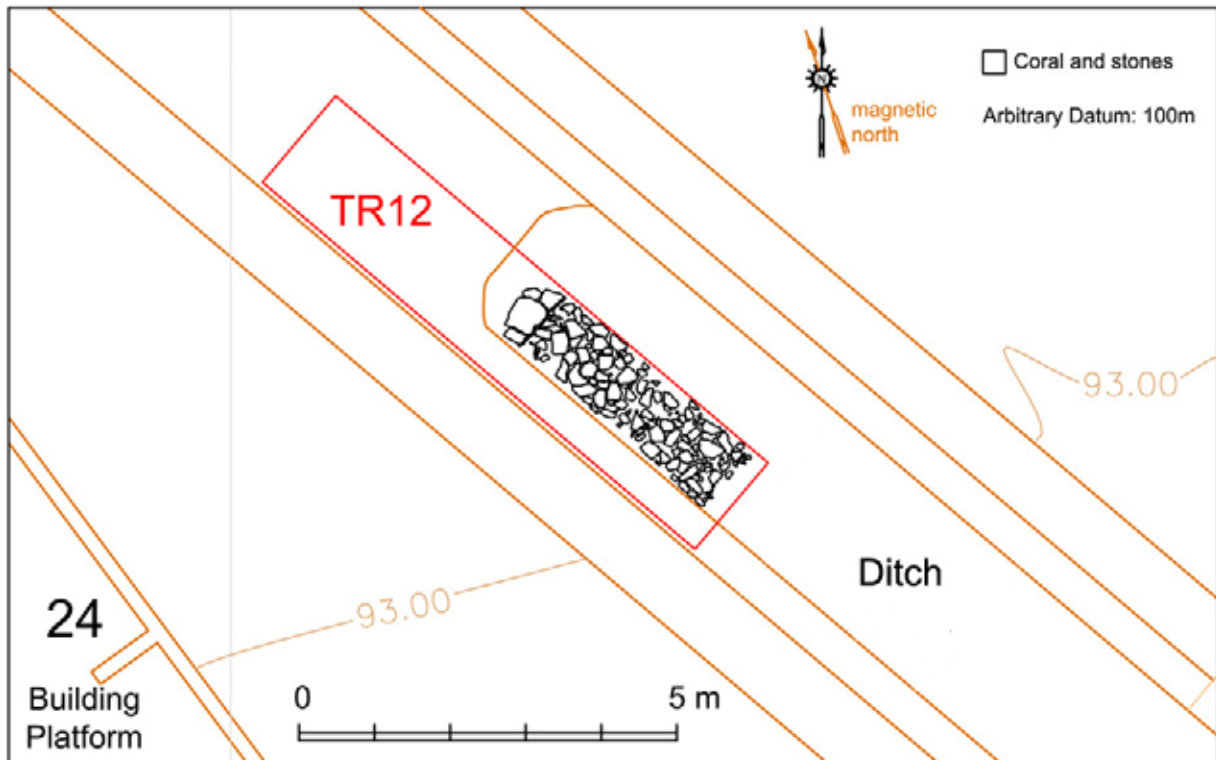


Figure 44. Plan of the of the rubble fill in trench TR12 with a crude step at the north-west end.



Figure 45. The top of the rubble fill in trench TR12. (04jv1701)



*Figure 46. Once it was discovered that there was WW II corrugated sheeting in the bottommost fill of trench TR12, it was decided not to continue further. (04jv2007)*



*Figure 47. The base of the ditch stepped down, the higher part at the north-western end being unfinished. (04jv2009)*



*Figure 48. The line of the unfinished ledge at the end of the trench can be clearly seen from this angle. (04jv2011)*

### Trenches TR13 and TR14

Trenches TR13 (Fig. 49) and TR14 (Fig. 50) provided details about the rock-cut trench or channel that runs around the top of the south-eastern half of the ditch. In trench TR13, at the back of the generator halls, it was seen that there was a step in the base of the channel which is explained by differences in the absolute heights of the channels on either side. It is thought probable that this channel, and the vertical stepped slots in either side that were reported on in 2003, were associated with some sort of roof over this end of the Ditch, and that they are an integrated set of secondary features added to an earlier ditch.



*Figure 49. Trench TR13 showing the channel at the top of the Ditch with the roof and ventilation slots of the Generator Hall at right. (04jv1717)*



*Figure 50. Trench TR14 showing the channel blocked by the front wall of the WW II Generator Hall. (04jv1517)*

## The Origin of the Ditch

To repeat earlier conclusions, it is probable that the ditch was part of a grand defensive scheme that was never completed. If this interpretation is correct, it can be assumed that the scheme would have been drawn up some time during the French period. There is some mystery here, however, because it is not shown on the 1811 map (Fig. 10) but, as noted earlier, might be equated with the *fossé* mentioned in an inventory of the same year. It can only be assumed that this ditch was omitted because, size notwithstanding, it did not serve any useful purpose. It would be possible to construct a somewhat convoluted case that the Ditch was begun when the Upper Battery was being constructed.

## 14. STRUCTURE 32 AND TRENCH TR10

Cutting back grass around the cistern revealed that areas of cement surface in fact belonged to the flooring of a flimsy WW II building. The entire structure was exposed in a 5 x 4m trench labelled TR10. It seems obvious that this structure was associated with the Cook House, and was presumably a store.

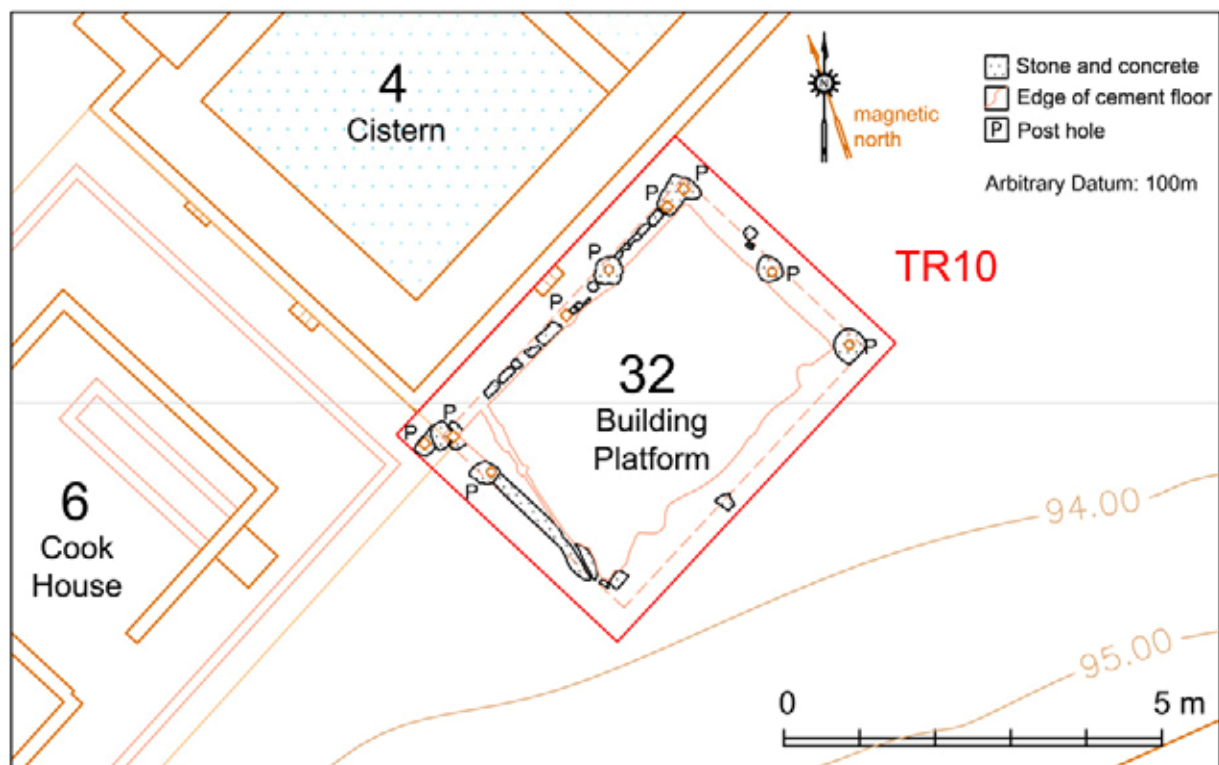


Figure 51. Plan of trench TR10 and remains of Structure 32 revealed in 2004.

### Trench 10

Clearance of the western corner further revealed that there were traces of an earlier structure the walls of which were composed of cut coral bonded with lime mortar. These are stippled on the plan (Fig. 51). It was therefore decided to clear the entire WW II floor which was found to be covered with nothing other than vegetation and a little sand.

The WW II structure comprised the settings for posts, many of which were angled, and a cement screed surface (Fig. 52). The edges of the cement floor are irregular and uneven, indicating walls of canvas or ravenal (rather than the more usual corrugated asbestos sheeting). The impression of an electric cable and joint runs across the floor at an acute angle and is cut through the earlier wall close to the southern corner, otherwise there are no internal features.



*Figure 52. Structure 32 south of the Cistern. The entire floor was exposed by trench TR10. (04jv2416)*

Of the earlier structure only a few stones of the north-west and south-west walls were found. The presence of a structure in this position is not recorded on any known plan, and it need not be assumed that the remains belong to a building. Use of cut coral and lime mortar probably indicates a French date.

## **15. STRUCTURE 33 AND TRENCH TR11**

In the north-western sector of the islet, inside the breach through the perimeter wall F4 and F5, the sea has created an eroding scarp. A section of lime-mortared coral walling projects from this scarp. The south-western face of this wall would seem to be an exterior one while the north-eastern face appears to retain terrace fill beneath a floor or surface that is no longer extant. The wall was most probably part of a building depicted on French plans.

### **Trench TR11**

Excavation here was limited to cutting vertical sections against each face in such a way as to minimise the amount of material to be moved. This procedure explains the irregular shape of the trench TR11 as it appears on the plan (Fig. 53).

This operation (Fig. 54) revealed an unexpected depth of stratigraphy that comprises a layer containing cultural material above the bedrock and beneath a surface which has patches of burning, apparently associated with clay features. The wall is above, and thus postdates, this surface. The material against the outer face of the wall (at left in Fig. 54) represents yet later activity.

Finds from this operation include a number of iron nails from the burning as well as a few bones, shells and fragments of charcoal. There were no diagnostic objects or sherds, so that the precise date of these layers is open to speculation.

At the end of the season the spoil was piled back against the section so as to provide as much protection as possible. Because of the preservation of well stratified and sealed organic material in this area further excavation, combined with a program of sieving and flotation, is planned for 2005.

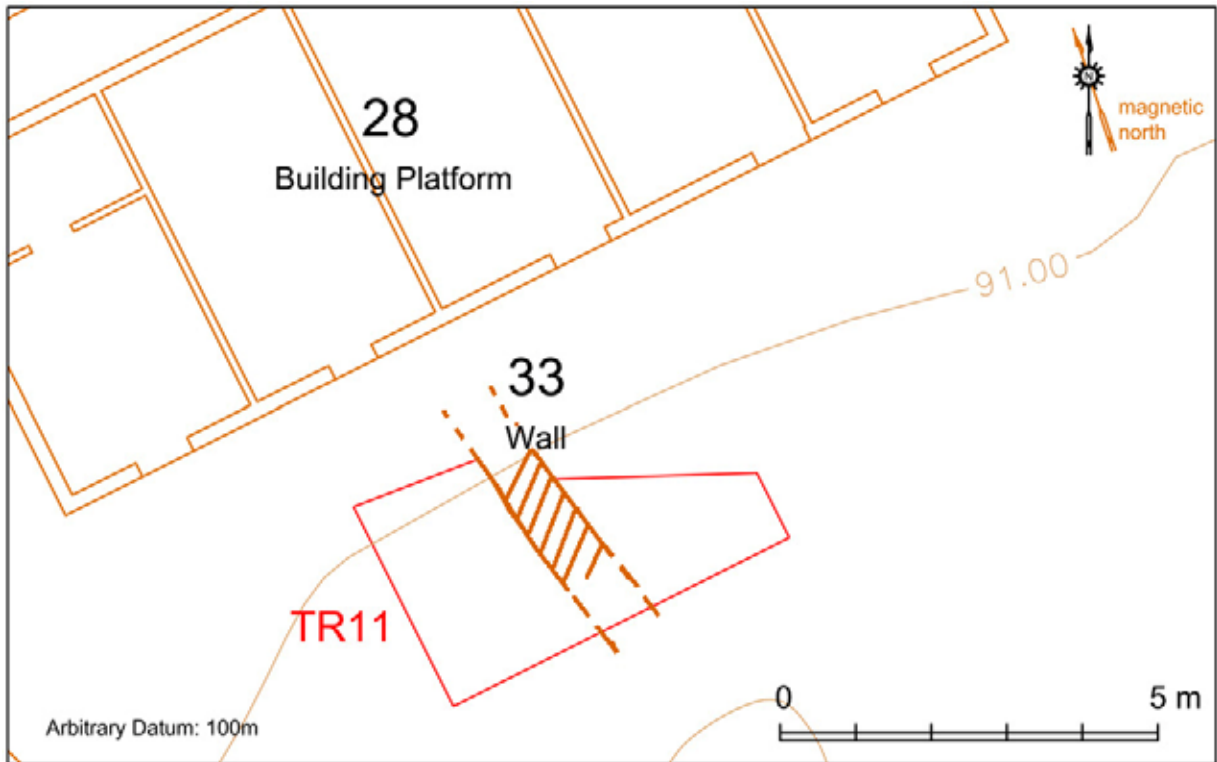


Figure 53. Plan showing the location of Structure 33 and trench TR11.



Figure 54. Trench TR11 with the wall of Structure 33 at centre and the sections to either side. Structure 23 lies behind.

## 16. ESSENTIAL CONSERVATION

Emergency conservation work was carried out at the Cistern and Hot Shot Furnace where stones which had slipped or been pushed out were put back in place, thus preventing further deterioration of these structures.



*Figure 55. A stone that slipped from the base of the Hot Shot Furnace was put back in its place. (04jv1213)*



*Figure 56. Replacement of the stone has restored the stability of the bottom course of masonry. (04jv1216)*



*Figure 57. A large basalt corner block was put back on the settling tank of the Cistern. (04jv0903)*

## 17. RECORDING GRAFFITTI

The majority of graffiti were carved by officers and men in the nineteenth century. Some are very neatly cut while a few are in positions, such as the inside of the Powder House roof, which would have required the use of steps or ladders. It is not certain that any of these graffiti pre-date 1840, by which time the islet appears to have been devoid of a garrison.

In 2004, the efforts to record graffiti focused on the Powder House. Complete photographic coverage of a wall is followed by the measuring and plotting of control points. A sufficient number of control points are needed for the rectification of each photo. If space is so restricted that only close up can be taken progress is both slow and tedious. Post-fieldwork consists of using appropriate software to plot the points and rectify the photos. The precise position of each graffiti is also recorded in this way. When resources become available it will be possible to assign these tasks to a student. The graffiti can then be transcribed and the transcriptions collated back in the field and accurate drawings could be made from the rectified photographs. Transcription, collation and drawing are, however, time consuming tasks that require practise and dedication.



*Figure 58. Digital photography produces clear images of graffiti. A scale drawing can be produced from a rectified photo. (04jv0538)*

## 18. GUNS

Although most of the artillery has been taken to the main land, three guns remain on the islet. Two iron Gribeauval mortars with cylindrical inner chambers that are now on the WW II Building Platform 23 were photographed, measured and drawn (Fig. 59). These weapons are corroding rapidly. An identical mortar, in an excellent state of preservation, can be seen outside the National Naval Museum in Mahébourg. One side of an iron bed for one of these mortars has been dragged to the Landing point where it is now washed by the waves (Fig. 60). This rare and important piece was also drawn. These large mortars and their iron beds, which were made for coastal defence, were manufactured in France. The effort of shipping them from Europe would only have been surpassed by the difficulty of unloading them and moving them into position on Ile de la Passe.

Yann von Arnim pointed out that the iron cannon set vertically in the rock on the west side of the Landing Point is in fact a carronade (Fig. 61) i.e. a gun with a short barrel and wide bore generally used on ships for combat at close range. This too was documented.





*Figure 59. Lise, Mary and George documenting the iron mortars. (04jv1205)*



*Figure 60. Lise, Mary, George and Vickram measuring the iron mortar bed which would have supported a mortar. The piece was dragged to the Landing Place but was obviously too heavy to be put on a boat. (04jv1309)*



*Figure 61. The carronade by the Landing Place. 04jv3522)*

## 19. FINDS

A catalogue of finds is appended to this report. No finds of particular historical or archaeological significance were found during the excavation. Although some interesting pieces came from the underwater reconnaissance, nothing was found that adds to our understanding of the defences or which could be related to the Battle of Grand Port.

The finds from the surface and excavations have been catalogued according to materials as listed below.

- Ceramics (see Fig. 61 for an example of porcelain)
- Glass
- Metal Objects (see Fig. 62 for an example of iron shot)
- Organics (see Fig. 63 for a selection of bones)

The 34 items from the underwater reconnaissance have not been reclassified. Rather, they are catalogued with the original numbers given to them by Yann von Arnim as signified by the prefix A. Thus a concordance can be made between these finds and von Arnim's dive sheets.



*Figure 61. Broken porcelain found on the surface.*



*Figure 62. Iron shot from trench TR3 on the Central Platform. (04jv)*



*Figure 63. Animal bones and charcoal from trench TR11.*

## 20. ARCHAEOLOGICAL AND HISTORICAL CONCLUSIONS



*Figure 64. Ile de la Passe and neighbouring islets at sunset.*

The evidence revealed through archaeological investigation at Ile de la Passe (Fig. 64) 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, while the buildings and remains of buildings together with the gun emplacements, mortars and more mundane fragments of military occupation are evocative in themselves. Architectural and archaeological studies continue to fill in gaps in the archival record, such as the sequence of structural phases and function 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. Thus the debates around the defensive value of Ile de la Passe for the protection of Mauritius are seen to be reflected in the piecemeal modifications and the failure to fully implement large schemes.

There is slight but important evidence for the installation of Gribeauval traversing platforms behind newly designed emplacements on the Upper Battery, which provided the gun crews with the facility to follow their target and for neighbouring crews to concentrate fire on a single target while at the same time allowing for smaller gun crews. In order to permit the broad sweep of the traverse the barrels of the guns could not be restricted by the width of a splayed embrasure (as was the case in the earlier Lower Battery). The new emplacements had basalt sills above triangular niches, the latter probably for lights. Although this meant that the heads of the gun crews were more likely to be visible above the parapet, the much more elevated location of the Upper Battery, together with its greater distance from the water, would have made them very difficult to hit from a boat in the channel. These sophisticated arrangements and advanced weaponry, as well as the setting up of huge iron mortars cast in France, indicate that when it was considered necessary Ile de France could be provided with state of the art weaponry.

Although coastal batteries were set up on Ile de la Passe, in other ways the islet resembled a ship. All supplies, building materials, ammunition and guns, food and drinking water had to be supplied from the mainland. The sea can be rough and landing difficult. Officers, soldiers, craftsmen and labourers were isolated from the mainland, cut off from the company of others and creature comforts. To be posted on Ile de la Passe must have seemed like cruel punishment. This might be reflected in the almost complete absence of rubbish from periods of military occupation. Officers would have had a hard time keeping the men from excessive boredom which could be partially alleviated by continual cleaning. It is only since the Second World War, whence the islet has been given over to fishing parties and campers, that rubbish has accumulated. Exceptionally, however, it has been seen that there may be some possibility of documenting certain aspects of French military life on Ile de la Passe through further careful excavation in trench TR11. Here preliminary results include evidence of burning and the good preservation of animal bone from levels that should probably be dated early on in the period of French activity. There is also a slight possibility that faunal remains from yet earlier times might be recovered from immediately above the bedrock.

Outstanding archaeological problems to be addressed in future seasons include a fuller understanding of the Central Platform, particularly the additional phases at its north-eastern end, and the possibility that evidence survives for a French barrack building that maps show in front of the Powder House.

## 21. PUBLIC OUTREACH

Ile de la Passe was sometimes thought to be pivotal to control of the Indian Ocean. At times it was strongly fortified, particularly by the French. Many of these fortifications are well preserved. How the People of Mauritius and visitors from the four corners of the world will share the responsibility of preserving the islet and its heritage will dictate its future. The dramatic and evocative situation of the islet, together with the strong visual impact of well preserved and perhaps unique structures, make for a Cultural Heritage Resource of unsurpassable importance for future generations of Mauritians. The mute stones speak volumes that can be experienced from any number of views, accessible to adults and children alike from any strand of the complex web of Mauritian culture. Organised visits, especially of schoolchildren and students, bring to life aspects of the past that have shaped Mauritius and which help to define what it means to be Mauritian.

On the 4<sup>th</sup> of February filming crews from the MBC and the University documented the visit from members of the NHF Board of Directors and a group from the University of Mauritius (Fig. 65).

A public lecture, organised Dr. Vijaya Teelock and hosted by the University of Mauritius and The National Heritage Fund, was delivered on the 11th February 2004. Radio and television crews covered the event.

Several articles appeared in the local press including one in the *Week End* of the 29<sup>th</sup> February (Fig. 66), by Jean Claude Antoine who joined the team on Ile de la Passe.



*Figure 65. A visit by Members of the NHF Board, Staff and Students from the University of Mauritius immortalised by the MBC. (04jv1510)*



*Figure 66. An article on Ile de la Passe by Jean Claude Antoine appeared in the Week End of the 29<sup>th</sup> February 2004.*

## 22. FUTURE PERSPECTIVES

Cutting edge technology provides real time virtual reality recreations of the past in the present (Fig. 67). The potential is enormous. Mauritian school children and foreign guests could be re-enacting the battle of Grand Port in 2010, exactly two hundred years after the French won the naval battle against the British. Who knows, perhaps even the outcome could be changed?



*Figure 67. The real setting can provide the backdrop for the virtual reality.*

