

## Conservation Plan For Aapravasi Ghat

2006-2011





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## Introduction

The Conservation Plan provides an understanding of the historical development of the site and of the various existing structures. It examines and evaluates significance, and considers present and possible future vulnerabilities. The plan then proposes policies for the protection and management of the significant aspects of the buildings and their principal spaces. In common with other conservation plans, it comprises a single, comprehensive document that can be consulted in connection with:

• Providing clear guidelines for the testing and evaluation of new development proposals or for material changes to the site or buildings.

• Preparing long-term conservation programmes for the site and its various components.

• Making day-to-day decisions with regard to maintenance and repair.

#### Structure of the Conservation Plan

The Conservation Plan is presented in two sections, the first containing the following topics:

- Understanding
- Significance
- Issues and policies

#### Updating the Conservation Plan

Conservation policies should not be considered as being static; updating and amendment may be required for both philosophical and circumstantial changes. This Conservation Plan should, therefore, be considered as the first in an ongoing exercise, to be updated at intervals of not more than five years, or, whenever changing circumstances demand.

## 1. Historical background

## **Establishment of the Immigration Depot**

Aapravasi Ghat was the landing place of half a million indentured labourers who arrived from India, Eastern Africa, China, South East Asia and Madagascar to work on the island's sugar plantations. The immigration depot was established in 1849.

It housed the office of the Protector of the Immigrants and provided accommodation to the indentured labourers who spent a minimum of 48 hrs there before leaving for the different sugar plantations. The building housing the offices dated back to the 1750s. It was used as a store during the 18th century and it was then converted into an office in 1849. It was in this building that administrative procedures like registration, photographing of immigrants and issuing of immigrant tickets were carried out. This large building was demolished in the 1980s during the construction of the motorway.

Some officials were expected to live in the Depot. The Gate keeper, for example, had to be given decent quarters for day and night duty. By 1852 he had 'two small rooms and a kitchen'.<sup>1</sup> By 27 April 1849, the Depot was nearly complete. Only communication from the Depot to public toilets was needed to be opened up as Depot toilets not ready. On 28 Sept 1849, the Protector recommended the planting of trees in the 'triangular piece of vacant ground' in front of the depot to improve ventilation and cool down the Depot.

<sup>&</sup>lt;sup>1</sup> MA: RA1166.,Letter from Protector to Colonial Secretary 28 June 1852

Although arrangement had been made to receive up to 700 adult immigrants there were sometimes up to 1,000: it was felt the offices would have to be given up and building open sheds in the adjoining yard.<sup>2</sup>

<sup>&</sup>lt;sup>2</sup> MA: RA1208/LR866 Letter from protector of Immigrants to colonial Secretary, 23 February 1853;

#### Extension of the depot: 1854-1856

With an increase in arrival of immigrants during the peak years of immigration in the second half of the nineteenth century, the depot accommodations soon became insufficient. The recommendations to enlarge the Depot were approved in 1856. Land was acquired from Mauritius Dock Company in 1858.<sup>3</sup> In addition the premises of private parties found near the depot were purchased and brought inside the depot walls.

#### **Benchmark Description of Site 1864-1865**

A key moment in the structural history of the site occurred in 1864. All the major alterations in the basic fabric of the depot were undertaken during this time. Many new structures were built and older ones were redeveloped. The railway built to the north of the island in 1864 cut across the site, dividing it into two sections, and a footbridge was constructed to link both parts of the Aapravasi Ghat. Sheds were pulled down, tanks and a portion of the kitchen disappeared. There was now space for 200 immigrants on one side and for 250 immigrants on the other. The Eastern side was to be reserved for arriving immigrants while the Western side for 'other classes'. The railway line had also cut across other amenities. All the kitchens were found on one side and all privies on the other. A kitchen was built in 1865 and was used exclusively by the immigrants.

<sup>3</sup> RA 1444, Lr 1496, Surveyor General's Office ,Dept No: A/90,Date: 29 March 1858

By 1870s, the number of indentured immigrants began to decline. Despite the drop in the number of immigrants arriving, there was still a need to expand the Depot. Not only was it a landing place and recruitment centre but it was also a place where immigrants whose contract had ended, departed. In addition, the Aapravasi Ghat was also the place where the payment of taxes and dues owed by the indentured immigrants were settled and where their marriage certificates and land purchases were confirmed. By the end of that century, the site covered the whole of 'Immigration Square'. Thus, between 1849 and 1910, the Aapravasi Ghat played a central role in the day-to-day functioning of the indenture labour system and in the lives of indentured labourers.

#### End of indenture

At the end of immigration the office was merged with the Poor Law Office. The post of Protector of Immigrants remained in place until 1938. After that the protector became the Director of Labour in charge of the Labour department.

During the Second World War, the offices were used by the War Department. In 1950, Aapravasi Ghat was transferred to the Public Assistance Department.

#### Campaigns for the preservation of the site: 1970s-1987

It is due to the efforts of a few committed individuals that over time, the Mauritian Government also began to recognise the historical and heritage value of the site. Of all those Mauritians who have fought for the site of Aapravasi Ghat to be given its due recognition as a historical site, the name the following person of stands out. From 1970 onwards, Beekrumsing Ramlallah, the descendant of an indentured labourer, intellectual, journalist and editor of the Mauritius Times, campaigned for the Aapravasi Ghat to be recognised as a historical site. He initiated the ceremonies for the commemoration of the arrival of indentured labourers on the 2 November of every year. He organized an annual religious ceremony at the Aapravasi Ghat because he believed in the 'jehaji bhai' spirit, the spirit of brotherhood that unites all those who arrived on the same boat: Hindu, Muslim, Christian. This ceremony has become a tradition and is still organized.

After having been informed by the Public Assistance Commissioner, Ramnarain Ramsaha, that the Immigration Office Archives were rotting, Beekrumsing Ramlallah campaigned to have them housed at the Archives. The former Immigration Office itself was at that time in a dilapidated state and Ramlallah campaigned to have the whole area including the Immigration Square rehabilitated. In 1970, Indira Gandhi, then Prime Minister of the Republic of India visited the Aapravasi Ghat.

The campaigns for the preservation of the site bore fruits in 1985, when the site was decreed a national monument under the National Monuments Act. At that time, the immigration depot was known as the 'Coolie Ghat'. In April 1987, an amended version of the Act proclaimed the site as the 'Aapravasi Ghat', because of the negative connotations of the term 'coolie' the word 'aapravasi' meaning immigrant. A 'ghat' is a landing place near a stretch of water.

## 2. Significance of different components of Aapravasi Ghat

## The site

The Aapravasi Ghat is an outstanding and complete example of an immigration depot built at the time of the 20th Century by the British. The Aapravasi Ghat is located in the capital city of port-Louis and more specifically in the bay of Trou-Fanfaron.

The site is gazetted as a government property. It h1987 it was declared a National Monument under the National Monument act of 1965, the State recognising the immigration depot that was an important part in shaping up the social, economic and politics of the island.

## Legal status

Acts of Parliament are the highest form of law in any given country. All other sources derive their validity from or are subordinate to Acts of Parliament. Under the National Monuments Act 1965, the building and its surroundings was declared a National Monument in 1987. The National Heritage fund Act No. 40 of 2003 has as objectives to safeguard, preserve and promote the national heritage of Mauritius as well as educate and sensitize the public on cultural values implanted there in.

In 2001, the parliament enacted the AGTF Act No 31 of 2001 and a Fund was created, namely the Aapravasi Ghat Trust Fund

## Aims and objectives of the Plan

The third phase of the Aapravasi Ghat project started in July 2004 with the arrival of Icomos consultants, Mr. Devendra Sood and Mr. Munish Pandit. The conservation of the Aapravasi Ghat site is in line with the application to UNESCO for the site to be declared a World Heritage Site. The physical condition of the site as it was in 2003 revealed interventions that had been done during renovation works in an attempt to beautify the compound. All such interventions needed to be undone and the site to be given back its authenticity and uniqueness. Hence the restoration and conservation of the site will irrefutably help for a better interpretation of the immigration depot.

The Conservation work for the Aapravasi Ghat site was scheduled in three phases;

- Excavation and exploration of the site and collection of data through archival research and investigation of buildings contemporary to site.
- Preparation of working plan and drawings for the restoration work.
- Execution of the conservation plan.

# PHASE I: Excavation and Exploration of the Site and Collection of Data through Archival Research

During the first phase of the project an archaeological survey was carried out by Mr. Amitava Chowdhury, Lecturer in Archaeology at the University of Mauritius. Archival materials of the site recovered from the National Archives helped in identifying the primary areas where the excavation could be initialised. The excavations started in December 2002. within the centre of the existing yard, the base of a structure, identified as a kitchen in 1865, was gradually exposed. The archaeological investigation was also accompanied by the archival research undertaken by newly appointed Research Assistants.

## PHASE II: Preparation of Working Plan and Drawings for the Conservation Work.

A prerequisite for any Heritage Site is the setting up of a dedicated institution/Fund and the recruitment of professional staff to manage it. The Trust Fund thus proceeded between January 2003 and January 2004 to recruit staffs that was then trained who would later be able to take over the works once the foreign expertise would accomplish their mission. The Trust worked on refining the organigramme for the Conservation Project and to meet the requirements of the World Heritage Centre. Two Technical reports prepared by the ICOMOS consultants were submitted in June 2003 and May 2004. Since 2003, the ICOMOS-India consultants have visited the Aapravasi Ghat on several occasions to evaluate the conservation work and provide training to the technical staff

#### **PHASE III: The Conservation project**

The aim of the Aapravasi Ghat Conservation Project is to conserve the original structures of the Aapravasi Ghat to the state in which it existed in the 19th Century when it was the landing place and transit area of over 450,000 indentured immigrants. More specifically, the aim is to conserve

features dating back to the 1865 state, as evidenced by the plans of 1864-1865. Conservation is the first step towards the preparation for application for World Heritage Site Status, a Status clearly desired by the Government of Mauritius.

## **Organization of the Conservation Project**

Various activities were recognized and stages to be followed have been identified for the Conservation process in conformity with World Heritage Site Status standards. As no expertise was available in Mauritius, the Trust Fund turned towards India to seek the professionals conversant in the matter. The setting up of an ICOMOS branch in India was deemed to be of particular importance as this is the organisation UNESCO will turn to, to evaluate the site for World Heritage Status.

## The terms of reference for the visit of consultants from ICOMOS were to:

- The preparation of a general work plan for the site conservation
- Establishment of a programme framework for landscape planning
- Contribute towards the evaluation and replication of construction materials for restoration
- Plan for the integration of the excavated data in the restoration programme framework
- Prepare a dynamic heritage management plan for the site
- Train Mauritian researchers in conservation

The conservation project started in July 2004 with the recruitment of research assistants to be trained in conservation. More skilled workers were recruited during that period in order to provide a more suitable workforce to assist the Conservation engineer. Technical staffs were also recruited gradually to support the conservation project. At present, major restoration work has been completed under the supervision of the two ICOMOS-India consultants. The Aapravasi Ghat Trust Fund has also engaged itself in the conservation and maintenance of the original features of the Archaeological site.

The administrative arrangements for the ongoing management of the Aapravasi Ghat site have been meticulously studied during the visit of ICOMOS consultants in March 2004 the necessary human resources were identified for the conservation project of site 4. Accordingly to the report prepared by ICOMOS consultants, 1 conservation trainee and 1 archaeologist are employed on a full-time basis at the Aapravasi Ghat site for the monitoring of the archaeological and conservation works. The management of the site also comprises of a research unit which includes historians, qualified officers in museum studies and of a curator.

<sup>&</sup>lt;sup>4</sup> Technical Report II Aapravasi Ghat Conservation Project, Port-Louis, Mauritius

No	specialist	task	Duration
1	1 Curator/Object	Setting up of interpretation	Full-time
	Conservator	centre & conservation of	
		artefacts	
2	1 Archaeologist	Responsible of the Aapravasi	Full-time
		Ghat site and excavations	
3	2 Trainee Conservation	Responsible for the	Full-time
	Officers	conservation work on site	
4	2 Historians	Compiling data and	Full-time
		documentation of Aapravasi	
		Ghat site/Historical research	
5	2 Officers holding a	Helping the curator and	Full-time
	postgraduate degree in	collecting data	
	museum studies		
56	10 semi-skilled General	Maintenance of site and	Contract
	workers	conservation work	basis

Table 1: List of members composing of the Research Unit at present

The Research unit is currently working under the close Guidance of two ICOMOS-India consultants and the visits of the consultants vary from 1 to 3 visits each year to evaluate the conservation work.

## 3. Conservation policies and strategies

#### **Principles of conservation**

The main purpose of conservation is to promote cultural heritage and to highlight the historical, aesthetic and architectural value of buildings and structures without losing its authenticity and context. Conservation is essentially a technical, cultural and artistic activity which is based on scientific studies and in-depth research It is imperative that conservation must respect the cultural context of a building or structure.

At the international level, it is widely accepted that the conservation of building or structure which is a monument does not concern only the monument or the site, but also there is a great need to ensure that the setting and ambiance of its immediate surroundings is maintained as close as possible to the specific period in history when it was erected.

When it comes to the Aapravasi Ghat site, it should be noted that the primary objective is to conserve as well as to reveal the aesthetic, architectural and historic values and significance of the site. The various interventions on the site are based mainly on a detailed knowledge of the original materials used in its construction and authentic archival documents, maps and plans available. It should be greatly emphasized that reconstruction is not the aim of the conservation plan of the Aapravasi Ghat site and definitely not based on inferences and speculations.

Further works which may be deemed necessary to guarantee the structural integrity of the site, visitor safety and provide a new lease on life to the site will be carried out in a way which will be distinct from the original architectural plan and in a modern, accurate and scientific way. Archaeological and historical studies are undertaken before and after the conservation process at the Aapravasi Ghat.

During the course of more than one and a half century, the site has evolved however based on documentary evidences available and taking into account the most crucial period in the site's history, the unanimous consensus of the multi-disciplinary team involved in the project is to highlight the elements and character of the site during the period between 1860 and 1865.

It was during that brief period that the Aapravasi Ghat site, which was then commonly known as the "Immigration Depot" was given a new look, expanded and remodelled to provide accommodation for the everincreasing number of indentured labourers. The archaeological excavations have also revealed that many structures erected during that period are being preserved and reinforced for future generations. A lot of stress has been placed on the need to thoroughly understand and carefully document the history of the site before and after the 1860s period.

As the process of conservation gets underway, attempts have been made to avoid damaging and modifying the known architectural features of the site which date from the earliest to the later periods contributing significantly to the historical value of the site.

In order to achieve a better understanding and interpretation of the site to the visitor, an "interpretation centre" will be established near the old warehouse located next to the Aapravasi Ghat site. The warehouses will be conserved and reused because they also have a historical value and are contemporary to the site.

Every effort is being made to guarantee that during the conservation process, the specific guidelines for conservation works as laid down in the various technical reports and recommendations of ICOMOS are carefully followed and respected.

The materials which are used for the conservation process are identical to the ones used in the original construction of the site. Historical research and evidence available at the Aapravasi Ghat has clearly shown that the materials utilized in the construction were local stones, lime mortar and renders, and teak wood for the windows, roofing and doors. According to the archival records, two of the surviving rooms (surgery and ward) in the Hospital Block consisted of a floor made from wood. The door and window designs and roof truss will be reproduced as the original ones. Lastly, all possible efforts and precautions are being taken in order to guarantee that the physical interventions undertaken during the conservation process can be reversible.

## 4. Analysis and Identification of the Causes

## Causes of decay at the site of Aapravasi Ghat

Every historical/cultural property deteriorates through attack by both human and natural agents acting upon the several weaknesses inherent in the component materials and fabric of the structure. The most uniform and universal form of decay in a historic building is gravity, followed by human interventions and natural agents.

## Natural agents

Nature's agents can be listed as follows; floods, cyclones, earthquakes, lightning and other related agents. At the Aapravasi Ghat, the damages of tropical cyclones have lashed on the site persistently. Moreover, climate in all its form is a fundamental cause of decay for any archaeological site. Proper conservation techniques are presently being used to prevent further decay on the site

The resistance of building materials decreases with exposure and age. Water also acts as an accelerated agent to the deterioration of building materials due to chemical actions. For the Aapravasi Ghat site and its specificity, the active components of decay resumes to seasonal change of temperature, sun, rainfall, wind and moisture.

#### **Solar Radiation**

Solar radiation is an important cause of damage to old structures. Light and more specifically, the ultraviolet component is a destructive agent to materials such as wood and pigments. Ultraviolet component causes fading, weakens and create loss of substance. Unprotected wood faces both ultraviolet decaying agents as well as moisture exchange. Aapravasi Ghat remains exposed to the solar radiation and therefore undergoes both structural and micro-component degeneration. The stone surfaces facing the wharf or Trou Fanfaron basin have lost some of its inner structural strength. Embrittlement of the basalt surface is noticeable. The structural components mainly the basalt stones are losing their natural lustre and homogeneity is slowly becoming fragmentised.

Building materials are heated by solar radiation in three ways:

- By direct solar gain from external radiation
- By indirect solar gain through windows and openings
- By indirect heating through external air, the ambient temperature is raised by the sun

#### **Thermal expansion**

Building materials expands when heated and contract again when cooled. The expansion and contraction is called thermal movement. Thermal movement is a major cause of decay in old buildings and structures. The extent of the thermal movement depends on the temperature range resulting from the heat input modified by the thermal capacity of the structure, the thickness, conductivity and coefficient of expansion of the material. The shaded part of the wall stays relatively cool and immobile since it is mainly affected by the seasonal average temperatures.

Along with solar radiation, thermal expansion and subsequent contraction has led to flaking of stone surfaces to a considerable degree. The stone walls of the Aapravasi Ghat have a high thermal mass that compensates to a greater or lesser degree for daily temperature changes. However, the temperature range of the basalt surfaces reaches temperature much higher than the atmosphere.

The thermal expansion of the basalt materials at the Aapravasi Ghat can be said to depend on the following factors:

- 1. humidity
- 2. elasticity of basalt used
- 3. capacity of material to creep of flow under load

4. degree of restraint of movement of material by its connection to other elements of the structure

5. change of moisture content by evaporation

Due to the above named factors, a few signs of fatigue have been noticed in the basalt elements. As a result of an unequal expansion and contraction of the basalt blocks, the mortar holding them had shown sign of cracks in several parts of the site.

#### **Thermal movement**

Thermal movement and thermal expansion are two features closely associated. Hence, thermal movement depends on both the elasticity and plasticity of the mortar. Thermal movement is noticeable in many segments of the walls of Aapravasi Ghat. Since most of the site is relatively exposed to direct solar radiation, thermal movement is very much present in the basalt structures of the site. Signs of thermal movement at the Aapravasi Ghat are noticeable in the loosening of the stones in their joints and crack in the upper faction of the walls in sector P. This is visible in sector R. Similar cracks from thermal movement are visible in the eastern wall perpendicular to sector P near the bath area and also the western wall perpendicular to the privies.

The situation is however improved by the fact that the lime mortar helps in containing and restraining the thermal movement at the Aapravasi Ghat site.

#### Moisture

The presence of water in the porous stone masonry and materials has a negative effect on the lifespan of the building material. Water can reach the masonry surface through rain or fall from the top surface of the wall. Several complicated ways may exist for water penetration in a building material. Water coming from the top can be more destructive since the water picks up soluble materials in its path to reach the ending point. Destructive crystallisation processes occur when the water evaporates.

It is noticed that in several places in the hospital block, decay resulting from moisture is visible especially (in room 1 and two). Previous to the restoration of the wooden roof on the hospital block, damaged and faulty roofing had led to leakage and seepage of rain water, leading to disengagement of the mortar. Cement mortar had been unwisely used to stop the disengagement of the mortar. At present, lime pointing is being redone after the process of racking out cement pointing. Moreover, the high salinity of the region has led to severe damp and embrittlement of the wall members in various parts of the Hospital Block, particularly in the surgery room.

The rain water also acted as a dissolvent to pollutants found on the stone surface. Several incrustations of calcium carbonate, owing to its origin of lime-based mortar, sodium chloride, owing to high salinity have also worked in combination to harm the structural components of several sections of some walls.

#### Wind

It is noticed the structures of the Aapravasi Ghat are strong enough to resist strong winds and gusts. However, general erosion of the external surfaces has been provoked by strong winds resulting in the stones surfaces to be affected.

This has caused cavitations in several sectors of the Aapravasi Ghat. Particulates are solid particles that remain in the air. Common particles that remain in still air are dust, sand and grit. Wind has transported and deposited particulates in Aapravasi Ghat.

#### **Biological agents**

Roots of creepers and trees growing on walls and building elements cause gradual disintegration of the building elements. This is not very perceptible at Aapravasi Ghat due to regular maintenance by the workers. Consolidation of mortar joints have been performed where possible biological interventions exist. Roots of trees found near the walls of the bath area have been cut and secured under the supervision of the conservation engineer.

#### **Bacteria and lichen**

Bacteria and lichen can be motors of decay for building materials by producing acids which react chemically to structural materials. Acid producing lichens and mosses are noticeable in many places at the Aapravasi Ghat. Lichens found on basalt stone retain moistures and this result in creating dampness on the structure. All these microbiological agents produce oxalic acid which slowly decays and disintegrates the structures.

At Aapravasi Ghat there are blotchy stains of lichens, algae and mosses visible on the surfaces of structures found in sector P. it is especially prominent at the external wall of sector P facing the wharf whereas the wall in the Hospital Block also show staining from lichens.

#### Insects

Insects are another cause of decay of archaeological and cultural property. While insects having their nests in pit-holes of basalts blocks are not dangerous to the structures, insects having nests in contact with mortar can be dangerous if they drill their way through the mortar, thus loosening the bond and weakening the structure.

Insects such as beetles are potential dangers to the wooden roof although the wood has been recently treated linseed oil and anti-termite solution. With time, insects can represent potential dangers to the wooden structure. Ants in large numbers can be seen everywhere at the Aapravasi Ghat site. These ants burrow micro-tunnels through the floor and mortars in the walls. Ants found at the Aapravasi Ghat can represent potential danger if no monitoring is done on these ants.

#### **Human interventions**

In any heritage/historical site, human intervention can be the most destructive and significant factor. This has been no exception for the Aapravasi Ghat. Only a small portion of the immigration depot has survived the development of Port-Louis and the Trou-Fanfaron area. The remaining structure at the Aapravasi Ghat had recently undergone several structural changes since its inception in the mid-nineteenth century. What has remained from the 19th century constitutes a Heritage property and needs to be conserved appropriately.

Man-made causes of decay have widespread implications in the conservation of Heritage buildings. The various causes of decay by human agency are analysed below:

#### Damage by vibration

Vibrations are generally small; especially those caused by human agencies and can damage the site on the long term. It is difficult to determine the damages caused from vibration on an ageing building. It may add or accelerates the decay of the structure by general ageing. In principle, the damage caused by vibration is irreversible.

At Aapravasi Ghat, ground transmitted traffic vibration from the adjacent motorway is the major culprit. Vibrations can initiate cracks in materials already subject to temperature and humidity changes. It may well contribute to the fatigue of the building. Vibrations can also cause loss of foundation strength by affecting the subsoil. However, it can be said that the vibrations have not affected the structures as yet but initiatives must be taken to prevent the site from being damaged.

#### **Atmospheric pollution**

It is noticed that three principle categories of pollutants are affecting the site:

1. particulates emitted from vehicular exhaust and from the ships in the port

- 2. smoke from vehicular, ship and industrial exhaust
- 3. various gases, namely carbon dioxide and sulphur dioxide

At present the heavy traffic in front of the Aapravasi Ghat is the source of most atmospheric pollution. Gaseous deposits and particulates are a potential threat to the structure since they may corrode the surface.

#### **Acoustic causes**

Acoustic causes can be a source of damage to the Aapravasi Ghat site. Acoustic causes are mainly the noise pollutants emanating the neighbouring traffic. Unlike ground-borne vibrations, the acoustic

vibrations are air-borne and affect the top area of the structures of Aapravasi Ghat.

At present, there is a plan from the government of Mauritius to decrease the traffic around Aapravasi Ghat and the centre of Port-Louis. This is a long term solution to eliminate the source of possible damage.

At present, the site is being monitored by our conservation engineer for any stress that might cause danger to the structure. A transparent boundary wall which will help in reduction of noise from motorway is under study as well as for the port.





## 5. Comprehensive documentation on condition of site

The Aapravasi Ghat is located in the capital city of Port-Louis and is bordered in the north end by the bay of Trou Fanfaron and on the eastern side by the motorway. The area covers an area of 1640 sq metres. The site's existing components are as follows:

## Hospital Block (sector T)

The most important phase of the Aapravasi Ghat conservation project consists of the restoration of the surviving building, namely the Hospital Block, to its original state.

This is a linear structure containing seven rooms. The physical state of the site has revealed that large scale intervention was carried out as an endeavour to modernise the surviving structure during the past decade. In 2000, a new roof was put on the building which unfortunately changed the hospital block's appearance. The use of modern construction materials also compromised the buildings' historical authenticity. The restoration of the hospital block aims at re-establishing the aesthetic and historic value of what is now left of the Immigration depot. The whole restoration process is being carried out after a deep study of 1864 and 1865 archival plans of the building. Modern features such as modern tile flooring in surgery and ward rooms were removed as well as the use of cement components.



The hospital Block Source: AGTF collection

#### Gate keeper's room

The gatekeeper's room is a rectangular room with one door and one window. The door, which was narrowed during recent renovations, was restored to its original state after the dismantling of modern features such as cement masonry and blocks. The floor in this room is almost intact and will be conserved.

The general condition of the walls in room one do not show much sign of stress or deformation. It is noticed that the lintel of the window has been covered with thick cement mortar. This cement mortar has to be removed carefully with hammer and thin chisels in order not to damage what may be left of the original lintel materials.

The modern window shutter needs to be replaced by a window shutter of the same model and dimensions of the MPI plans of 1865.



AAPRAVASI GHAT

#### Stable

Chamber two, also known as the stable, served as a place to accommodate a maximum of two horses. According to the 1865 plan, this chamber had a door and two small windows at front view. This chamber had been modified during the renovations the room suffered in a near past. The original design was restored with new stones cut as per the dimensions indicated in the 1865 plan. The windows at the back elevation have features identical to the original structure.

At present, there are no signs of severe stress from the walls. However, several voids are present in the walls of the room. These voids were most probably produced by the mortar decaying and falling as dust downwards and outwards through cracks and faulty joints. One void is present on the right side of the entrance of the entrance. The cavity has been filled up with cement mortar in a non-aesthetic way the same can be noticed in the void on the left side of the wall. The void on the back wall has not been filled with cement mortar.

The use of cement mortar in the building has a negative impact on the structural materials like mortar. It is important that the cement mortar and particles be removed from the surface of the stones so as to preserve it from further deterioration as well as for its aesthetic values. Racking out of cement pointing has already been done in this room as well as the removal of dead lime mortar. Lime pointing needs to be done for the whole of the room.

	Source: AGTF collection		
Elevation plan of Hospital Block	Cement filling in the voids on the right side of entry. The ce- ment will be removed and un- derpinning will be performed to fill the void. Traditional lime mortar will be material to be used	Modern window frame that will be removed and replaced by window shutters of the original design and measures	OUIS, MAURITIUS
	Elevation plan of original stable room Source: MPI collection	CONSERVATION PLA	GHAT COMPLEX, PORTL
AAPRAVASI GHAT Port Louis Room Condition : Room 2: Stable All drawings are to be read only and not scaled All dimensions are in ft only		Plan of stable Source: MPI collection	AAPRAVASI
#### **Coach room**

The coach room is the third room of the Hospital block. It is a rectangular room with only one entrance. It is noticed that the room contains no window. This may be explained as the room was designed as a place for keeping a coach. It had a large arched opening of 9' wide that was altered during repairs in 2000. The original arch stones have been removed from the site and instead a cement lintel was used for the door. The arch was restored to its original size and design during restoration in September 2005 by using as model of the 1865 plan. The new stones which have been have been marked-dated so as to distinguish them from the other original stones.

The original British bonded stone block flooring with lime mortar still exists as per today and has been well conserved.

The overall condition of the room shows no signs of stress or deformation from load. There no signs of decay as well. The walls found in the coach room shows resistance to torsion, tension, compression, bending and shearing. The cement mortar has been removed from the joints to prevent damage to the walls. There are no visible cavities in the walls and it can be said that the original structure of the walls have survived the ravages of stresses.

Lime pointing is major conservation work to be done in the coach room since there are some stones which are getting loose.



AAPRAVASI GHAT COMPLEX, PORTLOUIS, MAURITIUS

#### Kitchen

The chimney found in the kitchen has not undergone any structural changes. The internal form of the kitchen has remained the same without experiencing alterations. The burnt brick superstructure of the chimney has an English cross bond pattern and original lime mortar can be seen.

This kitchen was used by officials at the Depot and consists of one door and one chimney. There are no windows in the room. One striking feature noticed in the kitchen is the fact that the original opening on the left side wall has been sealed in recent time with cement blocks. It has been suggested that this served as an outlet for the surgery unit but has been of no use afterwards. The kitchen is still in a good state of conservation with the original fireplace, chimney and flooring still in place. The random stone masonry shows no sign of stress or distortion.

The use of cement in recent times to conceal small cracks at the point of conjunction with the basalt wall has weakened the stress bearing power of the brick feature. This has to be undone to effectively increase the survival age of the chimney.

The use of brittle burnt bricks for the windows of the Hospital block and especially the kitchen have resulted in weakness in tension, but much strength in compression. There are a few small cracks that have occurred more or less at right-angles to the principal tensile stresses. The stress of load of the chimney on the brittle burnt bricks is resulting giving signs of weathering in a few of the bricks. These bricks need to be consolidated and preserve as part of the original aesthetic value of the Aapravasi Ghat site.





CONSERVATION PLAN

Weathering of some bricks in the chimney. Source: AGTF collection

Original chimney in the kitchen made up of

basalt stones and burnt bricks. Source: AGTF collection







### AAPRAVASI Ghat CONSERVATION PLAN



Original chimney in the kitchen made up og basalt stones and bumt bricks



Plan of Hospital Block in 1865 Source: MPI Plan



Weathening of some bincks in the chimney.

#### **Surgery and Ward Rooms**

The surgery and ward room were constructed during the 1865 remodelling of the complex. The two rooms are identical in size (6.7 by 4.7 metres). On the front and back side of the surgery and ward rooms there are slit openings for ventilations. These features have maintained their original shape and form although they have been obstructed by rash cement mortar. This has to be undone before the placing of wooden flooring. Each room has two windows on the front elevation and two windows at the back elevation.

The original wooden flooring was replaced with tiles during renovation works. The cement pointing has been removed and is being replaced with lime pointing. The tiled flooring has been dismantled and will be replaced with the wooden flooring as per the original plans. The overall dimensions of the windows surgery and ward room have remained the same but the shape and form of the window have been altered. They need to be removed and replaced back by windows and doors of the original design. The ward room still maintains the locking mechanisms as the original type and is being used as reference for the window locking.

The bricks used as lintels in the surgery and ward room have mainly weathered in the absence of a stone lintel. It is to be noted that some bricks are missing from the lintels of the 8 windows in these two rooms. At present the remaining bricks are being consolidated and cement mortar is being carefully removed. The missing bricks will be replaced by bricks of same fabric.



CONSERVATION PLAN

Elevation plan of Hospital Block	Unveiling of lintel bricks under- neath cement lintel Source: AGTF collection Source: AGTF collection amb. The removal tion of the ward nom. The cement mortar needs to be removed carefully to prevent any more damage to the lintel bricks which are underneath bricks which are underneath
AAPRAVASI GHAT Port Louis Room Condition : Room 6: Ward Room All drawings are to be read only and not scaled All dimensions are in ft only	Plan of hospital Plan of hospital Source: MPI collection Cement materials recently used to fill the door of the cement mortar forms part of the conserv room. Weakened lime mortar will be removed new mortar

AAPRAVASI GHAT COMPLEX, PORTLOUIS, MAURITIUS

### **Staff Privies**

The last room in the structure was a privy for depot officials. Neither the original floor nor the internal wooden partitions indicated in the 1865 plan of the Depot survived to the present.

### Sector R

### **Immigrants' Sheds**

The eastern wall of the shed was made of wooden planks, while the other three walls were constructed of random rubble stone masonry. The shed was covered by a pitched roof. The western wall contained openings for ventilation at regular intervals. The shed's floor consisted of lime concrete covered with a bitumen layer. Sections of the shed's original flooring have been recovered at two places while the original stone walls still exist.

The original floor levelled has hence been unveiled for the better understanding of the conservation to be done. The original flooring needs to be redone as per the original structure.

The original back wall has retained its features with the windows corresponding to the archival plans. Lime pointing has recently been redone on the joints of the stone masonry and water tightening process has been effectuated to prevent damage to the wall due to water absorption and moisture.



### **Sector Q**

### **Immigrants' Kitchen**

Excavations in this sector facing the motorway revealed important features which corresponded to the plan of 1865. Hence a kitchen base was unearthed by a horizontal excavation. The base, which was the only part remaining, was that of a kitchen constructed in the central area during the year 1864-1865.



Q207 The ashoka tree which has to be removed and placed back from the site since it is damaging the structure from beneath.





the north-western kitchen. The drain has to be cleaned for proper water channeling.



209 water pipe on the wet of the kitchen needs to be investigated for better understanding of water canalization. The pipe needs regular cleaning

All drawings are to be read only and not scaled

#### AAPRAVASI GHAT **PORT LOUIS**

DRAWING TITLE

Sector Q

CONSERVATIONPLAN AAPRAVASIGHAT COMPLEX, PORTLOUIS, MAURITIUS



The base has been consolidated with lime mortar. Temporary sand slopping has been placed on the kitchen surface to prevent water logging. This has to be removed and a proper sloping be made with earth and mortar.

One striking feature found on the kitchen is the growth of two ashoka trees at two end corners. These ashoka trees threaten the integrity of the structure and have to be carefully removed in the recent future to prevent further damage to the structure.

The water pipes found on the western part of the kitchen and north western part have to be investigated to better understand the water channelling of the site and kitchen. The pipes and drains have been obstructed by mud and dead leafs due to negligence. Proper cleaning of these drains is required.

### Sirdars' Quarters

The sirdar quarters were demolished during the construction of the motor way. Excavations at the southern part of the complex also revealed the stone plinth for the sirdar's quarters. The structure's foundation consists of random rubble masonry filled with a red sand and lime mortar mix.

The drain found next to the structure needs to be restored for proper channelling of water during seasonal rainfall. The same is required to the drain next to the immigrant's shed.





### Sector P

### **Immigrant Privies**

Additional privies for men and women were built in the Depot's Eastern side, since all original privies had existed on the western side. The privies on the Depot's western side have been uncovered. They have been found to be almost intact after excavations that had been effected and three sets of staircases leading to the privies were also found.





Overview of immigrant's privies



P112 The separation wall of the privies show sins of moisture and algae growth. The separation wall is made up of random stone masonry and burnt bricks



P113 Algae growth is present on women's second separation wall. There are signs of cracks in the mortar. Light brushing to remove the algae All drawings are to be read only and not scaled

AAPRAVASI GHAT PORT Louis

DRAWING TITLE

Western side of sector

CONSERVATIONPLAN AAPRAVASI GHAT COMPLEX, PORTLOUIS, MAURITIUS The floor consists of big basalt plates covered with bitumen. The women's' privies consists of a single 12m2 chamber. This chamber corresponds exactly in size and location to the women's privies found in the 1865 plan.

The separation walls in the privies are made up of burnt bricks and random rubble masonry. Different layers of the lime wash can be found on the walls of the privies. It can be noticed that layers of the lime wash are flaking away with the seasonal changes of temperature added with exposure to rainfall. Grouting and edging needs to be performed to preserve the remaining lime wash.

One noticeable thing is the growth of mosses and algae on the walls of the privies. This has affected large areas of the wall due to moisture in the walls. The algae needs to be removed by a fine brush carefully and water based silicone needs to be spread on these walls to stop water penetration.

At present, the process of laying a transparent plastic sheet on top of the privies is being studies with the Aapravasi Ghat consultants in order to preserve the privies from further deterioration.









### **Bathing area of Immigrants**

The bathing area is situated on the eastern side of the privies. Three tanks were used to store water. One of these water tanks was reserved for women who had a separate entrance to it. The bathing area was covered with sloping roof supported by wooden posts. A wide but shallow channel cutting across the bathing area carried waste water to the main drain which leads to the wharf. The water basins have retained their original features and no visible sign of deterioration is present on the water basins. The lime plaster has however peeled off with time and only a portion has survived. Edging has been done to the remaining lime plaster to conserve them and prevent water penetration.

### **SECTOR P**



Detailed plan of remaining structures in the Northern side of the Aapravasi Ghat site



P105 Remaining lime plaster found in the water basins on the eastern side of the privies area. The lime plaster is flaking and crumbling due to its exposure to weather conditions. Edging is being done at present to preserve the remaining plaster



P106 This the stairs leading to the kitchen area. The stones have been disturbed with time. These stones need to be fixed back to their place and consolidated with lime mortar All drawings are to be read only and not scaled

 All dimensions are in ft only

#### AAPRAVASI GHAT PORT Louis

DRAWING TITLE

Eastern side of sector

CONSERVATIONPLAN AAPRAVASI GHAT COMPLEX, PORTLOUIS, MAURITIUS

#### Steps

Immigrants ascended a straight flight of sixteen stone steps from the wharf to the depot after disembarking from their ship. These steps are considered to be a symbolic gateway to the island. It can be noticed that the steps has survived effectively the ravages of time. The do not show any sign of crumbling or cracks. The steps need to be maintained on a regular basis as these structures are very symbolic for the Aapravasi Ghat site.

### Drains

There were many drains running through the central yard that have been uncovered during the excavations. The drains are approximately 60 cm wide and were 5 cm to 10 cm deep. During this period of the nineteenth century, shallow drains were normally dug in the soil and shaped basalt blocks were fixed in with the help of a mortar prepared out of red soil to build the drains.

Drains built according to the plans of 1864 consisted of 3 basalt blocks, 2 on both side and one in the middle. The remaining drains in sector P have been conserved the missing ones have been restored with the original stones which were found during excavations.

### Washing Shed

A shed was located on the side of the wharf, adjacent to the steps that lead to the inner courtyard. This shed was most probably used for washing purposes when immigrants arrived in Mauritius. Archaeological investigations have uncovered floors that slope down on the southern side where a drain is located. This drain joins a pit which opens in the sea. Drains coming from other parts of the site also join this pit. The ground was covered with bitumen flooring. Large parts of this bitumen have survived the ravages of time. However, there are signs of cracks and flaking in the original bitumen. The bitumen is presently being conserved through edging with tar felt and filling up of the racks with same. After the conservation process, the area will be covered with a thin transparent sheet from the top.



Detailed map of remaining structures in the Northern side of the Aapravasi Ghat site



Cracks in wall on eastern side of the washing shed due to vegetation.

#### P102 Remaining bitumen on the floor for bath area. The original bitumen is showing signs of cracks and weather-ing due to direct exposure to climatic conditions. Consolidation and edging of the remaining tarfelt is required



View of bath area



A



Cracks in walls on eastern side of washing shed due to harmful growth.

#### CONSERVATIONPLAN AAPRAVASIGHAT COMPLEX, PORTLOUIS, MAURITIUS

**PORT Louis** DRAWING TITLE

Eastern side of sector P

AAPRAVASI GHAT

All drawings are to be read only and not scaled Vegetation growth is noticeable on the eastern side of the washing shed. Two major diagonal cracks are being seen coming from the wall due to the vegetation The cracks found in the walls are part of the continuing process of adjustment to continually varying loads due to thermal and moisture movements and wind.

Defects are noticeable on parts of the walls due to disintegration of binding materials and moisture. Decay is inherent in the very nature of the irregular bonded wall types in the extension shade wall. The vegetation and branches on top of the wall have to be removed. A quantum of water based silicone is required to be sprayed on the wall to stop further decaying.





### General conditions of walls

Aapravasi Ghat shows an array of wall types from the unbounded stone blocks; closely fitted random stone masonry laid dry and random rubble in lime mortar. The walls found at the Aapravasi Ghat site, generally show resistance to torsion, tension, compression, bending and shearing. It can be said that the walls of the hospital block are statically determinate. No salt crystallisation has been detected on the walls of Aapravasi Ghat.

However, there are signs of fatigue and deformations in the walls on the north side of the immigrants' kitchen due to the tree next to it. The roots of the tree have led the wall to incline towards the privies area and are showing signs of collapsing if noting is done to stop the stress emanating from the roots of the tree. Hence, the tree will be removed in a near future and proper consolidation of the wall will be done in accordance with our conservation engineer.

The use of lime mortar has proved to be extremely advantageous. The elasticity of the mortar has lead to compatibility with the structure as a whole. There is relatively low percentage of cracks appearing in the wall due to the accommodating nature of the lime mortar used. However, use of cement mortar recently has led to more structural deformations. This has to be removed completely from the structures by chisels and hammer and replaced by the traditional lime mortar that is being used on the site.

The role of chemistry in Heritage conservation involves identification of causes and products of decay, treatment of decayed structures and

preservation from further decay. The involvement of chemistry and science in general has been favourable to the study and preservation of Heritage sites. The basis of conservation should be conserving all preserved elements on the structures and allow restoration to required norms.

At Aapravasi Ghat, the structures have been studied on three levels, as a whole, as elements and as materials. The conservation work has been meticulously planned and the traditional material such as lime mortar has been used for binding the structures. Conservation practices involve the use of traditional and well proven technologies and materials to prevent present and future deterioration.

The techniques involved in structural conservation and repairs are:

- resetting of old stones
- renewing missing and worn out stones from the drains
- grouting, underpinning and pointing

### Effects of rain water on the Aapravasi Ghat structures

Water is one of the main hazards which affect stone structures. It affects them in two ways; by weakening the foundations through weathering effect on the stone. Damage is done by both running and stagnant water. This causes erosion and flaking of stone structures. It can also cause mortar joints to crumble. The combination of moisture lichens and mosses have weathering action of the biochemical agents of the stones. Rain water enters the walls through pores, gaps and cracks. This gradually weakens the structure. It is very important to seal the joints to check the ingress of rain water in order to ensure its structural stability. Silicone sealants will be used for sealing joints in masonry and the exterior joint walls. Silicone sealant is resistant to solar radiations and to weathering, vibrations, moisture and extreme temperature.

In stone conservation, the micro-structure of the deteriorated stone is stabilized through the introduction of a binder. This strengthening measure is generally combined with a stones protection measure against further deterioration. These are called impregnating agents. The commonly used silicone compound to consolidate stone is tetra-ethoxysilane. Methyl trimethoxysilane (MTMOS) is responsible for imparting water repellence to stones. The use of water-based silicone on the Aapravasi Ghat site is important to conservation of the structures against decaying agents and all types of damage caused by water absorption.

# 6. Conservation of different parts of the site

# Sector P

After the excavation in this area the conservation of the separation walls in the privies was identified and performed by the archaeological conservator and the trained workers.

### **Issues:**

- Cracks in walls
- Weathering of lime wash
- Fungus or other vegetative growth on walls
- Water accumulation
- Cracks and breaking off of bitumen flooring
- Disturbance in the uplifted basalt flooring of the privies

### Cause:

Climatic conditions, heavy rainfall, high degree of humidity, blocking of outlets and drains

### **Solutions and Procedures**

• The cracks in the walls around were consolidated and the lime plaster and lime wash were carefully conserved through grouting and edging process and regular monitoring is being conducted. A coat of water based silicon will be applied on the walls to avoid moisture and water accumulation on walls. This will help to preserve the lime wash and to prevent any fungus growth. The water based silicon will be applied after each two years on the walls

• All the original outlets and drains exposed in this section of the site need regular cleaning to avoid water accumulation in the floors of the privies especially resulting from heavy rainfall. Some of the basalt blocks which constitute the floor of the privies area have been disturbed due to materials dumped over it for decades. These blocks will be restored to create the proper slopes as well as consolidate the floor.

• The floor of the privies is being consolidated using the traditional lime mortar. Underpinning and pointing is being conducted from underneath the flooring (as it consists of uplifted flooring using basalt blocks) and grouting and filling of the joints from above the floor will be carried out.

• The bitumen exposed in the flooring of Sector P (both in the privies and washing shed) which are cracking and slowly breaking off, is being consolidated by using tar coal. The paint and heated tar coal is mixed and edging is being done with the help of fine paint brush to avoid the original bitumen layer from breaking off. The cracks will also be filled by the same material. Thereafter a coat of water based silicon will also be applied on the bitumen flooring to avoid any water accumulation and penetration in the bitumen.

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• The gaps and joints between the privies walls and floors will be cleaned and filled with lime mortar to avoid water accumulation.

• The steps attaching Sector P to Sector Q will be restored with fresh cut basalt stones as the original stones are missing.

• Two stone steps are missing at the bottom of the main staircase which leads to the wharf level and instead cement concrete platform has been erected. The cement concrete has been dismantled and two stone steps were unveiled, thus amounting to a total of 16 steps instead of 14 steps.

• The cement concrete added to consolidate the drains and floor of the washing shed area shall be carefully chiselled out followed by edging to avoid further decay of the original features.

### Sector Q

Several features have been exposed in Sector Q, after the excavation. The 1865 kitchen foundation have been consolidated along with the two pavements at the south and north end of the kitchen. Nevertheless there are some more features which are awaiting conservation work.

#### **Issues:**

- Deterioration of ceramic basin
- Weathering of the consolidated kitchen foundation
- The partly survived foundation wall of the Sirdars' quarters
- Water accumulation
- Erosion
- Vegetation growth

### Cause:

Regular movement of people around the ceramic basin, climatic conditions, heavy rainfall, lack of proper drainage

### **Solutions and Procedures**

• The ceramic basin will be consolidated by mending using small driller, glue and stone dust. To prevent further deterioration the basin has been temporary covered with soil until further progress. It shall be one of the final stages of conservation for the site need to be landscaped first since once uncovered any disturbance around would need to be completely avoided. The same applies for the other two features located next to the ceramic basin. However, movement around these features should be very restricted as movements result in vibration in the ground, and in long run cause the ceramic to break off.

• The partly survived foundation wall of the Sirdars' Quarters will be consolidated. The outline of the wall will be clearly exposed thereafter the wall will be raised for about 30cm to avoid water accumulation in the wall. Traditional lime mortar will be used to consolidate the feature.

• All the survived drains in Sector Q are being identified and uncovered. Thereafter a good slope for easy flow of water directed towards the drains will be created. Cutting and filing of soil will be carried out to fashion proper slopes.

## Sector R

The modern features consisting of roof, floor, trusses and beams have been removed and the original wall has been partly restored and consolidated. The original floor level was exposed after the removal of the modern flooring. To prevent any further deterioration, the original floor has been temporary covered by a layer of soil.

### **Issues:**

- Partly survived original foundation wall,
- Drain
- Partly survived original lime concrete flooring

### Cause:

Exposure of the partly survived wall and drain, weather conditions, moisture

### **Solution and Procedures**

• A partly survived veranda wall along which a drain is located has also been exposed in Sector R. The veranda wall will be consolidated and

the drain restored. As it is a continuation of the drain running along Sector T, the whole drain will be restored at one go.

• Lime concrete will be applied to consolidate the original flooring.

• Thereafter a coat of water based silicon will be applied on the walls and the floor of this area to protect from penetration of moisture and water.

# **Sector S**

Work in Sector S will be undertaken in the final stage of the Conservation Project. Excavation of two trenches in this area proved that no remains have survived.

### **Issues:**

- Modern pavement,
- Level of drain,
- The tree

### **Solutions and Procedures**

• The modern cement concrete pavement of this area shall be removed and soil below the pavement shall be dug out up to the depth of the drain level.

• The big tree trunk just next to the gate will be removed.

• A small dressed stone path of 1.5 m width shall be laid on a cushion of sand and small pebbles applied on the ground, with the help of lime mortar. This path will continue along the trail of the site which will be provided for visitors.
• The remaining area on both sides of the pathway shall be covered by sand and sand gravels to avoid erosion and easy flow of water.

## Sector T

This Sector is undergoing architectural restoration and conservation.

## **Issues:**

- Roof
- Walls
- Flooring in hospital and surgery room
- Modern doors and windows
- Modern roof from last chamber
- Modern cement concrete floor of the seventh chamber
- Partly survived drain running along the hospital block
- Modern concrete drain

## Solutions and procedures

• The restoration of the wooden roof has been completed. The wood has been treated with anti-termites and linseed oil before being placed on the stone building. Thereafter, wax will be applied with brush. This process will be followed by the application of fire retardant. After completion of the treatment a coat of water based silicon will be applied on the roof. • Pointing will be carried out in the same manner after underpinning work in the stone masonry wherever required with the lime mortar, thus, consolidating the walls of the Hospital Block.

• The wooden floor of the hospital and surgery rooms of the Hospital Block will be restored in the original pattern. Treated Teak Wood will be used for the purpose.

• Doors and windows will be fixed as found in the original archival drawings wherever required. Doors and windows shall only be fixed wherever it is found necessary for the preservation and conservation of the building.

• The modern roof of the last chamber of the Block, the Officers' Privies, shall be removed and the concrete beams carefully dismantled. A false roof shall be laid which will not be visible from the outside.

• The modern flooring of the last chamber shall be dismantled and replaced by stone flooring as per the original designs.

• Underpinning and pointing will be conducted in the same fashion.

• Along with the restoration and conservation of the building the remaining parts of the original drain running along the building will be restored.

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# 7. Identification of new works

## **Issue – Maintenance**

The Aapravasi Ghat immigration depot has suffered from a regime of limited and expedient maintenance during the early 1970s and followed by little or no structured maintenance until 2001. This building is vulnerable to deterioration due to its geographical location.

## **Policy**

It is indispensable to have an effective detailed structure wide system for planning, approving and undertaking maintenance and repair work. One team, in consultation with ICOMOS consultants, is responsible for – and ensures that – all work is undertaken to an agreed standard of the Burra Charter and ICOMOS Charter for conservation, that is commensurate with the importance of the building.

The Aapravasi Ghat immigration depot is recognized as being of international significance because of its uniqueness. Hence, a complete change in the approach to safeguarding the Aapravasi Ghat is essential. The historic fabric must be retained and any work undertaken on any element of the building must identify and be sympathetic with the nature, materials and workmanship of the original construction of the building.

#### LANDSCAPING

After the conservation of all the excavated features, the site will be totally landscaped. All the original drains are being uncovered and restored as they will be reused for proper drainage of water from the site. Proper slopes directed towards these drains will be created.

A trail starting from the main steps (16 steps starting from wharf up to Sector P) to the gate is being proposed. The pathway of 1.5 m wide will be made of dressed basalt stones and lime mortar placed on a layer of sand and gravels. The area left on both sides of the pathway and around the features will be covered with coral gravels or pebbles most probably schist or quartzite. The latter being clearly distinguishable from the features.

Panels with brief explanation on each part of the site will be fixed near the features. As it is an open site lightning is not a big problem, for it is bestowed by natural light. However, fog lights will be placed in the outside fence around the site.

# 8. Future conservation works and processes

The conservation plan for Aapravasi Ghat Site (2006 – 2011) is being prepared and will be complete and operational by July 2006. This conservation plan is in continuation with the conservation plan and strategies developed till date. The conservation plan will include;

# **FUTURE RESEARCH**

## **Compilation of Archaeological Reports and Architectural Documentation**

This will be an important step in the Interpretation of the site as an integrated whole and will hugely facilitate the ongoing compilation of archaeological reports and architectural documentation. Once designation have been made it will be possible to refer to walls and features of individual structures.

#### **Drawing Architectural Profiles: 2006**

One underlying characteristic of the Aapravasi Ghat Site are the vertical differences between various sectors of the site and the means of transition (flights of steps) between the various elements. There is a rise in heights above sea level (absl) from the wharf through the toilets to the upper structures and spaces.

Making Key Profiles and Architectural Sections across the Site

A series of key profiles and architectural sections will be measured and drawn up. This is an essential step in the recording and interpretation of past and future archaeological excavations. These profiles will be of particular importance in reaching a proper understanding of the spatial relationships between separate elements of the Immigration Depot, from the level of the wharf up through various facilities to the more elevated sections of the site which are close to the modern street level.

# Full visual and written documentation of the visible built remains: 2006-2009

#### The Importance of Full and Accurate Documentation

Understanding and interpretation of the evolution of the built structures and features that make up the Immigration Depot is completely dependent upon completion of full and accurate documentation of the visible features. These visible features include elements that have been revealed through archaeological excavation and have been, or will be, reburied as part of the program of landscaping and display.

All wall faces, flights of stairs, floors, built features (such as basins), drains and other features shall be clearly documented. The records will contain interpretations of phasing, alterations, adaptation and repairs.

#### **Methods of Documentation**

Documentation will be performed by both visual means and written description. Visual records will include photography, digital photography

for photo-rectification, perhaps stereo-photography, measured drawings, digitised overlays and CAD imagery. Written descriptions will illustrate architectural and construction details, materials and evidence of phasing. The documentation will be done by a team of archaeologists and architects. It is crucial that one or more members of this team should have expertise and experience in this kind of detailed recording and interpretation. In order to ensure continuity and compatibility of records, it is also vital that key team members are involved in the entire process of documentation from start to finish.

The team will include, as required, an archaeologist a professional surveyor, an architectural historian, an architect with advanced CAD skills, an expert in photography and photo-rectification, and one or more draftsmen

## **Outcomes of Archaeological and Architectural Documentation**

The outcomes of full and accurate documentation will be:

- A full record available for further research and forward planning;
- Visual reconstructions, both hard copies and digital imagery, of each stage in the development and evolution of the Immigration Depot;
- Visual displays for dissemination through exhibition and publication;
- Potential for the creation of Virtual Reality Simulations.

# 9. Interpretation of Archaeological and Architectural remains

## Interpretation of visible built remains: Chronology

Archaeological methods, including stratigraphy and analysis of structural phases (i.e. the physical relationship between built elements that reveals the sequence of construction) will make it possible to reconstruct each of the phases of development of the Immigration Depot. They will also permit some reconstructions to be made of earlier structures that, where they have been preserved, largely lay beneath the standing buildings and preserved surfaces.

Correlation of Archaeological Interpretation and Archival Material The correlation of archaeological interpretation and archival material will involve interdisciplinary studies. To a very considerable extent, archaeology and architectural history at Aapravasi Ghat will provide verification of the results of archival research.

## **Targeted Excavation 2008-2010**

#### **Reasons for Targeted Excavation**

Documentation will inevitably raise problems of interpretation and understanding. Indeed, the recognition of these research problems is one of the fundamental reasons for making the detailed documentation. Some of the issues rose in these processes of recording and interpretation of the physical (material) remains might be resolved by carefully targeted excavation.

#### **Timing of Targeted Excavation**

Further excavation will take place, only after documentation is complete. Targeted excavation will thus fall in the medium-term of the Management Plan, perhaps not beginning before 2008.

#### **Outcomes of Targeted Excavation**

Most of the archaeological problems that will arise, with the possible exceptions mentioned in above, will relate to the history and archaeology of the Aapravasi Ghat Site before it became the Immigration Depot. The results of these excavations will provide additional dimensions to the understanding of Aapravasi Ghat and its position within the development of Port Louis which are of secondary importance to the main aims and objectives of the AGTF.

# The special role of archaeological and architectural interpretation Interdisciplinary Studies

The broader interpretation of archaeological and architectural recording and research is a continuous and ongoing process. It need hardly be stated that the processes of interpretation are so deeply interwoven with archival, historical and anthropological research as to render any division between these disciplines rather meaningless and somewhat artificial.

# 10. The Special Role of Archaeology

## The Study of Material Evidence

Although interpretation will, of necessity, be interdisciplinary (see 5.1. above) archaeology does have special and unique roles to play in the processes. This is because archaeology focuses on the study of material remains: landfills, terraces, buildings and structures, man-made features, artefacts and ecofacts. Very often, in the archaeology of historical periods, these studies of material remains will achieve little beyond the verification of archival records. This observation is particularly true of Aapravasi Ghat where the central focus of interest, the Immigration Depot, dates to the second half of the 19th and the early 20th centuries. Even here, however, the physical remains permit the initiation and development of innovative and exciting approaches which will provide new insights, raise new questions and provide testimony of the unspoken and unwritten past.

## **Evocative Nature of Material Evidence**

Archaeology provides for many the most poignant material evidence of the past. The vividness of the physical remains, their immediacy and strong visual impact, reaches audiences that lay far outside the normal academic cloisters of enquiry into the past. Most importantly, these audiences include descendents of the very immigrants who themselves passed through the Immigration Depot.

# Breakdown of Archaeological Interpretation into Categories

The results and interpretation of archaeological investigations at Aapravasi Ghat can conveniently be broken down into several categories. Ranked perhaps in order of importance for the Management Plan of the AGTF these can be listed as:

1. Interpretation of the function of buildings, structures, spaces and features;

2. Tracing the physical paths of immigrants as they were processed through the Depot;

3. Identifying and explaining the physical (built) interfaces between immigrants, immigration officials, plantation representatives;

4. Providing explanations of the priorities of the Colonial Administration in the design and construction of the Immigration Depot and its facilities, together with the levels of craftsmanship employed and the (high) quality of the materials used.

5. Documentation and explanation of alterations, expansion and development of the Immigration Depot, particularly in relation to advances in medical knowledge, increasing immigrant numbers and developing administration policies.

6. Interpretation of such archaeological artefacts and ecofacts as may be directly associated (by context) with the use of the site as an Immigration Depot.

## **Significant Issues**

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Although detailed studies and interpretation at Aapravasi Ghat are still in their infancy, a number of significant archaeological and architectural issues can already be tentatively identified as targets for particular attention.

#### These are:

1. The role of security, as seen for instance through the perimeters of the site, access and circulation of people.

2. Emphasis on the hygiene and health of immigrants as displayed in the function, layout and design of facilities and infrastructure together with changes and additions.

3. Holding conditions, including areas of personal space, sleeping quarters, exposure to and protection from the elements, provision of food and levels of nutrition.

4. Relative positions and status of officials as seen through the space provided for both their duties and their comfort.

Archaeology will play a number of crucial and fully integrated roles in the Management Plan for Aapravasi Ghat. In the short-term archaeology will be restricted to essential works in connection with conservation and landscaping. In the short and medium-terms full documentation will go hand-in-hand with processes of interpretation. In the longer-term a program of new archaeological research will be initiated in which the community will be as fully involved as is compatible with safety and logistics. Archaeological research at Aapravasi Ghat highlights and helps to provide explanations for the special and unique history and development of Mauritius together with the composition of its multi-cultural and pluralistic population, and for the crucial importance of immigration in the course of modern global history.

# 11. Maintenance plan

# **Maintenance of Building**

Building maintenance organized through a rigorous program of cyclical maintenance plays a major role in preventing building defects. Historic buildings that neglect building maintenance may fall into several defects which may lead to structural failures. Inspections will be carried out by the technical staff and include inspection for any signs of abnormal deterioration, cleaning out gutters from leaves or harmful growth, checking lighting conductors near the site, cleaning out all voids and spaces; and changing tap washers. To secure the general structural stability and life of a building, it is important to regularly inspect not only the main structural elements including foundations, walls and roofs; but other common problems associated to structures.

# **Building Age**

All elements of historic buildings tend to deteriorate at a lesser or greater rate depending upon their location and function. Aging building materials, particularly timber should be checked once there are signs of fungal and termite attacks. Buildings that were built in the early period of British occupation often face problems in building materials. Proper treatment of building repair and maintenance is being given full consideration.

## **Climatic Conditions**

It is important to consider the climatic conditions in Mauritius and the effect on building materials. Like many other tropical countries, Mauritius

has heavy rainfall and warm sunshine all year round. This implies that buildings in the country tend to weather rapidly, particularly in respect to external building materials which are exposed to external causes such as rain, wind, solar radiation and atmospheric pollution. Fungal stain, harmful growth, erosion of mortar joints and defective plastered rendering are a few examples associated with this factor.

## **Dampness Penetration through Walls**

Dampness penetration through walls can be a serious matter, particularly to the buildings which are located close to water sources. It can cause not only deterioration to the building structures but damages to furnishings and contents as well. The main cause of dampness is water which may enter a building by a number of different routes. Water penetration occurs commonly through walls exposed to prevailing wet wind or rain. With the existence of gravity, water is likely to penetrate through capillaries or cracks between mortar joints and bricks or blocks before building up trap moisture behind hard renders and also driving further up the wall to emerge at a higher level. Dampness may also occur in walls because of other factors such as leaking gutters or down pipes, defective drains, burst plumbing and condensation due to inadequate ventilation. Dampness may also enter a building from the ground through cracks or mortar joints in the foundation walls.

## Cracking of Walls / Leaning Walls

Apart from distributing loads from roofs and floors to foundations, external walls may be harmful to a building if they are structurally

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unsound. Cracks in wall, either vertical or diagonal, are common symptoms of structural instability. Such defects should be investigated and the cause diagnosed in either the foundations, weak materials and joints; or any shrinkage or thermal movements such as timber window frames. Diagonal cracks, which are often widest at the foundations, may terminate at the corner of a building. These cracks often occur when shallow foundations are laid on smaller sub-soil that is drier than normal or when there is a physical uplifting action of main roots of a large tree close to the walls. Furthermore, there are a few causes to the problem of leaning walls including spreading roof which forces the weight of a roof down towards the walls, hogging and sagging due to soil movement, weak foundations due to presence of dampness, shrinkable clay soil or decayed building materials; and disturbance of nearby mature trees in which their roots gradually expand the local settlement.

# 12. Monitoring and reviewing process and methods

The consolidated kitchen base, in Sector Q is exposed to the climatic conditions, which is causing the conserved work to deteriorate. It is not advised to apply lime mortar as and when the lime exposed is being eroded. It will be adding new material and not preserving the authentic one. A coat of water based silicon will be applied on the feature. Thereafter, transparent perforated sheet will be placed over the kitchen on a few centimetres raised frame around the feature. Thus it will add in the preservation of the feature. However, the sheet will be placed in such a way that it can be manually lifted as a when required for monitoring the feature or applying silicon coat.

The same will be done in the privies area in Sector P, to further preserve the bitumen layer and the lime wash. However, these areas will be highly restricted to visitors and the latter can only see from at least two meters away.

Daily monitoring is required for the site during the conservation work and even after. As it is an open site wind often brings in light debris and leaves, thus all the outlets and drains have to be cleaned daily along with the other features especially the surviving base and foundations of buildings.

Weekly inspection by trained personnel in conservation will be conducted and minor repairs such as repairing of hair cracks will be carried whenever required. The coat of water based silicon shall be applied after each two years. However the surface will be well inspected as any single hair crack will be repaired before applying the silicon.

The AGTF staffs are being trained to conduct these regular monitoring works. However, the visit of the experts in conservation will be accomplished once a year for inspection and advice. Nevertheless, the experts are expected immediately after any calamity like cyclones.

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