



A Rejuvenation Plan for The Historic Forts of Mumbai

A Tribute to Our Rich and Varied Heritage



Advocacy - Governance - Renewal






The NAGAR Team

Anjali Pandit, Associate Director
Archana Deshmukh, M.Arch Architectural Conservation
Devashree Vyas, Architect & Programme Coordinator

Trustees

Parul Kumtha (Architect)
Meher Rifaat
Nayana Kathpalia

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-  Archaeological Survey of India (Mumbai Circle), Government of India
-  Directorate of Archaeology and Museums, Government of Maharashtra
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-  The Inheritance Project, by Alisha Sadikot
-  Bloggers: Kunal Tripathi (MumbaiHeritage on Twitter), Ashutosh Bijoor (bijoor.me) and Sudha Ganapathy (sudhagee.com)

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About NAGAR

NAGAR is a not for profit organization established in 2000, born out of the passion of several ordinary citizens with a goal to improve life in the city of Mumbai. It works in the areas of preservation of public open spaces, solid waste management, improvement in air quality, preservation of beaches, mangroves, heritage places, efficient road space management, better policing and water conservation. Its creed has been strong and consistent advocacy with Government and its agencies for better implementation of existing laws, suggesting policies for better governance in civic related issues and working towards urban renewal. It has a vast citizen base spread over the city and networks with other civic NGOs on specific issues.

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Foreword by Dr. Tejas Garge, Director, Maharashtra State Directorate of Archaeology and Museums



Directorate of Archaeology and Museums, Maharashtra Government of Maharashtra

St. George Fort, St. George Hospital Campus, Near C.S.T, Mumbai - 400 001 Tel. (022)-22623380
F.No/DI/PC/2017/

Date :

Mumbai rightly titled as economic capital of India has great significance in history of our country. This historical record survives today in form of numerous buildings showcasing rich architectural past inherited from the colonial powers. This phenomenal construction activity was result of consolidation of European power in India as initially it was a humble beginning in form of factories, warehouses and check posts. Growing conflict with local powers and other European powers several forts, check posts and garrisons were raised in Mumbai from 16th to 18th century. In the beginning of 19th century the British consolidated their power after victory over the Marathas and other powers in India. After defeat of Napoleon in Europe there was no reason to maintain several defence structures at Bombay now known as Mumbai. As a result demolition of several fortifications paved the way for development of new city. At present very few are surviving under pressure of urbanization and ravages of time.

'A Rejuvenation Plan for the Historic forts of Mumbai: A Tribute to Our rich Varied Heritage' is a good initiative by the NAGAR team in terms of its critical approach and counteractive proposed measures. The present work includes study cases of forts at Sewri, Sion, Bandra, Worali, Mahaim and Dharavi. This document also highlights present status of conservation, preservation, review of amenities and implementation of existing legal provisions. These forts are protected monuments by government agencies facing several problems related to management of protected heritage in urban areas. The present work may lack detailed analysis of existing government system but still it is a useful document providing guidelines for future conservation and management forts in Mumbai. I hope to have more documents of such lines initiated by non-government organisations highlighting basis of public private partnership in preservation of cultural heritage for posterity.

(Dr. Tejas Madan Garge)
Director

o/c

Foreword by Mr. Bipin Chandra Negi, Superintending Archaeologist, Archaeological Survey of India (Mumbai Circle)

भारत सरकार
GOVERNMENT OF INDIA

अधीक्षण पुरातत्त्वविद
भारतीय पुरातत्त्व सर्वेक्षण
मुंबई मंडल
सायन किल्ला, सायन (पुर्व)
मुंबई - ४०० ०२२.
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Superintending Archaeologist
ARCHAEOLOGICAL SURVEY OF INDIA
Mumbai Circle
Sion Fort, Sion (East), Mumbai - 400 0022.
Tel / Fax : (91 + 022) 24078388, 24078266
E-mail : circlemum.asi@gmail.com

Foreword

A fascinating fact about the World class city Mumbai is the incredible balance between tradition and modernity and it is also reflects in its architecture. One side is modern skyscraper and other side ancient rock-cut caves, temples, colonial structures and forts. Forts are main tangible heritage of Maharashtra and it is important to mention here that in Maharashtra specially in Konkan belt all types of forts can be seen e.g. hill fort, sea fort (costal fort, Island fort), terrestrial fort (with or without moat) etc. It is a matter of pride for citizen of Mumbai that there are many ancient massive structures in form of fort within Mumbai city but most of them are not in presentable condition. These forts are the testament of the glorious past of the city, hence they deserves for special attention of the government organizations as well as citizens.

It gives me an immense pleasure to write the foreword for this report as it is a painstaking work to prepare a vision document for rejuvenation of built heritage and Nagar did this for their love and respect for this city's glorious past and present. Heritage management in urban area is a challenge and nowadays in metropolitan cities like Mumbai, it becomes more challenging due to the urbanization and growing population pressure but NAGAR team has meticulously prepared a vision document for rejuvenation of the fort of Mumbai along with brief history, beautiful photographs and drawing. In this project, they not only focused upon the heritage but vision for the symbiotic relationship between society and the monument was also drawn by them, how can a heritage proudly stand in a populous locality with mutual understandings and benefits of monuments and society. It's a really good start in this field that a non government organization is also taking such interest in heritage preservation. I believe this vision document will transform in to reality as it is a need of hour. My best wishes to Nagar for their Future endeavors.

(BIPIN CHANDRA NEGI)



Map of the Island of Bombay, dated 1843

Source: 'The Rise of Bombay: A Retrospect', S M Edwardes.

Introduction

Mumbai or *Bombaim* (Good Bay), as it was called by the Portuguese due to its excellence as a natural harbour, has a rich and varied history. When the Portuguese arrived, Mumbai was an archipelago of seven islands. Over time, eleven forts were built in Mumbai, but unfortunately, only nine exist today. All of them are designated as “protected monuments”.

The consolidation and preservation of these forts is entrusted to two government authorities – The Archaeological Survey of India (ASI), a central body and the Maharashtra State Directorate of Archaeology and Museums. Within this study, six of these forts have been covered.

The fort under the jurisdiction of the ASI is Sion Fort and those under the jurisdiction of the State Directorate are Sewri Fort, Bandra Fort, Worli Fort, Mahim Fort and Dharavi Fort.

The Forts of Mumbai are an intrinsic and invaluable part of Mumbai’s heritage. They stand testimony to the City’s vitality and importance from its historic past to the present day. Indeed, they are the sentinels who protected Mumbai and are today in desperate need of rejuvenation and preservation. Due to the ravages of time and human neglect, they have deteriorated and are in a poor condition.



BANDRA FORT



DHARAVI FORT



MAHIM FORT



SEWRI FORT



SION FORT

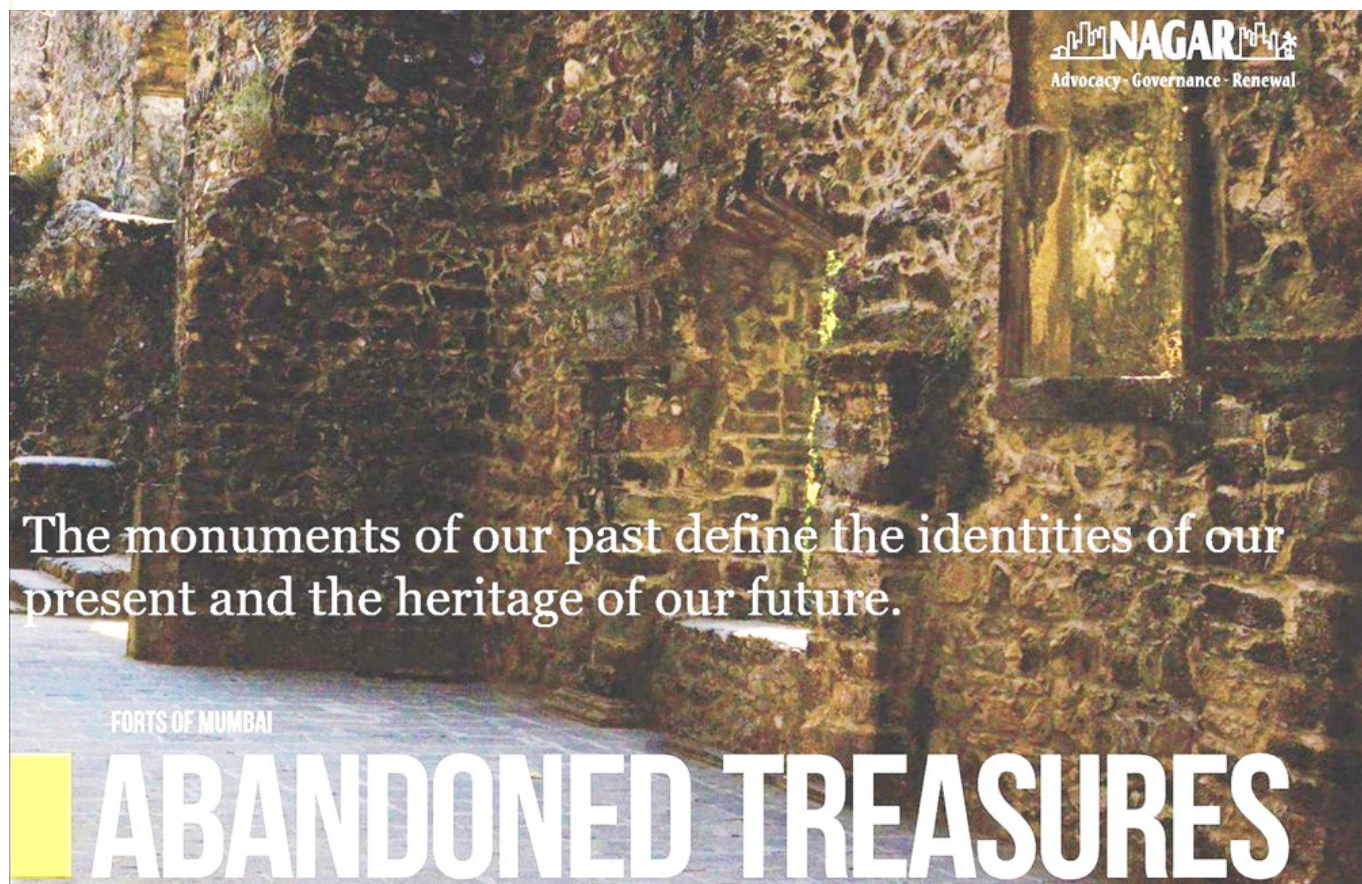


WORLI FORT

Six Forts of Greater Mumbai.

Source: NAGAR.

NAGAR's interest in these heritage monuments resulted in our conducting a survey and publishing our findings in a book entitled – “Forts of Mumbai – Abandoned Treasures”. This has been presented to concerned governing authorities, in the hope that the forts of Mumbai become part of their agenda sooner rather than later.



‘Forts of Mumbai: Abandoned Treasures’; Book Cover, edited with an additional quote.

Source: NAGAR.

The Project

Objective

While deeply involved with civic infrastructure and urban environmental issues of Greater Mumbai, NAGAR feels it is equally important to address issues of built heritage in the City. Hence, the primary objective of the project is to ensure historically and architecturally accurate restoration and preservation of these invaluable monuments. In addition, NAGAR is looking at a holistic rejuvenation of the structures of the forts, as well as their surrounding areas, which should be planned and developed into recreational open spaces. While citizens can take pleasure in the availability of a viable open space, they can also soak up the history of these wonderful forts and garner information about their importance.

NAGAR believes it is necessary to restore, rejuvenate and conserve these historic forts for posterity and provide plaques and signage within the sites of these monuments giving their history. This knowledge would bring the forts alive for citizens and tourists alike, hopefully ensuring that the structures are not vandalised and are treated with respect and care. The interior of each fort should be clean and encroachment free. In addition, the free space around each structure including the buffer zone could be appropriately landscaped following best practices and conservation norms. This would make them available as public open spaces for all citizens to enjoy and recreate in. This becomes particularly necessary when we consider the paucity of such spaces in Mumbai, which are clean and accessible to relax in, play in and commune with nature.

In an effort to incorporate these wonderful forts into the present-day life of the City, NAGAR has put together a proposal for four forts, namely Sewri, Sion, Bandra and Worli. The other two forts, Mahim and Dharavi are heavily encroached, making documentation difficult at this time. Taking into account the specific story and the biodiversity surrounding each fort, NAGAR's plan aims to highlight and enhance the unique position of each fort in time and space.

NAGAR's view is that this can be done by ensuring that all the forts are restored, rejuvenated and conserved in an appropriate manner as prescribed by law and international standards of conservation. Further, by landscaping and maintaining the required buffer zones around them, they can be kept free of encroachments.

NAGAR would like to assist the Maharashtra State Directorate of Archaeology and Museums, the Archaeological Survey of India, the Ministry of Cultural Affairs and the Ministry of Tourism and the Municipal Corporation of Greater Mumbai in their endeavour to rejuvenate the Forts of Greater Mumbai and their surroundings.

We hope the State Government takes up this project and appoints a nodal officer to coordinate it using this report as a basis. NAGAR's conservation architect, who prepared the condition assessment report and is empanelled with the State Directorate, could be appointed to oversee the restoration work.

NAGAR's role will be that of a facilitator in the 'Adopt - A - Monument' programme of the Ministry of Cultural Affairs, identifying sponsors, suggesting regulatory guidelines along with ensuring that best practices are followed.

This would be in keeping with our longstanding reputation of working closely with the MCGM, Govt. authorities, corporates and stakeholder organisations on several projects of civic importance.

Description

Current guidelines regarding the protection of these forts display a worrying lack of concern towards these structures. For instance, the Archaeological Survey of India has firmly established that a prohibited area of 100-meter radius be strictly observed around the monuments, as per the Ancient Monuments and Archaeological Sites and Remains Act, 1958, while the Maharashtra State Directorate of Archaeology and Museums has no such guidelines. Moreover, though materials like lime plaster or mortar, which are in consonance with the age of the structure, are used for restoration in some cases, there are innumerable instances where materials, which are not suitable, such as cement plaster or mortar are used. Not only does the restoration work using unsuitable materials result in a loss of the original structure, it would prove detrimental to the structural fabric and life of the monument.

Importantly, NAGAR's proposal includes framing guidelines for the restoration of the structures as well as for their maintenance following international best practice. NAGAR has commissioned a qualified conservation architect, Archana Deshmukh, who works extensively with the forts of Maharashtra, to do the architectural documentation and 'defect mapping' of four of these forts.

Authority

The built heritage in India includes artefacts, statues, monuments and buildings, which are in use. In order to ensure their optimum protection, preservation and conservation, notified structures are categorised into various grades of heritage, which indicate their significance, and the heritage value associated with them.

The Ancient Monuments and Archaeological Sites and Remains Act, 1958 “provides for the preservation of ancient and historical monuments and archaeological sites and remains of national importance, for the regulation of archaeological excavations and for the protection of sculptures, carvings and other like objects” (No. 24 of 1958). In 2010, this Act was amended whereby it “declared the limit of the protected area or the protected monument as extending to a distance of 100 meters in all directions and this area shall be prohibited.” This necessary amendment of a buffer zone is regrettably not included in the State Act, resulting in heavy encroachment around the protected monuments.

Though a Fort Conservation and Development Committee has been formed by the Government of Maharashtra to survey and conserve forts in Maharashtra, inexplicably the forts in Mumbai have not been included in the first phase.

All the forts in Mumbai have been given the Grade-I Heritage status in the Heritage Regulations For Greater Mumbai 1995, published by the Urban Development Department, Government of Maharashtra and included in the Heritage List prepared by the MCGM. The regulations state:

“Grade-I Heritage:

Definition: Heritage Grade-I comprises of buildings and precincts of national or historic importance, embodying excellence in architectural style, design, technology and material usage and/or aesthetics; they may be associated with a great historic event, personality, movement or institution. They have been and are the prime landmarks of the region. All natural sites shall fall within Grade-I.

Objective: Heritage Grade-I richly deserves careful preservation.

Scope for Changes: No interventions be permitted either on exterior or interior of the heritage building or natural features unless it is necessary in the interest of strengthening and prolonging the life of the buildings and/or precincts or any part or features thereof. For this purpose, absolutely essential and minimum changes would be allowed and they must be in conformity with the original.

Procedure: Development permission for the changes would be given on the advice of the Heritage Conservation Committee.

Vistas/Surrounding Development: All development in areas surrounding Heritage Grade-I shall be regulated and controlled, ensuring that it does not mar the grandeur of, or view from Heritage Grade-I.”

The Heritage Grade-I sites are maintained under the purview of either the Archaeological Survey of India, or the State Directorate of Archaeology and Museums, as defined in the notification.

Among the six forts covered by this report, the Bandra Fort, Dharavi Fort, Mahim Fort, Sewri Fort and Worli Fort are under the jurisdiction of the State Directorate of Archaeology and Museums, while the Sion Fort is under the jurisdiction of the Archaeological Survey of India.

Issues of Significance

The heritage grading of sites aims to ensure the optimum level of preservation by the concerned authorities, stakeholders as well as the public. However, it remains evident that most citizens are unaware of either the existence or the significance of the forts of Mumbai. This needs to be urgently corrected and it is well known that heritage awareness leads to heritage sensitivity.

The structures and their sites have been documented for their current conditions and defects, a plan has been prepared for sensitive and appropriate restoration and maintenance guidelines have been stipulated so that any detrimental action in the future, due to negligence or ignorance, can be prevented.

The forts situated in Mumbai, were built at coastlines and along creeks, but are now surrounded by urban sprawl, blurring their identities and stature. This is specifically due to the fact that the surroundings of these sites are left unregulated, despite the direction in the Heritage Regulations that they be regulated and controlled. The forts and their surroundings are neglected, dirty, encroached upon and deteriorating at an alarming rate. It is imperative that this is reversed and these historic monuments are restored to the city.



Plan de Bombay et ses Environs, dated 1764.

Drawn By: Bellin, J. N., *Le Petit Atlas Maritime. Recueil de cartes et plans des quatre parties du monde.* (Volume III of the 1764 edition)

The NAGAR Report

Inclusions

NAGAR's report comprises all relevant aspects for rejuvenation of the fort sites in Greater Mumbai, which are listed below.

The history of each fort, since its origin, the role it played in the life of the city and which led to its significance, and its evolution over the years, have been described and supported by available archival information as well as images and drawings.

The current status of each fort has been observed and recorded, with a view to ascertain its level and quality of preservation and whether the stipulated Heritage Regulations have been effectively followed.

We have also focussed on their architectural character and prevailing defects, which have grown over the years. To reverse this unfortunate process, we have given sensitive and sustainable measures for their effective restoration.

Moreover, the surroundings of each fort have been reviewed and given careful consideration while formulating the rejuvenation plans. This is because the environs surrounding the forts are significant to the unique context of each fort. The immediate surroundings are an integral part of the fort site and need to be protected and preserved.

Historical sites such as these necessitate interpretation for visitors, and introducing appropriate signage is a means to achieve this. Also required is instructional and directional signage to ensure ease of circulation for visitors.

All signage should be sensitively designed, keeping in mind the context of the fort.

The Sugamya Bharat Abhiyaan (Accessible India Campaign) mandates that all public places must have barrier free accessibility.

All proposed design interventions should be according to the guidelines stipulated.

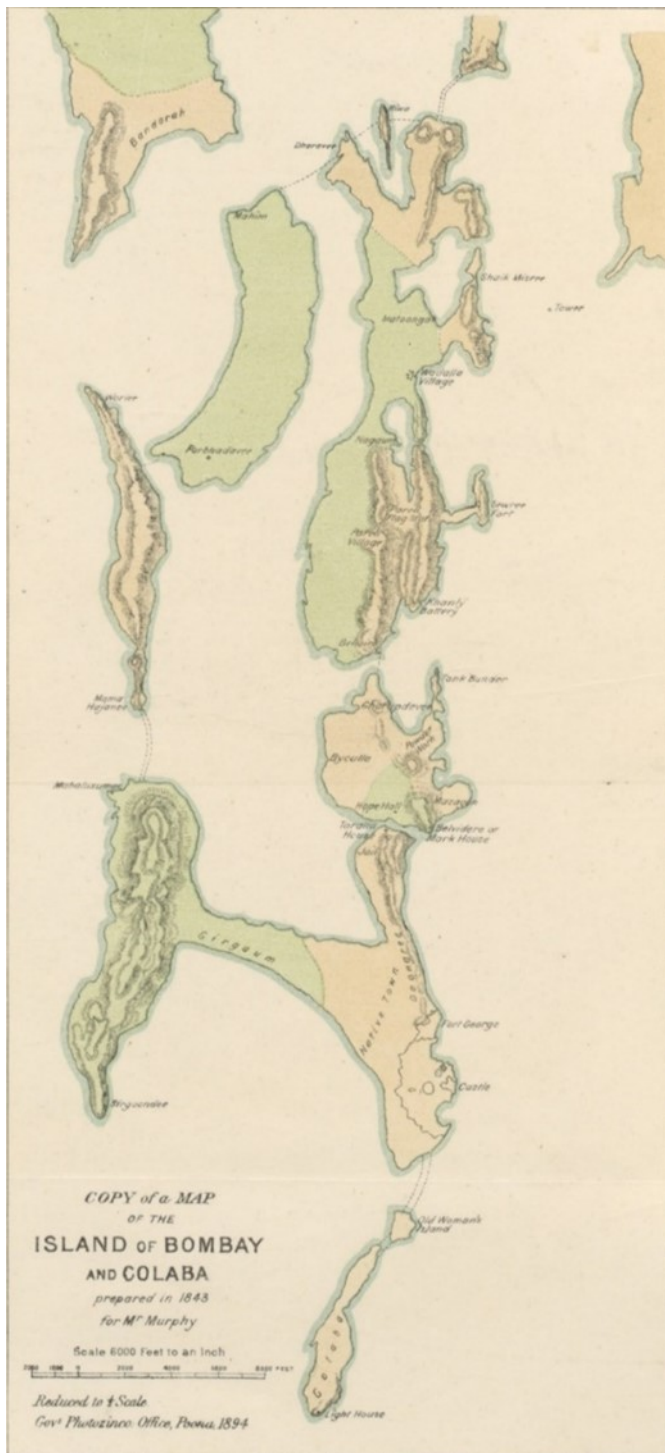
The report also includes suggested measures to implement effective programmes and strategies, to emphasize the civic importance and tourism value of these sites. We hope this approach will garner support from the authorities as well as stakeholders, which is the holistic way to undertake the rejuvenation and realise the full potential of these monuments.

Rejuvenation of the Forts of Mumbai

Sewri . Sion . Bandra . Worli

A Story of the City's Evolution

The representative map of Mumbai depicted herein, indicates the original islands of Bombay.



Noting the positions of the individual forts, it is evident that the forts have been an intrinsic part of the history of the city. Each of the forts had a strategic position, as they were built to serve specific purposes, pertaining to defence and security. These historic structures played a pivotal role in protecting the islands.

However, while the forts have been witness to Mumbai's growth, Mumbai is, today, witness to their decline. They have sadly deteriorated from being imposing monuments of grand stature to becoming victims of insensitive and callous neglect.

Each fort in Mumbai has arisen out of a unique context, and continues to retain its individuality till date, be it the architecture or the surroundings. A programme aimed at achieving sensitive conservation of the structures, along with interventions to enhance them, and raise awareness of their value, would be ideal. We have viewed the Forts of Greater Mumbai collectively, from the perspective of their historic importance, and their future role as part of the cityscape.

The forts of Mumbai gained maximum prominence after The Marriage Treaty of 1661, between the British King Charles II, and the Portuguese Lady Catherine of Braganza which led to the secession of the Bombay Islands to the British. The Islands were a mix of peoples of different races and diverse faiths, many of whom were invaders. This, along with the constant pressure felt in the region by the Maratha Empire, was a key factor in establishing the forts and their rise in prominence.

'Copy of a Map of the Island of Bombay and Colaba',
Dated 1843.

Source: Gazetteer of the Bombay Presidency .



It is a testament to their strength, and to the construction prowess of our ancestors that they remain standing today. Unwise actions have led to the degradation of some features, which can be rectified, or at least salvaged, by the implementation of necessary strategies.

By enhancing the surroundings, providing informative signage and improving facilities for visitors, the forts can present a gateway into the past of this city.

These monuments are immensely valuable to the fabric of this city, and with their importance in history as well as their relevance in the present, for citizens as well as tourists, they are nothing short of treasures for posterity.

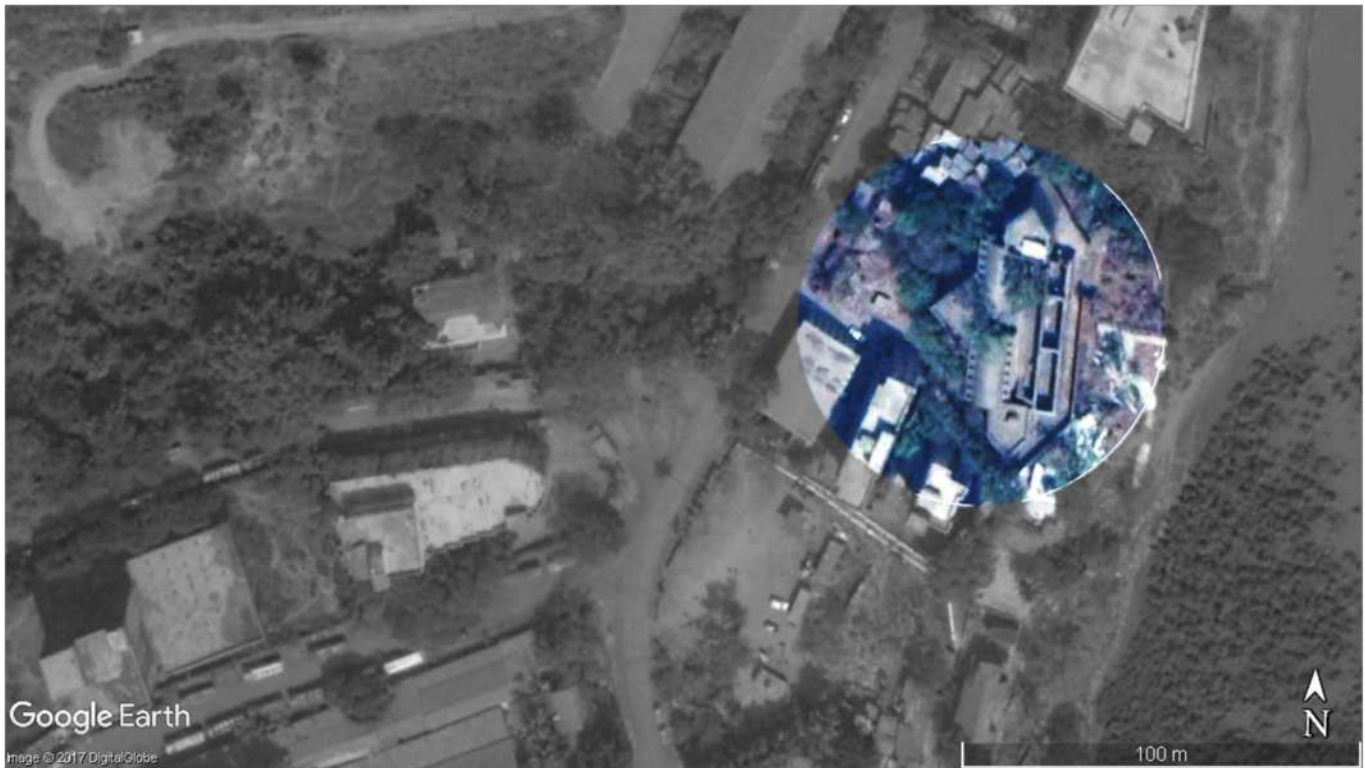
Map showing the Archipelago of the Seven Islands of Bombay, and Subsequent Reclamation with the Locations of the Forts.

Description: Edited by Charles Blackwood.

Source: Nasadeeya (Ar. Archana Deshmukh).

Sewri Fort

About the Fort



Satellite Image depicting the Location of Sewri Fort Site and Surroundings.

Source: Google Earth.

The region of Sewri is located along the eastern side of the city of Mumbai and was originally a part of the Bombay Isles. The fort is situated along the eastern waterfront. The name 'Sewri' is most probably a derivative of 'Shivadi', named after Lord Shiv. Shivadi was a part of Parel island, which was an island in the Bombay Islands archipelago. With the Arabian Sea on one side and with Sion on the other side, the location of Shivadi held prominence. Towards the north, beyond the creek, was Salsette Island.

However, after the Marriage Treaty of 1661, in the initial years, the British did not lay focus on the economic aspects of Sewri. In a diary entitled 'Secret and Political Department', there is an honest and candid description of the lack of focus on Sewri. The fort itself was built in the year 1680, after the British were firmly established in Bombay. The architecture of the fort was elementary, with similar facades along all sides.

In 1681, Sardar Yakut Khan Siddi, under the reign of King Aurangzeb, attacked Bombay, and it was Sewri fort which fell first, its capture allowing Yakut Khan to proceed to Mazgaon. Under an agreement with Aurangzeb, the British had Yakut Khan removed from the islands. The fort was eventually reconstructed, and an inscription currently existing in the fort indicates that the reconstruction is dated 1768.

Sewri Fort



Pen and Ink Drawing of Sewri Fort, in Bombay, looking across to Trombay Island, by William Miller (1795-1836).

Source: tr66.blogspot.in.

However, as the British control in Bombay increased, the fort was not necessary for defence purpose. It was first used as a prison, and later a 'godown'. These different uses of the fort led to many alterations in the structure of the fort.

The entire structure is bounded by high stone walls, with inner concentric walls which provides further protection. It is landlocked on three sides and is situated atop a cliff, 60 meters high, with a strong base of rocks below it. The fortification has been constructed in heavy stone masonry blocks, making the main walls thick and large. There are ten turret areas, which were once fitted with large canons. The stone gateway leads to a courtyard and the inner entrances are placed perpendicular to the main entrance in order to prevent a frontal attack. There is also a pentagonal room with an elongated vaulted corridor inside the fort and there are several compartmentalized spaces which had been built with the unique feature of curved roofs made of stone blocks. These spaces were used for various purposes including store rooms and residential rooms.

Sewri Fort

Significance and Value of the Historic Fort	
Historic Significance	Built by the British in the 18 th century, the fort is an intrinsic part of the colonial history of Mumbai, and was one of the important forts along the Western Coastline of India.
Geographical Significance	The fort is situated at the Eastern Seafront of the city, at a height.
Architectural Significance	Military and Defence Architecture and a part of the city's fortified heritage.
Ecological Significance	The site overlooks the Eastern Seafront of the city of Mumbai, and glimpses at an abundance of mangroves and a point along the coastline which is frequented by migratory birds including flamingoes.
Local and Regional Significance	Being an intact heritage structure, offering scenic views, the site is frequented by history buffs as well as nature lovers, along with students and tourists.

Sewri Fort

Recent History and Past Interventions

After Indian independence in 1947, the Bombay Port Trust, BPT, started using this monument as a godown. In 1976, there was a proposal put forth to demolish the fort and use the land for development of housing for the officers of the BPT. This sparked an outrage among citizen activists who strongly opposed it which led to the Directorate of State Archaeology and Museums inscribing Sewri fort as a Grade I, state protected monument and its usage as a godown was stopped.

Currently, Sewri fort is structurally intact, and its original form can be viewed and interpreted from its remains. However, it has been subject to neglect as well as insensitive restoration practices, which have caused its surfaces to be haphazardly treated with inappropriate materials. The site has been partially encroached upon and has been marred with the dumping of litter and garbage. Its location makes it less visible to the public, and it is therefore visited mainly by enthusiasts who are aware of its existence.

Though the fort is close to major transport links such as the railway station and bus stop, there is a lack of signage which could help direct the public towards the fort. There is no signage, either on the road leading to the fort, or the road abutting the site which indicates the presence of a historical monument. Unless one has got specific directions to it or is provided with a map of the region, one would miss the fort completely.

One of the most attractive features that can be ascribed to Sewri fort is the panoramic view it offers of the Eastern waterfront. Its close proximity to the sea takes in the dense and green cluster of the mangroves surrounding it. From November to June, every year, multiple species of birds, especially flamingos flock to the bay and form a beguiling pink vista of Mumbai.

Enthusiasts, bird watchers, biodiversity conservationists and organisations such as the Bombay Natural History Society are regularly active in promoting awareness of the flora and fauna and planning visits for the public. It is noteworthy that records dating from the colonial era show that the area had a similar recreational purpose then.

Sewri Fort

Observations of the Fort



Entrance Steps to Sewri Fort.



Image showing Arch at Sewri Fort.



Courtyard at Sewri Fort.



Image showing Steps at Sewri Fort.



Courtyard at Sewri Fort.



Mangroves and Flamingos as viewed.

The structure of Sewri Fort is largely intact today, aside from an exterior wall, slightly broken, and an upper floor, which seems to have once existed. The structure, however, has also suffered from insensitive restoration practices, including the application of cement plaster in many portions.

The images have been sourced from NAGAR.

Sewri Fort

Interventions Proposed

Approach: Existing



Legend



Lack of Necessary Signage



Dumping of Garbage

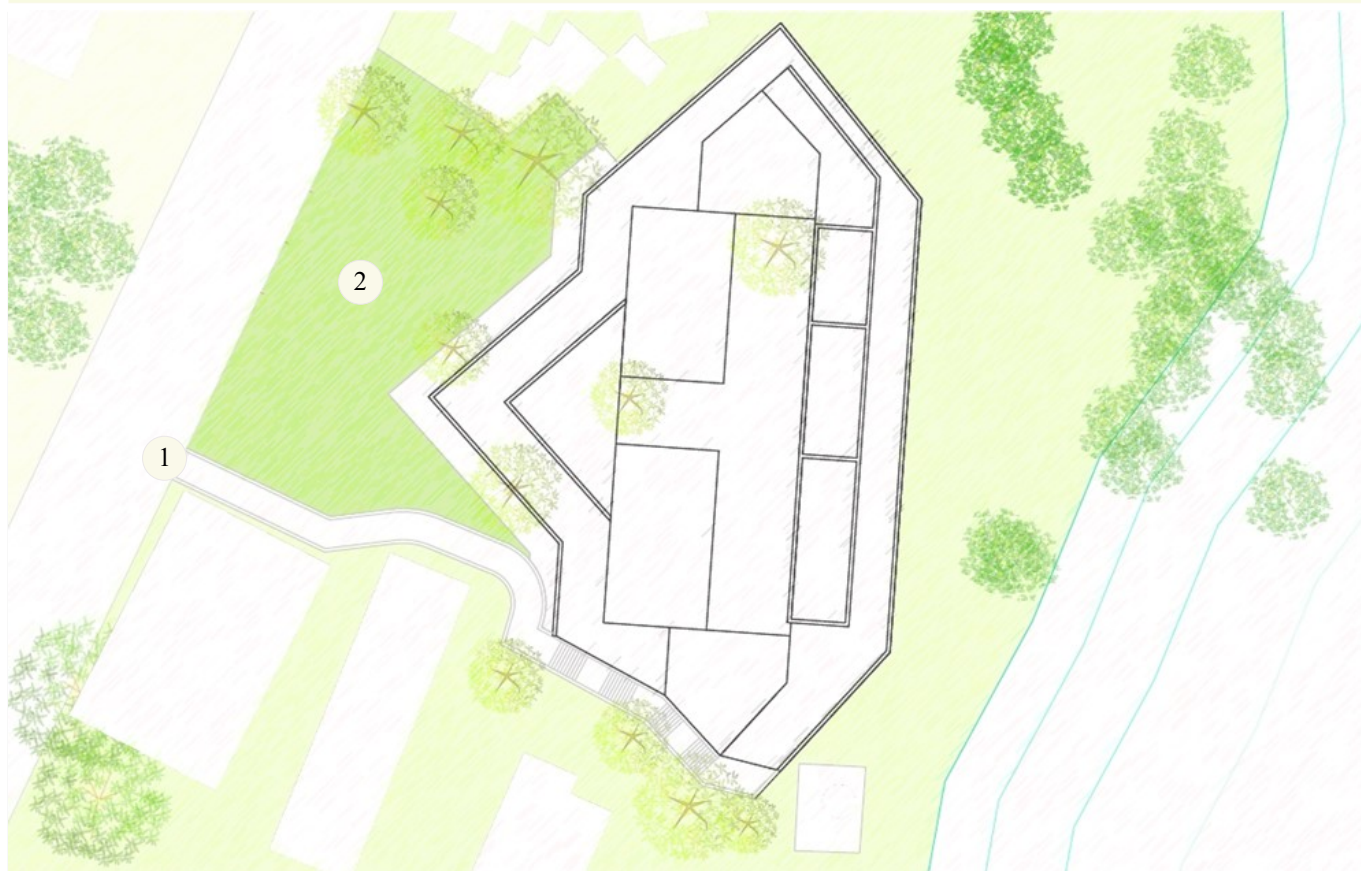


Satellite Image Indicating Existing Conditions at Site.

Source: Google Earth (Image), NAGAR (Edits).

Sewri Fort

Approach: Proposed



Legend

- 1 Entrance Gateway and Signage
- 2 Removal of Garbage to Create Green Recreational Space with Signage and Street Furniture

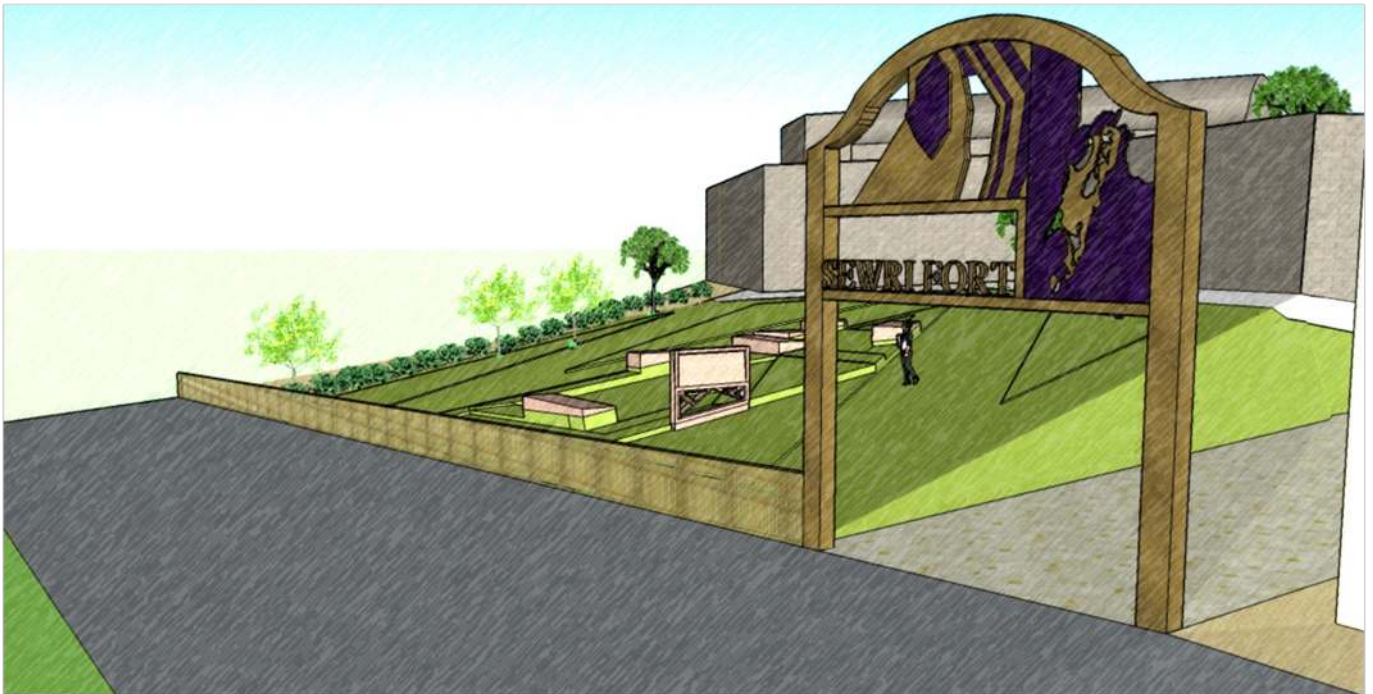


Proposed Layout for Sewri Fort Site and Surroundings.

Source: NAGAR.

Sewri Fort

Rendered Views



View 1: Entrance to Sewri Fort Site from Approach Road.



View 2: Rejuvenation of Sewri Fort Site Surroundings for a Recreational Open Space with Signage.

Sion Fort

About the Fort



Satellite Image depicting Sion Fort Site and Surroundings.

Source: Google Earth.

The region of Sion formed the northernmost boundary of the Bombay Isles, separated from the Salsette Island by the creek and the Sion fort was located along this boundary. The etymology of Sion, or Sheev, as it is also called colloquially is perhaps a derivative of 'Simha' (Seema) which also means boundary in Marathi, an indication of its position as a boundary hamlet.

A fort at Sion was built by the Portuguese, and after the Marriage Treaty of 1661, the Sion Fort was rebuilt between 1669 to 1677, during the time of the British East India Company. At this time, the Bombay Islands were under the British, Salsette was under the Portuguese and the Marathas held the mainland to the north. Therefore, Gerald Aungier, the then Governor of Bombay, sanctioned the building of this fort, to ensure a stronghold at the border. This is among the largest forts built by the British in Bombay and much of it survives despite the ravages of time.

Sion fort was built to defend, protect as well as accommodate a large number of soldiers, and has provisions for a large catchment area for freshwater.

It has been built atop a conical hill, the Sion hillock, and has a number of chambers whose architectural features suggest that the fort was used as a residence.

Sion Fort



Depiction of Sion Fort and Surroundings, the View from Sion Fort, by James Wallace, in 1791-92.

Source: Lachlan and Elizabeth Macquarie Archive.



Depiction of Sion Fort and Surroundings, the View from Sion Fort, by James Wallace, in 1791-92.

Source: Lachlan and Elizabeth Macquarie Archive.

Sion Fort

According to some archival reports, the fort had a small watchtower, and old paintings of the fort suggest the presence of cannons and soldiers on guard. The main structure of the fort is built in granite stone, and the inner portions are mainly in laterite stone masonry, bound with mortar. The usage of laterite is surprising, as it is not native to the region.

The fort has a very strong rampart. There are bastions on its sides and is in cylindrical shape. On top of the rampart, it seems that there had been medium sized cannons fixed in all four directions. The exterior of the rampart lowers into the ground with a steep slope which lends strength to its defense. The chambers within the fort have been built in European style, comprising rooms of various sizes are still largely intact. Openings in the walls of the rooms indicate that the area was well ventilated. The pathways and steps found leading to the fort and its interiors have been found as largely intact and strong, built and restored in stone blocks and slabs. The fort had an outpost watch tower, which was the highest point. There remains a shorter access route from the base of the hillock to the top of the fort, which is a stone step pathway, but portions of it have disappeared with the ravage of time. The fort had been built very sufficiently to meet the needs of an outpost watch tower. This watch tower is the highest place of this fortress.

Presently, the fort is located within Pandit Jawaharlal Nehru Van Udyan, a garden maintained by the MCGM. The only fort in Greater Mumbai under the jurisdiction of the Archaeological Survey of India, Sion fort is protected by its regulations, which include a mandatory prohibited zone of 100 meters. This does not allow any development or construction within this area, as per the Ancient Monuments and Archaeological Sites and Remains Act, 1958. The garden creates a recreational area and the entrance steps of the fort lie within the site of the garden itself.

Sion fort, at present, is in a good condition, structurally, as well as free of any encroachments in its environs. This is due to the presence of an existing buffer area which has helped control such deteriorating factors. Therefore, this emphasizes the need of a mandatory buffer zone for the other forts as well, which are under the jurisdiction of State Directorate of Archaeology and Museums.

Sion Fort

Significance and Value of the Historic Fort	
Historic Significance	Built by the British in the 17 th Century, the fort is an intrinsic part of Mumbai's colonial history.
Geographical Significance	The fort is situated atop the Sion hillock, and once formed a part of the boundary of the Bombay Isles.
Architectural Significance	Military and Defence Architecture and a part of the city's fortified heritage.
Ecological Significance	Sion hillock is surrounded by the Pt. Jawaharlal Nehru Van Udyan, a garden, with a wide range of plant and tree species, which forms a natural buffer area around the fort. The site overlooks the salt pan lands and Thane creek into the distance.
Local and Regional Significance	The site is visited by history enthusiasts as well as nature lovers. The premises and the surrounding gardens are frequented by students and tourists as well.

Sion Fort

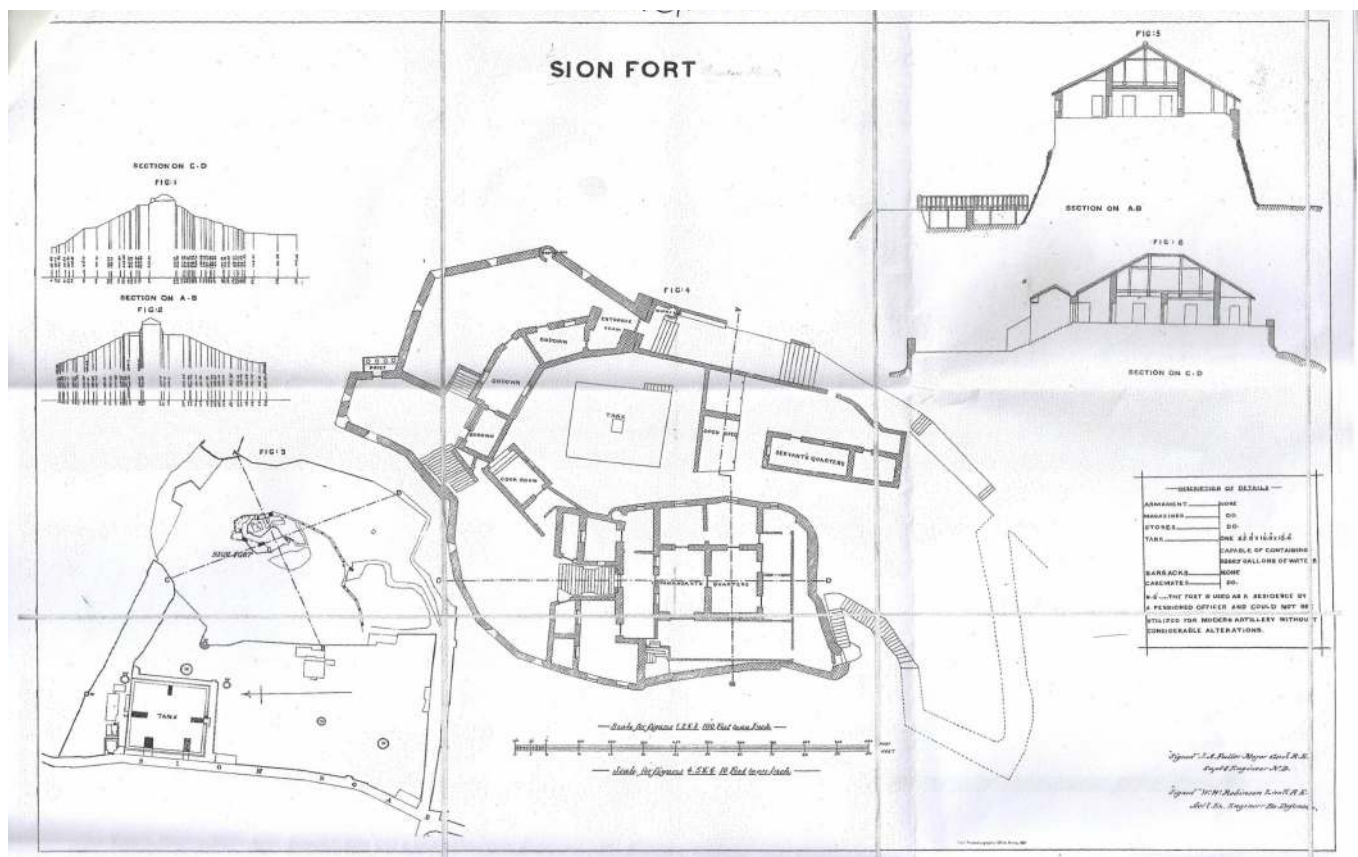
Recent History and Past Interventions

The site adjacent to the Sion Fort also comprises the office of the Archaeological Survey of India, Mumbai Circle. The ASI publishes a yearly review of all its activities entitled 'Indian Archaeology: A Review'. A perusal of these volumes indicates that conservation of Sion Fort was undertaken periodically, since its inscription as a heritage monument of national importance.

There are records which state that in as recently as 1985, tiled roof repairs were undertaken at Sion fort. The archival drawings procured from the ASI also indicate that the roofs of the fort were sloping, and this is supported by the form of the walls observed in the ruins, along with the placing of decayed timber members.

The ASI has continued to undertake conservation work at the Sion fort site and reports suggest that restoration work on the walls, in 2009, was halted due to the lack of funds. Officials from the ASI have informed us that restoration work for the stone pathways was also taken up in 2015.

However, despite these efforts, the structure bears little trace of roofs and also seems to have been subject to unsuitable restoration measures, such as plaster work in cement. The walls are covered with graffiti, which suggests a lack of vigilance in the maintenance of the fort.



Documented Drawings of Sion Fort.

Source: Archaeological Survey of India, Mumbai Circle.

Sion Fort

Observations of the Fort



Sion Fort Viewed from Entrance Steps.



The Remains of the Fort and Bastions.



Internal Chambers at Sion Fort.



Steps Leading to the Interiors of Fort.



Structural Grooves and Remains.

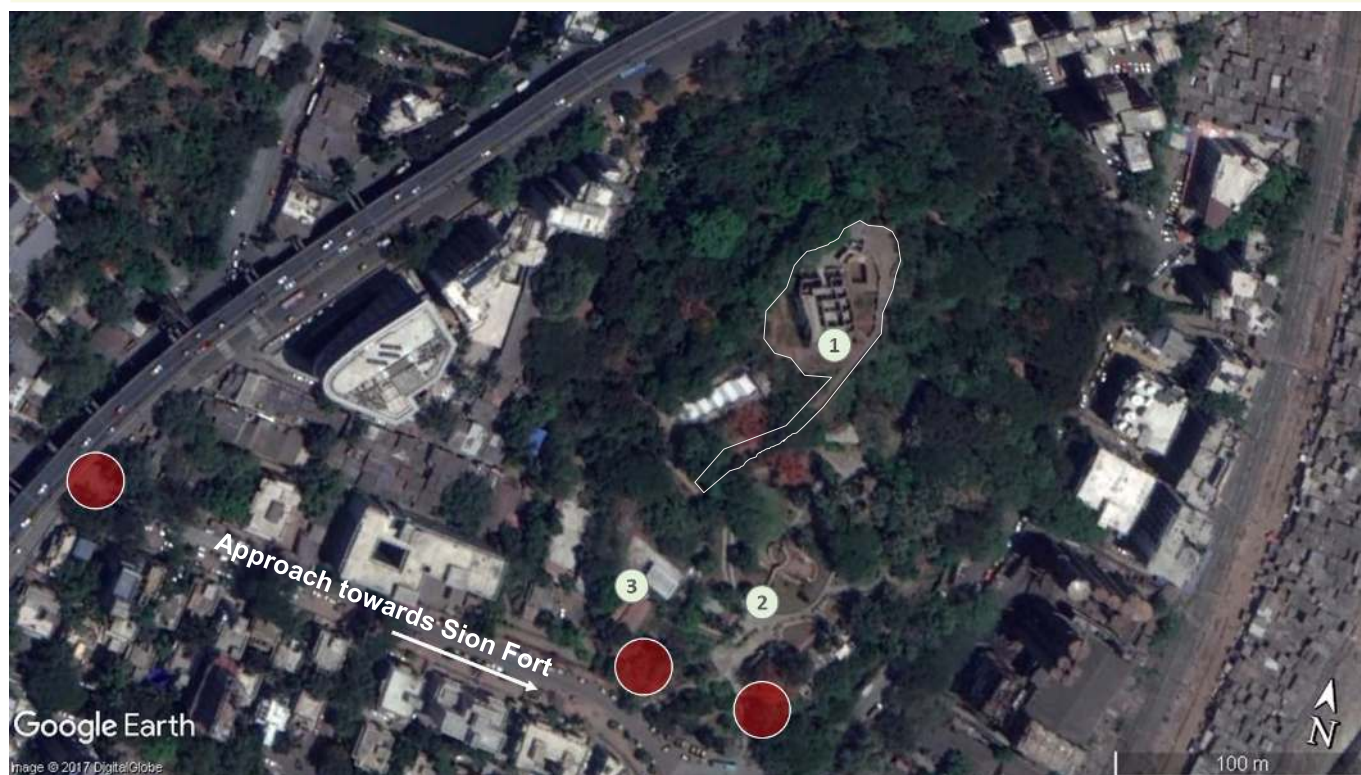
The structure bears little trace of structural members, roof and other timber construction. A canon is lying neglected in one of the niches in the fort, without a pedestal, facing the wrong direction. The space meant for a water tank lies empty, and is littered with waste and dried leaves. In past restoration works, the fort has in parts been subject to unsuitable restoration, such as application of cement plaster on its walls. However, work for restoring the floor of the monument was recently undertaken.

The images have been sourced from NAGAR.

Sion Fort

Interventions Proposed

Approach: Existing



Legend

- 1 Sion Fort Structure
- 2 Pt. Jawaharlal Nehru Van Udyan
- 3 Archaeological Survey of India, Mumbai Circle

● Absence of Informative Signage

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Satellite Image showing the Existing Conditions at Site and Surroundings.

Source: Google Earth (Image); NAGAR (Edits).

Sion Fort

Approach: Proposed



Legend

- 1 Addition of Directive Signage regarding Sion Fort
- 2 Addition of Signage Directive towards ASI Mumbai Circle
- 3 Entrance Gateway and Information about Sion Fort

Proposed Layout for Interventions at Approach.

Source: NAGAR.

Sion Fort

Access: Existing



Legend



Steps for access, but no provision of barrier free access of any kind



Existing Layout Indicating Position of Garden and Route to Fort.

Source: Google Earth (Image); NAGAR (Edits).

Sion Fort

Access: Proposed

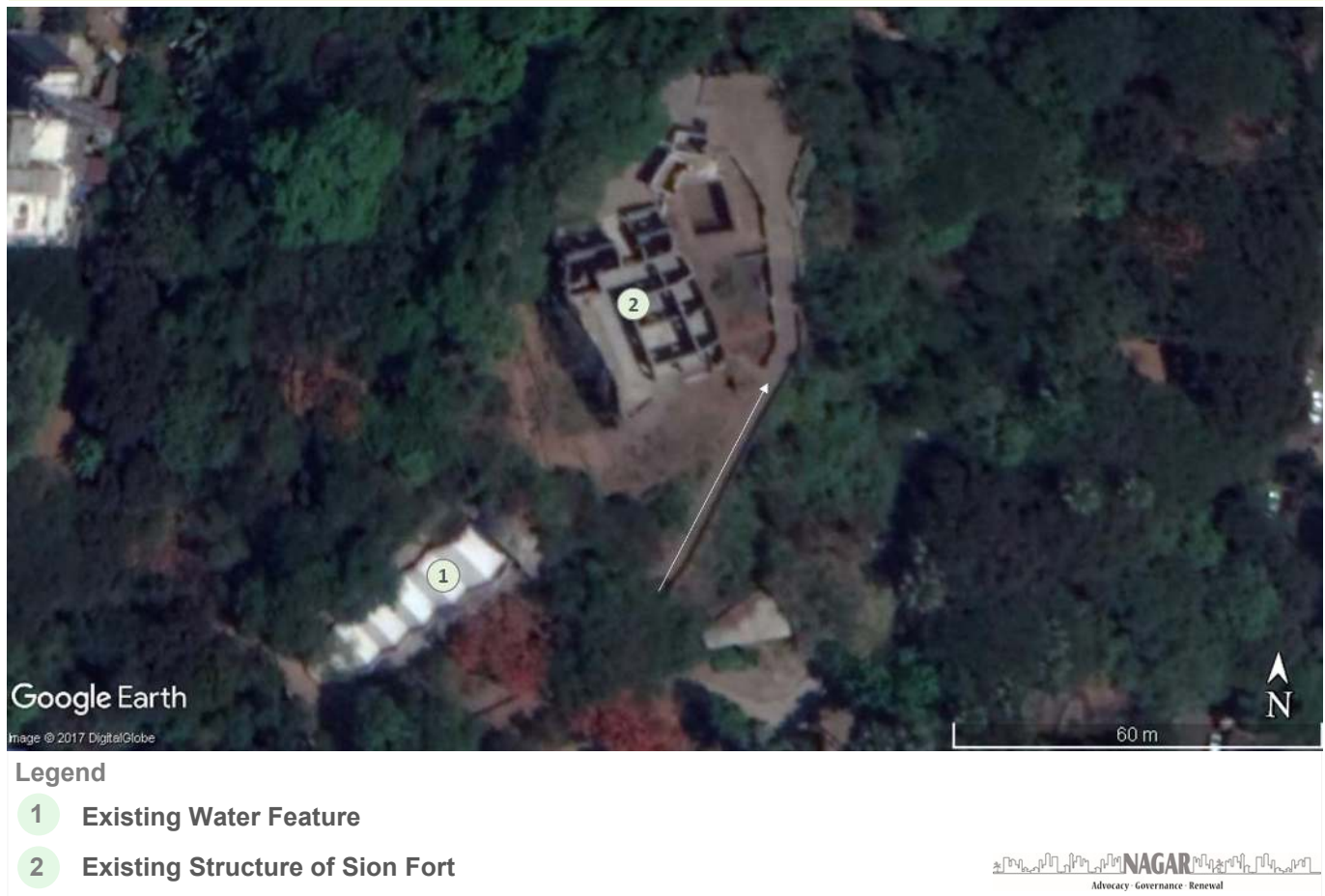


Proposed Layout for Signage and Access as Indicated.

Source: NAGAR.

Sion Fort

Sion Fort Structure: Existing

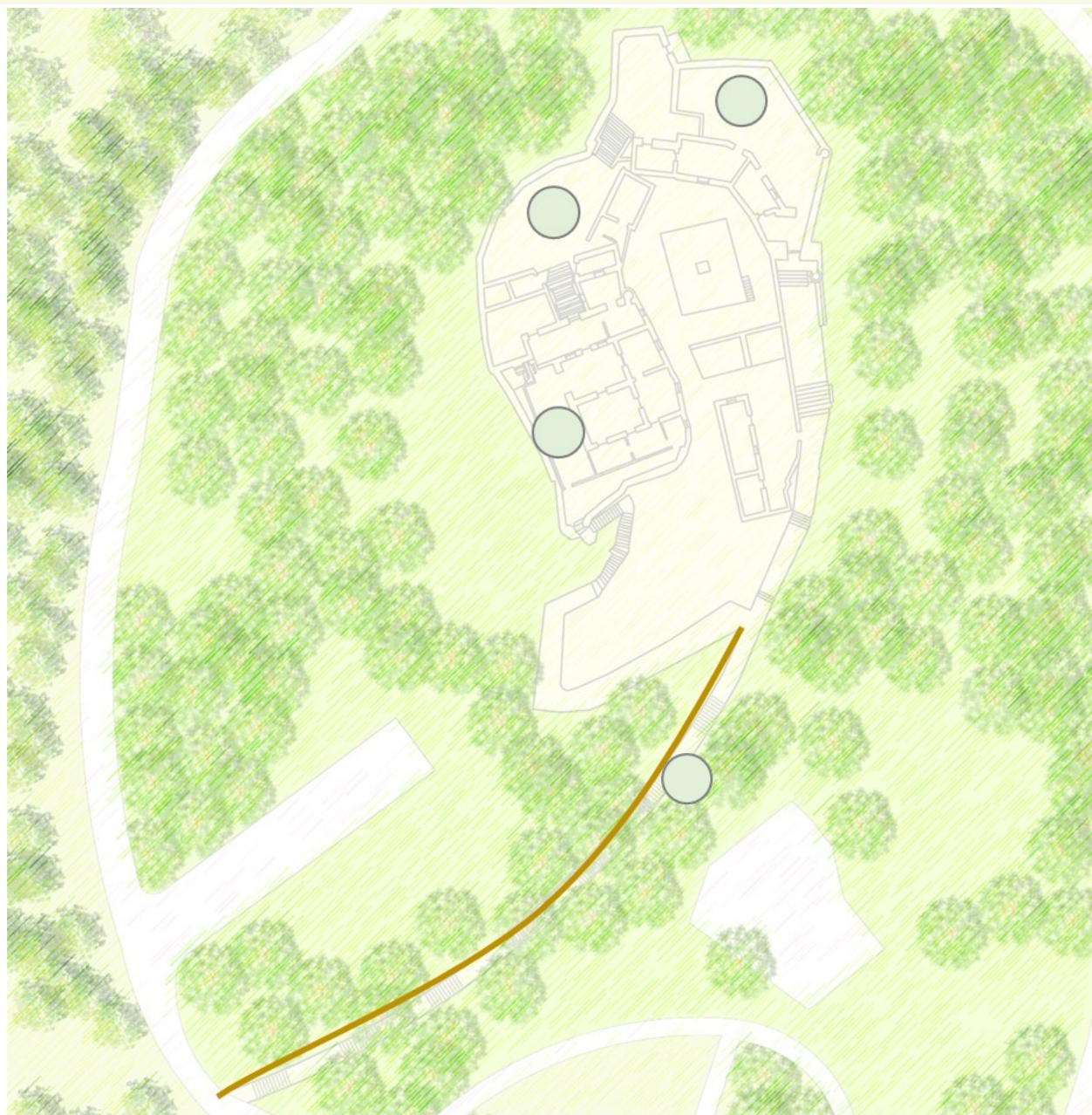


Satellite Image showing the Existing Location and Condition of Sion Fort and Site.


Source: Google Earth (Image); NAGAR (Edits).

Sion Fort

Sion Fort Structure: Proposed



Legend

-  Interpretative Signage along the Steps, Plantation and Landscaping as
-  Spaces with Potential for Interactive Usage



Proposed Layout for Interventions at Sion Fort.

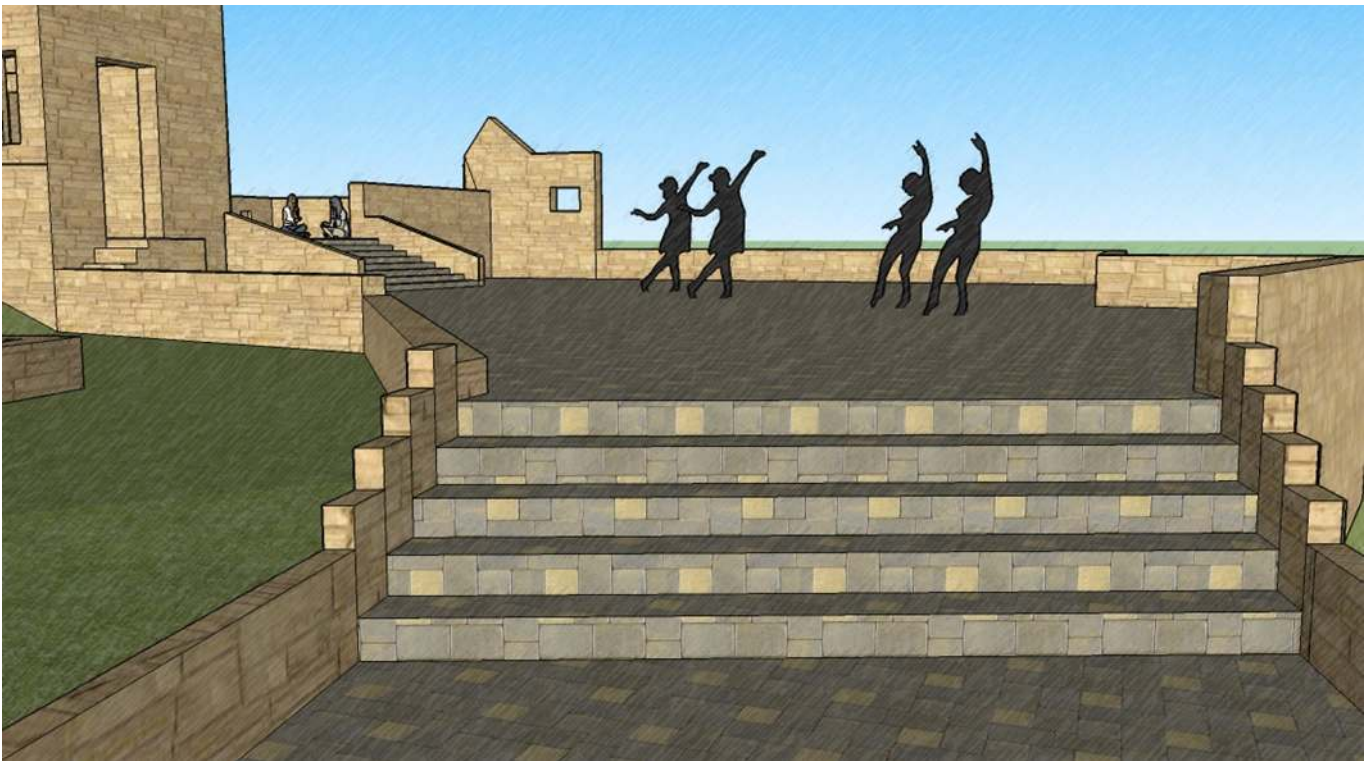
Source: NAGAR.

Sion Fort

Rendered Views



View 1: Signage and Entrance to the Steps towards Sion Fort (View not to Scale, Representational Only).



View 2: Usage of Spaces in the Fort for Different Cultural Activities.

Bandra Fort

About the Fort



Satellite Image showing Location of Bandra Fort Site and Surroundings.

Source: Google Earth.

Bandra Fort, also known as, Castella de Aguada, is situated on the South-Western shore of Bandra, one of the Western Suburbs of Greater Mumbai. The entire region was once called Salsette, or 'Shashashti', derived from the sixty-six villages it was made up of.

The Portuguese had established themselves in the region in 1534 and they intermittently took measures to strengthen their base. This became especially important when the British came to India and started their expansion. In addition, the Maratha Empire beyond Bombay was a cause of concern for the Portuguese. Due to the Marriage Treaty of 1661 between the British and the Portuguese, the Isles of Bombay were ceded to the British. However, the rivalry between the Portuguese, and the British East India Company continued.

In order to strengthen their boundaries, and ensure optimum defence, against not only the British, but all potential attackers and invaders from the sea, the Portuguese built Bandra Fort in 1640, and it was named Castella de Aguada, after a fountain of potable water (Aguada, in Portuguese) which had existed there. The Bandra fort held a position of immense importance, being the only fort under the Portuguese control along the boundary of Portuguese Salsette and British Bombay Islands. The latter contained the imposing Mahim fort, held by the British East India Company, which had survived multiple formidable attacks in the past.

Bandra Fort

The Bandra Fort played an important role, when in 1735 the Marathas gained more strength, moved forward and captured major portions of Portuguese Salsette. However, when Salsette came under attack from the Marathas, and there was no help forthcoming from the British, the Portuguese destroyed major portions of their own fort, in 1739. This was done in order to prevent it falling into the hands of the Marathas. Due to this background, though the Bandra fort ruin represents only a portion of the entire fort, it is still an essential aspect of Greater Mumbai's history.

The fort is situated atop terrain comprising basalt rock, and is surrounded by a rocky outcrop. The north and east portion are at the highest level of the terrain, and the south and west are at the lowest, with the exteriors of the fort walls being continuously struck by waves. It rises from sea level to an altitude of 24 meters.

Dressed basalt stone masonry is used for the construction of the fort walls. The entrance to the fort comprises a stylized Portuguese gateway, with a stone framing around the door opening. Decorative stone brackets are on both sides of the gateway, leading to the stairway. Stone projections are identified at lintel level and there is a memorial stone plaque on the gateway.



Image of the Military Camp Garrisoned at the Site of Bandra Fort, Hill and Land's End during the Second World War.

Source: Naresh Fernandes (www.tajmahalfoxtrot.com).

Bandra Fort

Significance and Value of the Historic Fort	
Historic Significance	Built by the Portuguese in the 17 th Century, it was one of the important forts on the Western Coast, and an intrinsic part of Mumbai's colonial history.
Geographical Significance	Along the coast of Mumbai, it once overlooked a harbour, and was constructed due to its strategic location from the point of view of defence.
Architectural Significance	Military and Defence Architecture from the Colonial Era, a part of the Fortified Heritage in Mumbai.
Ecological Significance	Situated at the Coast, it overlooks the Sea, and the Fort is atop rocky outcrop, and the surrounding site is abundant with greenery. The surrounding site comprises of a botanical garden (reflecting biodiversity), which is maintained by a residents' trust. The presence of the sea and oceanic ecology adds to the significance.
Local and Regional Significance	The place is visited frequently by daily visitors looking to recreate, history buffs and heritage walkers, tourists and students, including nature lovers. It is also significant for the local residents, as they have invested and effectively maintained the surroundings and the site. The site surroundings also comprise an amphitheatre, and that along with the additional open areas in the foreground of the fort and acts as an active cultural hub for events and concerts.

Bandra Fort

Recent History and Past Interventions

The interest and involvement of the local residents of Bandra led to Bandra fort being successfully put up as a project for rejuvenation in 2006 by the Bandra Bandstand Residents Trust (BBRT). This initiative garnered support from the local government and corporator and they successfully worked towards ensuring that the surroundings of Bandra fort were cleared of the existing litter, debris and garbage. They also ensured, that the present topography of the surroundings of the fort was preserved as it was, and not tampered with during the intervention.

The project developed gardens and open spaces at the lower level which abuts the sea and provides an entrance to the fort. Similar development took place at the higher level, which offers views of the sea and the adjacent areas of Mahim and Worli. A well maintained botanical garden was laid along the contours with information about the typology of the plants and species. In addition, an amphitheatre was constructed along the contours of the land, which caters to a number of cultural events and programmes, as well as daily activities. Signage regarding the history of the fort and its relevance has been placed at the site.

The efforts of the BBRT have led to the fort becoming a viable option for visitors and recreation. The space around the fort, which includes the gardens and the open spaces acts an effective buffer area, which prevents possible encroachment and exploitation of the heritage structure.



Plan of Proposal for Rejuvenation of Bandra Fort and Gardens (2006)

Source: P K Das and Associates



Bandra Fort after Rejuvenation in 2006.

Source: P K Das and Associates.

Bandra Fort

Observations of the Fort



Doorway with Historic Plaque.



Fort surrounded by Rocky Outcrop.



Bandra Fort Walls.



Broken Wall at Bandra Fort.



View of the Sea from the Fort.



Surrounding Recreational Area.

The existing structure of Bandra fort has recently undergone insensitive restoration and conservation. This has included coating the surfaces of the fort walls with cement mortar (instead of lime mortar), and unnecessarily constructed walls atop the existing ones instead of preserving the original structure. Worse, the fort has been vandalised in places by scribbling and graffiti. Despite these failings, Bandra fort has fared better than other more neglected and less preserved forts of Greater Mumbai.

The images have been sourced from NAGAR.

Bandra Fort

Approach: Existing



Satellite Image showing the Existing Conditions at Site and Surroundings.

Source: Google Earth (Image); NAGAR (Edits).

Bandra Fort

Approach: Proposal



Layout showing Proposal for Approach Road.

Source: NAGAR.

Bandra Fort

Entrance: Existing

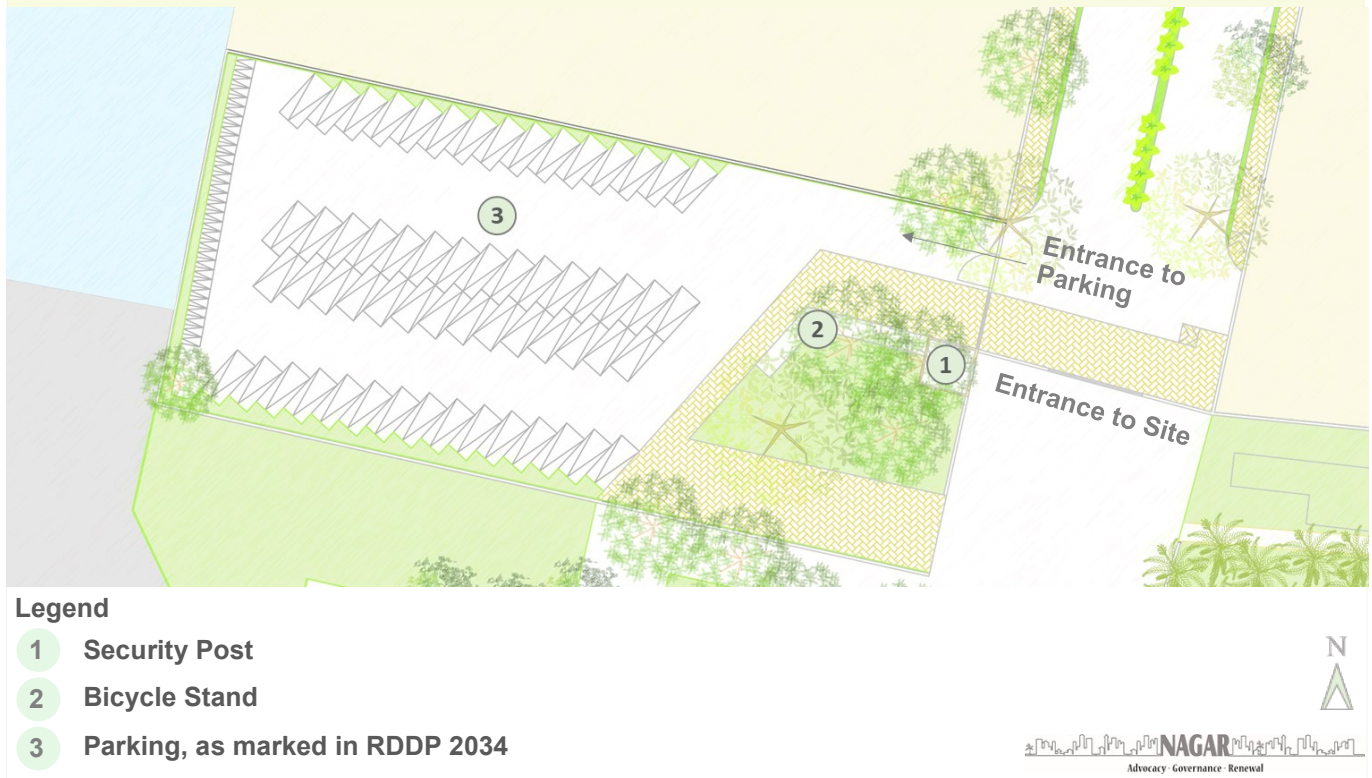


Satellite Image showing the Entrance to Bandra Fort and Gardens Site.

Source: Google Earth (Image); NAGAR (Edits).

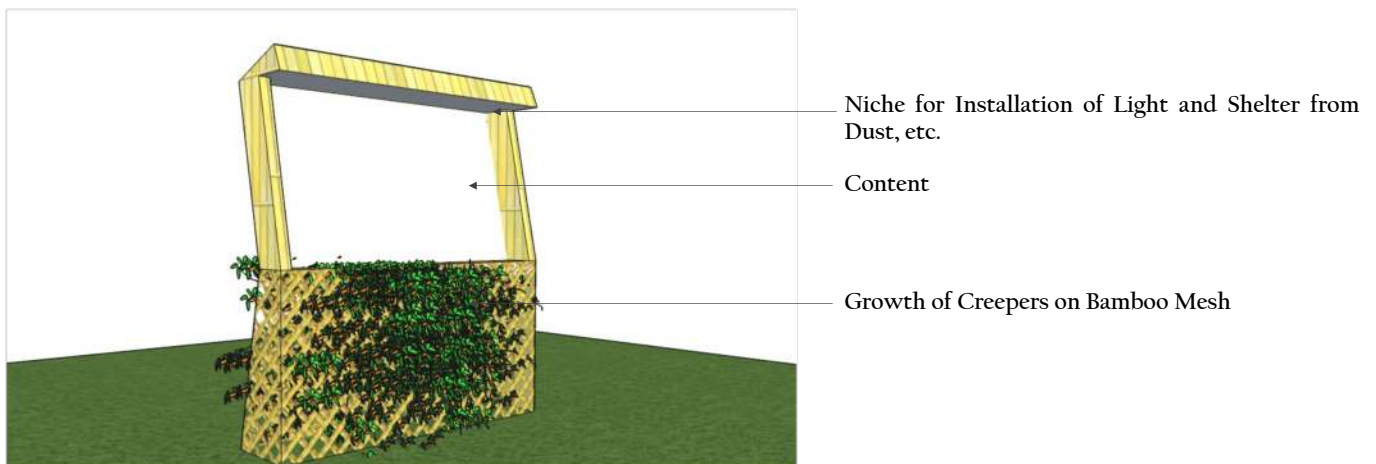
Bandra Fort

Entrance: Proposed



Proposed Layout for Entrance Area to the Site.

Source: NAGAR.



Rendered View of Option for Design of Signage (A Replicable Prototype, which can be Redesigned according to Context).

Source: NAGAR.

Bandra Fort

Surroundings: Existing



Legend

- 1 Lower Recreational Space
- 2 Garden and Amphitheatre
- 3 Upper Recreational Space
- 4 Bandra Fort



Satellite Image depicting the Existing Layout of Bandra Fort Site and Surroundings.

Source: Google Earth (Image); NAGAR (Edit).

Bandra Fort

Surroundings: Proposed



Legend

- | | |
|--|--|
| 1 Amalgamation of two Recreational Grounds | 4 Clean-Up Drive and Refurbishment, if required for Gardens and Amphitheatre |
| 2 Conversion of Paved Area to Green Space | 5 Consolidation of Bandra Fort Structure |
| 3 Suggestion for an Alternate Usage for Interpretation/Art Pop-Ups | 6 Enhancement by Additional Street Furniture |

Proposed Layout for Bandra Fort Site and Surroundings.

Source: NAGAR.

Bandra Fort

Rendered Views



View 1: Approach Road to Bandra Fort.



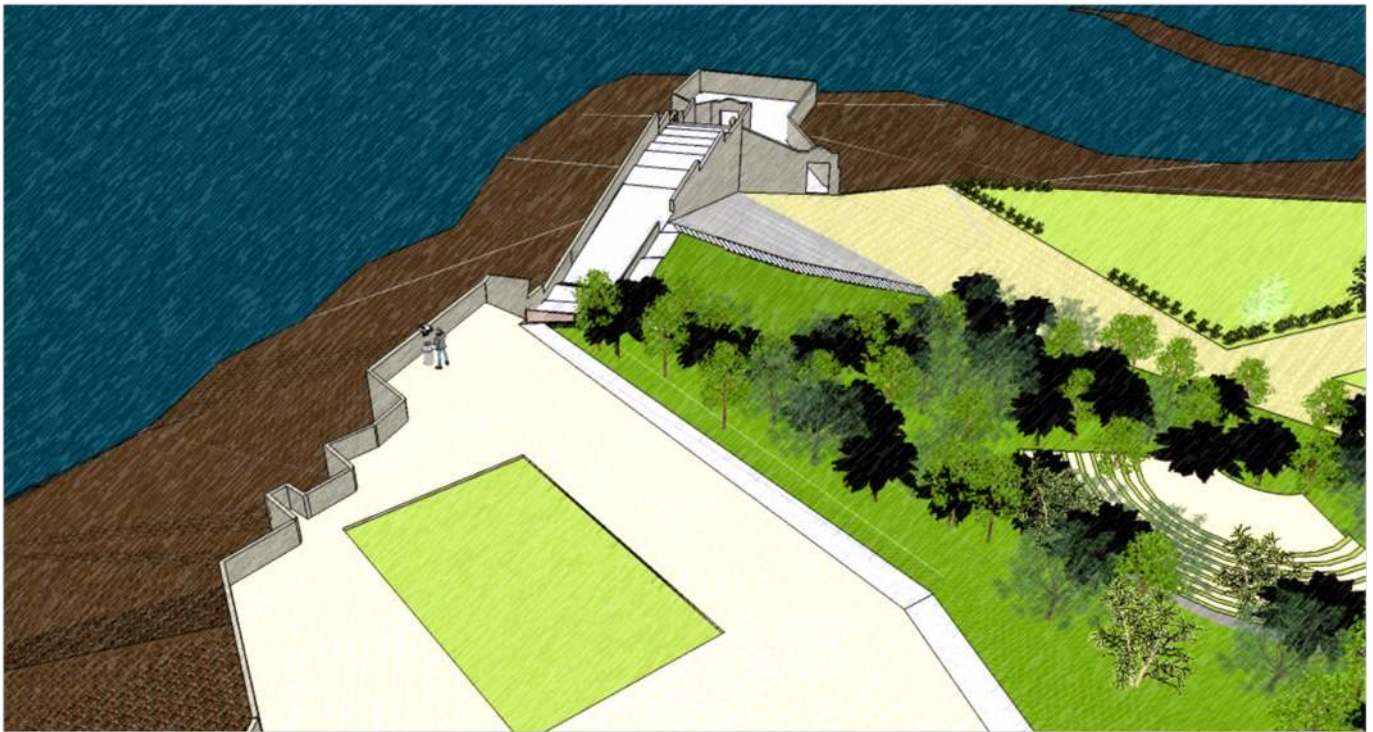
View 2: Entrance to Bandra Fort Site and Gardens, and Parking.

Bandra Fort

Rendered Views



View 3: Bandra Fort Site Recreation Ground as Viewed from Bandra Fort.



View 4: View of the Highest Point at Site for Installation of Long Range Binoculars.

Worli Fort

About the Fort



Satellite Image depicting Worli Fort Site and Surroundings.

Source: Google Earth.

Worli Fort is situated along the northern tip of the Worli peninsula, formerly Worli island. Its location when approaching it from the mainland is preceded by the Gaonthan of Worli Koliwada, a fishing hamlet of the Kolis, the first inhabitants of the Bombay Isles.

The island of Worli saw little change in terms of colonial growth through all the dynasties and reigns in Bombay. The name, Worli, is likely a derivation of 'Vad Ali', which means Banyan Row in the local language. There are historical descriptions of the island with rows of bountiful Banyan trees.

Worli Fort was built by the Portuguese in the year 1561. The walls of the fort are tapering, an architectural element traditionally used for strengthening. As per the plan, there is a bell tower, triangular in shape, situated at the southern tip of the fort, where a bell was once placed. These are characteristic features of Portuguese architecture. Following the Marriage Treaty of 1661, Worli island, and therefore the fort, were transferred to the control of the British.

The fort acted as an outpost flanking the Mahim creek, and is said to have stored artillery during the British-French Seven Years War.

The entrance to the fort is approached by a staircase which leads to an arched gateway, opening out into a central courtyard within the fort. The fort comprises two levels, the broad corridor along the higher level overlooks Mahim Bay and panoramic views of the city.

Worli Fort

Significance and Value of the Historic Fort	
Historic Significance	Built by the Portuguese in 1561, the fort is an intrinsic part of Mumbai's colonial history, as it was built as a precautionary measure to overlook Mahim Bay.
Geographical Significance	The fort is situated on the peninsula, formerly Worli island, which juts into the sea.
Architectural Significance	Military and Defence Architecture, with a bell tower, which once had a bell.
Ecological Significance	Worli Fort is surrounded by the sea on three sides. It is believed that the name 'Worli' is derived from 'Vad Ali, which means a row of banyan trees. The presence of the coast and the biodiversity it supports indicate the ecological significance.
Local and Regional Significance	The site of the fort is in close proximity to Worli Koliwada, an old fishing village of Mumbai. It is visited by history buffs, students and tourists alike.

Worli Fort

Recent History and Past Interventions

This monument, situated beyond the Worli Koliwada, has been known to have undergone a complete restoration in 2008-2009. However, it can be observed that the process undertaken has included unsuitable restoration measures, and insensitive conservation efforts.

The monument has been encroached upon internally as well as externally. Surprisingly, there is an air-conditioned private gymnasium functioning in the interiors of the fort, which the persons currently running the gym claim has been in existence since 1962. In addition, they have built a temple of ceramic tiles in the vicinity of the gym. There is no legal provision for such use as per the laws in force yet incomprehensibly, the structures were allowed to be built and continue to exist.

The Worli Koliwada Gaathan (fishing village), which has existed for centuries near the fort, maintains a certain boundary from the fort. However, a vast amount of the open space surrounding the fort has been encroached upon by slum dwellers, who have built shanties haphazardly, in the surroundings of as well as in the niches formed by the exterior walls of the fort. Unlike the Kolis, the residents of these shanties dump and throw garbage in the open area, which has resulted in rapid deterioration of the surroundings of the monument.



Aerial View of Worli Fort prior to the Internal Encroachment.

Source: Gopal Bodhe.

Worli Fort

Observations of the Fort



Entrance Steps of Worli Fort.



Entrance Arch of Worli Fort.



Worli Fort and Surroundings.



Worli Fort and Surroundings.



Worli Fort Bell Tower and View.



View from Worli Fort.

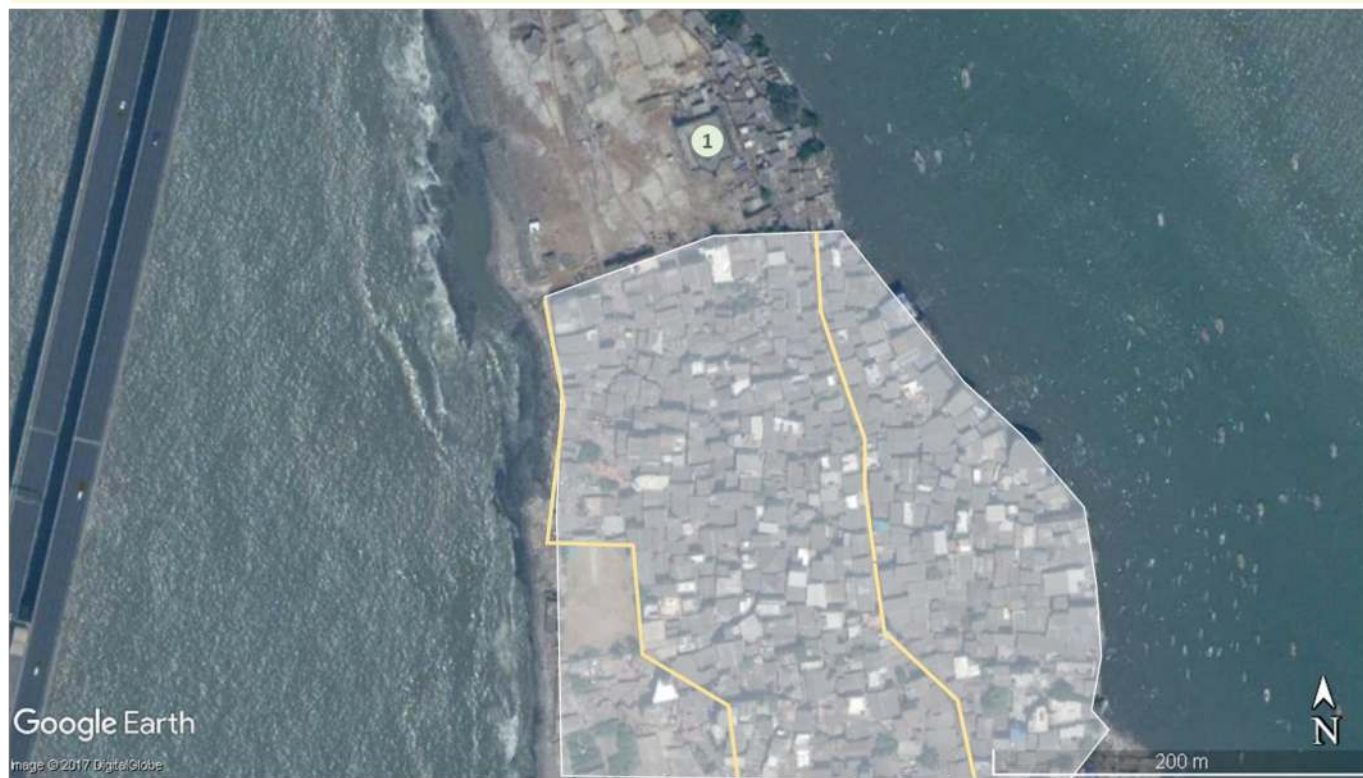
The fort is facing severe encroachment issues, with its interiors being illegally occupied by a private gym and a temple, and its exteriors being defaced due to the presence of illegally constructed shanties, and much of the structure has suffered as a result.

The images have been sourced from NAGAR.

Worli Fort

Interventions Proposed

Approach: Existing



Legend

- 1 Worli Fort
- Worli Koliwada
- Approach Route to Worli Fort

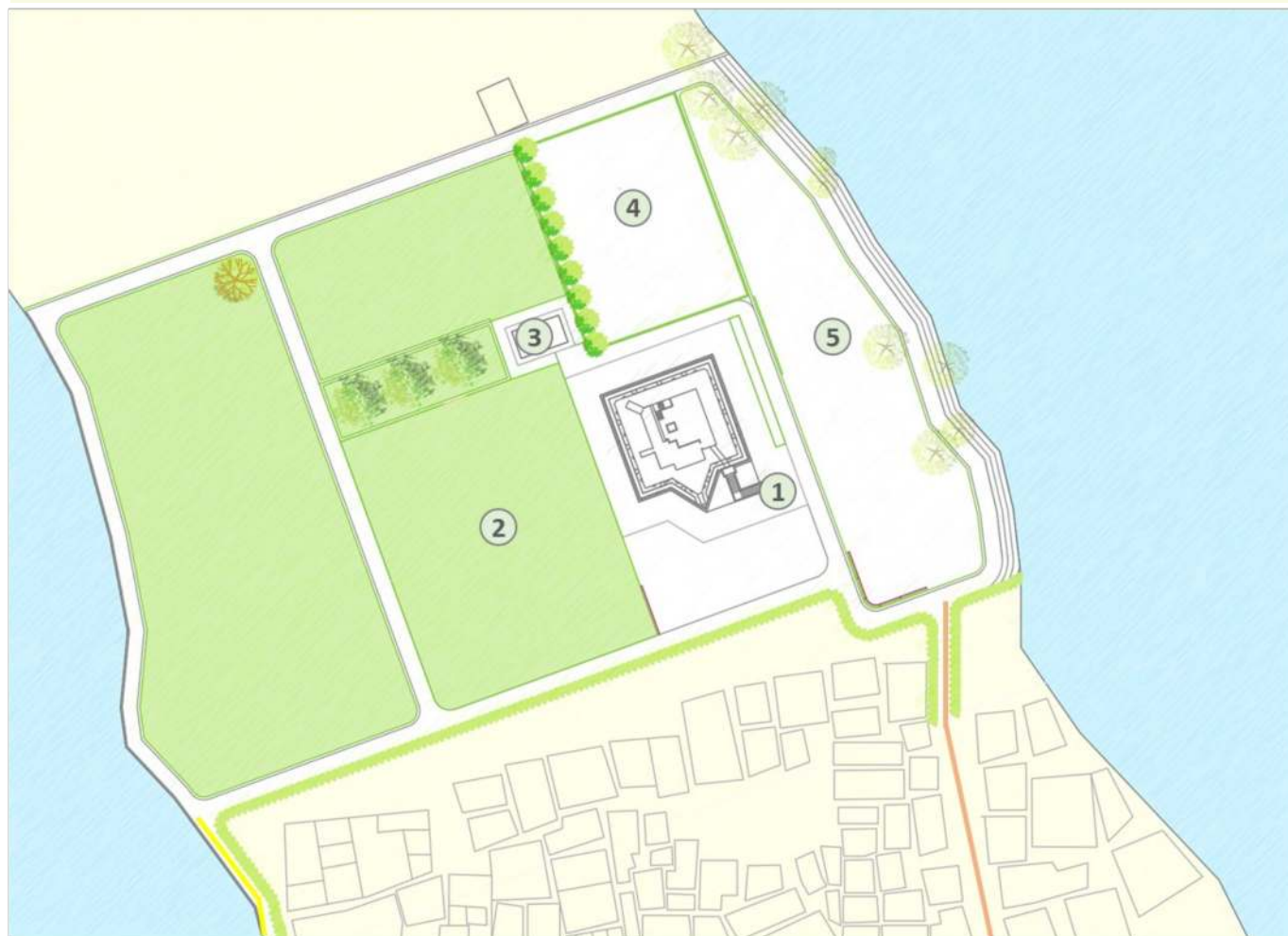


Satellite Image showing the Existing Conditions at Worli Fort Site and Surroundings

Source: Google Earth (Image); NAGAR (Edits)

Worli Fort

Worli Fort Site and Surroundings: Proposed



Legend

- | | |
|--|---|
| 1 5m Peripheral Protection for Fort | 4 Recreational Space for Seating and Interpretative Signage |
| 2 Recreational Ground with Seating and Street Furniture, acting as Foreground for the Fort | 5 Recreational Space with Seating and Promenade |
| 3 Existing Public Toilet | — Enhancement of Pathway along the Coast |
| | — Enhancement of Pathway through Koliwada |

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Proposed Layout for Worli Fort Site and Surroundings

Source: NAGAR

Worli Fort

Rendered Views



View 1: Worli Fort, Cleared of Encroachments for Foreground and Recreational Open Space.



View 2 Proposed Pathway Along the Coast, and Foreground for the Fort.

A Technical Condition Assessment
with
Restoration Measures for the Forts

Sewri . Sion . Bandra . Worli

Methodology and Conservation Approach

The four forts of Mumbai, which are a part of this study, have been surveyed and documented in order to assess their current condition and evaluate the measures required for the best possible conservation practices which need to be undertaken for their effective restoration.

The technical assessment has been carried out by Archana Deshmukh, M. Arch Architectural Conservation and principal architect of the Pune based firm Nasadeeya. A conservation architect with extensive experience and knowledge of the forts of Maharashtra, she is also empanelled with the Maharashtra State Directorate of Archaeology and Museums.

The Technical Assessment Covers:

- I. Analysis of fort site and surrounding;
- II. Identifying and understanding of issues;
- III. Photo documentation, observation, assessment of condition;
- IV. Proposal of conservation guidelines for the forts;
- V. Suggestion of appropriate adaptive reuse for the forts, if any.

Methodology

I	II	III	IV
Archival Research	Architectural Documentation	Condition Assessment	Conservation Guidelines
Analysis of archival records, drawings, photographs. Value assessment.	Photo documentation. Key plan.	Condition mapping for defects in building alterations, interventions, etc.	Conservation guidelines for all forts.

Archival Research

- Collecting all required data for pre-study and analysis of archival data to understand the historical chronology and important events was done. Previously done studies, restoration or repairs which were carried out were also studied.
- Photographic and visual inspection to identify and locate problem areas, defects, damages, etc, was conducted.

Architectural Documentation

- Photo documentation of all the forts was done.
- Key plans of the forts were made.

Condition Assessment

- All areas where distress / damages have taken place with passage of time were recorded.
- The extent of damage caused have been indicated with details and photographs.
- Detailed documentation has been done to support the claim, along with deriving at the cause of damage.
- It has been ascertained whether such damages have rendered the structure unsafe, in case of each fort, and if so, it has been reported.

Conservation Guidelines

- Restoration and conservation guidelines for the Fort on the basis of issues which have been identified via preliminary and secondary surveys have been given.

Conservation Approach

Stability

Stabilization of architectural components and elements is to be done as it is; in the present condition; so as to avoid from getting damaged further.

Strengthening

This is giving or providing additional strength to the structure, architectural elements and components to make them last longer. This can be achieved by using chemical as well as natural strengthening materials, such as epoxy grouting or lime slurry grouting or providing copper plates, etc. as per the context of the problem.

Sustainability

This is achieved by usage of like - to - like materials or by introduction of appropriate technology during any proposal of adaptive reuse, in order to ensure that the conservation of the building also leads to the conservation of energy resources in the future.

Sewri Fort

Inspection of Site and Surroundings



Pathway towards the entrance of the Fort, Garbage and littering at foreground.



Outer fortification walls of the Fort with missing plinth protection and poor signage.



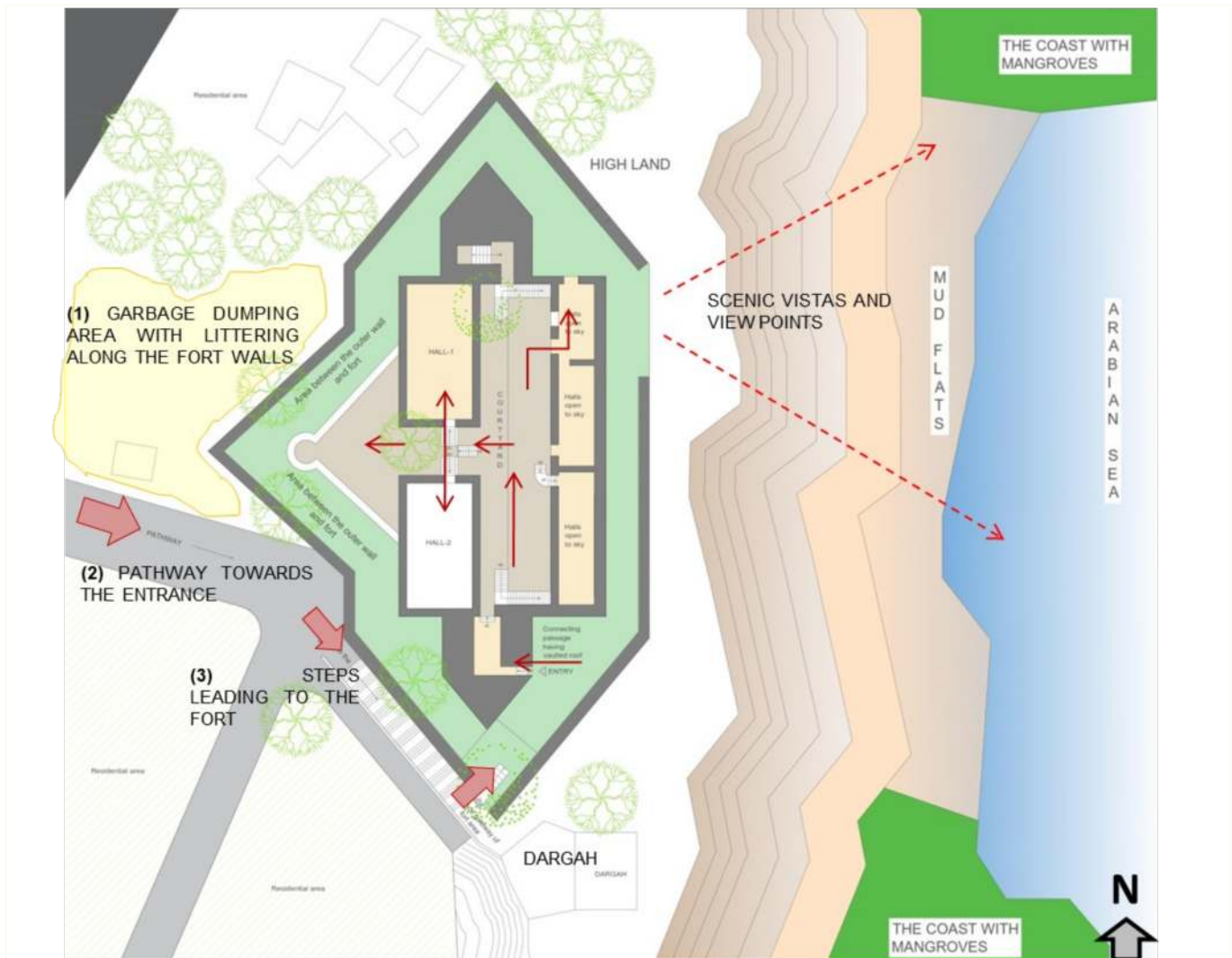
The entrance of the fort and Durgah in the immediate vicinity of each other, lack of a gateway to the Fort. The temporary barricade acts as access control.



The natural setting of the terrain is damaged due to encroached structures.

The images have been sourced from Nasadeeya.

Sewri Fort



Layout showing Sewri Fort and Surrounding Areas.



Pathway to the Entrance of the Fort .



Condition of Sewri Fort Wall.

The images have been sourced from Nasadeeya.

Sewri Fort



Layout showing the Physical Conditions of the Interiors of the Fort (Refer Table on Page)

Sewri Fort



Photo Ref. 1.2/1.6 in Defect Mapping.



Photo Ref. 1.2/9.1/6.1 in Defect Mapping.



Photo Ref. 7.1 in Defect Mapping.



Photo Ref. 5.1 in Defect Mapping.

The images have been sourced from Nasadeeya.

Sewri Fort

Conservation Guidelines for Sewri Fort

The most important task before handling any restoration work is to prepare a detailed documentation and mapping of the site using 3D photo-grammetry or other similar means to enable a study of the historic structure.

Additionally, a detailed documentation of the history, archeological remains and physical condition of each structure, in this case, the fort, should be recorded under the supervision of experts in the field.

The following exercise of the assessment of the physical condition has been done on the basis of primary and secondary surveys, site visits and visual inspection using photo documentation.

Sr. No.	Location	Condition Assessment	Restoration and Conservation Measures
1	Site & Surroundings: Areas along the outer fortification and area between fort walls and access route.	Encroachment is observed in close vicinity to the structure as there is no demarcation of protected and prohibited areas.	As this site is under the supervision of the State Directorate, laws should be suitably amended especially for demarcating Protected & Prohibited areas. around the Historic Fort.
		Littering and dumping of garbage is seen.	Application of strict rules and regulations along with regular maintenance is required.
		Unwanted vegetation growth is observed.	This should be frequently removed using scientific conservation approach by natural or chemical (sensitive to heritage conservation) means.
		Means of access control for visitors is missing.	Visitors access control systems should be formulated by outsourcing such jobs or employing a security/ ticketing system.
		Plinth protection to the outer fort wall is missing.	Providing plinth protection is necessary using similar type of stone finish.
		Overall upkeep is inadequate due lack of maintenance.	Application of strict rules and regulations along with regular maintenance is required.

Sewri Fort

Conservation Guidelines for Sewri Fort

Sr. No.	Location	Condition Assessment	Restoration and Conservation Measures
2	Fort Walls: Stone Masonry	Deposits of soot, dirt and dried algae are seen on the wall surfaces.	Cleaning of surfaces manually using chemical / natural treatment is recommended, such as rubbing diluted caustic soda mixture on the surface and removing the dirt should be removed using zero wired brush.
		Broken and damaged stone elements are seen.	Replacement of such elements using new ones that are as suitable to the original as possible, is recommended. Some elements need consolidation using similar type of material, for example, using epoxy and stone powder, etc.
		Damaged and broken walls are seen.	Restoration of damaged wall with stone masonry is recommended.
		The stone pointing which was originally in lime has been replaced with patchy cement pointing or at some places pointing is missing entirely. This leads to water seepage in the masonry.	The fortification wall needs to be re-pointed with slaked lime, to make the walls water tight and avoid any water seepage.
3	Blocked areas - Dilapidated outer fortification wall	The segmental arch opening located to the north, towards the sea, is blocked with stone masonry.	This archway should be properly restored using appropriate method of consolidation after removal of blocked areas.
4	Openings - Doors/ windows/ ventilators/ other openings	The main entry to the fort has no entrance door, and a temporary barricade is currently set up to control the entry.	This needs to be properly addressed while carrying out conservation works, in terms of defining the entrance of the Fort.
		Deteriorated and missing wooden members at the lintel level.	Replace wooden members at the lintel level with appropriate Burma Teak.

Sewri Fort

Conservation Guidelines for Sewri Fort

Sr. No.	Location	Condition Assessment	Restoration and Conservation Measures
5	Graffiti	Graffiti is seen on the historic fort walls.	Cleaning of graffiti and re-plastering of the walls using appropriate materials and mixes is necessary.
6	Plaster Works	Fort walls are plastered with cement mortar.	Removal of cement mortar and re-plastering with rich lime mortar which would be long lasting, is recommended.
		Patchy repairs and damaged plaster works is seen.	Removal and repairs of patchy works and replacing it with traditional lime mortar which is appropriate for humid climate, is recommended.
7	Flooring	Damaged stone flooring, loss of mortar joint and stones, displacement of stones and missing stones, are seen in the flooring. The base layer of the flooring is missing at certain locations. Vegetation growth and deep roots have damaged the flooring at certain areas.	Restoration of stone flooring with replacement of similar type of stones at places where they are damaged or using appropriate use of mortar mix, is recommended.
8	Ceiling	Previously done repair works are in a dilapidated state, chicken mesh used as a reinforcement in ceiling is exposed with missing of the top layer of plaster is missing.	The vaulted roof is among the few remaining important features of this Historic Fort. Restoration of the vaulted roof is necessary with scientific means of restoration and conservation using appropriate materials.
		Inappropriate and patchy repair works with cement mortar done at ceiling level, is further damaging the historic vaulted roof.	
9	Staircases	Stones have deteriorated and the damage has resulted in a loss of the original profile. A loss of mortar in the stone joints is seen.	The stone steps need to be replaced with new ones that are shaped in the original form. All mortar joints are to be filled with lime mortar.

Sewri Fort

Conservation Guidelines for Sewri Fort

Sr. No.	Location	Condition Assessment	Restoration and Conservation Measures
10	Roof Works	The slab is plastered with cement mortar which is chipping off and damaged at certain locations. Dampness was also identified at various locations.	Removal of damaged plaster is recommended and re-plastering should be done using lime based waterproofing and using appropriate methods of carrying out the work.
		Vegetation growth is seen at the terrace level.	It is recommended that the terrace floor be cleaned and the vegetation should be removed to avoid water seepage.
		Pointing with cement of the stone floor is seen.	Removing the cement mortar pointing and replacing it with lime mortar is recommended.
11	Ornamental/ decorative works of art & embellishments	Arch openings.	Consolidation of arches using scientific stone consolidation methods is recommended.
12	Services	Existing water outlets at terrace level are blocked due to garbage.	Cleaning of all the outlets is recommended.
13	Signage	No good signage exists.	The historic building and even the premises needs an overall signage programme. This includes Informative, Directional and instructive signage.
14	Lighting and Architectural Illumination	No light system is observed in the fort and a few spaces in the fort are completely in the dark.	The façade and decorative elements should be lit with proper LED lighting systems for functional as well as aesthetic purposes.

Sewri Fort

Conservation Guidelines for Sewri Fort

Sr. No.	Location	Condition Assessment	Restoration and Conservation Measures
15	The structure is underutilized though it has lot of potential for heritage tourism and as an interpretation centre.	The structure can be put to adaptive reuse after due consent of the concerned authority so as to make it self-sustainable with regular upkeep and maintenance.	Possible Adaptive Uses: The Main Fort could become a museum cum interactive discussion zone, with the surrounding areas of the Flamingo Bay, an Ornithology Centre / a viewing desk or galleries for bird watching, etc. could also be incorporated.



Entrance to the Fort.



Graffiti at the Entrance Wall.



Damaged Walls, Plaster Work and Graffiti.



Garbage Dumped in Every Corner of the Fort.

The images have been sourced from Nasadeeya.

Sewri Fort

Photographs highlighting the existing physical condition of the fort is a part of the visual inspection exercise. There are several features in the fort which need to be restored using scientific methods of heritage conservation, under the guidance of an expert with usage of appropriate materials.



The flooring in the fort is getting damaged due to vegetation growth and this needs to be addressed by giving tree guards, where applicable and the details of such areas need to be worked out while carrying out the conservation works.



Overall shape of the vaulted roof has been damaged due to previous repair works and inappropriate cement plaster should be removed and traditional mortar mix, suitable to the structure should be used.



Damaged flooring, blackish plaster and graffiti on the walls.



Damaged, deteriorated and inappropriate plaster works should be corrected with suitable plaster and finishing works.

The images have been sourced from Nasadeeya.

Sewri Fort



Maintenance and upkeep should be considered as a main agenda.



Plaster works should be redone using appropriate method and materials .



Garbage and litter in between outer fortified walls and the main fort.



Broken and damaged old wooden beam ends could be original floor beams and they need to be restored with provision of proper interpretation.

The images have been sourced from Nasadeeya.

Sewri Fort



Damaged flooring can be seen.



Garbage is dumped around the fort.



Inappropriate pointing work has been previously done.



Patchy plaster works should be redone using appropriate method and materials

The overall work in restoration which has been done in the fort in the past, has been carried out using cement mortar and other modern materials and mixes.

In the future, while carrying out conservation work, the materials and the techniques used should be suitable to the age and era of the historic structure.

There are several locations where the corrections in the repair works needs to be done using traditional mortar.

The images have been sourced from Nasadeeya.

Sewri Fort



Inappropriate sticking of flyers on the historic walls should be curbed.



Broken stone moldings need immediate consolidation as there are very few architectural elements left in the fort



Patchy repairs using cement mortar on the outer fortified walls need to be redone with usage of suitable materials and appropriate technique



Historical findings need to be archived, if not, and interpreted accordingly.



Plaster work, where deteriorated, needs re-plastering, which must be done using traditional methods and suitable means.

The images have been sourced from Nasadeeya.

Sewri Fort

Photographs taken prior to Previous Conservation Work



Dilapidated condition of the Fort before restoration work was carried out in 2003.



Dilapidated condition of the Fort before restoration work was carried out in 2003.

Sion Fort

Inspection of Site and Surroundings



Entrance gateway to the fort through the garden at foothill.



The pathway and the area around the garden.



Different components and features in the Garden area.



Pathway around the hill through the garden.

The images have been sourced from Nasadeeya.

Sion Fort

Inspection of Site and Surroundings



Entry to the hill through flight of steps with poor signage.
(Source: Nasadeeya)



Stone Steps leading towards the Hill Fort and Parapet Wall
(Source: Nasadeeya)



Plan showing levels of the fort towards the highest point of the Fort (Source: © Archeological Survey of India, Edits: Nasadeeya)

Sion Fort

Conservation Guidelines for Sion Fort

The most important task before handling any restoration works is to make a detailed documentation and mapping using 3D photo-grammetry or other similar means to study document the historic structure.

Additionally, a detailed documentation of the history, archeological remains and physical condition of each structure, in this case, the fort, should be recorded under the supervision of experts in the field.

The following exercise of the assessment of the physical condition assessment has been done on the basis of primary and secondary surveys and on the basis of site visits and visual inspection using photo documentation.

Sr. No.	Location	Condition Assessment	Restoration and Conservation Measures
1	Site & Surroundings Areas along the outer fortification and area between fort walls and access route.	The Fort is under the supervision of the Archaeological Survey of India and its foothill is maintained by the Municipal Corporation of Greater Mumbai and has been designated as a garden. Therefore, the fort is well maintained, in terms of encroachment.	As this site is under supervision of ASI, suitable laws have been levied, to demarcate Protected and Prohibited areas around the Historic Fort. However, the surrounding Garden needs to be developed under a holistic conservation plan, ensuring that the Fort is considered in the entire circuit.
		Unwanted vegetation growth is seen.	This should be frequently removed using scientific conservation approach by natural or chemical (sensitive to heritage conservation) means.
		Elements ensuring public safety are found to be completely missing, such as access controls and railings.	Visitors' access control systems should be set up, and railings, which are constructed with sensitivity to the heritage monument, must be provided for the safety of visitors immediately, as the fort is situated on the hillock and is at great height.
		Overall upkeep is inadequate, along with lack of maintenance.	Application of strict rules and regulations along with regular upkeep and maintenance is required.

Sion Fort

Conservation Guidelines for Sion Fort

Sr. No.	Location	Condition Assessment	Restoration and Conservation Measures
2	Fort Walls: Stone Masonry	The parapet walls along the way to the fort are in a deteriorated condition. These have been built much more recently, compared with the fort and therefore differ in appearance.	This needs immediate repair work, and the work must be done in materials similar to those which were used in the construction of the fort, as the walls are the first glimpse of the fort and must be in consonance.
		The fort is situated on a hillock, surrounded by nature. Therefore, neither plinth protection nor a similar demarcation is required.	This is a unique feature of the fort, and should be retained.
		There can be seen deposits of soot, dirt and dried algae on the surfaces of the fort walls.	The surfaces must be cleaned using chemical or natural treatment, by manual means, for example, rubbing diluted caustic soda mixture on the surfaces, and removal of dirt by the use of zero wired brushes.
		Broken and damaged stone elements are seen.	Replacement of such elements using new ones that are; as suitable to the original as possible, is recommended. Some elements need consolidation using a similar type of material, for example, epoxy and stone powder, etc.
		Damaged and broken walls are seen.	Restoration of damaged walls with stone masonry is recommended.
		The stone pointing which was originally in lime has been replaced with patchy cement pointing, and at some places, pointing is entirely missing. This leads to water seepage in the masonry.	The fortification wall need to be repointed with slaked lime to make the walls water tight and avoid any water seepage.

Sion Fort

Conservation Guidelines for Sion Fort

Sr. No.	Location	Condition Assessment	Restoration and Conservation Measures
3	Openings - Doors/ windows/ ventilators/ other openings	The doors, windows and other openings are currently not in good shape. Lintels are missing and inappropriate methods have been used for repair.	This needs to be properly addressed while carrying out conservation works.
		At lintel level, some wooden members are deteriorated, and some are missing.	The wooden members at lintel level should be replaced with appropriate members in Burma Teak.
4	Graffiti	Graffiti is seen on the historic fort walls.	Cleaning of graffiti and re-plastering of the walls using appropriate materials and mixes is necessary.
6	Plaster Works	Fort walls are plastered with cement mortar.	Removal of cement mortar and re-plastering with rich lime mortar which would be long lasting, is recommended.
		Patchy repairs and damaged plaster works are seen.	Removal and repairs of patchy works and replacing it with traditional lime mortar which is appropriate for humid climate, is recommended.
7	Flooring	Damaged stone flooring, loss of mortar joint and stones, displacement of stones and missing stones, are seen in the flooring. The base layer of the flooring is missing at certain locations. Vegetation growth and deep roots have damaged the flooring at certain areas.	Restoration of stone flooring with replacement of similar type of stones at places where they are damaged or using appropriate use of mortar mix, is recommended.

Sion Fort

Conservation Guidelines for Sion Fort

Sr. No.	Location	Condition Assessment	Restoration and Conservation Measures
8	Staircases and Steps	Stones used in the construction have deteriorated and damage has caused the stairway to lose its original profile. Loss of mortar joints in stone is seen.	Replacement of steps with new ones of similar material and appearance, shaped according to original form, is recommended. The mortar joints should be filled with lime mortar.
		Some of the stones have lost the mortar filling and the profile.	Such steps need immediate stabilization.
9	Items of Safety	Damages and deterioration are observed in the parapet walls.	Removal of damaged plaster is recommended and re-plaster should be done using lime based waterproofing with the appropriate method of carrying out the work.
		The absence of railings at higher levels is observed.	This needs to be addressed immediately by providing new railings whose design is sensitive to the stature of the historic fort.
10	Ornamental/ decorative works of art and embellishments	A historic canon is present in the fort premises, facing an incorrect direction, and is lying in one of the niches between the fort walls.	It is required that the canon be seated on a pedestal in an appropriate direction. Its documentation and interpretation is also recommended.
11	Roof Works	The physical form of the fort and remains of structural members indicate that the fort once had timber trussed sloping roofs.	Restoration of the roofs according to archival records and documentation is recommended.
12	Services	Existing water outlets at terrace level are blocked due to garbage. An existing water tank lies empty and littered.	Cleaning of all the outlets and the water tank is recommended.
13	Signage	No good signage exists.	The historic building and even the premises needs an overall signage programme. This includes Informative, Directional and instructive signage.

Sion Fort

Conservation Guidelines for Sion Fort

Sr. No.	Location	Condition Assessment	Restoration and Conservation Measures
14	Lighting and Architectural Illumination	No light system is observed in the fort.	The façade and decorative elements should be lit with proper LED lighting systems for functional as well as aesthetic purposes.
15	The structure is underutilized, though it has lot of potential for heritage tourism and as an interpretation centre.	The structure can be put to adaptive reuse after due consent of the concerned authority so as to make it independently sustainable with regular upkeep and maintenance.	Possible Adaptive Reuse: The Main Fort could become a part of heritage hiking tours, with organized fortified heritage walks, etc. and an interpretation centre and museum dedicated to the legacy and tradition of trade and ethnic communities can be proposed at the foothill of the fort.



Poor condition of a signage at the entrance to the fort.



Loose stones in the steps need immediate stabilization.

The images have been sourced from Nasadeeya.

Sion Fort



Crumbling stones of the walls need immediate stabilization.



Parapet walls around the fort needs repairs and at some locations they seem unnecessary.



This existing water reservoir, which is currently empty, needs repairs and investigative works to search out the cause of possible leakage or damage, as this once served as a water harvesting system.



The rocky terrain on which the walls are standing today is still visible. The walls need immediate stabilization and cleaning work, re-plastering work, using traditional and suitable mortar mix.

Sion Fort



The parapet walls around the open area and landscape need repair work.



The parapet walls around the open area overlooking the city need repair work.



Some areas of the floor are damaged and need appropriate repair work.



There is only one canon, which is among the main features remaining and needs proper pedestal support and interpretation.

The images have been sourced from Nasadeeya.

Sion Fort



The walls of the different spaces and rooms within the fort are defaced with dirt, soot, patchy repair work and graffiti all over and this needs a serious approach and measures towards cleaning and re-plastering should be taken.



Wooden lintels of the openings seem to have been restored recently but some of them are deteriorated and are not functional as per their purpose and they need to be stabilized and restored.



Some areas of the floor are damaged and need appropriate repair work. Parapet walls also need repair.



Damaged concrete floor needs immediate attention along with repair works for the parapet walls with safety rails.

Sion Fort



Inappropriate repair works need immediate attention and such work should be redone using appropriate methods of restoration .



Damaged concrete floor needs immediate attention along with repair works for the parapet walls with safety rails.

In March 2017, an inspiring initiative was taken up by CANKIDS...KIDSCAN, an NGO dedicated towards the welfare of children suffering from cancer, where nearly 110 children were taken on a visit to Sion Fort.

The idea behind this visit was to make the children connect with the historicity of the fort, where once, in a bid to protect our lands, warriors resided. These children, fighting their diseases, are no less than warriors.

It is uplifting to note how such initiatives are being taken up, and it is hoped that these forts and their surroundings are consolidated to become safe and secure, in order to encourage such endeavours.

The images have been sourced from Nasadeeya.

Bandra Fort

Inspection of Site and Surroundings



Main Entrance to the garden and the fort.



Pathway along the garden area leading to the open space.



Open space and the lawn area overlooking the sea.



Open space in front of the fort overlooking the sea.

The images have been sourced from Nasadeeya.

Bandra Fort

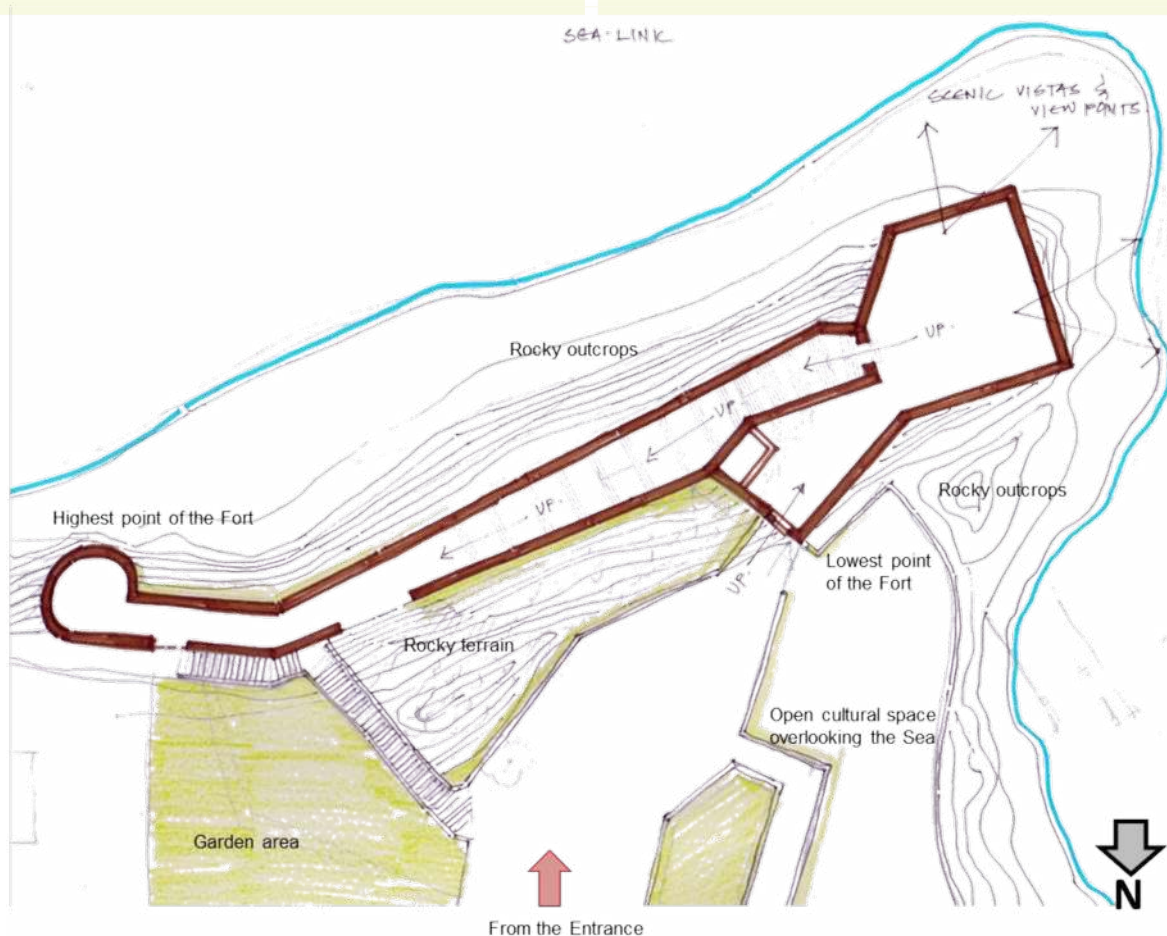
Inspection of Site and Surroundings



A view of the sea and the open space from the Fort.



Open space in front of the fort and hotel Taj Land's End in the background.



Layout showing Bandra Fort Site and Surroundings (Source: Nasadeeya)

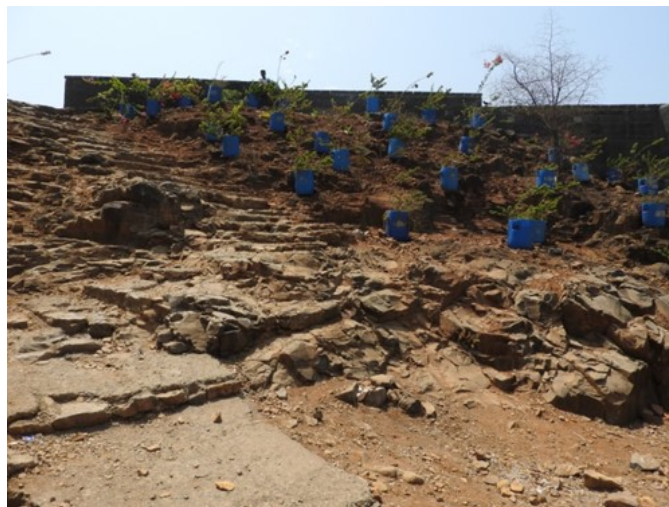
The images have been sourced from Nasadeeya.

Bandra Fort

Inspection of Site and Surroundings



Arched entrance to the Main Fort depicting Portuguese influence, also has a memorial plaque.



Rocky terrain at the other side of the fort must be retained and needs to be stabilized.



Poor Signage at Site.



Bandra Fort

Conservation Guidelines for Bandra Fort

The most important task before handling any restoration works is to make a detailed documentation and mapping using 3D photo-grammetry or other similar means to study document the historic structure.

Additionally, a detailed documentation of the history, archeological remains and physical condition of each structure, in this case, the fort, should be recorded under the supervision of experts in the field.

The following exercise of the assessment of the physical condition assessment has been done on the basis of primary and secondary surveys and on the basis of site visits and visual inspection using photo documentation.

Sr. No.	Location	Condition Assessment	Restoration and Conservation Measures
1	Site & Surroundings Areas along the outer fortification and area between fort walls and access route.	The fort is well maintained in terms of encroachment. The surroundings comprise a garden maintained by the MCGM, with effective contribution by the Bandra Bandstand Residents Trust.	As this site is under supervision of Maharashtra State Directorate of Archaeology and Museums, suitable laws should be levied, to demarcate Protected and Prohibited areas around the Historic Fort. The Garden needs to be developed under a holistic Conservation plan with due consideration to the Fort in the entire circuit.
		Littering can be seen.	There are rules and regulations in place, especially under the care of BBRT. However, regular upkeep and cleanliness awareness need to be instilled.
		Unwanted vegetation growth is seen.	This should be frequently removed using scientific conservation approach by natural or chemical (sensitive to heritage conservation) means.
2	Fort Walls: Stone Masonry	Deposits of soot, dirt and dried algae on the wall surfaces are seen.	Cleaning of surfaces needs to be done using chemical/ natural treatment by manual means, for example, rubbing of diluted caustic soda mixture on the surface and removal of dirt using zero wired brush.

Bandra Fort

Conservation Guidelines for Bandra Fort

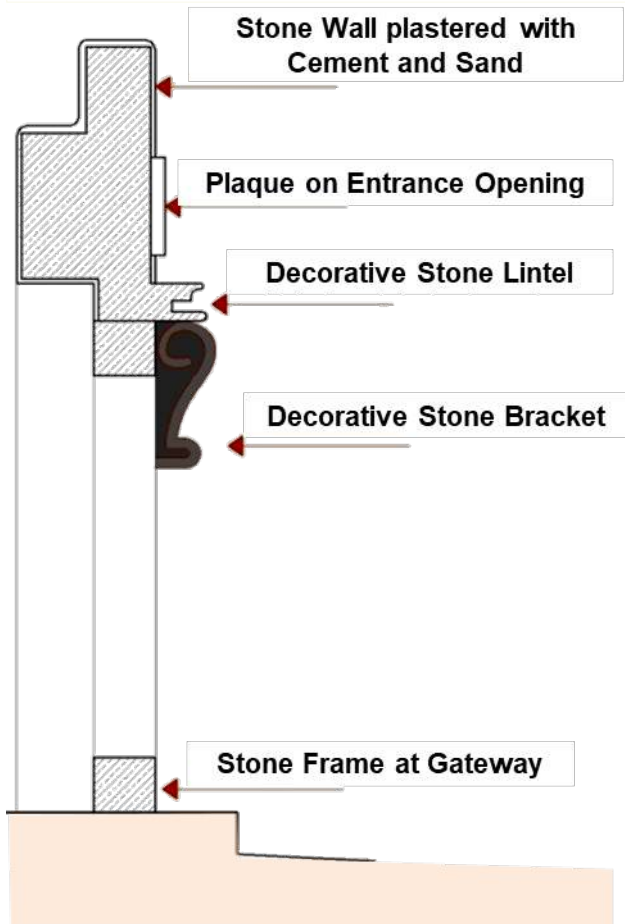
Sr. No.	Location	Condition Assessment	Restoration and Conservation Measures
2	Fort Walls: Stone Masonry	Broken and damaged stone elements are seen.	Replacement of such elements using new ones that are as suitable to the original as possible, is recommended. Some elements need consolidation using a similar type of material, for example, epoxy and stone powder, etc.
		Damaged and broken walls are seen.	Restoration of damaged walls with stone masonry is recommended.
		The stone pointing which was originally in lime has been replaced with patchy cement pointing, and at some places, pointing is entirely missing. This leads to water seepage in the masonry.	The fortification wall needs to be repointed with slaked lime to make the walls water tight and avoid any water seepage.
3	Graffiti	Graffiti is seen on the historic fort walls.	Cleaning of graffiti and re-plastering of the walls using appropriate materials and mixes is necessary.
4	Plaster Works	Fort walls are plastered with cement mortar.	Removal of cement mortar and re-plastering with rich lime mortar which would be long lasting, is recommended.
		Patchy repairs and damaged plaster work is seen.	Removal and repairs of patchy works and replacing it with traditional lime mortar which is appropriate for humid climate, is recommended.
5	Flooring	Damaged stone flooring, loss of mortar joints and stones, displacement of stones, missing stones, are seen. The base layer of the flooring is missing at certain locations. Vegetation growth and deep roots have damaged the flooring at certain areas.	Restoration of stone flooring with replacement of similar type of stones at places where they are damaged or using appropriate use of mortar mix, is recommended.

Bandra Fort

Conservation Guidelines for Bandra Fort

Sr. No.	Location	Condition Assessment	Restoration and Conservation Measures
7	Staircases and Steps	Stones in the steps have deteriorated and damage has been caused to its original profile. Loss of mortar joints in stone can be seen.	Replacement of stone steps with new ones by shaping them as per their original form and filling of mortar joints with lime mortar is recommended.
		Some of the stones have lost their mortar filling and have lost the profile.	Such steps need immediate stabilization.
		The stone pointing which was originally in lime has been replaced with patchy cement pointing, and at some places, pointing is entirely missing. This leads to water seepage in the masonry.	The fortification wall needs to be repointed with slaked lime to make the walls water tight and avoid any water seepage.
8	Signage	No good signage can be seen on site.	The historic building and even the premises need an overall signage programme. This includes Informative, Directional and instructive signage.
9	Lighting and Architectural Illumination	No system of illumination is observed in the premises of the fort.	The façade and decorative elements should be lit with proper LED lighting system, sensitive to the historic stature of the fort for functional and aesthetic purposes.
10	The structure of the fort is preceded by an open space which includes an amphitheater, which is an active cultural space.	The garden area along with the pathway leading to the fort needs to be redesigned. A small interpretation centre is recommended.	The main fort should be well lit, and it is suggested that the design for the same could be along the lines of the lighting of the Sea Link.

Bandra Fort



Cross section of the entrance gate way showing the architectural components which need scientific conservation along with chemical conservation under the guidance of the expert .

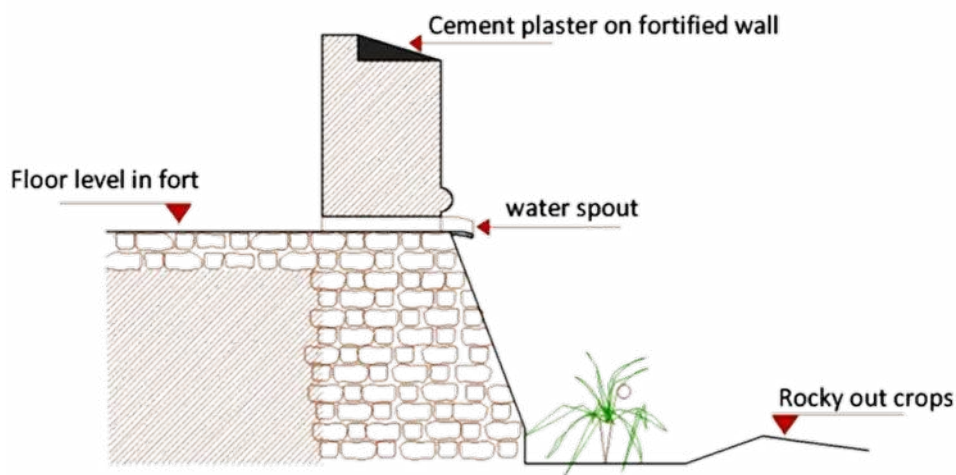


Entrance of the fort showing the dilapidated and damaged condition of the plaster with weathered stones.



Entrance of the fort showing weathered stone and layers of soot and dirt, dried algae on the walls.

Bandra Fort



Cross section of the outer fort wall with very interesting feature of water outlet .



Water Spout of a Fort Wall.



Graffiti on the walls needs cleaning and supervision and plaster works needs maintenance.



Broken dilapidated walls needs stabilization and consolidation.

The images have been sourced from Nasadeeya.

Bandra Fort



Plaster works needs to be done suitable to traditional materials and techniques.



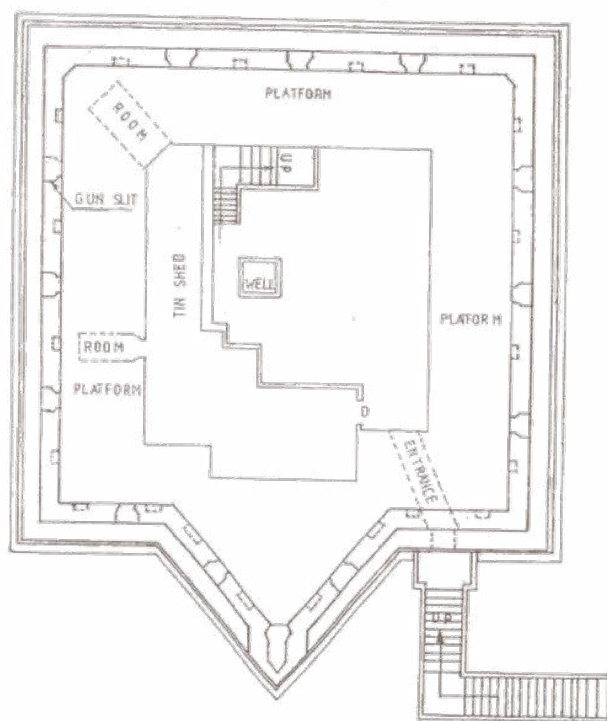
Inaccessible areas should be demarcated with appropriate signage.

Worli Fort

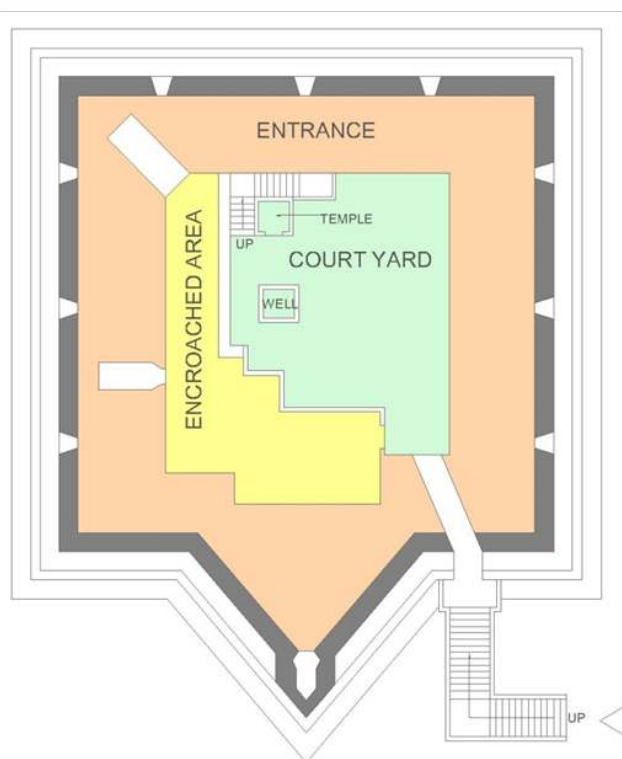
Inspection of Site and Surroundings



Photographs showing the route which leads to the Fort, a way through Koliwada.



© B V Kulkarni, Plan showing Worli Fort extent within the fortified walls



Plan showing Worli Fort extent within the fortified walls and occupied areas (Source: Nasadeeya)

The images have been sourced from Nasadeeya.

Worli Fort

Conservation Guidelines for Worli Fort

The most important task before handling any restoration works is to make a detailed documentation and mapping using 3D photo-grammetry or other similar means to study document the historic structure.

Additionally, a detailed documentation of the history, archeological remains and physical condition of each structure, in this case, the fort, should be recorded under the supervision of experts in the field.

The following exercise of the assessment of the physical condition assessment has been done on the basis of primary and secondary surveys and on the basis of site visits and visual inspection using photo documentation.

Sr. No.	Location	Condition Assessment	Restoration and Conservation Measures
1	Site & Surroundings: Areas along the outer fortification and areas between fort walls and access route.	Encroachment and illegal occupancy are observed, at close vicinity to the structure as there is no demarcation of prohibited and regulated areas.	As this site is under supervision of Maharashtra State Directorate of Archaeology and Museums, suitable laws should be enforced, such as to demarcate Prohibited and Regulated areas around the Historic Fort.
		Littering and dumping of garbage in the area can be seen.	Application of strict rules and regulations along with regular upkeep and maintenance is urgently required.
		Unwanted vegetation growth is seen.	This should be frequently removed using scientific conservation approach by natural or chemical (sensitive to heritage conservation) means.
		Means of visitors' access control is missing and there is no access route to reach the structure.	Visitors access control systems should be formulated by outsourcing such jobs or introducing a security/ ticketing system after designing proper access to the fort.
		Plinth Protection to the outer Fort wall is missing.	Provision of plinth protection is necessary using a similar type of stone finish.
		Overall upkeep and lack of maintenance is observed.	Application of strict rules and regulations along with regular upkeep and maintenance are required.

Worli Fort

Conservation Guidelines for Worli Fort

Sr. No.	Location	Condition Assessment	Restoration and Conservation Measures
2	Fort Walls: Stone Masonry	Deposits of soot, dirt and dried algae on the wall surfaces can be seen.	Cleaning of surfaces using chemical/ natural treatment by manual means must be done, for example, diluted caustic soda mixture rubbed on the surface and removal of dirt should be removed using zero wired brush.
		Broken and damaged stone elements can be seen.	Replacement of such elements is recommended using new ones as suitably alike to the original. Some elements need consolidation using a similar type of material, such as epoxy and stone powder, etc.
		Damaged and broken walls are seen.	Restoration of damaged walls with stone masonry is recommended.
		The stone pointing which was originally in lime has been replaced with patchy cement pointing, and at some places, pointing entirely missing. This leads to water seepage in the masonry.	The fortification wall needs to be repointed with slaked lime to make the walls water tight and avoid any water seepage.
3	Graffiti	Graffiti is seen on the historic fort walls.	Cleaning of graffiti and re-plastering of the walls using appropriate materials and mixes is necessary.
4	Plaster Works	Fort walls are plastered with cement mortar.	Removal of cement mortar and re-plastering with rich lime mortar which would be long lasting, is recommended.
		Patchy repairs and damaged plaster works is seen.	Removal and repairs of patchy works and replacing it with traditional lime mortar which is appropriate for humid climate, is recommended.

Worli Fort

Conservation Guidelines for Worli Fort

Sr. No.	Location	Condition Assessment	Restoration and Conservation Measures
5	Flooring	Damaged stone flooring, loss of mortar joint and stones, displacement of stones and missing stones in the flooring are seen. The base layer of the flooring is also missing at certain locations. Due to vegetation growth, the flooring is damaged at certain areas.	Restoration of stone flooring with replacement by stones of similar type where damaged and where missing, using appropriate use of mortar mix is recommended.
6	Openings	The arch at the entrance is pierced through by a pipe for an illegal occupation, along with other damaged openings.	Appropriate and scientific measures of restoration for these and removal of intrusive interventions should be done are recommended.
7	Ceiling	Previously done repair works are in a dilapidated state. Chicken-mesh, which was used as a reinforcement in the ceiling is now exposed, with the top layer of plaster work missing.	Restoration of the roof is necessary with scientific means of restoration and conservation using appropriate materials.
8	Staircase	Stones in the staircases are deteriorated and damage has caused loss of original profile. Loss of mortar joints in stone is seen.	Replacement of stone steps with new ones, shaped according to the original form. The mortar joints should be filled with lime mortar.
9	Roof Works	The slab is plastered with cement mortar which has chipped off and damage can be seen at certain locations with dampness observed in some locations.	Removal of damaged plaster is recommended and re-plastering should be done using lime based waterproofing with the appropriate method of carrying out the work.
		Vegetation growth at the terrace level can be seen.	Cleaning of terrace floor by removing vegetation in the appropriate method to avoid water seepage is recommended.

Worli Fort

Conservation Guidelines for Worli Fort

Sr. No.	Location	Condition Assessment	Restoration and Conservation Measures
9	Roof Works	Pointing of stone with cement mortar can be seen.	Removal of cement mortar pointing and replacement with lime mortar is recommended.
10	Services	Existing water outlets at terrace level are blocked due to garbage.	Cleaning of all the outlets is required.
11	Signage	No good signage can be seen.	The historic building and even the premises require an overall signage programme. This includes Informative, Directional and instructive signage.
12	Lighting and Architectural Illumination	No illumination system is observed in the fort and few of the spaces are completely in the dark.	The façade and decorative elements should be lit with proper LED lighting systems for functional as well as aesthetic purposes.
13	The structure is illegally occupied.	There are encroachments surrounding the fort structure and the fort is illegally occupied by a private gym and a temple.	The encroachments must be cleared, after which a suitable plan for adaptive reuse can be considered, with the consent and supervision of the concerned authorities.



Photographs showing the site and surroundings of Worli Fort.

The images have been sourced from Nasadeeya.

Worli Fort



Photographs showing the site and surroundings of Worli Fort .



The Fort was once a watch tower and an important security post but currently, it consists of an illegally occupied private gymnasium, along with a temple constructed within the courtyard.

The Encroached Forts of Mumbai

Mahim . Dharavi

Mahim Fort

About the Fort



Satellite Image depicting Mahim Fort Site and Surroundings.

Source: Google Earth.

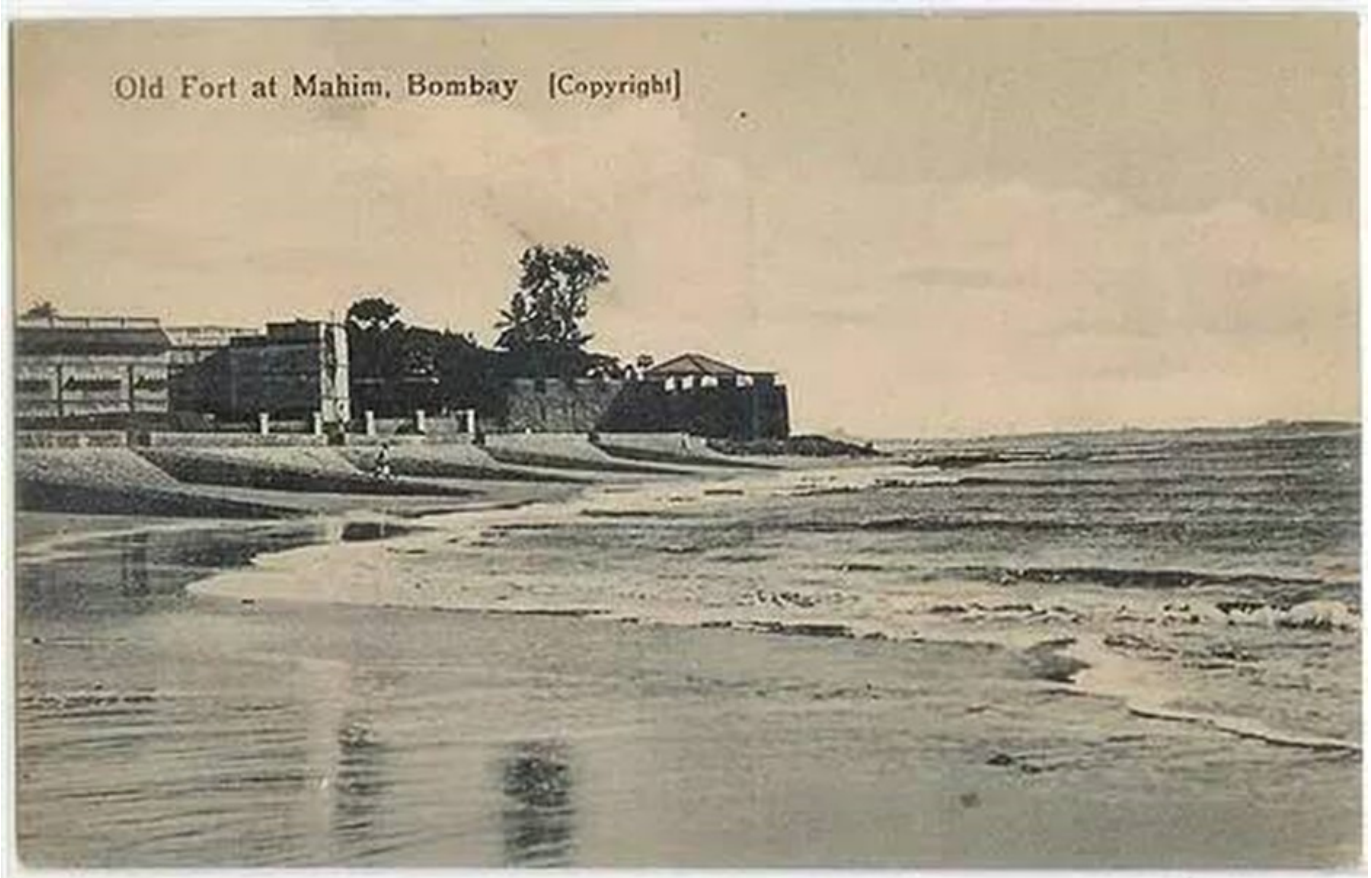
Mahim fort is situated along the coast of Mumbai, in close proximity to Mahim beach. After tectonic movements caused the landmass of the Bombay Isles to separate from the mainland as well as each other, Mahim, along with the Esplanade, was the first region to emerge over the surface of the sea. Mahim has held immense significance in the evolution of this city, right from the time of its geological formation.

The Bombay Isles were first inhabited by Koli villagers, and the island of Mahim was the first to be colonized by an emperor. King Bimbadev, hailing from Aparanta (North Konkan), as a prince escaped attacks in his kingdom and landed at the coast of Mahim. He established his kingdom here, built palatial homes for both the royal family and their subjects, made the land lush and green. This region was called 'Mahikavati'.

Mahim Fort

The kingdom of King Bimbadev flourished and his descendants built Mahim fort, sometime between 1140 and 1241. A noteworthy aspect about Mahim fort is that every reigning dynasty subsequent to King Bimbadev has made significant contributions to it. The Muslim conquerors reigning from 1348 to 1534, the Portuguese after their colonization of the Bombay Isles in 1534 and the British after the Marriage Treaty of 1661, have all altered the architectural features and usage of the fort over time. Mahim had been a seat of power among the Bombay Isles and the fort is representative of its glorious past.

One of the alterations made in the Mahim fort by the British, once they were firmly established, was the setting up a Customs house, as the fort once functioned as a port. Consequently, the Collector's office and residences for some customs officials were also set up here.



Archival Image of Mahim Fort,
Source: Flickr (Old Postcards of Bombay – BOMBMAN).

Mahim Fort

Recent History and Past Interventions

After independence, the premises of Mahim fort were vacated of offices, but the land continues to be under the ownership of the Customs Department.

In 1972, when the monument was inscribed as a State Protected Monument under the Maharashtra Ancient Monuments and Archaeological Sites and Remains Act, 1960, the Customs Department removed the existing security from the fort.

Between 1972 to 1978, funds amounting to approximately ₹8,33,000/- were allotted for the upkeep and revitalization of Mahim Fort. However, it is recorded that the funds could not be successfully utilized due to encroachments.

Subsequent to this, after years of seeming inaction, correspondence regarding clearing the fort of encroachments was initiated between various concerned authorities in the government, including the Maharashtra State Directorate for Archaeology and Museums, Municipal Corporation of Greater Mumbai, the Customs Department and Ministry of Tourism and Cultural Affairs. Records indicate that action was taken in the form of a survey, after which, it was intended that rehabilitation be arranged, and a proposed programme for the rejuvenation of the fort was prepared by the Director of the State Directorate of Archaeology and Museums. However, despite over a decade of continuous correspondence and meetings between the respective authorities, the fort remains an encroached monument, neglected by the authorities and facing gradual ruin by the illegal occupants.

Mahim fort and the land it is situated on is owned by the Customs Department, and an attempt was made to negotiate the passing of the ownership to Maharashtra State. Records up to 2015 show that nothing was finalized. The State Directorate of Archaeology and Museums, is therefore, unable to take any progressive steps, save for placing an advisory stating that it is illegal to cause any damage to the heritage structure, which, given the plight of the structure, is futile.

The fort is entirely encroached upon by shanties, which have been built in varying materials, such as brick and wood with some being along the fort walls. The occupants make use of multiple services, such as electrical wiring, water services and even televisions with dish antennas, which have all been fitted in the premises.

It has been reported that the load on the structure has caused tremendous damage to it, with deep cracks in the walls and the crumbling of elements, raising concerns about its structural integrity.

In such a scenario, recent reports suggest that the Maharashtra State Directorate of Archaeology and Museums is actively pursuing a solution for the predicament of Mahim Fort. This is a ray of hope and is being done in collaboration with the Maharashtra Housing and Development Authority (MHADA), so that an effective plan for the rehabilitation of the occupants can be prepared. Only after the removal of the encroachments, can the fort be surveyed for restoration and conservation. According to the report, a programme to accomplish this has been forwarded to the Government of Maharashtra for review and approval.

It is hoped that the long and arduous processes for saving this historic monument will lead to fruition.

Mahim Fort

Observations of the Fort



View of Mahim Fort, with Littering and Garbage surrounding the Historic Structure.



View of Mahim Fort, with Illegal Structures built along the Walls of the Fort and Littering around the Fort.



View of Everyday Objects stored in the Niches; The load of occupants has caused extensive damage to the historic monument.



Image showing installed services in the Fort, indicating how drastic the situation has become and sheer negligence.



Image showing dumping of garbage along a historic wall, and site surroundings, which include a timber mart.

Mahim Fort

Suggestions for Necessary Actions

In order to carry out any successful rejuvenation of Mahim fort, it is essential that a plan be drawn up to clear the forts of encroachments.

After the encroachments are removed, the fort and its site would need to be surveyed and examined to ascertain the extent of damage and to prepare a consolidation plan by a prominent conservation architect.

A rejuvenation plan for the areas surrounding the fort, taking into consideration the ease of accessibility, the prevailing transit points, potential recreational means, should be prepared in order to transform the Mahim fort to promote recreation and tourism. The rejuvenation plan would comprise all necessary signage, street furniture and facilities required to ensure that the awareness of the fort, its surroundings and the history is relayed to all.

Mahim fort is a tragic example of neglect which has caused the loss of essential components of our past. Urgent steps in rectifying the situation will transform the monument into a site befitting its importance as one of the oldest regions in the city, housing a fort which has a long historical association in protecting the city of Mumbai.

Dharavi Fort

About the Fort



Location of Dharavi Fort with the Adjacent Bus Depot.

Source: NAGAR.

Surrounded by slums on all sides, and adjacent to the Dharavi bus depot, Dharavi fort is colloquially called 'Kala Killa'. Originally, this fort was situated along the Mahim creek and atop marshy land. According to a plaque on the West fortification of the fort, it was built in 1737, though few records remain that could convey details of its history.

At the time, the British were ruling the Bombay Isles, and were confronted with three potential threats, from the Dutch, Yakut Khan and the Siddis. The Marathas had defeated the Portuguese at Salsette, towards the north of the Bombay Isles and Dharavi fort was constructed by the British in the north to strengthen those borders. The architectural style of the fort is indicative of its function as a watchtower.

The fort is situated at a height, and currently no public means of access is available. A visit requires climbing a ladder, generously offered by a resident in the vicinity, to reach the fortification. Its significant features include the plaque and an opening in the floor, which is now filled to the brim with litter and dried leaves, but opens into a tunnel through which it is believed water from the Mithi river flowed. Drawings, as well as experiences by individual enthusiasts, who have visited the site, have also indicated this and exploration of elements such as these is required in order to gain valuable details of the history of the fort, now seemingly lost.

Dharavi Fort

Recent History and Past Interventions

There are recent reports which state the intention of the Maharashtra State Directorate of Archaeology and Museums to pursue a rejuvenation proposal for the fort. However, the inaccessibility to the structure makes this difficult, and it is necessary that the concerned government authorities cooperate with each other to open access to the fort.

The Dharavi Redevelopment Proposal, which aims at transforming the entire region places the Dharavi fort in Sector 5. The redevelopment of Sector 5 will be undertaken by the Maharashtra Housing and Area Development Authority. A plan indicates that the surroundings of the fort will be cleared of encroachments, and a green, recreational space will be proposed around the fort. While the redevelopment proposal, in its entirety, is much debated, the proposed green area around the fort should be planned as a buffer area around the heritage monument.



Image showing Historic Plaque on the forts walls of Dharavi Fort.

Source: NAGAR



Image showing an Explored Tunnel in Dharavi Fort Premises, under an Existing Opening in the Floor

Source: bijoor.me

Dharavi Fort

Observations of the Fort



Image showing how a ladder is required to access the fort.



Image showing fort walls ravaged by time, covered with vegetation growth and the adjacent bus depot.



Image showing the Opening in the Ground filled to its Brim with Dry Leaves and Litter.



The site of the fort, littered and encroached.

The images have been sourced from NAGAR.

Dharavi Fort

Suggestions for Necessary Action

Investigative and exploratory surveys of the fort need to be done, prior to formulating an action plan for its consolidation and rejuvenation. This is necessary in order to make a note of the damage suffered due to neglect, as well as to ascertain if any new features can be discovered from a hitherto unknown or unseen portion of the site. To undertake this project and reveal the historic facets of the site, it is imperative that accessibility to the fort is addressed promptly.

Removal of encroachments would provide a foreground for the fort and introduce recreational spaces around the fort, which would encourage more visits to the fort as well as the opportunity to appreciate the actual structure. In addition, due to neglect, the fort is frequented for illegal and unsocial activities, an issue which must be addressed urgently by the law and order machinery.

After the encroachments are removed, the fort and its site would need to be surveyed again and examined to assess damage and for the preparation of a consolidation plan by a prominent conservation architect.

A rejuvenation plan for the areas surrounding the fort, taking into consideration the ease of accessibility, the prevailing transit points, potential recreational means, should be prepared in order to transform Dharavi fort to promote recreation and tourism. The rejuvenation plan would comprise all necessary signage, street furniture and facilities required to ensure that the awareness of the fort, its surroundings and the history is relayed to all.

The Way Forward for the Forts of Mumbai

Sewri . Sion . Bandra . Worli . Mahim . Dharavi

Salient Features for the Way Forward

The interventions proposed herein are targeted towards rejuvenation of Mumbai forts and their sites, as mentioned, which are currently viable for access and documentation for the purpose.

Moreover, it is intended that the spaces which these forts occupy become recognised and identifiable in the city space, for recreation and tourism, while being acknowledged as important heritage.

Based on the report, the following aspects appear to be salient features, which need to be considered while deliberating the path ahead for their rejuvenation.

- Each fort has been observed to have suffered due to less than ideal and insensitive practices of restoration. Therefore, all work which must be undertaken for suitable restoration of these forts to reinstate their former glory needs to be surely ascertained as appropriate and sensitive towards the structure and its context. The same must be performed with the optimum level of skill, craftsmanship and quality of material.
- The encroachments on the forts and their surroundings must be cleared on an urgent basis, as this is not only a societal detriment, but has evidently caused harm to these invaluable monuments. The clearing of encroachment must be done in association with the necessary authorities, pertaining to issues of regulation and rehabilitation.
- As encroachment of spaces is a prevailing issue in the urban spaces of the city, necessary measures must be undertaken to prevent any encroachment, commercial or residential from affecting these forts and their surroundings, with the aid of availing security as well as regular checks. Public participation can be invited in aiding this effort.
- The forts bear traces of the history of this city, and these must be indicated through various means, such as signage and encouragement of programmes which celebrate their history. Currently, insufficient signage can be observed which depict the history and prevailing aspects of the forts and their sites.
- The surroundings of the forts should ideally be rejuvenated to landscaped green and public open spaces for public recreation, as well as to act as much needed foregrounds for these monuments.

The forts of Mumbai are a symbolic representation of its historic past and subsequent evolution. Built at different times in the city's history, each fort, its unique context and its architecture exemplify a shared built heritage, representing the origin of Mumbai, and its colonial history.

The ideology behind the rejuvenation project is not limited to a physical renewal, but aims to cultivate the awareness of and inclination towards heritage in this city. It is hoped that this project would pave way towards various activities, such as heritage walks, discussion groups and interactive events, wherein the history, architecture and culture of this shared built heritage will be nurtured.

Categorization of Required Initiatives

Fort	Urgent	Necessary	Desirable
Sewri	A buffer area needs to be mandated by the Maharashtra State Directorate of Archaeology and Museums.	The fort must be made accessible to all, and indicative as well as informative signage, along with interpretative aids, needs to be placed in the premises. Sewri Fort lacks visibility from any of the access routes. The surroundings of the fort must be treated as a public open space, and kept well maintained.	The rejuvenation should include design for the surroundings, in order to incite further recreational value. The same can be done through introducing interactive street furniture and other objects.
	Consolidation of the fort in order to restore it to former glory must be ensured.		
	The fort premises need to be cleared of all encroachments and existing garbage and litter need to be cleared.		
Sion	Consolidation of the fort in order to restore it to former glory must be ensured, including proper placement of the existing canon in the fort.	The fort must be made accessible to all, and indicative as well as informative signage needs to be placed in the premises.	The garden surrounding the fort should encourage awareness of the fort and can include interpretation spaces in order to raise the level of awareness about the fort and understanding of heritage.
Bandra	A buffer area needs to be mandated by the Maharashtra State Directorate of Archaeology and Museums.	Signage, additional to the existing signage, needs to be added in the premises of the fort, and its surroundings, to raise awareness about the fort. The fort must be made accessible to all.	The existing surroundings of the fort can be further rejuvenated for enhancement in the level of recreation.
	Consolidation of the fort in order to restore it to former glory must be ensured.		Interpretation spaces should be introduced at Bandra Fort in order to encourage more knowledge of heritage in the available recreational space.
			The approach road to Bandra Fort can be further resolved by introducing design aids, which would help circumvent the traffic more easily and effectively.

Categorization of Required Initiatives

Fort	Urgent	Necessary	Desirable
Worli	The encroachments inside the fort must be cleared immediately.	The approach route to Worli fort is through the Koliwada, and should be demarcated and depicted through indicative signage, at a traffic node ahead of the entrance to Worli Koliwada. Other informative as well as directive signage needs to be included in the rejuvenation programme.	Once cleared of encroachments, the surroundings of Worli Fort can be landscaped as a green public open space and designed with interactive street furniture for recreation. Ideally, an interpretation centre should also be introduced.
	The illegal encroachments in the surroundings of the fort must be cleared immediately, along with cleaning the resultant garbage.		
	A buffer area needs to be mandated by the State Directorate of Archaeology and Museums.		
	Consolidation of the fort in order to restore it to former glory must be ensured.		
Mahim	The encroachments inside Mahim fort, as well as its surroundings need to be cleared immediately.	A rejuvenation proposal for the fort and its surroundings must be prepared after a complete and detailed survey.	The rejuvenation proposal undertaken in this case can be along the lines in which the same has been done for the forts at Sewri, Sion, Bandra and Worli.
	After clearing the encroachments, the structure of the fort must be surveyed and documented, and all damage that has been caused to the structure must be attended to on a priority basis, but in a suitable manner, where sensitivity to heritage is ensured.		
	A buffer area needs to be mandated by the Maharashtra State Directorate of Archaeology and Museums.		

Categorization of Required Initiatives

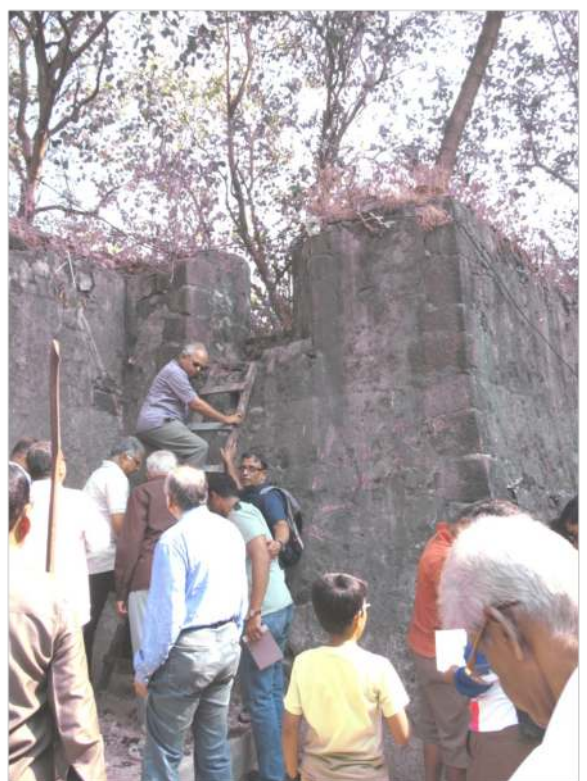
Fort	Urgent	Necessary	Desirable
Dharavi	The illegal encroachments surrounding Dharavi fort need to be cleared immediately.	A rejuvenation proposal for the fort and its surroundings must be prepared after a complete and detailed survey.	The rejuvenation proposal undertaken in this case should ideally be along the lines in which the same has been done for the forts at Sewri, Sion, Bandra and Worli.
	An approach route to the fort needs to be demarcated.		
	A buffer area needs to be mandated by the Maharashtra State Directorate of Archaeology and Museums.		
	Consolidation of the fort in order to restore it to former glory must be ensured.		

An Important Recommendation

As per the Central Act pertaining to heritage monuments, that is, the Ancient Monuments and Archaeological Sites and Remains Act, 1958, there is a provision for 'Prohibited and Regulated Areas' around heritage structures. According to this provision, 'every area, beginning at the limit of the protected area, or the protected monument, and extending to a distance of 100 meters in all directions has been specified as the prohibited area for the specific area, or monument'. Similarly, 'every area, beginning at the limit of the prohibited area in respect of every ancient monument and archaeological site and remains declared of national importance, and extending to a distance of 200 meters in all directions has been specified as the regulated area, respectively'. This prohibits all new construction in the prohibited area, and regulates all construction activities in the regulated area.

However, the Maharashtra State Ancient Monuments and Archaeological Sites and Remains Act, 1960 has no such provision and thus has jurisdiction solely on the structure, and cannot maintain or control the immediate surroundings of the monuments. This has caused many problems, namely encroachments and deterioration of the structures.

Recognizing the effectiveness of buffer areas in monuments protected by the ASI, such as, Sion Fort, it is suggested that buffer zones marked as 'Prohibited and Regulated areas' be stipulated individually for every heritage monument within the jurisdiction of the State Directorate of Archaeology and Museums as well.



References

- Bhalchandra Kulkarni, *Mumbai Parisaraateel Arthaat Ekekaalchya Firangaanaateel Kille* (Mumbai, Maharashtra State Directorate of Archaeology and Museums, 2009)
- Stephen Meredyth Edwardes, *The Rise of Bombay: A Retrospect* (Bombay, Times of India Press, 1902), <https://archive.org/details/risebombayaretr00edwagoog>
- Tasneem Zakaria Mehta, “Unlocking Mumbai’s Cultural Potential”, *The Hindu*, April 3, 2016, <http://www.thehindu.com/news/cities/mumbai/Unlocking-Mumbais-cultural-potential/article14308405.ece>
- Ruhi Bhasin, “Revisiting the forgotten forts – Part I- Castella de Aguada: History of the grand ruins in Bandra most Mumbaikars are oblivious to”, *The Indian Express*, November 16, 2015, <http://indianexpress.com/article/cities/mumbai/revisiting-the-forgotten-forts-part-i-castella-de-aguada-history-of-the-grand-ruins-in-bandra-most-mumbaikars-are-oblivious-to/>
- Manasi Phadke, “Revisiting the forgotten forts: Part 2 — ‘No information for visitors on historical, architectural importance of Sion Fort’”, *The Indian Express*, November 17, 2015, <http://indianexpress.com/article/cities/mumbai/revisiting-the-forgotten-forts-part-2-no-information-for-visitors-on-historical-architectural-importance-of-sion-fort/>
- Aamir Khan, “Revisiting the forgotten forts- Part III: From Worli Fort, the Portuguese kept eye on enemy ships, launched attacks”, *The Indian Express*, November 18, 2015, <http://indianexpress.com/article/cities/mumbai/revisiting-the-forgotten-forts-part-iii-from-worli-fort-the-portuguese-kept-eye-on-enemy-ships-launched-attacks/>
- Benita Chacko, “Revisiting the forgotten forts – part 3 — Govt to develop Mughal era British fort in South Mumbai”, *The Indian Express*, November 19, 2015, <http://indianexpress.com/article/cities/mumbai/revisiting-the-forgotten-forts-part-3-govt-to-develop-mughal-era-british-fort-in-south-mumbai/>
- P.K. Das, Indra Munshi, *On the Waterfront: Reclaiming Mumbai’s Open Spaces* (Mumbai, P. K. Das & Associates, 2011),
- The Inheritage Project, *Once Upon a Time there was a House on a Hill*, August 31, 2014 <https://theinheritageproject.wordpress.com/2014/08/31/once-upon-a-time-there-was-a-house-on-a-hill/>
- Tanushree Venkatraman, “Mumbai’s Historical Secrets Still Unexplored, say Experts”, *Hindustan Times*, August 19, 2016, <http://www.hindustantimes.com/cities/mumbai-s-historical-secrets-still-unexplored-say-experts/story-LteDokfuBsydvWLyeJP2rL.html>

References

- Ruhi Bhasin, “Hutments, Seepage of Water Breach Mahim Fort, but Swift Help Unlikely”, *The Indian Express*, May 27, 2016, <http://www.hindustantimes.com/cities/mumbai-s-historical-secrets-still-unexplored-say-experts/story-LteDokfuBsydvWLYeJP2rL.html>
- K A Dodhiya, “Lack of Conservation, Nature Takes Toll on Mumbai’s Oldest Fort”, *The Asian Age*, January 31, 2017, <http://web.asianage.com/metros/mumbai/310117/lack-of-conservation-nature-takes-toll-on-citys-oldest-fort.html>
- Kunal Chonkar, “Beautification of City to take Centre-Stage Soon”, *DNA*, August 3, 2016, <http://www.dnaindia.com/mumbai/report-beautification-of-city-to-take-centre-stage-soon-2240554>
- “Children fighting Cancer visit Sion Fort”, *Mumbai Mirror*, March 8, 2017, <https://mumbaimirror.indiatimes.com/mumbai/other/children-fighting-cancer-visit-sion-fort/articleshow/57535636.cms>
- “Lime Mortar, a Boon for Heritage Conservation”, *Times of India*, October 20, 2013, <https://timesofindia.indiatimes.com/city/goa/Lime-mortar-a-boon-for-heritage-conservation/articleshow/24409735.cms>
- <http://bijoor.me/>
- <https://sudhagee.com/>
- <https://twitter.com/mumbaiheritage>
- The Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation Act, 2010), New Delhi, March 30, 2010, Ministry of Law and Justice, Government of India
- The Maharashtra Ancient Monuments and Archaeological Sites and Remains Act, 1960, Law and Judiciary Department, Government of Maharashtra
- Heritage Regulations for Greater Bombay, 1995, Urban Development Department, Government of Maharashtra

Notes



Advocacy - Governance - Renewal

NAGAR

Cecil Court, 3rd Floor, Mahakavi Bhushan Marg,
Colaba, Mumbai—400001

Tel: 022-22882018, 022-22021621

www.nagar.org.in;

info@nagar.org.in

[Facebook.com/nagar.org.in](https://www.facebook.com/nagar.org.in)

[Twitter.com/NAGAR_Ngo](https://twitter.com/NAGAR_Ngo)