

CHAPTER III : MINISTRY OF CULTURE

Indian Museum, Kolkata

3.1 Modernisation of Indian Museum, Kolkata

Indian Museum, Kolkata awarded the modernisation work on nomination basis and executed the work without any conservation plan or preparation of Detailed Project Report and proper planning. Major works pertaining to providing modern storage system, fire-fighting, fire-detection and prevention and HVAC were not taken up though sanctioned. It also did not ensure financial safeguards and failed in monitoring of the quality of work in the initial phases. Works sanctioned at a cost of ₹ 83.66 crore were executed for ₹ 105.70 crore, with works estimated to cost ₹ 25.76 crore not awarded at all. Proper conservation processes were also not followed during renovation resulting in damage to priceless artefacts.

3.1.1 Background and Overview of modernisation

Indian Museum (IM) Kolkata, founded in 1814 as the ‘The Asiatic Society Museum’, was shifted from the Asiatic Society to the present building and opened for the public in 1878 as ‘Imperial Museum’ and later renamed as ‘Indian Museum’. IM is an autonomous organisation under the Ministry of Culture (MoC), Government of India with a Board of Trustees (BoT) as its apex body.

BoT initiated the process for renovation, upgradation and modernisation of the Museum by constituting the Indian Museum Bicentenary Vision Concept and Development Committee (IMBVDC) in July 2008 keeping in view the bicentenary celebration in 2014. Accordingly, IM, with the approval of BoT, entered into a Memorandum of Understanding (MoU) with M/s NBCC (India) Ltd. (NBCC) in August 2011 for repair and renovation of various buildings. Subsequently, IM submitted (June 2013) a proposal to the Standing Finance Committee (SFC) to undertake the following:

- (a) Restoration, repair and painting of the heritage building under the guidance of best available experts in civil engineering and conservation architect;
- (b) Modernisation of museum galleries; and
- (c) Addition of new visitor facilities like washrooms, cafeteria, souvenir corners *etc.*

The entire modernisation work was funded/approved by three sources -

- (i) IM sanctioned (2011) ₹ 0.66 crore for repair and renovation of the external facade of Fire Proof Spirit (FPS) building from its funds/General Grant;
- (ii) IM received (March 2013) ₹ nine crore from MoC under ‘Scheme of Modernisation of Museums in the Metro Cities’; and
- (iii) MoC, after approval of SFC (June 2013) sanctioned ₹ 99.76 crore.

Thus, the entire fund available for modernisation was ₹ 109.42 crore and each of works were scheduled to be completed within two years from the date of receipt of payment.

NBCC divided the entire work into 23 packages (**Annexe-3.1**) and awarded these packages to sub-contractors (October 2011 to June 2016), released the payments after scrutiny of the bills submitted by sub-contractors and submitted the statement of expenditure to IM for adjustment/reimbursement. The awarded packages were completed¹ at a cost of ₹ 105.70 crore. Audit noted that there was no record of proper handing/taking over of the completed works.

3.1.2 Audit Objectives, Scope and Methodology

An audit on the modernisation of the IM was taken up to ascertain whether:

- (a) Modernisation was carried out in consonance with the relevant government rules and regulations and within the prescribed time frame and cost;
- (b) IM followed an effective monitoring mechanism to ensure full and efficient utilisation of the available resources; and
- (c) Intended purpose of modernisation was achieved without damage to priceless artefacts.

Provisions of the MoU between IM and NBCC, records, files, documents and other relevant information were sought from the audited entity. Audit analysed the records/information furnished to audit, in relation to the audit objectives.

IM did not offer its comments on the observations, but an Exit Meeting was held with the Management of IM on 29 July 2019 and their views on the observations were recorded. The matter was reported (September 2018) to MoC and their reply is awaited as of March 2020.

¹ FPS Building - fund paid to NBCC in November 2011 and work recorded to be completed in March 2013; Metro Museum - fund paid to NBCC in June 2012 and work recorded as completed in May 2014; Modernisation - fund paid to NBCC in August 2013 and work recorded as completed in April 2015.

3.1.3 Production of records

Audit of the modernisation project of IM was taken up from April 2018. During the course of Audit, records relating to the modernisation project, which was initiated since 2008 and completed by April 2015, were requisitioned from the IM authorities. The records requisitioned included files relating to award of work to NBCC, minutes of Board of Trustees, Finance Committee meetings, Ministry correspondence, files relating to Project Implementation and Monitoring Committee, files relating to the Expert Committee for Conservation of Projects, all work related/package related files etc.

In response, IM submitted a copy of the complaint filed by the Security Officer, IM on 24 July 2018 with the New Market Police Station, Kolkata regarding loss of majority of the requisitioned documents/files. Further, there was no record to indicate - (i) duration from which the records were unavailable/not traceable; (ii) efforts by the IM authorities to trace the relevant records; (iii) whether the issue was intimated/taken up with MoC; and (iv) whether any action was initiated on persons responsible to maintain the records. The relevant record available with the Ministry was also not made available to Audit.

Hence, the audit findings are based on the limited documents made available by IM and NBCC.

3.1.4 Audit Findings

On scrutiny of the records made available, the following observations are being made:

3.1.4.1 Reduction of Scope and its Impact

The work of modernisation was taken up with the funds received from the MoC (₹ 108.76 crore) and funds sanctioned from General Grants by IM to the tune of ₹ 0.66 crore. Audit noted that the scope of work actually executed vis-à-vis the intended scope under each of the three sanctions/sources as per details given

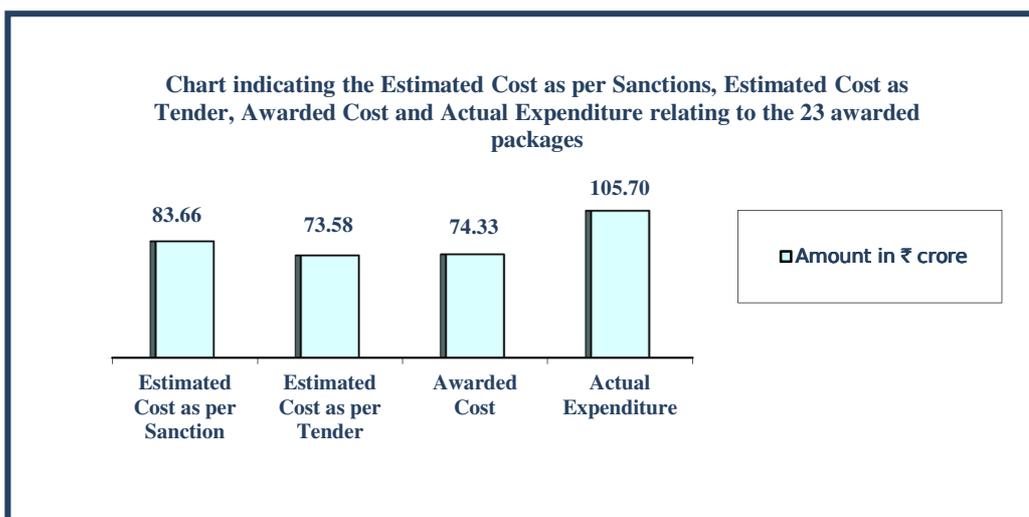
Table No. 1:

Table No. 1: Scope of work actually executed vis-à-vis the intended scope

Sanction/Source	Scope and Estimated Cost	Actual Scope executed and Expenditure
IM from General Grants	Repair and renovation of the external facade of Fire Proof Spirit (FPS) building (₹ 0.66 crore).	Entire work was completed by March 2013 with expenditure of ₹ 0.49 crore.
MoC under 'Scheme of Modernisation of Museums in the Metro Cities'	(i) Restoration, repair and renovation of the exterior façade of main museum building (₹ 6.75 crore); (ii) Construction of toilets,	Only restoration, repair and renovation of the exterior façade of main museum building and construction of toilets were completed after an expenditure of ₹ 9.34 crore.

	replacement of lifts (₹ 2.22 crore); and (iii) Gravity Fall System (Fire Protection) in the main museum building (₹ 0.03 crore).	Works relating to replacement of lift are yet to be completed and those relating to Gravity Fall System (Fire Protection) in the main museum building are yet to be awarded.
MoC with SFC approval	Restoration, renovation and modernisation of IM (₹ 99.76 crore).	Works executed and completed at an expenditure of ₹ 95.87 crore. Major part of work viz. Restoration and Modernisation of Reserve Store, Installation of Fire-Fighting, Fire Detection and Prevention System and Heating, Ventilation and Air-Conditioning (HVAC) System, estimated at ₹ 25.73 crore, was not awarded at all.

Further, even for the 23 packages executed and completed, Audit noted wide variations in award and execution with reference to initial estimates indicating that due diligence was not exercised while preparation of package-wise BoQs and hence, extra/excess expenditure were incurred.



In the absence of records relating to detailed estimates and rate analysis for non-scheduled items, Audit was unable to analyse the reasons for variation in costs. Audit also could not correlate the estimated cost with the awarded cost as the description/nomenclature of the works in the 'Estimated Cost as per SFC sanction' and that of the 'Award' were different. Further, the impact of non-inclusion and subsequent non-award of some critical works in the 23 packages executed are discussed below:

(A) Storage of Reserve Artefacts

Audit noticed that the storage and upkeep of Reserve Artefacts were completely ignored during the project execution although provision for providing modern storage system for the artefacts was included in the SFC proposal at an estimated cost of ₹ 15.75 crore. The Reserves, which account for almost 94 *per cent* of the collection of the Museum and consist of inorganic objects susceptible to heat and humidity, are now subject to excessive temperature and humidity variance, crumbling walls, dust, dampness, water seepage, loose hanging electrical wires and unscientific storage systems. Fire detection system, HVAC and CCTV surveillance were also not provided in the Reserve Store, though included in the approved cost.



Reserve store – Roof with rust and termite, Artefacts on ground, Fabric bundled and stacked

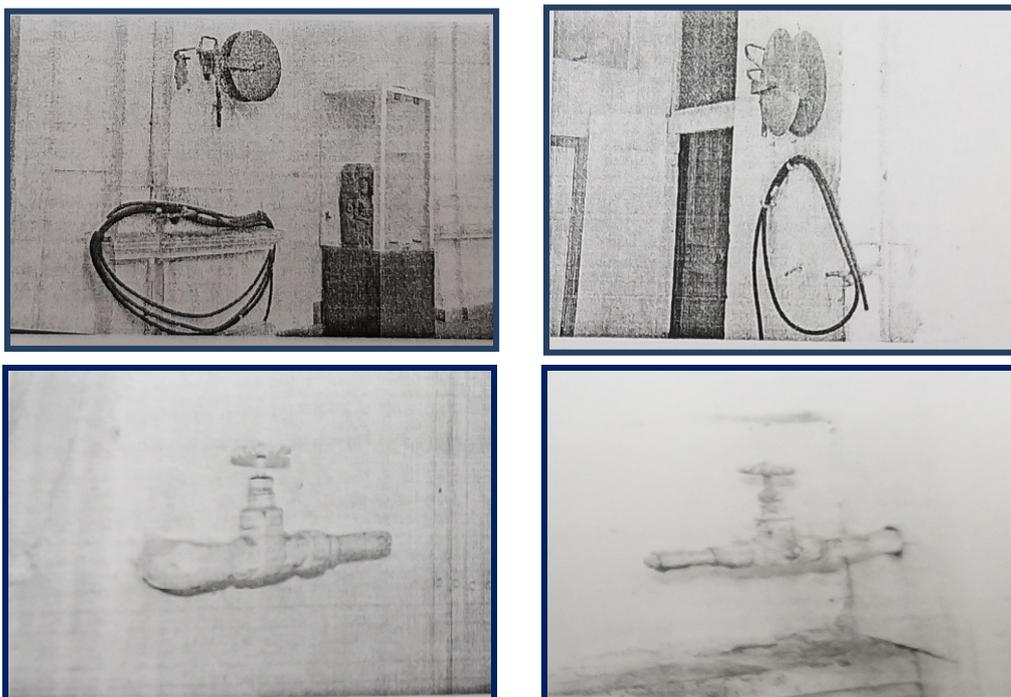
(B) Fire-Detection, Fire-Fighting and Prevention System

With a view to minimise danger and loss of life and property from fire, Guidelines² stipulate that a museum should install Heat/Smoke detectors for detecting fire, manually operated alarms and public address systems, fire

² As per Guidelines on Fire & Life Safety of National Building Code 2005; National Disasters Management Guidelines for Museums issued by the National Disaster Management Authority; and Guidelines for Disaster Preparedness in Museums issued by the International Council of Museums.

extinguishers, clearly mark exit routes with universally understood emergency signage, emergency lighting, public address system, intercom etc.

Audit noted that the approved SFC proposal (June 2013) included works related to 'Fire Detection, Fire Fighting and Prevention System' for an estimated expenditure of ₹ 4.08 crore. However, these works were not included in the packages executed. Subsequently, NBCC (June 2016) submitted a revised proposal amounting to ₹ 1.84 crore for installation of Fire-Fighting System, Signage and others. However, no action was taken by IM on these proposals and the Museum is running with existing old fire-fighting system (September 2019). Further, IM accepted that they had not obtained any No-objection Certificate (NoC) from the Fire Department and also stated that NBCC, during the modernisation process, removed the existing fire hydrants which were not installed later.



Images of the dismantled fire equipment

NBCC stated (May 2019) that the Fire-Fighting System could not be taken up due to piecemeal availability of work front.

Absence of proper Fire Detection and Fire-Fighting System, more so in a scenario where the existing system has been dismantled, endangers the safety and security of staff, visitors and also priceless artefacts.

(C) Installation of Lift

The Letter of Intent (LoI) No. 1017 which included replacement of Lift in the main museum building was awarded by NBCC in August 2013. Audit noticed that the components of Lift, valued at ₹ 0.21 crore, had been procured and dumped on site (May 2014) before finalisation of the installation location. The Lift could not be installed till date (September 2019) due to failure of IM to provide suitable space/location. The same was confirmed by IM in the Exit Meeting.



Components of Lift dumped in the IM Campus

The main museum building has three floors and absence of Lift poses hindrance to the elderly and the handicapped visitors from visiting all the galleries and thereby partially defeats the objective of taking up the renovation project.

(D) Heating, Ventilation and Air-Conditioning (HVAC) System

Installation of HVAC System was included in the proposal approved by SFC but the work was not included in the 23 packages executed. Installation of HVAC in Galleries and Reserve Store is important not only as a measure for visitor's comfort but also to maintain a controlled atmosphere and safeguard of organic objects from temperature and humidity fluctuations.

Hence, apart from the reduction of scope of works estimated at ₹ 25.76 crore, important gallery like Egyptian Gallery, though planned, was not renovated, some galleries were partially renovated (Pre & Proto History Gallery & Mask Gallery) and some works were partially completed (Renovation of Administrative Building and Installation of Lift), and almost entire fund, i.e. ₹ 105.70 crore out of ₹ 109.42 crore, was exhausted.

3.1.4.2 Planning of works executed

(A) Adequacy of Policy, Guidelines

The conservation and restoration of monuments must have recourse to all the sciences and techniques which can contribute to the study and safeguarding of the architectural heritage.³

Audit noted that there were no specific guidelines/laid down criteria issued by the MoC for preservation and conservation of museums. In the absence of a comprehensive conservation policy/plan and benchmark, the entire work was executed as per the designs and discretion of the executing agency, which had no expertise in conservation of heritage building.

Proper conservation planning and estimates are to be prepared for optimum utilisation of financial resources. Audit, however, observed deviations from above procedures during modernisation activities in IM as given below:

- (i) No conservation architect was employed by IM to oversee the modernisation work to be done by NBCC. Even the curatorial members of IM were not involved in the modernisation work.
- (ii) No gallery-wise storyline was prepared and provided by IM to NBCC before preparation of Detailed Project Report.
- (iii) The assessment report, the methodology and the Bill of Quantities (BoQ) of the material used for the restoration work had not been examined and vetted by an expert body of IM.
- (iv) No guideline/directive was prepared/issued by IM for handling artefacts during modernisation work.

These are discussed in succeeding paragraphs.

(B) Preparation of Concept Plan

After constituting (July 2008) the IMBVDC, IM called for Expression of Interest for 'Renovation, upgradation and modernisation of the IM through advertisements in September 2008. IM entrusted (December 2008) the work of preparing Detailed Project Report (DPR)/Project Estimates to a private party without any formal agreement, in violation of Rule 204 (v) of the General Financial Rules (GFR), 2005. Audit noted the IM paid ₹ 16.50 lakh to M/s DBA Partners, after authorisation of BoT in January 2009, for preparation of Concept Plan.

³ The International Charter for the Conservation and Restoration of Monuments and Sites of 'International Council on Monuments and Sites' (ICOMOS).

IM further engaged (May 2010) CPWD for examining the feasibility of the Concept Plan prepared by M/s DBA Partners from the aspect of structural and constructional feasibility along with compliance to municipal bye-laws and heritage point of view and paid (September 2013) ₹ 22.93 lakh towards detailed survey of IM campus in connection with bicentenary celebrations of IM in 2014. The Detailed Survey Report prepared by CPWD was not found on record. Meanwhile, “Condition Survey of Indian Museum Main Building” was again carried out (April 2012) by NBCC through Jadavpur University, rendering the survey conducted by CPWD, if done, also redundant. No further action was taken on the plan prepared by M/s DBA Partners.

IM stated (Exit Meeting) that in the BoT meeting (July 2010) presided over by the Chairman of BoT, it was decided to put on hold the tripartite agreement between IM, CPWD and M/s DBA Partners as it was felt that the emphasis should be on working on the interior of the museum galleries rather than going for a tripartite agreement for exterior addition/expansion. However, this decision rendered ₹ 0.39 crore (₹ 16.50 lakh + ₹ 22.93 lakh paid to M/s DBA Partners & CPWD respectively) unfruitful.

(C) Award of work to NBCC

IM, based on the suggestion of MoC and deliberation in the BoT meeting (January 2011), awarded (August 2011) the ‘Repair and Renovation’ work of IM to NBCC on nomination basis without assessing the requisite expertise for conservation work of Heritage Building. NBCC was given preference on the ground of CPWD’s preoccupation and involvement in other projects. Audit noted that CPWD had showed (May 2010) its willingness in executing the modernisation work and this would have been without levy of any departmental charges as it is a Central Government funded project. IM paid (up to March 2018) ₹ 6.89⁴ crore to NBCC towards agency charges on modernisation work and this was avoidable had CPWD been engaged for the work.

(D) Memorandum of Understanding (MoU) signed with NBCC

Rule 204 of GFR 2005 stipulates general principles for entering into contract, according to which, the terms of contract must be precise, definite and without any ambiguities. The terms should not involve an uncertain or indefinite liability. Infirmities in the MoU and Non-compliance of the provisions are detailed below:

⁴ Seven *per cent* of the total value of the work done through Project Management Consultancy (₹ 98.38 crore).

- (i) As per Clause 4.4 of the MoU, NBCC was to prepare the Detailed Project Report (DPR) which was not done.
- (ii) Clause 4.8 of the MOU exonerated NBCC from any liability towards any harm, loss, damage etc. which may be caused on any account or on account of fault of the employees.
- (iii) As per Clause 8 (Mode of Payment), on the basis of the approved DPR, IM was to deposit 40 *per cent* of the approved cost as interest free initial advance to NBCC. However, even though no DPR was prepared by NBCC, IM paid interest free advance to NBCC. IM accepted this.
- (iv) There was no provision for liquidated damages or defect liability period in the MoU for defaults on the part of NBCC.

Results of failure to comply with the terms of the MoU as at (i) to (iv) above discussed in subsequent paragraphs.

(E) Detailed Project Report (DPR)

Clause 4.4 of the MoU specified that NBCC was to prepare detailed plans, designs and DPR after approval of Conceptual Project Report (CPR) by IM. NBCC only prepared a CPR (October 2012) and did not prepare any DPR. CPR formed the basis of the modernisation works to be carried out. Audit noted that the CPR lacked the following information, which a DPR, to be prepared, would have included:

- (i) Detailed architectural, structural and flowchart drawings and approved layout plans;
- (ii) Detailed specifications of each work/items;
- (iii) Structural drawings/design calculations for all the components of the scheme;
- (iv) Detailed Electrical/Mechanical drawings/design calculations for all the components of the scheme including getting approvals from the concerned authorities;
- (v) Detailed Technical Specifications for all the non-scheduled items proposed in the scheme;
- (vi) Required set of Tender Documents, Tender Drawings, Estimates, and Specifications etc.;
- (vii) Bill of Quantities duly priced along with take-off sheets; and
- (viii) Market Rate analysis for non-scheduled items supported with quotations.

Audit noted that IM, without insisting on preparation of DPR and detailed estimates, allowed NBCC to execute the work only on the basis of CPR with above deficiencies and released ₹ 105.70 crore till March 2018.

NBCC stated (May 2019) that since modernisation plan including details of display, etc. was not finalised and also as the work was to be carried out in phases, DPR could not be prepared.

The reply is not tenable since the scope of work along with site was available to NBCC. In the absence of DPR and detailed estimates, comparison of the items planned to be executed with the actual work executed could not be made. Absence of the said specifications also hindered the quality control. There were no criteria for validation which led to huge deviation in quantities executed as indicated in the subsequent paragraph at **3.1.4.3 (A) (i)**.

3.1.4.3 Execution of works

NBCC divided the modernisation work into 23 packages and awarded them to different sub-contractors, between October 2011 and June 2016. Audit noted the following issues with reference to the execution of the project.

(A) Preparation of estimates

Audit selected five packages with actual cost incurred of more than rupees five crore for detailed examination of the estimates. However, only Bill of Quantities (BoQs) and Final Bills pertaining to only four packages⁵ involving actual expenditure of ₹ 86.82 crore were submitted to Audit.

(i) Deviations

Scrutiny of the records revealed that the expenditure included an absolute deviation of ₹ 51.10 crore⁶ that ranged between 62 and 88 *per cent* of the awarded value of packages in quantities of 503 items out of a total of 545 items in BoQs. The primary reason for incorrect estimation attributable to such deviation was the absence of the DPR and freezing of the detailed estimates as already indicated in Paragraph **3.1.4.2 (E)**.

⁵ (i) Renovation and Upgradation of Galleries in IM (LoI No.338) - ₹ 54.05 crore (final payment); (ii) Repair and Renovation of IM (Part-II, Main Building) (LoI No. 519) - ₹ 10.08 crore (final payment); (iii) Upgradation of Archaeology, Paleo and Anthropology etc. Galleries at IM (LoI No. 890) - ₹ 17.80 crore (final payment); and (iv) External electrical installation of IM (LoI No. 381) - ₹ 4.89 crore (final payment). Records pertaining to Repair and Restoration of IM Building (External) (LoI No.07) - ₹ 7.40 crore (final payment).

⁶ Sum of absolute value of deviated amounts of all individual items. Positive deviation (increase in quantity of 204 items) of ₹ 37.71 crore and negative deviation (decrease in quantity of 299 items) of ₹ 13.39 crore.

As per the CPWD Manual 2012, Clause 24.1.2, deviations in quantities of individual items beyond the limit of ± 10 per cent should not be made at site without the in-principle approval of Technical Sanction Authority. Audit noted that there was deviation in excess of ± 10 per cent in quantities of 465 items out of a total of 545 items in BoQs. Audit, further, noted that no such approvals were found on record, which is irregular. Also, IM had to incur an extra expenditure of ₹ 24.32 crore (net positive deviation).

(ii) Non-Scheduled Items

As per CPWD Manual 2012, Clause 4.3(3), the rates entered in the estimates should generally agree with the scheduled rates, but where due to any reason, the later are not available, market rates may be considered. Audit scrutiny revealed that out of total payment of ₹ 86.82 crore, IM made payment towards execution of non-scheduled items for ₹ 81.15 crore which constituted 93.46 per cent of the total cost. The veracity of the rate of the non-scheduled items could not be ascertained in audit as neither IM nor NBCC furnished records on rate analysis.

IM mentioned (Exit Meeting) that the payment of Running Account (RA) bills to the sub-contractors was made by NBCC without obtaining its approval and NBCC only submitted the Statement of Expenditure to it. NBCC had not offered any remarks to the observations made.

The reply of IM is not acceptable. As per Clause 8 of the MoU with NBCC, IM cannot absolve its responsibility from discrepancies in payments made as NBCC was to submit final expenditure statement showing details of final payments made to sub-contractors/agencies engaged by it for the project, supported by authenticated documents, i.e., final bills etc. which needed to be verified by the IM authorities, before adjusting the same with the outstanding advance, if any lying with NBCC.

(B) Payment to sub-contractors

NBCC was responsible to scrutinise and make payment of bills of sub-contractors as per the terms and conditions of the agreement with the sub-contractors. Audit noted that during renovation and up-gradation work of IM, contractors were given undue advantage either by allowing higher rates than the agreed rates or incorrect application of Delhi Schedule of Rates (DSR) as detailed below:

(i) Adoption of BoQ rates

NBCC awarded (August 2013) work of 'Upgradation of Archaeology, Paleo& Cultural Anthropology Gallery' to a Contractor at a cost of ₹ 12.47 crore which was completed after incurring an expenditure of ₹ 17.80 crore. Audit noticed that in five items of BoQ, the Contractor was paid at rates, higher than the agreed rates which resulted in overpayment to the tune of ₹ 2.75 crore.

NBCC in their reply (May 2019) stated that the rate of items were revised in pre-bid meeting (July 2013) and it was uploaded on website also. It was further stated that the unrevised BoQ was inadvertently enclosed with the agreement.

However, Audit could not validate NBCC's contention in the absence of supporting documents such as minutes of pre-bid meetings etc.

(ii) Application of DSR rates

Audit noted that in respect of three major packages⁷ in IM, NBCC prepared BoQ based on DSR 2012. However, while preparing the BoQ, NBCC applied incorrect rate of ₹ 93.30 instead of ₹ 77.90 towards one item⁸ of work thereby the value of 'Estimated Cost Put to Tender' was increased. The tender was accepted on percentage rate basis and hence, the application of incorrect rate led to acceptance of tender on higher rate and consequently the work was executed on higher rate. Had the correct rate been applied in the BoQ for the said item, IM could have saved an amount of ₹ 0.44 crore plus applicable agency charges paid to NBCC towards renovation work.

NBCC accepted (May 2019) the observation and stated that necessary recovery would be made.

(C) Safeguarding of Artefacts

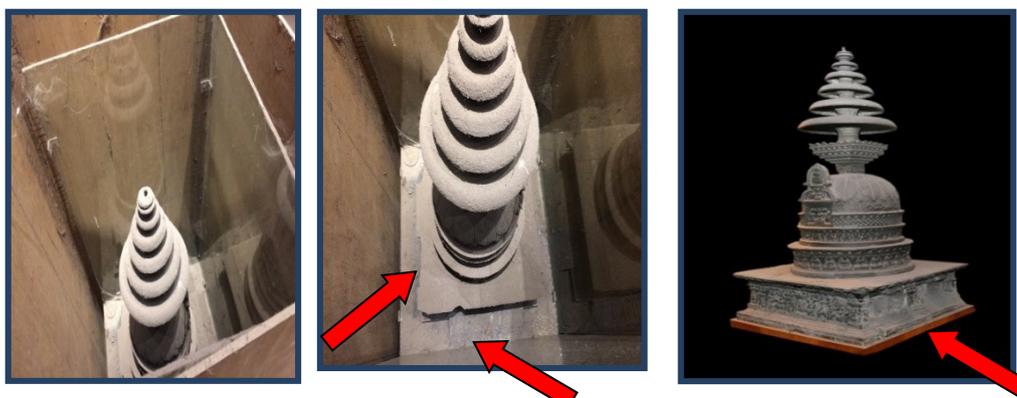
As per Clause (xii)(a) under Rule 204 of GFR 2005, in contracts where government property is entrusted to a contractor for doing further work on such property, specific provision for safeguarding government property should be included in the contracts.

Neither any guideline was prepared/issued nor any conservation architect/expert was employed by IM for handling artefacts during modernisation work. It was found that due to absence of any expert, some rare and priceless artefacts were severely damaged by the executing agency.

⁷ (i) LoI No. 519 dated 18 July 2013 for ₹ 6.79 crore; (ii) LoI No. 890 dated 16 August 2013 for ₹ 12.48 crore; and (iii) LoI No. 338 dated 21.03.2014 for ₹ 34.93 crore.

⁸ Item No. 10.25.2 of DSR 2012 – In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works.

- (i) The Stupa exhibit located at the centre of Gandhar Gallery broke down due to mishandling by NBCC.



Damaged Gandhar Stupa

- (ii) The Lion Capital (more than 2000 years old) at the entrance of IM was mishandled and severely damaged during modernisation work.



Lion Capital before Renovation

Damaged during Renovation

Further, as per clause 4.8 of the MoU, NBCC was fully exempt from any liability towards any harm, loss, damage etc. which may be caused on any account or on account of fault of his employees. This made IM fully responsible for all the damages that occurred during the work of modernisation and hence would have to bear any additional financial burden.

The facts were confirmed by the IM.

3.1.4.4 Renovation of galleries

The measures undertaken by NBCC to modernise the galleries have, in fact, jeopardised the safety and longevity of the images. Though the designs of display units/showcases were finalised by NBCC after consultation with IM, many shortcomings were noticed as explained below:

(A) Pedestals

The pedestals installed during the modernisation project are made of non-porous ‘Corian’ surface, inside of which is an iron structure and sand filling covered by plywood on which the objects are placed. In some instances, it was found that objects were tilted and sinking into the pedestals, and sand oozing out of the pedestals due to corrosion in the iron structure inside the pedestals. Also, plywood structure inside the pedestal was found badly damaged due to absorption of moisture.



Images of broken pedestals

The above instances indicate that the pedestals installed during the modernisation project are neither durable nor appropriate for the purpose for which they have been created. The pedestals were approved by the Core Committee but assessment of appropriateness of such pedestals was never carried out.

IM authority confirmed the facts.

(B) Showcases

The quality of plywood used for construction of showcases was poor and the showcases are also not user friendly. It is difficult to open it for cleaning and other maintenance works. The lack of ease of access inside the showcases, as reported by the Museum staff, is the major cause for poor maintenance. Due to the problem of accessibility, Museum Authorities are unable to solve the problem of detachment of object information label inside a showcase in the Coin Gallery for a period of over three months. Although the showcases were approved by the Core Committee, the accessibility issue was not addressed at the implementation and monitoring stage.



Image of cobweb in Showcase in one of the ground floor corridor



Image of detached label lying in a Showcase at Coin Gallery



Objects placed at a level much higher than the height of the general visitor



Gallery lighting and glass showcase makes the visitor see his/her own reflection

IM confirmed the fact during discussion.

(C) Lighting in Showcases and Galleries

Audit observed that the lighting in the showcases was not proper. In some cases, excess lighting was done inside the Showcases and in some cases, lighting was not done accurately. Also, Track Mounted LED Projector Lights installed in many Galleries are more than the requirement which is discussed in latter Paragraph at 3.1.4.4 (D).





Poorly lit Reptile Gallery; Bird Gallery; and Invertebrate Gallery

IM authority confirmed the fact.

(D) Installation of Track Mounted LED Projector Lights

The repair and renovation work of the Museum Building *inter-alia* included installation of new ceiling spot lights (Track Mounted LED Projectors) in the galleries and corridors of the museum building.

Test check in joint inspection with IM Authority during June 2018 of the installation of LED Projector Lights in 11 Galleries revealed that 1247 nos. of LED projector lights were installed at a cost of ₹ 3.32 crore. IM stated that of these, 50-60 *per cent* were redundant and keeping all the lights on, resulted in generation of heat and discomfort to the visitors. This fact was also confirmed by IM during the Exit Meeting. However, in absence of detailed electrical drawings and design calculations, Audit is unable to comment on how many lights were sufficient and how many are redundant.

NBCC replied (May 2019) that the requirement was determined in consultation with the consultant and was also approved by the Technical Committee of IM. The reply of NBCC could not be verified as minutes of such Technical Committee meeting were not made available to Audit. The fact remains that most of the LED Projector Lights installed remained unused.

(E) Surveillance System and Power Back-up

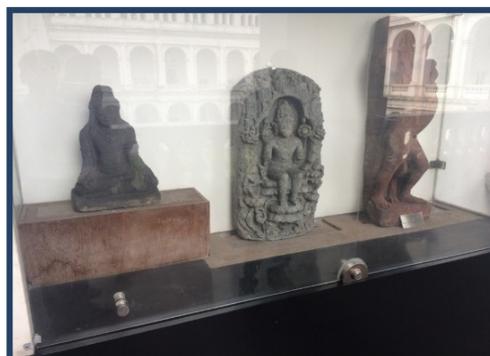
The Surveillance System, with 445 CCTV cameras installed during modernisation was inadequate as the Reserve Store holding 94 *per cent* of the artefacts were not provided with any CCTV cameras. Also, as per museum authorities, the CCTV cameras installed in different galleries were also inadequate.

The SFC approved works included works relating to ancillary electrical works like sub-station with Transformer and Air Circuit Breaker estimated to cost ₹ 2.00 crore. Though the LoI No. 381 dated 6 December 2013 for the work of 'External electrical installation' awarded to a private party for ₹ 3.87 crore included supply and installation of one 11 KV Sub-station and one 440 KW/500 KVA Diesel Generating Set, these items were not supplied and the work order was closed. There were no reasons on record for non-supply of the indented items.

As IM doesn't have any emergency power backup, in the situation of power failure by force majeure events or voltage fluctuations or during disaster, it may cause inconvenience to visitors and also, the safety of artefacts is at risk.

(F) Artefacts displayed without labels/description

Artefacts were displayed without any description/label hence, depriving the visitors of accurate details/description of the displayed artefacts.



3.1.4.5 Monitoring and Co-ordination

The modernisation works were to be overseen by a 'Core Committee'. However, no record of its constitution, terms of reference, periodicity of meetings etc. were made available to Audit. From the minutes of meetings made available pertaining to the Core Committee, Audit noted that the Core Committee was active in 2013 and discussed the progress of work including the technical issues relating to design and specifications of Pedestals, Showcases, Lift, Gallery Lighting, Souvenir Shop etc. However, as already pointed out by Audit in the previous paragraphs, monitoring by Core Committee was deficient to the extent that the design and specifications of Pedestals and Showcases were deficient; lighting in Galleries was not proper and the Lift is still to be installed.

Further, the SFC approved (June 2013) constitution of a Project Implementation Monitoring Committee (PIMC) to assess the progress of the modernisation project and determine the quality of the work to be executed. Also, MoC constituted (January 2014) a Technical Committee (TC) to technically assess the work executed.

Audit noted that the constitution of PIMC and the TC was towards the fag end of the project as it can be seen that the PIMC (1st meeting in November 2013) and TC (1st meeting November 2014) were operational only after NBCC had achieved substantial progress, both physically and financially, which resulted in lack of effective monitoring of quality of work specifically during the initial phases.

This fact was also confirmed by IM during the Exit Meeting.

Further, the Technical Committee in their meeting held on 15 November 2014 observed the following in respect of restoration/modernisation work:

- (i) The assessment reports, methodology and the BOQ were not vetted and examined by experts.
- (ii) IM had not made use of the services of a consultant who is aware of the conservation process and techniques, civil work as well as museum design with whom NBCC could have interacted at every stage and vetted the process in order to implement best practices.
- (iii) No Committee or Expert has identified the necessary items of work in the Building, Galleries, and other areas of the Museum before awarding the work to NBCC. Entire work was done by NBCC based on their own assessment.

The fact that NBCC, during the TC meeting, agreed to rectify the defects caused as the work was done under a time pressure and as a result quality standards were not met in the process substantiates Audit observation that the best practices/standard procedures had not been adhered. Audit could not verify the compliance of NBCC towards any related work done subsequently in the absence of records.

3.1.4.6 Handing over of the project by NBCC

Audit noted that no proper handing over of the Galleries and assets created by NBCC were made to the IM and hence, no physical verification to reconcile the work done could be conducted. As a test check, Audit noted that though RA bill⁹ indicated 509 CCTVs being installed by NBCC, subsequent physical verification by IM revealed that only 445 cameras existed. Thus, there was shortage of 64 cameras valuing ₹ 10.34 lakh.

⁹ 5th and Final Bill for LOI No. 890 dated 16 August 2013 for (156+41) 197 CCTVs; and Final Bill for LOI No. 338 dated 21 March 2014 for (242+70) 312 CCTVs.

IM stated (May 2019) that the matter will be taken up with NBCC for further details. IM, further, mentioned (Exit Meeting) that no formal handing over was done, and only the keys of the showcases were handed over.

3.1.4.7 Maintenance of assets of the Museum Post Modernisation

After completion (2015) of modernisation work initiated in 2008, IM did not assign any agency for the upkeep and regular maintenance of the galleries/corridors renovated. Audit noticed that IM proposed (August 2016) that maintenance work would be assigned to NBCC and discussions were held between IM and NBCC. However, even after a lapse of more than four years from the completion of the modernisation work, no agency was assigned for the work of maintenance of IM.

IM stated (Exit meeting) that after the handing over of assets, AMC can be entered into. However, the fact remained that the Heritage Building was running without maintenance.

3.1.4.8 Unutilised Grants of MoC

The Sanction letter of Grants prescribe that if the grantee fails to utilise the grant for the purpose for which the same has been sanctioned, the grantee will be required to refund the entire amount with interest thereon @ 10 per cent per annum and that unspent balance, if any, may be surrendered to the Government without any delay.

Out of the grant of ₹ 108.76 crore sanctioned by MoC for specified purposes under the modernisation project, ₹ 105.04¹⁰ crore was given to NBCC till date as advance. NBCC declared the project completed in April 2015 but the final completion certificate has not been submitted by NBCC to IM. The balance fund amounting to ₹ 3.72 crore remaining unutilised and is still lying with IM. The Museum authorities are liable to refund the same to the Ministry without further delay, and interest accrued, also has to be paid by IM.

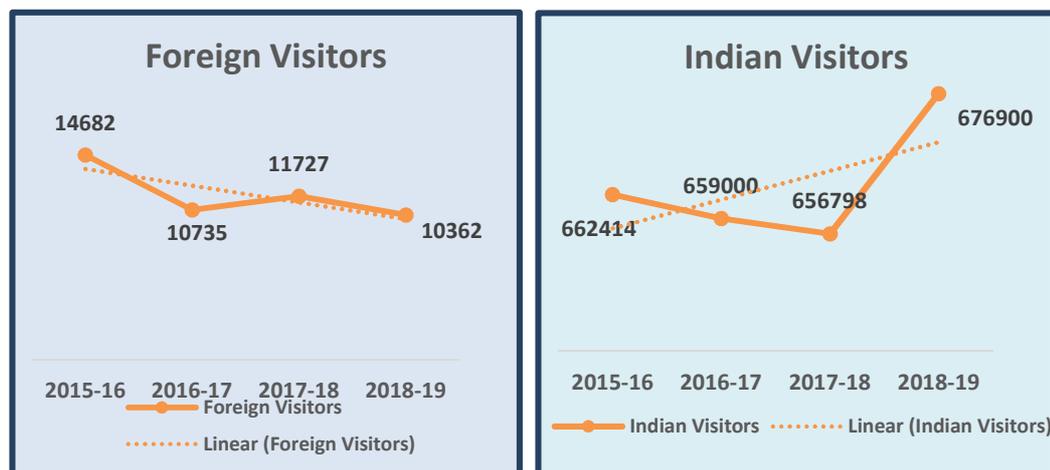
3.1.4.9 Increase in footfall post modernisation

As per the SFC proposal, IM stated that the anticipated facelift of the museum by the modernisation works would result in increased footfalls and hence, increased revenue. This would offset a substantial portion of the additional expenditure for operation and maintenance of the upgraded facilities.

¹⁰ Total advance of ₹ 105.70 crore given to NBCC – Advance of ₹ 0.66 crore given for FPS Building from its own budget by IM = ₹ 105.04 crore.

Audit noted that the increase in revenue collection from ₹ 0.90 crore in 2014-15 to ₹ 1.99 crore in 2018-19, was due to enhancement of entry fees in December 2015¹¹ and March 2019¹² and not due to increase in footfalls as depicted in the **Chart No. 1**:

Chart No. 1: Number of visitors to the IM during 2015-19



This indicates that the modernisation project failed to provide the intended benefit in terms of increased footfalls.

3.1.5 Conclusion

The modernisation works, as planned, were not executed as works estimated at ₹ 25.76 crore were not awarded and almost entire fund aggregating ₹ 105.70 crore has been exhausted out of available fund of ₹ 109.42 crore. IM failed to address some major and important works like providing modern storage system, and installation of Fire-Fighting, Fire Detection and Prevention System and HVAC System as well as Lift, though provided for. It awarded the modernisation work on nomination basis without assessing the requisite expertise for taking up the restoration and renovation of museums and executed the work without preparation of Detailed Project Report and proper planning. It did not ensure financial safeguards and failed in monitoring the quality of work in the initial phases. There are no specific guidelines/laid down criteria of the MoC for preservation and conservation of artefacts. All these resulted in expenditure on redundant items and overpayments to contractors besides irreparable damage to the priceless artefacts. Also, lack of post modernisation AMC may endanger the safety of the structure and also priceless artefacts.

¹¹ Fee for Indian Visitor increased from ₹ 10 to ₹ 20 and for Foreign Visitor from ₹ 150 to ₹ 500.

¹² Fee for Indian Visitor increased from ₹ 20 to ₹ 50 for visitors above 18 years of age.

The matter was referred to the MoC (September 2018); their reply was awaited (March 2020)

Recommendations:

The following is recommended for modernisation and renovation work of Museums:

1. It may be ensured that restoration work, including work relating to modernisation, is carried out in with the assistance of suitable experts in the field and the work is awarded to agencies who have access to such experts. Proper conservation plans containing Standard Operating Procedures may be prepared and Conservation Architects may be involved to oversee work relating to modernisation.
2. A Detailed Project Report, having measurable outcomes such as improving aesthetics, footfall, longevity may be prepared and got duly vetted by competent agencies/ institutions before the commencement of work.
3. Agreements with the executing agencies may be unambiguous and may incorporate adequate safeguards against any damage to the building and artefacts during the execution of work.
4. All estimates, as prepared by the executing agencies, may be got vetted by technical experts, for assessment of their technical adequacy and financial justification.
5. Detailed procedures, including joint inspection by both parties, may be put in place to ensure proper monitoring and handing over by the executing agency, following completion of the work.
6. Systems may be put in place to ensure monitoring of outcomes and proper maintenance of the assets so created or restored, throughout the currency of the Annual Maintenance Contract.