

ILE DE LA PASSE

REPORT 3

MANAGEMENT, DEVELOPMENT AND RESEARCH: RECOMMENDATIONS AND PROPOSALS



The Observation Tower.

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Cover picture: *The Observation Tower. (01jv0203)*

INTRODUCTION

This report, based on the current state of knowledge and taking due note of the predicted impact of increased tourism, sets out some of the major issues concerning Heritage Management at Ile de la Passe. Proposals are made for action that will preserve and enhance both the historical and the natural assets of the islet which will be a focal point within the wider scheme of Heritage and Wild Life Management that is envisaged for the region. Priorities for restoration and conservation of standing architecture and extant archaeological features have been drawn. In addition, future roles for archaeology within the unfolding and continuous processes of historical and archaeological research are discussed.

In making the recommendations we have been conscious of several issues.

1. The architectural and archaeological remains on Ile de la Passe are both finite and fragile.
2. The increase in the number of visitors now envisaged, while it provides a most welcome window of opportunity for the implementation of conservation measures, will have a substantial impact on the remains. The response will need to be a program for *Heritage Management*, sometimes called *Cultural Resource Management* (CRM), which will include advanced planning and which will also necessitate implementation of an ongoing program of maintenance and protection.
3. It is understood that the most important monuments of the island are those that belong to the French period, that is, from the second quarter of the 17th Century to 1810.

There are two central reasons for focus on this first period, one historical and one a matter of practicality. Historically, following the defeat of Napoleon Bonaparte the British were in such a position of global command that its position of supremacy was not to be seriously challenged until the Great War (WW I). Further, as far as Mauritius was concerned, technological advances and the rivalries of the Great Powers in the first half of the Twentieth Century hugely reduced the level of strategic importance that the island had played in the Age of Sail. The practical reason, which is a direct result of the unique historical role of Mauritius, is that the French built defences to the very highest standards of their day. The monuments that have survived, in a remarkably good state of preservation, on Ile de la Passe are of great architectural importance over a very great part of both the Southern and the Northern Hemispheres. On the other hand, while the later, British, remains are of very considerable interest to historians and archaeologists whose central concern is with the fortunes and policies of Colonialism, and what remains does indeed represent a part of the progress of Mauritius through that most important era from the abolition of slavery until the end of the Second World War (WW II), it would not perhaps be unjust to say that the defences of Ile de la Passe that date from these times represent a colonial side-show. This conclusion, that the buildings put up in the British period, and those from WW II in particular, are of lesser importance than pre-1810 structures, is confirmed by study of the remains themselves. The stone buildings, Structures 10 – 12, do have some architectural merit (whatever their precise date and purpose), but the WW II buildings and modifications were built for the duration of the war and not as a permanent, lasting, system of defence.

These conclusions, concerning the relative merit of structures from different periods, are of importance in drawing up a plan for the management and development of the island. Priorities are more easily established, materials more easily chosen and interventive actions can be proposed with greater authority.

THE CURRENT STATE OF KNOWLEDGE

In January 2002 a two-week long program of preliminary architectural and archaeological survey was conducted on Ile de la Passe. There were two principal aims:

1. An archaeological survey of the remains from all periods, together with estimates of their condition and stability, as a step towards drawing up the archaeological component of a Heritage Management Plan.
- 2: Basic architectural documentation of standing structures together with an assessment of their present condition and recommendations as to what action might be needed for their preservation and enhancement.

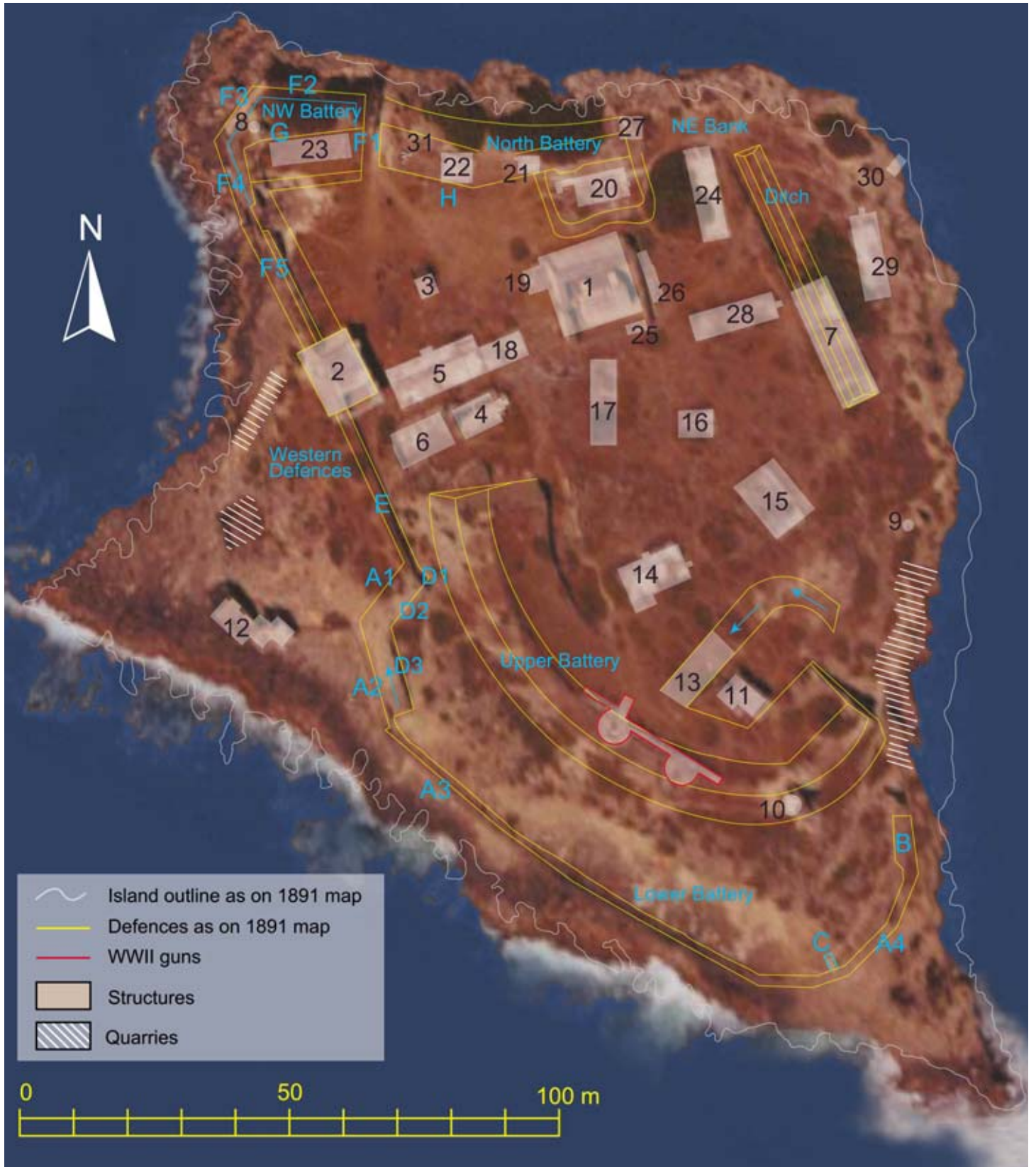


Surveyors from the Ministry of Lands and Housing making a map of Ile de la Passe in January 2002. (02cn0517)

The results are presented in:

- Report 1: Archaeological and Architectural Survey,*
- Report 2: Basic Architectural Survey of Standing Structures.*

The same Map, on which the structures have been numbered, is included in each of these reports for ease of reference.



Map, created from an aerial photo stretched over the 1891, plan showing the main features and structure numbers used in these reports.

PRINCIPLES OF HERITAGE MANAGEMENT AT ILE DE LA PASSE



Sunrise over the Islands. (m02jv2203)

Ile de la Passe is a unique heritage site of supreme importance to the history of Mauritius in particular and of the Indian Ocean in general. There can be no doubt that the structures and remains dating to the period of French rule, that is, from the early eighteenth century until 1810, are of the greatest value. Nevertheless, remains from all periods are evidence of the unfolding history of Mauritius and, as such, have each their own value and interest.

Ile de la Passe is the westernmost of a string of islets that have formed on the coral reef to the east of the pass that leads into the historic and very scenic bay of Grand Port. An evocative nineteenth century lighthouse still stands in a dilapidated condition on one of these islets, Ile aux Fouquets (Ile au Phare). Inside the bay the larger island of Ile aux Aigrettes is now managed by the Mauritian Wild Life Foundation. This Report, and the recommendations therein, are restricted to Ile de la Passe itself, although it is fully understood that an integrated Management Plan for the entire group of islands is in the process of being formulated. Some of the wider policy issues that this comprehensive Plan must address will have very important repercussions for Ile de la Passe, particularly with regard to the level of infrastructure that will be provided and the question of wardenship and protection. In as far as it has been possible we have restricted our recommendations to architectural and archaeological issues, merely noting wider policy issues where they seemed particularly relevant.

GUIDING PRINCIPLES

The guiding principals on which this report is based are:

1. Participation by local communities and interests is essential for the success of any scheme.
2. All remains of every period are of importance and each should be preserved.
3. Any action that is taken should, if at all possible, be reversible.
4. Preservation, conservation and restoration measures should make as little alteration as possible to the extant remains.
5. New materials should, wherever possible, replicate the materials originally used. Where this is not possible (e.g. asbestos) the modern substitute should be faithful to the original character of the structures.
6. Any scheme of management must be sustainable, will need to be continual and will require constant monitoring.
7. Any scheme will entail a more or less constant official presence on the islet and will therefore require the introduction of new facilities. These last should be as unobtrusive and as restrained as possible.

DEVELOPMENT ISSUES

Aims and Objectives

The components of a development plan will need to include:

1. Protection of assets
 - Preservation or protection
 - Conservation through active measures
 - Restoration through partial rebuilding
2. Enhancement of assets
3. Provision of facilities and amenities
4. Public outreach

1. Protection of assets

Protection of existing assets, i.e. prevention of further deterioration and destruction, has to be the first priority. Three levels of Protection may be summarised: passive preservation by means of restricting access to vulnerable areas (such as paths down steep banks of loose coral), conservation involving action such as the repositioning of loose stones or repointing, and restoration that might entail re-roofing, the fitting of doors and shutters and so forth.

2. Enhancement of assets

Enhancement of assets takes restoration a stage further by adding issues relating to new functions for existing or, even, for rebuilt structures. Such functions might include facilities for wardens, displays and exhibits, retail outlets, etc.

3. Provision of facilities and amenities

The provision of facilities, most urgently toilets and washrooms, might very well entail the construction of entirely new structures, the provision of water, drainage and septic pit.

4. Public outreach

Public outreach centres on two publics, a Mauritian public and a tourist public. There is a duty to ensure that heritage on Ile de la Passe is preserved for future generations of Mauritians. First and foremost it is Mauritians who should be provided with every opportunity to appreciate the monuments and to derive some understanding of what they mean for the history and identity of Mauritius. Outreach to a Mauritian public will need to be at several levels, including the extremes of local interest and internal tourism. International tourism, the tourist industry and related organisations will, on the other hand, provide the principal means of financing sustainability in any management scheme for the foreseeable future. In this respect, outreach involves attracting tourists to visit the islet in the first place and, once there, in providing appropriate levels of information and explanation.



Using photograph to render a 3D digital model of the Powder House produces a very realistic impression which can be explored in virtual reality.

How much should and can be done will depend on both the philosophy that is eventually adopted and also on the level of financing and resources that are made available. Whatever is done must be done well. Here we have set out what we consider to be the priorities.

NECESSITIES AND NEEDS

Warden

The first and foremost necessity will be to assure more or less permanent surveillance of the island to assist visitors in gaining the greatest possible pleasure and enjoyment out of their visit while, at the same time, preventing vandalism and limiting negative impact on vulnerable features. Ideally there should be a permanent presence, although the logistical difficulties of this are not inconsiderable, implementation of a viable scheme is the topmost priority. The issue is further complicated by the concept of a much larger scheme of management that embraces other islets in the bay. From the viewpoint of this report it needs to be stressed that extended physical presence on the islet will necessitate the provision of some facilities.

Accommodation for Warden(s)

Shelter, comfort, a kitchen and a washroom will be the minimum requirements for a permanent or semi-permanent presence. One possible solution is that, at least in an initial stage of infrastructure development, a warden might best be accommodated in the Storehouse (Structure 2 on the Map). Accommodation might either be restricted to only one side of the building, or could, perhaps, take up the entire structure, depending on the requirements set out in the management plan. For reasons of safety as well as for the preservation of the building, restoration of the Storehouse is the most urgent priority.

Flexibility that makes provision for a range of options, regarding both the future use of the internal space and also the variety of possible uses to which the structure could be put in the future, should be built into any scheme for restoration. In a later phase of development alternative and more spacious accommodation for a warden might be considered, perhaps by rebuilding one of the rebuilt WW II structures.

The Provision of Facilities

Facilities that do not currently exist and which will need to be provided include water, toilets and washing areas; construction of a jetty or enhanced landing facilities; power generation for lighting, electrical appliances, means of communications and, perhaps, the installation of remote surveillance systems.

Water

The most important commodity, which will facilitate all other enterprises on the islet, is water. Predecessors have very sensibly built a very large cistern which has survived intact for some 250 years. This cistern, which holds 11,000 gallons, might still be fully serviceable if it was properly controlled. The obvious solution, then, is to reuse this cistern. As described elsewhere, the major requirement would be a new cover. Ideally this would be a construction that replicated the nineteenth century shingle roof, although a temporary alternative might be considered in the immediate future.

Drinking water will need to be brought from the mainland. Water for kitchen, washing facilities and toilets could be collected in the existing Cistern and redistributed as needed by means of pumps.

Electric pumps (see "power" below), or perhaps wind pumps, could be used to raise and distribute water from the cistern to discretely sited header tanks for key installations.

Toilets

It will be essential to provide and maintain toilets. The question of scale is complex because it involves issues concerning tourist numbers, the length of time groups will be on the islet, the extent and nature of facilities to be provided on Ile aux Fouquets (Ile au Phare),

the extent to which visitors will be encouraged or discouraged to dine on the islet and so forth. There is also the question of cleaning and maintenance.

The most essential need will be the provision of a minimal basic facility that could be extended or replaced at some future date. Issues of particular concern include the location, the system of flushing or cleaning, the provision of water, the type of cesspit, arrangements for cleaning and maintenance and levels of use. These complex issues are, of course, inter-related. One possibility is the adaptation of the Western, Searchlight, Building which, it might be considered, is situated a suitable distance away from the centre of interest for the installation of discrete toilet facilities. A modern, sophisticated dry toilet system would have the advantage of minimising the use of water.

Power Provision

Electric power will be essential. Bringing power from the mainland would be prohibitively expensive. The obvious solution to this particular problem is a combination of wind and solar power, perhaps backed up by a generator. Sighting solar and wind generating units so that they do not detract from the visual atmosphere of the islet will need careful planning, but with careful forethought this could be achieved.

Jetty or Landing Platform

A jetty or landing platform will have to be built to facilitate embarkation and disembarkation from boats. This also raises the issue of entrance control. One possibility that has been suggested is a floating jetty. If this was technically possible and affordable it be a very attractive solution. Another, perhaps simpler, solution might be the provision of mooring buoys with retractable walkways on the island.

If a permanent presence on the island is established it might be desirable to always have a boat available to the person on duty, as well as a direct link to the Coast Guard, but it is to be remembered that a rough sea can make the journey to the mainland hazardous.

Communication

The mobile telephone network has greatly facilitated communications although issues related to battery charging have to be addressed. Some alternative means of communication, radio or perhaps simply flags, might also be desirable.

Visitors Centre

There are, perhaps, two inter-related functions of a Visitors Centre both of which are central to any scheme of management: the provision of information and the presence of an attractive sales outlet for souvenirs.

Here the possibilities are quite wide. We would suggest one possible scheme whereby in an initial phase the Storehouse was divided between facilities for wardens and a visitors centre. In a second phase a more spacious visitors centre could be provided in one of several locations, either the whole of the Storehouse or some other structure.

These ideas are set out in greater detail below. Here it is worth stressing that tourists need to be made welcome, need to have some experience of the historic atmosphere of the islet to which they can relate, and need to be encouraged - in return - to part with their money.

RESTORATION AND ENHANCEMENT OF ASSETS

Here are set out the priorities for restoration of standing buildings on Ile de la Passe. Details of the current state of the structures are given in the *Basic Architectural Report*, so that it is not necessary to provide more than a brief summary here. The order of priority is based almost entirely on the present condition of the buildings, taking into account future possibilities for the use of each of the standing buildings and the safety of visitors.

The top five priorities are:

1. The Cistern (Structure 4)
2. Storehouse (Structure 2)
3. The Hot Shot Furnace (Structure 3)
4. The Observation Tower (Structure 10)
5. The Breach in the North-West Defences (Wall F)

The Cistern (Structure 4)

The cistern needs to be cleaned, repaired and repointed where necessary, provided with a cover or roof and have a new system whereby rainwater is channelled into it. The cistern was originally filled by the collection of runoff rainwater from the double pitched shingle roofs of both the cistern itself and the Barracks (Structure 5). It is assumed that this system generally provided sufficient water for the everyday needs of a garrison since, in so far as is known, other methods of water collection and storage were not attempted. Re-roofing the Cistern and the Storehouse, with the discrete use of piping from the latter, might very well provide sufficient water for most needs. Success would in great part depend on proper management and controlled usage. A roof or cover would prevent debris and rubbish entering the cistern and would also inhibit the growth of algae.



The Cistern. (m02cn0401)

The best solution would be the installation of a new double pitched roof with wooden shingles over a timber frame. Such a new roof would imitate the earlier roof that is mentioned in the British report of 1837 but which was presumably French in origin. Further research in the archives might reveal further details about this roof, such as the precise arrangement at each of the two ends, and might also ascertain whether it was, as seems likely, of French construction. It is apparent that the cistern was given a new cover in WW II when, presumably, the last vestiges of the earlier roof were removed. Since the provision of water is such a high priority in any management plan it might be thought worth considering the installation of a temporary cover.

The Storehouse (Structure 2)

The present condition of the Storehouse is perilous. The roof of the southern room has been largely removed and, presumably, the remainder of the roof will need to be removed since it has lost the greater part of its structural strength. An expert report from a structural engineer is needed in order to ascertain if the WW II internal partition walls are structurally safe, or whether they too will need to be demolished. Otherwise, this magnificent building is sound.

Action

If urgent action is not taken this most important building will very rapidly decay now that a large part of the roof has been recently demolished because its of perilous condition and the northern part is in imminent danger of collapse.

The structure needs a new, flat, roof supported on timber joists that replicates as nearly as possible the original French aspect of the building in as far as it can be ascertained from the archives. It will be necessary either to remove or to consolidate the existing partition walls. No other structural action needs to be taken, but issues concerning how the new roof might be anchored and how its weight might be supported will need to addressed. A new door together with new windows and shutters are also required.

The internal WW II fitments (plinths for generators and cable ducts) must be preserved. The cable ducts could be fitted with new grills and perhaps a temporary false floor could be installed in part or all of one room as a matter of expediency.



The Storehouse. (m02jv0401)

Function

In an initial phase we suggest that the first function should be the warden's accommodation. This for two reasons: firstly, it is the most suitable standing building; and secondly, its location provides for the best possible visual coverage of entry from the Landing Point and of the entrance to the Powder House. If the restoration is to retain the current tripartite division it would be possible, even desirable, to make one side into a Visitor Centre.

In the longer term the building could be given over to one of these two functions in its entirety. The Storehouse would, of course, make an excellent Visitors Centre; something that might be possible in the future if the entrance and the central area could be kept under proper surveillance by, for instance, security cameras.

Recommendations

A survey of the building by a structural engineer is the most urgent requirement. On the basis of such a survey an architectural scheme for re-roofing and for the use in the internal space can be proposed and costs estimated.

The Shot Furnace (Structure 3)

The hot shot furnace is one of the most interesting and exciting structures on Ile de la Passe. Its present state, however, is rather disturbing. Even if it does not suffer further damage from vandals, or as a result of more fires being lit, its condition is precarious. Some temporary support to prevent total collapse of the roof might be advantageous. It is clear, however, that in the longer term a full program of restoration is required.



The Shot Furnace. (m02jv1023)

Action

Restoration would be preceded by very careful cleaning, recording and conservation of earlier structural remains beneath and adjacent to the furnace. Any foundations that are revealed will only comprise a single course of stone resting directly on the bedrock, and they will require repointing with a lime mortar followed by reburial under sand.

Restoration of the furnace itself will need to be preceded by several studies. Meticulous cleaning of the interior would permit detail records to be made of the remaining iron work, something that is essential in order to reach an understanding of how the furnace was operated. The surviving metal, or rather, its corrosion products, have lost almost all of their strength, with the result that once cleaned that will need to be treated at once if they are to be preserved. Another requirement would entail analysis of the original materials, especially the mortars and argamasse, and of the bricks.

Full restoration would include replacement of the missing brickwork from the vault and chimney. The bricks might be salvaged 18th century bricks from elsewhere or modern reproductions. In either case there must be a complete record made of what now survives before restoration and the introduction of foreign materials. On one side there has been some modern underpinning of the foundations with what appears to be Portland cement. Expert opinion is required to assess if this should be removed and replaced by a more sympathetic material or whether the further disturbance would best be avoided.

Some of the basalt has cracked as a result of the heat that was generated in the furnace. These broken stones will need repair and gaps will need to be filled. This type of stone conservation also requires expert advice.

Recommendations

Both the importance of the monument and the complexity of the materials are such that a highly experienced group of conservation experts will be required to make a full assessment and to implement a program of conservation and restoration. Such expertise will only be available through international organisations, such as UNESCO or the Paul J. Getty Foundation. It goes without saying that such a program will be costly, but inappropriate and ill-designed action would, in the long run, be more expensive and might very well cause irreversible injury to the furnace.

The Observation Tower (Structure 10)

The Observation Tower provides, as befits its original military function, a magnificent view over the pass and could, perhaps, provide equally magnificent views over the reef to the east. The building is one of the gems of Ile de la Passe not so much for its architecture, but for the views that it would provide and its potential for associated displays on the internal walls.



The Observation Tower. (m02jv0417)

Action

The present condition of the Observation Tower is, if anything, even more perilous than that of the Storehouse. The WW II reinforced concrete roof has partially collapsed and the entire roof will need to be removed since it too has lost the greater part of its structural strength. Again, a report from a structural engineer would be most advantageous and should address two specific issues: how to remove the roof without completely dislodging the basalt walling on which the roof rests and, secondly, the structural feasibility of reopening the two original windows on the eastern side so as to afford views over Ile au Phare (Ile aux Fouquets) and the reef.

A new roof needs to be constructed. There is no good reason why a new roof should not be of reinforced concrete resting on a new ring beam, provided that the quality of materials and workmanship is such that the reinforcement has an acceptable length of life and, most importantly, that the reconstruction be carried out in such a way that should the concrete require replacement in the future it can be removed without causing further structural damage to the stone walling on which it will rest. The new roof would be covered with a low, conical, coral and cement cap that replaces the extant original.

A new wooden floor, replicating the original floor of tongue-and-groove boarding supported by wooden joists, needs to be laid together with a new staircase. It might be thought preferable that the new staircase should be designed to take account of visitor needs rather than attempting to authentically reproduce an original design (even if the latter could be discerned).

The existing opening would need to have waterproof closable shutters fitted, perhaps of WW II basic design in more durable modern materials. If the two windows on the north-eastern side could be re-opened, they could be fitted in a similar manner. A new door is required.

Function

A visit to the restored first floor of the Observation Tower would perhaps be the highlight of a tour of Ile de la Passe for the majority of visitors. The vistas are superb and a complete overview of the islet can also be obtained. Waterproof (perhaps plastified) display panels at both ground floor and first floor level would be enormous assets.

Recommendations

A survey of the building by a structural engineer is the most urgent requirement. On the basis of such a survey an architectural scheme for re-roofing and consolidation of the upper stone walling can be proposed. The restoration is more straightforward than that of the Storehouse in that the span of the roof is modest and there is no difficulty about the use of a new reinforced concrete ring beam and roof. Here too some action is needed very urgently because further collapse of the roof will undoubtedly do great damage to the earlier stone walls.

The North-Western Defences (Wall F)

Although not a building, the breach in the most impressive stretch of defensive walling on the islet is in need of considerable restoration if much more is not to be lost. There is a range of options, from minimal consolidation to total rebuilding, each of which have points in their favour. Perhaps the strongest argument against total rebuilding, apart from any consideration of cost, is that the breach allows visitors easy access to the edge of the islet at this most charming point.



*Breach in the North-Western Defences.
(m02jv1012)*

Recommendations

We would recommend underpinning the wall where the sea has undermined the footings, particularly on the southern side of the breach, and rebuilding a little of the wall in order to protect the eroding sides. This scheme would slow erosion without obscuring the clearly visible construction techniques that were originally used and, at the same time, would leave open access to the shore. In this way the character of the breach as it presumably was by WW II, when a drain was taken through it, would not be altered.

At the same time some very limited conservation and restoration could be undertaken on the inner banks and on the broken end of Wall G where at least some of the displaced basalt blocks could, perhaps, be repositioned.

The Powder House (Structure 1)

As regards this report, there is nothing further to add concerning the Powder House. Minor repairs would not go amiss but there are no major problems. The top of the enclosure wall needs to be examined where it was flattened in order to seat WW II water tanks. None of the known methods of conservation that could be applied to the soft coral block have yet proved very satisfactory so that, in the short term at least, the acceptance of natural weathering is inevitable. Graffiti thus need to be recorded as soon as possible.

The Powder House should not be given any new functional role that might in any way detract from its unique architectural quality. Displays and panels could be introduced if carefully designed.

The Other Standing Buildings

There are three other standing buildings (apart from the two sentry posts). These are the Underground Generator Halls (Structure 7), the Central Building (Structure 11) and the Western or Searchlight Building (Structure 12). All three buildings have potential for future use and all three have essentially the same problems of conservation. None are in imminent danger and none pose any particular danger to visitors.



The Underground Generator Halls. (m02cn0417)



The Western Building.(m02jv0419)



The Central Building.(m02jv0412)

Conservation Issues

All three structures have WW II reinforced concrete roofs which are breaking up as the iron reinforcement corrodes and expands. In the long term there will need to be some positive action taken. The precise action will depend, in very large part on the assessment made by structural engineers as to whether the roofs can be sustained or will eventually require total replacement. Ideally we would like to see the installation of false ceilings with, if necessary, sufficient strength to support the decaying reinforced concrete. It might also be advantageous to apply a waterproof coating to the top surface. The most important function of the false ceiling, apart from structural considerations, would be to prevent concrete falling from the under surface as the corroding iron expands. Shuttering for windows and new doors are also required.

Functions

All three structures have the potential to function as useful buildings without any adaptation being made to their existing plans. There are numerous possibilities. On the other hand, there are also logistical matters to consider, of which the lack of light is the most obvious. For the Generator halls there is also the question of flooding and drainage and, for the Western Building, its exposure to rough seas.

Recommendations

Advice from a structural engineer is required with regard to the roofs. Shutters and doors need to be designed and fitted. If the buildings are to be used lighting will need to be installed and powered.

World War II Building Platforms

The main issue in this Report is the possibility of rebuilding one or more of the WW II structures. The reasons for rebuilding one or more WW II structures are twofold: to provide a realistic reconstruction and to create a functional buildings.



WWII Building Platforms. (m02jv0314)

Functions

Functions could include facilities for wardens, exhibition space, retail outlets, shelter and rest areas that relieve pressure of visitor numbers from other assets, storage of equipment and archaeological materials.

Recommendations

Reconstructions of WW II buildings should be restricted to those on the eastern side (e.g. Structures 15, 16, 24, 28 and 29) and most certainly not those structure that would detract from views of the French period buildings and the Upper Battery.

Appearances should replicate, in as far as it is possible, the original pre-fabricated structures.

Modern materials, such as fibre cement sheeting (not asbestos) will need to used.

THE IMPACT OF TOURISM

Introduction

Two assumptions underlie this section of report. The first of these assumptions is that the higher public profile which the National Heritage Trust Fund of Mauritius currently envisages for Ile de la Passe will rapidly lead to a very considerable increase in the numbers of people visiting the Islet. The second assumption is that increased interest in the monuments and remains on Ile de la Passe will provide the stimulus for building a much-needed program of Heritage Management for the island. It is nevertheless inescapable that a substantial increase in the number of visitors poses certain threats to the remains. It is the purpose of this report to identify those threats and to suggest ways in which they might be averted.

At the present moment, January 2002, it would seem that visitors Ile de la Passe in any one year are to numbered in their hundreds. Of these, few stay more than one hour. Significant deterrents to visiting are the difficulty of landing and the near impossibility of mooring a boat to the landing place. A tenfold increase in the number of visitors can easily be envisaged in the next few years, and the potential for considerably higher numbers most certainly exists over the longer term.

Impacts

The threats posed by an increase in visitor numbers are generally the same as those that confront heritage management worldwide. Specific issues at Ile de la Passe include the small, two hectare, size of the site, the absence of services, such as water and electricity, together with the difficulty of gaining safe access in bad weather.

Graffiti

Increased numbers of visitors, Mauritian and foreign, will inevitably lead to a great increase in the number of graffiti that are carved and painted on the buildings and rock surfaces. This global problem is particularly acute at Ile de la Passe for two reasons: firstly, the prominence of older graffiti, mostly carved by British troops in the 1840s, the visual impact of which acts as a spur to modern visitors to leave behind a record of their own; and secondly, the softness of the fossilised coral and sandstone, which is the main building material, that makes inscription relatively fast and easy.



Spray paint on the Shot Furnace is almost the first thing that the visitor sees. (02iv1215)

The carving or painting of new graffiti, for whatever motive or intention, should be actively discouraged for two reasons. Firstly, most of the new graffiti are unsightly and thus lessen the attractiveness of the entire islet (as, no doubt, were those of the nineteenth century when freshly carved). Secondly, new graffiti are very often painted, and even carved, with no regard for older graffiti which, however slight their aesthetic attributes, are historical records of not inconsiderable importance.

Vandalism

The wanton and mindless destruction of remains, particularly built structures, which is very often carried out in a competitive spirit (who can move the biggest stone). Sadly, there is some evidence of such recent vandalism (e.g. at the doorway of the northern sentry post) and

it would be prudent to anticipate future activity of this same kind. Additional threats include the lighting of fires (now officially banned), particularly against wall faces and inside buildings, and the removal of stones from walling for use as seats at picnics.

“Treasure Hunting”

The use of metal detectors to search for ancient artefacts and fragments is a growing threat to archaeological sites the world over. Besides the loss of objects themselves there is the greater loss of context for any particular piece and the general destruction that results from random digging. At Ile de la Passe a few determined hobbyists could do great damage, particularly to the ramparts, in a very short space of time.

Erosion of Wall-Tops

Visitors to ancient sites are naturally inclined to walk along the tops of walls. One reason for this tendency is that the greater elevation very often provides a more comprehensive view. In addition, wall-tops also offer level and direct routes. Walls, however, are neither designed nor constructed as walkways. The passage of feet very soon dislodges stones from wall faces, with the result that the wall rapidly crumbles as a result of further wear and an acceleration of natural weathering processes. The softness of the fossilised coral from which the walls on Ile de la Passe are most usually constructed makes this particular danger a unusually severe.



Wall A and Wall D with the rubble fill showing the way in foot traffic and nature are eroding the ramped casemate fill and has undermined the base of the wall on the right. (02jv1903)

Erosion of Berms, Banks and Ramparts

There are a number of existing tracks, some of which are ancient and stable, some of which appear to have been created during World War II (e.g the track to the toilet), and some of which are apparently of more recent date. Visitors naturally follow these tracks since they often take the shortest route from one feature of the site to another and because they are relatively free of obstacles. Some of these tracks, however, traverse defensive banks, berms and ramparts. These defensive features are composed of loose material that rests at unnaturally steep angles, both factors that make them particularly vulnerable. The constant movement of feet dislodges the surface and removes binding vegetation thus causing these tracks hollow. Torrential rain further deepens the hollows. If not checked these tracks will eventually lead to very significant erosion. The north end of the elevated battery rampart is of particular concern at the present time and serves to demonstrate how serious the problem could become.



Vegetation on the wall top prevents visitors walking along the wall edge and dislodging stones. Note how the soft fossilised coral is slowly eroding. (02jv0218)



The southern end of the Upper Battery showing erosion caused by the track down the rampart, the deterrent effect of bushes and the inert path at the base of the wall. (02jv1620)

Wider Issues

The implementation of a Management Plan will of necessity involve the creation of certain facilities. These will have to include domestic facilities for a guard and or guides, and also public toilets. It is not perhaps practicable to attempt to assess in detail the specific impacts that these changes will create because of the very wide range of possible options.

Recommendations

Ile de la Passe is a small, non-renewable heritage resource of inestimable value to Mauritius. The first and overriding concern is that the islet and its remains should be preserved for future generations, both to learn from and to enjoy. The second concern is that any management plan is sustainable. The third concern is the process of preservation and management does not of itself cause needless and irreparable damage. It is axiomatic that any management plan contains a central place for continual monitoring, maintenance and repair that will be continually needed as a result of an increased human presence (as well as a natural processes of erosion and decay).

Recommendations are set out below:

1. Graffiti writing, vandalism and treasure hunting can only be controlled by effective surveillance.
2. Erosion can be checked by creating and clearly marking paths or trails along routes where they will cause as little damage as possible.
3. Planned paths will need to be monitored and maintained, perhaps by the regular replacement of levelling material along certain stretches.
4. Access to wall-tops can to some extent be discouraged by blocking tracks and by making repairs where ascent is currently easy. Strategic planting of suitable and appropriate plants could be considered.
5. Existing tracks that are causing erosion should be obliterated. If necessary plants or other obstacles could be introduced to prevent re-establishment of these routes. There is a complication here in that a good number of the paths that are causing erosion of the ramparts and banks originate from World War II and are thus themselves a part of the historic development of the island. Thus, although continued use will in some cases need to be discouraged the obliteration of WW II pathways may not be desirable.
6. There are areas where some conservation of the remains is necessary, even urgent. In as far as it is compatible with other conservation issues any repair to walls and structures should be carried out in ways that minimise the ease by which visitors might clamber onto walls and structures.
7. Any clearance of vegetation together with any program of new planting should be carried out only with the consent and full cooperation of the Mauritian Wild Life Foundation.

Conclusions

A very large increase in the number of visitors, at least ten times the present number, is anticipated in the near future. Such a rise in the number of visitors, together with the introduction of new visitor facilities, will have a significant impact on the remains. If not checked and controlled the impact will cause the rapid onset of erosion. It is therefore essential that a Heritage Management plan be drawn up and implemented. Amongst the many issues that such a plan will need to address, the impact of visitors on the non-renewable archaeological resources of Ile de la Passe must be given the highest possible priority.

ARCHAEOLOGY, CONSERVATION AND RESTORATION

Archaeological Research at Ile de la Passe can usefully be divided into three inter-related areas: integration with architectural conservation and restoration, detailed recording and interpretation of extant remains, and excavation.



Measuring and recording the Ditch. (m02jv2212)

POTENTIAL FOR ARCHAEOLOGICAL RESEARCH

Aims and Objectives

Ile de la Passe is a small, finite, and non-renewable archaeological resource. The first concern of any program of archaeological research design must, therefore, be the intact preservation of as much of what remains as possible. Archaeological research should thus involve as little intrusive investigation as possible in the implementation of any action towards the achievement of stated goals. Full and complete survey of the extant remains, combined with exhaustive study of archival material, should be fully integrated with any and all intrusive investigation, i.e. archaeological excavation, carried out purely for the purpose of research. Where there is a case to be made for very precisely targeted excavation it will be essential that the program of research includes total recovery of all possible types of evidence. Co-operation of specialists in all relevant fields should be secured very early in the development of any research design and agreements for specialist studies and analyses should be established before the commencement of any digging.

Detailed Recording of Extant Remains

There is a need to document as fully and completely as possible all extant remains. A program of recording should precede the active conservation or excavation of any structure or feature. The need for documentation is twofold. First is the fragile state of some of the remains, including many of the graffiti and most of the building platforms, and the potential acceleration of erosion that will be caused by greater numbers of visitors. Secondly, interpretation of the remains, both from an archaeological and historical point of view and for the presentation of the site to different publics, is dependent on obtaining a detailed knowledge of the remains themselves and of their physical (spatial and chronological) relationships.



Recording extant remains. (m02jv0315)

Excavation

Excavation can be divided into two, although in many ways the division is a false one because the ultimate goals are the same. One reason for initiating excavation is the need to record archaeological deposits that are going to be disturbed as a result of other measures that are deemed to be necessary (such as architectural restoration or the provision of facilities). The other reason for excavating would be as part of a program of archaeological research. It is axiomatic that all excavation is destruction, and it is therefore essential that any excavation is carried out for very good reasons and to the highest possible standard. On the other hand, there are a number of issues and areas of research interest that can only be taken forward through an investigative scheme of archaeological research.

The Value of Archaeology at Ile de la Passe

Archaeology is the most eclectic of all of the sciences and humanities. It is therefore entirely wrong to try to make clear distinctions between a study of the architectural history and the archaeology at Ile de la Passe. It would be equally wrong to engage in any form of archaeological research without the fullest possible access to archival material.

At Ile de la Passe archaeology can provide a number of avenues for understanding the development of the site and the realities of life on the islet.

1. Archaeology is particularly good at working out the chronological relationships between different morphological features and structures. Many of these physical relationships can be established by careful survey of extant remains, perhaps combined with the removal of some vegetation. It is therefore possible to document the complex stages of development of the defences and associated structures in considerable detail.
2. Archaeological investigations will make it possible to document features and structures that are no longer standing. This holds for structures that are shown on old maps or referred to in archival sources, but which are no longer visible. Results will, of course, only be commensurate with the degree of preservation of surface and sub-surface remains.
3. Structural history and stratigraphic relationships that are not visible from surface survey or study of standing architecture might be established by small and precisely targeted excavations.
4. Survey and archaeological excavation will perhaps recover weaponry and associated artefacts that will supplement and enhance historical records and accounts.
5. Excavation might produce evidence that sheds light on the practicalities of living on Ile de la Passe. Of particular importance in that respect would be food remains, although it might well be expected that the majority of refuse would have been thrown into the sea.
6. Equally, excavation might produce artefacts, such as pottery fragments, that would illustrate socio-economic realities and indicate connections.
7. Archaeological documentation is essential in determining the materials and techniques that were used for building construction in the different phases and periods. Such evidence would greatly aid in the establishment of the place of Ile de la Passe in the growth and development of coastal fortification in the Indian Ocean and, indeed, within the entire sphere of European expansion in the eighteenth century. In addition, this kind of information would provide the basis for any program of conservation and restoration of structures.
8. The public presentation of archaeological evidence adds flesh to the dry bones of history. The material evidence, properly displayed, makes past ages believable and vivid.
9. It is entirely possible that excavation would provide environmental evidence dating to times before there was any human activity at Mauritius. Such evidence would be a by-product of any excavation at Ile de la Passe rather than the primary target of any scheme of research.
10. A study of the graffiti, which might perhaps be classed as the sub-discipline of epigraphy, would provide historical information. Additionally, there might be some evidence that would be of help in determining the date, or relative date, of specific features.

CONSERVATION AND RESTORATION OF STRUCTURES

A very major component of any management plan for Ile de la Passe has to include the active conservation and restoration of the standing buildings and remains. This is for three reasons. Firstly, in their present condition all but the Powder House are in a dangerous state. Secondly, if positive action is not taken in the near future the monuments are going to suffer great deterioration that will eventually lead to further collapse. Thirdly, management of the island will entail a physical presence on the island and, therefore, the creation of some infrastructure for both staff and visitors. Restoration of existing structures and their careful adaptation to meet the needs of the management plan is, in all probability, the best solution, but such alteration will undoubtedly entail some exposure of and disturbance to archaeological evidence. Whatever architectural solutions are to be adopted, throughout the entire range of possible options from conservation through restoration to adaptation, it is essential that archaeological recording and, where might perhaps be necessary, archaeological excavation, should be conducted before or in conjunction with other action.

A SCHEME OF RESEARCH

1. The first need is for a full and complete detailed survey of all of the visible remains on Ile de la Passe. This survey will necessitate the cutting back of grass. From a strictly archaeological point of view, there would be some advantage in also cutting back or removing other kinds of vegetation. Cutting back or removing larger plants should not, however, be undertaken without the full consent and active co-operation of the Wild Life Foundation together with a careful study of the impact that the clearance vegetation would have on the stability and preservation of structural remains (especially walling).
2. The survey would identify structures or parts of structures which require clearance and consolidation. A priority list would be drawn up and a program of work established. Clearance of rubble and other accumulations should be undertaken by an archaeological team, or under strict archaeological supervision. No stratified (*in situ*) deposits should be removed or disturbed unless this is unavoidable for structural reasons. There should be complete documentation of all remains before measures for preservation and reconstruction are carried out.
3. The survey (1 above) would also identify problems in the interpretation of the surviving monuments. Problems might include, for instance, stratigraphic relationships, construction techniques and materials, function, or the identification of structures which are known only from old maps and records. Such issues might be resolved by limited clearance or by small scale and precisely targeted excavation.
4. Reconstructing life on the islet through the excavation and study of artefactual, archaeozoological and perhaps archaeobotanical remains might perhaps be rewarding if suitable deposits could be identified. Because there has been little build up or formation of soil such evidence as does survive at Ile de la Passe is very likely be of limited extent.

Methods of Research

Proposed methods of research will include:

- Full photographic documentation of all extant features, to include colour slide and high-resolution digital imagery.
- Production of a topographic plan of the islet that will have sufficient detail (micro-topography or close contour) to show the ramparts, banks and paths.
- Mapping of buildings, structures and other features.
- Production of drawn, measured, plans, sections, elevations and details of all buildings together with other recognisable features.
- Written descriptions of all buildings and features.
- Production of sets of plans or maps showing the different stages of in the development of the defences and associated remains on the island.
- Systematic recording of the (pre 1945) graffiti together with their exact their locations and distributions.
- Virtual reconstructions and simulations of the different phase plans.
- Applications of GIS *Viewshed Analysis* as well as other GIS graphic and analytical tools for the batteries and other features.
- Study, documentation, conservation and storage or display of all archaeological materials.

Specific Examples

Three specific examples of the archaeological potential are briefly described below.

The Hot Shot Furnace

The reverberating Hot Shot Furnace is now in a precarious condition and, if it is to survive as a recognisable monument, will require highly expert restoration. The structure is badly cracked and, moreover, the bricks that were used to vault the chamber and clad the inside of the chimney have almost completely disappeared. It is known that scant foundations of an earlier structure, or structures, survive beneath the furnace and that they also project beyond it at the front and back. These remains are of great importance in reaching a fuller understanding of the development of installations and might yield evidence concerning the date at which the (present) furnace was constructed. Restoration should, therefore, be carried out in conjunction with systematic excavation and recording of the very fragile earlier remains.



Repair to the Hot Shot Furnace is urgent if further collapse is to be avoided

Upper Battery Emplacements

Clearance and recording of the pre World War II emplacements on the Upper Battery will permit a program of restoration to be put into place that would very greatly enhance the appearance of this most important feature.



Measuring the Upper Battery by the team of Government surveyors. (m02jv0818)



One of the cannon emplacements on the Upper Battery with a World War II concrete shell cabin on the left. One of the basalt capstones and the central pier between the two triangular niches at the base of the French cannon emplacement are still in place, but other stones lie where they fell and have become embedded in the grass. Clearance, recording and restoration of the emplacement would greatly enhance the appearance of the monument and would also preserve it from further decay. (02jv0408)

The Early Rock-Cutting beneath and to the north of the Upper Battery

The early French maps of Ile de la Passe appear to show a rock-cut route or passage leading directly to the rear of the Lower Battery towards its centre. Both ends of this passage have been tentatively identified in the preliminary survey. Excavation would perhaps confirm the interpretation and holds some prospect of recovering archaeological material relating to occupation on the island before the construction of the Upper Battery. The same holds true of the area immediately in front of the high northern terrace wall at the end of the Upper Battery where there are a number of rock-cut features visible.



A cutting in the rock on the outer side of the Upper Battery. One of the two Second World War concrete gun emplacements can be seen above the rubble fill makeup of the French rampart. It appears possible that the cutting is the end of a passage that gave level access from the Landing Point and the main structures to the Lower Battery. This hypothesis could be tested by excavation. (02jv1901)



The early rock-cutting partially beneath the north wall of the Upper Battery. (02cn0431)

CONCLUSIONS

Application of the methods and techniques of Architectural History and Archaeology will result in the detailed documentation of the remains and will thereby permit the vivid reconstruction of the defences and of garrison life on Ile de la Passe in each of the major periods of the history of Mauritius. Further, they will reveal evidence for the phases of development and for ways in which monuments may be restored and revitalised. It is of paramount importance that other areas of Heritage Management at Ile de la Passe, such as conservation and restoration or the introduction of new infrastructure and facilities are only undertaken with full cognisance of the architectural and archaeological impact.

Archaeology, and its sister discipline of Architectural History, study and interpret the material remains from the past. Archaeology is thereby able to document and bring to life aspects of the past that are rarely recorded in written documents. Archaeological evidence also acts a check on the accuracy of written records, particularly when it might be expected that official written accounts are often bias and rarely comprehensive.

Finally, archaeology provides the means whereby the importance and attraction of Ile de la Passe can be broadcast through electronic and traditional publication in formats that will reach a wide public, in Mauritius and beyond. Museum displays and travelling exhibitions, features in magazines, the production of brochures and other marketing techniques will attract attention and interest. By these means a program of archaeological research will raise the national and international profile of Ile de la Passe and thereby ensure its preservation for the enjoyment of present and future generations.

It might now be clear that there are two broad, overlapping, areas of concern, one being Heritage Management and Public Outreach and the other Academic Research. These two areas are not, and should never become, mutually exclusive, but perhaps the first is of more pressing concern because of imminent implementation of a Management Plan and also because the perilous condition of some monuments requires urgent intervention.

The proposal, set out in the last few pages, is for a multi year program of archaeological and architectural research that involves a combination of a professional archaeologist, a qualified architect specialising in Heritage issues, together with collaboration from such specialists as may be required for any part or parts of the program, Mauritian students, international volunteers from (for example) Earthwatch and Mauritian volunteers. Under this program archaeological fieldwork would take place over a period of four to six weeks each year. The precise aims of each season would depend, firstly, on the needs of the wider program of conservation and restoration, but would generally trend from the recording of extant remains towards targeted excavation and the processing of excavated materials. A central part of this program is targeted at the involvement and training of Mauritian students.

Funding would be provided by Earthwatch, the National Heritage Trust Fund, corporate and private sponsorship raised in Mauritius and international institutions.



Development will attract an increasing number of visitors. (02jv2220)