

CONSERVATION OF BOMBAY CASTLE

NAVAL DOCKYARD, MUMBAI

FINAL REPORT – PHASE I

K. Unwalla Architects, December 2005

CONSERVATION OF BOMBAY CASTLE (RESTORATION - PHASE I)

OWNERS : NAVAL DOCKYARD, MUMBAI

FUNDING: NAVAL DOCKYARD & MMRDA

PROJECT DURATION: OCTOBER 2004 - DECEMBER 2005

TECHNICAL TEAM

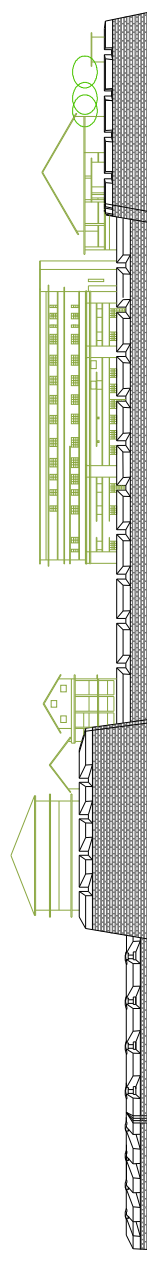
PROJECT CONSULTANTS: K. UNWALLA ARCHITECTS, MUMBAI

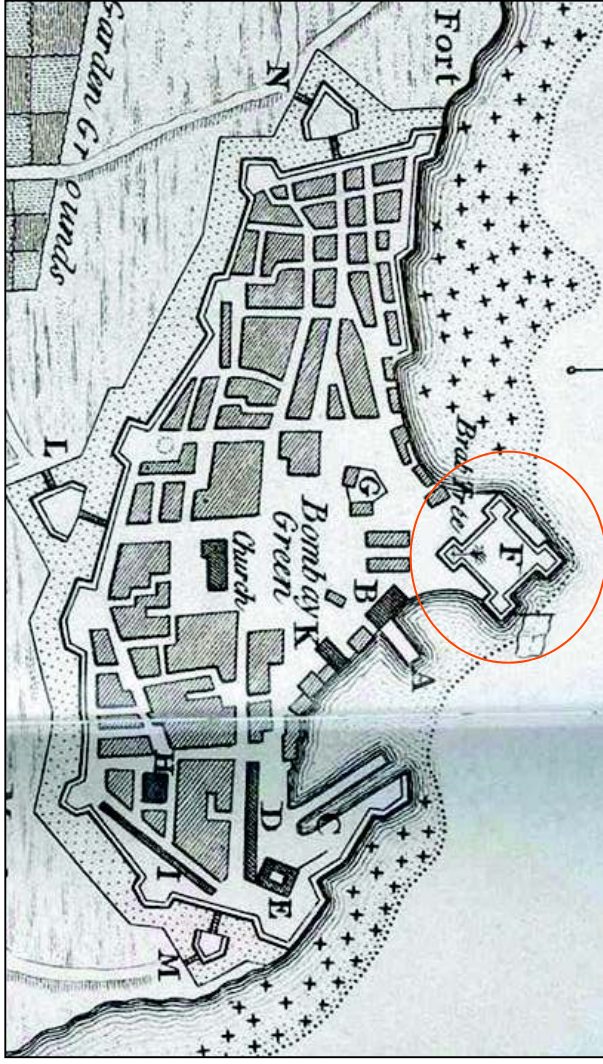
Ar. Kirtida Unwalla (Conservation)

Ar. Suneeta Samant (Planning)

STRUCTURAL CONSULTANTS: Epicons Consultants Pvt. Ltd.

CONSERVATION CONTRACTORS: Savani Construction Co.

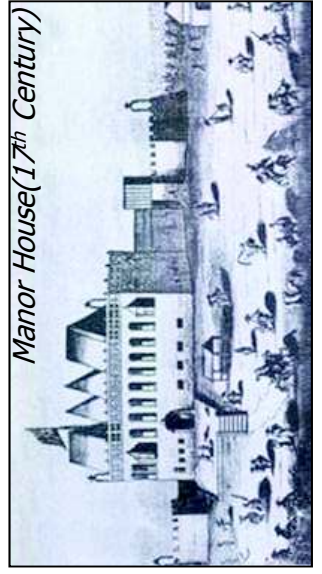




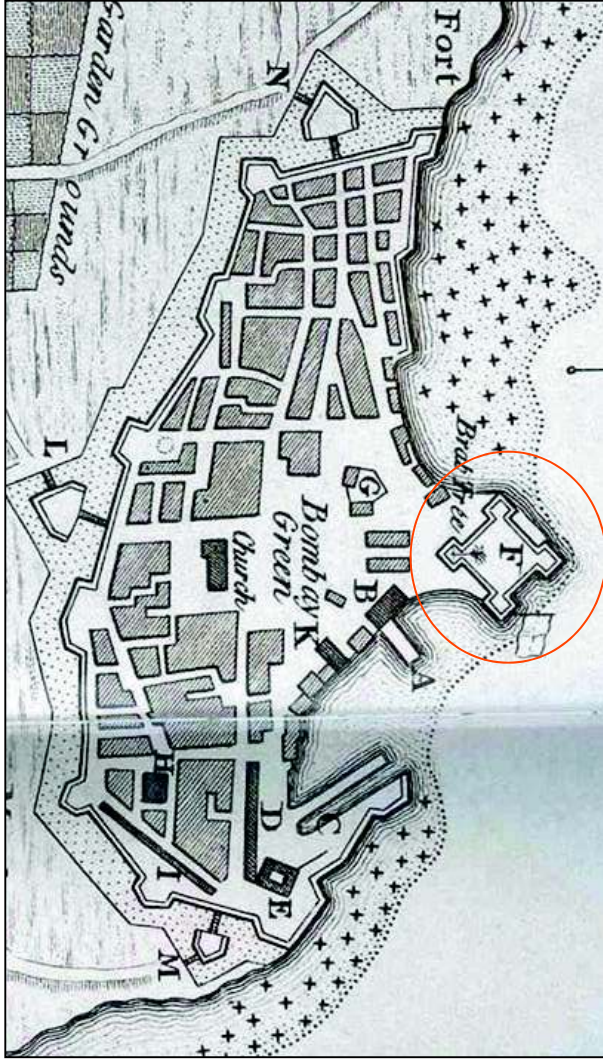
17th Century Plan of the Town of Bombay

HISTORICAL BACKGROUND

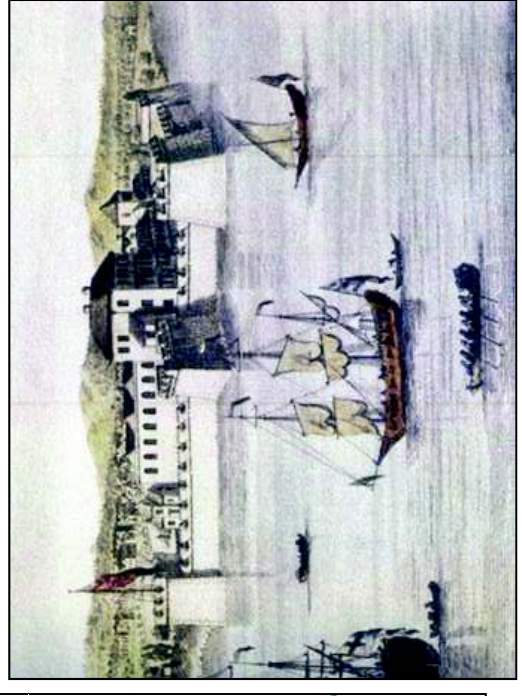
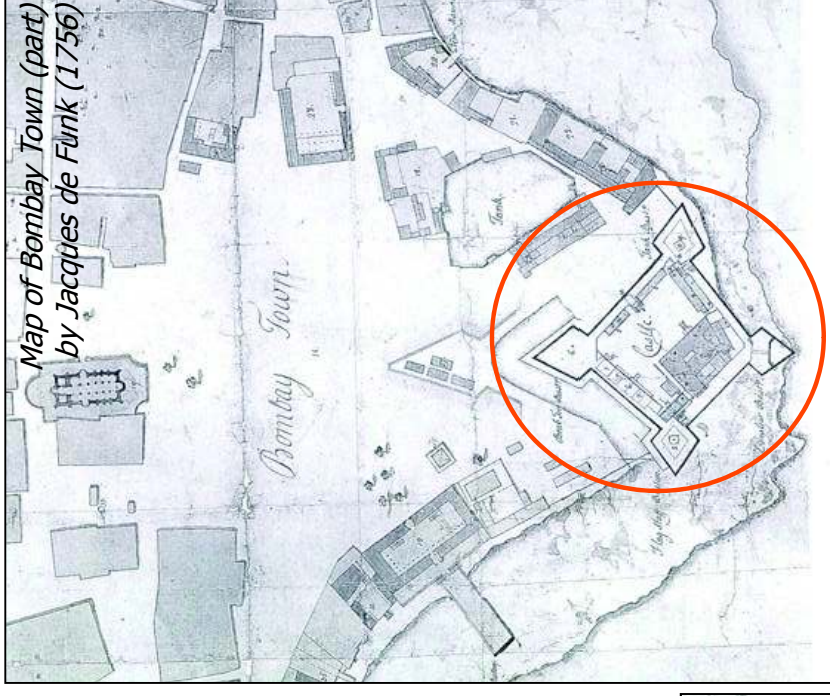
- 'The Manor house' on Bombay Castle built in 16th century by Garcia da Orta, a Portuguese physician and botanist, that stood amongst a spacious garden on the western shore of Bombay island, is considered the nucleus of physical growth of Bombay town. In year 1661, Manor House was partially destroyed by the Arabs leaving only the walls intact.
- After prolonged disputes, the British finally took over Bombay Island in 1665, when the Instrument of Possession was signed in Manor House. Subsequently, the British fortified the remains of 'Manor House' and named it **Bombay Castle**.



Manor House (17th Century)

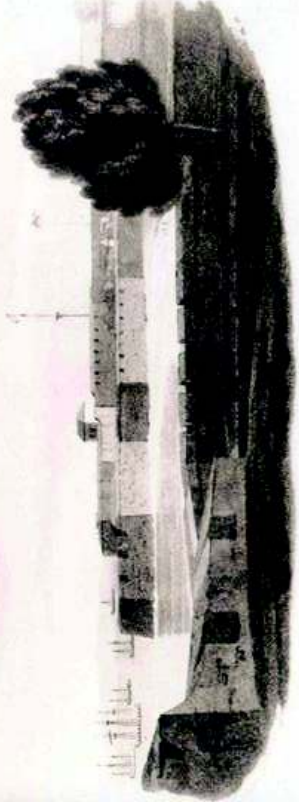


*Delineation of His Majesty's Citadel & Fort of Bombay (1668)
Ref: Bombay Gazetteer 1919, vol III*



Bombay Castle (17th Century)

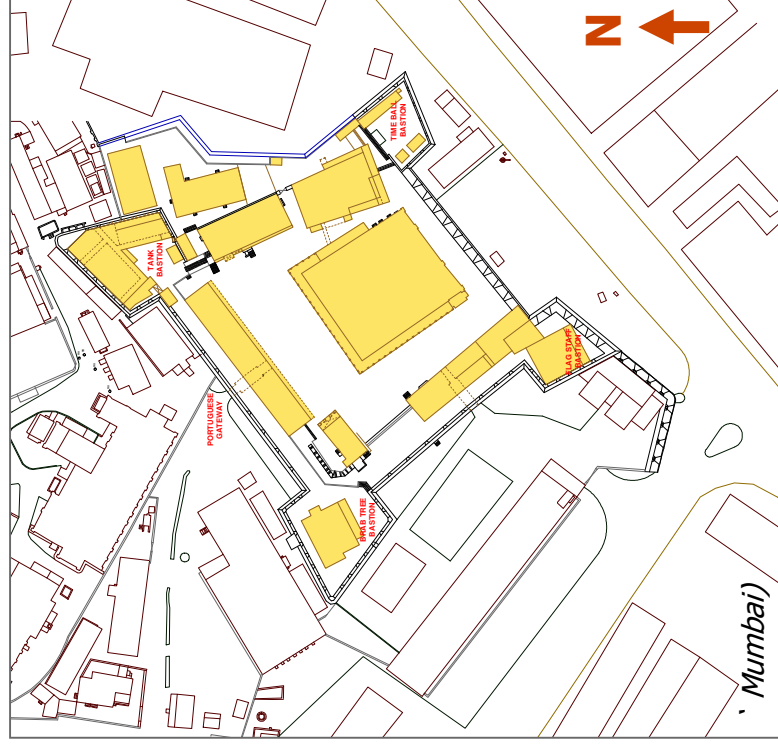
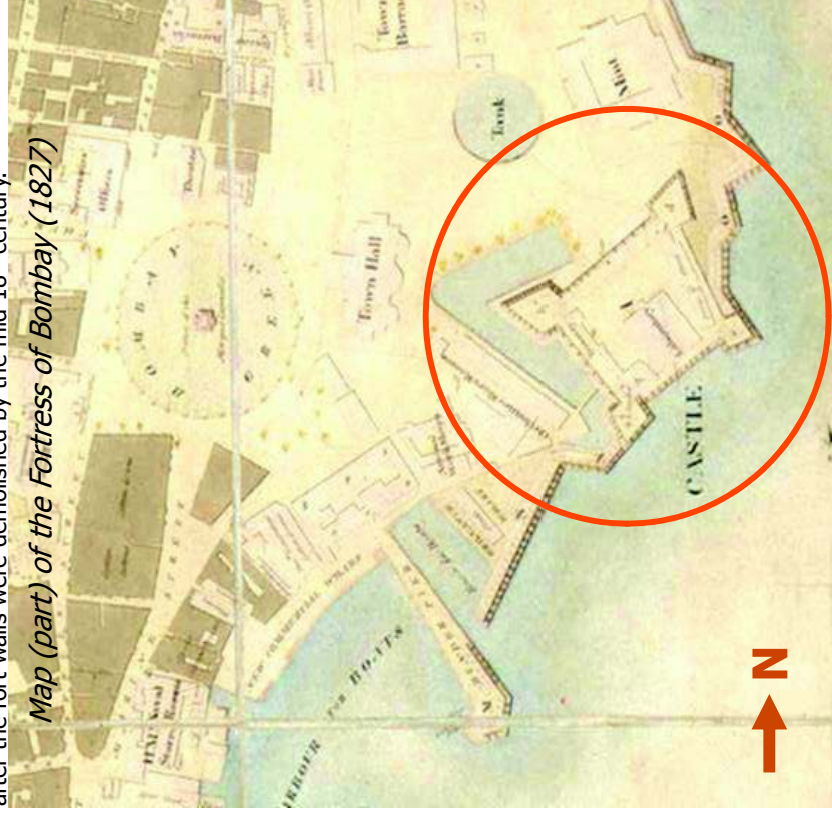
Bombay Castle viewed from the sea



- The plan for development of Bombay city, initially drawn by Governor Gerald Aungier in 1675, that proposed creation of a walled town was finally implemented in 1715 under the governorship of Charles Boon, when the fort walls were built and existing fortification of the castle was strengthened. The castle that housed Governor's Office, treasury, artillery stores and lodgements for company servants behaved as the nucleus of the fort.

- The Castle maintained continued to maintain its identity and importance even after the fort walls were demolished by the mid 18th century.

Map (part) of the Fortress of Bombay (1827)



- Owing to its strategic position commanding the harbour, the castle was structurally strengthened and equipped with over 100 canon pieces in 18th century by the British.

- In 1830, when the Bombay Marine was redesignated as Indian Navy, company Jack was hoisted from the castle bastion.

- After abolition of Indian Navy in 1863, the castle was left unmaintained, till it was inducted back into the naval family as His Majesty's Indian Naval Ship Dalhousie in 1940.

- After Independence, the castle was associated to Indian Navy, initially as I.N.S. Dalhousie in 1950 and later as Indian Naval Ship Angre on 15th Sept 1951.

- Over the years, the castle has witnessed considerable transformation and growth within and around that has affected its structural stability as well as visual identity. In past two decades however, substantial efforts have been taken by Indian navy to conserve their rich heritage.

HISTORICAL BACKGROUND

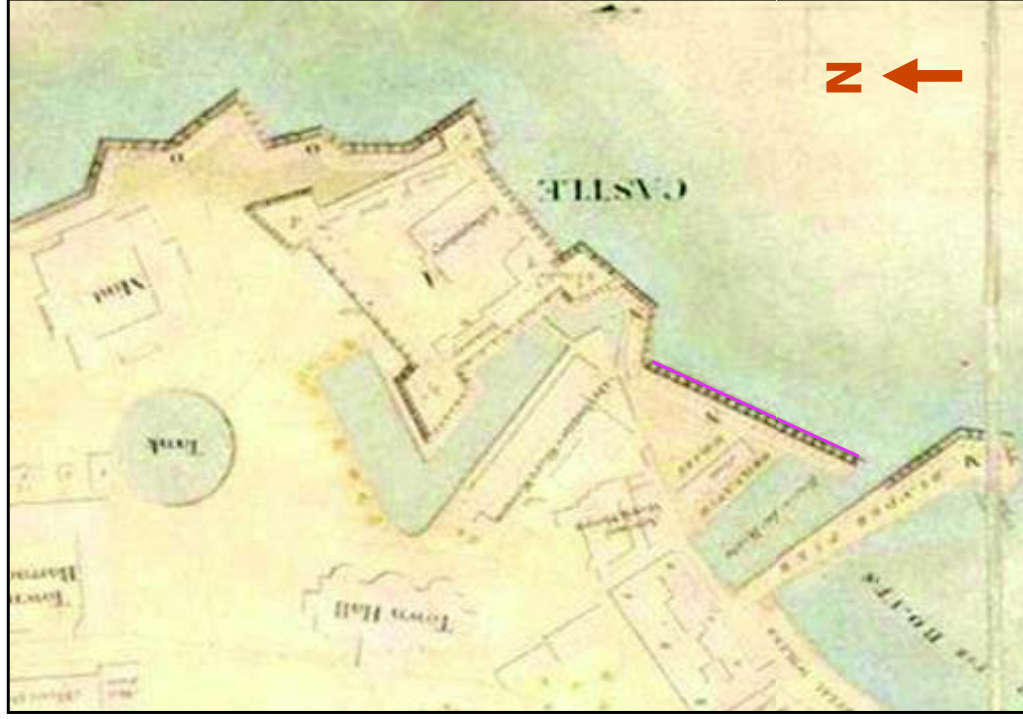
The Castle has been awarded the status of Grade I Heritage structure vide Heritage Regulations for Greater Bombay, 1995.

Bombay Castle Today (year 2004)

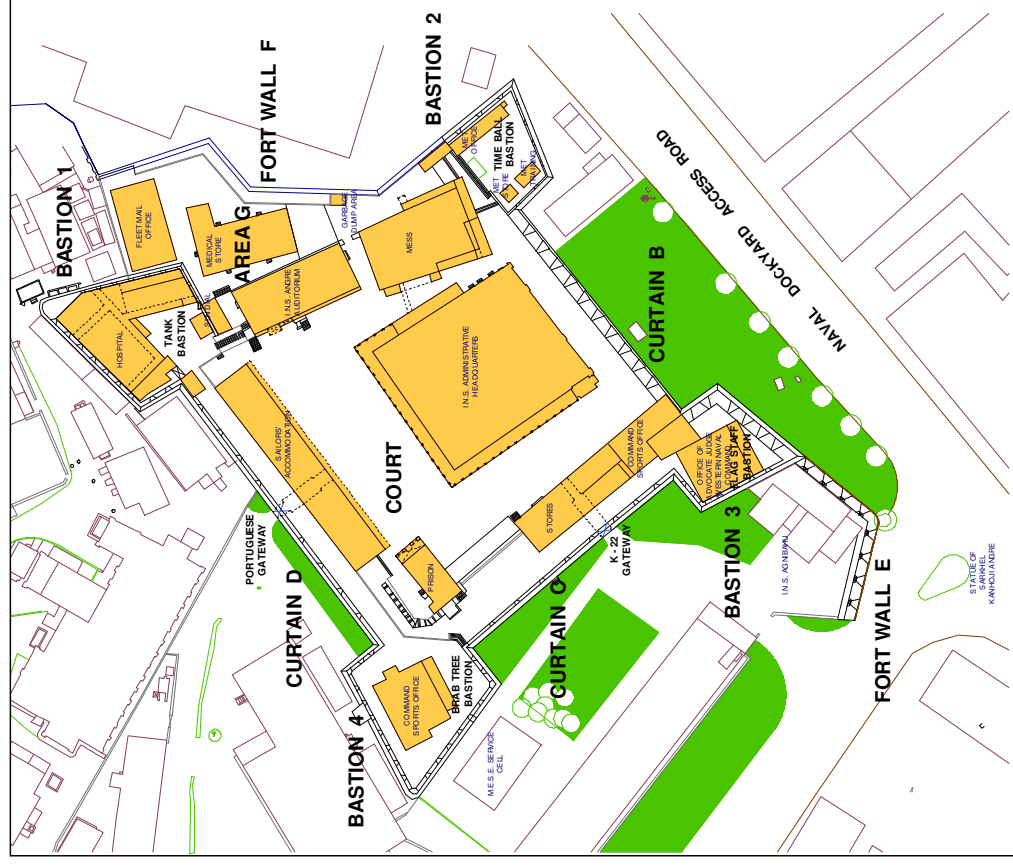


Location Maps – Bombay Castle

RESTORATION PHASE I



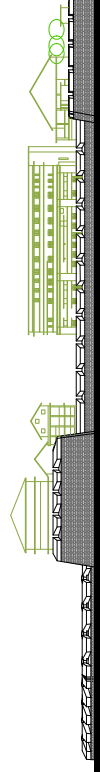
Plan of the Fortress of Bombay 1827



Digitized from City Survey Sheets Nos . 43,44 & 52 (revised upto 1971)

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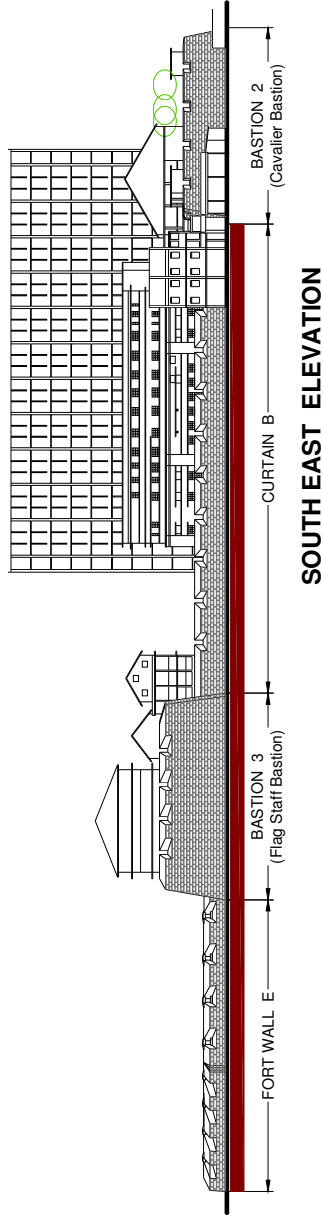
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Extent of Fort Wall and Castle Walls in Phase I

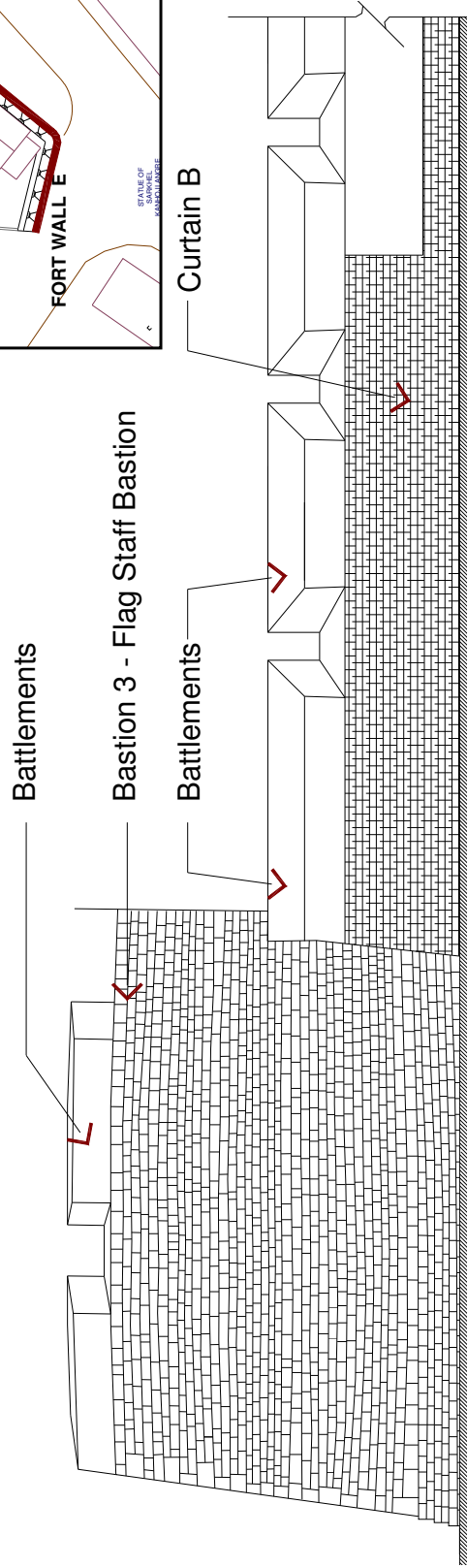
RESTORATION PHASE I



SOUTH EAST ELEVATION

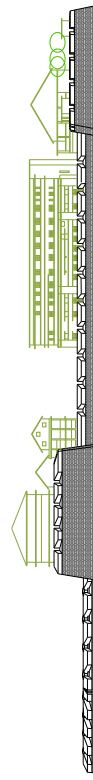
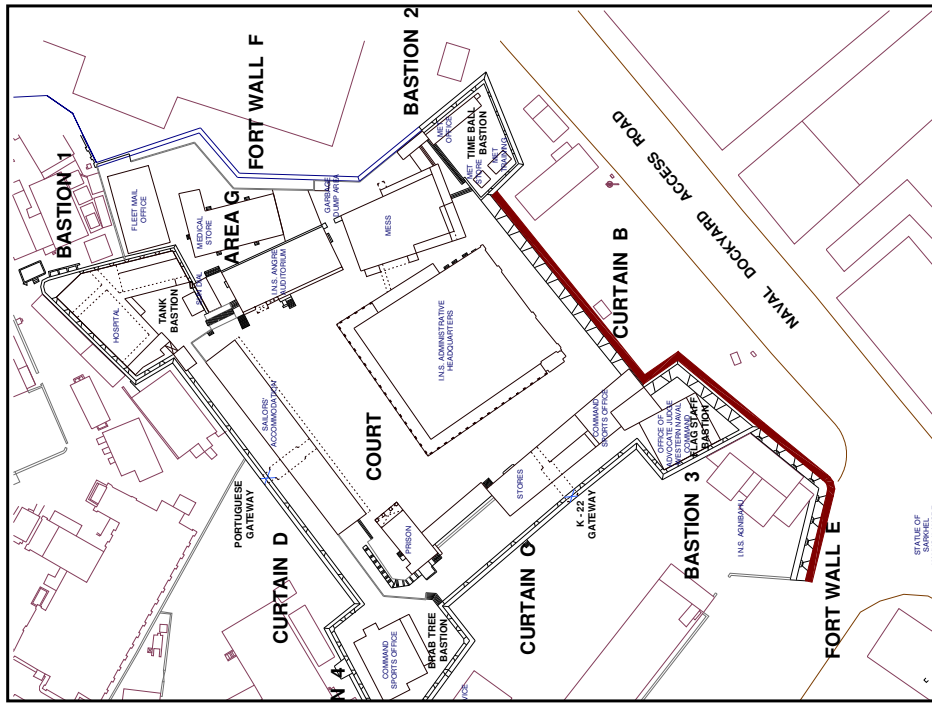
Scope of Works

1. Clearing the clutter
2. Removal of Concrete Coba fill on the Battlements and replace with brick bat coba & lime plaster
3. Stone cleaning
4. Re-Jointing and Re-Pointing
5. Stone replacement



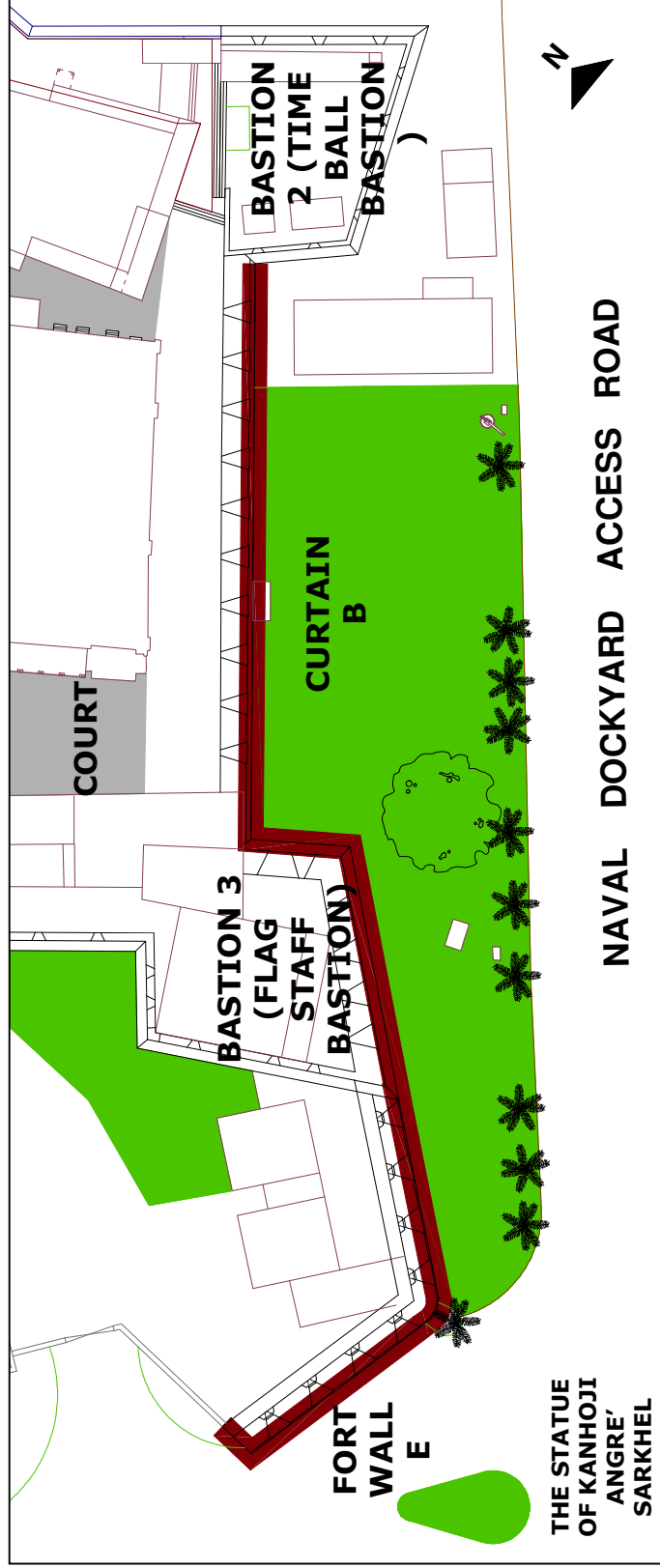
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Extent of Fort Wall and Castle Walls in Phase I

RESTORATION PHASE I



Fort wall



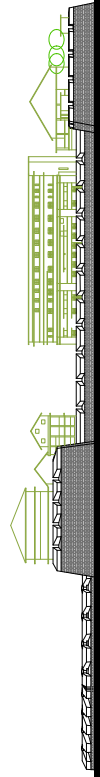
Fort wall continuing into Bastion 3



Bastion wall returning to join the Curtain



Curtain B with battlements



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Clearing The Clutter

RESTORATION PHASE I

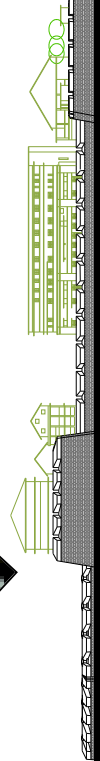


Security fencing in steel angles & mesh was mounted onto the Fort wall directly. This has been cleared and the walls restored.



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Stone Cleaning

RESTORATION PHASE I



Condition prior restoration – accretions of cement paint



Removal of cementitious accretions by gentle tapping & soft brushing of pre-wetted stone surfaces



Battlements on the Bastion 3 in brick work



Condition prior restoration – accretions of cement plaster



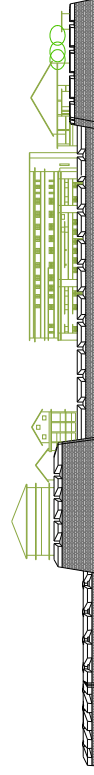
Gentle tapping to remove paint accretions



Bastion 3 after initial removal of paint

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Jointing & Pointing

RESTORATION PHASE I



Raking out weakened jointing mortar and flushing out loose mortar



Re-jointing and re-pointing with lime mortar



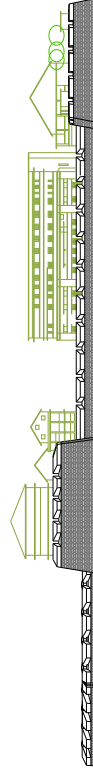
Condition prior to restoration

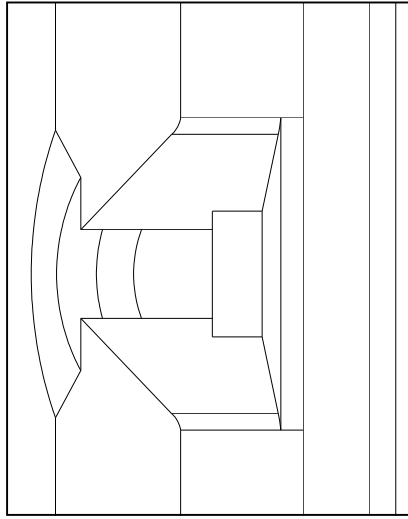


Part pointing complete.

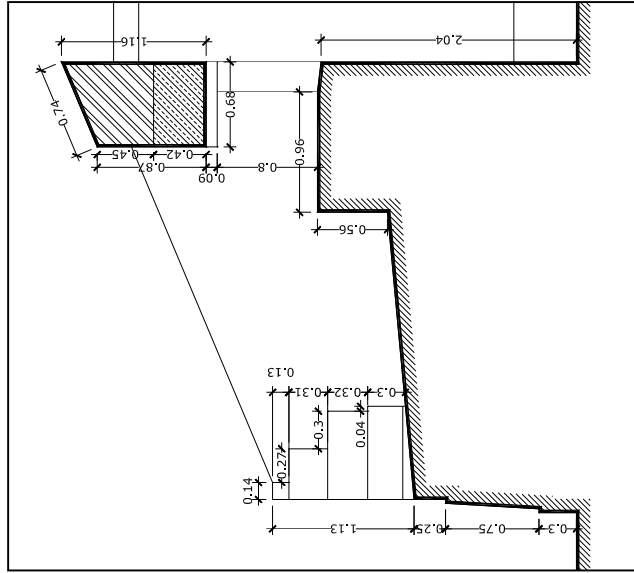
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Typical Elevation of a bay, Fort Wall



Typical Section of a bay, Fort Wall



BEFORE



DURING



AFTER



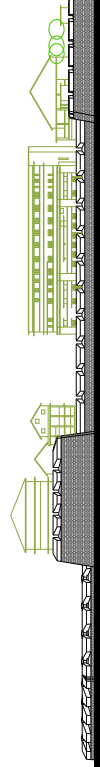
BEFORE



DURING



AFTER

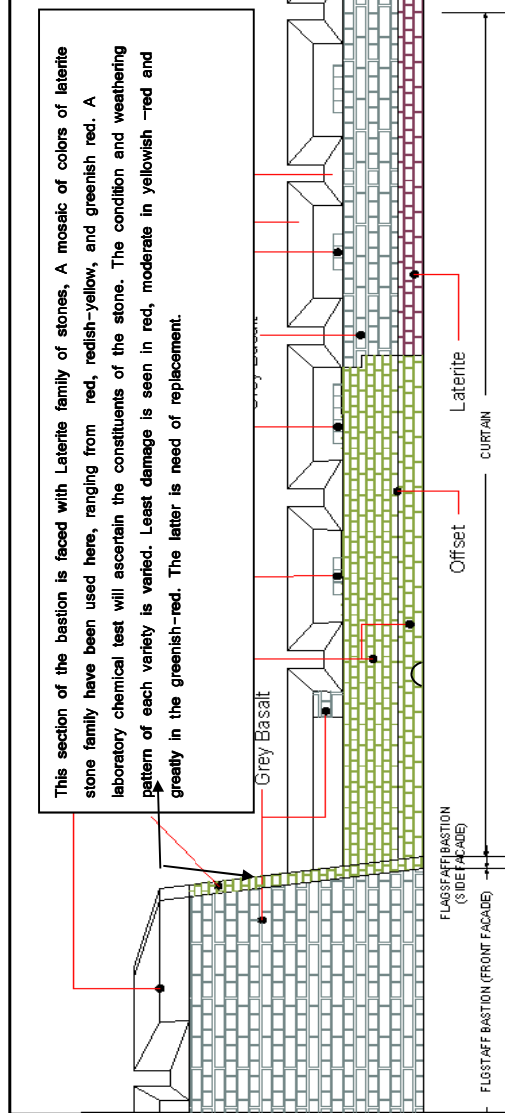




The battlements in this section of the curtain wall while beginning with a single layer of grey basalt stone, its final form is completed with brick masonry, unlike the battlements of the Fort Wall. Topped with mass cement concrete, it was replaced with brick bat coba in lime mortar and lime plaster finish.



Stone Replacement



Before Restoration



Condition of Laterite stones exposed after removal of paint & cement plaster

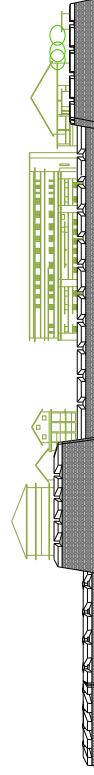


Stone replacement in process



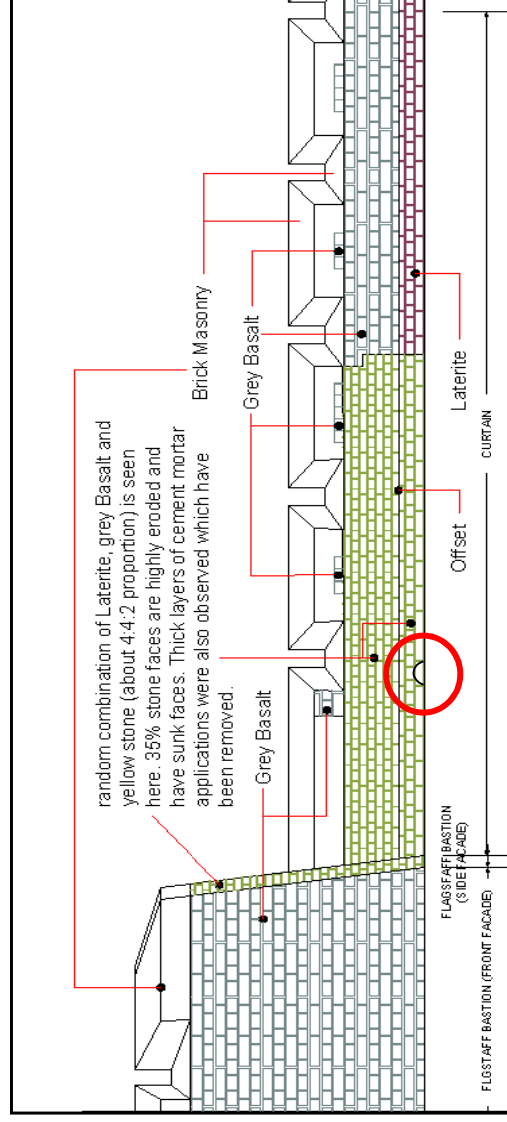
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Unearthed Feature – Passage Tunnel in Curtain B

RESTORATION PHASE I



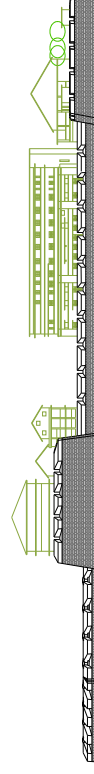
Location of Passage tunnel at Curtain B. this wall originally would have been fronting the shore line of the eastern coast.



During carrying out the process of stone replacement in Curtain B, this passage tunnel (1.5m wide & 1.2m tall) has been unearthed. It has been decided to undertake further research subsequent to which further excavation and restoration work may be carried out.

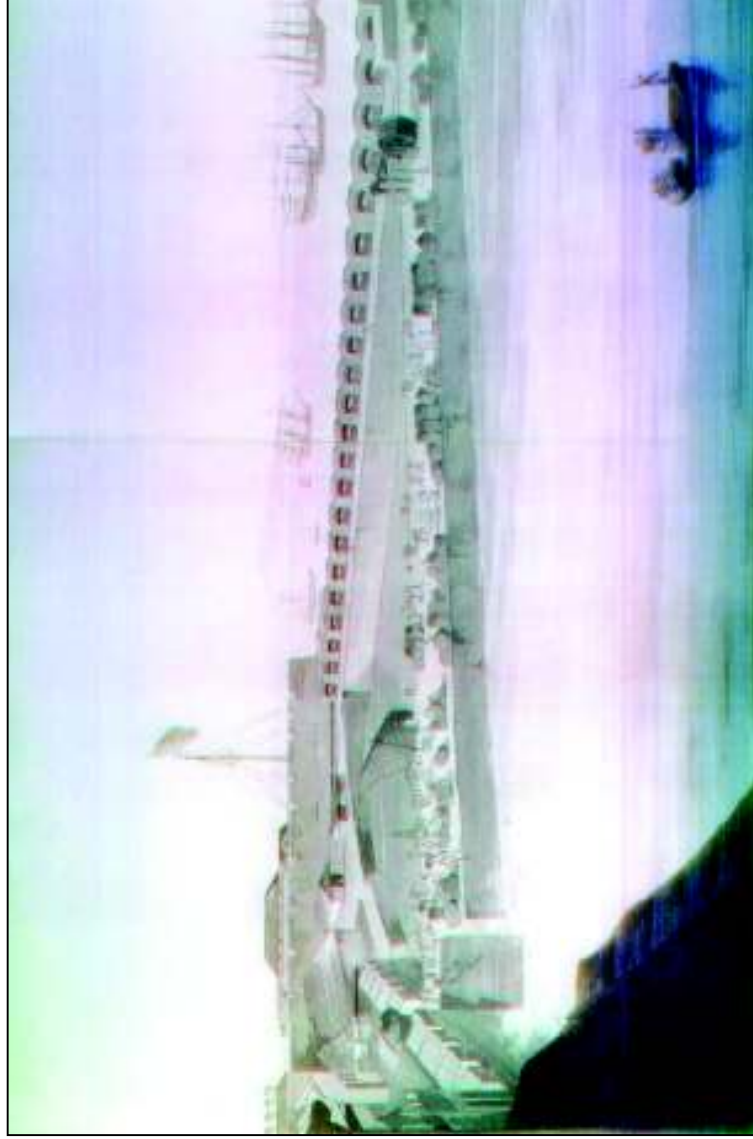
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Restoration of Original Features in Fort Wall

RESTORATION PHASE I



View of Bombay Harbour (1791 – 92)

The view indicates the Fort wall as observed from the Custom basin. Note the typical form and detail of the battlements indicating the exposed arches .

The restoration process while removing the obtrusive application of cement plaster exposed the original stone arches. The arches have now been restored and maintained in an exposed state.

The guns with the constructed pedestal are of recent intervention and have been maintained as such.



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Fort wall



Fort wall continuing into Bastion 3



Bastion wall returning to join the Curtain B



Curtain B with battlements



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