

## **4. Management Plan**

This management plan is based on the premises discussed on Chapter 3.

### **4.1. Institutional Set-up**

In India, the museums are part of a government entity (i.e. Ministry of Culture) and employees are civil servants. Their governance and administration are integrated with that of the larger body. The line department museums receive an annual operation allocation from the budget of the governing organization. Earned revenues are not retained by the museums but go to a national treasury, not benefitting the museum directly. For this reason, there is little incentive to improve the delivery and quality of services.

Decision making is restricted and policies concerning administration fees, opening hours, operational programmes and pay-scale of personnel are set by the governing body. Memberships, sponsorships, donations and fundraising opportunities are limited.

In order for the visitor centres to overcome the above issues, the institutional set-up of the visitor centres should aim to attain functional sustainability.

#### **4.1.1. Institutional requirements**

While dealing with a large and complex project like this visitor centre, officers may not have enough time to review preparatory activities and projected operations daily since they are assumed to have other responsibilities outside as well.

Accordingly, it will be necessary to create a MTDC Preparation Office as the practical organization having the responsibility for the statutory works, institutional set-up and necessary preparatory activities and approval processes for future operations. Therefore, the Study Team recommends that MTDC should establish a "Preparation Office".

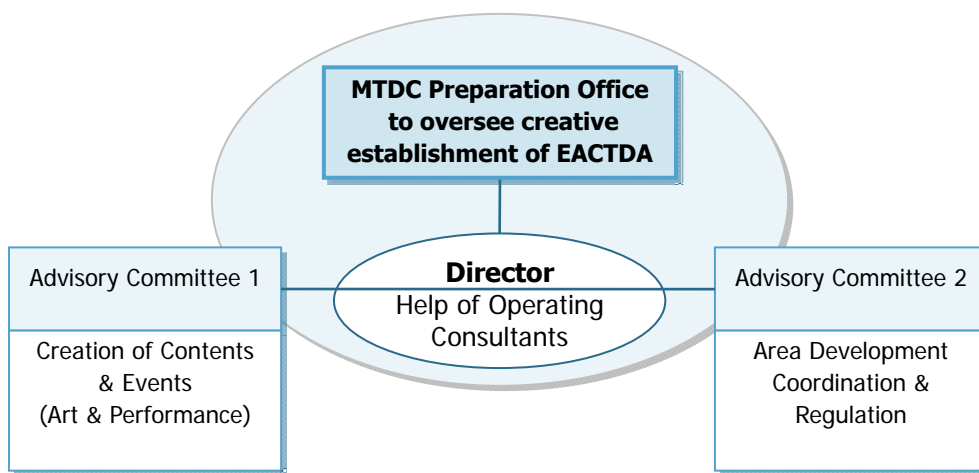
One of the issues that arises during the preparation stage for a cultural facility such as this visitor centre is the organization and system of the operation body and its timing.

Because the financial resources to operate an organization and input of human resources will be limited, there is need to minimize the number of staff members. However, few such cases have succeeded. For operation of the visitor centre, it is essential to have staff members who sufficiently understand the policies of the visitor centre and the objectives of operations. In a short period of preparation, operation staff may not be able to fully understand the operation policies of the visitor centre. In this regard, it is important to open the preparation office at an early stage and to assign potential key staff who will continuously manage actual operations after the opening.

The MTDC Preparation Office will also play an important role in establishing a reliable relationship between the operation body and MTDC. In this project, it is very important to join the image of the completed building facility and the image after the opening with well-organized institutional functions.

The operating consultants employed by MTDC will discuss these matters with the Director and staff of the MTDC's Preparation Office in detail and will make various suggestions concerning the preparatory activities. Receiving such suggestions, the staff of the MTDC's Preparation Office will review them to determine if they can actually manage them by themselves.

The operating consultants will consult on any unclear or difficult issues, and results will be reflected in the operations plan. In this way, the future staff of the visitor centres will have guidance in what they need to do and the visitor centres can be opened with full understanding to carry out the purposes of establishment, operation policies, and aims of activities.



**Figure 4-1 Institutional setup at initial stage**

Source: JICA Study Team

#### **4.1.2. Creation of special advisory committees**

The Study Team found that three levels of special committees exist to provide oversight on Ajanta and Ellora Tourism Development Project (II) including Chief Secretary, Aurangabad Divisional Commissioner and District Collector in order to facilitate and coordinate the physical development of the project.

Hence, the Study Team would like to suggest for the sake of operations and management of the visitor centres and their sustainable future operations, that the following two advisory committees to be constituted by the MTDC Preparatory Committee with the assistance of Operating Consultants:

##### **(1) Advisory committee 1**

Advisory Committee 1 will provide MTDC Preparation Office advices, directions, policies and guidelines for creation of contents & event programmes focused on visitor centres' attractions. Members of this advisory committee will facilitate the decision making process and consist of the following representatives:

- Performing Arts
- Academia
- Handicrafts and Arts
- MTDC and ASI
- Ajanta & Ellora subject experts (who have demonstrated long-term commitment and interest over the last decade or so)
- Business associations/entities having interest in supporting culture & heritage

## **(2) Advisory committee 2**

Advisory Committee 2 will plan for the enabling environment (physical and activity dimensions) for the areas including and around the visitor centres and the caves, envisaged to be led by the government. The committee will provide directions in regard to the following aspects:

- Land use planning & coordination with 30 years or more perspective
- Regulation for development (including ensuring protection of ancient landscape and view from distances)
- Design/heritage adaptation aesthetics
- Sanitation & cleanliness
- Pollution control
- Trunk infrastructure development & access to key designated user segments

This advisory committee will facilitate the MTDC Preparation Office at the initial stage of preparatory works of the visitor centres and will eventually become "Ajanta & Ellora Heritage and Integrated Development Authority." Member of this advisory committee will consist of the following concerned parties:

- District Collector
- ASI
- Department of Forests
- State Town & Country Planning
- Department of Public Works
- MTDC
- Any other as per policy and subject matter

Sustainability of the project can only be achieved by the management of regional development. In this sense, management of VC alone could not sustain the atmosphere, environment and development concept of the entire site (world heritage site, visitor centre and surrounding

environment/landscape). Unwilling developments will deteriorate the environment and theme of the original concept.

Hence, it is important to establish common discussion and decision making platform (i.e. Authority) amongst agencies concerned.

#### **4.1.3. Establishment of Ajanta & Ellora heritage and integrated development authority**

When control is required over a large area, with both private and public land ownership, a particular pattern of land use needs to be enforced in order to:

- Prevent haphazard or unstructured development
- Focusing on a particular theme or set of themes
- Ensuring long term economic, social and environmental sustainability; in certain cases cultural assets can also be included in their purview – such as the usage of urban design controls to reinforce a visual character brought about by a precedent monument/artefact (the city of Cairo, for example, mandates the usage of white as the standard colour for all its buildings).
- Improving general development in the area

All of the above requirements seem to apply to Ajanta & Ellora heritage sites encompassing surrounding areas.

Constitution of an Authority under an appropriate Act, in this case, the Maharashtra Region & Town Planning Act of 1966 is recommended, as:

- There are no issues relating to parallel authorities which may end up working at cross-purposes or with conflicting objectives
- The integration of a newly notified 'planning area' into the regional fabric is easier (particularly in terms of resource sharing)
- There are inherent transfer clauses that allow a local Government to take over the task of managing development/ managing developed assets after a certain period of time
- The apex decision making body in an Authority is almost invariably a set of elected representatives and some non-officio members with a technical expertise – this allows an Authority in the case of Ajanta & Ellora cave areas to retain a conservation-centered focus – this modality can be used to involve the Archaeological Survey of India, stakeholders from independent Institutions such as INTACH, etc.

In the case of Ajanta & Ellora, the Government of Maharashtra assigns the Department of Town & Country Planning to develop the following things:

- A study that delineates a planning area around each visitor centre
- Prepare an existing land use plan of the entire delineated areas

- Prepare a Master/ Structure/ Development Plans of the delineated areas

State cabinet note for approval of an Authority, including:

- its administrative & financial implications on the State
- Its administrative structure, sanctioned positions
- other resources that may be raised for such purpose

Rules, statutes and regulations of the Authority (including quorum, decorum, etc. – most of these are already there in the MRTPA/MHADA Rules, some of these may have to be altered slightly updated on account of the conservation angle).

Under the appropriate sections of the Act, an Authority is constituted with the following.

The apex board, consisting of:

- State Minister for Urban Development as Chairperson
- Elected member of State Legislative Assembly for the constituency covering the area
- Sitting Member of Parliament for the constituency covering the area (Lok Sabha)
- Zila Panchayat/ Parishad President
- District Collector, Aurangabad
- Sarpanch/ Headman, Ajanta village
- Sarpanch/ Headman, Ellora village
- Vice-Chairman as the Member Secretary
- Chief Planner/ Director, Directorate of Town Planning, Department of Town & Country Planning, Government of Maharashtra
- Engineering Member of the Authority (usually at the level of Director)
- Conservation Member of the Authority (usually at the level of Director)
- Finance Member of the Authority (usually at the level of Director)
- Representative member of the Maharashtra Jeevan Pradhikaran (as water sector regulator)
- Representative member of the State Electricity Regulatory Commission
- Representative of the Director General of the Archaeological Survey of India
- Two Co-opted members, Civil Society (usually a Trust/ Society with proven credentials in conservation of built heritage)
- Six Co-opted members of line Departments (MSRDC, MIDC, MTDC, South Western Railways, BSNL & DGCA Maharashtra)

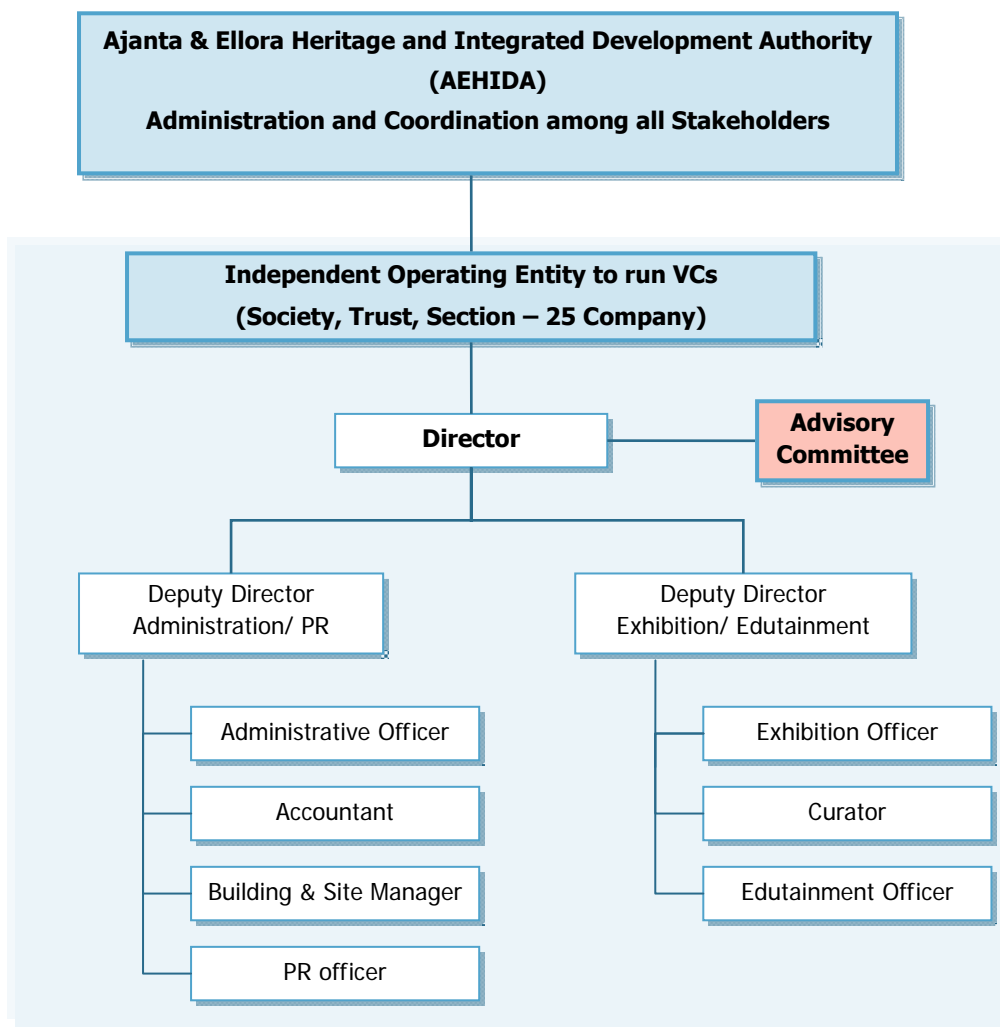
Executive & deliberative Standing Committees to deliberate on segments/ sections delegated to them by the Board – the above people, in part, can be appointed for the same. The Authority Secretariat, with a set of sanctioned positions as stated above. The start-up corpus of funds as indicated (donor aid can be leveraged to such effect for a while).

### **(1) Precedence**

- Hampi World Heritage Area Management Authority: Created under Karnataka Town & Country Planning Act.
- Special Area dispensation under Delhi Master Plan, 2001 & 2021, used for Walled City Area.

Technically, a precedence is not necessary, as the Act proposed for use (MRTPA, 1966) does not require justification for declaring any area as a planning area. The power to delineate any area as a planning area for public purpose is a discretionary right/ privilege of the State Government.

The name of the Authority should be “Ajanta & Ellora Cultural Heritage and Integrated Development Authority (AEHIDA).”



**Figure 4-2 Institutional Setup of final stage**

Source: JICA Study Team

#### 4.1.4. Nature of independent entity

The nature of independent entity that is provided for the visitor centres has implications for revenue surplus & expenditure and is discussed below in terms of three typical options: namely,

- The Centres continue to be run as non-incorporated, strategic business units of MTDC.
- The Centres become their own entities, whether in for-profit or in not-for-profit mode.
- The Centres are retained by the MTDC as assets, but the entire set of operations is assigned (with or without demand risk) to a private entity.

While the implications of all the three modalities will be discussed in detail, the treatment of the revenue surplus or deficit would be treated differently in all the three cases.

In the first case, i.e. the Centres remain as non-incorporated, strategic business units of MTDC, the revenue surplus or expenditure would become part and parcel of MTDC's income & expenditure account and therefore, tax liabilities. At the time of writing this report, donations with exemptions of tax are permitted only in the case of non-profit entities under section 80-G of the Income Tax Act of 1961. In the case of for-profit entities, some of them have been known to raise bonds from the market, with the investment of up to a certain amount exempt from Income Tax. However, in the recent years, the Banking and Finance Division of the Ministry of Finance has been extremely selective about what bonds to offer tax exemptions to. Such exemptions are usually for bonds which are used for creation of capital assets for infrastructure.

Since the MTDC will not be creating capital assets for infrastructure within the Centres, it is safe to assume that they would unlikely be able to raise tax free bonds. Hence, while they may seek donations, neither the donor, nor the receiver (MTDC, in this case) will be able to avail of tax exemptions under the present system.

The same situation as applicable to MTDC above would apply for a private, for-profit entity which takes up operations of the Centres with or without demand risk, as well as for the Centre becoming its own entity in a for-profit mode.

In case of these Centres being their own entities (profit or not for profit), the employees of such entities can usually utilise a different set of establishment, manpower rules and salary scales than MTDC or any private entity.

In case of the Centres being run as not-for profit entity, the treatment of the revenue surplus or deficits would be different.

- The surplus will not be construed as taxable income, as long as it is being ploughed back into the operations, working capital or reserve capital of the Centres.
- In case of a deficit, a for-profit entity still requires paying Minimum Alternate Tax or MAT. In case of a not-for-profit entity, this will not be applicable.
- Donations received from domestic sources can be brought under (although not automatically or naturally) the purview of exemption under Section 80G of the Income Tax Act of 1961. This may include the MTDC itself as a donor beneficiary – donations made by it to the Centres thus becoming exempt from Income Tax under section 80G.
- Donations can be received from foreign sources via the Foreign Contribution Regulatory Act (FCRA) route.
- Elected Representatives can be regularly co-opted into the Centres' Governance structure, as the Centres do not constitute Offices of Profit.

Since a for-profit entity (irrespective of being a dedicated one for the Centres or an external entity which has been assigned the work of running the Centres) would seek a certain profit margin on employees, the overall pay of an average employee within the cost incurred for the



employee would be less than what it would be in a not-for-profit entity. This may be illustrated through the following example:

Let us suppose that expenses for an employee are US \$100 per day for the establishment through its operations in order to break even. This \$100 would be distributed into five parts as follows:

**Table 4-1 Allocation of expenses for an employee in the case of for-profit & not-for-profit entities**

Allocation	for-profit entity (US\$)	not-for-profit entity (US\$)
Salary claimed by the employee	40	50
Expenses accounted for in offering such services	30	30
Sinking fund, depreciation & overheads	5	5
Repayment of debts/ borrowings	10	15
Dividends for the investor/ shareholders	15	0
<b>TOTAL</b>	<b>100</b>	<b>100</b>

Note: Neither modality, whether for-profit or not-for-profit is likely to be exempt from levy and payment of service tax or value added tax (for services and goods offered, respectively).

Source: JICA Study Team

### **(1) Borrowings by the MTDC/ Entity**

In case of MTDC running these entities as a strategic business units (not-incorporated) or giving it out to a private party (with or without demand risk), there is a fair possibility that either of these entities may seek borrowings to sustain operating expenditure of these facilities. Such borrowings may come with the following situations:

That the Centres are obligated to pay back the loan/ borrowing to the MTDC/ private party at the same or a different rate of interest than what the MTDC/ private party has borrowed in the first place for sustaining operating expenditures of the Centres,

That the Centres need not pay back the loan/ borrowing to the MTDC/ private party, and that the MTDC/ private party will pay back the loan from their own sources other than the revenue derived from the Centres, or

The Centres themselves may or may not be securitised as assets against such borrowings.

A detailed assessment of revenue and expenditure, sensitivities and possible projections of revenue surpluses or deficits would be necessary to see if the Centres are capable of servicing debt on their own.

As regards third party securitisation of assets of the Centre, it would be desirable to seek confirmation of the procedure from the Department of Economic Affairs on such matters as the capital assets were created using an extra-budgetary source such as external assistance. It would also require seeing as to whether the assets are listed as part of the asset register of MTDC, and if MTDC would be ready to securitize the asset, whether for itself or for a private party.

## **(2) Borrowing by the Centres as stand-alone incorporated entities**

Since early 2004, the Reserve Bank of India has indicated that States should discourage the use of sovereign guarantees for borrowings availed of by stand-alone entities. This statute affects the Centres by way of the fact that their borrowings can no longer be securitised by the State itself, either directly via a State guarantee, or indirectly, through a future commitment of recurring grants. Also, as in the case of MTDC, clearance may need being sought from DEA as to whether the assets can be securitised. However, in this case, the assets are most likely to be transferred to the stand-alone entity, and would be part of its asset register.

An alternative recourse for the Centres is to create a Debt Redemption Reserve (DRR), which may be created out of specific portions of capital receipts received by the Centres and a load on the revenue receipts.

As indicated in the example above, a not-for profit entity may also be in a position to maintain a higher inflow into its DRR as compared to its for-profit counterpart, assuming identical situations. This in turn would imply a higher degree of debt serviceability and DSCR.

A DRR is also likely to offer greater flexibility to donors such as the MTDC in timing the release of funds. However, for this purpose, it is essential that the size of the DRR (in terms of money contained) is several times larger than the annual capital grant paid by MTDC. This can be controlled by keeping a small portion of the DRR as a blocked 'revolving corpus' – the basic minimum amount that must be present in the DRR at any given point of time.

### **4.1.5. External entity to be considered**

The institutional framework is an important influencing element in determining organisation design. Some key parameters as discussed above that need to be addressed and determined include:

- Whether Visitor Centre is to be a sub-unit within MTDC entity or as a separate entity.
- Whether Visitor Centre is to be managed and controlled by a "for-profit" entity or by a "non-profit" entity

The Study Team has interacted with key government stakeholders including MoT, Maharashtra State Government (Tourism Department), MTDC, and ASI to obtain various perspectives in regard to the above.

Pending final decision, for reference purpose only, the following assumptions/premises are being considered:

- The institutional framework is for management of visitor centre only, i.e. the object of the institution framework is visitor centre facility.

In India non-profit/ public charitable organisations can be registered as trusts, societies, or a private limited non profit company, under section-25 companies. Non-profit organisations in

India (a) exist independently of the state; (b) are self-governed by a board of trustees or 'managing committee'/ governing council, comprising individuals who generally serve in a fiduciary capacity; (c) produce benefits for others, generally outside the membership of the organisation; and (d) are 'non-profit-making', in as much as they are prohibited from distributing a monetary residual to their own members.

Whether a trust, society or section-25 company, the Income Tax Act gives all categories equal treatment, in terms of exempting their income and granting 80G certificates, whereby donors to non-profit organisations may claim a rebate against donations made. Foreign contributions to non-profits are governed by FC(R)A regulations and the Home Ministry.

It is recommended that legal and or financial experts be consulted before taking any important legal or financial decision or arriving at any conclusion.

In the case of the visitor centre, it will be managed by a not-for-profit entity to (a) enable appropriate platform to receive grants and to hold a corpus, (b) provide tax incentive to donors, including private donors, (c) enable dedicated governance structure, (d) co-opt multiple stakeholders, both public and private, (e) enable payscales and operations relatively independent of MTDC/parent sponsors and etc.

In case of the Visitor Centres being run as not-for-profit entity, there are three ways of registration can be available in India.

- Trust
- Society
- Section-25 Company

Where there are assets and properties involved, especially in terms of lands, valuable objects and buildings, a trust is usually established. In the case of the Anandpur Saheb Foundation (AEF) in Punjab, Chhatrapati Shivaji Maharaj Vastu Sangrahalava Museum and Dr. Bhau Daji Lad Museum in Mumbai, those museums are organized as Trusts.

The final decision on the type of non profit entity would be based upon specific preferences and circumstances of the MTDC/government sponsor in addition to the objective of the visitor centre. The Study Team recommends that in case non profit entity mode is decided by MTDC/government sponsors, then the process may be initiated to examine the specifics of each option including consultations with their legal experts.

In terms of broad principles, the following table may be considered for a better understanding of the three modes of non-profit entity.

**Table 4-2 Comparison among Trust, Society and Non profit Company**

	Trust	Society	Section-25 Company
Statute/Legislation	Relevant State Trust Act or Bombay Public Trusts Act, 1950	Societies Registration Act, 1860	Indian Companies Act, 1956
Jurisdiction	Deputy Registrar/Charity commissioner	Registrar of societies (charity commissioner in Maharashtra).	Registrar of companies
Registration	As trust	As Society In Maharashtra, both as a society and as a trust	As a company u/s 25 of the Indian Companies Act.
Registration Document	Trust deed	Memorandum of association and rules and regulations	Memorandum and articles of association. and regulations
Stamp Duty	Trust deed to be executed on non-judicial stamp paper, vary from state to state	No stamp paper required for memorandum of association and rules and regulations.	No stamp paper required for memorandum and articles of association.
Members Required	Minimum – two trustees. No upper limit.	Minimum – seven managing committee members. No upper limit.	Minimum three trustees. No upper limit.
Board of Management	Trustees / Board of Trustees	Governing body or council/managing or executive committee	Board of directors/ Managing committee
Mode of Succession on Board of Management	Appointment or Election	Appointment or Election by members of the general body	Election by members of the general body

Source: JICA Study Team

In general terms the following aspects may also be considered:

**a. For entity creation:**

Section-25 companies have more complex procedures and take longer time duration for set up: typically from 3 to 6 months. Trusts and Societies are relatively easier to establish and duration in this regard is shorter.

**b. Operations**

Section 25 companies have annual filing norms, disclosures and etc. that are strict and penalties for non compliance. Flexibility in terms of income sources, investments and activities in their context have less restrictions compared to Societies and Trusts. The restriction in regard to profits for Section-25 entities is that profits have to be reinvested and there is no dividend payout to shareholders.

Change in objectives of the Section-25 as also Trusts are regarded by practitioners as more difficult to change subsequently after these are stated in the Registration Document.

Societies are deemed to have greater flexibility for adaptation/modification in this regard.

Original sponsors of the Trust have greater control on the management/governance of the Trust format compared to Society format, since periodic elections are not mandatory in the former (this is a prima facie observation according to practitioners)

In summary, in terms of ease of formation, formalities, and operations, Trusts may have merit. However, each situation is unique; and the interests, conventions, and requirements of the key sponsoring entity (MTDC in this instance) will have to be assessed by them in consultation with legal and tax experts.

For the purpose of a reference institution design, the Trust format is being initially taken and detailed out. Based upon final subsequent decision by MTDC/government sponsors, the institution design will be appropriately modified accordingly and organisation structure would be worked out accordingly.

### **(1) In case of a Trust is considered for the operation of visitor centres**

As discussed earlier, a separate entity such as a Trust is considered for the operation of the Visitor Centres. Typically, such an entity would have a Governing Board or apex body consisting of members or Trustees. One of these may be a full-time, Resident Director of the Centre, who may as well function as an Executive Trustee or a Member Secretary.

Other ex-officio members may include key positions within the local Government, the State Department of Tourism and Cultural Affairs, the District Collector, an elected representative of the Zila Parishad, the local Member of the Legislative Assembly, representatives of the line Departments such as Water, Electricity, Forest, Transport and etc.

Specialist non-officio members may be co-opted on a rotating basis. These may include academicians, historians and other persons of eminence.

While the MTDC and MSRTC hold important stakes in the system, it requires being deliberated upon and decided as to whether they should be part of the Governing Board. Being commercial entities, and very likely to provide services to the Centres, their inclusion on the Board may raise issues regarding its independence.

The Governing Board may further arrange its members into certain subject portfolios, which pertain to the day-to-day business and operations of the Centre. These may include:

1. Museum sub-Committee: Deliberating upon all matters pertaining to the museum space, inventory of artefacts and permanent displays
2. Culture and Events sub-Committee: Deliberates upon all matters pertaining to events and cultural functions, including interpretation activities
3. Infrastructure sub-Committee: Deliberates upon the availability of requisite infrastructure, viz. power, water, forest, transport, parking etc.

4. Finance sub-Committee: Prepares the annual or periodic budget, revenue forecasts, audit and assurance matters, and also for matters pertaining to external borrowings, aid management etc.
5. Other sub-Committees as the Governing Board may deem fit and may appoint through a resolution passed by the Board.

Proposals may be placed by any of the sub-Committees in the meetings of the Board, and be approved by the Board using a vote-on-account mode.

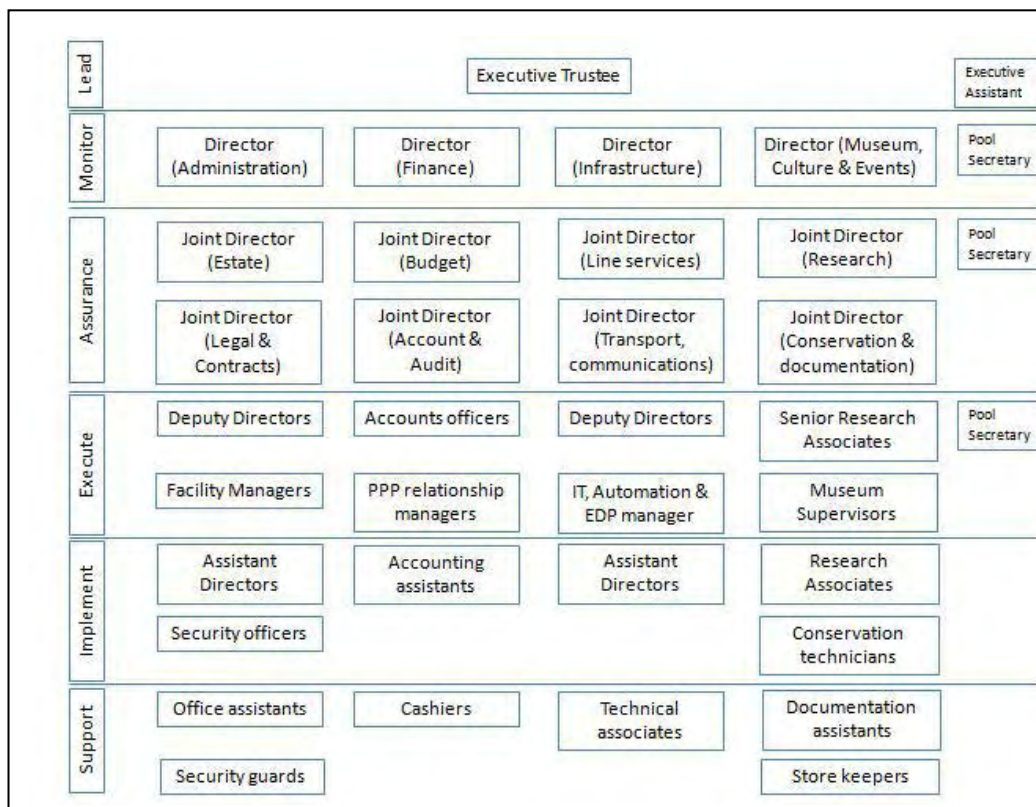
The Chairman or President of the Board is elected from amongst the Board members on a periodic basis as defined in the Act (Societies Registration Act, 1860 or Indian Trusts Act of 1882). Other office bearers may include:

1. Treasurer, in charge of the finance sub-Committee, elected by the Governing Board
2. Heads of other sub-Committees, elected by the Governing Board
3. The position of the General Secretary will be subsumed in that of the Executive Trustee and will not be elected

Ideally, the Trust should remain independent of the MTDC. However, MTDC may be asked to issue a certain capital grant every year to the Trust for and on behalf of the Department of Tourism and Cultural Affairs, and the Trust may maintain a dotted line relationship of intimating its status, viz. financials, audit trail, reports of activities etc. to the MTDC as an interested party.

The Trust would have an executive layer which may be in the form of a Secretariat to the Governing Body, headed by the Executive Trustee/ Director of the Centre. This Secretariat would perform the day-to-day functions of the Centres, and act upon the resolutions of the Governing Board.

A typical structure of the Secretariat may be as follows:



**Figure 4-3 Typical structure of secretariat**

Source: Study Team

The main instrument of any public charitable trust is the trust deed, wherein the aims and objects and mode of management of the trust should be enshrined. In every trust deed, the minimum and maximum number of trustees has to be specified. The trust deed should clearly spell out the aims and objects of the trust, how the trust should be managed, how other trustees may be appointed or removed, etc. The trust deed should be signed by both the settlers and trustees in the presence of two witnesses. The trust deed should be executed on non-judicial stamp paper, the value of which would depend on the valuation of the trust property.

The application for registration should be made to the official having jurisdiction over the region in which the trust is sought to be registered.

After providing details in the form regarding designation by which the public trust shall be known, names of trustees, mode of succession, etc., the applicant has to affix a court fee stamp of Rs. 2/- to the form and pay a very nominal registration fee which may range from Rs. 3/- to Rs. 25/-, depending on the value of the trust property.

The application form should be signed by the applicant before the regional officer or superintendent of the regional office of the charity commissioner or a notary. The application form should be submitted, together with a copy of the trust deed.

Two other documents which should be submitted at the time of making an application for registration are affidavit and consent letter.

## **(2) In case of a Society is considered for the operation of visitor centres**

According to section 20 of the Societies Registration Act, 1860, the following societies can be registered under the Act: 'charitable societies, military orphan funds or societies established at the several presidencies of India, societies established for the promotion of science, literature, or the fine arts, for instruction, the diffusion of useful knowledge, the diffusion of political education, the foundation or maintenance of libraries or reading rooms for general use among the members or open to the public, or public museums and galleries of paintings and other works of art, collection of natural history, mechanical and philosophical inventions, instruments or designs.

Societies are registered under the Societies Registration Act, 1860, which is a federal act. In certain states, which have a charity commissioner, the society must not only be registered under the Societies Registration Act, but also, additionally, under the Bombay Public Trusts Act.

The main instrument of any society is the memorandum of association and rules and regulations (no stamp paper required), wherein the aims and objects and mode of management of the society should be enshrined.

A Society needs a minimum of seven managing committee members; there is no upper limit to the number managing committee members. The Board of Management is in the form of a governing body or council or a managing or executive committee.

Registration can be done either at the state level (i.e., in the office of the Registrar of Societies) or at the district level (in the office of the District Magistrate or the local office of the Registrar of Societies).

The procedure varies from state to state. However generally the application should be submitted together with: (a) memorandum of association and rules and regulations; (b) consent letters of all the members of the managing committee; (c) authority letter duly signed by all the members of the managing committee; (d) an affidavit sworn by the president or secretary of the society on non-judicial stamp paper of Rs.20-/, together with a court fee stamp; and (e) a declaration by the members of the managing committee that the funds of the society will be used only for the purpose of furthering the aims and objects of the society.

All the aforesaid documents which are required for the application for registration should be submitted in duplicate, together with the required registration fee. Unlike the trust deed, the memorandum of association and rules and regulations need not be executed on stamp paper.

## **(3) In case of a Section-25 Company is considered for the operation of visitor centres**

According to sections 25(1)(a) and (b) of the Indian Companies Act, 1956, a Section-25 Company can be established 'for promoting commerce, art, science, religion, charity or any



other useful object', provided the profits, if any, or other income is applied for promoting only the objects of the company and no dividend is paid to its members.

Section-25 Companies are registered under Section-25 of the Indian Companies Act. 1956.

For a Section-25 Company, the main instrument is a Memorandum and articles of association (no stamp paper required).

A Section-25 Company needs a minimum of three trustees; there is no upper limit to the number of trustees. The Board of Management is in the form of a Board of directors or managing committee.

An application has to be made for availability of name to the registrar of companies, which must be made in the prescribed form no. 1A, together with a fee of Rs.500/-. It is advisable to suggest a choice of three other names by which the company will be called, in case the first name which is proposed is not found acceptable by the registrar.

Once the availability of name is confirmed, an application should be made in writing to the regional director of the company law board. The application should be accompanied by the following documents:

- Three printed or typewritten copies of the memorandum and articles of association of the proposed company, duly signed by all the promoters with full name, address and occupation.
- A declaration by an advocate or a chartered accountant that the memorandum and articles of association have been drawn up in conformity with the provisions of the Act and that all the requirements of the Act and the rules made there under have been duly complied with, in respect of registration or matters incidental or supplementary thereto.
- Three copies of a list of the names, addresses and occupations of the promoters (and where a firm is a promoter, of each partner in the firm), as well as of the members of the proposed board of directors, together with the names of companies, associations and other institutions in which such promoters, partners and members of the proposed board of directors are directors or hold responsible positions, if any, with description of the positions so held.
- A statement showing in detail of the assets (with the estimated values thereof) and the liabilities of the association, as on the date of the application or within seven days of that date.
- An estimate of the future annual income and expenditure of the proposed company, specifying the sources of the income and the objects of the expenditure.
- A statement giving a brief description of the work, if any, already done by the association and of the work proposed to be done by it after registration, in pursuance of section-25.
- A statement specifying briefly the grounds on which the application is made.

- A declaration by each of the persons making the application that he/she is of sound mind, not an un-discharged insolvent, not convicted by a court for any offence and does not stand disqualified under section 203 of the Companies Act 1956, for appointment as a director.

The applicants must also furnish to the registrar of companies (of the state in which the registered office of the proposed company is to be, or is situate) a copy of the application and each of the other documents that had been filed before the regional director of the company law board.

The applicants should also, within a week from the date of making the application to the regional director of the company law board, publish a notice in the prescribed manner at least once in a newspaper in a principal language of the district in which the registered office of the proposed company is to be situated or is situated and circulating in that district, and at least once in an English newspaper circulating in that district.

The regional director may, after considering the objections, if any, received within 30 days from the date of publication of the notice in the newspapers, and after consulting any authority, department or ministry, as he may, in his discretion, decide, determine whether the licence should or should not be granted.

The regional director may also direct the company to insert in its memorandum, or in its articles, or in both, such conditions of the licence as may be specified by him in this behalf.

It is important to further discuss with MTDC the possibility and nature of organization to be formed in order to formulate a management plan which will establish the authorities (including relationship with MTDC Headquarters), internal structures, and directive system for the organisation of managing both visitor centres.

## **4.2. Operations Planning**

In the planning of ordinary museum operations in the past, all it was only necessary to have a department for each operation and to set up its scope of activities. However, in case of a well functioning visitor centre for the cultural and tourism industries, a number of project teams including professionals from various business markets must be organized to cooperate. Thus, it is necessary to recruit staff from a wide variety of areas as well as ensure operational flexibility of the organization. Such operational flexibility is expected to increase the operational complexity of the visitor centre. The Operations Planning should define coordinate decision making, prevent potential confusion, and help ensure smooth operation of the visitor centre.

The first step in establishing an operation organization is to analyse its pre-conditions such as operation areas, etc. The plan that the pervious study has developed shall be summarized according to the following structure in order to check for missing components.

**Table 4-3 Check point structure for pre-condition analysis**

Mission	Visitor Centre Policy Visitor Centre Functions
Scope of Operations	Operation Areas Operation Plans
Management Plan	Management System Organization
Operations Resource Arrangement	Communication Plan Information and Communications plan Staffing plan Facility plan Equipment plan
Financial Planning	Initial Costs Running Costs Revenue and Expenditure Plan

Source: JICA Study Team

While the above structure is used as a generic procedure for carrying out arrangement and operations of the visitor centre, each actual item has its own characteristics depending on its contents. Especially, the item of Scope of Operations should include visitor centres role as a gateway to Aurangabad tourism and with businesses that stimulate the cultural and tourism industries; this approach will contribute to maximize the utilization of the cultural resources of the heritage sites and visitor centres. It also will provide the visitor centres with the possibility to exert a large influence to the Indian cultural and tourism industries.

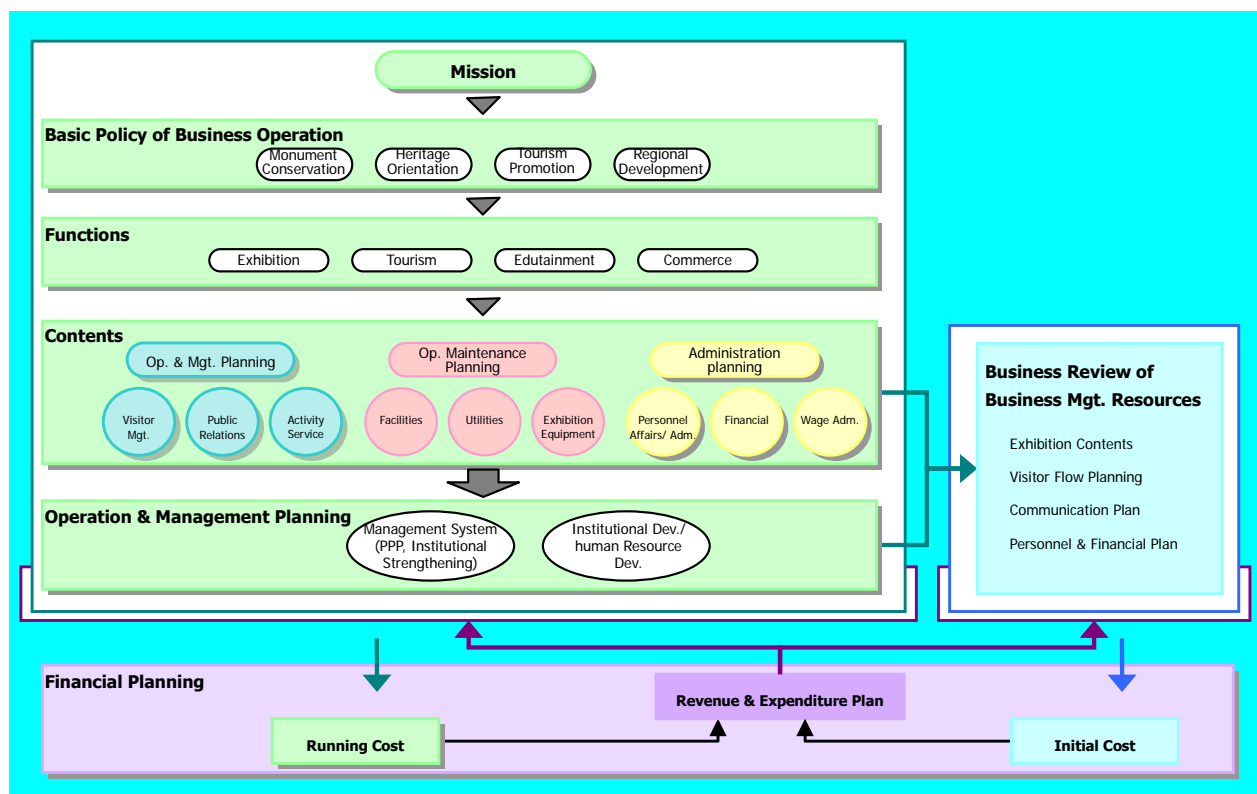
#### **4.2.1. Mission & basic policies**

Before designing organization and operational procedures of the visitor centres, the type and scale of each business/function must first be determined. Unless the scope of the operation is defined, necessary skills and the number of staff members cannot be determined. The basis to determine the business types and their scales are the roles and functions of the visitor centres. Such roles and functions depend on the mission and policy for establishment of the visitor centres. Because the detail plan of operations must be condensed out from the master concept, it is necessary to establish master concept prior to preparing detailed operations plans.

First of all, a clear idea of operation such as mission, basic operation policy, concept, etc. should be established. Then, business units can be determined based on it and methods and contents of each business can be decided. For selection of business units, it is necessary to clarify the full characteristics of the visitor centres and to make sufficient sustainable plans based on functions and contents for each business unit.

After this, the optimal system and environment can be defined for the respective businesses. When the planning work is carried out in this order, it becomes possible to depict the proper system and environment for the businesses. Once the system and environment are clarified, a financial plan can be prepared by estimating the respective costs. If the incomes do not cover the costs, the plan shall be amended by seeking ways to increase income or to reduce costs.

Through iterations of such reviews, the accuracy of the plan will be improved. This process is shown in the figure below.



**Figure 4-4 Flow for preparation of the visitor centre operation and management plan**

Source: JICA Study Team

The founders of a visitor centre expect VC's construction to provide all that is needed for full VC functioning. To realize this goal, professional staff from various areas must participate, and their work well integrated otherwise the expected effects will not be materialized. Every staff member must share a common vision and cooperate with each other. What is important in Operations Planning is to establish this vision in clear and simple words. This is extremely important for all works. Such a vision becomes the criteria shared by all staff in order to fix the scope of operations.

### (1) Mission statement

It is vital to establish a Mission Statement for each visitor centre in Ajanta and Ellora.

The mission statement states the purpose of the visitor centre providing a clear vision of future activities in delivery of services as a whole and the starting point of operations and management planning including establishing an independent entity and formulation of marketing strategy which provides a sense of direction.

Eventually, the mission statement should be drawn up by the directors and senior member of visitor centre staff and should be endorsed by the board of trustees.

However, the basic guidelines for developing the mission statement will be discussed in this section.

#### **a. Mission statement for Ajanta visitor centre**

Since Ajanta caves are famous for the cave paintings illustrate the story of Buddhism and stunning figures of sculpture to decorate the walls, the caves were cut of out rock by merely hammer and chisel and built as secluded retreats of the Buddhist monks who preached and performed religious rites in the temples and monasteries, the Ajanta visitor centre should continuously act as the centre for learning of the Buddhism culture as it was in ancient times.

Therefore, the aspects of education and interpretation of caves and arts in conjunction with Buddhism culture should be prioritized as a core function in its operations, especially to children. Performing arts such as dance and music should be developed with the inspiration from the caves, sculptures and paintings to move education into edutainment; hence appeal to the senses will provide effective learning and enlightening experience that overcomes any language barrier.

#### **b. Mission statement for Ellora visitor centre**

The uniqueness of Ellora caves is represented by three faiths of Hinduism, Buddhism and Jainism in unison. The great and endurance by craftsmanship of Kailash Temple has become one of the greatest architectural wonders with the entire composition chiselled out from the world's largest monolith.

Due to its adjacent location from the downtown of Aurangabad, the Ellora visitor centre could offer various attractions since the majority of visitors to the area including the visitors to Grishneshwar Hindu Temple are locals from the region; however educational and interpretative aspects should be kept as a core function of the centre including exhibiting of performing arts in a night venue.

### **(2) Basic policies**

Because both sites are world heritage sites, conservation, environment and tourist friendly and pollution free concept should be respected in their operations; hence the visitor centre should disseminate these concept and become a catalyst to sustain the heritage sites in the long run.

The protection of water courses is most critical since the birth of both sites originated from the water feature, its energy for carving the base-rock surface and providing a healthy living environment for ancient monks and craftsmen for years.

Currently, the majority of visitors visit during the winter time when it is sunny, dry and relatively lower temperature; however as it was in the ancient time, monsoon season is more relevant for visitors to perceive the original and authentic atmosphere of the sites.

The operations of the visitor centres should enhance marketing and encourage tourism in the monsoon season so that the number of visitors in the conventional peak season can be reduced, but annual number of visitors could be increased at the same time.

#### 4.2.2. Functions & contents

While VC's own operation policies overlap the basic functions of the ordinary visitor centres, it is indispensable to have other value-added functions that should be facilitated in the business body, as well as to clarify its social roles.

VC features include museum and tourist information centre functions which are listed in the table below and explained in the sections which follow.

VC Area	Physical functions	Soft functions
Tourist Service	Information centre Helpdesk Cloakroom ATM Kiosk Sitting area Crèche area	
Tourist Information	Meeting point Orientation board Information boards	Attendant
Information Transmission	Exhibition Theatre Lecture room Library	Performance Event (Edutainment, Education) Guide
Commercial Area	(Museum) shop Craft centre Restaurant Café Small commercial point	Activity
Transportation	Parking lot Eco-bas	
Fundamental Features	Tourist filter Ticket control Information on rules Tourist information of VCs Toilette (Drinking) Water	
Non-public Features	Staff room First aid Office room Storage room Cleaning room ASI laboratory	

Source: JICA Study Team

Each function has its own specific operational issues and points to be dealt with and highlighted in order for MTDC to prepare, consider and make decision to finalize the operations and management plan.

### **4.2.3. Operations & management plan**

Operational quality has to be seen from the visitor's viewpoint and not the visitor centre's. Operational quality needs to be measured from the visitor's perspective and not from what MTDC think or what the board of visitor centre thinks their visitors views are.

Some of the key operational issues for each function are as follows:

#### **(1) Security checkpoint**

Before accessing to the ticketing office and entrance foyer, visitor will be requested to go through the metal detection machine and their bags will be checked by the security.

Usually, this security checkpoint will become a bottleneck of the visitor flow so that enough waiting space under the shade should be provided. Both gender securities should be attended, but the severity of checking and necessity of implementation of x-ray machine should be consulted with the district police.

#### **(2) Ticketing office**

As soon as visitors arrive at the visitor centre, visitors should easily be recognized the directions of Toilets, Water and Ticketing, thus directional signage should be clearly indicated and guiding person should be allocated.

At the ticketing office in a peak-time and season, people usually making queues and traffic guiding staff should be attended and crown control tapes for guiding people traffic should be placed in front of the ticketing counter, especially in a peak season.

Staff of ticketing office should record and collect the following demographic information from the visitors in addition to the difference of locals or foreigners for future planning purposes:

- Difference of gender
- Difference of approximate age (elderly, adult, children, toddlers, handicap)
- In group or private

#### **(3) Information centre**

This area will be the face of the visitor centre and it will provide a strong and first impression of the visitor centre and visitors will automatically grasp the concept and atmosphere of the space. Therefore, the staff of information should have hospitality know-how and aptitude to proactively serve visitors. The information centre will provide with short information for visitors such as general orientation of VCs, provide directions of specific interests and offer special events held in the visitor centre. The general information should be on the boards and the details in the brochures for VCs and Caves with a map of each including information of rules and regulations on the ASI site. More extensive information about the caves is presented in the exhibition halls.

It is important for visitors to grasp and understand the overall facility plan and location of important amenities such as toilets, drinking spots, ATM and information centre before walking into the building.

**a. Help and tourist desk (part of the information centre)**

Detailed information and advice for visitors covering both on the ASI site and in VCs as well as touristic information in the Aurangabad District, such as special permissions for professional or commercial use of camera, audio and video, opening hours and days, regulations and rules and other specific issues and information related to visitor attractions. Furniture will include advisory desk with chairs for visitors.

**b. Orientation and information boards**

Because of its large scale, Orientation and information boards and directional signage are vital for visitors to move around in the visitor centre without losing their way and not getting separated from each other.

**(4) Temporary storage room**

In order to protect artefacts and valuable objects and goods from stealing and avoid hindrance of visitor flow from people holding big bags, a temporary storage room should be allocated. The area should be easily accessible on the way to the exhibition area as well as on the route after the visit to retrieve the items. One person should deal with visitors to give and return their baggage, and the other should bring them to the storage shelves. A nice baggage claim tag should be prepared prior to the opening.

**(5) ATM and foreign currency exchange services**

Visitors should be given the opportunity to withdraw money from an ATM machine and exchange their foreign currencies in the visitor centres in case of shortage of local currency.

The place for ATM machine has already been allocated for both visitor centres near the entrance lobby, but away from the restaurants and souvenir shops where cash is required. However, restaurants and shops should be able to process credit cards.

**(6) Display shelves**

Display shelves or small commercial point should be reserved to display/sell orientation materials such as site map, guide books or specific postcards. In addition, the visitors should also the opportunity to view souvenirs which can buy at the museum shop.

**(7) Sitting area**

Because of enormous space and long walks are expected there both in the heritage site and visitor centre, the centre should provide enough chairs/benches where groups and individuals can sit and rest inside the exhibition hall as well as under the shade of trees especially for elderly visitors. The sitting area should provide the opportunity to enjoy an exhibition and/or the natural surrounding as well. However, such areas should not hinder circulation in the VCs



because the areas tend to become gathering space for people, thus the operator should choose the location of chairs and benches in consideration with visitor flow and facility space.

### **(8) Crèche Area**

Many Indian adult visitors want to enjoy the VCs and caves to the full. The crèche area will offer space and nursery staff for children. In addition toys, books and other things should be prepared for children. In the crèche area it will be possible to hold the events for children. However it should be discussed whether that use of the crèche area is free or not.

#### **a. Lost child department (part of the crèche area)**

For especially children who are missing, staff should be support to find their parents such as by using radio and cell phone networks. While waiting, the parents can be in the crèche area.

### **(9) Meeting point**

Because enormous space and long walks are expected in both the heritage site and visitor centre, the centre should provide some meeting points. It is very useful in arranging to meet someone, and therefore there should be a guiding monument (landmark) visible from a distance at the point. Naturally there will be many visitors at such points, and it also can be an information transmission area.

### **(10) Exhibition hall**

In the exhibition halls there are 4 kinds of facilities: panels, movies, kiosks and replicas. In addition there should be some signage and map of the whole area with the marks of specific locations to guide visitors. Some staff should also be there for answering questions from visitors, in case of accidents, etc.

### **(11) Theatre**

In the theatre some kinds of movies will be shown in keeping with the announced time-schedule. Therefore the time-schedule should be displayed on walls outside the theatre and staff should be at the front of the doors for guiding visitors smoothly. In addition, the theatres should be ready for any emergency situation. So guiding in an emergency should be marked and be explained for visitors when they enter there.

Theatres will be utilized for crowd control when waiting for shuttle bus and viewing exhibition areas as well as for scheduling visitors flow to the caves.

Theatre should show orientation programmes of the world heritage site including guidance for visitors to learn the history and significance of the site, fragility of the caves and artworks, and prohibited actions to avoid deteriorating the ancient monuments and artworks.

**(12) Lecture room**

Lecture room will hold many kinds of lectures. Therefore the schedule should be prepared for visitors. The room should be prepared with furniture which is flexible to change depending on the layout required.

**(13) Library**

Library will be prepared to have many books concerning the Ajanta and Ellora caves and they should be controlled by book numbers which will be specified both in a list and on the books. This system also should be simple for visitors to find books easily.

**(14) Site-related shop**

Specific information and souvenir materials on the sites, such as postcards, reproductions, books, CDs, DVDs and as well as others should be offered. The shop should not have the same assortment as the commercial area but offer extra souvenirs and goods about the sites. MTDC will select shops categories.

**(15) Craft centre**

This area will demonstrate the performance of artisans and craftsmen producing the handicrafts and artworks which are common in Aurangabad. The area will be leased out and therefore electricity, lighting and water should be available to users. Other necessary furniture and equipment should be prepared and installed by operators in keeping with their requirements. MTDC should indicate design guidance for any modifications or additions to the building and provide rules about trash disposal, using fire and water and others.

**(16) Restaurant and cafe**

These areas will also be leased out to a private company; therefore electricity, fan (AC depending on area), lighting, water should be available to users. Other necessary furniture and equipment should be prepared by operators in keeping with their requirements. MTDC should indicate design guidance for any modifications or additions to the building and provide rules about trash disposal, using fire and water and others. Parking lot

There should be a toll booth with a board of tariffs before entering to the site. For remembering the place where visitor parked their cars, there should be very visible landmark (signage) at some points.

**(17) Eco-bus**

A short announcement or movie of explaining VCs and the caves should be prepared in green-bus. The staff will be at the bus station and they will announce time schedule of the next bus, check tickets and guide visitors. The tickets should be cut or stamped when visitors take green-bus in order to prevent reuse.

**(18) Ticket control**

For ticket control at the entrance, staff should cut or stamp the ticket and at the exit staff should stamp (fluorescent ink) on the back of visitor hands if they want to enter the ASI sites and/or visit VC again. This system will prevent visitors who do not purchase the ticket from entering the site and VC.

**(19) Toilet**

Toilet will be utilized by all visitors and staff. Especially after the long drive from Aurangabad and long walk back from the Cave visit, the location of toilet is crucial. Toilets of both visitor centres are located near the entrance and easily noticeable, but the available number is limited for those coming with a group and operational solutions will be required. Staff should basically use different toilets from the visitors. Cleaning staff should keep them clean and deliver the paper, soap and others so there is no lack of such items anytime.

**(20) Drinking water spots**

Drinking water spots are also important for visitors in the hot weather and after a long walk. As for AVC, the drinking water spots are located near the entrance, but EVC needs additional installation of cool water service. These spots will be utilized by all visitors and staff for drinking and hand-washing, but the location for staff use should be different from the one for visitors. Cleaning staff should keep these spots clean at all times.

**(21) Staff room**

This room is reserved for MTDC staff (including outsourced staff) working in each VC when they have a break. The place should have lockers for personal belongings and also act as a relaxing space for staff. The staff will use the public sanitary facilities in the VCs, but the location should be limited to try not to duplicate the one for visitors. This staff room should be marked “RESTRICTED AREA NO ADMITTANCE” on the doors because it is a private room for staff, but should be non-smoking space to prevent against fire and excuse for occasional skipping out from their work.

**(22) First aid**

First aid is mandatory for the visitor centres since there is no hospital near the sites and this kind of function may be required before sending the hospital. First aid should be available adjacent/in the staff room for security reasons. The room should be reserved for emergencies and equipped with a bed and first aid kit including AED. Staff of the visitor centre should be trained in first aid skill.

**(23) Office room**

This room is working space for administrators. It should be prepared with usual OA equipment and facilities, the same type as MTDC office in Mumbai. This room should be marked “RESTRICTED AREA NO ADMITTANCE” on the doors because it is a private room for staff. LAN system should be provided.

**(24) Storage room**

The room should be adjacent to the information centre to store spare materials. This room should be locked to prevent visitors from entering the room. Unlike ordinary museum, there are no valuable items to be stored at the initial stage; however in case the visitor centre will display authentic objects and store them under the guidance of ASI, proper lock system and storage room environment are required.

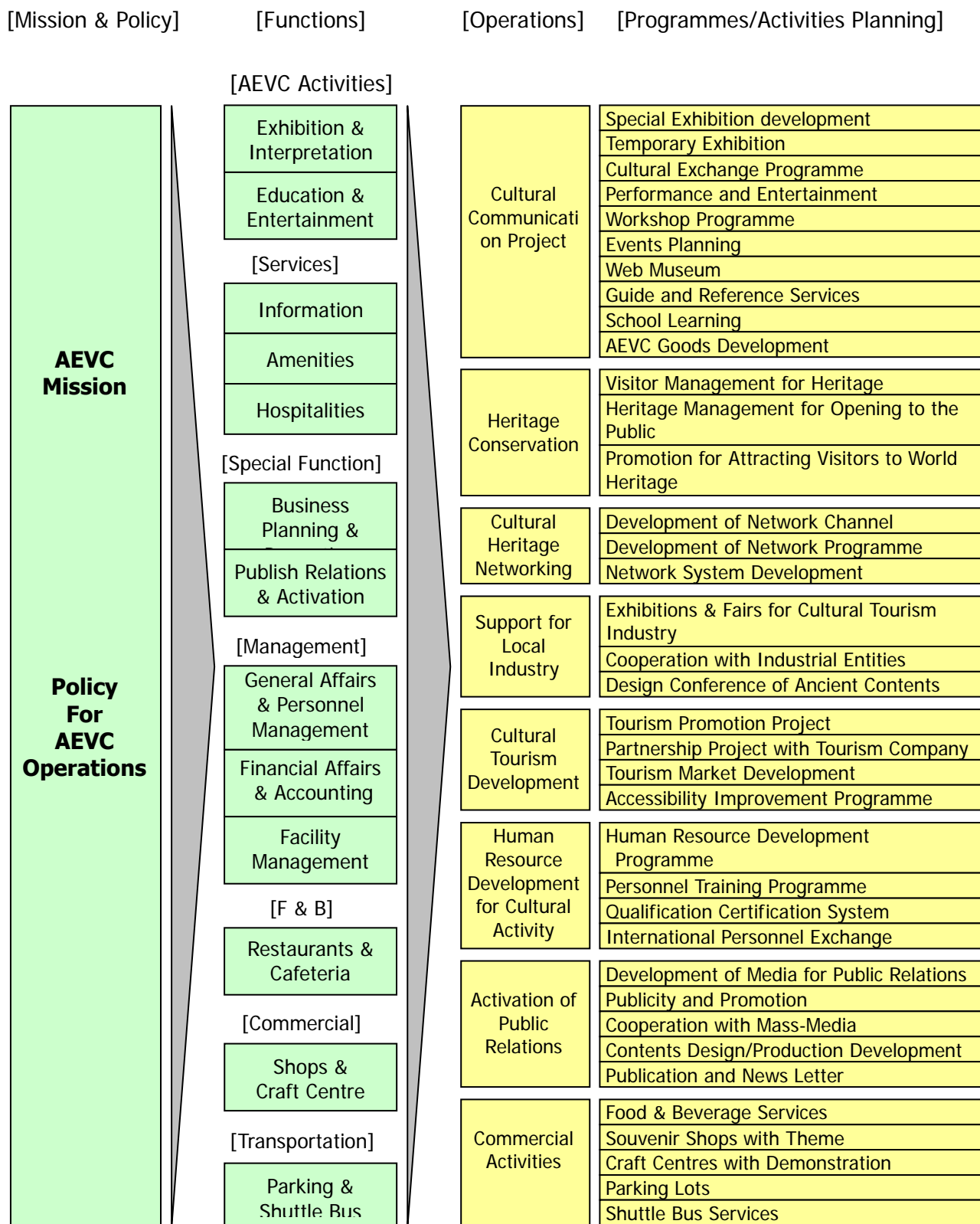
**(25) Cleaning room**

Some small rooms should be available to store cleaning equipment that will be required for maintenance in the VCs. This room should be locked to prevent visitors from entering the room especially children.

**(26) ASI laboratory**

Minimum facilities and equipment including electrical power outlet, fan, lighting and water should be available in this room. Other items should be prepared by ASI in keeping with their requirements for a laboratory. This room is a private room and does not belong to MTDC therefore it should be locked to prevent visitors from entering the room.

Planning activities for operations of the visitor centres are summarized as follows:



**Figure 4-5 Planning activities for operations of the visitor centres**

Source: JICA Study Team

### **4.3. Maintenance Plan**

The Maintenance Plan has been prepared to call attention to the necessity and importance of proper and appropriate management of the facilities; hence it is a facility management plan (FMP). Maintenance is not merely to prolong the life-span of the building facilities and equipment, but to optimize the potential capacity inherent in the place, and to ensure functionality of the built environment by integrating people, place, process and technology.

We expect the operating organization to further update this Plan into an improved version by integrating feedback from their daily usage of the site with opinions and comments from visitors.

#### **4.3.1. Physical requirements & capabilities**

Maintenance of the building facilities consist of two different activities, one is daily maintenance of the building facilities such as cleaning and routine or regular inspections, and another one is sound management of the building facilities by means of appropriate repairing and/ or extension and alteration.

- Function of facilities will give full play to secure building environment and safety therein by implementing maintenance activities appropriately.
- Appropriate implementation of the maintenance activities during operations and management stage will enable to prolong life-span of the building facilities and to reduce life-cycle costs and environmental adverse effects, etc.

It is quite important to clarify necessary items with regard to basic maintenance activities, such as daily inspection and maintenance, operation and monitoring and so on, and its planning and contents of log book, in order to implement such maintenance activities appropriately and effectively.

Each stage of the following activities should be considered as one cycle for the maintenance of the building facilities, which should be reviewed regularly for the implementation of appropriate maintenance activities:

- 1) Preparation of maintenance plan
- 2) Implementation of maintenance activities
- 3) Recording of maintenance activities undertaken
- 4) Evaluation and improvement of maintenance activities undertaken

Definition of inspection is “an activity to check functional conditions and/or status of building and mechanical and electrical facilities, etc., and deterioration thereof” which is inevitable for preventive maintenance for the management of maintenance.

Although appropriate maintenance would require some manpower and costs, there is a less costly maintenance activity defined as “inspection”. If the said inspection was postponed, extensive repair as a result could be required and ending up incurring substantial repairing cost.

First of all, for management of facilities, it is quite important to understand normal conditions of the building facilities and mechanical and electrical equipment and to keep in good custody of relevant as-built drawings and operation and maintenance manuals, etc.

Furthermore, after establishing a feasible implementing cycles, regular or periodical inspection should be implemented so that deterioration of building, equipment and systems can be detected as early as practically possible.

In other words, it is quite important to take an appropriate measure by detecting or discovering the said deterioration as early as practically possible through the regular or periodical inspections, instead of waiting until an extensive repairing work become necessary, as it would require much larger amount of manpower and costs.

#### **4.3.2. Technical self-sustainability**

Operations of facilities are not merely to switch on and off for automated equipment, but the synchronised combination of techniques and know-how of those people operate and well maintained facilities and equipment.

Adequate and thoughtful applications and adjustments of machines/equipment and information and communication technologies are the result of visitor oriented hospitality mind of technical and managerial staff of the visitor centre. Hence, the delicate handling, adjustment and repair of facilities and equipment are required for achieving the visitor satisfaction depend upon catering to the number of visitors in a given space (especially peak hours in peak season), seasonal requirements (dry and rainy seasons) and type of visitors (foreigners, locals, adult/children and group of students).

For instance, the following operations and maintenance are always monitored properly and maintenance activities applied immediately:

- Regulation of A/C and natural ventilation
- Adjustment of lighting intensity and bring in natural daylight
- Function and malfunction of lift
- Operating speed of escalator
- Controlling queues and direction guiding
- Conditions of floors steps, walls, handrails, doors and ceiling
- Sound of public address and BGM
- Pressure of water

- Connectivity of PC and telephone, etc.

### **4.3.3. Maintenance for building**

In order to maintain building environment and safety, it is inevitable to implement daily inspection and maintenance to certain extent in order to sustain the utmost functions, besides implementing regular or periodical inspection and maintenance.

As for the repair, it is necessary to grasp status of the implementation of the daily inspection and maintenance as well as to understand requests and/ or claims made by the occupants and/ or users. It is also necessary to analyze and evaluate the subject repair in terms of importance or urgency in the facilities as a whole in order to review long-term maintenance plan.

Preventive maintenance, on the other hand, is another way of maintenance to repair or replace a part of building or equipment in order to maintain initial performance or function before a part of building or equipment has been damaged or malfunctioned.

However, all of these activities are based on the regular and periodic inspections and monitoring in order to sustain required performance of the equipment and facilities, and to detect or discover deteriorating conditions.

#### **(1) Inspection of building**

Although it is desirable to inspect all parts or elements of the building, methodology for inspection of waterproofed roof of which the durability of the building largely affects is explained intensively here-in-after due to their extensive operational implications when its failure.

Deterioration of waterproofed roof will definitely affect the life-span of the building and will become a great cause of water leakage, etc, which will disrupt daily use of the building and often operations to closedown and damage equipment and exhibits.

#### **(2) Methodology for inspection**

- Inspection shall be carried out by visual and/or finger touch, in principle.
- Concealed or perilous parts or elements of the building where inspection seems impossible shall be left out. Inspection of such left-out parts or elements shall be carried out by the experts.
- In case of finding any rubbish that is blocking roof drains etc, such rubbish shall be immediately removed and affected roof drains etc shall be cleaned as far as possible.
- After discovery of deteriorated parts or elements of the building, an emergency measure for prohibiting to enter into such area where a danger of falling down etc is assumed shall be taken as necessary



### **(3) Location for inspection**

- External: wall, windows and doors, roof
- Internal: all stairs and corridors, and all rooms
- Inspection of Deck Roof

Deck roof that directly take or receive rainfalls will not be water tight without waterproof layers being provided on top of the concrete slabs. However, such waterproof layers have certain life-span, and therefore, it is necessary to repair part thereof or to replace entire waterproof layers sometimes during life-span of the building.

It is necessary to carry out periodical inspection of the waterproof layers, as even small damage to it will lead to severe water leakage.

Another important factor in maintenance of the deck roof is cleaning of the roof drains that should be carried out regularly, as accumulated rubbish, fallen leaves, flew in dust and sand, and so on will usually block such roof drains and become major cause of leakage from the deck roof.

Inspection of the deck roof usually involves the work at high above ground, and therefore, areas where inspection seems impossible shall be left out. Inspection of such left-out areas shall be carried out by the experts. And, steel ladder conditions of fixed balustrades or posts shall be thoroughly inspected, and at the same time, check and see if there is any obvious corrosion thereon.

#### **4.3.4. Maintenance for M&E installation**

The electricity charge fee account for over 80 % of the total running cost according to the running cost analysis and this cost burden will be further aggravated by waste of energy.

A waste of energy is often caused due to unforeseeable wrong condition of the M/E system in addition to the maladjustment of the system and/or lack of perception to the system by management staff. Therefore, the employment of skilled maintenance staff is the easiest way to sustain the physical aspects of the buildings and services.

During the opening hours, it is indispensable to establish the optimum condition of the system by searching into the cause of the wasting energy.

Preventive inspection against system failure through daily routine inspection and periodic inspection to the system contribute the provision of the energy saving indirectly. The main points of the preventive inspection and maintenance to be carried out and the appropriate inspection periods will be prepared for Mechanical and Electrical Installation respectively based on the result of functions and operating rates of visitor centres.

If the performance or functions of any mechanical and electrical equipment become degrade, building environment will become uncomfortable and may become a factor for unwarranted accident, which will disrupt daily use of the building.

### **(1) Methodology for inspection**

- Inspection should be carried out by visual, in principle.
- In case of finding any obstruction that is blocking drain pipes etc, such should be immediately removed and affected roof drain pipes etc should be cleaned thoroughly as possible.
- After discovery of deteriorated parts or elements of the equipment or malfunction of the mechanical and electrical system as a whole, an emergency measure for prohibition to enter into such area where deterioration of the equipment or malfunction of the system should be imposed.
- Inspection reports etc being prepared in accordance with legal requirements should be referred to as necessary.
- As for the inspection to be undertaken by the specialist or expert, necessary inspection should be carried out in accordance with legal requirements

### **(2) Location for inspection**

- All parts of mechanical and electrical equipment and facilities where visual inspection is possible.

### **4.3.5. Operation and maintenance costs**

By sorting out work necessary for physical maintenance of both visitor centres, such as maintenance inspection, cleaning, repair, guard, etc., the implementation plan will be prepared concurrently with an estimation of costs. For maintenance and control of equipment, the maintenance contractors and parts affordability on-site as well as in India (particularly, the Mumbai Metropolitan area) will be taken into account. For those requiring manuals, a draft manual will be prepared and attached to the operation plan.

Budget for maintenance activities should be prepared and submitted to Account Department on appropriate time to secure the necessary budget in order to implement maintenance work and the facility management plan to be functional.

Requested budget for maintenance activities and its approval process as well as actual spending should be recorded and comparative analysis of the approved budget and actual spending of each item should be made and the result of which should be used as a reference for future planning of the budget for maintenance activities.

Consumables, spare parts, refilling oil and water, etc. necessary for the maintenance of the subject facilities should be properly managed with proper records and their budget to be allocated for purchase in a timely manner.

The timing for placing order will be scheduled with consideration of time for deficiency of consumables, the kind or size of the subject repair works and facilities operational limitations as well as relations between such repair works. Therefore, maintenance work program should be prepared with consideration of the size of each repair work and its design concept.

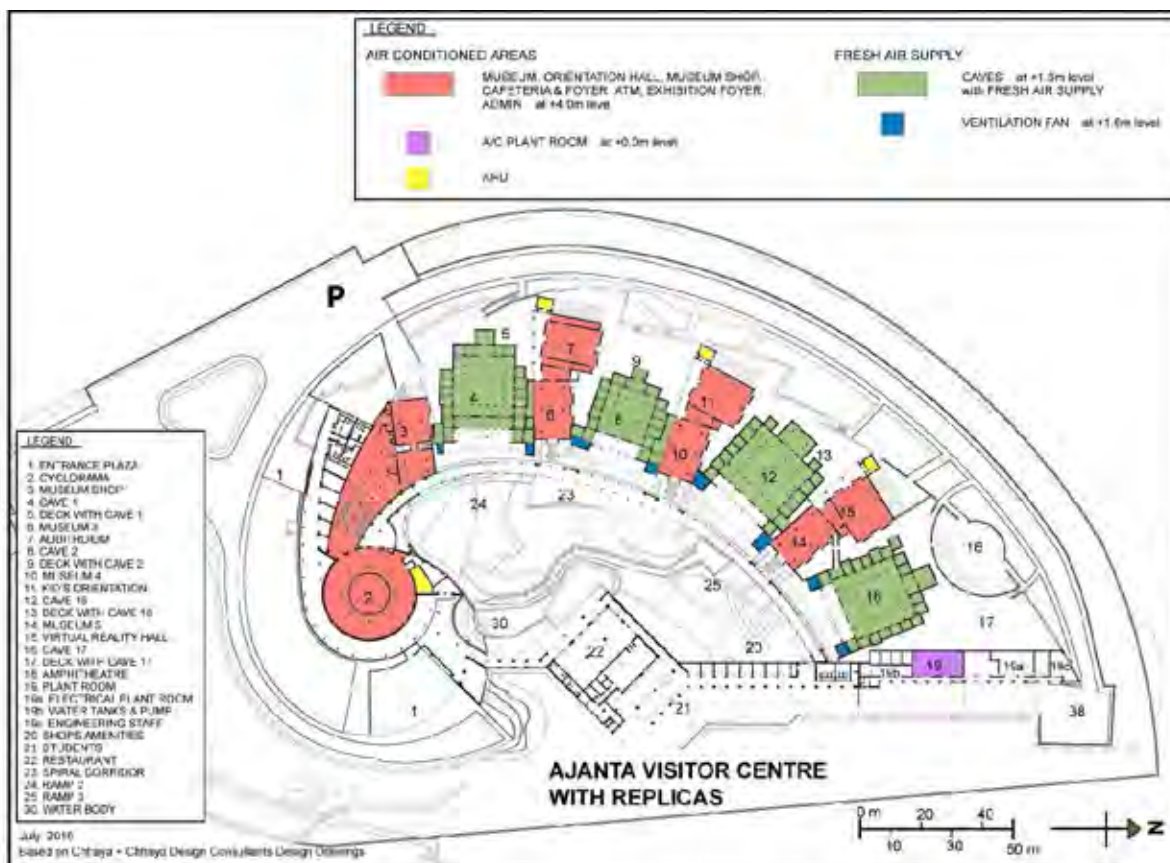
### **(1) Efficient A/C operations**

In order to reduce operation and maintenance costs, efficient operations of service facilities are vital. As mentioned above, the electricity charges account for over 80% of the total running cost, thus proper and efficient operations of Air Conditioning (A/C) will determine the maintenance and operation costs for visitor centres.

The ways of reducing operation costs of the A/C are mainly:

- Controlling and adjusting the room temperature to suit appropriate external and internal temperature and humidity in season to avoid redundant operations.
- Controlling and adjusting the A/C operations depending upon the density of visitors/room.
- Controlling and adjusting the location of A/C operations depending upon the visitor centre programmes.

The coverage areas of A/C operations and artificial ventilation are as shown in the following figures:



**Figure 4-6 Areas for A/C operations and fresh air supply (AVC)**

Source: JICA Study Team

In Ajanta visitor centre, rooms of approximately 3,204 m<sup>2</sup> are covered by the A/C operations and 2,955 m<sup>2</sup> are covered by fresh air supply.



Only authorized persons may have access to the roof and to terraces and plant areas.

Doors, shop shutters and open-able window frames accessible from the ground floor on all sides of the building or from accessible platforms and terraces will be fitted with key-operated locks.

In general there will be four (4) levels of security in the visitor centre.

1) The entire terrain will be protected by a perimeter wall and guarded entrances. All those entering (excluding those specially permitted beforehand) must go through check-in at the guard hut situated at the entrance gate of perimeter fence. The main purpose being the prevention of carry-in of dangerous objects by terrorists, etc. The vehicles need to be checked at this spot.

2) The information office area, the restaurants and the shops will be subject to the next level of security with security guards or entrance control devices. To enter the visitor centre building from the entrance or back area near the restaurants, people need to be checked using metal detectors. Provision of X-ray screen machines at these spots should be determined by consulting with the police department.

3) Within the visitor centre there will be areas with restricted access only those who paid the admission fee to these areas such as auditorium, exhibition halls and seminar rooms. Entering these areas need to be checked by security guards requesting display of admission ticket.

4) Within the visitor centre there will also be rooms with restricted access to general visitors comprising the administration office, staff room and plant room. The rooms can be protected by ID check (IC cards), but also warning signs will usually put up to avoid unnecessary confusions for visitors.

## **(2) CCTV system**

Around-the-clock recording by HDD, security cameras to be installed at the strategic locations where tight security and entrance points are necessary with the sufficient height to prevent them from being vandalized and connected to monitors and recorders situated in the security office. These provisions can be dealt with contract basis by a private security company.

### **4.4.2. Safety and security plan**

This section describes the safety and health requirements for all AVC/EVC staff and visitors. No person shall be required or instructed to work and act in AVC/EVC and related ancillary facilities or under conditions that are deemed unsafe or dangerous, especially children and aged people.

#### **(1) Emergency situations**

The employer shall provide training in handling emergency situations that may arise in the activities or use of equipment in the centre.

All centre staff and employees shall be familiarized with the location of the equipment, trained in the proper use of the equipment and its capabilities and limitations, and technically qualified for its use.

## **(2) Emergency planning**

Emergency plans to ensure employees' safety in case of fire or other emergency shall be prepared, in writing, and reviewed with all affected employees. Emergency plans shall be tested to ensure their effectiveness. The emergency escape plan should be practiced at least once a year with all the staff, employee and visitors if any.

Plans shall include escape procedures and routes; critical plant operations; employee accounting following an emergency evacuation; rescue and medical duties; means of reporting emergencies; persons to be contacted for information or clarification.

Planning for any operation shall include the total system response capabilities to minimize the consequences of accidents or natural disaster and shall consider communications, rescue, first aid, medical, emergency response, emergency equipment, and training requirements.

Fire alarm system shall be tested to alert all persons likely to be affected by existing or imminent disaster conditions and to alert and summon emergency responders.

### **a. Police and emergency hospital**

Currently in Ajanta, a head of police and two constables are posted at Fardapur (20 minutes from AVC) and a guard is presently stationed at the entrance of Ajanta and Ellora caves. It is necessary for a police officer to be stationed for each Ajanta and Ellora visitor centre when it opened; however the police officer is responsible only for the area outside the visitor centre and MTDC will be responsible for security inside the visitor centre.

Generally policemen communicate with each other and police headquarters by cellphone when necessary. However at the Ajanta caves, it is impossible to communicate by cellphone due to physical barriers of the caves which is an issue that must be resolved quickly by ASI, MTDC and the State Government.

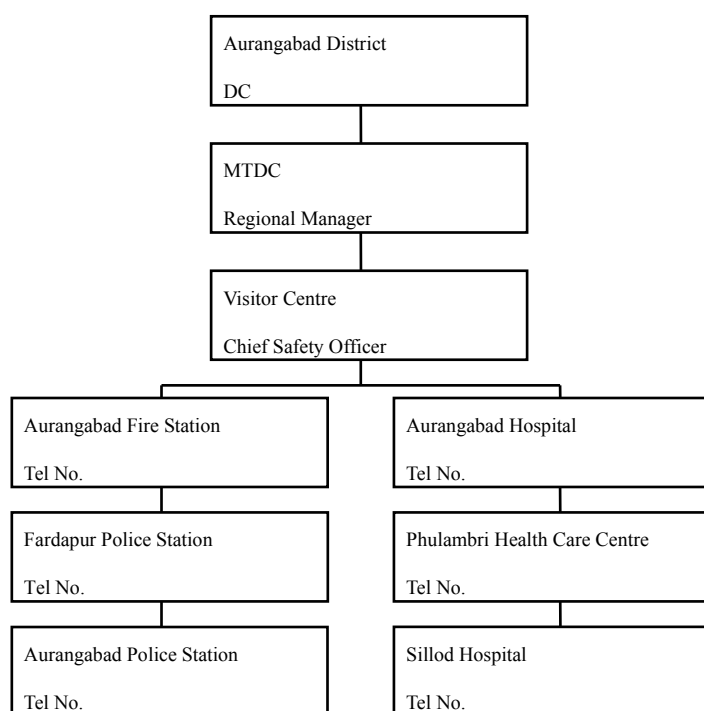
Currently, no female police officer exists in the region, but a female guard (constable) should be assigned to certain areas at Ajanta or Ellora sites including the visitor centres.

There are four police stations on the way to the Ajanta visitor centre. If a traffic accident occurs, the police stations can communicate with each other on their own networks.

There is a hospital including emergency room service at Sillod (25 km from AVC) and a primary health centre at Phulambri (50 km from AVC) that can provide first aid.

Emergency telephone numbers and reporting instructions for ambulance, hospital, fire, and police shall be conspicuously posted at the respective work places.

The sample of emergency network is shown below:



**Figure 4-8 Emergency networks**

Source: JICA Study Team

### **(3) Security and safety for emergency**

#### **a. Fire prevention**

The fire alarm system and public address system has been installed in the visitor centres. The Fire Alarm Control Panel and Security control panel for Public Address System are located in the security room at ground floor. The security room should be manned at all times to handle emergency.

#### **Fire prevention / fire extinguisher**

To minimize / prevent fire or in case of a fire, fire extinguishers should be available easily and placed in conspicuous areas.

Areas like the kitchens and the LPG should have readily and easily accessible fire extinguishers placed in strategic locations in these place.

There should be a smoking prohibition in these areas, and only appropriate smoking zones could be allocated away from these place.

#### **LP-gases**

Storage, handling, installation, and use of LP-Gases and systems shall be in accordance with State standards, where applicable.



LP-Gas containers, valves, connectors, manifold valve assemblies, regulators, and appliances shall be regularly check and maintaining good condition at all times.

#### **(4) Disaster prevention**

##### **Earthquake disaster**

Maharashtra State lies in the earthquake prone region (Seismic Zone-1).

In the event of an earthquake, visitors should be led to be evacuated from the centre to open grounds.

The staff should follow the Emergency Planning.

##### **a. Damage from the strong wind**

As the centre is susceptible to regular windy conditions, sometimes excruciating, the landscape should be kept trimmed and tidied at all times, especially dead trees to avoid such to fall on vehicles / passers-by.

The shed at car park should be checked and tightened at least once a week to minimize damages due to strong wind.

##### **b. Crime prevention**

The entrance gate shall be operating 24 hours with security guard.

The security guard shall patrol the ground after visitor centre closed at least every 2 hours.

The entrance and exit of all visitors including staff should be recorded on the log book at the entrance gate.

#### **4.4.3. Facility safety requirement**

##### **(1) General, first aid kits**

First aid kits are required to be kept at the Centre at all times. First aid kits shall be kept within weatherproof containers, easily accessible to all staff and each item maintained sterile.

The contents of first aid kits shall be checked prior to their utilization at least monthly and to insure that expended items are replaced.

The staff should be trained to administer basic first aid treatment such as utilizing AED.

##### **(2) Equipment and buildings**

##### **a. Generator, transformer and electrical board**

The person working inside sub-station shall be performed by a qualified engineer.

Persons working on electrical distribution systems shall be provided with the appropriate electrical protective equipment, which shall be inspected, tested, and maintained in safe condition in accordance with the manufacturer's recommendation.

Electrical workers' rubber insulating protective equipment shall be visually inspected for damage and defects before use.

Protective equipment of material other than rubber shall provide equal or better electrical and mechanical protection.

Before commencement of work inside substation, the person should understand the system and what / which facilities are energized

#### **b. Water pit and sewerage tank**

When cleaning and other works are required inside water pit or sewerage tank, Air monitoring is required to ensure safe air is present before entering.

Fresh air shall be supplied to inside pit and tank in sufficient quantities to prevent dangerous accumulation either natural or mechanical ventilation.

#### **c. High voltage electrical cable intake**

11 Kv intake cable constructed and brought to the site by overhead lines at AVC, while at EVC the cable was laid underground according to uncertified as-built drawings and the location should be noted by the operator to avoid electrocution.

### **4.4.4. Visitor's safety and health requirement**

#### **(1) Pre-warning of safety in the caves**

The safety walks in the world heritage site should be maintained. However the visitors could easily access to the cliff edge and most of the locations without handrails and safety net due to maintaining authenticity of the site. Therefore it is advisable that MTDC/ASI should improve the method of providing warning information to visitors.

Security guards or guides should be present at all times along the dangerous spot and bottleneck in the site to ensure visitors do not stray beyond the safety lines.

It is also recommendable to show safety warning video to visitors before getting to the site.

#### **(2) Night walk**

The night tour to the heritage site is basically not recommended due to the lack of lighting for visibility and therefore the visitor centre should serve the purpose.

### **(3) Children safety**

As children are by nature more active, it is advisable that children should be accompanied by adults while outside of the Building to maintain their safety, especially near the road and the cliff edge in the heritage site.

To ensure the sustainable management of the VCs, it is necessary to cater to the needs of local people as well. Interviews with local stakeholders revealed that they expect the VCs to be more leisure-oriented and to provide attractions for local visitors. Facilities for kids are often quoted because family trip is one of the most common forms of travel in India and the parents would appreciate if their children can be left in the VC while the parents are observing the caves.

Handling children is specialized work, and it is not clear how many parents would use a facility for kids. The term 'children' could cover several categories: for example, up to 3 years, 3 to 8 years, and 8 to 12 years. All of these segments have different pedagogy and companionship requirements. The VC should have capable exhibition and education staff who can provide ideas to design exhibits for these categories.

### **(4) Smoking area and no litter**

It is recommended that smoking should be prohibited while inside the building.

Appropriate smoking zones or areas should be allocated by the operator with appropriate/adequate signs to inform those intending to smoke.

No littering policy should be adopted and litter bins should be provided at strategic locations within the Centre.

### **(5) Drinking water**

The water from any of the spouts or creak is not recommended to be drunk directly. All visitors / staffs should consume water from reliable sources e.g. bottled drinking water or water purchased from the restaurants and shops.

### **(6) Protection from flies and mosquitoes**

Generally, flies and mosquitoes are harmful to human health and at the same time, creating inconvenience, annoyance and discomfort and as disease carriers.

Sanitation is the best method of controlling filth flies and infected mosquitoes in and around the Centre. Flies seek breeding places where garbage and/or vegetation residues accumulate. Therefore do not let garbage accumulate in the open and make sure garbage receptacle should have a solid tight-fitting cover. It is also recommended not to over water the landscape for breeding mosquitoes.

## **(7) Garbage disposal**

Receptacles used for garbage should be provided and be equipped with a solid tight-fitting cover.

Solid and liquid waste has to be removed in a way that avoids creating a menace to health and environment i.e. breeding flyers, outbreak of bacteria, outbreak of ecological system and so on. Therefore it should be disposed of daily to maintain a sanitary environment.

## **4.5. Internal Organisation and Human Resource Plan**

As mentioned above, the Study Team recommends that MTDC establish a "Preparation Office" and MTDC needs to assign several staff at an early stage, including the Preparation Office Manager in order to discuss and prepare the details of plans of operations on the day one.

After that, the necessary staff members will be recruited during the system preparation stage, preparing for the opening.

The detailed job descriptions and Terms of Reference for the positions are as shown in Appendix. A few points are important to note:

1. It would not be advisable to fill up positions on deputation from the MTDC or the Department of Tourism and Cultural Affairs, except for that of the Executive Trustee/ Member Secretary, as this may be seen as conflict of interest.
2. While the Union Ministry of Finance, the Government of India has set a moratorium on new hires, in this particular case the employees will not be considered a permanent pensionable liability of the State Government, and hires may be made on account of resolutions by the Governing Board, depending on the budget, as long as it is able to prove to MTDC or the State Department of Tourism and Cultural Affairs that such hires will not affect the budgetary support provided by such entities and will be a sole liability of the Centre.
3. Establishment, regularization, service rules etc. may be formed by the Centres with approval from the Governing Board. The members of the Governing Board representing State Departments of Tourism and Cultural Affairs, Transport and/or Finance may assist in developing parallel reference standards from analogous entities, although the Board will be under no compulsion to adopt them.

Some ideas to consider are as follows:

1. Open ended contracts of three years duration for all staff of the level of Senior Research Associate or above
2. Fixed Term of no more than five years for Executive Trustee – such person may be a member of the All India allied services or State Administrative Services who would be screened by the Governing Board prior to deployment.

3. Analogous rank of executive trustee (in case of being an officer of the All India allied services or State Administrative Services) will not be a consideration; only merit and inclination to do well in the position would be. This should prevent the position from being deemed as a 'punishment posting'.

#### **4.5.1. Sourcing personnel**

Hospitality and tourism related personnel are readily available in India including the Maharashtra State and Aurangabad District, while museum related personnel are very difficult to find primarily due to very limited number of institutions that provide museum related education in India.

However, if the necessary personnel are to be classified into their tasks, available personnel already exist and should be utilized as is the usual practice of private sector. Some of examples are indicated below:

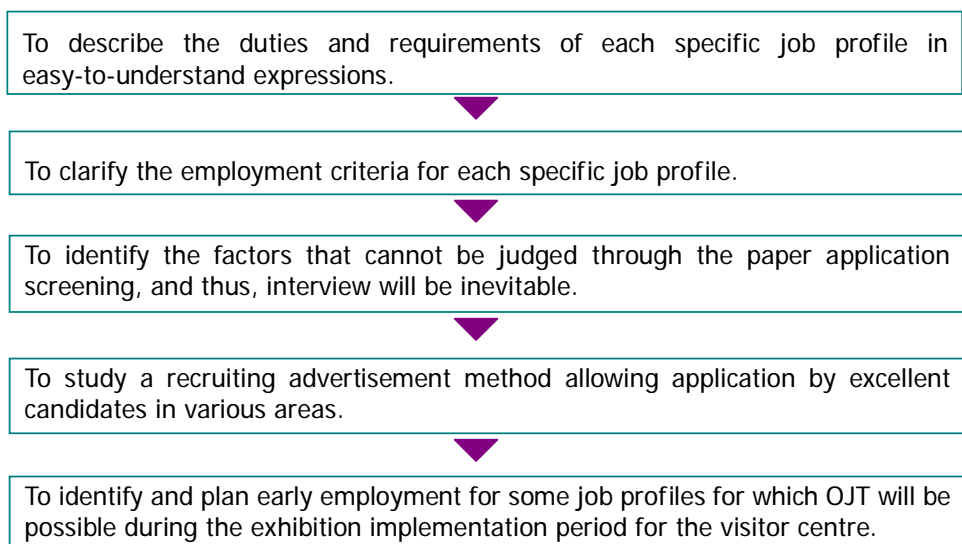
- Exhibition designer and planner: decoration and display design of shop front and showcases.
- Educator: cultural events organizer and cultural programme creators for adults and children.

Since the visitor centres do not have functions for conservation and restoration, research and publishing an article, documentation and registration and storing artefacts unlike ordinary museums, the concerned personnel and their required skills in museology are limited. Hence, MTDC needs to rely on ASI personnel in these areas.

#### **4.5.2. Staffing schedule (numbers & ranks)**

The organizational structures, such as Administration, Exhibition, Public Programs, etc., for the visitor centre should be established in appropriate timing and deployment of staff can be realized in accordance with the Operations Planning.

The following steps will be considered in the process of preparation of the staffing and recruiting plan:



At the same time, staffing and recruiting plan will carefully be reviewed giving consideration to AEPD (II) Implementation Schedule and proposed date of soft opening of each visitor centre, since provision of on-the-job training will constitute an integral part of the training especially during this period. Thus, actual staff recruiting should take place by stages, starting from core staff, followed by secondary and general staff to be ready for test & commissioning of the facility and commencement of display and implementation works for exhibition items and AV equipment.

This schedule will establish the deployment plan (the line of business, and the number of persons) for executive and ordinary staff, necessary for operation of both centres. The human resources securing strategy, the employment plan, and human resources development plan will be prepared to put the above manpower deployment plan into practice.

The following tables show the assumed manpower inventory for the visitor centres. These should be matched to the roles and nomenclature of functions listed in the illustration as above.

It is also important to consider that visitor centres must follow the employment opportunity situation and regulations in India and the Maharashtra, which usually increase the service level number of staff.

**Table 4-4 Tentative organisation of visitor centre (Ajanta)**

Section	Line Staff				Service Staff		Responsibility
	Total	Dept. Head	Section Chief	Section Staff	Total		
Director of Visitor Centre	1	1					Overall Management of the Visitor Centre
Deputy Director (Administration/PR)	1	1					Assistance to Director in administrative and PR matters
Deputy Director (Edutainment)	1	1					Assistance to Director in edutainment matters
● Administration	14		1			32	
○ General Affairs		3		1		4	
• General Affairs					1	2	Legal, Documents, General
• Personnel					1	2	Personnel, Training
○ Accounting		2		1		4	
• Accountant					1	2	Budget, Financial Matters
• Supply						2	Purchase, Material Supply
○ Facility		8		1		24	
• Maintenance					6	6	ICT, AV, Maintenance
• Safety and security					1	6	Guarding and janitorial service
• Gardening						6	Landscaping and watering
• Cleaning						6	Cleaning
● Public Relations	5		1			8	
○ Promotion		2		1		4	
• Public relations					1	2	Public affairs and services
• Marketing						2	Fundraising and sponsorships
○ Visitor service		2		1		4	
• Tourism information					1	2	Group tours, information service
• Crafts and shops						2	Products development
● Exhibition	6		1			12	
○ Exhibition		3		1		8	
• Planning					1	2	Exhibition Planning
• Fabrication						2	Maintenance/Renewal
• Gallery					1	4	Cave replica attendant
○ Education		2		1		4	
• Education					1	2	Education Programme
• Publication						2	Publication, News Letters
<b>Total</b>	<b>28</b>	<b>6</b>	<b>7</b>	<b>15</b>		<b>52</b>	<b>80</b>

Note: ●:Department, ○:Section, •:Subsection

Source: JICA Study Team

**Table 4-5 Tentative organisation of visitor centre (Ellora)**

Section	Line Staff				Service Staff		Responsibility	
	Total	Dept. Head	Section Chief	Section Staff	Total			
Director of Visitor Centre	1	1					Overall Management of the Visitor Centre	
Deputy Director (Administration/PR)	1	1					Assistance to Director in administrative and PR matters	
Deputy Director (Edutainment)	1	1					Assistance to Director in edutainment matters	
● Administration	14		1			32		
○ General Affairs		3		1			4	
• General Affairs					1		2	Legal, Documents, General
• Personnel					1		2	Personnel, Training
○ Accounting		2		1			4	
• Accountant					1		2	Budget, Financial Matters
• Supply							2	Purchase, Material Supply
○ Facility		8		1			24	
• Maintenance					6		6	ICT, AV, Maintenance
• Safety and security					1		6	Guarding and janitorial service
• Gardening							6	Landscaping and watering
• Cleaning							6	Cleaning
● Public Relations	5		1				8	
○ Promotion		2		1			4	
• Public relations					1		2	Public affairs and services
• Marketing							2	Fundraising and sponsorships
○ Visitor service		2		1			4	
• Tourism information					1		2	Group tours, information service
• Crafts and shops							2	Products development
● Exhibition	5		1				8	
○ Exhibition		2		1			4	
• Planning					1		2	Exhibition Planning
• Fabrication							2	Maintenance/Renewal
○ Education		2		1			4	
• Education					1		2	Education Programme
• Publication							2	Publication, News Letters
<b>Total</b>	<b>27</b>	<b>6</b>	<b>7</b>	<b>14</b>	<b>48</b>	<b>75</b>		

Note: ●:Department, ○:Section, • :Subsection

Source: JICA Study Team



**Table 4-6 Tentative staffing plan with ASI collaboration and coordination**

Section	Line Staff				Service Staff		Responsibility
	Total	Dept. Head	Section Chief	Section Staff	Total		
●Research	13	1					
○Research	5		1		4		
•Coordination				1		1	Coordination, Collaboration
•Archaeology				1		1	Archaeological Research
•History				1		1	Historical Research
•Culture/Folklore				1		1	Research for Culture/Folklore
○Heritage	3		1		2		
•Study				1		1	Study on Cultural Heritage
•Conservation				1		1	Conservation Engineering
○Collection	4		1		3		
•Artefact				1		1	Collection of Artefacts
•Information				1		1	Collection of Research Information
•Documentation				1		1	Documentation, Recording
<b>Total</b>	<b>13</b>	<b>1</b>	<b>3</b>	<b>9</b>	<b>9</b>	<b>22</b>	

Source: JICA Study Team

The existing issues and necessary support measures for fields where human resource development is necessary are described below.

**Table 4-7 Issues and support measures for human resource development**

Issues	Necessary support measures
1 Mastering of technologies for special operation and maintenance appropriate to specialties (theme, AV facilities and replica, etc.) of the contents of the exhibition facilities	It is necessary to foster the staffs who have the special knowledge and accomplishment on the World Heritage and AV exhibition contents, thorough special skills and familiarity concerning maintenance, and the capability of improving and developing the AV exhibition contents.
2 The issues pointed out are further improvement and development of C/P's operation and management techniques and maintenance/recovery technologies.	The system ensuring modern and adequate securing and repair method is demanded for introduction of adequate control technology related to the preservation and the effective repair technique. Particularly needed is the support for the human resource development exploiting fully the achievements and experiences in Japan, such as preservation/recovery based on the digital recording method, scientific and adequate repair technology.

Source: JICA Study Team

### 4.5.3. Skill requirements

Skill required for the permanent VC staff is closely related to the services will be delivered by the visitor centre and segments of visitors who receive these services, and the providing services and their level should meet with the current needs and international trends. In this regard, this new visitor centre should be more visitor-oriented to fulfil new tasks and functions.

Job profiles with related duties and required qualifications for the staff are shown in the following table:

**Table 4-8 Job profile of the major VC staff**

<p>Position:</p> <p>Director of Visitor Centre</p>	<p>Required Qualification:</p> <ul style="list-style-type: none"> <li>• Master’s degree in Museology and/or Ancient Indian History &amp; Culture or Indian Archaeology or History of Art, Post Graduate diploma in Museology or PhD degree.</li> <li>• Minimum 10 years experience in Curatorial capacity in a Museum of repute and considerable administrative and business experience in a responsible position.</li> </ul>
<p>Job duties and responsibilities:</p> <ul style="list-style-type: none"> <li>• Direct and realizing the mission statement of the visitor centre.</li> <li>• Direct and encourage leadership through special knowledge of the VC’s mandate.</li> <li>• Recommending and planning policies and new developments, and their revisions to the Board.</li> <li>• Direct and implementing policies and plans approved by the Board.</li> <li>• Staff planning, organizing and recruiting.</li> <li>• Direct the issue of directives on corrective actions to the related section heads and monitoring of implementation of the corrective actions directed.</li> <li>• Report to the Board the results of monitoring the implementation of policies and plans, quality audits and corrective actions.</li> <li>• Directing and coordinating day-to-day operations through the Department Heads.</li> <li>• Direct and implement financial management and funding activities.</li> <li>• Liaison with relevant governmental, institutional and industrial coordination in the interest of the visitor centre.</li> <li>• Responsible for achieving agreed Organisational performance with cost effective, efficient, economic, smooth execution and creating a stimulating &amp; challenging work environment nurturing knowledge, growth &amp; team work through leadership role.</li> <li>• Conceptualization, planning and preparation of annual and mid-term operating business plan with Executive Committee; review periodically and present the performance dashboards as and when required</li> <li>• Responsible for establishing the organizations brand equity internally &amp; externally in consultation with Operating Consultants.</li> <li>• Ensure implementation and compliance of HR &amp; operational policies across the</li> </ul>	

<p>Organisation</p> <ul style="list-style-type: none"> <li>• Represent the visitor centre at the appropriate forums and meetings;</li> <li>• Support marketing team in order to spread the organizations awareness.</li> <li>• Support team/s in dealing with crucial issues and make critical decisions related to operations and should be able to solve queries of the customers for ensuring high customer satisfaction.</li> <li>• Review the achievements in terms of targets, and initiate appropriate corrective measures required to achieve the targets.</li> <li>• Manage and control expenditure within agreed budgets and analyze the operations in terms of targets.</li> <li>• Focus on building relationship with different organizations in and outside India (education societies, schools, colleges, regional institutions and other institutions which can be potential clients).</li> <li>• Develop employee/research exchange program or bilateral agreements with similar institutions in and outside India in order to understand and further implement best practices.</li> <li>• Manage client relationships at top level and handle key client escalations and solutions.</li> <li>• Monitor resource planning to ensure the effective utilization of the resources.</li> <li>• Provide leadership to the cross functional teams and be instrumental in developing their capabilities.</li> </ul>	
<p>Position:</p> <p>Deputy Director (Administration/PR)</p>	<p>Required Qualification:</p> <ul style="list-style-type: none"> <li>• Master's degree in Accounting and Business Administration and/or Public Relations or Administration</li> <li>• Experience in a non-profit making cultural organization or related institutions.</li> <li>• Knowledge of accounting and administration.</li> <li>• Knowledge of legal aspects of museum operations and relevant institutions.</li> </ul>
<p>Job duties and responsibilities:</p> <ul style="list-style-type: none"> <li>• Assisting the Director in conducting his/ her duties as described above.</li> <li>• Responsible for all financial management aspects of VC operations. Provide leadership and coordination in the administrative, business planning, accounting and budgeting efforts of the VC.</li> </ul>	

<ul style="list-style-type: none"> <li>• Formulating and establishing financial objectives and accounting system.</li> <li>• Control and manage financing, budgeting, accounting, purchasing, human resources, salaries and benefits of personnel, taxes and contracts.</li> <li>• Continually assess Organization’s SWOT and prepare plans in consultation with the Marketing and Finance teams in order to roll out new initiatives.</li> <li>• Perform quality audits of Employer, other Departments of PMC, consultants and contractors involved in the Project including preparation of audit reports.</li> <li>• Develop strong fund raising programs to generate corpus and manage the same to ensure the steady inflow of the revenue.</li> <li>• Supervising the performance of staff within administration, accounting and PR division.</li> <li>• Administer routine functions (financial, legal and administrative) at museum including attendance and leave, expense approvals, travel, etc of his team.</li> <li>• Preparation of standard operating procedures/ manuals for all aspects of operations and ensure its smooth implementation and compliance.</li> </ul>	
<p>Position: Deputy Director (Exhibition/Education)</p>	<p>Required Qualification:</p> <ul style="list-style-type: none"> <li>• Master’s degree in Museology and/or Ancient Indian History &amp; Culture or Indian Archaeology or History of Art.</li> <li>• Experience of organizing Museum exhibitions (National/International), Seminars, Workshops and Lectures.</li> </ul>
<p>Job duties and responsibilities:</p> <ul style="list-style-type: none"> <li>• Assisting the Director in conducting his/ her duties as described above.</li> <li>• Development and management of exhibitions and AV programming, activities, materials for a wide range of audiences and school students.</li> <li>• Liaison with the school principals to increase cultural heritage awareness of the visitor centre and the cave site as educational resources.</li> <li>• Direct and liaison with curators, exhibition planner and fabricators, education officer and artists.</li> <li>• Supervising the performance of staff within exhibition and education division.</li> </ul>	
<p>Position: Administration Manager (Department Head)</p>	<p>Required Qualification:</p> <ul style="list-style-type: none"> <li>• Master’s degree in Museology and/or Ancient Indian History &amp; Culture or Indian Archaeology or History of Art.</li> <li>• Experience of organizing Museum exhibitions (National/International), Seminars, Workshops and</li> </ul>

	Lectures.
<p>Job duties and responsibilities:</p> <ul style="list-style-type: none"> <li>• Assisting the Deputy Director (Administration/PR) in conducting his/ her duties as described above.</li> <li>• Monthly Provisions/estimation of Admin. Cost and monitoring Actual vs. Budgeted.</li> <li>• Participate in negotiations with vendors to minimize cost.</li> <li>• Initiate and implement cost cutting measures in areas of operations like electricity, stationary etc.</li> <li>• Oversees the work of contractors engaged by the VC Board.</li> <li>• Ensures compliance with building, operating and regulatory standards remains apprised of statutory and regulatory enactments and amendments and recommends appropriate action.</li> <li>• Manage all general administration activities including the followings and ensure utmost utilization of the resources</li> <li>• Pantry and housekeeping management</li> <li>• Stationary &amp; printing stationary inflow &amp; Outflow.</li> <li>• Tracking of company assets record</li> <li>• Cafeteria &amp; Parking Management</li> <li>• Local Transport</li> <li>• Appoint Local transport service providers; continuously monitor services and choose new service providers if required.</li> <li>• Make arrangements of local transport for employees through cab service provider. Ensure timely reporting and take corrective action on day to day basis as required.</li> <li>• Plan, develop and implement strategy for HR management and development in line with the Business Strategy, including:             <ul style="list-style-type: none"> <li>• Recruitment, Retention &amp; Development</li> <li>• HR Policies</li> <li>• Performance Management System (PMS)</li> <li>• Compensation and benefits, employment contracts</li> <li>• Learning and development</li> <li>• Retention</li> <li>• Employee Welfare</li> <li>• Organization Culture</li> </ul> </li> </ul>	

<ul style="list-style-type: none"> <li>• Performance Management</li> </ul>	
Position:  PR Manager (Department Head)	Required Qualification: <ul style="list-style-type: none"> <li>• Post Graduate</li> <li>• Desirable Qualification: MBA Marketing</li> <li>• Total Experience: 15-20 Years</li> <li>• Having handled 3-4 years as head of Marketing &amp; PR</li> <li>• Excellent communication/inter-personal relationship skills</li> </ul>
Job duties and responsibilities: <ul style="list-style-type: none"> <li>• Assisting the Administration Officer (Department Head) in conducting his/her duties as described above.</li> <li>• Manage the VC's marketing and communication efforts for exhibitions, educational programs, and special events.</li> <li>• Implement and oversee a facility rental program for the VC.</li> <li>• Coordinate public relation efforts on behalf of the VC.</li> <li>• To stimulate interest in, and promote a greater understanding of, the culture and history of the World Heritage site.</li> <li>• To consult with VCs Boards/Advisory Committee on matters that may impact on theme and concept of operations.</li> <li>• To secure external funding to support VC operations and development initiatives.</li> <li>• Proper promotion of VC activities to encourage a wide audience.</li> <li>• Opportunities are sought to secure external funding for VC and project development.</li> <li>• Familiar with protocol for contacting and working with the media</li> <li>• Delivering public programs will include curricula-related school programs, special events, workshops, outreach programs, guided tours, and site interpretation, etc. that have district and State-wide application.</li> <li>• Initiating research and making use of information such as the VC's mandate, visitor feedback, demographic trends, participation rates, staff and facility capacity, identified current and historic economic and social trends to assess, develop, and improve VC programming.</li> <li>• Optimizing use of existing facilities and identifying operational needs, modifications, repairs/maintenance, and improvements to achieve programming objectives and meet community needs.</li> <li>• Developing and administering contracts for the acquisition of goods/services and supplies required in the promotion and implementation of education and special event programs, outreach activities, guided tours, etc.</li> </ul>	

<ul style="list-style-type: none"> <li>• Supporting and assisting in the preparation of marketing and communication strategies in order to effectively promote educational and special event programming; creates, prepares, and coordinates the distribution of promotional material and communications for distribution internally and externally. This includes identifying and seeking sponsorship opportunities where appropriate.</li> <li>• Responsible for writing press releases, compiling newsletter, Write newsletter articles and other pieces as assigned.</li> <li>• Support marketing team in order to spread the organizations awareness.</li> <li>• Liaising with Corporate Communications and the media as a spokesperson for education activities and special events.</li> <li>• Managing and delivering group tours and school programs for visitors.</li> <li>• Developing and supervising the implementation of program/visitor surveys to obtain feedback on the quality and effectiveness of site interpretation, events, educational programs, tours, etc.</li> <li>• Maintaining statistical records and providing ongoing analysis of visitor patterns; performs research to identify and understand the audiences and communities the VC serves.</li> <li>• Providing monthly and yearly reports on visitor data and patterns.</li> </ul>	
<p>Position:</p> <p>Exhibition Manager (Department Head)</p>	<p>Required Qualification:</p> <ul style="list-style-type: none"> <li>• Master degree in Arts, Architecture, Graphic Design or related to the museum studies.</li> <li>• Experience in curatorial activities, exhibition design, exhibition fabrication and production, model-making and/or media in a museum or cultural attractions.</li> <li>• Knowledge of specifications and nature of materials used for displays and conservation technique and practice.</li> <li>• Ability to plan and design special exhibitions including audio-visual and interactive techniques.</li> </ul>
<p>Job duties and responsibilities:</p> <ul style="list-style-type: none"> <li>• Assisting the Deputy Director (Edutainment) in conducting his/her duties as described above.</li> <li>• Conceptualization, planning and preparation of annual and mid-term exhibition plan with Advisory Committee; review periodically and present the special and thematic exhibition concept as and when required.</li> <li>• Development and management of exhibitions and audio-visual programming, activities, materials and events which attract and serve a wide range of audiences</li> </ul>	

including school children.

- Liaison with exhibition officer and fabricator, technical programme suppliers and artists.
- Monitoring the overall functioning of processes/operations, identifying improvement areas and implementing adequate measures to maximize customer satisfaction level.
- Develop research exchange program or bilateral agreements with similar institutions in and outside India in order to understand and further implement best practices.
- Creating exhibition and public programmes.

Further details of other VC staff are shown in Appendix.

The areas concerning research and conservation activities and their related training and educational programmes, designated ASI staff will manage and assume the related works in coordination with the Director of the visitor centre.

Therefore, from the initial and preparatory stage, ASI staff should also be a member of the MTDC Preparation Office and create a team working mechanism prior to opening of the visitor centre.

#### **4.5.4. Staff training plan**

Training and development can help visitor centre business to effectively use employee labour, provide new opportunities to improve their skills and increase employee satisfaction with their jobs and working conditions.

It is also important to develop visitor centre management skills such as for business owner, events organizer and programme implementer or manager.

In order to integrate actual implementation activities with the training component, it is necessary to assess the actual situation and operational needs as well as the operational objectives of each expertise. Consequently an objective statement defining the requisite operational results and output to be arrived at will be established by consensus of all involved parties.

In order to implement the operational plan, Organization/Human Resources Development Specialist and Training Programme Specialist should be employed by MTDC and will act as a coordinator assisting MTDC on site for a designated period of time. At the same time, this Training Programme Specialist will assess the recruited staff, to identify their training and awareness needs as well as to plan for seminars, workshops, domestic and overseas technical visits and necessary implementation activities to take place for this purpose. The MTDC's HRD Division will be assisted and supported by these specialists throughout the above designated period of time.

Fundamental conditions of the above described methodology are the scheduling of staffing, timing of domestic and overseas technical visits and progress of implementation activities. In

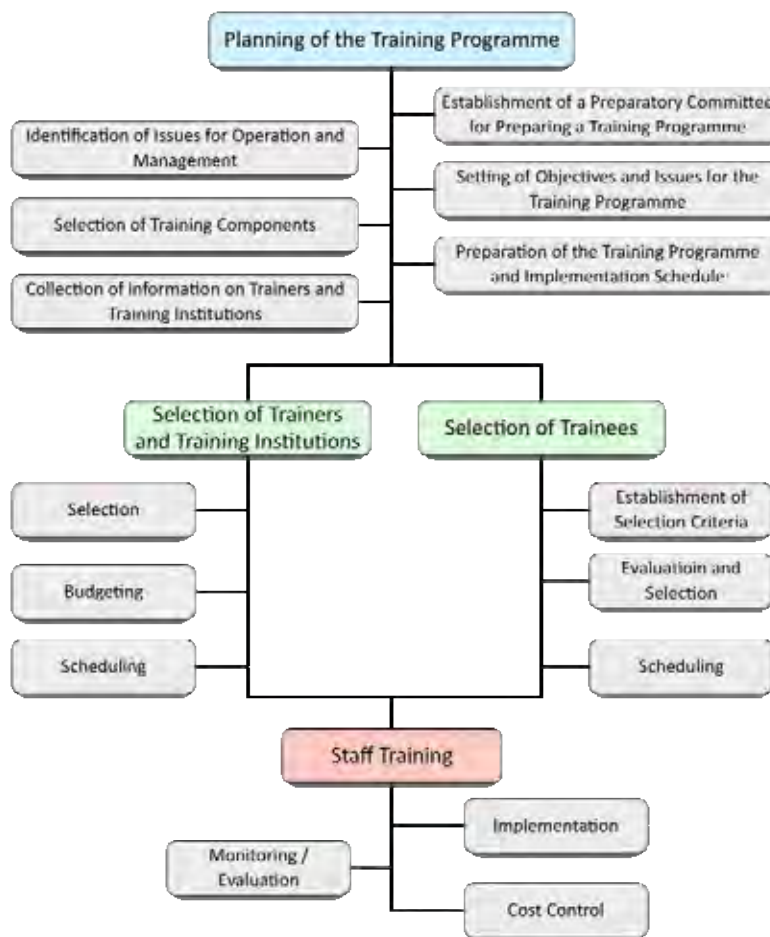


other words, the training programmes to be implemented overseas will need to be scheduled in conjunction with the progress of the implementation activities in order to maintain availability necessary staff for the specific tasks and management.

This methodology is proposed is in line with the declared objectives of the visitor centre in terms of operation set-up and process which is intended to lead towards sustainability and continuation into the future with ever evolving improvement and development institutional functions.

Figure 4-9 shows a typical flow of preparing training programmes.

Depend upon the capability, knowledge, qualification and work experience of staff, the existing courses of visited institutions can be utilized, however as mentioned above, the level of services to be delivered and type of functions to be adopted by the visitor centres have to be determined prior to the employment of staff for visitor centres.



**Figure 4-9 Typical flow of preparing training programmes**

Source: JICA Study Team

## **(1) Establishment of the organization and deployment of staff**

In order to execute the above works, the MTDC's Preparation Office needs to prepare the plans mentioned below. The organization should be established in the proper timing and staff can be deployed.

- Schedule for establishing of the operation organization
- Stuffing and Recruiting plan

Human resources training plan for the future VC staff will be prepared after reviewing the skill of each position required by the Operations Plan. MTDC with the help of specialists is required to formulate training courses with consideration to the existing human resource development programmes available in Aurangabad and Mumbai. While areas that need training will actually vary depending on the operational activities, and skills that need training are assumed to be as follows.

### **a. Management of organization**

- Management and operations of the visitor centre
- Business planning
- Programme management

### **b. Control of documents**

- Collection and registration of materials, documents and display items (including registration to the database)
- Preservation, repair and transfer of materials
- Digitization technology of materials (2D, 3D)

### **c. Research and investigation**

- Research planning for future exhibitions and events
- Research control
- Material and information evaluation and analysis techniques

### **d. Cultural communication**

- Exhibition planning and designing
- Production of digital contents
- Development of education programmes
- Exhibition guide training
- Event planning
- Cultural exchange programmes

- Development of goods

**e. Public relations**

- Publicity strategy
- MI strategy
- Strategy for web servicing
- Media production
- Linkage with media

**f. Tourism development**

- Marketing techniques
- Qualified services for visitor
- Amenity management, etc.

Employees and employers in tourism and hospitality now have many options for quality training and education in India. There are programs and short courses run by universities, public/private training providers, information and training services offer by the many business and industry associations. Significant benefits can be obtained from networking with government tourism organizations.

For the staff training programme, MTDC with the support of specialists need to establish cooperation with the existing institutions which have been providing hospitality business, museum operations and management training through the MTDC network. Possible institutions (to be discussed with MTDC) are as follows:

- Hospitality business training institutions: “Kuoni Academy (Mumbai)”, “Institute of Hotel Management (Aurangabad)”, Institute of Hotel Management, Catering Technology & Applied Nutrition (Mumbai).
- Museums which accept trainees: “National Museum (New Delhi)”, “Chhatrapati Shivaji Maharaj Vastu Sangrahalaya Museum (Mumbai),” etc.
- Academic Institutions: Dr. Babasaheb Ambedkar Marathwada University, Pune University, University of Mumbai, etc.
- NGO: INTAC
- International donors providing training programmes: JICA, UNESCO, etc

Staff of the visitor centres should take major training courses in the following two sectors. Some sample curriculums by staff category are shown in the following Tables for Tourism Administration and Museology Staff.

- Tourism Administration

- Museology

**Table 4-9 Tourism Administration Course Curriculum by Staff Category**

Course	Director	Deputy Director	Dept. Head	Section Chief	Section Staff
Human Resource Development	◎	◎	◎	◎	○
Effective English Communication	△	△	○	○	○
Foreign Language (German/ French/ Japanese)	△	△	△	△	△
Indian History Society and Culture	◎	◎	◎	◎	◎
Tourist Products of Maharashtra	◎	◎	◎	◎	◎
Geography of Tourism	○	○	○	△	△
Marketing Principles and Practices	◎	◎	◎	○	△
Financial Management	◎	◎	◎	○	△
Hotel Management	△	△	△	△	△
Quantitative Method	△	△	△	△	△
Organizational and Consumer Behaviour	○	○	◎	○	○
Management Principles	◎	◎	◎	○	△
Business Policy and Social Responsibility	◎	◎	◎	○	○
Public Relations, Promotion and Operations Management	◎	◎	◎	◎	○
Management of Travel Agency and Tour Operations	△	△	△	△	△
Ethical Legal and Regulatory Aspects of Tourism Business	◎	◎	◎	◎	○
Eco-Tourism	△	△	△	△	△
Adventure Tourism	△	△	△	△	△
Cultural Tourism	○	○	○	○	△
Destination Planning Development and Management Conceptual Framework	△	△	○	○	○
Contemporary Issues in Tourism	○	○	○	○	○
Tourism Products of India	◎	◎	◎	◎	◎
Tourism Development, Evaluation and Control Measures	○	○	○	○	△
Management Information System and Computer Application	○	○	◎	◎	◎

◎:primary essential, ○:secondary essential, △:elective

Source: JICA Study Team

It is also important for staff to be trained in these courses and practice as staff under-training during the soft opening stage, so that they can learn from the actual working situation and improve their working skills and ethics as well by reflecting the results of questionnaires for the visitor survey in their work.

A visitor survey should be given continuously even after the grand opening so that the sustainable operations with visitor-centred services and hospitality can be achieved and continuous improvements can be made to the delivery of services.

**Table 4-10 Museology courses curriculum**

Course	Director	Deputy Director	Dept. Head	Section Chief	Section Staff
Principal of museum	◎	◎	◎	◎	◎
Principal of education	◎	◎	○	○	△
Collection data in museum	◎	◎	○	△	△
Management and information in museum	◎	◎	◎	◎	◎
Life-long study	◎	◎	○	△	△
Audiovisual media in museum	◎	◎	○	○	○
Planning of exhibition	△	△	○	○	△
Practice of exhibition	△	△	○	○	△
Conservation and restoration of cultural properties	△	△	△	△	△

◎:primary essential, ○:secondary essential, △:elective

Source: JICA Study Team

Museum related activities in the visitor centre require different skills and educational background to that of tourism administration; however both museum and tourism related activities should focus on the delivery of excellent services to the visitors, i.e. follow a visitor-centred approach.

The timing of staff training should be implemented during the operational preparatory period so that by the time of the soft opening of the visitor centre, the majority of core staff are ready to serve the visitors properly. It is also important to provide a good impression to visitors to the visitor centre so they can promote the visitor centre by word of mouth.

#### **4.5.5. Contract terms**

Especially at Ajanta Visitor Centre, recruiting personnel is difficult due to its location far away from the city. In this regard, arrangement of fringe benefits is important including commuting fee, accommodation and training provisions in order to attract highly capable personnel.

It is also important to have a flexible fee scale to cope with various levels of personnel which could be recruited from some renowned private enterprises and/or those working overseas in facilities of a similar nature.

#### **4.6. Operation and Commissioning Plan for Commercial Areas: restaurants, shops, parking areas**

Economic efficiency and constraints with MTDC were reviewed for restaurants, souvenir shops, and parking lot services in the commercial area according to the agendas confirmed in the course of the 1st and 2nd Works in India. On the basis of these review results, the basic concept of outsourcing is proposed and where the economic feasibility of the service is high, the method allowing the contractor to have a high degree of freedom in operation in terms of the rates, design, material procurement, etc. would be selected.

At Ajanta Visitor Centre and Ellora Visitor Centre, the following spaces are available for commercial activities of the operations of restaurants, shops, and parking area. The outline of commercial areas, forms of operation, operation performed by MTDC or private companies, and the type of contracts with private companies are discussed below.

#### 4.6.1. Restaurants

It should be noted that additional funds required for tenant works including restaurant interior and kitchen for operation are minimal since the major work components have been already done under the AEDP (II) except installation of kitchen equipment such as freezer, fridge, stove, microwave oven, etc. While both Visitor Centres have two or three restaurants, for the recovery of the investment, private companies may be interested in only one restaurant. In that case, restaurants should be run both by private and MTDC. Since the key assumptions for restaurant operation, the forecast of visitors, is very uncertain, it might be difficult to attract private parties at the initial stage for restaurant operation to lease space.

Also, there are issues about the competition with MTDC by existing restaurants at the caves.

##### (1) AVC restaurants

There are three types of restaurants in AVC: i.e. cafeteria, restaurant, and student restaurants. Cafeteria and Restaurant have air conditioning, and Student Restaurant is situated outside with roof and ceiling fan as shown in the photographs below.

Cafeteria is located with the best view followed by the Restaurant. Student restaurant is very simple space used for student lunch or snacks with drinks from Student restaurant.



Available space and seats for restaurants in AVC are as follows:

**Table 4-11 Restaurant facilities in AVC**

	Floor area (m2)	No of seats	Kitchen space (m2)
Cafeteria	283	60	60
Restaurant	340	96	225
Student Restaurant	263	80	-
Sub-total	886	236	285

Source: CCDC

In comparison with the above restaurant in AVC, MTDC currently operates a restaurant at Ajanta cave site. The following is the information of its operational capacity and financial performance.

**Table 4-12 MTDC Ajanta restaurant facilities and financial performance**

Number of Available Seats	Number of Employees	Financial performance in 2008		
		Expenditure	Income	Profit
120	8	29.5 lakhs	31.8 lakhs	2.3 lakhs

Source: MTDC

This MTDC restaurant made a profit in 2008 primarily due to its good location right next to the ASI administration office, where it is visible and has an easy access for the visitors to/from the Caves. However the range of foods and beverages is very limited and the restaurant is not air-conditioned; hence the restaurants at AVC need work to provide more thematic menus related to the exhibition concepts to attract visitors.

## (2) EVC restaurants

There are two similar restaurants, Restaurant-1 and Restaurant-2 at Ellora visitor centre. Each restaurant has inside spaces with air conditioning, outside covered area and student open platforms as shown in the photographs below.



Available space and seats for restaurants in EVC are as follows:

**Table 4-13 Restaurant facilities in EVC**

	Floor area (m2)	No of seats	Kitchen space (m2)
Restaurant-1	217	96	-
Restaurant-2	351	121	-
Restaurant (below pergola)	338	120	-
Student (covered area)	134	40	-
Student (open area)	228	96	-
Sub-total	1,268	473	303

Source: CCDC

MTDC has been running a restaurant at Ellora cave site. The following is information on its operational capacity and financial performance.

**Table 4-14 MTDC Ellora restaurant facilities and performance**

Number of Available Seats	Number of Employees	Financial performance in 2008		
		Expenditure	Income	Profit
60	5	15.4 lakhs	13.8 lakhs	-1.5 lakhs

Source: MTDC

This MTDC restaurant did not make a profit in 2008 primarily due to its bad location after the entrance gate to the caves, not being visible, having a difficult access for the visitors to/from the Caves, and the range of foods and beverages are very limited and not air-conditioned. Hence the restaurants at EVC need work, among other things, to provide more thematic menus related to the exhibition concepts to attract visitors.

## 4.6.2. Shops

Shops in the visitor centres should be controlled and managed regarding their operational ethics, goods and products to be displayed, and importantly the sales items should reflect the thematic image of the world heritage sites, i.e. Ajanta and Ellora caves.

### (1) AVC shops

The number of available shops in AVC is only eight (8) and total floor area is 142 m<sup>2</sup>, while approximately 70 small shops are operating at the existing Ajanta Shopping Plaza and it is assumed those shops will remain as they are. Therefore conflicts with the existing shops at the shopping plaza may not be a problem in terms of relocation.



To avoid the competition with the existing shops, higher-end products sales with a thematic relation with the Ajanta caves should be considered for AVC shops.

It is also important to create new products with the coordination of local craftsmen and artists.



## (2) EVC shops

The number of available shop spaces in EVC is sixty (60) and total floor area of 916 m<sup>2</sup>. The issue of relocation and competition of the existing shops may exist.

Extensive space is provided for: 1) shopping mall area with more than 2,000 m<sup>2</sup> including covered corridors and amenities with 60 shops, and 2) craft centre area with 482 m<sup>2</sup> including central plaza, activity platform with 4 shops (floor area: 234 m<sup>2</sup>). On the access road before the Ellora cave site, there are approximately 15 – 20 small shops in operation, which is less than the available shop space at the Ellora visitor centre.



Because of the large number of small shops available for EVC, it is difficult to focus on only thematic products as in the case of AVC. EVC shops should introduce and sell diversified items available in Aurangabad district.

EVC craft centre, which is larger than the module of 60 shops and adjacent to central plaza, can be utilized as a demonstration and display space for artisans and craftsmen in rotation. Visitors can also experience making some handicrafts and art works.

### 4.6.3. Parking space

Although the available parking space in AVC is very limited (40 cars and 4 buses), the Phase-I project has already established a large parking space on the other side of AVC (240 cars: Rs. 15/car, 16 buses: Rs. 25/bus and 200 two wheelers: Rs. 5/two wheeler), so the combined parking capacity of AVC is quite large.



The available parking space of EVC is large enough for a while (142 cars, 18 ST buses, 9 tourist buses, 34 auto rickshaw, 40 taxis, 199 motorcycles and 14 shuttle buses). The opportunity for private companies in terms of size of business is larger due to the fact that the existing parking lot at Ellora cave (Rs. 15/car, Rs. 20/bus, Rs. 5/two wheeler and Rs. 2/bicycle) will be relocated to the EVC parking, private companies might be interested in the operation of EVC parking.

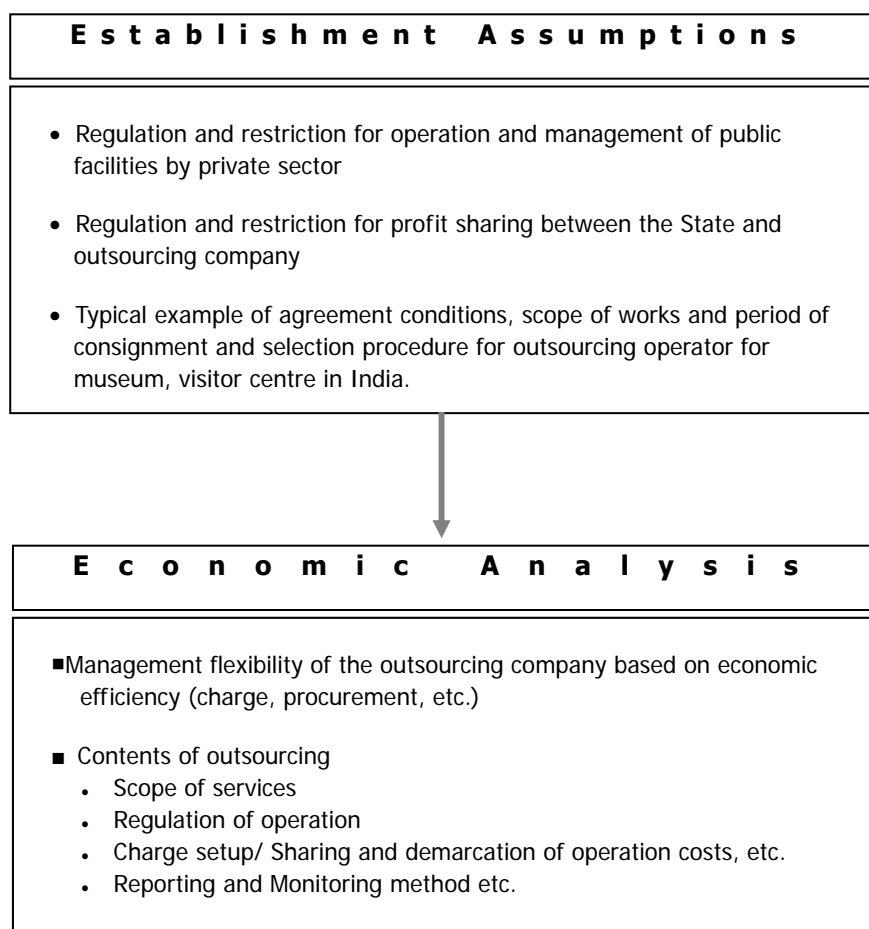


For the privatization of parking, it should be noted that the funds for shuttle bus from Ellora Visitor Centre to the cave should also be provided by private company.

Parking costs have to be kept separate from the admission fee. However, caution must be exercised in one specific area: the revenue from parking can be retained by MTDC only for land which is under its possession.

In case such parking space is given to MTDC to administer – there is a chance that a competing/free facility comes up in the vicinity, or a counter offer is made by another party to the owner of the neighbouring lands to offer better revenue sharing or lower costs. Hence, certain regulation should be made to control such activities.

The following figure shows the planning process of outsourcing the rentable spaces based on discussion with MTDC.



**Figure 4-10    Operation planning process for commercial areas**

Source: JICA Study Team

#### **4.6.4.    Form of operation**

##### **(1) Operation by MTDC or contract out**

MTDC may operate commercial area activities of restaurants, shops, and parking by themselves, or may contract with private companies for operations.

While MTDC has been operating restaurants in various areas including Ajanta and Ellora caves, MTDC's experience in restaurant operation seems not to be extensive enough compared with private companies in restaurant business. The largest number of seats of MTDC restaurant in the region is 120, at the Ajanta cave MTDC restaurant. The numbers of seats of Ajanta and Ellora caves are 236 and 473 respectively.

It should be noted that the restaurant at the visitor centres should offer higher quality and service with higher price, to be different from the current MTDC restaurant operation. The same direction should be applied to the operation of shops.

Parking operations are simpler than restaurant and shops, so it is possible for MTDC to operate parking by themselves. However, for more efficient operation required to coordinate with the shuttle services to/from the cave sites, parking operation can be contracted to private company as well.

## **(2) Forms of contract with private companies**

For long term stable operation, contracts by MTDC with private companies should be long term basis.

There are two types of contracts: management licensing contract which has been used by MTDC and profit sharing. Outlines, advantages of the contracts and the recommendation of types for restaurant, shops, and parking operations are described below.

### **a. Licensing contract**

Each year, MTDC has been offering licensing contracts for MTDC hotels and restaurants. MTDC has used standardized bidding forms and contracts for licensing contracts for 10 years. MTDC receives fixed amount of monthly fees from contracted private companies. The advantage to MTDC is stable fee flow even when operation is making loss (It is possible private company may breach the contract and will not pay the fees if loss becomes too large). MTDC also does not need to get involved in the actual operation.

On the other hand MTDC may not enjoy a share when the operation makes profit.

### **b. Revenue sharing contract**

With revenue sharing contract, revenue from operations will be shared. It should be noted revenue sharing is different from profit sharing. With profit sharing, profit which is deducting expenses from revenue is shared. Since profit sharing requires very detailed accounting verification for all the accounting items, and human resources with MTDC for the work is limited, revenue sharing is considered here.

Advantage of revenue sharing contract is MTDC can enjoy an upside of revenue. If revenue grows unexpectedly, MTDC can enjoy the share of it together with private companies. Disadvantage is that revenue varies and MTDC should verify the amount of revenue. MTDC should check not only books, but revenue items including actual sales, the number of sales.

Therefore, a computerized bookkeeping system, with input at the time of sales, is very convenient for MTDC, since verification of sales by MTDC is easy. The requirement of the investment in the system may result in lower share to MTDC.

**c. Term of contract**

While 10 years is the standard term of contract for licensing by MTDC, shorter term such as 3 years should be considered for commercial activities at visitor centres.

During the bidding process to private companies, since there is no track record of visitor centre operations, private companies tend to offer fixed fee or share of revenue based on pessimistic forecast. If the contract term is 10 years, either with licensing contract or revenue sharing, MTDC will lose the opportunity to receive higher fees.

From the private companies point of view, they need a term of contract that will allow them to recover initial investment. For restaurants, private companies make investment in kitchen, possibly some interiors, purchase of eating utensils, creation of menu and advertisement; therefore private companies probably need 10 years to recover their investment.

For, shops and parking, there are no initial investment associated with them; therefore the term could be shorter than 10 years.

In summary, the following are pros and cons of licensing contract and profit sharing contracts.

**Table 4-15 Comparison of licensing and revenue sharing**

Type of contract	Pros	Cons
Licensing contract	Fixed revenue to MTDC Limited MTDC involvement in operation Standard procedure to MTDC	MTDC receives no share of business upside
Revenue Sharing contract	Higher fees to MTDC are possible	Fees to MTDC vary MTDC should verify revenue Not standard procedure to MTDC

Source: JICA Study Team

**(3) Recommendation of types of contracts and term**

Based on the previous discussion, the following are the recommended contracts for the commercial activities at the visitor centres.

For parking operation, both licensing contract and revenue sharing are recommended. Revenue sharing is more preferable for operation since it may receive more fees and efforts required by MTDC are limited; however, new procedure for bidding should be provided by MTDC.

**Table 4-16 Recommended types and term of contracts for commercial activities**

Commercial area	Type of contract	Fee to MTDC	Term
Restaurant	Licensing contract	Fixed fee	10 years
Shops	Licensing contract	Fixed fee	2-3 years
Parking	Revenue sharing (or Licensing contract)	Share of revenue (Fixed fee)	2-3 years

Source: JICA Study Team

## 4.7. Basic Plan for Outsourcing to the Private Sector

### 4.7.1. Type of vendors for operations

Who should run the Visitor Centre, or who should be the operator of the VC?

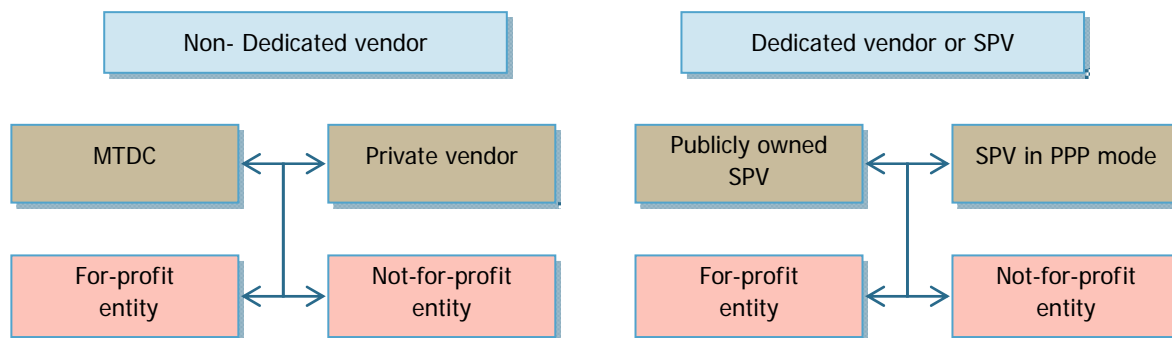
Any party operating the Visitor Centre would broadly have the following obligations, risks, concessions and rewards associated with its role:

**Table 4-17 Role of visitor centre operator**

Obligations	Risk	Concession	Rewards
Running the core operations of the Centre	Demand	Power to levy entrance fees, exhibition fees for all exhibits/ services offered by it	Proceeds from various core and value added services developed and offered by it
Offering public amenities through self or associate vendors	Demand	Power to levy rental/ proportional amount of proceeds of sales from vendors offering public amenities	Rental/ portion of proceeds from sales
Maintenance of the facilities	Performance		Capital grants (via State, only to MTDC or a not-for profit entity) for specified purposes listed as part of obligation
Ensuring environment, health and safety obligations of the facilities	Performance/ compliance		-DO-

Source: JICA Study Team

The possible groups of parties that can be considered for operating Visitor Centres include the following options:



**Figure 4-11 Vendor options**

Source: JICA Study Team

Since both the VCs have been constructed through external aid, the capital cost may be construed as capital subsidy/grant provided to the Government of India and the State Government (acting through MTDC).

### (1) Non-dedicated vendor of VC operator

In the first option, we consider a non-dedicated vendor, i.e. a party who takes up the obligations, risks, concessions and rewards of the VCs in addition to any other business that it may have. Now, assuming that the MTDC manages the VC with the above obligations, risks, concessions and rewards, and that there is a revenue surplus, this surplus would be ploughed back in its entirety to the State exchequer, since MTDC is wholly owned by the Government of Maharashtra.

However, if a private, for-profit vendor substitutes MTDC and takes over the complete set of obligations, risks, concessions and rewards, and runs the Centre such that there is a revenue surplus, part of this surplus would be paid back to the vendor as profits. In such a case, it may be construed that the assets created out of external aid are being used to generate profit for a private party. Whether this is an acceptable use of external aid is indeed debatable, and is usually prohibited by certain guidelines<sup>1</sup> dealing with external aid in India.

In both cases involving a non-dedicated vendor though, MTDC or a private vendor, there would however, be requirement of a specific project account pertaining to the VC for purposes of auditing. This in turn would mean that MTDC or the private vendor would require 'carving-out' or 'islanding' a specific sub-account which would have to be linked to the parent entity's finances. Again, being objects whose capital costs are funded out of external aid, the issue of revenue surpluses being diverted to other projects would arise, i.e. both the MTDC and the

<sup>1</sup> e.g. National Execution guidelines followed by UN agencies, issued by the Department of Economic Affairs in 1996. As per this, capital subsidy or grants can be given only to budgeted entities of the National and State Governments, or to non-Governmental organizations registered under the Societies Registration Act of 1860, the Indian Trusts Act of 1882 or an equivalent Act of a State (e.g. Kerala Scientific and Educational Societies Act, 1981). The Manual for External Aid, issued in 2001 also discourages loans to be provided to private entities, unless (i) there are extraordinary circumstances, and where it is determined by the donor they are such loan is not against the letter and spirit of the aid purpose, and (ii) they securitized with a guarantee of the State or Central Government.

private vendor (irrespective of whether being for-profit or not-for-profit) would have to ensure that revenues from this entity are not being diverted elsewhere (e.g. other cost centres, and not necessarily profits).

## **(2) Dedicated vendor or VC operator**

In the dedicated vendor option, i.e. a special purpose vehicle or SPV, the 'islanding' issue in accounts is settled, since such SPV will not have any cost centres outside the VC to re-appropriate revenue receipts to. Now, whether such an SPV should be fully owned by the public or should be a PPP entity would be governed by the same principles that would determine if a non-dedicated, for-profit private vendor should be allowed to utilize the assets to generate profit. In case of a for-profit PPP entity, part of the revenue receipts (post-tax-depreciation-interest) would be paid as dividend to the private party, which invested in the PPP entity in the first place. Hence, it may be construed as assets created using external aid are being used to generate profits/ revenues for a private sector. However, in the case of a fully public for-profit SPV, the post-tax-depreciation-interest revenues from the same would be paid back to the State/ public exchequer itself.

However, compared between this and any not-for-profit entity, the following benefits arise with respect to the latter:

- No tax overheads<sup>2</sup>
- Access to international funds directly via FCRA route (available only to non-profit entities)
- Possibility of securing National level donations through channels that make such grants partially or fully tax exempt for donors.
- Able be a recipient of grants from National or State Governments (non-competitive)
- The entity cannot be held liable or instrumental for diverting profits derived from external aid to private hands, since the entity itself is not for profit.
- There can be a number of modalities to use, depending on the flexibility required in the Governance structure<sup>3</sup>.
- Financial management & reporting discipline need not be as regimented as a for-profit entity, but it is preferable to have a sound financial management, audit and reporting regime for retaining bankability and credibility in the debt market<sup>4</sup>.

It should be noted here that a vendor who offers services from the premises of the visitor centre against payment of lease/rental or sharing a part of his business revenues with the

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<sup>2</sup> Taxes includes direct taxes or MAT, since even a loss making for-profit entity, private or public, would be liable to pay MAT. However, the entity requires filing returns separately.

<sup>3</sup> Options include: Societies Registration Act of 1860, Indian Trusts Act of 1882, Section 25 of the Companies Act of 1956 amongst others.

<sup>4</sup> It is often believed that a not-for-profit entity has lesser access to the debt market than a for-profit entity. In reality, access to the debt market is determined by ability to service debt through revenue inflows. Therefore, a not-for-profit entity with regular revenue receipts (including periodic recurring grants) can service debts better than for-profit entities with unpredictable sales/ revenue volume.



operator of VC cannot be construed as a legal entity deriving profits from external aid, since the limitation of the liabilities of assets created through external aid terminate at the level of the VC operator. The vendor to whom the space has been leased has no obligation of ensuring the sustainability of VC just that of paying a rental / portion of sales proceeds to the operator of VC.

While a detailed assessment may be necessary to determine the best form of entity that can take custody of and run the visitor centres, the hypothesis may veer towards the following:

- That the ideal form of entity would be a not-for-profit SPV, preferably incorporated under the Societies Registration Act or the Trusts Act.
- That such an entity can be formed with participation from multiple entities, viz. the MTDC, Department of Tourism, local Civil Society, representation from a local area planning authority, District Collectorate, Panchayati Raj Institution (Gram Panchayat), representatives from donors (JICA & UNESCO), ASI and a co-opted term representative from the associate vendors who are granted a medium to long-term concession to offer public services and amenities to the public from within the VC premises.
- That such entity can have independent rules, regulations, salary structure and manpower standards for the employees of VC (they may depute personnel from participating entities in executive positions).
- That such an entity can effectively bargain with the local business community to set up more effective ways of doing associative business, i.e. the offerings of one automatically create opportunities for the other.

#### **4.7.2. Types of PPP relationships**

Private sector participation may be seen from the following perspectives:

1. Adding value to the existing inventory of services offered for which neither the MTDC nor the VC management may have ready expertise and/or resources.
2. Activities which can be carried on inside the Centre on a stand-alone basis, utilising only space & infrastructure of the Centre, and maintaining their own cash flow.
3. Activities which may be construed as 'providing services' to the Centre.

Examples of the first case include:

1. Capitalising upon the surplus land available with the MTDC to offer value added services, viz. hospitality and leisure activities, that may be availed or/ perused by the tourists after they have seen the caves.
2. Development of tourist shopping & business support facilities

3. Development of alternative attractions in addition to the caves – this may be by way of utilising surplus exhibition area available at the VC.

Examples of the second case include:

1. Development of cafeteria, curio shops, souvenir shops
2. Developing and offering spaces for parking

Examples of the third case include:

1. Provision of security services to the Centre
2. Developing and maintaining audio-visual, IT and other systems for the Centre for usage by the public – e.g. a resident contract for production of media
3. Exhibition & event management services

Two examples of PPP relationships may be offered here:

Case I: Reconstructing replicas of cave paintings, production of 2D artwork, storage and handling of painting material

**Table 4-18 Example of PPP relationship (Case I)**

Activity	Reconstructing replicas of cave paintings, production of 2D artwork, storage and handling of painting material
Parties	Public: MTDC/ VC as an independently incorporated entity Private: Guilds/ associations/ collectives of workers/ crafts persons/ art houses/ professional artists (as individuals)
Role of the public party (MTDC/ VC)	Provides the space and line infrastructure to work – electricity, water, controlled conditions etc. Appoints an expert for quality control Selects content for cave paintings
Role of the private party	Develops replicas of cave paintings
What the public party gets	Assured supply of replicated cave paintings to sell to interior decoration systems, retailers, and other interested collectors.
What the private party gets	A commission of sales of the replicas of cave paintings provided by the curio-dealer to the public party
Length of the contract	Open ended – can be renewed year upon year or at more frequent intervals
Reference case example	Crafts Museum, Delhi Dilli Haat

Source: JICA Study Team

Case II: Reconstructing replicas of cave paintings, production of 2D artwork, storage and handling of painting material.

**Table 4-19 Example of PPP relationship (Case II)**

Activity	Exhibiting and selling replicated cave art, booking orders for professionally supplied interior items through curio-shop
Parties	Public: MTDC/ VC as an independently incorporated entity Private: Curio dealer/ entrepreneur
Role of the public party (MTDC/ VC)	Provides the space and line infrastructure to work – electricity, water, controlled conditions etc.
Role of the private party	Stock and sell replicated cave art, and other replicated art produced at the VC
What the public party gets	A ground rent and commission of sales of the replicas of cave paintings
What the private party gets	A significant portion (dealer's cut) Sales proceeds of the replicated art
Length of the contract	About five years of lock-in period at the outset, then extendable in steps of two years.
Reference case example	Any of the State Handloom Emporia in Delhi

Source: JICA Study Team

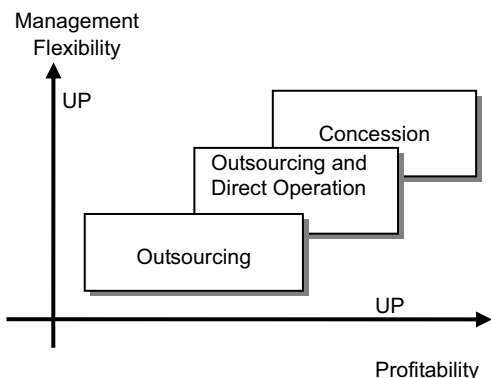
Recognizing the nature of services necessary for operation with the expected revenue/expenditure of both visitor centres, the optimum consignment pattern (services to be consigned, contract form) will be presented from among multiple options.

At the same time, the work needed for selection of the contractors will be listed up and the contents of each work will be identified. These are intended to provide the guideline for subsequent private consignment by MTDC (not including support for bidding for selection of contractors).

Note that, depending on the scale of expenditure necessary for operation and maintenance, there is a possibility that profit may not be anticipated after all during the initial period after opening. In such an event, the private consignment will be planned on the basis of a prerequisite that MTDC will compensate for the deficiency by its own fund. The basic plan, which is based on the above contents and includes action programs for various works toward private consignment of operation of both visitor centres, will be established.

For PPP (Public Private Partnership) for management of the visitor centres, it should be kept in mind that the core function of the visitor centres should remain in the control of public, MTDC. Since private sector's incentive is economical benefit and it may not go along with the core function. Having this in mind, non-core function of services necessary for operation with the expected revenue/expenditure of both visitor centres, the optimum consignment pattern (services to be consigned, contract form) will be presented from among multiple options.

The work and contents associated with selection of the operator will be presented.

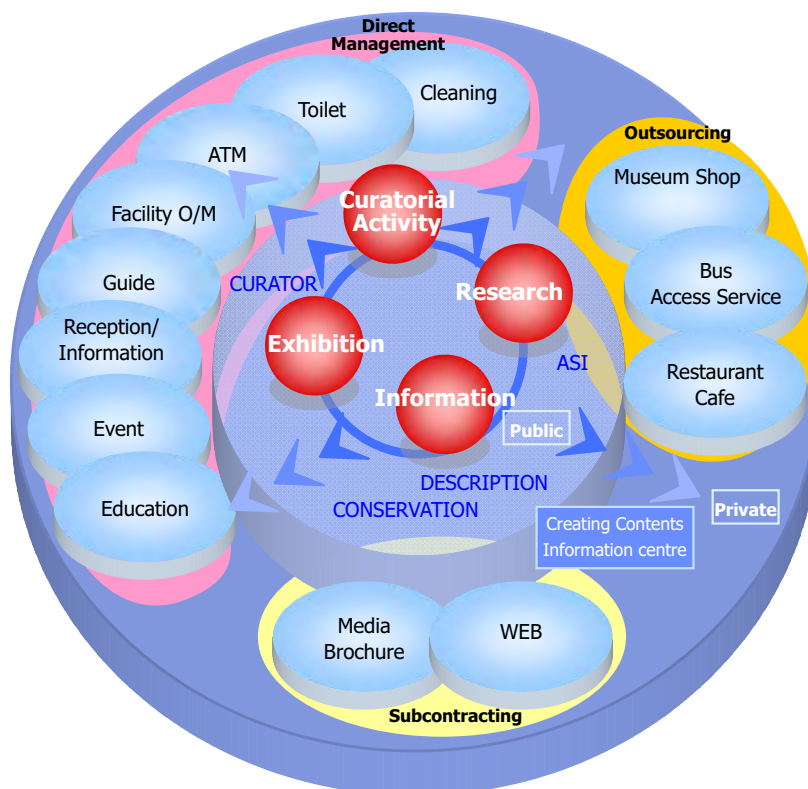


	Operations	Managed by (including Finance)	Owned by
Outsourcing	Private	MTDC	MTDC
Mixture of Outsourcing/Direct Operations	Private	Private /MTDC	MTDC
Concession	Private	Private	MTDC

**Figure 4-12 Alternatives for PPP**

Source: Study Team

Figure 4-12, Figure 4-13 shows graphically the feasibility of private tie-up on the basis of existing functions and services to be provided of the visitor centres. Grouping was attempted by separating the business type possible by the direct management of MTDC, those to be outsourced as service assignment, and those to be contracted for each operation. However, confirmation and review will also be made on the feasibility of the concession agreement for comprehensive implementation of the overall operation and maintenance.



**Figure 4-13 Possibility of collaboration with private sector at the visitor centre**

Source: JICA Study Team

Concerning private tie-up, on the other hand, confirmation and review will be made of the CSR activities of Indian and Foreign enterprises for regional residents (particularly the poor), as well as the possibility of cooperation in the BOP business according to the basic policy for private tie-up as proposed by MTDC.

### 4.7.3. Exploring PPP options for the visitor centre

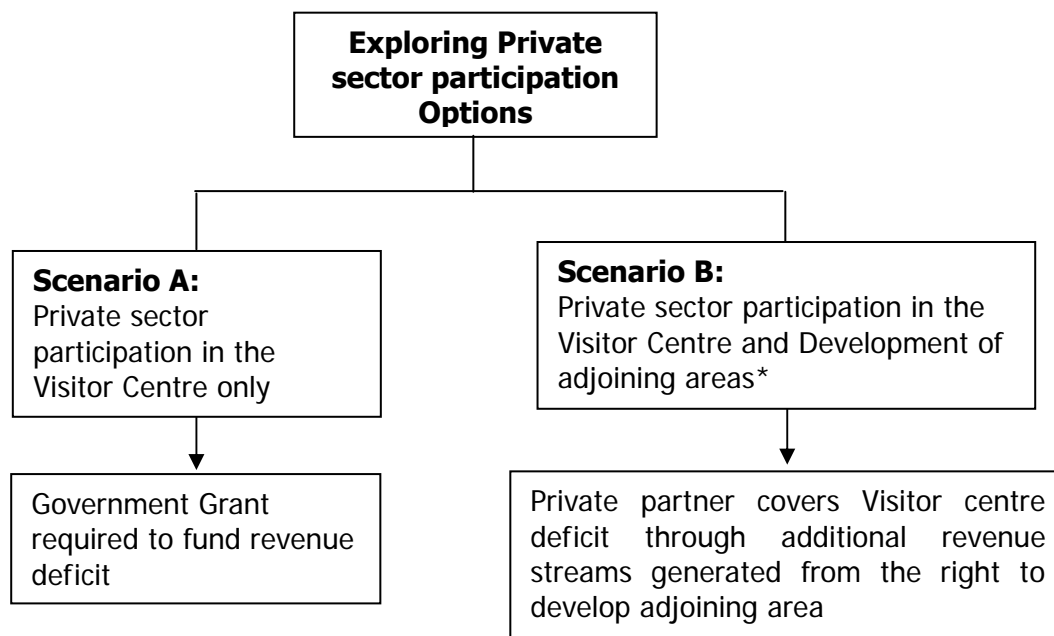
Ideally, the scope for Public private partnership should have been explored at the project inception stage. However, in the context of current engagement, the scope for public private partnership is limited due to the following project characteristics:

#### Project characteristics limiting PPP options

- Most of the construction related activity is already complete
- The project involves a significant operating expenditure component only
- From risk perspective the scope for risk sharing is mostly limited to Operations & Maintenance risk.
- Based on a preliminary assessment of Operating costs and Revenues, the project is likely to have a significant revenue deficit.

#### Exploring private sector participation options for the Visitor Centre

Considering the project characteristics, two options for private sector participation are formulated and summarized as follows:

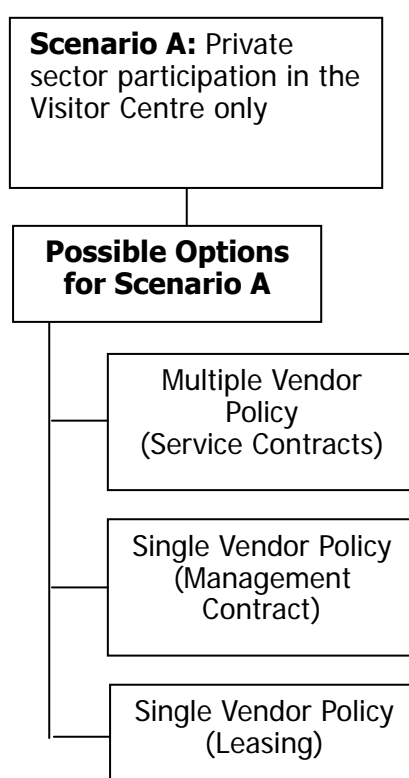


**Figure 4-14 Possible options for private sector pParticipation**

Source: JICA Study Team

### (1) Scenario A: PPP options

- Under Scenario A, scope for private sector participation is limited to deriving efficiencies related to service delivery since most of the construction related activities are completed.
- Based on a preliminary assessment of Operating costs and Revenues, the project is likely to have a significant revenue deficit.
- Thus, adequate provisions will have to be made for a government grant to finance the revenue deficit.
- In each of the options of Scenario A, security service provider may be considered as an independent contract: this can provide an added check-and-balance in the robustness of the security system.



**Figure 4-15 Flow of PPP option (Scenario A)**

Source: JICA Study Team

**Table 4-20 Key characteristics & risk of PPP options (Scenario A)**

Possible PPP Options	Key characteristics	Risk
<b>1) Services contract (Multiple vendor policy)</b>	Multiple fixed fee contracts	
	Public party collects the incomes generated through operations of VC	Commercial / demand risk borne by the public sector
	All investment decisions rest with the public sector	
<b>2) Management contract (Single vendor policy)</b>	One Fixed fee contract for O&M of the entire VC	
	Incentive based fee contract also possible.	
	Public party collects the incomes generated through operations of VC	Commercial / demand risk borne by the public sector
	All investment decisions rest with the public sector	

<b>3) Leasing</b>	One Fixed fee contract for O&M of the entire VC	
	Private party collects the incomes generated through operations of VC	Commercial / demand risk borne by the private sector
	Public party receives a Fixed Lease payment from the private sector	
	Private party may take investment decisions related to targeted capital improvements	

Source; JICA Study Team

### **Scenario A: PPP options suitability assessment**

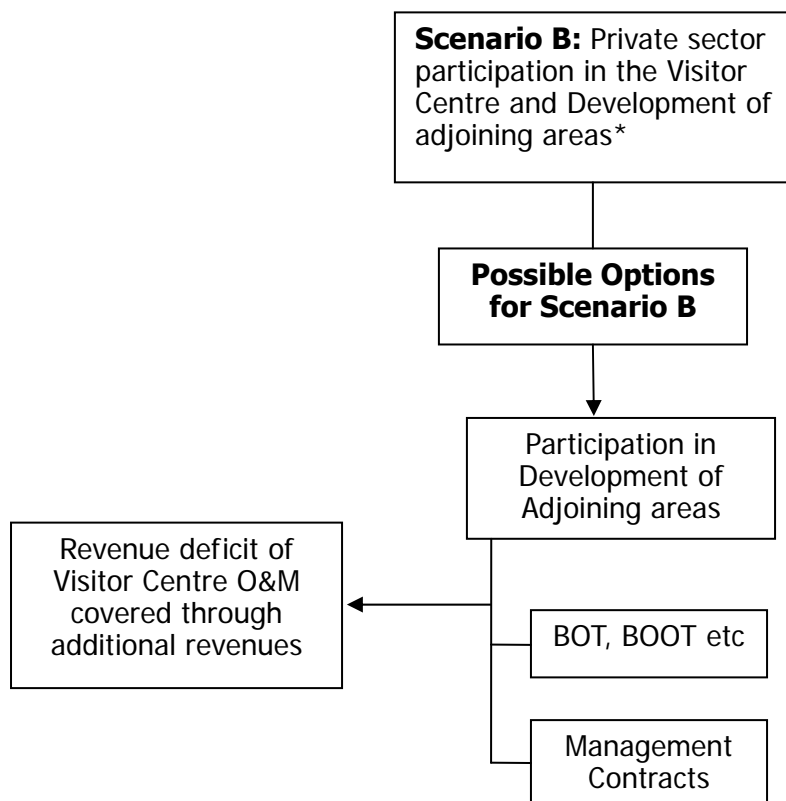
- Considering the above characteristics, following table assesses the suitability of options discussed above:

The envisaged revenue deficit constraints the suitability of the Leasing option as the private party might not be willing to bear the commercial / demand risk in this context. Thus only options 1 & 2 above may be explored further.

### **(2) Rationale for scenario B:**

Considering that the preliminary assessments indicate a significant revenue deficit in case of Scenario A above, MTDC can explore the possibility of meeting the revenue deficit by providing additional rights to the private partner (responsible for maintenance of the visitor centre) in development of the adjoining area owned by MTDC.

**\* Adjoining Areas:** The adjoining area refers to the area owned / proposed to be owned by MTDC for planned tourism and hospitality development activities near the Ajanta and Ellora sites (Approximately 270 hectares for Ajanta and 30 hectares for Ellora).



**Figure 4-16 Flow of PPP option (Scenario B)**

Source: JICA Study Team

Based on the financial forecasts, the quantum of land to be made available for permissible commercial development can be determined. In this context the options for private sector are multiple:

- Design build operate specific project over a designated area patch based on long term lease
- Management contract for developed facilities for a designated area (e.g. for 60 hectares within Ajanta owned area)
- Develop and market the entire land area/designated land area based on a long term lease

The revenue deficit in visitor centre O&M can thus be covered through additional revenue streams generated by way of participation in the adjoining areas. The specific “obligations” and “concessions” for the private sector participation will have to be worked out based on the financial projections.

Integrating the development of adjoining area (whole or part of it) with the visitor centre management plan provides additional scope for private sector innovation in the management of visitor centre.

Furthermore, the nature of activities planned in the adjoining areas has to be both regulated and harmonized with the VC. Scenario B provides an added advantage in this regard.



### (3) Comparative assessment of scenarios A & B:

**Table 4-21 Advantages and disadvantages (Scenario A)**

Advantages	Disadvantages
Ease of implementation in the short run	Government grant required to fund Revenue deficit.
Simpler contracting structure.	Lack of incentive for Marketing and Promotion of Visitor centre.
Simpler management of operations.	Demand risk borne by the government sector.
Separate legal entity not a necessity.	Limited scope for private sector innovation in the existing visitor complex.

Source: JICA Study Team

**Table 4-22 Advantages and disadvantages (Scenario B)**

Advantages	Disadvantages
Potential for covering Revenue deficit of visitor centre O&M through additional revenues generated from adjoining areas	Difficult implementation in the short run.
Increased incentive for Marketing and promotion of visitor centre due to integrated development of adjoining areas.	Complex contracting structure.
Viability of Visitor centre potentially gets enhanced including through increased scope of private sector innovation.	Separate legal entity may be required.
Demand risk borne may be shared by the private partner.	Increased complexity due to regulatory clearances.

Source: JICA Study Team

#### **Conclusion:**

- The ease of implementation options under Scenario A seems preferable; however from a long term perspective Scenario B might provide additional benefits although it also requires greater collective commitments.
- Options listed above under Scenario A and B may be discussed with key stakeholders including MoT, MTDC, ASI, and JICA.
- One scenario may consider Option A to be the practical focus initially, and in a subsequent phase after 2-3 years may consider planning for adaptation of policy Scenario B.

#### **4.7.4. Alternatives for PPP framework focussed on immediate/short term solutions**

In addition to the above, there will be three (3) alternatives in PPP framework:

- PPP with project management infrastructure development specialist agencies
- PPP with immediate and direct tendering of facilities manager entities
- Direct management by MTDC

### **(1) Appointment of project management infrastructure development specialist agencies**

These are agencies that typically engage in project development and oversight for infrastructure projects including roads, bridges, commercial facilities, etc. Some of them (e.g. such as ILF&S and IDFC) are also known to form JVs with government agencies.

One of their modus operandi is to be retained under an arrangement whereby, they engage in programme management and handholding and recover costs and charges from successful contractors, developers, vendors and bidders. The objective of minimizing cost to government /public agency is hence attempted to be achieved in this manner.

However, such models have not become universalized nor predominant under the Indian PPP /management procurement arrangements and have been attempted for “hard” or physical infrastructure and not for integrated infrastructure involving art, culture, heritage, museology and related interpretation, performance arts activity development, branding and promotion etc.

By intrinsic definition call for the commercial viable opportunities and are also at the pre-construction stages usually practiced:

- The visitor centre intrinsically in the near future is envisaged to face a commercial deficit.
- Further, the construction activities are already undertaken in most part.

In conclusion, these agencies typically do not have in-house skill sets relating to museology, art, etc. and these are critical drivers for the longer term sustainability for the visitor centre concept, and branding especially if the Government intends promotion to make the Ajanta-Ellora Experience on near par with Taj Mahal.

This option, if adapted, may provide short term convenience of arrangements, coordination, etc. from the host MTDC perspective, but could lead to a suboptimal arrangement if the above is not addressed.

### **(2) Immediate and direct tendering of facilities manager entities**

Facilities managers can quickly be tendered for and appointed to provide quick support for the visitor centre becoming operational. However, without appropriate handholding and support provided by MTDC in-house, the facilities manager activities will not be integrated into the overall strategy of the visitor centre as it evolves for soft opening and grand opening.

Facilities Manager and assessment and appointment needs to be integrated into the build up of Visitor Centre Management Plan and hence it needs to be harmonized with the handholding support that is imperative to lead to the opening of the visitor centre. Facilities Manager, without integration into an overall handholding plan could be a suboptimal solution, although in the short run it may give appearance of activity and forward movement.

Based on discussions with MTDC, given their institutional arrangements, priorities, available budget etc., MTDC would face constraints in providing the required manpower handholding support to the Facilities Manger by themselves.

### **(3) Direct management by MTDC**

While this is an alternative, based on discussions with MTDC senior professionals, given the existing realities relating to capacity, and multiple tasks being assigned to key HO professionals, it is difficult to provide complete and dedicated staff from a handholding perspective.

MTDC can manage and provide a platform where handholding support is provided and MTDC can be part of such a system, however given the nature of the project and the expectations and requirements for establishing the foundation and building on the foundation for long term branding and institution building for the visitor centres rather than attempting alone, MTDC will be greatly benefited from the external assistance which the Study Team suggested in Chapter 5.

## **4.8. Financial Plan**

On the basis of recent trends in the number of visitors, etc. to neighbouring groups of historic sites, the expected number of visitors to both visitor centres were estimated, and the revenue/expenditure plan for both visitor centres was prepared by taking into account the revenues, such as the expenditures, admission fees, lease/rental, etc., necessary for their operation and maintenance and personnel costs. For variable factors, such as the number of visitors, etc., both an optimistic and pessimistic scenario was prepared for sensitivity analysis. When the result shows a deficit balance, the level of cross subsidy was estimated.

In this Financial Plan, first the base case is prepared based on the operations of the visitor centre discussed earlier. One year cashflow shows the outline of revenue, expenditure, and profit or deficit. In case of deficit, financial support should be provided. 10 years cashflow is prepared to see the change due to the visitor growth or cost escalation.

Sensitivity analysis by changing the assumptions of future visitor growth and its result is examined.

The following is a list of the major revenue and expenditure items; the details are explained below:

- Revenue
  - Admission revenue
  - Rent revenue for restaurant, shops, and parking
  
- Expenditures

- Personnel expenses
- Maintenance cost
- Utility cost

#### 4.8.1. Base case assumptions (revenue)

The following are the assumptions of revenue and cost items for the base case.

The major revenue sources of visitor centres are from (1) admission and (2) fees for the commercial space. Revenues from commercial area are in the form of rent for space or shared revenue. The rent for restaurants and shops operations and revenue sharing for parking is assumed.

##### (1) Admission revenue

Admission revenue is calculated based on the number of visitors to the visitor centres and tariff.

##### a. Visitors to caves

It should be noted the number of visitors for the calculation of revenue is the visitors to the visitor centres, which will be percentage of the number of visitors to the caves.

The originally assumed number of visitor arrivals in 2010 is shown below. Actual visitors are approximately one third of the original estimate. Visitors have not increased as expected.

**Table 4-23 Original projected visitor arrivals in 2010 and actual**

		(Unit: person)	
		Ajanta	Ellora
Original visitors estimate (2010)		1,284,000	1,612,000
Actual visitors (2008)	Total	319,427	592,661
	Local	290,062	574,370
	Foreigner	29,365	18,291

Source: JICA Study Team based on MTDC Data

The originally projected number of visitor arrivals in 2010 was overestimated comparing to the actual number of visitor arrival in 2008 at Ajanta and Ellora.

Revenue assumption is based on the forecast of visitors in 2011, which is assumed year 1 starting operation. To forecast the visitors in 2011, the following growth rates (based on the historical growth from 2001 to 2008) are basically applied starting from year 2008.

**Table 4-24 Visitors growth rates**

		Ajanta	Ellora
Actual average growth rate (from 2001 to 2008)	Local	0.3%	3.8%
	Foreigner	9.5%	8.3%
Growth rate assumption (%/year)	Local	0.3%	4.0%
	Foreigner	5.0%	5.0%

Source: JICA Study Team based on MTDC Data

It also should be noted that only a portion of visitors to the caves will visit visitor centres. The following table summarizes the % of cave visitors who visit the visitor centres.

Visitors to Ajanta cave have less time to spend at the visitor centre because of its location. There are no major accommodations near Ajanta cave and the cave is approximately 3 hours away from Aurangabad, which is the nearest large city.

Accordingly, different percentages are assumed.

**Table 4-25 Assumed percentage of visitor centre visitors**

	Ajanta	Ellora
% of VC visitors/cave visitors	30%	40%

Source: JICA Study Team

The following table shows the number of visitors to the caves and the visitors to the visitor centres based on the above assumptions. While no data is available for children under 15 years old and student groups at the cave, it is assumed the number of children under 15 years old is 20%, students groups are 15% of local visitors. The number of operation days per year is assumed as 312 days.

**Table 4-26 Daily visitors to caves and visitor centre**

Assumptions	Ajanta	Ellora
Total visitor to Cave (person/day)	1,047	2,139
Local	938	2,071
Foreigner	109	68
Total visitor to visitor centre (person/day)	413	1,139
Local	281	823
Children under 15 years old	57	165
Group student	42	124
Foreign	33	27

Source: JICA Study Team based on MTDC Data

**Table 4-27 Operation days per year**

	Ajanta	Ellora
Operation days per year	312 days	

Source: JICA Study Team based on MTDC Data

## b. Tariff

Currently, different tariffs are applied to locals and foreign visitors for the caves as shown below. Considering ASI may raise the tariff in near future (we understand it has been discussed officially) and visitor centres exhibitions are unique, the following tariffs are assumed for the base case. Visitor Centres will charge tariff for Children under 15 years old with adults and group students.

**Table 4-28 Tariff: Current and base case assumption**

(Unit: Rs./person)

		Ajanta	Ellora
Current	Local	10	10
	Children under 15 years	Not charged	Not charged
	Group student	Not charged	Not charged
	Foreigner	250	250
Assumption	Local	50	50
	Children under 15 years	25	25
	Group student	20	20
	Foreigner	250	250

Source: JICA Study Team

## (2) Revenues from commercial area (Restaurant)

As the operation of restaurants, shops, and parking will be contracted to private companies, revenue will be in the forms of rents for space and the share of operation income. (It should be noted that the word “revenue” is used for revenues to MTDC, and “income” is used for the revenue of commercial activities.) According to the recommendation in the section of “Operation and Commissioning plan for commercial area”, it is assumed that rent revenues come from restaurants and shops and shared income from parking.

In order to receive rents or shared income from private companies, profits should exist with commercial activities. The feasibility of the operations of restaurant, shops, and parking are examined in the following way.

### a. Steps for the calculation of rent

Rent which keeps restaurant operation profitable is decided in the following ways.

- Operation income, based on the number of seats, average spending per seats incorporating turn over ratio. It is assumed restaurants are free to use, there fore all cave visitors are accessible. Turn over ratio is calculated based on forecast number of users divided by the number of seats.
- Operating cost before rent payment, including the following is calculated:

- Personnel cost. It is calculated based on the required number of personnel and the cost to company per person.
- Material cost and other expenses. They are assumed to be 30% of operating income.
- Operating profit before rent and income share payment is calculated from the operating profit before rent and income share.
- Also, the return on the initial cost for kitchen and opening is verified to exceed 10% (i.e., if the term of lease is 10 years, 10% per year is the minimum).

3% escalation of rents is assumed.

## **b. Income**

Income to visitor centres is calculated in the following way.

- Number of restaurant users is estimated. Since anybody can go to the restaurant, the number is based on a percentage of cave visitors.
- Based on the number of restaurant users and the number of restaurant seats, seat turnover ratio is calculated.
- Based on the assumption of daily spending per seat per day at different restaurant, average daily spending per seat is calculated.
- Based on the above, restaurant operation income is calculated. The following table summarizes the assumptions.

**Table 4-29 Assumptions for restaurant incomes**

	Ajanta				Ellora			
	Cafeteria	Restaurant	Student Eating Area	Total /weighted average	Restaurant 1&2 (covered)	Restaurant 1&2 (outside)	Student Eating Area	Total /weighted average
Daily cave visitor <sup>①</sup>	-	-	-	1,047	-	-	-	2,139
Daily visitor centre visitor <sup>②</sup>	-	-	-	413	-	-	-	1,139
% of cave visitor use restaurant <sup>③</sup>	-	-	-	30%	-	-	-	40%
The number of seats <sup>④</sup>	60	96	80	236	217	120	136	473
Turn over (times) <sup>⑤</sup> = (① * ③)/④				1.3				1.8
Daily spending per seat (Rs./seat/day) <sup>⑥</sup>	200	150	50	129	100	80	30	75
Average daily spending per seat (Rs./seat·day) <sup>⑦</sup> = ⑥ x ⑤				168				135

Source: JICA Study Team

The average daily spending is higher because of the higher quality of food and delivery of services of the restaurants at the visitor centres compared with the existing MTDC restaurant.

**Table 4-30 Existing MTDC restaurants**

	Ajanta	Ellora
Average daily spending per seat (Rs./seat/day)	85	73

Source: JICA Study Team

### c. Cost

Personnel cost is calculated based on the number of people and with the private sector pay-scale assumptions. The number of personnel including kitchen is calculated using the ratio of one employee per 15 seats. This is same ratio as MTDC Ajanta restaurant. The number of employees may not be enough for full service restaurant, however it should be enough for the buffet service.

Since student restaurant areas are mainly for picnics, the seats of student restaurant area are excluded from the calculation. One manager each for Ajanta and Ellora visitor centre is assumed.

Material and other expenses are assumed at 30% of operating income.



**Table 4-31 Assumptions for restaurant costs**

	Ajanta	Ellora
No of seats excluding student restaurant (Adjusted by seat occupancy %)	156	337
Seats/no. of personnel	15	
Number of personnel (Manager/others)	11 (1/10)	23 (1/21)
Personnel cost per person (Manager/others) Rs. lakh/Year	5/1.4	
Material and other cost (% of Income)	30%	

Source: JICA Study Team

#### d. Initial investment

The initial cost for restaurant includes kitchen equipment such as refrigerator, microwave, tableware, consumables, advertisement cost, and personnel cost for training before opening.

The return on the initial investment cost will be checked to see if operations can recover the investment. Since the restaurant interior and tables are provided to private companies, initial investment is smaller than usual, therefore the return on the initial cost should be higher than usual.

**Table 4-32 Assumptions for initial cost for restaurant**

	Ajanta	Ellora
Kitchen Floor area (m <sup>2</sup> )	206	303
Unit cost (Rs. / m <sup>2</sup> )	10,000	
Initial cost for kitchen etc. (Rs. lakh)	20.6	30.3

Source: JICA Study Team

#### e. Operating income, cost, and rent

The following table summarizes the first year operating income and costs other than rents, and the rents to private companies. The rent is the rent revenue to MTDC.

It shows return on the initial cost for kitchen etc. exceeds 10%/year.

It is assumed rent includes utility cost since separate utility meters for restaurants are not available originally.

For comparison purpose, the average annual rent for MTDC Ajanta restaurants is shown in the table.

**Table 4-33 1st year income, expenses, and rent and rents of Ajanta restaurants**

(Unit: Rs. Lakh)

	Ajanta	Ellora
Operating income	123.3	198.7
Operating expenses excluding rent	56.6	91.1
Rent Expenses (MTDC rent revenue)	53.2	76.6
Total Expenses	109.7	136.8
Operating profit	13.6	31.0
1 <sup>st</sup> year return on initial cost (%)	66%	102%
	MTDC Ajanta view point	
Annual average rent	31.2	

Source: JICA Study Team

### (3) Revenues from commercial area (Shops)

Different rents for shops are applied to local shops and other shops. There is no space for local shops for Ajanta visitor centre and there are spaces for 60 local shops at Ellora visitor centre.

For local shops at Ellora visitor centre, the same rent of Rs. 500 per month currently adapted to Ajanta local shops is applied.

#### a. Operating income

Operating income of shops is calculated by the number of the visitors (local and foreigner) to the visitor centre and adjusted by spending per customer. The adjusted spending per customer is calculated by multiplying average purchase amount per person and percentage purchaser out of visitor centre visitors.

Since it is likely visitors purchase at 60 local shops at Ellora, in that sense craft centre competes with them, 20% of visitors will purchase at the craft centre, while 40% is assumed with Ajanta visitor centre where there are no local shops inside the building.

3% per year increase in average spending is also assumed.

**Table 4-34 1<sup>st</sup> year income assumptions for shops**

	Ajanta	Ellora (craft centre only)
Total visitor to visitor centre (person/year)	98,002	265,417
Local	87,804	256,947
Foreigner	10,198	8,470
Average spending per customer		
Local	50	50
Foreign	500	500
% of customer/visitors (Local/Foreigner)	40%/40%	20%/20%

Source: JICA Study Team

## b. Cost

It is assumed that each of the following rooms will have 1 person for operation and costs of goods and other expenses are assumed 30% of income. The 60 spaces for local shops are not included here.

**Table 4-35 Assumptions for cost for shops**

	Ajanta	Ellora (craft centre only)
Total no of rooms for shops	8	4
Leased rooms	8	4
The number of personnel	8	4
Personnel cost (Mgr/others) Rs. lakh/Year		1.4
Goods and expenses (% of Income)		30%

Source: JICA Study Team

## c. Operating income and rent

Rs. 6,000 per year or Rs. 500 per month per shop, which is similar to the rent for existing shops at Ajanta shopping plaza, are used for 60 local shops at Ellora visitor centre.

Currently, approximately 70% of spaces for local shops at Ajanta shopping plaza are leased, so the same rate is used for the case of Ellora visitor centre.

**Table 4-36 Assumptions of rents for local shops**

	Ajanta	Ellora
No of local shops at visitor centres	0	60
Leased rooms	-	42
Rent per shop (Rs./year)	-	6,000
Total rent for local shops (Rs. lakh/year)	-	2.5

Source: JICA Study Team

The operating income, expenses, and rents amount for shops at Ajanta visitor centre and craft centre at Ellora are summarized below:

**Table 4-37 Operating profit for shops**

	Ajanta	Ellora
		(Unit: Rs. Lakh)
Operating income	39.9	35.2
Operating expenses excluding rent	23.2	16.2
Rent for local shops	0	2.5
Rent for Other shops	8.5	10.6
Total rent (MTDC rent revenue)	8.5	13.1
Total Expenses	31.7	26.8
Operating profit	8.2	8.4

Source: JICA Study Team

## (4) Revenues from commercial area (Parking)

Revenue comes from a share of parking operation income..

It should be noted that parking operation at Ajanta visitor centre is combined with the existing parking operation at the site. Therefore, the existing parking fee and amenity fee will be considered a source of revenue to the visitor centre.

Revenues are calculated based on the assumptions of capacity for vehicles, tariff, and utilization rate. Current tariff are assumed for the combined operations for Ajanta and higher tariff for Ellora is applied.

Amenity fee is calculated Rs. 7 per visitor to the cave and 3% per year escalation is assumed for both parking fee and amenity fee.

Tariff for Shuttle bus at Ellora visitor centre is assumed to be set to cover the initial cost and operating cost, therefore the tariff is not considered as a source of income of parking operations.

#### a. Income

Since Ellora cave is easily accessible, visitors tend to stay shorter than Ajanta cave. Accordingly, different capacity utilization is assumed as shown below.

**Table 4-38 Ajanta parking**

	Capacity/Number	Fees/day	Capacity Utilization
Cars	240	Rs. 25	90%
Buses	16	Rs. 100	70%
2 Wheeler	200	Rs. 10	50%

Source: JICA Study Team

**Table 4-39 Ellora parking**

	Capacity/Number	Fees/day	Capacity Utilization
Cars	142	25	100 %
Buses	32	100	100 %
2 Wheeler	199	10	100 %
Taxi, Auto Rickshaw	74	-	100 %

Source: JICA Study Team

It should be noted there is no tariff increase per year is taken into consideration for the base case based on the assumption that it may be difficult to raise them again soon.

#### b. Cost

a) Personnel cost

**Table 4-40 Personnel cost**

	Ajanta	Ellora
No. of personnel	10	5
Personnel cost per person( Rs. lakh/Year)	1.4	1.4

Source: JICA Study Team

### c. Income share

Based on the above income and cost, the shared income payable to MTDC is calculated.

**Table 4-41 Income share**

(Unit: Rs. Lakh)

	Ajanta	Ellora
Total income of parking (amenity fee)	46.3	27.3
Share (%)	40%	40%
Amount to MTDC	18.5	10.9
Cost	16.1	8.1
Operating income	11.7	8.3

Source: JICA Study Team

### 4.8.2. Base case assumptions (expenditures)

#### (1) Personnel cost

Based on the planned organization of the visitor centre, personnel cost including benefits, etc. was calculated. Different costs per person are used for MTDC and private sector. The following pay-scale of MTDC reflects the regulation of C6, which raises government official's salary level.

While the timing of the application of C6 to MTDC is uncertain, it is assumed that the pay-scale of MTDC be revised at the time of visitor centre opening.

**Table 4-42 Ajanta visitor centre organization**

	Director	Skilled Staff	Service Staff	total
1.Management	3			3
	MTDC	1		1
	Private	2		2
2.Administration				
① General affairs/Accounting		6	8	14
	MTDC	6	0	6
	Private	0	8	8
②Facility		8	24	32
	MTDC	0	0	0
	Private	8	24	32
3.Public relations		5	8	13
	MTDC	0	0	0
	Private	5	8	13
4Exhibition/Education		6	12	18
	MTDC	0	0	0
	Private	6	12	18
Total	3	25	52	80
	MTDC	1	6	7
	Private	2	19	21

Source: JICA Study Team

**Table 4-43 Ellora visitor centre organization**

		Director	Skilled Staff	Service Staff	total
1.Management		3			3
	MTDC	1			1
	Private	2			2
2.Administration					
① General affairs/Accounting			6	8	14
	MTDC		6	0	6
	Private		0	8	8
②Facility			8	24	32
	MTDC		0	0	0
	Private		8	24	32
3.Public relations			5	8	13
	MTDC		0	0	0
	Private		5	8	13
4Exhibition/Education			5	8	13
	MTDC		0	0	0
	Private		5	8	13
Total		3	24	48	75
	MTDC	1	6	0	7
	Private	2	18	48	68

Source: JICA Study Team

Although the common understanding of the pay-scale for the managerial staff in public sector is considered to be around Rs. 7.5 lakhs/year after C6 application, the pay-scale of Director for the visitor centre has been made slightly higher than this norm in order to attract competent personnel who will deal with multi-disciplinary roles including business administration, accounting, museology and curatorial capacities. It is also important to provide attractive incentives since the working and residing areas for those assigning for the visitor centres will be located away from the cosmopolitan urban setting like Mumbai.

**Table 4-44 Payscale / cost to company**

(Rs. lakh / year)			
	Director	Skilled staff	Service staff
MTDC (after C6)	8.5	3.0	1.2
Private sector	11.0	5.0	1.4

Source: JICA Study Team

## (2) General expense

General expenses are estimated as percentage of personnel cost.

Higher percentage is used for facility group since maintenance of machinery and equipment is required. Maintenance cost of equipment including utility such as electricity, water, and audio visual equipment are estimated separately and are included in maintenance cost.

**Table 4-45 General expenses (% of personnel cost)**

	% of personnel cost
Administration, promotion & exhibition	15%
Facility Group	20%

Source: JICA Study Team

### (3) Utility cost

Recurrent costs for the visitor centres including utility costs, fuel for generators and solid waste are calculated based on the following assumptions:

#### a. Seasons

- Summer Season: 4 months (April, May, June and October)
- Rainy Season: 3 months (July, August and September)
- Winter Season: 5 months (November till March)

#### b. Opening hours

- Summer Season: 8.5 hours/day 09:00 ~ 17:30
- Winter Season: 8.5 hours/day 09:00 ~ 17:30

#### c. Operation hours

- 10.5 hours/day (1 hour each before and after opening hours)

#### d. Closing day

AVC	EVC
Monday	Tuesday

Source: JICA Study Team

#### e. Annual operation days

- 52 weeks x 6 days/week = 312 days/year

#### f. A/C requirement

- Cooling period : 7 months (from April to October)
- Ventilation only: 5 months (from November to March)

#### g. A/C design conditions

- Outdoor: 42°C
  - Relative Humidity (RH) 18% (Dry season)
  - RH 70% (Rainy season)
- Indoor: 21°C ~ 24°C

- RH 55 ~ 60%

Electricity, water, telephone, fuel for generators and solid waste disposal cost for full operation are summarized below (see Appendix for details).

**Table 4-46 Utility cost**

(Unit: Rs. Lakh)

	Ajanta	Ellora
Electricity	71.7	49.3
Water	13.1	6.8
Telephone	16.6	16.6
Generator fuel, solid waste	24.0	19.3
Total	125.4	92.0

Source: JICA Study Team

#### (4) Maintenance cost

Maintenance cost of utility and audio visual equipment including renewal cost of visual programs are based on the estimates provided by the construction contractor. While their estimate comes from 2006, it is assumed the original estimate included the room for negotiation. Therefore, their original estimate is used as the equipment maintenance cost starting from the second year. Since the first year is supplier's defect liability period, maintenance cost is assumed from year 2 and will be escalated.

**Table 4-47 Equipment maintenance cost**

(Unit: Rs. Lakh/annum)

	Ajanta	Ellora
Electrical Equipment	23.0	15.0
HVAC	7.3	4.4
Audio Visual equipment	31.2	24.3
Total	61.5	43.7

Source: JICA Study Team

It is assumed the renewal of the film, movies, and game software is every 5 years. 20% of initial cost of the audio visual soft are assumed to be annual cost.

**Table 4-48 Audio visual soft renewal assumption**

(Unit: Rs. Lakh)

	Ajanta	Ellora
Film, movie initial cost	116	78
Renewal interval	5 year (20% p.a.)	5 year (20% p.a.)
Annual renewal cost	23.20	15.6

Source: JICA Study Team

#### 4.8.3. Base case cashflow

Revenue expenditure cashflow is calculated based on the revenue and cost items as described above. The cashflow consists of the three parts. One is for the main activities, which include



management and general affairs, education, exhibition and the other is for commercial area, such as restaurant, merchandising, and parking areas.

Revenue expenditure cashflow for the main activity is calculated based on admission revenue and the costs of personnel and other expenses for the activity and the utility and O&M costs.

It should be noted that utilities such as electricity and water cannot be measured separately for restaurants and shops, therefore the lease/rents should be decided taking it into account.

Base case of various parameters which affect revenue and expenditure cashflow have been refined by discussions with MTDC. The parameters include number of visitors, tariff, number of staff, pay-scale of MTDC and private parties, utilities cost and utilization, cost escalation rate, etc.

Based on the assumptions for base case scenario, annual cashflows for Ajanta and Ellora are summarized as follows:

### (1) Annual cashflow (Ajanta)

**Table 4-49 Ajanta base case – Results (daily visitors to AVC: 413 persons)**

(Unit: Rs. Lakh)

Annual cashflow		2011	
Admission revenue			76.4
	Local	50.9	
	Foreigner	25.5	
Commercial area lease revenue			83.1
	Restaurant	53.2	
	Shopping Mall	8.5	
	Parking	21.4	
Revenue Total			159.5
Personnel Expenditure			336.0
	Management	33.9	
	Admin, General Affairs	33.6	
	PR, Exhibition, Education	95.5	
	Facility ( include security and gardening)	88.3	
	Equipment maintenance	61.5	
	Audio visual program renewal	23.2	
Utility			125.4
	Electricity	71.7	
	Water/wastewater	13.1	
	Communication	16.6	
	Fuel for generator	21.0	
	Solid waste	3.0	
Expenditure Total			461.4
Operating Deficit			(301.9)

Source: JICA Study Team

## (2) Annual cashflow (Ellora)

**Table 4-50 Ellora base case – Results (daily visitors to EVC: 1,139 persons)**

(Unit: Rs. Lakh)

Annual cashflow		2011	
Admission revenue			170.2
	Local	149.0	
	Foreigner	21.5	
Commercial area lease revenue			100.6
	Restaurant	76.6	
	Shopping Mall	13.1	
	Parking	10.9	
Revenue Total			270.8
Personnel Expenditure			336.0
	Management	33.9	
	Admin, General Affairs	33.6	
	PR, Exhibition, Education	83.3	
	Facility ( include security and gardening)	88.3	
	Equipment maintenance	43.7	
	Audio visual program renewal	15.6	
Utility			92.0
	Electricity	49.3	
	Water/wastewater	6.8	
	Communication	16.6	
	Fuel for generator	16.3	
	Solid waste	3.0	
Expenditure Total			390.4
Operating Deficit			(119.6)

Source: JICA Study Team

Ten (10) year cashflow based on the base-case scenario for both Ajanta and Ellora visitor centres are calculated as shown below.

**Table 4-51 Ten (10) year cashflow (Ajanta base case)**

(Unit: Rs. Lakh)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>1. Revenue Estimates</b>										
①Admission Revenues	76.4	77.8	79.3	80.9	82.5	84.2	84.5	84.7	85.0	85.2
1) Local	50.9	51.1	51.2	51.4	51.5	51.7	51.8	52.0	52.2	52.3
2) Foreigner	25.5	26.8	28.1	29.5	31.0	32.5	32.6	32.7	32.8	32.9
②Space rental/Revenue share revenue	83.1	85.6	87.7	89.9	92.2	94.6	97.0	99.5	102.1	104.7
1)Restaurant	53.2	54.8	56.4	58.1	59.8	61.6	63.5	65.4	67.3	69.4
2)Shopping	8.5	8.8	9.0	9.3	9.6	9.9	10.2	10.5	10.8	11.1
3)Parking	21.4	22.0	22.3	22.5	22.8	23.1	23.3	23.6	23.9	24.2
Revenue Total	159.5	163.4	167.0	170.8	174.7	178.8	181.5	184.2	187.1	190.0
<b>2. Expenditure</b>										
①Management	33.9	34.4	34.8	35.3	35.8	36.3	36.9	37.4	38.0	38.7
②Administration										
■General Affairs & accounting	33.6	35.3	37.0	38.9	40.8	42.9	45.0	47.3	49.6	52.1
③Public relations, Exhibition + Education	95.5	100.2	105.2	110.5	116.0	121.8	127.9	134.3	141.0	148.1
④Facility	88.3	92.7	97.4	102.2	107.4	112.7	118.4	124.3	130.5	137.0
⑤Equipment maintenance	61.5	64.6	67.8	71.2	74.8	78.5	82.4	86.5	90.9	95.4
⑥Audio visual etc program renewal	23.2	24.4	25.6	26.9	28.2	29.6	31.1	32.6	34.3	36.0
Sub-total	336.0	351.5	367.8	384.9	402.9	421.8	441.6	462.5	484.3	507.3
⑦Utility and waste disposal										
1)Electricity	71.7	74.9	78.6	82.5	86.7	91.0	95.5	100.3	105.3	110.6
2)Water/Wastewater	13.1	13.8	14.5	15.2	16.0	16.8	17.6	18.5	19.4	20.4
3)Communication	16.6	17.4	18.3	19.2	20.2	21.2	22.2	23.4	24.5	25.7
4)Fuel oil	21.0	22.1	23.2	24.3	25.5	26.8	28.1	29.6	31.0	32.6
5)Solid waste disposal	3.0	3.2	3.3	3.5	3.6	3.8	4.0	4.2	4.4	4.7
Utility & waste disposal sub-total	125.4	131.3	137.9	144.7	152.0	159.6	167.6	175.9	184.7	194.0
<b>Expenditure total</b>	461.4	482.8	505.7	529.7	554.9	581.4	609.2	638.4	669.0	701.2
<b>MTDC activities net cashflow</b>	<b>-301.9</b>	<b>-319.4</b>	<b>-338.6</b>	<b>-358.9</b>	<b>-380.2</b>	<b>-402.6</b>	<b>-427.7</b>	<b>-454.2</b>	<b>-482.0</b>	<b>-511.3</b>
Daily visitor to visitor centre	413	415	418	421	424	427	429	430	431	433

Source: JICA Study Team

**Table 4-52 Ten (10) year cashflow (Ellora base case)**

(Unit: Rs. Lakh)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>1. Revenue Estimates</b>										
①Admission Revenues	170.2	176.9	183.9	191.2	198.7	206.6	214.5	222.6	231.1	239.8
1) Local	149.0	154.7	160.6	166.7	173.0	179.6	186.4	193.5	200.8	208.5
2) Foreigner	21.2	22.2	23.3	24.5	25.7	27.0	28.1	29.1	30.2	31.4
②Space rental/Revenue share revenue	100.6	103.6	106.6	109.7	113.0	116.3	119.7	123.2	126.8	130.5
1)Restaurant	76.6	78.9	81.3	83.7	86.2	88.8	91.5	94.2	97.0	100.0
2)Shopping	13.1	13.4	13.8	14.1	14.5	14.8	15.2	15.6	16.0	16.4
3)Parking	10.9	11.2	11.6	11.9	12.3	12.6	13.0	13.4	13.8	14.2
Revenue Total	270.8	280.5	290.5	300.9	311.7	322.9	334.1	345.8	357.9	370.4
<b>2. Expenditure</b>										
①Management	33.9	34.4	34.8	35.3	35.8	36.3	36.9	37.4	38.0	38.7
②Administration										
■General Affairs & accounting	33.6	35.3	37.0	38.9	40.8	42.9	45.0	47.3	49.6	52.1
③Public relations, Exhibition + Education	83.3	87.4	91.8	96.4	101.2	106.3	111.6	117.2	123.0	129.2
④Facility	88.3	92.7	97.4	102.2	107.4	112.7	118.4	124.3	130.5	137.0
1)Personnel	73.6	77.3	81.1	85.2	89.5	93.9	98.6	103.6	108.7	114.2
2)Other cost	14.7	15.5	16.2	17.0	17.9	18.8	19.7	20.7	21.7	22.8
⑤Equipment maintenance	43.7	45.9	48.2	50.6	53.1	55.8	58.6	61.5	64.6	67.8
⑥Audio visual etc program renewal	15.6	16.4	17.2	18.1	19.0	19.9	20.9	22.0	23.0	24.2
Sub-total	298.4	312.0	326.4	341.4	357.2	373.8	391.3	409.6	428.8	448.9
⑦Utility and waste disposal										
1)Electricity	49.3	51.4	54.0	56.6	59.5	62.5	65.6	68.9	72.3	75.9
2)Water/Wastewater	6.8	7.2	7.5	7.9	8.3	8.7	9.1	9.6	10.1	10.6
3)Communication	16.6	17.4	18.3	19.2	20.2	21.2	22.2	23.4	24.5	25.7
4)Fuel oil	16.3	17.1	18.0	18.8	19.8	20.8	21.8	22.9	24.1	25.3
5)Solid waste disposal	3.0	3.2	3.3	3.5	3.6	3.8	4.0	4.2	4.4	4.7
Utility & waste disposal sub-total	92.0	96.2	101.0	106.1	111.4	117.0	122.8	128.9	135.4	142.2
<b>Expenditure total</b>	390.4	408.3	427.4	447.5	468.6	490.8	514.1	538.5	564.2	591.1
<b>MTDC activities net cashflow</b>	<b>-119.6</b>	<b>-127.8</b>	<b>-136.9</b>	<b>-146.6</b>	<b>-156.9</b>	<b>-167.9</b>	<b>-179.9</b>	<b>-192.7</b>	<b>-206.3</b>	<b>-220.7</b>
Daily visitor to visitor centre	1,139	1,183	1,228	1,275	1,324	1,374	1,427	1,481	1,537	1,595

Source: JICA Study Team

#### 4.8.4. Optimistic case

Comparing to the base-case, an optimistic case is also calculated for both visitor centres and the following assumptions are made:

- Higher growth rate of visitors
- More people from the caves
- Higher tariff
- Higher rents and shared revenue

**Table 4-53 Assumptions for Ajanta optimistic case**

	Optimistic case	Base case
Visitors/Tariff		
Annual Local visitor growth rate	Visitors gradually increase to the original design capacity: (2000/day) in the 4 <sup>th</sup> year and stay afterward. (see below for the detail)	0.3 %
Annual Foreign visitor growth rate		5%
% of visitors from cave		30 %
Tariff Local/Children/Student/Foreigner	Rs. 75/35/20/250	Rs. 50/25/20/250
Restaurant		
Seat Turnover	200%	130%
Number of people (Manager/Staff)	17 (1/16)	11 (1/10)
Shops		
% of customer/visitor	10/40	40/40
No of staff	16	4
Parking		
Income share to MTDC	40 %	40 %
Capacity Utilization (%) Car/Buses/Motor bike	100/100/100 %	90/70/50 %
Number of staff	15	10

Source: JICA Study Team

**Table 4-54 Comparison of average daily visitors to AVC, optimistic vs. base case**

	Optimistic Case		Base case	
	Local	Foreigner	Local	Foreigner
Yr 2008 (Cave visitor number is adjusted )	279	28	279	28
Yr 2011	380	33	380	33
Yr 2014 and after	1,841	158	383	38

Source: JICA Study Team

**Table 4-55 Assumptions for Ellora optimistic case**

	Optimistic case	Base case
Visitors/Tariff		
Annual Local visitor growth rate	Visitors gradually increase to the original design capacity: (2000/day) in the 4 <sup>th</sup> year and stay afterward. (see below for the detail)	3.8 %
Annual Foreign visitor growth rate		5.0%
% of visitors from cave		40 %
Tariff Local/Children/Student/Foreigner	Rs. 75/35/20/250	Rs. 50/25/20/250
Restaurant		
Seat Turnover	300%	180%
Number of people (Manager/Staff)	31 (1/30)	23 (1/22)
Shops		
% of customer/visitor	10/40	40/40
Number of staff	8	4
Parking		
Income share to MTDC	40%	40%
Capacity Utilization (%) Car/Buses/Motor bike	130/130/130 %	100/100/100 %
Number of Staff	8	5

Source: JICA Study Team

**Table 4-56 Comparison of average daily visitors to EVC, optimistic vs. base case**

	Optimistic Case		Base case	
	Local	Foreigner	Local	Foreigner
Yr 2008 (Cave visitor number is adjusted )	736	24	736	24
Yr 2011	1,112	27	1,112	27
Yr 2014 and after	2,332	57	1,243	31

Source: JICA Study Team

Based on the above assumptions, the optimistic 10-year cashflow scenario for both Ajanta and Ellora visitor centres are calculated as shown below.

**Table 4-57 Ten (10) year cashflow (Ajanta optimistic case)**

(Unit: Rs. Lakh)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>1. Revenue Estimates</b>										
① Admission Revenues	100.1	228.5	356.8	485.1	485.1	485.1	485.1	485.1	485.1	485.1
② Space rental/Revenue share revenue	145.2	149.6	154.1	158.7	163.5	168.4	173.4	178.6	184.0	189.5
1) Restaurant	79.7	82.1	84.6	87.1	89.7	92.4	95.2	98.1	101.0	104.0
2) Shopping	35.5	36.6	37.7	38.8	40.0	41.2	42.4	43.7	45.0	46.3
3) Parking	30.0	30.9	31.8	32.8	33.7	34.8	35.8	36.9	38.0	39.1
Revenue Total	245.4	378.0	510.9	643.8	648.6	653.5	658.5	663.7	669.1	674.6
<b>2. Expenditure</b>										
① Management	33.9	34.4	34.8	35.3	35.8	36.3	36.9	37.4	38.0	38.7
② Administration										
■ General Affairs & accounting	33.6	35.3	37.0	38.9	40.8	42.9	45.0	47.3	49.6	52.1
③ Public relations, Exhibition + Education	95.5	100.2	105.2	110.5	116.0	121.8	127.9	134.3	141.0	148.1
④ Facility	88.3	92.7	97.4	102.2	107.4	112.7	118.4	124.3	130.5	137.0
⑤ Equipment maintenance	61.5	64.6	67.8	71.2	74.8	78.5	82.4	86.5	90.9	95.4
⑥ Audio visual etc program renewal	23.2	24.4	25.6	26.9	28.2	29.6	31.1	32.6	34.3	36.0
Sub-total	336.0	351.5	367.8	384.9	402.9	421.8	441.6	462.5	484.3	507.3
⑦ Utility and waste disposal										
1) Electricity	71.7	74.9	78.6	82.5	86.7	91.0	95.5	100.3	105.3	110.6
2) Water/Wastewater	13.1	13.8	14.5	15.2	16.0	16.8	17.6	18.5	19.4	20.4
3) Communication	16.6	17.4	18.3	19.2	20.2	21.2	22.2	23.4	24.5	25.7
4) Fuel oil	21.0	22.1	23.2	24.3	25.5	26.8	28.1	29.6	31.0	32.6
5) Solid waste disposal	3.0	3.2	3.3	3.5	3.6	3.8	4.0	4.2	4.4	4.7
Utility & waste disposal sub-total	125.4	131.3	137.9	144.7	152.0	159.6	167.6	175.9	184.7	194.0
<b>Expenditure total</b>	461.4	482.8	505.7	529.7	554.9	581.4	609.2	638.4	669.0	701.2
<b>MTDC activities net cashflow</b>	<b>-216.0</b>	<b>-104.7</b>	<b>5.2</b>	<b>114.1</b>	<b>93.7</b>	<b>72.1</b>	<b>49.4</b>	<b>25.4</b>	<b>0.1</b>	<b>-26.6</b>
Daily visitor to visitor centre	413	941	1470	1999	1999	1999	1999	1999	1999	1999

Source: JICA Study Team

**Table 4-58 Ten (10) year cashflow (Ellora optimistic case)**

(Unit: Rs. Lakh)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>1. Revenue Estimates</b>										
① Admission Revenues	239.6	327.2	414.9	502.5	502.5	502.5	502.5	502.5	502.5	502.5
② Space rental/Revenue share revenue	141.4	145.5	149.8	154.3	158.8	163.5	168.3	173.3	178.4	183.7
1) Restaurant	95.8	98.6	101.6	104.6	107.8	111.0	114.3	117.8	121.3	124.9
2) Shopping	31.4	32.3	33.2	34.1	35.1	36.0	37.1	38.1	39.2	40.3
3) Parking	14.2	14.6	15.0	15.5	16.0	16.4	16.9	17.4	18.0	18.5
Revenue Total	381.0	472.8	564.7	656.8	661.3	666.0	670.8	675.8	680.9	686.2
<b>2. Expenditure</b>										
① Management	33.9	34.4	34.8	35.3	35.8	36.3	36.9	37.4	38.0	38.7
② Administration										
■ General Affairs & accounting	33.6	35.3	37.0	38.9	40.8	42.9	45.0	47.3	49.6	52.1
1) Personnel	29.2	30.7	32.2	33.8	35.5	37.3	39.1	41.1	43.1	45.3
2) Other cost	4.4	4.6	4.8	5.1	5.3	5.6	5.9	6.2	6.5	6.8
Sub-total	33.6	35.3	37.0	38.9	40.8	42.9	45.0	47.3	49.6	52.1
③ Public relations, Exhibition + Education	83.3	87.4	91.8	96.4	101.2	106.3	111.6	117.2	123.0	129.2
④ Facility	88.3	92.7	97.4	102.2	107.4	112.7	118.4	124.3	130.5	137.0
1) Personnel	73.6	77.3	81.1	85.2	89.5	93.9	98.6	103.6	108.7	114.2
2) Other cost	14.7	15.5	16.2	17.0	17.9	18.8	19.7	20.7	21.7	22.8
⑤ Equipment maintenance	43.7	45.9	48.2	50.6	53.1	55.8	58.6	61.5	64.6	67.8
⑥ Audio visual etc program renewal	15.6	16.4	17.2	18.1	19.0	19.9	20.9	22.0	23.0	24.2
Sub-total	298.4	312.0	326.4	341.4	357.2	373.8	391.3	409.6	428.8	448.9
⑦ Utility and waste disposal										
1) Electricity	49.3	51.4	54.0	56.6	59.5	62.5	65.6	68.9	72.3	75.9
2) Water/Wastewater	6.8	7.2	7.5	7.9	8.3	8.7	9.1	9.6	10.1	10.6
3) Communication	16.6	17.4	18.3	19.2	20.2	21.2	22.2	23.4	24.5	25.7
4) Fuel oil	16.3	17.1	18.0	18.8	19.8	20.8	21.8	22.9	24.1	25.3
5) Solid waste disposal	3.0	3.2	3.3	3.5	3.6	3.8	4.0	4.2	4.4	4.7
Utility & waste disposal sub-total	92.0	96.2	101.0	106.1	111.4	117.0	122.8	128.9	135.4	142.2
<b>Expenditure total</b>	390.4	408.3	427.4	447.5	468.6	490.8	514.1	538.5	564.2	591.1
<b>MTDC activities net cashflow</b>	<b>-9.4</b>	<b>64.5</b>	<b>137.3</b>	<b>209.3</b>	<b>192.7</b>	<b>175.2</b>	<b>156.8</b>	<b>137.3</b>	<b>116.8</b>	<b>95.1</b>
Daily visitor to visitor centre	1139	1556	1972	2389	2389	2389	2389	2389	2389	2389

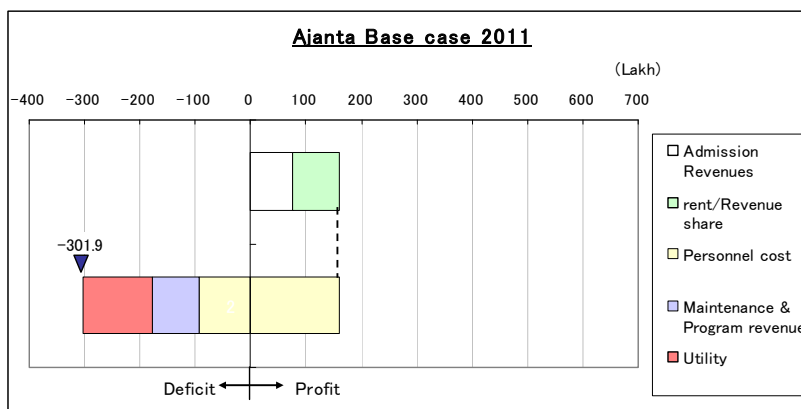
Source: JICA Study Team

## 4.8.5. Financial analysis

### (1) Ajanta

#### a. Base case

Ajanta 10 year base case (Table 4-51) shows deficit of approximately Rs. 302 lakhs in 2011. The deficits will increase thereafter since revenues increase less than costs. Visitors are assumed to increase 0.3%/year and 5% per year for local and foreigners respectively and cost escalation is 5%/year.



**Figure 4-17 Ajanta base case 2011**

Source: JICA Study Team

In 2011, the total revenue is Rs. 159.5 lakhs. Approximately 50% come from admission and the remainder are the revenues from the rents and revenue share of restaurant, shopping mall and parking activities by private companies.

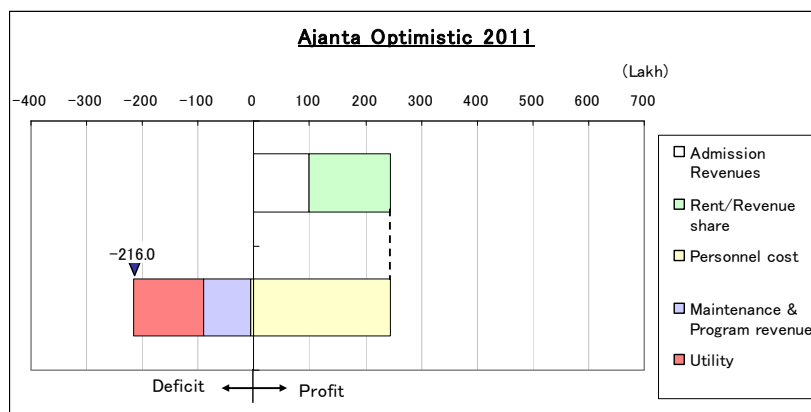
While the rents or revenue share is expected about 50% of the revenue in the base case, they are less certain than admission revenue. The amount of rents and revenue share are decided through bids from private companies and the bids will be affected by various factors. If appropriate bidders are not invited, the price of offer of rents or profit share will remain low since competitions does not exist.

Also, if business environment to bidders are depressed or bidders expect their future business are depressed, then the price of rent may remain low and the deficit may be bigger than the base case.

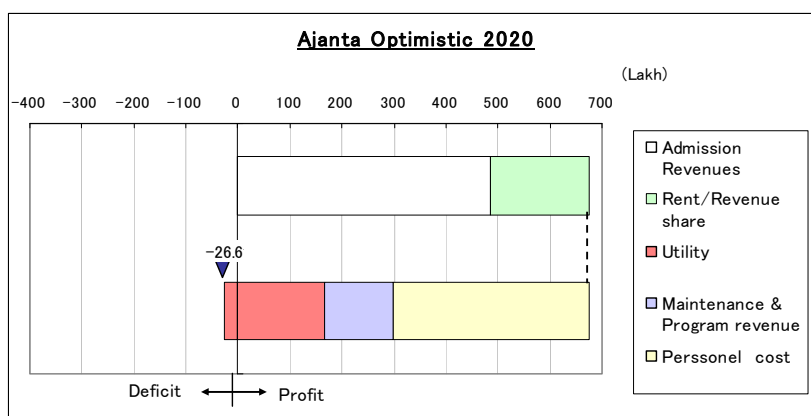
The total expenditure is Rs. 461.4 lakhs and personnel expenses and maintenance cost is Rs. 336 lakhs, or 73% of the overall expenditure.

Among the personnel cost, exhibition & education cost is the largest. This is because higher cost of personnel for exhibition & education is allocated considering it is the most important function to attract visitors and only private sector personnel with such experience can accomplish the task in consultation with ASI.

**b. Optimistic case**



**Figure 4-18 Ajanta optimistic 2011**



**Figure 4-19 Ajanta optimistic 2020**

Source: JICA Study Team

As shown in 10 year cashflow (Table 4-57), in optimistic case for Ajanta will recover from deficits from 2013 as the number of visitors grows. The profit will decrease as revenue remains same and the cost increases due to escalation.

In optimistic case, there is no escalation in tariff during 10 years is considered as tariffs are increased from the current level at the cave. However, if tariff escalation is considered in future, deficits will be eliminated.

The following shows the Optimistic cashflow for Ajanta with 3 % escalation in tariff.



**Table 4-59 Ten (10) year cashflow (Ajanta optimistic case with 3%/year tariff escalation)**

(Unit: Rs. Lakh)

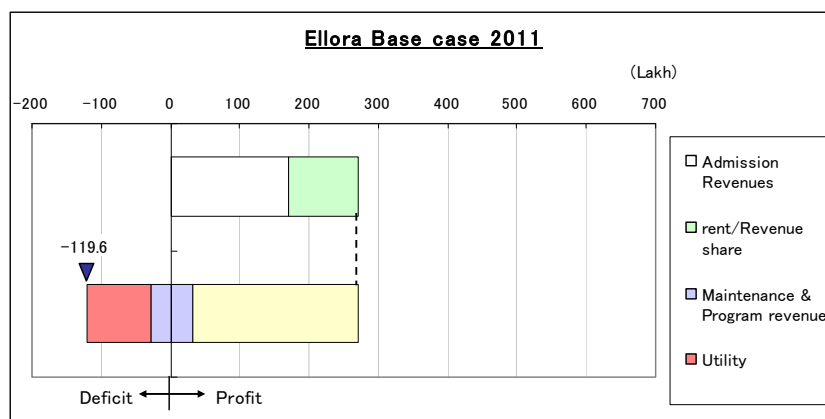
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>1. Revenue Estimates</b>										
① Admission Revenues	100.1	235.3	378.5	530.1	546.0	562.4	579.3	596.7	614.6	633.0
② Space rental/Revenue share revenue	145.2	149.6	154.1	158.7	163.5	168.4	173.4	178.6	184.0	189.5
1) Restaurant	79.7	82.1	84.6	87.1	89.7	92.4	95.2	98.1	101.0	104.0
2) Shopping	35.5	36.6	37.7	38.8	40.0	41.2	42.4	43.7	45.0	46.3
3) Parking	30.0	30.9	31.8	32.8	33.7	34.8	35.8	36.9	38.0	39.1
Revenue Total	245.4	384.9	532.6	688.8	709.5	730.8	752.7	775.3	798.5	822.5
<b>2. Expenditure</b>										
① Management	33.9	34.4	34.8	35.3	35.8	36.3	36.9	37.4	38.0	38.7
② Administration										
■ General Affairs & accounting	33.6	35.3	37.0	38.9	40.8	42.9	45.0	47.3	49.6	52.1
③ Public relations, Exhibition + Education	95.5	100.2	105.2	110.5	116.0	121.8	127.9	134.3	141.0	148.1
④ Facility	88.3	92.7	97.4	102.2	107.4	112.7	118.4	124.3	130.5	137.0
⑤ Equipment maintenance	61.5	64.6	67.8	71.2	74.8	78.5	82.4	86.5	90.9	95.4
⑥ Audio visual etc program renewal	23.2	24.4	25.6	26.9	28.2	29.6	31.1	32.6	34.3	36.0
Sub-total	336.0	351.5	367.8	384.9	402.9	421.8	441.6	462.5	484.3	507.3
⑦ Utility and waste disposal										
1) Electricity	71.7	74.9	78.6	82.5	86.7	91.0	95.5	100.3	105.3	110.6
2) Water/Wastewater	13.1	13.8	14.5	15.2	16.0	16.8	17.6	18.5	19.4	20.4
3) Communication	16.6	17.4	18.3	19.2	20.2	21.2	22.2	23.4	24.5	25.7
4) Fuel oil	21.0	22.1	23.2	24.3	25.5	26.8	28.1	29.6	31.0	32.6
5) Solid waste disposal	3.0	3.2	3.3	3.5	3.6	3.8	4.0	4.2	4.4	4.7
Utility & waste disposal sub-total	125.4	131.3	137.9	144.7	152.0	159.6	167.6	175.9	184.7	194.0
<b>Expenditure total</b>	461.4	482.8	505.7	529.7	554.9	581.4	609.2	638.4	669.0	701.2
<b>MTDC activities net cashflow</b>	<b>-216.0</b>	<b>-97.9</b>	26.9	159.1	154.6	149.4	143.5	136.9	129.5	121.3
Daily visitor to visitor centre	413	941	1470	1999	1999	1999	1999	1999	1999	1999

Source: JICA Study Team

## (2) Ellora

### a. Base case

The deficit in the initial year is approximately Rs. 120 lakhs, which is smaller than that of Ajanta base case. Compared with the average daily visitors of 413 people/day in 2011 with Ajanta base case, it is 1,139 people/day with Ellora base case. Also, since the floor area of 11,807m<sup>2</sup> with Ellora visitor centre is smaller than that of 20,442 m<sup>2</sup> with Ajanta visitor centre, Ellora has smaller costs of facility maintenance and utilities running costs.



**Figure 4-20 Ellora base case 2011**

Source: JICA Study Team

The trend of the deficit is same as the Ajanta base case. The deficit will increase in 10 years due to the gap between the increase in visitors and the escalation rate of costs.

In 2011, the total revenue is Rs. 270.8 lakhs, and admission revenue is approximately 63%, which is larger than Ajanta base case, due to more expected visitors to Ellora.

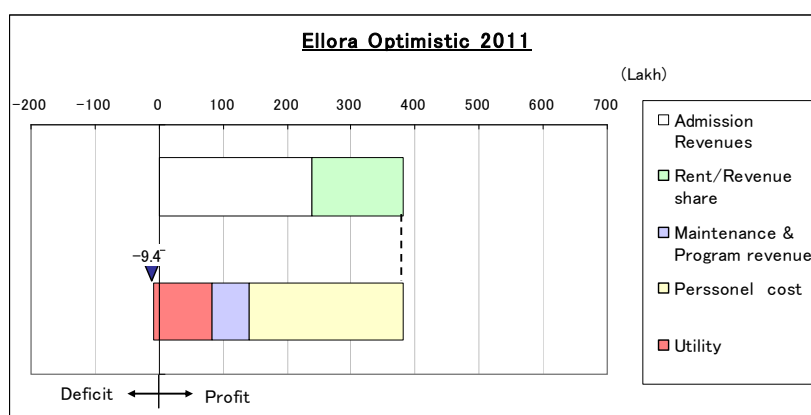
As was discussed with Ajanta base case, revenue of rents and revenue share are less certain and subject to bidding with private company. Since expected revenue from admission is larger, revenues are more certain with Ellora than Ajanta base case.

Expenditure total is Rs. 390.4 lakhs and personnel expenses and maintenance cost is 76 % of the overall expenditure.

### b. Optimistic case

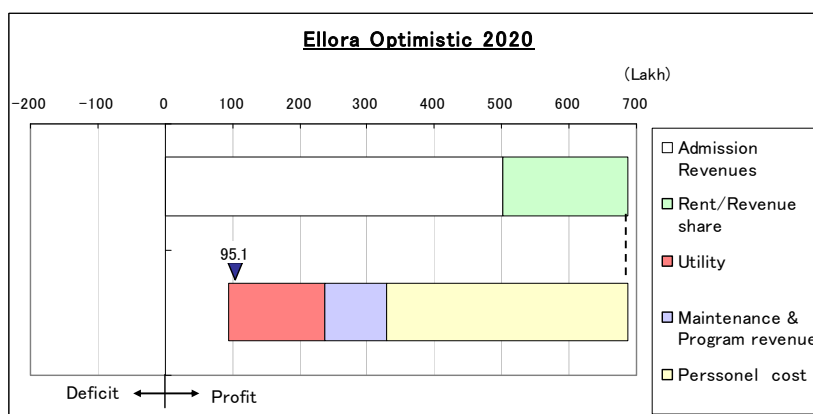
Except the initial year, there are no deficits during 10 years in Ellora optimistic case. (Table 4-58)

As with Ajanta optimistic case, no escalation in tariff is considered in Ellora optimistic case. If tariff escalation is employed, cashflow will be improved as below.



**Figure 4-21 Ellora optimistic 2011**

Source: JICA Study Team



**Figure 4-22 Ellora optimistic 2020**

Source: JICA Study Team

**Table 4-60 Ten (10) year cashflow (Ellora optimistic case with 3%/year tariff escalation)**

(Unit: Rs. Lakh)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>1. Revenue Estimates</b>										
① Admission Revenues	239.6	337.0	440.1	549.1	565.6	582.6	600.0	618.0	636.6	655.7
② Space rental/Revenue share revenue	141.4	145.5	149.8	154.3	158.8	163.5	168.3	173.3	178.4	183.7
1) Restaurant	95.8	98.6	101.6	104.6	107.8	111.0	114.3	117.8	121.3	124.9
2) Shopping	31.4	32.3	33.2	34.1	35.1	36.0	37.1	38.1	39.2	40.3
3) Parking	14.2	14.6	15.0	15.5	16.0	16.4	16.9	17.4	18.0	18.5
Revenue Total	381.0	482.6	590.0	703.4	724.4	746.1	768.4	791.3	815.0	839.4
<b>2. Expenditure</b>										
① Management	33.9	34.4	34.8	35.3	35.8	36.3	36.9	37.4	38.0	38.7
② Administration										
■ General Affairs & accounting	33.6	35.3	37.0	38.9	40.8	42.9	45.0	47.3	49.6	52.1
1) Personnel	29.2	30.7	32.2	33.8	35.5	37.3	39.1	41.1	43.1	45.3
2) Other cost	4.4	4.6	4.8	5.1	5.3	5.6	5.9	6.2	6.5	6.8
Sub-total	33.6	35.3	37.0	38.9	40.8	42.9	45.0	47.3	49.6	52.1
③ Public relations, Exhibition + Education	.3	87.4	91.8	96.4	101.2	106.3	111.6	117.2	123.0	129.2
④ Facility	88.3	92.7	97.4	102.2	107.4	112.7	118.4	124.3	130.5	137.0
1) Personnel	73.6	77.3	81.1	85.2	89.5	93.9	98.6	103.6	108.7	114.2
2) Other cost	14.7	15.5	16.2	17.0	17.9	18.8	19.7	20.7	21.7	22.8
⑤ Equipment maintenance	43.7	45.9	48.2	50.6	53.1	55.8	58.6	61.5	64.6	67.8
⑥ Audio visual etc program renewal	15.6	16.4	17.2	18.1	19.0	19.9	20.9	22.0	23.0	24.2
Sub-total	298.4	312.0	326.4	341.4	357.2	373.8	391.3	409.6	428.8	448.9
⑦ Utility and waste disposal										
1) Electricity	49.3	51.4	54.0	56.6	59.5	62.5	65.6	68.9	72.3	75.9
2) Water/Wastewater	6.8	7.2	7.5	7.9	8.3	8.7	9.1	9.6	10.1	10.6
3) Communication	16.6	17.4	18.3	19.2	20.2	21.2	22.2	23.4	24.5	25.7
4) Fuel oil	16.3	17.1	18.0	18.8	19.8	20.8	21.8	22.9	24.1	25.3
5) Solid waste disposal	3.0	3.2	3.3	3.5	3.6	3.8	4.0	4.2	4.4	4.7
Utility & waste disposal sub-total	92.0	96.2	101.0	106.1	111.4	117.0	122.8	128.9	135.4	142.2
<b>Expenditure total</b>	<b>390.4</b>	<b>408.3</b>	<b>427.4</b>	<b>447.5</b>	<b>468.6</b>	<b>490.8</b>	<b>514.1</b>	<b>538.5</b>	<b>564.2</b>	<b>591.1</b>
<b>MTDC activities net cashflow</b>	<b>-9.4</b>	<b>74.3</b>	<b>162.6</b>	<b>255.9</b>	<b>255.8</b>	<b>255.3</b>	<b>254.3</b>	<b>252.8</b>	<b>250.8</b>	<b>248.3</b>
Daily visitor to visitor centre	1139	1556	1972	2389	2389	2389	2389	2389	2389	2389

Source: JICA Study Team

#### 4.8.6. Financial sustainability

It should be noted both Ajanta and Ellora visitor centres are constructed for the capacity of larger visitors than current expected visitors to the visitor centres. Therefore, it is inevitable to have deficits initially.

Below, important items for the financial sustainability are discussed.

##### (1) Increase of admission revenue

###### a. Increase visitors

While personnel cost is fixed cost and utility cost is variable cost, both are considered here as fixed because of the following reasons:

- Fixed cost of personnel and maintenance cost is more than 70% of the total expenditure.
- Electricity, which is about 50% of the total utility cost, required regardless of the number of the visitors, although there will be slight increase in a crowded situation for A/C.

Therefore, revenue is the item which will impact cashflows of the visitor centres.

Revenue consists of 1) admission revenue, and 2) revenue from rents/revenue share. Admission revenue is calculated tariff and the number of visitors, therefore once tariff is decided, the number of visitors is the major factor with admission revenue.

Revenues of rent or revenue share account for 40-50% of the total revenue with Ajanta and Ellora base cases. As was discussed previously, revenue from rents and revenue share are very much subject to bidding to private company, and expected revenues are very uncertain.

As seen in the optimistic case, as the number of visitors grows, Ajanta and Ellora will have profits or can sustain its operation without financial supports.

Therefore, the most important item for the cashflow is the number of visitors to the visitor centres.

In order to increase the visitors, it is important to hire competent personnel to be in charge of attractive exhibit and education to improve the visitor centres cashflow. Programmes, contents development of exhibitions, are keys to attract people and concerned personnel with adequate experience should be placed.

Other factors for revenue enhancements such as corporate CSR and PPP model are based on leveraging of land bank and are not part of the above assessments. Incorporating forecasts of these factors would be more realistic after a 2-3 year timeframe after soft opening; by this time a more accurate assessment of private sector intentions and specific range of their expectations can be factored appropriately.

#### **4.9. Schedule/Time-bound Action Plan for the Opening of AVC/EVC**

It is important to programme all necessary activities which will be implemented by MTDC before opening of the visitor centres while the construction works are still ongoing on both visitor centres.

The critical actions to be taken into consideration are the completion of construction works and the nominating and employment of staff for the MTDC preparation office.

The physical completion of all construction activities and hand-over of the construction site to MTDC will enable MTDC to learn a lot by actually using the completed facility. The initial operation period will take at least 6 months after all operational equipment installation and staffing for basic functions for the visitor centre have been done to achieve the most functional result and to learn from numerous errors during the initial period.

It is also important to promote the visitor centre as an attractive facility to visit (not as a construction site) to various audiences including media and tour operators. The result of marketing for new segments and development of audiences will take at least 2-3 years to penetrate to the general public worldwide.

#### **4.9.1. Responsibilities & deadlines**

Although it was originally assumed that the opening time of the Ellora and Ajanta visitor centres was March 2010 and the end of 2010 respectively, the Study Team found that the construction will be delayed beyond these target date.

For Ellora visitor centre, most of the civil works have already been completed and minor outstanding works and installation of exhibition items needs to be done. According to MTDC, the Ellora visitor centre will be completed in October 2010.

For Ajanta visitor centre, most of the civil works have already been completed; however major exhibition works for cave replica have not commenced yet and it will take at least another 8 months to complete (i.e., around March 2011).

##### **(1) Supervision and establishment of work schedule to complete the facility**

The constructions of AVC and EVC have been suspended and the Contractor has left sites and only minor activities are currently being implemented on the sites.

However the remaining works are mainly including repairing and touch-up works. The following M&E kinds of remaining works are left on sites.

##### **a. Electrical works**

Sub-station and low voltage distribution board have been completed and are ready to get electrical supply. The main high voltage cable from MSDE has been connected to main sub-station, however various kinds of pre-test and or verifying to get high voltage electric supply have not been confirmed yet.

Therefore, it is urgently required to get electric supply for test and commissioning of air-conditioning/ventilation, water supply and drainage system and fire protection/alarm system which will be critical for the implementation of soft opening activities.

##### **b. Mechanical and piping works**

At the same time water storage tank, hydrant water tank, elevated water tank and ancillary tank need to be filled for cooling tower to flush those tanks before operations.

At the same time, flushing is needed for water supply pipe, hydrant pipe, cold water supply pipe for air-conditioning and cold water supply pipe with water which has used for filled various kind of tanks. Then all tanks need to be refilled to proceed to test and commissioning.

When the Contractor neglects these flushing works, they will create choked filter and cause functional problems on expensive equipment due to remaining paring of pipe, beverage used by workers and food garbage.

Both AVC and EVC have main water supply pipes at approximately 200 m away from building which have been implemented by MSED (Maharashtra Jeevan Pradhikaran Works Division, Aurangabad).

However related authorities have not agreed for underground piping in adjoining land.

MTDC needs to solve this otherwise water lorry is required to carry water (expected 17 tons) continually.

Necessary time for adjustment, test and commissioning of water supply, hydrant, cold water supply, circulation of cold water air-conditioning equipment, ventilation fan will take about 3 months after fill-up all tanks with clean water and receiving electrical supply.

In other words, the time needed is at least another 3 months in the fastest case for simply cleaning, test & commissioning.

### **c. Contractor's all risk coverage (CAR)**

In the usual case, contractor covers risks with CAR which covers worker's accident, damage for third party, vehicles and construction machine/ equipment, flooding caused by heavy rain, fire in construction site and/or labour accommodation, collapse due to failure of shoring on excavation work, materials and equipment at site except force majeure such as natural disaster, riot, rebellion.

MTDC is the Employer of the Contractor, so it should have a copy of CAR submitted from the Contractor and confirm the validity and the amount of insurance.

During construction, the ownership of building belongs to the contractor until handover to the Employer so that fire of building under construction should be covered with fire insurance of CAR.

At handover of building to the Employer, the ownership should be transferred to the Employer so the owner must have fire insurance.

Separate from main building works, the owner needs to order other work directly such as exhibition, interior decoration and special work after taking over main work. At this time, fire insurance is absolutely required by the owner.

MTDC is the Employer and supervisor so it should have a budget for fire insurance.

Eventually materials to be used in exhibition and interior decoration work are mostly inflammable but many inflammable packing materials are left in the building that have high possibility of fire too.

As aforementioned, CAR of main contractor does not cover works of other contractor's risks such as exhibition and interior decoration works. So they need CAR or erection all risk insurance and MTDC as supervisor should instruct and supervise this activity.

#### **d. Test, inspection and as-built drawings related with completion and handover**

Supervisor should request submission of results of various tests of M&E works to M&E contractors. Re-testing should be done with attendance of the main Contractor and supervisor for items of defect and deficiency.

Operation Manual & Maintenance Manual is also important documents for handing-over and operations and maintenance of the visitor centre.

List of required as-built documents between supervisor and contractor should be confirmed prior to proceeding to prepare them and consistent Operation Manual and Maintenance Manual should be submitted.

When supervisor confirms practical completion, supervisor should issue Practical Completion Certificate, and Defect Liability Period (DLP) should start from this date.

The Performance Bond and retention payment should be released and return original to contractor.

The effective date of Defect Liability Period is important so need to be documented carefully also it one of the dispute item after completion.

#### **e. Establish opening date**

Based on the progress of interior decoration, exhibition works and installation of equipment and display items, MTDC needs to establish a soft opening date.

#### **4.9.2. Work Schedule for soft and grand openings**

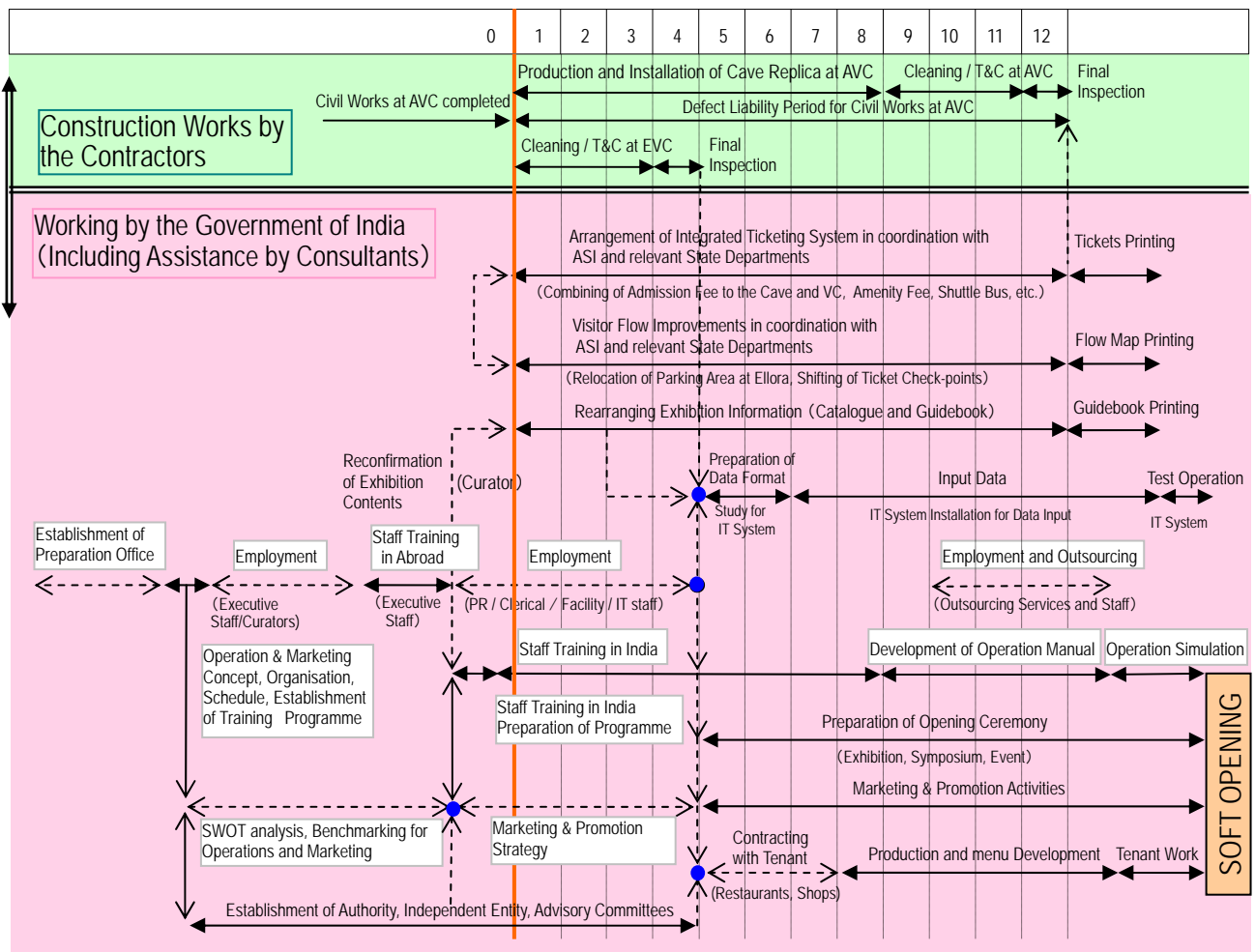
The preparatory works and pre-opening activities require more than one year, so they should be performed in addition and parallel to the completion of the construction activities and before the handover of the site. This is also suggested by the length of time required for the following work activities that need to be completed first:

- Staffing of MTDC preparation office for opening of visitor centres
- External organization set-up (establishment of authority, independent entity and advisory committees)
- Internal organization set-up (nominating board members, employment of managerial and highly skilled positions)
- Tendering procedure of PPP and the division of functions to be outsourced.

It is also important to implement solution activities and measures against various problems mentioned in Chapter 3 “Foundation for Management Planning” in order to expedite the necessary programmes toward the opening of visitor centres.

Although the opening schedules of Ellora and Ajanta visitor centres are slightly different due to the completion of their construction works, establishment of external organizations encompassing both visitor centres and some preparatory works are almost same and it is much more efficient that preparatory works for visitor centres should be done for both Ellora and Ajanta together.

The figure below shows a general procedure up to the soft opening of the visitor centres and necessary actions to be taken in the time schedule when the completion of civil works at AVC is set to zero (0).



**Figure 4-23 Time schedule for the soft opening**

Source: JICA Study Team

The soft opening schedule has been prepared based on MTDC direct operations with outsourcing of commercial areas to private companies.

### 4.9.3. Time-bound action plan

The activities plan in regard to the soft opening through to the grand opening schedule in conjunction with the revenue enhancement activities includes timing of outsourcing and PPP is summarized as follows:



### (1) Soft opening preparations

There is an advantage in careful preparation for outsourcing and not rushing immediate opening of the visitor centre without proper planning and preparation.

Model of outsourcing should be limited in a simple service contract (multi vendor directly coordinated by MTDC).

- Hence duration of contracts is expected to be 1-3 years.
- Tender award and contract conclusion to be concluded at least 3 months before Soft Opening Date.

The above becomes preconditions for soft opening.

- The multivendor model will enable MTDC to understand and become sensitized about key activity areas. It is selected to keep costs down during the initial period; the relative drawback is the greater complexity for coordination.
- Successful vendors are to send designated staff on 15th day for 1 month training at vendor expense for special training on hospitality and visitor services, museumology, on artefact/art maintenance, security and safety, emergency measures, communications, promotion and marketing, general enhancement of tourism experience.

This will improve the orientation of the service providers to the visitors and tourists.

Timeframe	Key activities & focus for revenue enhancement/outsourcing/cost recovery/PPP
12 months	Soft opening envisages basic visitor centre facilities and activities.
12 months from date	All institutional planning, recruitment of core staff, budgetary support approvals for 1-2 years, etc. to be planned. Focus: Outsourcing plan and carrying out tendering for: A) Revenue generating spaces: commercial shops, restaurants, and parking B) Non revenue generating spaces: facilities maintenance, gardens and upkeep and including security to be outsourced.

### (2) Soft opening and initial trial phase

The visitor centre will be operated directly as a unit of MTDC at the initial trial phase. At the end of the initial phase, transfer of entity to a society (encompassing both Ajanta and Ellora visitor centres: AEVC Society) is recommended.

Timeframe	Key activities & focus for revenue enhancement/outsourcing/cost recovery/PPP
6 months duration	Soft opening covers only basic operations. Based on actual observations and feedback from visitors, several improvements in operations and for enhancing visitor experience can be assessed and planned
6 months from date of soft opening	Preparation of high profile marketing plan to be in place within 3 months of the initial trial phase. - Marketing covers: appointment of official responsible for marketing to cooperates and for obtaining sponsorships
18 months from date	Focus: - Minimal outsourcing

### (3) Grand opening & consolidation of initial operations

Creating the foundation for the next stage of revenue enhancement is the key for this period such as corporate sponsorships.

In order to entice private sector participation detailed guidelines should be circulated and marketed to potential corporate entities in Aurangabad and Mumbai by the end of this period.

Timeframe	Key activities & focus for revenue enhancement/outsourcing/cost recovery/PPP
6 months duration	Grand opening would take place at after conclusion of high power marketing campaign
Up to 6 months from date of Grand opening	Focus: - Simple direct outsourcing model. - Government to pay revenue deficit on actual.
24 months from date	

### (4) Introducing Value added activities/retreat options etc.

The objective is to be very selective and limited in corporate sponsorship; to internalize internal leanings to ensure an effective and targeted marketing approach to obtain corporate sponsorships.

Timeframe	Key activities & focus for revenue enhancement/outsourcing/cost recovery/PPP
6 months duration	Focus: - Simple direct outsourcing model. - Effort to reduce revenue deficit through enhanced revenue.
Up to 12 months from Grand opening	- Corporate sponsorships & CSR “early bird schemes” for enhancing revenue. (further details on corporate sponsorships and CSR are provided in the following sections)
30 months from date	

### (5) Consolidating value added activities/ retreat/ exhibition (in case of Ellora)

Options in terms of cost include contribute to corpus of society/trust are as follows:

- Corporate entities would expect participation as trustees / society board members.
- Contribute towards O&M cost for: specific museum space, artefact, auditorium, landscaping and gardens.
- Contribute towards a performing arts event (calendar should be made public for 1 year in advance).

- Corporate would obtain right to display logo within regulatory & aesthetics guidelines.

Timeframe	Key activities & focus for revenue enhancement/outsourcing/cost recovery/PPP
12 months duration	Focus: - Simple direct outsourcing model. - Effort to reduce revenue deficit through enhanced revenue
Up to 24 months from Grand opening	- Corporate sponsorships & CSR for enhancing revenue.  Wide range of options to suit different scale of support by corporate to be taken into consideration.
36 months from date	- Introduction of Membership drive: Friends of Ajanta & Ellora to cover national and international members for a range of fee options.

### **(6) Consolidating value added activities/ retreat/ exhibition (in case of Ellora)**

The following pre-requisites are envisaged for enhancement of the sustainable operations for the visitor centres:

- Statutory Authority for heritage and integrated development is in place.
- Master plan for land is available (300 hectares in Ajanta and about 30 in Ellora).

PPP structure and tendering procedure defined and hence tendering should be implemented during this stage.

Ideally, since this is an emerging area, the following stages should be considered:

- Market Solicitation Sounding in the form of EOI.
- This stage does not lead to any specific pre-qualifications. It permits MTDC/AEVC Society to get a wide range of views from the market.
- It is suggested that multiple packages be made available for registering in order to attract competent vendors from various sectors and providing valuable information for PPP structure:
  - Museology and activity content participation.
  - Facilities management.
  - O & M for commercial spaces.
  - Land / facilities development in line with MTDC master plan for the 300 ha in Ajanta and 30 ha in Ellora.

If item for land/facilities development attracts private participants, then commercial development can be undertaken in return for O & M cost bearing.

The advantage of developing / planning for PPP structures by the end of the three year period rather than upfront presently is that the revenue / commercial risks that are extremely high at this stage can be appropriately factored for informed options detailing and management.

Secondly, through market sounding exercise, the suitability of firms/consortiums in content management/development and ownership or other options may be assessed.

All firms registered under EOI would be invited to make presentations including on their preferred terms and conditions for undertaking a project of this nature

The above will help MTDC evaluate the options of going ahead with the land-based cost recovery option for visitor centre (i.e. BOT or variant for project on adjoining land owned by MTDC, with the O & M cost of the visitor being borne additionally as a part of the PPP.

The pre-qualifications (PQ) and Request for Proposal (RFP) including draft concession agreement should be prepared accordingly.

The tendering strategy / approach followed by bid process management is preferred to the one-stage bidding or direct 2-stage bidding.

Timeframe	Key activities & focus for revenue enhancement/outsourcing/cost recovery/PPP
Subsequent duration	Focus: - Planning for sustainability. - Revamped PPP model in place of simple service contracts.
After 3 years of operations going for serious PPP	PPP Option Scenario B in Section 4.7.3 above can be considered (cost recovery based on land bank development or select permissible tourism facilities (e.g. hotel, housing etc)  A fixed amount per annum or one-time as a corpus support may be obtainable from the successful developer of the land/identified facilities.

## 4.10. Recommendation for Enhanced Management Efficiency and Visitor Attraction

### 4.10.1. Sources for additional revenue

Amount and source of revenue is evaluated in the following section on Ajanta and Ellora respectively. Here we summarise three types of options for sources of additional revenue to accrue for the visitor centres depending upon the intensity of further capital investments and prepared expenditures.

#### (1) Option 1 - Regular visitor centre activities

The following revenue activities are already designed and prepared into the visitor centre functions during the implementation stage and have no need for further investment:

- Ticketing
- Audio-guide (if not part of ticketing)
- Photos and videos
- Publications (posters, calendars, postcards and guidebooks)
- Lease/rentals : commercial areas: shops, crafts centres, restaurants and cafeteria
- Parking: option of lease/rental or parking fee in case of direct operations

The spaces for the additional activities are already allocated and it is only necessary for arrangement of programmes and coordination with artists and performers specifically related to the world heritage sites and histories:

- Special performance shows and classes
- Special arts events and classes
- Special education and research seminars
- Special film and poetry events

Dance and music performance combined with dinner would be appreciated by both locals and foreign tourists. Other than this, VCs can provide venues for exhibitions, conference and other events, and the planning of a chain of activities would be important to ensure the sustainability to operate VCs. An organization tasked to manage, and events plan in VCs has to be established. Interviews with local people have revealed that they would even go to VCs without visiting the caves, if there are good restaurants and shops, beautiful lawns dotted with shady trees, museum and other leisure facilities that meet their needs and preference.

Other value-added activities can be pursued but need additional cost in terms of supporting facilities including in adjacent areas/special promotion, etc. Some activities would themselves have additional cost implications, regulatory implications, organisation implications, and etc.; hence these can be considered more effectively after initial core activity has become consolidated and achieves critical mass.

- Retreat (Ajanta)
- Buddhist Education & Research Centre (Ajanta)
- Exhibition grounds for permissible business events (Ellora; Ajanta can also be explored)
- Conventions & Club (with defined permissible activities)

## **(2) Option 2 - CSR and corporate sponsorships**

Corporate sponsors can contribute to create a Corpus in addition to government contributions.

- Use of interest on corpus towards O&M costs.

Corporate sponsors can provide financing in return for logo/naming facility/appropriate branding. Some options are as follows:

- Designated spaces: e.g. exhibition hall, auditorium, amphitheatre, landscaped/garden areas.
- Designated artefacts/replicas; exhibiting objects.
- Sponsorship of specific additional/value added activities.

Museum, art and culture and world heritage can potentially attract a wide range of models including basic philanthropic models and CSR efforts.

The financial contributions of different concept options are outlined in the table below.

**Table 4-61 Financial contributions of different concept options**

no	Concept	Model of Participation & Comments
1	Contribution to Corpus (if corpus is created) - one time - maximum quantum model	Financial participation by corporate entity. Variation option: contribution by association or such institutional body rather than individual corporate.
		Private sector expectations can cover: (a) Trustee position, if quantum is significant (b) Membership of key committee(s) of interest (c) Tax exemption
		Private sector other secondary expectations can include: (a) Access to financial accounts (b) discounts & privileges select activities of the VC.
2	Contribution to O & M of designated area/space - can be one time or for pre designated durations - moderately high to low cost quantum model	Financial participation by corporate entity. Variation option: contribution by association or such institutional body rather than individual corporate.
		Designated areas to cover: (a) Museum display space area (b) Individual artefact or replica (c) Auditorium space (d) Gardens + exterior and interior landscaping spaces & items
		Possible areas of private sector expectations can cover: (a) Brand & logo placement; “naming facility” for given section space in visitor centre (b) Placement of Co. brands in Maharashtra Tourism brochures & literature forms in various/designated offices & facilities of MTDC (c) Tax exemption
3	Contribution to events /projects (i.e. contribution to activities) - several options through the year. - moderate to low cost quantum model	Financial participation by corporate entity. (a) Variation option: contribution by association or such institutional body rather than individual corporate. Voluntary work & organisation efforts of activity.
		Designated activities (illustrative) (a) Performing Arts events (b) Participative crafts creation events (c) Other cultural Events (d) Business/Corporate Retreats of appropriate themes (e) Research projects
		Possible areas of private sector expectations can cover: (a) Branding & logo placement during event (b) Tax exemption

Source: JICA Study Team

In the column of concept a broad classification of magnitude of financial contribution in terms of scale is also provided. Through a consultative process, specific financial requirements estimations may be considered for each category.

In going forward, the following need to be undertaken:

- Broad governance guidelines for acceptance of financial contributions and their usage as also benefits to contributor.

- In this context, there is a need for a screening mechanism to evaluate such offers of financial contribution before consideration of acceptance.
- Benefits may be formulated in terms of a hierarchy depending upon extent of involvement and contribution.
- It may be noted that the broad governance guidelines would also examine the need for internally organizing, mobilizing, and “target” setting requirements for the visitor centre as institution to enhance incentives (including recognition) and accountability in achieving this form of private participation.

Within this framework, marketing efforts for corporate sponsorships (both domestic and international) may be initiated within the first year of actual operations of the visitor centres.

### **(3) Option 3 – Adjoining land development**

Land development of adjoining area/designated area for permissible tourism purposes which may be considered in the long-run (post 8-10 years), if this option is taken up, it is as follows:

- PPP model integrating the above with support to visitor centre O&M cost/revenue deficit of O&M.

Membership fee: “Friends of Ajanta & Ellora”: targeting both domestic and international individuals as well as institutions.

## **4.10.2. Risks / sensitivity factors**

### **(1) External factors**

- Reduced tourist inflows to India (especially after recent travel advisory warnings issued by some countries).
- Reduced tourist inflows to district Aurangabad, via rail, air or road, due to development of competing destinations, e.g. Hampi, or Khajuraho.
- Development of competing intermediate facilities enroute to and from Ajanta & Ellora caves, both at short and long ranges – attenuated by lack of adequate segmentation in the market.
- Demand risks, precipitated by external factors that lead to underutilisation of Centres despite being able to provide optimal services & goods.
- Environmental risks, including hazards, political or regulatory risks that prevent the Centres from performing optimally.

### **(2) Internal factors**

Performance risks: The Centres not being able to handle volumes of tourists or offer goods & services qualitatively, quantitatively or substantively.

Insofar as computing such risks and their implications are concerned, there may be a need for assessing the nature and purpose of tourists visiting the Ajanta & Ellora Caves. In India, typical spectrum of pleasure sought by a tourist varies between the following categories:

**1 Desire to visit & see places:**

- a) of historical importance by way of remnants of civilisations, empires, administrations – forts, city remains etc.
- b) of historical importance by way of Cultural artefacts with adaptive re-use value, whether current or extinct – Ajanta, Ellora & Khajuraho, any heritage hotel / hospitality site
- c) of religious significance – e.g. any site which is a pilgrimage destination / node
- d) of natural or scenic heritage – Arakku Valley, Borra caves, seashore/beaches
- e) of other educational significance – Acquaria, museums, etc.

**2 Seeking lifestyle, or experiencing the vibrancy of a place by way of:**

- a) Enjoying a relaxed time, shopping, enjoying the cuisine, shopping – e.g. Dubai, Hong Kong, Singapore, most of Kuala Lumpur etc. (such sites are currently not available in India)
- b) Entertainment or services that satisfy thrill-seeking desires, e.g. amusement parks etc.

**3 Meeting & visiting relatives & friends**

**4 Business-cum-pleasure**

Usually a mix of business and item 2, unless the business itself is detailed analysis/ research in any of the aspects covered in item 1

**5 Health & wellness**

Seeking a change through a controlled lifestyle or controlled therapy. This is very important since the site was originally used by Buddhist monks during the rainy season for their retreat.

Evaluation of Internal factors

Further to the above, the Ajanta & Ellora cave sites (in their current state of development) primarily cater to tourists with the purpose of item 1b and partially item 1e. This may be translated, for the sake of simulations to the following assumptions:

The typical duration of stay would not be much longer than what it takes to see the caves, after which they would probably head back to where they started from, which may mean Aurangabad town or another set of caves.

After seeing the caves, only a small portion may be interested to re-visit the re-creation/ interpretation of what has been seen (assuming that an overview has already been conducted in the guided tour).

An even smaller section would be interested to pursue deeper into research and interpretation of the artefacts.



While the implications of these scenarios can be factored into the sensitivity assessment, from a strategic perspective, it would mean being prepared to project the Visitor Centres to cater to more purposes as stated above. Typical areas that may be considered are the follows purposes:

Item 1b, accentuated to a more holistic experience to cover Item 2a as well,

Item 1e, accentuated to cover Item 4, and possibly Item 5 as well.

The rationale for considering additional roles for the purposes can be justified as follows:

On an average, the itinerary between Ajanta & Ellora takes two days, with one day being spent in each location, and Aurangabad being considered as a stopover. However, if facilities for using both Ajanta as well as Ellora as stopovers were to be developed at these locations, considerable time can be added to the disposal of tourists, who may also invest both time & money in purposes Items 2, 4 & 5. This itinerary also reduces travel need by a certain measure, and may offer improved livelihoods opportunities to local populace.

Currently, the bulk of the active research work on the period, archaeological or otherwise, is being conducted by various institutions at different locations. However, many of them may wish to set up a field office to study the artefacts, or to evolve and deploy new measures of conservation. It is also learnt at the time of preparing this report that certain artefacts may have to be hidden from / not exposed to the public at large, since they are not in a very pristine condition, and may require specialised conservation. This would require a facility in the vicinity that can provide requisite support comparable to any research Institution dealing with conservation and/or restoration. In time, such facilities would evolve to full-scale research facilities. Focusing on purpose Item 1e should permit this to be achieved.

#### **4.10.3. Increase linkage with agencies, private sector and community**

Proposal for enhancing of the attractiveness of both visitor centres including the exhibition plan will be developed, however it will be affected by the commitment and intensity of involvement made by ASI and the regional community.

If the facilities are to remain attractive in the coming years, it is necessary to establish comprehensive operation and management encompassing the Ajanta and Ellora World Heritage area.

The existing issues and necessary support measures are summarised in the table below.

**Table 4-62 Issues and support measures for enhancing the attractiveness of visitor centres (1)**

Issues	Necessary support measures
1 Necessity of mutual coordination concerning the management system under guidance of the third party because of the particularity of the site environment (individual management by two organisations of ASI and MTDC)	Establishment of the integrated management system of two organisations (ANS and MTDC) is urgently needed; e.g. the operation of the exhibition facilities linked with effective guidance of visitors by two organisations within the same site, ticket system, and cave wall paintings preservation and control. It is essential that technical support is to establish the effective mutual coordination and cooperation system.
2 Necessity of construct the mechanism to form the attractive tourist sites while augmenting the potential capacity of tourism facilities in the remote place as well as to improve the profitability of the facilities	For any areas with unutilised potential tourism resources or with less attractiveness, the technical support requiring expertise, such as creation of overall attractiveness, review on presentation to encourage longer stay, establishment of the implementation system for above purposes.

Source: JICA Study Team

It normally is the responsibility of all those engaged in the tourism industry to inform tourists about what they can do in and around tourism site. In other countries, even taxi drivers can provide useful tourism information. However in Aurangabad, such responsibility seems to be viewed as belonging to the government, mainly MTDC. Hotels do respond to requests for tourism information and pass out MTDC brochures, but they have the attitude that it is not their job to encourage tourism.

This current situation is a big sales opportunity which is being lost since most tourists stay in hotels and have the time and interest to listen to promotion if there were any. MTDC should work more with promotion at hotels and other service providers to tourists and not just with promotional materials.

#### **4.10.4. Defining market segments**

Ajanta and Ellora Caves are attracting various types of visitors whose motivations are quite different. The caves are not attracting certain types of visitors, but they have potential to attract more. Such ideas are summarised as follows:

##### **(1) Current visitor segments**

###### **Domestic visitors**

- School excursion
- Middle/upper-class family for sight-seeing and/or pilgrimage
- Local people for recreation

Domestic visitors that constitute more than 90% of the total visitor arrivals contain a large number of people from nearby large cities including Aurangabad and Mumbai. There are a large number of students (30% of local visitor arrivals) who come to visit the caves for educational purposes. According to tour guides, there is a large portion of visitors who come to the caves for recreation and to have fun with their friends and family members due to the

nominal entrance fee of Rs.10. The sites have greenery and are actually used as parks for number of visitors.

### **Foreign visitors**

- General interest package tourists from East Asia
- Backpackers and independent tourists from different parts of the world
- Pilgrimage and SIT (special interest tourism) for Buddhism

One notable characteristic of foreign visitors is the large percentage of those who came from East Asia, which means a relatively small number of those from other parts of the world. The Study Team observed backpackers and independent tourists from Europe and Americas but very few package tourists from that part of the world.

Although pilgrimage and SIT exist, they constitute only a small portion of the foreign visitors, and the most of the visitors come to the caves as general interest tourists. Pilgrimage from East Asia is well-known in India but the Ajanta and Ellora Caves are not designated as one of the Buddhist Holy Sites and Circuit. In this context, efforts to promote the caves as pilgrimage destinations should be made with the following in mind.

- To promote the caves as a post-pilgrimage destination
- Pilgrimage is a niche market in East Asia and it should be promoted as such.

## **(2) Potential visitor segments**

As noted previously, there are a large number of visitors, mostly from nearby cities, who come to the caves for recreational purposes. They come to the caves for the purposes different from those from distant areas of India and foreign countries. Thus there are basically two types of visitors: those who come for recreation and those for observing the caves. In this context, it is recommended that the visitor centres should develop functions to cater to local visitors (including foreigners living in Aurangabad) to encourage repeat visits to the visitor centres without visiting the caves.

### **Activities for domestic visitors (including foreigners living in Aurangabad)**

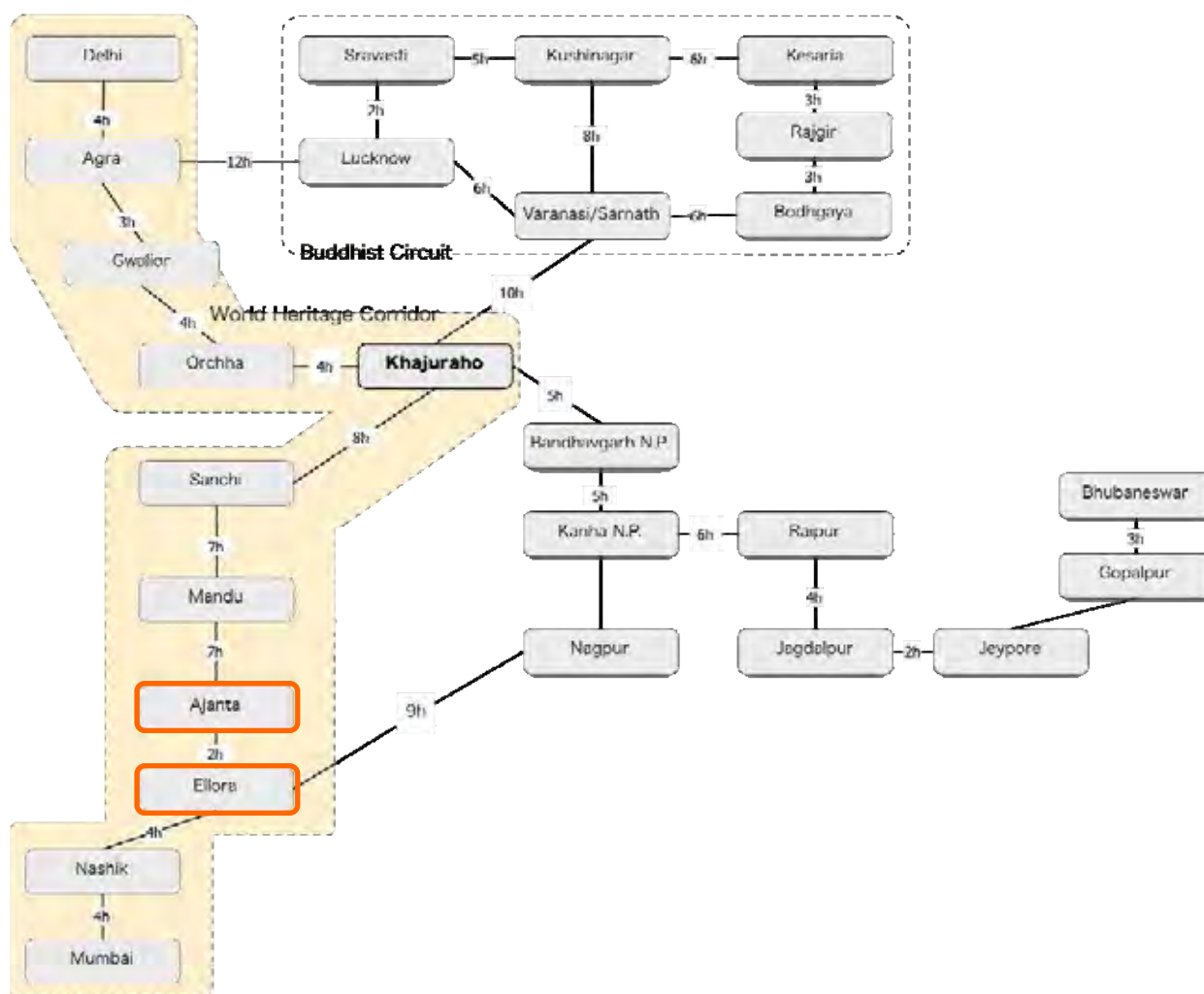
- Picnic and recreation
- Shopping and restaurant
- Museum
- Events and festivals
- Seminar and conference

### **Activities for foreign visitors**

- General interest package tours from Europe and Americas

- Pilgrims and general interest tourists from countries in Southeast Asia such as Thailand, Malaysia, and Singapore.

For the foreign visitors, efforts should be made to attract package tours from Europe and Americas. One of the reasons for a small number of package tours from Europe and Americas would be an isolated location of the caves from established tour routes because they generally “tour” in India. Therefore tour routes that include the caves should be identified and promoted rather than promoting Ajanta and Ellora independently. It is noted that the concept of the World Heritage Corridor is noteworthy taking into account the improving road conditions in India, and also the strengthening of the linkage between Ajanta/Ellora and Mandu and other World Heritage Sites in Madhya Pradesh is strongly recommended.



**Figure 4-24 Linkage with World Heritage Corridor**

Source: JICA Study Team

#### 4.10.5. Integration with regional development plan and attractions

Ideas for expanding attractions at the sites include the following:

- Forming of the tourist site in the area around the World Heritage area and promotion/support of regional development;
- quality improvement of regional craft arts sold in the facilities and airport, and sales growth through sales promotion (fostering of the tourism industry based on small loans = indirect support interlocked with the loaned project);
- planning and operation of various cultural and tourism activities utilizing convention facilities (assembly hall, open-air theatre, auditorium) to support establishment of the key point of tourism activities in the surrounding area (invitation of AE cultural events held in Aurangabad, stimulating and regular holding of other cultural activities);
- coordination with the Buddhism Theme Park in the neighbouring area to construct the adequate environment; and
- review of the role of the facilities.

Taking these ideas into account, the visitor centres could be positioned as core facilities for regional development such as Michi-no-eki. Strengthening cooperation with relevant agencies and stakeholders is essential to realise this concept. Since the understanding and cooperation from local people are essential for the conservation of heritage and the environment, the visitor centres may have to be operated as a meeting place for local people and visitors.

The existing issues and necessary support measures in this regard are summarised in the table below.

**Table 4-63 Issues and support measures for enhancing the attractiveness of visitor centres (2)**

Issues	Necessary support measures
1 Recently, MTDC has announced the Buddhism Theme Park plan as the tourism facilities in the site concerned. There is great danger for deteriorating the ancient landscape by introduction of a huge Buddha statue. It is necessary to guide tie-up with this project and to ensure adequate development.	The support for adequate development planning is essential while reviewing to ensure integrated development covering development with due account of the global standard environmental development required for the World Heritage area, suppression of inadequate development, and utilisation of the appropriate service facilities.
2 The tourism information on the surrounding area including the gateway point or Aurangabad is not enough. It is necessary to provide a place for provision of the tourist route covering the historic sites, nature, and culture as well as of the regional information.	Technical support for development of the approach for effective utilisation of the facilities, such as provision of detailed regional information, public relations technique via IT media, etc. is essential for the facilities as a part of regional tourist point.
3 The facilities is to be used to the maximum degree as an important point for publication and dissemination of activities related to preservation of the cave wall paintings and other World Heritage as well as interdisciplinary activities. The aim in this way is to establish the system as a part of information transmission bases in the local region, in various parts of India, and the world.	Reinforcement and creation of attractiveness of the facilities are necessary to function as a centre of information transmission in terms of preservation of World Heritage of Buddhism sites. Technical supports for system establishment and human resource development concerning these activities are essential.
4 It is important to construct a system related to the site environment and site proper, such as introduction of facilities and exhibits, as well as to implement introduction and publication of the World Heritage in a manner intelligible and friendly to anyone.	Technical supports to encourage functioning as an information centre is extremely effective and important. Such supports are to refer to the good practices in Japanese museums (public relations activities, including the museum shop and educational services) and incorporate their experiences and approaches. These technical supports for facilities for the project facilities are indispensable for their realisation.

Source: JICA Study Team

#### **4.10.6. Recommendation for improving the existing exhibition plan to augment tourist attraction**

##### **(1) Existing Situation**

The existing situation of the exhibition at both AVC and EVC is that extensive planning has taken place. However, the Study Team could not access and evaluate the actual exhibit works, especially movies and graphic panels, although we did receive a list of exhibits from the exhibition designer. The types of exhibits are summarized in Table 4-64 below. On the following pages, Table 4-65 and Table 4-66 present a summary of exhibition contents by locations, and Table 4-67 and Table 4-68 show a summary of the major contents for movies, panels and walk through kiosks.

Based on the tables, themes and contents of exhibitions are well planned and cover wide areas of related information on the World Heritage sites including the general aspects of the World Heritage and Buddhism, however the level and quality of outputs and products were not made available to be reviewed and evaluated.

Therefore, the recommendation is merely to enhance operations management of visitor centres and its promotion.

**Table 4-64 Summary of types of exhibits**

Exhibit Type	AVC	EVC
Movies	12	8
Graphic panels	111	28
e-learning kiosks	5	
e-games kiosks	3	
Walk through kiosks	2	
Sculpture replicas	9	3
Relief replicas	6	
Mannequins	16	
Audio guides	50	25

Source: MTDC

## **(2) Recommendations**

In this Report, we have made recommendations for the visitor centres as a whole and including the exhibitions. Hence our recommendations to improve the existing exhibition plan to augment tourist attraction bring out the key relevant points.

### **a. Integrated tourist experience**

The most important point of all, is that the exhibits need to be part of an integrated tourist experience that covers the caves and the visitor centres. If such planning has not guided the work to date, it needs to be included since the exhibits are clearly an added value to the caves. It is a challenge to provide visitors with an experience which is visitor-friendly and enjoyable since the duration for the visitors to travel to and explore the site is very long. Informational materials need to be created so that visitors can see the value of extending their time to see the exhibitions, and so they can choose the items which are of particular interest to them. Signage at the caves needs to indicate the availability of visitor centre exhibitions. Hence the collaboration between ASI and MTDC including visitor centres is vital and makes it possible to realize these integrations.

### **b. Determining cave policy**

The policy on limiting visits to certain caves by an optional ticket (extra fee) in order to preserve them needs to be set so that the role of cave exhibitions can be set and be part of ticketing.

### **c. Integrated promotional materials**

Since no promotional materials, pamphlets or videos, are available that treat the caves and visitor centre as a single destination, they need to be created. Of course, integrating the two locations is the first priority. The contents and materials of exhibition works can be utilized for these purposes.

### **d. Content checking by experts**

Regarding the content for the movies and graphic panels, the Study Team is not sure whether it was checked by ASI experts in the field, but certainly this should be done. It will require

good cooperation between MTDC and ASI which is one of the main recommendations of this report.

### e. Staffing

Since the exhibits will cost a significant amount to produce and operate, they will require a significant amount of staff to manage and maintain. This issue is taken up elsewhere in this report.

**Table 4-65 Exhibition Content Summary by Locations (Ajanta)**

AJANTA		
<p>1. Cyclorama Ground Floor - Heritage and Buddhism Gallery</p> <p>a. Movies: 2 movies</p> <p>Movie 02: Buddhist Footprints in Maharashtra</p> <p>Movie 03: Buddhism</p> <p>b. Kiosk: 1 e-learning kiosk</p> <p>Heritage and Buddhism Gallery kiosk</p> <p>c. Sculpture Replicas: 3 sculptures</p> <p>d. Relief Replica: 1 relief</p> <p>Wall Panel – Cave 26 (2 x 10m length)</p> <p>e. Panels: 24 panels</p> <p>1A World Heritage Site Map</p> <p>1B India Heritage Site Map</p> <p>1C Buddhist Footprints in India</p> <p>1D Buddhist Footprints in Maharashtra</p> <p>1E Buddhist Sites in Asia</p> <p>1F Introduction Panel</p> <p>1G Visitor Centre Site Map</p> <p>1H Sculpture / Relief Replica Information</p> <p>2. Cyclorama First Floor - Ajanta Gallery</p> <p>a. Movies: 1 movie, 1 slideshow</p> <p>Movie 01: Introduction to Ajanta Ajanta Slideshow</p> <p>b. Panels: 34 panels</p> <p>2A Ajanta</p> <p>2B Ajanta Caves Installation</p> <p>2C Ajanta Panoramic Views</p> <p>2D Visitor Centre Site Map</p>	<p>3A. Museum 3 - Painting Gallery</p> <p>a. Movies: 2 movies</p> <p>Movie 04: Miracle Masterpiece of Ajanta Caves (Mural Paintings)</p> <p>Movie 05: Mural Paintings: People's Life and Living World</p> <p>b. Kiosk: 1 e-learning kiosk</p> <p>Painting Gallery kiosk</p> <p>c. Panels: 15 panels</p> <p>3A Introduction to Mural Paintings</p> <p>3B Techniques of Mural Paintings</p> <p>3C People's Life and Living World</p> <p>3D Paintings</p> <p>3E Entrance Signage</p> <p>3F Cave 1 Signage</p> <p>3B. Museum 3 Auditorium</p> <p>a. Movies: 2 movies</p> <p>Movie 06: All about Ajanta Caves-1</p> <p>Movie 07: All about Ajanta Caves-2</p> <p>4A. Museum 4 - Sculpture Gallery</p> <p>a. Movies: 1 movie</p> <p>Movie 08: Sculptures and Relief work: People's life and Living World</p> <p>b. Kiosk: 1 e-learning kiosk</p> <p>Sculpture Gallery kiosk</p> <p>c. Sculpture Replicas: 6 sculptures</p> <p>d. Relief Replica: 5 reliefs</p> <p>e. Panels: 19 panels</p> <p>4A Introduction to Sculptures</p> <p>4B Sculpture Information</p> <p>4C Relief Information</p> <p>4D Entrance Signage</p> <p>4E Cave 2 Signage</p>	<p>4B. Museum 4 Auditorium</p> <p>a. Movies: 3 movies</p> <p>Movie 09: Jataka Tales of Buddha-1</p> <p>Movie 10: Jataka Tales of Buddha-2A</p> <p>Movie 11: Jataka Tales of Buddha-2B</p> <p>b. Panels: 4 panels</p> <p>5A Jataka Stories</p> <p>5A. Museum 5 - ASI Gallery</p> <p>a. Movies: 1 movie</p> <p>Movie 12: Succession of World Heritage toward Future Generations</p> <p>b. Kiosk: 1 e-learning kiosk</p> <p>ASI Gallery kiosk</p> <p>c. Panels: 11 panels</p> <p>6A Discovery of Ajanta</p> <p>6B ASI Conservation Works</p> <p>6C Significance of World Heritage</p> <p>6D Entrance Signage</p> <p>6E Cave 16 Signage</p> <p>6F Cave 17 Signage</p> <p>5B. Museum 5 - Ajanta Quest Hall</p> <p>a. Kiosk: 6 kiosks</p> <p>1 e-learning kiosk</p> <p>3 e-games kiosks</p> <p>2 walkthrough kiosks</p> <p>Cave 10 walkthrough</p> <p>Cave 26 walkthrough</p> <p>b. Panels: 5 panels</p> <p>7A-E Tablet A-E</p> <p>6. Cave Museums</p> <p>a. Panels: 4 panels</p> <p>8A Cave 1</p> <p>8B Cave 2</p> <p>8C Cave 16</p> <p>8D Cave 17</p> <p>b. Mannequins: 16 mannequins</p> <p>c. Audio guides: 10 units</p>

Source: CCDC



**Table 4-66 Exhibition Content Summary by Locations (Ellora)**

ELLORA		
1. Tourist Unit	4. Museum 1 - Ellora Caves Gallery	5. Museum 2 - Kailash Temple Gallery
a. Handicrafts of Maharashtra Exhibit	a. Movies: 3 movies, 1 slideshow Movie 01: Concept of Buddhism, Hinduism and Jainism	a. Movies: 1 slideshow Kailash Temple Slideshow
b. Panels: 2 panels	Movie 02: Geographical distribution of Buddhism, Hinduism and Jainism in the World	b. Sculpture Replicas: 3 sculptures
4A Handicrafts of Maharashtra	Movie 05: Significance Of World Heritage Sites Ellora Slideshow	c. Panels: 13 panels 2A Kailash Temple Model Description 2B Kailash Temple Features 2C Kailash Temple Slideshow 2D Sculpture Information
2. Reception	b. Panels: 12 panels 1A Ellora Caves – Heritage 1B Ellora Caves – Religion 1C Cave Segments 1D Salient Features about the caves etc	6. Museum 3 a. Movies: 1 slideshow Movie 04: Kailash Temple (Cave 16) b. Panels: 1 panel 3A ASI Conservation Works
a. Movies: 1 slideshow - Introduction		
3 Orientation Hall 1&2 Auditorium		
a. Movies: 1 movie Movie 03: All about Ellora Caves		

Source: CCDC

**Table 4-67 Major Content Summary for Movies, Panels and Walk Through Kiosks (Ajanta)**

Exhibit Type	AVC	
Movies	Movie 01: Introduction to Ajanta Movie 02: Buddhist Footprints in Maharashtra Movie 03: Buddhism Movie 04: Miracle Masterpiece of Ajanta Caves (Mural Paintings) Movie 05: Mural Paintings: People's Life and Living World Movie 06: All about Ajanta Caves-1	Movie 07: All about Ajanta Caves-2 Movie 08: Sculptures and Relief work: People's life and Living World Movie 09: Jataka Tales of Buddha-1 Movie 10: Jataka Tales of Buddha-2A Movie 11: Jataka Tales of Buddha-2B Movie 12: Succession of World Heritage toward Future Generations
Graphic panels	1. Cyclorama Ground Floor - Heritage and Buddhism Gallery 1A World Heritage Site Map 1B India Heritage Site Map 1C Buddhist Footprints in India 1D Buddhist Footprints in Maharashtra 1E Buddhist Sites in Asia 1F Introduction Panel 1G Visitor Centre Site Map 1H Sculpture / Relief Replica Information 2. Cyclorama First Floor - Ajanta Gallery 2A Ajanta 2B Ajanta Caves Installation 2C Ajanta Panoramic Views 2D Visitor Centre Site Map 3A. Museum 3 - Painting Gallery 3A Introduction to Mural Paintings 3B Techniques of Mural Paintings 3C People's Life and Living World 3D Paintings 3E Entrance Signage 3F Cave 1 Signage	4A. Museum 4 - Sculpture Gallery 4A Introduction to Sculptures 4B Sculpture Information 4C Relief Information 4D Entrance Signage 4E Cave 2 Signage 4B. Museum 4 Auditorium 5A Jataka Stories 5A. Museum 5 - ASI Gallery 6A Discovery of Ajanta 6B ASI Conservation Works 6C Significance of World Heritage 6D Entrance Signage 6E Cave 16 Signage 6F Cave 17 Signage 5B. Museum 5 - Ajanta Quest Hall 7A-E Tablet A-E 6. Cave Museums 8A Cave 1 8B Cave 2 8C Cave 16 8D Cave 17
Walk through kiosks	5B. Museum 5 - Ajanta Quest Hall Cave 10 walkthrough Cave 26 walkthrough	

Source: CCDC

**Table 4-68 Major Content Summary for Movies, Panels and Walk Through Kiosks (Ellora)**

Exhibit Type	EVC	
Movies	Movie 01: Concept of Buddhism, Hinduism and Jainism Movie 02: Geographical distribution of Buddhism, Hinduism and Jainism in the World Movie 03: All about Ellora Caves Movie 04: Kailash Temple (Cave 16) Movie 05: Significance Of World Heritage Sites	
Graphic panels	1. Tourist Unit 4A Handicrafts of Maharashtra 4. Museum 1 - Ellora Caves Gallery 1A Ellora Caves – Heritage 1B Ellora Caves – Religion 1C Cave Segments 1D Salient Features about the caves etc	5. Museum 2 - Kailash Temple Gallery 2A Kailash Temple Model Description 2B Kailash Temple Features 2C Kailash Temple Slideshow 2D Sculpture Information 6. Museum 3 3A ASI Conservation <u>Works</u>
Walk through kiosks		

Source: CCDC

#### **f. Comparison of assumptions**

There are many researchers and scholars researching and studying continuously about the Caves, but often they have different views toward the history. One of the major arguable points is the duration and methodology of cave construction (cutting out of rock).

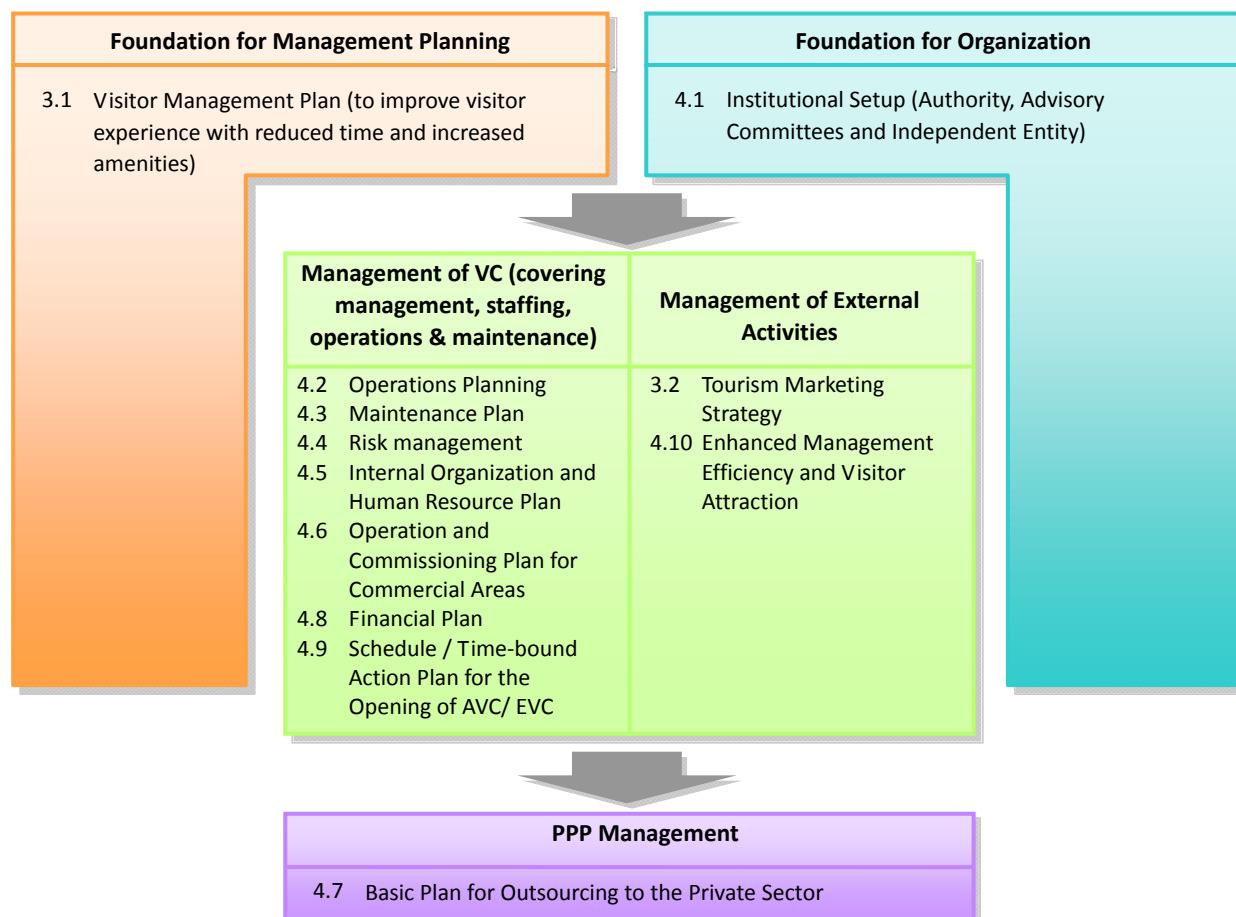
It might be interesting for ordinary visitors, usually laymen in this field, to compare various academic opinions for them to evaluate and judge each assumption.

However, in order to realize such exhibition, close coordination and presentation of materials and information from ASI is necessary.

## 5. The Way Forward

### 5.1. Incomplete Assumptions

The goal of this report is to formulate a Management Plan for the Ajanta-Ellora Visitor Centres. The chapters in this report have addressed the main areas of the sites based on the foundation of a new institutional setup for MTDC. The relationship of chapters is shown below as falling into 5 areas: Foundation for Management Planning, Foundation for Organization, Management of VC, Management of External Activities and PPP.



**Figure 5-1 Flow of preparatory activities in terms of FR chapters**

Source: JICA Study Team

As regards organizational issues, particularly in preparing Sections 4.1 “Institutional Set-up” and 4.7 “Basic Plan for Outsourcing to the Private sector,” the following assumptions were made:

- That it would eventually create the Ajanta & Ellora Heritage and Integrated Development Authority to sustain the mission and policy of the visitor centres as well as to manage and conserve the World Heritage sites from inadequate developments and activities.

- That it would create an independent entity as a Society rather than a Trust or Section-25 company in order to obtain financial flexibility, advantage in taxation and to achieve accountability in operations and administrations of the visitor centres.
- That the entity would fully design and plan the role for private sector participation by tender as a kind of Public-Private Participation (PPP). Such design work is the necessary basis for tendering.

However, in submitting Draft Final Report, subsequent discussions with MTDC have suggested that providing MTDC a management plan is not enough and are not practical for MTDC to follow up and initiating the process of realizing the management plan due to the limitations within MTDC: namely those of staff and budget.

## **5.2. Negative Risks of near-term PPP tender**

To move forward in spite of its limitations, MTDC has proposed to tender and sublet the operations management of the visitor centres to private sector entities in the near-term. However the following negative risks are envisaged that make this very impractical.

- Jeopardising the original concept of the establishing the visitor centres as a supplementary to Ajanta-Ellora World Heritage sites.
- Although the PPP arrangement of the visitor centres is quite attractive to private sector entities due to no large capital investment required such as planning, design development and construction of facilities and infrastructure, near-term tendering could lead to entice project developers experienced in “hard” or physical infrastructure such as roads, airports, commercial complexes, to dominate the control of Visitor Centres. However, this project is not a typical “hard” infrastructure project. There is need for complex coordination, consensus building, stakeholder coordination from an institution perspective and not entirely from infrastructure development/control/management perspective (e.g. between MTDC, MoT, State Government, ASI, business communities having CSR interests for heritage promotion, etc.).
- The responsiveness of CSR support could be negatively impacted. There is scope for institution development in a manner and providing mechanism for involving business communities from a CSR and culture / heritage preservation perspective. But this needs careful nurturing and a planned approach for obtaining the true potential of possible involvement.
- Public concerns about the objectives and benefits of the project could arise if tendering fails to get responses as have been experienced in projects even after qualifying firms and entities. An assessment of several PPP and other procurement projects leads to a conclusion that projects need to be properly planned and developed to ensure the most optimal responses and protection of public interest in context. A near-term tendering situation could lead to situation of the image of the project becoming adversely impacted (also called as Reputation & Branding risks).

- Working with the private sector requires the existence of full design and detailed specifications of the facilities and performance requirements as part of the tender for private sector entities to bid on. Without a proper PPP tendering (such as performance requirements, monitoring and evaluation mechanism and penalty and reward arrangements), it is difficult to maintain an expected level of performance quality and sustain the original concept of the visitor centres (i.e. world class standard of operations and attractions with visitor friendly, conservation friendly and pollution free for the world heritage sites).
- Lasting long-term impact requires not just physical investment but institutional support which cannot be achieved by near-term tendering. What is required is performance that will harmonise with the requirements of institutional development support.

In conclusion, we do not recommend PPP tendering in the near term.

### **5.3. Necessity of Greater Role for MOT**

MTDC faces constraints in planning and ensuring collaboration with ASI, including single ticketing plan, content development, and other activities; similarly MTDC faces constraints in catalysing with the state government for creation of regulatory framework of a statutory development authority. However, MOT is in a position to facilitate these critical enablers of tourism development and support for the Visitor Centres. MOT also has the strong capability of projecting (branding & promoting) Ajanta & Ellora internationally and provides a pan India image.

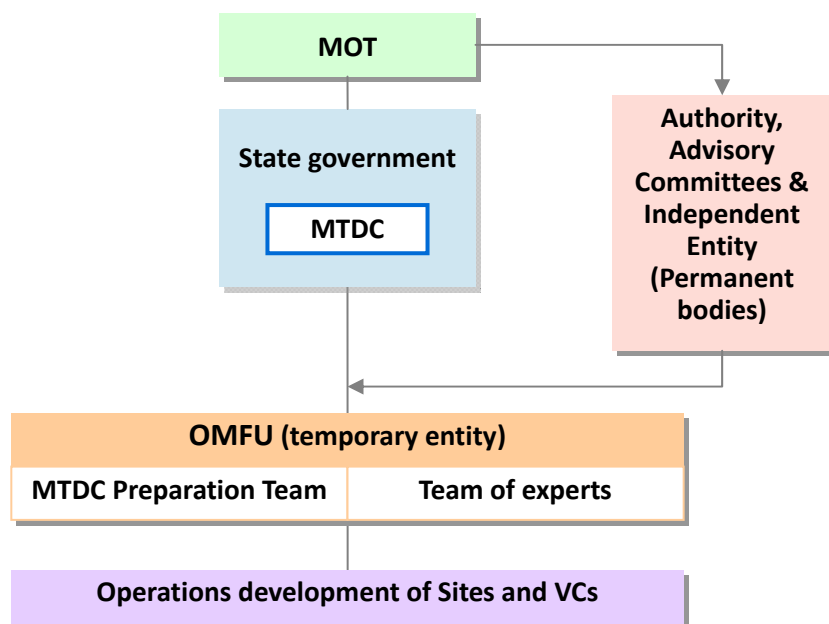
In addition, because close coordination is necessary with not only MTDC and the Maharashtra State Government, but also with ASI and Cultural Department, it would seem that MOT's needs to take the leading role in all aspects from technical to financial as soon as possible.

There are also advantages for MOT to continue to participate, support and assist the State Government/MTDC during the initial critical phase (covering soft opening and grand opening) for the development the Visitor Centres to meet their true potential.

If the state government/MTDC level constraints are very severe, perhaps direct, and longer period of MOT commitment and support need to be envisaged.

### **5.4. Organisational Structures**

In the long run, permanent bodies needed to run the sites: namely Authority, Advisory Committees and Independent Entity. However, since the institutional setup of these bodies takes a long time, we recommend that a temporary entity be set up to oversee the development work for the sites and visitor centres. The duties and design of the temporary entity is discussed in the next section. The proposed overall organization is shown below.



**Figure 5-2 Organization of temporary and permanent entities in relation to operations development**

Source: JICA Study Team

## 5.5. Operations Management Facilitation Unit (OMFU)

Instead of the MTDC Preparation Office previously proposed in Section 4.1.1 to assume day-to-day preparatory activities toward opening, the JICA Study Team now recommends an Operations Management Facilitation Unit (OMFU).

OMFU can serve as an ideal bridge between existing project management of visitor centres within/by MTDC as government referred agency and until the operations of visitor centres are established as working institutions.

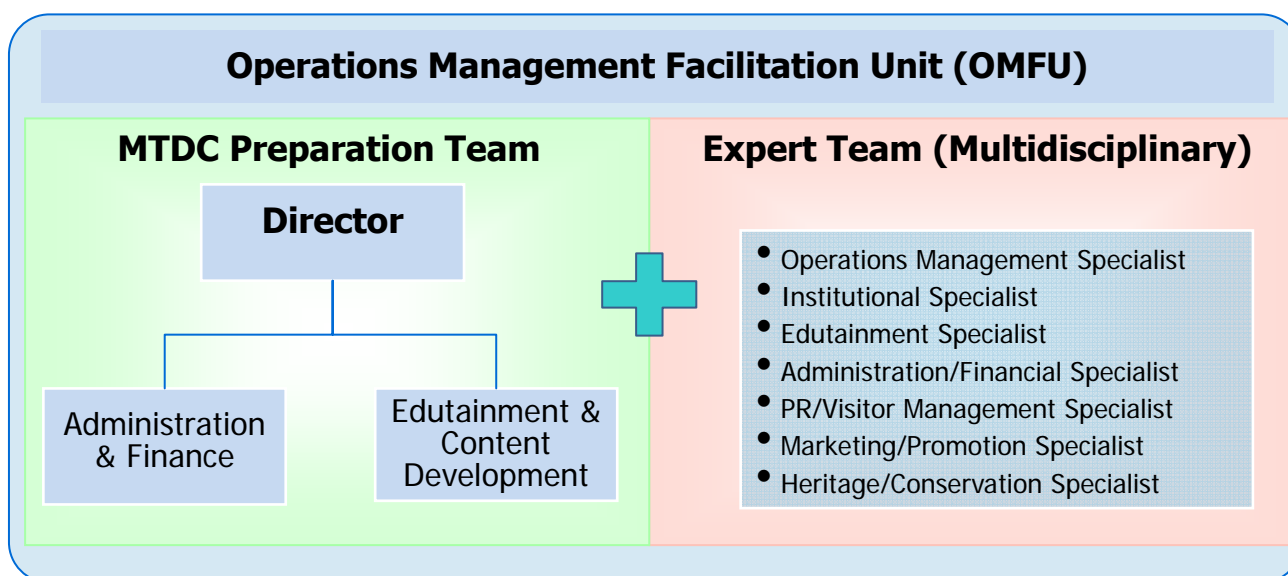
The Visitor Centres are planned to be of international standards and are the first of their kind in India. In going forward, brand build up of the Visitor Centres needs dedicated effort and continuous tactical planning cum implementation so that it will be reflected in the tourist experience and services provided, making targeted and professional approaches to attract business interests and participation through CSR and other avenues, balancing the interests of key stakeholders, etc.

The one possible concern is that the support and structure to support the Visitor Centres may be put on par with several other regular projects that are demanding attention from the authorities. If the objective of authorities is to promote Ajanta & Ellora to occupy a brand position on par with the brand occupied by the Taj Mahal today, special effort and coordinated support is needed especially/or at least in the build up to soft opening and grand opening phases.

In this context, OMFU would be a critical enabler for operations of the Visitor Centres in a planned and time-bound manner with an integrated facilitative support concept towards this end.

OMFU would combine personnel who will be employees of the new centres and are thus permanent/dedicated stakeholders together with specialist experts to support them in the needed areas. This is intended to be a practical and perhaps innovative approach given the circumstances, requirements, and an opportunity for realizing a higher potential of the Visitor Centres in the Indian context.

In the context of MTDC facing constraints in setting up a fully staffed Preparatory office in-house within MTDC focused exclusively on development activities towards the Visitor Centre, the following work structure is proposed to provide daily support to facilitate the preparatory activities leading to the soft opening of the Visitor Centres.



**Figure 5-3 Operations Management Facilitation Unit (OMFU) as MTDC preparation office**

Source: JICA Study Team

**(1) MTDC preparation team (refer to shaded box in green)**

Minimum of three positions are to be recruited as a core group: namely Director, Administration & Finance Head, and Edutainment & Content Development Head.

- These three positions are proposed to be funded by the Government based on appropriate budgetary allocation.
- They need not be from the government sector, and can be retained as consultants in the build up to the Visitor Centres. Eventually, they would be transferred to the entity operating and managing the Visitor Centres.

## **(2) Expert team (refer to shaded box in pink)**

This consists of specialist expert/consultant team that would support MTDC Preparation Office in a wide range of activities including development of marketing & promotional strategies, monitoring, MIS, follow up among multiple stakeholders including MoT, State Tourism, MTDC at Mumbai, Delhi as well as Aurangabad, ASI etc. Expert Team will also support the Government appointed team of MTDC Preparation Office in their work regarding coordination activities with various authorities concerned, institutional set-up, PPP structure development, staffing and training, outsourcing and tender procedure etc. All these will be undertaken in a facilitative role.

The necessity of Expert Team rests on the following:

- The need to create capacity and follow through on the Visitor Centres Management Plan. Also, the present situation wherein MTDC may not have personnel or otherwise face constraint that such personnel may have multiple tasks other than visitor centres.
- Diversified specialist skill sets needed in an integrated manner.
- Pay-scale limitations of the government fee scale, especially with respect to the specialist skill sets required.
- Budgetary constraints of the state & central governments. In this regard, scope or possibility of funded support may also be considered if required.

Expert Team will perform its roles initially on behalf of MTDC by providing specialist assistance to MTDC Preparation Office personnel who will be trained through OJT in this manner. Expert Team will be disbanded eventually after soft opening and operations achieve critical mass and momentum. They are to help provide programme management services to enable / support the major initiatives needed in this context.

MTDC Preparation Office will be eventually transferred into the Visitor Centres / entity operating and managing the Visitor Centres.

MTDC represented by the Managing Director, Executive Engineer having responsibility for the Visitor Centre will undertake to review progress on a fortnightly or monthly basis.

The whole project preparatory office/OMFU is envisaged to operate out of Mumbai (or Aurangabad or Delhi if necessary), during the period till handover of the Visitor Centres from contractor/vendors and acceptance by MTDC. This will enable the OMFU to support activities and tasks in this regard.

The project preparatory office/OMFU is envisaged to shift to Aurangabad in the subsequent period till conclusion of its mission with transfer of MTDC Preparation Office and disbandment of Expert Team.



Without the OMFU approach, the near-term PPP tender approach cannot address the core issues for soft opening or grand opening or further consolidation of the visitor centres and promote its intrinsic sustainability.

This approach is advisable to adopt, given the immense prestige and expectations of the project and given the confirmations that this project is being given the required attention and support from the local, state, and central government levels as a special priority project.

## **APPENDICES**

## **APPENDICES**

1. Member List of the Study
2. Study Schedule
3. List of Participants
4. Outlines of M & E Installation
5. List of Regular Maintenance for Major Items
6. Annual Inspection Maintenance Schedule for M & E Installations
7. Job Profile of the Visitor Centre Staff

**Member List of the Study**

- |    |                         |   |
|----|-------------------------|---|
| 1. | Mr. FUKUOKA Yuuichi     | Team Leader/<br>Institutional Capacity Building/Operations Management |
| 2. | Dr. Raja Venkataramani  | PPP 2 and Management  |
| 3. | Mr. SAKAI Toshihiko     | PPP 1 and Finance   |
| 4. | Mr. KAMON Fumitaka      | Facility and Equipment  |
| 5. | Mr. HIRABAYASHI Yoshiki | Operations and Visitor Management/<br>Promotion and Publicity         |
| 6. | Ms. AKIYAMA Aya         | Human Resources Development   |
| 7. | Ms. KIYONO Yuki         | TL Support/<br>Heritage Conservation and Utilization                  |

Appendix-2

**Study Schedule (1)**

Day-Month		Team Leader/Visitor Centre (Institutional Capacity Building/ Operations Management Planning)	Visitor Centre (TL Support/ Heritage Conservation and Utilization)	Visitor Centre (PPP-1 and Finance)	Visitor Centre (PPP-2 and Management)	Visitor Centre (Facility and Equipment)	Operations and Visitor Management/Promotion and Publicity	Human Resources Development
		FUKUOKA Yuuichi	KIYONO Yuki	SAKAI Toshihiko	Dr. Raja Venkataramani	KAMON Fumitaka	HIRABAYASHI Yoshiki	AKIYAMA Aya
21.Mar	Sun	NRT→DEL			-	NRT→DEL		
22.Mar	Mon	Discussion with JICA, MOT						
23.Mar	Tue	Inspection of Similar and Relevant Facilities and Organizations						
24.Mar	Wed	DEL→BOM			-	DEL→BOM		
25.Mar	Thu	Discussion with MTDC, TCS			DEL→BOM MTDC, TCS	MTDC, TCS		
26.Mar	Fri	Discussion with MTDC, Department of Tourism and Cultural Affairs, Government of Maharashtra Inspection of Similar and Relevant Facilities and Organizations			MTDC, Department of Tourism BOM→DEL	MTDC, Department of Tourism		
27.Mar	Sat	Discussion with TCS BOM→IXU			-	TCS BOM→IXU		
28.Mar	Sun	Inspection of Similar and Relevant Facilities and Organizations			-	Facilities and Organizations		
29.Mar	Mon	Discussion with MTDC Aurangabad Inspection of Similar and Relevant Facilities and Organizations			-	MTDC Aurangabad Facilities and Organizations		
30.Mar	Tue	Inspection of Similar and Relevant Facilities and Organizations			DEL→IXU / Facilities and Organizations	Facilities and Organizations		
31.Mar	Wed	Site Inspection						
1.Apr	Thu	Site Inspection Discussion with MTDC Aurangabad						
2.Apr	Fri	Discussion with MTDC Aurangabad Preparation of ITR						
3.Apr	Sat	Inspection of Similar and Relevant Facilities and Organizations Preparation of ITR						
4.Apr	Sun	Inspection of Similar and Relevant Facilities and Organizations Preparation of ITR			IXU→DEL	Preparation of ITR	NRT→BOM	
5.Apr	Mon	Discussion with MTDC Aurangabad / Inspection of Similar and Relevant Facilities and Organizations Preparation of ITR			-		Inspection of Similar and Relevant Facilities and Organizations	
6.Apr	Tue	IXU→BOM			DEL→BOM	IXU→BOM	Inspection of Similar and Relevant Facilities and Organizations	
7.Apr	Wed	Discussion with MTDC						
8.Apr	Thu	Discussion with MTDC, CCDC Inspection of Similar and Relevant Facilities and Organizations				BOM→DEL	MTDC Facilities and Organizations	
9.Apr	Fri	Inspection of Similar and Relevant Facilities and Organizations Preparation of ITR				DEL→	Facilities and Organizations Preparation of ITR	
10.Apr	Sat	Inspection of Similar and Relevant Facilities and Organizations Preparation of ITR		BOM→DEL	Facilities and Organizations Preparation of ITR	→NRT	Mumbai→Nasik	

Assistance to the Formulation of the Management Plan for Visitor Centres  
under the Ajanta – Ellora Conservation and Tourism Development Project (II)

11.Apr	Sun	Inspection of Similar and Relevant Facilities and Organizations Preparation of ITR	DEL→	Facilities and Organizations Preparation of ITR	Nasik→Aurangabad	
12.Apr	Mon	Discussion with ASI Preparation of ITR	→NRT	ASI Preparation of ITR		
13.Apr	Tue	Discussion with MTDC Preparation of ITR		MTDC Preparation of ITR		
14.Apr	Wed	BOM→DEL		BOM→DEL		
15.Apr	Thu	Discussion with JICA Inspection of Similar and Relevant Facilities and Organizations		JICA Facilities and Organizations		
16.Apr	Fri	Discussion with MOT DEL→		MOT		
17.Apr	Sat	→NRT				
18.Apr	Sun					Preparation of ITR
						IXU→BOM
19.Apr	Mon					Preparation of ITR
						Discussion with MTDC Inspection of Similar and Relevant Facilities and Organizations
20.Apr	Tue					Discussion with MTDC Aurangabad Inspection of Similar and Relevant Facilities and Organizations
21.Apr	Wed					IXU→DEL
22.Apr	Thu					Preparation of ITR
23.Apr	Fri					Discussion with MTDC Aurangabad Inspection of Similar and Relevant Facilities and Organizations
24.Apr	Sat					
25.Apr	Sun					
26.Apr	Mon					
27.Apr	Tue					
28.Apr	Wed					
29.Apr	Thu				IXU→DEL	
					Discussion with JICA Inspection of Similar and Relevant Facilities and Organizations	
30.Apr	Fri				Discussion with JICA DEL→BOM→	
1.May	Sat				Inspection of Similar and Relevant Facilities and Organizations	
2.May	Sun				→NRT	
3.May	Mon				DEL→IXU	
4.May	Tue				Discussion with MTDC Aurangabad	
5.May	Wed				Discussion with MTDC Aurangabad Inspection of Similar and Relevant Facilities and Organizations	
6.May	Thu					
7.May	Fri					
8.May	Sat					
9.May	Sun				Preparation of ITR	

10.May	Mon		Discussion with MTDC	
11.May	Tue		Aurangabad	
12.May	Wed		Inspection of Similar and	
13.May	Thu		Relevant	
14.May	Fri		Facilities and Organizations	
15.May	Sat		Preparation of ITR	

## Study Schedule (2)

Day- Month	Team Leader/Visitor Centre (Institutional Capacity Building/Operati ons Management Planning)	Visitor Centre (TL Support/ Heritage Conservation and Utilization)	Visitor Centre (PPP-a and Finance)	Visitor Centre (PPP-2 and Management)	Human Resource Development	Visitor Centre (Facility and Equipment)	Operation and Visitor Management/Pr omotion and Publicity	
								FUKUOKA Yuuichi
16.May	Sun	NRT→DEL		-	NRT→DEL		IXU→DEL	
17.May	Mon	Presentation and Discussion of Interim Report with JICA					JICA	
18.May	Tue	Presentation and Discussion of Interim Report with Ministry of Tourism					MOT	
19.May	Wed	DEL→BOM	Study of PPP and Finance	DEL→BOM	DEL→BOM		DEL→BOM	
20.May	Thu	Presentation and Discussion of Interim Report with MTDC	Study of PPP and Finance	MTDC	MTDC		MTDC	
21.May	Fri	Meeting with MTDC and ASI Consultant	Study of PPP and Finance	MTDC and ASI Consultant	MTDC and ASI Consultant		MTDC and ASI Consultant	
22.May	Sat	Meetings with CCDC and ASI Consultant	Study of PPP and Finance	CCDC and ASI Consultant	CCDC and ASI Consultant		CCDC and ASI Consultant	
23.May	Sun	Inspection of Similar and Relevant Facilities	DEL→BOM	Similar and Relevant Facilities	Similar and Relevant Facilities		Similar and Relevant Facilities	
24.May	Mon	Meetings with JICA, MTDC, ASI, TCS and ASI Consultant					MTDC	
25.May	Tue	Meetings with MTDC BOM→IXU					MTDC BOM→IXU	
26.May	Wed	Meetings with MTDC Aurangabad					NRT→DEL	MTDC Aurangabad
27.May	Thu	Seminar “Future Strategies for Cultural Tourism Development with Special Focus on AVC and EVC ” among stakeholders in Aurangabad					BOM→IXU	Seminar
28.May	Fri	Site survey (Ajanta)						
29.May	Sat	Site survey (Ellora)					IXU→BOM	
30.May	Sun	IXU→BOM					→NRT	
31.May	Mon	Meetings with MTDC						
1.Jun	Tue	Meetings with MTDC and ASI Consultant						
2.Jun	Wed	Meetings with TCS						
3.Jun	Thu	Meetings with ASI Consultant	BOM→DEL	ASI Consultant	BOM→DEL			
4.Jun	Fri	BOM→DEL	Meeting with JICA	BOM→DEL	JICA			
5.Jun	Sat	Preparation of DFR						
6.Jun	Sun	Inspection of Similar and Relevant Facilities and Organizations						
7.Jun	Mon	Meeting with JICA						
8.Jun	Tue	Preparation of DFR	DEL→	Preparation of DFR	DEL→		DEL→BOM	
9.Jun	Wed	Meeting with MOT, DEL→	→NRT	MOT	→NRT	Preparation of DFR		
10.Jun	Thu	→NRT				Preparation of DFR		
11.Jun	Fri					Meeting with MTDC		
12.Jun	Sat					Preparation of DFR		
13.Jun	Sun					Preparation of DFR		
14.Jun	Mon					BOM→		
15.Jun	Tue					→NRT		



### **Study Schedule (3)**

Day- Month		Team Leader/Visitor Centre (Institutional Capacity Building/Operations Management Planning)	Visitor Centre (TL Support/ Heritage Conservation and Utilisation)	Visitor Centre (PPP-a and Finance)	Visitor Centre (PPP-2 and Management)
		Fukuoka Yuuichi	KIYONO Yuki	SAKAI Toshihiko	Dr. Raja Venkataramani
4.Jul	Sun	NRT→DEL			-
5.Jul	Mon	Finalization of DFR			
6.Jul	Tue	Finalization of DFR			
7.Jul	Wed	Presentation and Discussion of Draft Final Report with JICA			
8.Jul	Thu	Presentation and Discussion of Draft Final Report with Ministry of Tourism DEL→BOM			
9.Jul	Fri	Discussion about Draft Final Report with MTDC			
10.Jul	Sat	Finalization of DFR			
11.Jul	Sun	Finalization of DFR			
12.Jul	Mon	Submitting and Discussion of Draft Final Report with MTDC			
13.Jul	Tue	BOM→DEL			
14.Jul	Wed	Preparation of FR			
15.Jul	Thu	Meeting with MOT			
16.Jul	Fri	Meeting of JICA DEL→		DEL→	Preparation of FR
17.Jul	Sat	→NRT			-

Appendix-3

**List of Participants**

<b><u>Name</u></b>	<b><u>Title</u></b>
<b><u>INDIAN Side</u></b>	
<b>• Relevant Authorities Concerned</b>	
<b>[Delhi]</b>	
<b>Ministry of Tourism (MOT)</b>	
Mr. Anand Kumar, IAS	Joint Secretary
Dr. Anupama Kumar	Director
Dr. Prabhakar Dubey	Director
Mr. Rangarajan	Asst. Director, International Cooperation
Ms. Neela Lad	Asst. Director, International Cooperation
Ms. Meenakshi Vashist	Asst. Director, International Cooperation
<b>Archaeological Survey of India (ASI)</b>	
Mr. Gautam Sengupta	Director General
Mr. Kanade	In Charge of JICA Project
<b>[Mumbai]</b>	
<b>Department of Tourism and Cultural Affair</b>	
Mr. Anarv Kulkarni	Principal Secretary Tourism
Mr. Ajay Ambekar	Deputy Secretary (Tourism)
<b>Maharashtra Tourism Development Corporation</b>	
Dr. Avinash Dhakne	Joint Managing Director
Mr. Vijay Chavan	General Manager
Mr. Shrikant V. Jadhav	Executive Engineer
Mr. Vinay Wavdhane	Manager (Works)
Mr. Rajan Momin	Sr. Manager (Development)
<b>[Aurangabad]</b>	
<b>District Office, Aurangabad</b>	
Dr. N. R. Shelke	Resident Dy. Collector/ Addl. District Magistrate
<b>Ministry of Tourism (MOT)</b>	
Mr. I. R. V. Rao	Assistant Director
<b>Maharashtra Tourism Development Corporation</b>	
Mr. Chandrashekhar S. Jaiswal	Senior Regional Manager, Aurangabad
<b>Archaeological Survey of India (ASI)</b>	
Mr. V. N. Prabhakar	Superintending Archaeologist
Dr. Manoj Kumar Kurmi	Assistant Archaeologist
Mr. KK Sheikh	Maintenance in Charge, Ajanta Caves Site Office

<u>Name</u>	<u>Title</u>
<b>MAHA Vitaran, Maharashtra State Electricity Distribution Co., Ltd.</b>	
Mr. Sirsikar Kishor Jageshwar	Chief Engineer
Mr. Pawar Somnath Namdeo	Superintending Engineer
Mr. Gadappa Satish N	Manager (P)
Mr. Ahire Prakash Vithalrao	Manager (F&A)
Mr. Shah Harshwardhan Ramanlal	Executive Engineer
Mr. Kamble A. M.	Dy. C.P.R.O
Mr. Waydande Shrikrishna Jagnnath	Dy. C.I.R.O
Mr. Surywanshi Siddarth Vajjinath	Dy. L. Officer
<b>Bharat Sanchar Nigam Ltd. (BSNL)</b>	
Mr. N.Rajashekar	General Manager
<b>Maharashtra Jeevan Pradhikaran (MJP)</b>	
Mr. Gajaran B. Rabde	Executive Engineer
<b>Maharashtra Police Department</b>	
Mr. Manoj Lohiya	Superintendent ( Rural: Aurangabad District)
<b>• Visited Relevant Institutions and Organizations</b>	
<b>[Mumbai]</b>	
<b>Chhatrapati Shivaji Maharaj Vastu Sangrahalaya (Prince of Wales) Museum</b>	
Mr. Ajay B. Kochle	Assistant Director, Administration
Dr. Prasanna Mangrulkar	Assistant Curator (Education)
<b>Dr. Bhau Daji Lad (Victoria &amp; Albert) Museum</b>	
Ms. Tasneem Mehta	Managing trustee & Honorary Director
Mr. Sunil Arya	Finance & Admin Manager
Ms. Poulami. Das	Senior Asst. Curator
<b>Kuoni Academy</b>	
Prof. Chittaranjan Bhattacharjee	Dean & SBU Head
Ms. Smeeta Gulvady	Regional Head -West
Ms. Renuka Natu	Head Marketing and Promotions
<b>Institute of Hotel Management, Catering Technology &amp; Applied Nutrition</b>	
Mr. Raj K. Saxena	Principal
Mr. Prabhu Desai	Administrative Officer
Ms. M. Bhattacharya	IT & Systems specialist
<b>[Aurangabad]</b>	
<b>Matoshree Kaushalya Purwar (Shivaji) Museum</b>	
Dr. Shantilal S. Purwar	Founder Director
Mr. Shriprakash S. Purwar	Director
Mr. M. D. Sonavane	City Engineer
Mr. Qamar Sheukh	Deputy Engineer
<b>State Archaeological Museum</b>	
Mr. Chetan S. Sali	Asst. Director

<u>Name</u>	<u>Title</u>
Mrs. Gore	Asst. Curator
<b>Dr. Babasaheb Ambedkar marathwada University Museum</b>	
Prof. Umesh Bagade	Professor & Head, Dept. of History & Ancient Indian Culture
Ms. Neelambari Jagtap	Museum Curator, Dept. of History & Ancient Indian Culture
<b>Dept. of Tourism Administration, Dr. Babasaheb Ambedkar marathwada University</b>	
Dr. Mulari Qureshi	Director
Dr. Rajesh Ragde	Reader
Dr. Madhuri Sawant	Lecturer
<b>Institute of Hotel management</b>	
Mr. Satish Jayaram	Principal
<b>Mahatma Gandhi Mission Mahagami (Sangeet Academy)</b>	
Shri A. N. Kadam	Secretary of MGM Trustees
Ms. Parwati Dutta	Director (Master Dancer)
<b>• Private Sectors</b>	
<b>[Delhi]</b>	
<b>Cultural Resource Conservation Initiative (CRCI) (ASI Consultant, Ellora)</b>	
Ms. Gurmeet S. Rai	Director
<b>[Mumbai]</b>	
<b>TATA Consultancy Services (TCS)</b>	
Dr. D. J. Rao	Senior Consultant
Ms. Priya M. Varghese	Tourism Planer
Mr. Manub Loi Parman	Engineer
Mr. M. D. Parmar	Consultant
Prof. T. M. Chhaya	Architect (CCDC)
Mr. Atrey Chhaya	Exhibition Planner (CCDC)
Ms. Anjana T. Chhaya	Architect (CCDC)
<b>A Akar Abhinav Consultants Pvt. Ltd. (MTDC Consultant, Land Use)</b>	
Mr. Amol S. Khair	Managing Director
<b>Vastu Yojana Architects &amp; Planners Pvt. Ltd. (MTDC Consultant, Land Use)</b>	
Mr. Anil Sule	Managing Director
<b>Abha Narain Lambah Associates (ASI Consultant, Ajanta)</b>	
Ms. Abha Narain Lambah	Principal
Ms. Sanaeya Erach Vandrewala	
Ms. Shraddha Bhatawadekar	
Ms. Anna Mill	
<b>K. J. Somaiya Centre for South and South East Asian Studies (Previous Director of State Archaeology and Museums, Maharashtra)</b>	
Dr. A. P. Jamkhedkar	Director

<u>Name</u>	<u>Title</u>
<b>[Aurangabad]</b>	
<b>VCs Site Office (Project Site Office)</b>	
Mr. Rane Yogesh Ramesh	Site Engineer (CCDC)
Mr. B. Deepak Motiram	HVAC Supervisor
<b>Taj Residency, Aurangabad</b>	
Mr. Deepak Cedric Menezes	General Manager
<b>Welecom Hotel, Rama International</b>	
Mr. Shrikant Jogdand	Unit Manager-sales & Marketing
<b>Kailas Hotels PVT ltd in Ellora</b>	
Mr. Suil Shah	Owner /General Manager
<b>PR Holidays &amp; Events (Tour Agent)</b>	
Mr. Jaswant Singh	Director
<b>Aurangabad Transportation Syndicate (Tour Agent)</b>	
Mr. Vijayan	Director
<b>Freelance Tour Guide</b>	
Mr. Mohammed A. S. Hashmi	Tour Guide (over 40 years experience)

#### JAPANESE SIDE

##### • Relevant Authorities Concerned

###### **[Delhi]**

###### **JICA India Office**

Mr. YAMANAKA Shinichi	Chief Representative
Ms. SUZUKI Osamu	Senior Representative
Mr. ASAKUMA Yumiko	Senior Representative
Mr. SAITO Mitsunori	Representative
Mr. SARIN Vineet	Lead Development Specialist
Mr. HIRAI Osamu	Project Formulation Adviser

##### • Visited Relevant Institutions and Organizations

###### **[Tokyo]**

###### **Waseda University**

Dr. NAKAGAWA Takeshi	Professor, School of Science and Engineering, Department of Architecture
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###### **University of Tsukuba**

Dr. INABA Nobuko	Professor, World Heritage Studies, Graduate School of Comprehensive Human Science
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###### **Suntory Museum of Art**

Mr. WAKABAYASHI Satoru	Assistant Director
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**The Outline of M & E Installation for AVC**

**ELECTRICAL INSTALLATION**

Sub-Station	Incoming Supply :	11KV Overhead 2- Express lines
	Sub-Station :	Outdoor Open type
	Transformer :	11 kV / 415-240V, 2 x 750 [kVA] Oil- Immersed ,Self-Cooled Outdoor type
Stand-by Generator	:	415-240V 1x750 [kVA] + 1 x 250 [kVA]

Lighting & Power Load		
Lighting	General Lightings & Display Lightings	111.12 [kW]
Power	General Socket Outlets & Power for Display	292.41 [kW]

**HVAC INSTALLATION**

Water Cooled Recip. Chiller (Working)	2 sets	135 RT	105 [kW]
Water Cooled Recip. Chiller (Stand-by)	1 set	135 RT	105 [kW]

Chilled Water Pump	3 sets	11.3 [kW]/ 15.0 [HP]
Condenser Water Pump	3 sets	9.3 [kW]/ 12.5 [HP]
Cooling Tower	3 sets	5,5 [kW]/ 7.5 [HP]

AHUs & FCUs			
AHU	2.2 kW ~ 9.3 kW	Total 9 sets	Total : 54.1 [kW]
FCU	3 x 1.5TR	Total 3 sets	( 1 φ 240 V )

Ventilation Fans			
Supply Air Fans	Cave & AC Plant	Total 10 sets	Total : 17.2 [kW]
	Kitchen & AC Pkant	Total 4 sets	Total : 8.3 [kW]
Exhaust Air Fans	HT	Total 4sets	( 1 φ 240 V )
	Toilet	Total 31sets	( 1 φ 240 V )

**FIRE PROTECTION INSTALLATION**

Fire Water Sump : 2 x 50 [m<sup>3</sup>]

Jockey Pump	14.4 [m <sup>3</sup> /hr]	240 [LPM]	70 [m] Head	7.5 [kW]
Main Pump	144 [m <sup>3</sup> /hr]	2,400 [LPM]	70 [m] Head	55.0 [kW]
Stand-by Pump	144 [m <sup>3</sup> /hr]	2,400 [LPM]	70 [m] Head	79.0 [HP]

**PLUMBING & STP**

Water Tank : 2 x 50 [m<sup>3</sup>]

Working Pump	2 Pump sets	250 [LPM]	25 [m] Head	3,7 [kW]/ 5 [HP]
Stand-by Pump	2 Pump sets	250 [LPM]	25 [m] Head	3,7 [kW]/ 5 [HP]

**ELEVATOR & ESCALATOR**

Elevator : 2 x 10 [kW]  
Escalator : 2 x 12 [kW]

**OUTLINE OF BUILDING**

Structure : RC 2F  
Total Floor Area : 17,936 m<sup>2</sup>

01 April, 2010 Aurangabad, India  
The Study Team

Source: As Built Drawings (uncertified) prepared by the Contractor. 2009

## Particulars of Electrical Load for AVC

MAIN LV PANEL					
TR	Distribution Board	Connected Load [kW]			
		Connected Load	Diversion Factor	Max, Demand	
<p>TR-1 750kVA</p>	X	MDB LIGHTING-1	76.71	0.9	69.04
	X	MDB POWER-1	187.50	0.4	75.00
	X	MDB AHU-1	23.80	0.8	19.04
	X	MDB PLUMBING & STP	35.50	0.6	21.30
	X	AC PANEL-1	115.70	0.8	92.50
	X	MDB-WATER BODIES	60.00	0.8	48.00
	X		499.21		324.88
	X	CAPACITOR	125 [kVAR]		
	X	(SPARE)			
	X	(SPARE)			
	X	(SPARE)			
<p>TR-2 750kVA</p>	X	FIRE PANEL	50.00	0.3	15.00
	X	MDB LIGHTING-2	34.41	0.9	30.97
	X	MDB POWER-2	104.91	0.4	41.96
	X	MDB AHU-2	49.10	0.8	39.28
	X	MDB ELEVATOR	45.00	1.0	45.00
	X	MDB EXTERNAL	45.26	0.9	40.73
	X		294.27		212.94
	X	CAPACITOR	125 [kVAR]		
	X	(SPARE)			
	X	(SPARE)			
	X	(SPARE)			
			<b>Connected Load = 793.48 [kW]</b> <b>Overall Viverion Factor = 0.677</b> <b>Maximum Demand = 537.82 [kW]</b>		

**MDB LIGHTING-1**

LDB-1		6.55
LDB-2		6.75
LDB-3		9.35
LDB-1A		4.75
LDB-6		5.33
LDB-8		4.58
LDB-9		8.08
LDB-10		4.49
LDB-6A		4.63
Inverter 15 kVA	→ SUB-LIGHTING G-1	3.72
LDB-8A		9.48
EXHAUST FAN		3.70
START-1		1.90
START-2		1.90
LDB (Security Cabin)		1.50
		Connected Load = 76.71 [kW]
		Overall Diversion Factor = 0.9
		Maximum. Demand = 69.04 [kW]

**SUB-LIGHTING G-1**

		Connected Load = 3.72 [kW]
		Overall Diversion Factor = 0.9
		Maximum. Demand = 3.35 [kW]

**MDB LIGHTING-2**

LDB-5		5.05
LDB-7		5.24
LDB-7A		4.97
LDB-12		5.65
LDB-14		2.92
LDB-15		3.86
LDB-5A		2.90
Inverter 15 kVA	→ SUB-LIGHTING G-1	1.82
LDB (STP)		2.00
		Connected Load = 34.41 [kW]
		Overall Diversion Factor = 0.9
		Maximum. Demand = 30.97 [kW]

**SUB-LIGHTING G-1**

		Connected Load = 1.82 [kW]
		Overall Diversion Factor = 0.9
		Maximum. Demand = 1.64 [kW]

**MDB EXTERNAL**

LDB-EXT-1		8.25
LDB-EXT-2		8.79
LDB-EXT-3		6.70
LDB-EXT-4		6.17
LDB-EXT-5		7.65
EXH FAN		2.20
EXH FAN		5.50
BATT CHARGER		
		Connected Load = 45.26 [kW]
		Overall Diversion Factor = 0.9
		Maximum. Demand = 40.73 [kW]





## Present Situation of the Infrastructure for AVC

### AVC

#### Power Supply

- Two (2) Express, 11 [kV] overhead HT Incoming Supply Cables were stringed and connected to the Sub-station of AVC.
- 90 % of the work under MSED for the HT supply line has been completed, however not energized yet.
- The Express 11 [kV] lines are separate power supply lines from the Existing lines supplying to the Ajanta Caves.
- Supply capacity of 33/11[kV] Primary Sub-station to the Express11 [kV] line for AVC is 2 [MVA] (=2,000 [kVA] )

#### Telecommunication

- 300 telephone lines up to Fardapur, approx. 2 [km] away from AVC, are available now.
- 10 lines have been utilized by Pick-up point.
- Therefore, BSNL is able to supply the demand for the telephone lines to AVC on request.

#### Water Supply

- 90% of the water supply system to Ajanta Caves view point has been completed, but not to AVC.
- 12 [in] (=300mm  $\phi$ ) water main will be laid nearby AVC and 2 [in] (= 50mm  $\phi$ ) branch-off pipe with the length of approx.100 [m] to AVC will be laid as an incoming main.
- Water pressure of the main pipe is expected as 20 [m] water head (=2 [kg/cm<sup>2</sup>]=200[kPa]=2[bar])

## The Outline of M & E Installation for EVC

### ELECTRICAL INSTALLATION

Sub-Station	Incoming Supply :	11KV Underground 1- Express line
	Sub-Station :	Outdoor Open type
	Transformer :	11 kV / 415-240V, 2 x 630 [kVA] Oil- Immersed ,Self-Cooled Outdoor type
Stand-by Generator	:	415-240V 2 x 320 [kVA]

Lighting & Power Load		
Lighting	General Lightings & Display Lightings	84.8 [kW]
Power	General Socket Outlets & Power for Display	142.5 [kW]

### HVAC INSTALLATION

Water Cooled Recip. Chiller (Working)	2 sets	70 RT	60.0 [kW]
Water Cooled Recip. Chiller (Stand-by)	1 set	70 RT	60.0 [kW]

Chilled Water Pump	276[USGPM] 36.6[m]	3 sets	15.0 [kW]
Condenser Water Pump	345 {USGPM} 25[m]	3 sets	9.3 [kW]
Cooling Tower	230 [USGPM]	3 sets	1.5 [kW]
Condenser Water Tank	10,000 [L]	1unit	

AHUs & FCUs			
AHU	1.5 [kW]~5.5[ kW]	Total 8 sets	Total : 28.0 [kW]
FCU	0.07 [kW]	Total 4 sets	( 1 $\phi$ 240 V )

Ventilation Fans			
Supply Air Fans	Cave & AC Plant		Total : 20.0 [kW]
	Kitchen & AC Plant		
Exhaust Air Fans	HT		( 1 $\phi$ 240 V )
	Toilet		( 1 $\phi$ 240 V )

### FIRE PROTECTION INSTALLATION

Fire Water Sump : 2 x 45 [m<sup>3</sup>]

Jockey Pump	14.4 [m <sup>3</sup> /hr]	240 [LPM]	70 [m] Head	7.5 [kW]
Main Pump	144 [m <sup>3</sup> /hr]	2,400 LPM]	70 [m] Head	55.0 [kW]
Stand-by Pump	144 [m <sup>3</sup> /hr]	2,400 [LPM]	70 [m] Head	75.0 [HP]

### PLUMBING & STP

Water Tank : 2 x 45 [m<sup>3</sup>]

Working Pump	2 Pump sets	250 [LPM]	25 [m] Head	3,7 [kW]/ 5 [HP]
Stand-by Pump	2 Pump sets	250 [LPM]	25 [m] Head	3,7 [kW]/ 5 [HP]

### ELEVATOR & ESCALATOR

Nil

### OUTLINE OF BUILDING

Structure : RC 2F  
Total Floor Area : 14,090 m<sup>2</sup>

01 April, 2010 Aurangabad, India  
The Study Team

Source: As Built Drawings (uncertified) prepared by the Contractor. 2009



**MDB LIGHTING-1**

LDB-1	Restaurant-1	8.80						
LDB-2	Restaurant-2	5.70						
LDB-3	Shop-1	7.00						
LDB-4	Shop-2	7.00						
LDB-5	Interpretation Centre	4.30						
LDB-5A	Interpretation Centre	3.40						
LDB-6	Interpretation Centre	2.70						
LDB-6A	Interpretation Centre	2.60						
LDB-6B	Interpretation Centre	1.80						
LDB-7	Interpretation Centre	8.10						
LDB-7A	Interpretation Centre	6.50						
LDB-11	Interpretation Centre	1.50						
LDB-STP	Drivers Utility	1.50						
<table border="1"> <tr><td>Connected Load</td><td>= 60.90 [kW]</td></tr> <tr><td>Overall Diversion Factor</td><td>= 0.9</td></tr> <tr><td>Maximum. Demand</td><td>= 54.81 [kW]</td></tr> </table>			Connected Load	= 60.90 [kW]	Overall Diversion Factor	= 0.9	Maximum. Demand	= 54.81 [kW]
Connected Load	= 60.90 [kW]							
Overall Diversion Factor	= 0.9							
Maximum. Demand	= 54.81 [kW]							

**MDB EXTERNAL**

LDB-EXT-1	Security Cabin	11.70						
LDB-EXT-2	Twowheeler Parking	12.20						
LDB-EXT-3	Restaurant	8.30						
LDB-EXT-4	Interpretation Centre	6.60						
<table border="1"> <tr><td>Connected Load</td><td>= 38.80 [kW]</td></tr> <tr><td>Overall Diversion Factor</td><td>= 0.9</td></tr> <tr><td>Maximum. Demand</td><td>= 34.92 [kW]</td></tr> </table>			Connected Load	= 38.80 [kW]	Overall Diversion Factor	= 0.9	Maximum. Demand	= 34.92 [kW]
Connected Load	= 38.80 [kW]							
Overall Diversion Factor	= 0.9							
Maximum. Demand	= 34.92 [kW]							

**MDB LIGHTING-2**

LDB-6C	Interpretation Centre	3.10						
LDB-8	Interpretation Centre	2.20						
LDB-8A	Interpretation Centre	2.50						
LDB-10A	Interpretation Centre	3.10						
LDB-9A	Tourist Center	2.10						
LDB-10	Tourist Center	4.80						
LDB-9	Tourist Center	6.10						
Inverter 15 kVA	→ SUB-LIGHTING-1							
<table border="1"> <tr><td>Connected Load</td><td>= 23.90 [kW]</td></tr> <tr><td>Overall Diversion Factor</td><td>= 0.9</td></tr> <tr><td>Maximum. Demand</td><td>= 21.51 [kW]</td></tr> </table>			Connected Load	= 23.90 [kW]	Overall Diversion Factor	= 0.9	Maximum. Demand	= 21.51 [kW]
Connected Load	= 23.90 [kW]							
Overall Diversion Factor	= 0.9							
Maximum. Demand	= 21.51 [kW]							

**SUB-LIGHTING-1**

<table border="1"> <tr><td>Connected Load</td><td>= 6.52 [kW]</td></tr> <tr><td>Overall Diversion Factor</td><td>= 0.9</td></tr> <tr><td>Maximum. Demand</td><td>= 5.87 [kW]</td></tr> </table>			Connected Load	= 6.52 [kW]	Overall Diversion Factor	= 0.9	Maximum. Demand	= 5.87 [kW]
Connected Load	= 6.52 [kW]							
Overall Diversion Factor	= 0.9							
Maximum. Demand	= 5.87 [kW]							

**MDB POWER-1**

PDB-1	Restaurant-1	14.10
PDB-2	Restaurant-2	10.00
PDB-3A	Interpretation Centre	9.80
PDB-4	Shop-1	6.20
PDB-10	Tourist Centre	6.20
PDB-6	Interpretation Centre	8.80
PDB-6A	Interpretation Centre	7.60
PDB-8	Interpretation Centre	7.20
PDB-10A	Tourist Centre	6.80
PDB-3	Shop-2	6.40
PDB-6B	Interpretation Centre	5.80
PDB-11	Drivers Utility	3.00
Connected Load = 91.90 [kW] Overall Diversion Factor = 0.5 Maximum. Demand = 45.95 [kW]		

**MDB POWER-2**

PDB-9	Tourist Centre	8.80
PDB-9A	Tourist Centre	11.00
PDB-5	Interpretation Centre	1.20
PDB-7	Interpretation Centre	5.50
PDB-7A	Interpretation Centre	3.60
PDB-6C	Interpretation Centre	6.50
PDB-4A	Shop-1	7.00
PDB-3A	Shop-2	7.00
Connected Load = 50.60 [kW] Overall Diversion Factor = 0.5 Maximum. Demand = 25.30 [kW]		

**MDB AHU-1**

Ventilation Fan-8	Kitchen-2	2.20
AHU-5	IC Orientation Hall-1	5.50
AHU-6	IC Orientation Hall-2	3.70
AHU-7	IC Museu -1	3.70
AHU-8	IC Museu -2 & 3	5.50
AHU-1	Tourist Centre	3.70
AHU-2	Tourist Centre	3.70
Connected Load = 28.00 [kW] Overall Diversion Factor = 0.8 Maximum. Demand = 22.40 [kW]		

**MDB AHU-2**

AHU-3	Restaurant-1	2.20
AHU-4	Restaurant-2	2.20
Ventilation Fan-7	Kitchen-1	2.20
Ventilation Fan-1	DC Room	2.20
Ventilation Fan-2	DG Room	1.50
Ventilation Fan-5	Pump Room	1.50
Ventilation Fan-6	Pump Room	1.50
Ventilation Fan-9	Panel Room	1.50
Ventilation Fan-10	Panel Room	1.50
Ventilation Fan-11	Panel Room	1.50
Ventilation Fan-12	Panel Room	1.50
Connected Load = 19.30 [kW] Overall Diversion Factor = 0.8 Maximum. Demand = 15.50 [kW]		

**MDB PLUMBING & STP**

Connected Load = 35.00 [kW] Overall Diversion Factor = 0.6 Maximum. Demand = 21.00 [kW]		
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## Present Situation of the Infrastructure for EVC

### EVC

#### Power Supply

- One (1) Express, 11 [kV] underground HT Incoming Supply Cable was laid and connected to the Sub-station of EVC.
- The work under MSED for the HT supply line has been completed, however not energized yet.

- Supply capacity of 33/11[kV] Primary Sub-station to the Express 11 [kV] line for EVC is 1.3 [MVA] (=1,300 [kVA] )

#### Telecommunication.

- 500 telephone lines up to Pick-up point are available now. Therefore, BSNL foresee no difficulty in supplying the demand for the telephone lines to EVC. However, no request to BSNL so far.

#### Water Supply

- Water supply system to Ellora Caves has been completed.
- 8 [in] (=200mm  $\phi$  ) water main will be laid nearby EVC and 2 [in] (= 50mm  $\phi$  ) branch-off pipe with the length of approx.100 [m] to EVC will be laid as an incoming main.
- Water pressure of the main pipe is expected as 16 [m] water head (=1.6 [kg/cm<sup>2</sup>]=160[kPa]=1.6[bar])

## Tariff of Electricity, Telephone, Water & Diesel Oil for AVC & EVC

### Electricity Tariff

- 1) Consumer category “HT-VI (B) Commercial Complex” listed in the schedule of electricity charges is applicable for both AVC and EVC respectively.
- 2) Fixed Demand Charge is Rs125 per KVA per month and Energy Charge is Rs6.<sup>00</sup> / kWh

### Telephone Tariff

- 1) Rs.500 for new connection charge.
- 2) A Free Card costs Rs.50/fixed-month is for 75 [times] City Calls (means 75 [units])  
Long Distance Call inside India – 1 [min.] is converted as 1 [unit]  
Overseas Call to USA – 10 [sec.] is converted as 1 [unit] and to Japan is 6 [sec.] as 1 [unit]

### Water Charge

- 1) Rs.28.<sup>9</sup> per m<sup>3</sup> plus amenity fee of Rs.2.<sup>0</sup> per a head (visitor)

### Diesel Oil for Emergency Generator

- 1) Rs.40.<sup>0</sup> per litter



## No Load Loss Calculation of the Transformers for AVC & EVC

### AVC

Transformer 750 kVA x1 for Stand-by

No load loss : 970 W (--- High Efficiency Transformer)

Annual cost for no load loss is :

$$0.97 \text{ kW} \times 24 \text{ hours/day} \times 365 \text{ days/year} = 8,497 \text{ kWh}$$

$$8,497 \text{ kWh} \times \text{Rs.}6.^0 / \text{kWh} = \underline{\text{Rs.}50,983 / \text{year}}$$

### EVC

Transformer 630 kVA for Stand-by

No load loss : 816 W (--- High Efficiency Transformer)

Annual cost for no load loss is :

$$0.816 \text{ kW} \times 24 \text{ hours/day} \times 365 \text{ days/year} = 7,148 \text{ kWh}$$

$$7,148 \text{ kWh} \times \text{Rs.}6.^0 / \text{kWh} = \underline{\text{Rs.}42,888 / \text{year}}$$

## Appendix: LIST OF REGULAR MAINTENANCE FOR MAJOR ITEMS (Building Works)

Maintenance Works are often accompanied by unexpected danger, therefore, it is preferable to work with two or more staff where and when dangerous work is expected.

Maintenance Item	Frequency of Maintenance (Clean & check once as noted)						Remarks
	1 day	1 week	1 month (s)	6 month (s)	1 year	As needed	
<b>Interior</b>							
Trash - Collection & Disposal	•						
Ventilation of All Rooms - Open windows, Mechanical ventilation	•						5-10 minutes <u>minimum</u>
Each Rooms' Floor - Sweeping, Wiping	•						
Common Use Space's Floor - - Sweeping, Wiping	•						Entrance, Corridor etc.
WC & Pantry - * <sup>1</sup> Clean with wet mop, Check for equipment	•						Pipe leaks, Poor drainage
Common Use Space's Floor - * <sup>1</sup> Clean with wet mop		•					Entrance, Corridor etc.
Floor Drain & Gutter - Drain cleaning		•	■				Record / Report
Furniture - Clean with soft dry cloth		•					Chairs, Tables, Cabinets, Shelves, Counters, etc.
Steel Furniture - Clean surface by damp cloth with neutral detergent, and dry off moisture thoroughly		•					
Notice Boards - Clean surface by soft brush			•				
Stainless Steel Sink - Clean surface by damp cloth with neutral detergent, and dry off moisture thoroughly			•	■			
Windowpane - Clean with soft wet cloth or wet newspaper			•	■			
Doors & Windows, Shutter - Check hardware				•			All hardware: Handle, Lock set, Closer, Hinge, etc.
Furniture Damages - Fix, Tighten, Replace lost bolt, screw / bond				•			Retighten / Re-bonding
Wall Mortar & Floor Tile - Check by tapping test					•		

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Maintenance Item	Frequency of Maintenance (Clean & check once as noted)						Remarks
	1 day	1 week	1	6	1 year	As needed	
			month (s)				
Steel Furniture - Polish with soft dry cloth					•		
Metal Surfaces such as Handrails, Steel Poles, etc. - Check for rust development						•	Remove rust and clean, re-paint/re-coating as required, or polish
<b>Exterior</b>							
Garbage - Collection & Disposal	•						
Complex or Yard - Sweeping	•						
Exterior Ditch / Road Drainage - Drain Cleaning			•				
Roof Drain - Drain cleaning, Check for damage			•				
Roof - Check for leaks and damage				•			
Outdoor Equipment for A/C* <sup>2</sup> - Clean around machine				•			
Water-proofing - Check for damage					•		
Seals - Check for damage					•		Roof windows, Expansion joints, etc.
External Walls - Check for damage, cracks					•		
External Walls - Wash off grime, graffiti						•	Clean with stiff brush and water/detergent, wash-off surface, and repaint as necessary
Metal Surfaces - Check for rust development						•	Remove rust and clean, re-paint/re-coating as required, or polish handrail, pole, etc.
<b>Fountain</b>							
Water Supply Pipe			•				
Water Pump - Check for appearance and control valves			•				Abnormal leakage from ground seal, Corrosion of pump
Water Pump -Check electrical motor			•				Current, Insulation value
<b>IRRIGATION SYSTEM</b>							
Irrigation Pump - Check for appearance and control valves			•				Abnormal leakage from ground seal, Corrosion of pump

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Maintenance Item	Frequency of Maintenance (Clean & check once as noted)						Remarks
	1 day	1 week	1 month (s)	6	1 year	As needed	
- Check and clean all valves and strainer			•				
<b>Others</b>							
Damages - Repair or replace & Cleaning						•	Don't leave unrepaired.

\*1. After cleaning with wet mop or cloth, it is necessary to wipe dry.

\*2. A/C: Air Conditioning

## Appendix: LIST OF REGULAR MAINTENANCE FOR MAJOR ITEMS (Electrical Works)

Basically and more preferably,  
follow the instructions described in manufacture's service manual provided.

Item	Frequency of Maintenance (Clean & check once as noted)						Remarks
	1 day	1 week	1 month	6 (s)	1 year	As needed	
<b>Electrical Board</b>							
- Wipe off dust				•			Clean without using water <b>(KEEP DRY)</b>
- Check for function				•			Abnormal sound, Blown light bulb, Alarm function, Fuse & Relays
- Check voltage, current				•			Record / Report
- Check for fixation stability & earth termination				•			Retighten or replace
- Check isolation & measure earth resistance					•		Record / Report
- Adjust timer						•*	*As necessary
<b>Electrical Distribution Board</b>							
Electrical Distribution Board - Check for damage or corrosion			•	■			
Electrical Distribution Board - Wipe off dust				•			Clean without using water <b>(KEEP DRY)</b>
MCCB* <sup>1</sup> & ELCB* <sup>2</sup> in Electrical Board - Check for termination & function					•		Retighten / Exchange
<b>Lighting Fixture</b>							
- Check for blown-out and fluctuation light bulb		•					Exchange When using a fluorescent light, check for glow lamp (glow switch starter) as well.
- Check for fixation stability, damage or corrosion			•	■			Re-fix / Exchange
- Wipe off dust				•			Clean without using water <b>(KEEP DRY)</b>
<b>PABX (Private Automatic Branch Exchange)</b>							
- Ensure room temperature		•					
- Check for fixation stability, damage or corrosion			•	■			

Item	Frequency of Maintenance (Clean & check once as noted)						Remarks
	1 day	1 week	1 month (s)	6	1 year	As needed	
- Wipe off dust				•			Clean without using water <b>(KEEP DRY)</b>
- Test operation with battery & check					•		
<b>LAN (Local Area Network)</b>							
- Ensure room temperature		•					
- Check for fixation stability, damage or corrosion			•	■			
LAN/HUB Rack (Fan) - Clean fan, Check for condition			•	■			
- Wipe off dust including HUB				•			Clean without using water <b>(KEEP DRY)</b>
- Test operation including HUB				•			
<b>Fire Alarm System</b>							
Indication Lamp - Wipe off dust			•				Clean without using water <b>(KEEP DRY)</b>
FHR* <sup>3</sup> Enclosure - Wipe off dust				•			Clean without using water <b>(KEEP DRY)</b>
- Test operation of FHR					•		
Detector, Push Button, Bell & Indication Lamp - Check for function					•		
<b>FACP (Fire Alarm Control Panel)</b>							
- Check for fixation stability, damage or corrosion			•	■			
- Wipe off dust				•			Clean without using water <b>(KEEP DRY)</b>
- Test operation & check battery charge					•		
<b>Public Address System</b>							
- Check for fixation stability, damage or corrosion			•	■			
- Wipe off dust				•			Clean without using water <b>(KEEP DRY)</b>
- Test operation and check local control volume					•		
<b>Others</b>							
Damages or Corrosion - Repair & Cleaning			•	■			Don't leave unrepaired.
Lightning protection - Check for fixation stability				•			Check guy wire and supports
Grounding - Measure earth resistance					•		Less than 2Ω for equipment and less than 10Ω for the lighting

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- \*<sup>1</sup>. MCCB: Molded Case Circuit Breaker
- \*<sup>2</sup>. ELCB: Earth Leakage Circuit Breaker
- \*<sup>3</sup>. FHR: Fire Hose Reel

## Appendix: LIST OF REGULAR MAINTENANCE FOR MAJOR ITEMS (Generator-Table A)

Basically and more preferably,  
follow the instructions described in manufacture's service manual provided.

Item	Frequency of Maintenance (Clean & check once as noted)						Remarks
	1 day	1 week	1 month	6 month	1 year	As needed	
- Check for fuel level		●					Record / Report
- Test runs			●*				*Run 10 minutes every month Check for noise
- Check for fixation stability including panel board			●				
- Check engine oil & coolant level			●				Record / Report
- Check termination of MCCB* <sup>1</sup> & earth				●			
- Check battery electrolyte level				●			Record / Report
- Check fan belt				●			
- Check color of engine exhaust smoke				●			
- Check & replace oil filter cartridge						●*	*At first, 250 running hours and every 500 hours thereafter Record / Report
- Check & replace fuel filter cartridge						●*	*At first, 250 running hours and every 500 hours thereafter Record / Report
- Check & replace air cleaner element						●*	*At first, 250 running hours and every 500 hours thereafter Record / Report
- Check & change engine oil					●		Record / Report When it gets dirty, change it
- Clean air cleaner element					●		
- Clean radiator fins					●		
- Check glass wool of cabinet					●		
- Components needing periodic replacement						●	Refer to Manual Record
- Repair & Cleaning						●	Don't leave unrepaired.

\*<sup>1</sup>. MCCB: Molded Case Circuit Breaker



## Appendix: LIST OF REGULAR MAINTENANCE FOR MAJOR ITEMS (Generator-Table B)

Basically and more preferably,  
follow the instructions described in manufacture's service manual provided.

Item	Frequency of Maintenance (Clean & check once as noted)						Remarks
	1 day	50 running hours	250 running hours	500 running hours	1,000 running hours	As needed	
- Check for fuel level		•					Record / Report
- Test runs			•*				*Run 10 minutes every month Check for noise
- Check for fixation stability including panel board			•				
- Check engine oil & coolant level			•				Record / Report
- Check termination of MCCB* <sup>1</sup> & earth				•			
- Check battery electrolyte level				•			Record / Report
- Check fan belt				•			
- Check color of engine exhaust smoke				•			
- Check & replace oil filter cartridge						•*	*At first, 250 running hours and every 500 hours thereafter Record / Report
- Check & replace fuel filter cartridge						•*	*At first, 250 running hours and every 500 hours thereafter Record / Report
- Check & replace air cleaner element						•*	*At first, 250 running hours and every 500 hours thereafter Record / Report
- Check & change engine oil					•		Record / Report When it gets dirty, change it
- Clean air cleaner element					•		
- Clean radiator fins					•		
- Check glass wool of cabinet					•		
- Components needing periodic replacement						•	Refer to Manual Record
- Repair & Cleaning						•	Don't leave unrepaired.

## Appendix: LIST OF REGULAR MAINTENANCE FOR MAJOR ITEMS (Mechanical Works)

Basically and more preferably,  
follow the instructions described in manufacture's service manual provided.

Item	Frequency of Maintenance (Clean & check once as noted)						Remarks
	1 day	1 week	1 month	6 month	1 year	As needed	
<b>A/C (Air Conditioning) / Heat Pump System</b>							
A/C - Check Room Temperature	•						Keep 24-26°C by temperature control, Confirm there are no dew condensation
A/C Filter - Wipe off dust or replace, Check			•				In the case of heavy use, clean every 2 weeks.
A/C Air Grill - Wipe off dust			•				In the case of heavy use, clean every 3 weeks.
A/C Drain Pan - Drain cleaning				•			
<b>Sanitary fixtures</b>							
- Clean floor drainage			•				
- Flush all sanitary fitting and discharge water to floor trap			•				
- Inspect plumbing sanitary				•			
Flush Timing Control - Check for power supply				•			
- Check and clean all soil and waste from manhole				•			
- Clean inside flush valve					•		Refer to attached sheet A
<b>Plumbing Installation</b>							
Water Reservoir Tank - Check for appearance			•				
Water Treatment System - Check for appearance			•				Pressure loss of sand filter, Corrosion of pumps & filter, etc.
Water Supply Pump - Check for appearance and control valves			•				Abnormal leakage from ground seal, Corrosion of pump
Water Supply Pump -Check electrical motor			•				Current, Insulation value
Fire Hydrant Pump - Running test			•				
Fire Hydrant Pump - Discharge test				•			

Item	Frequency of Maintenance (Clean & check once as noted)						Remarks
	1 day	1 week	1 month	6 month	1 year	As needed	
All Pumps - Check and clean water strainer as necessary			•				
All Pumps - Check alignment and condition of all flexible coupling between pump and motor if any				•			
All Pumps - Check all bearing and lubricate with oil or grease as necessary				•			
Hot Water Heating System - Check for appearance and control valves				•			Leakage, Overheating, Abnormal sound, etc.
Water Supply Equipment - Clean inside faucets					•		Refer to attached sheet B
Water Treatment System - Clean inside of tank					•		
Water Reservoir Tank - Clean inside of tank					•		Work with 2 or more staffs Record / Report
Fire Extinguisher - Exchange powder					•*		* Once every 3 years or so required
<b>Ventilation System</b>							
Exhaust / Ventilation Fan - Check for noise & vibration of fan			•	■			
Exhaust / Ventilation Fan - Clean fan, Check for condition				•			Clean insect screen, if any
Exhaust / Ventilation Fan - Check fan belt and tighten if necessary					•		
<b>WWTS (Waste Water Treatment System)</b>							
- Clean suction strainer			•	■			
- Check for system and appearance			•	■			Appearance of treated water, Sewage/drainage pipe line, Foul odor from WWTS
- Remove waste, Clean basket screen			•	■			
- Remove sludge in tank			•	■			

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Item	Frequency of Maintenance (Clean & check once as noted)						Remarks
	1 day	1 week	1 month	6 month	1 year	As needed	
- On site water analysis test, chemical dosing as necessary				•			
- Clean inside of tank						•*	* Once every 5 years Work with 2 or more staffs Record / Report
All Pumps - Check and clean water strainer as necessary			•				
All Pumps - Check alignment and condition of all flexible coupling between pump and motor if any				•			
All Pumps - Check all bearing and lubricate with oil or grease as necessary				•			
<b>SEPTIC TANK</b>							
- Check for appearance	•	■					Appearance of treated water, Foul odor, Noise
- Check inside of tank			•				Remove floating debris and garbage
- Check blower pump					•		Refer to Manual, Lubricate parts
- Remove sludge					•		Work with 2 staffs or more Record / Report
- Cleaning & Readjustment					•		Work with 2 staffs or more Record / Report
- Clean inside of tank						•	
- Repair						•	

## Appendix: LIST OF REGULAR MAINTENANCE FOR MAJOR ITEMS (Equipment Works)

Basically and more preferably,  
follow the instructions described in manufacture's service manual provided.

Item	Frequency of Maintenance (Clean & check once as noted)						Remarks
	1 day	1 week	1 month	6 month	1 year	As needed	
<b>General Items</b>							
- Clean in appropriate way and timing	•						Before & after using equipment, Record
- Check quantity	•						Before & after using equipment, Record
- Check power supply	•						Power source, UPS* <sup>1</sup> / AVR* <sup>2</sup>
- Check noise, temperature	•						
<b>PC (Personal Computer)</b>							
PC & UPS* <sup>1</sup> - Switch ON / OFF	•						UPS(ON)→PC(ON)→PC(OFF)→UPS(OFF)
UPS* <sup>1</sup> - Check battery water level	•	■					
PC - Clean screen surface & keyboard with a clean, lint-free cloth		•					
<b>Printer, Photocopier</b>							
- Clean glass surface by damp cloth with neutral detergent			•				
- Clean outside by damp cloth with neutral detergent			•				
- Clean inside by a clean, lint-free cloth			•				
- Clean inside accessible areas by brushing or vacuuming			•				
- Clean print head as instructed			•				
- Clean Paper Feed Trays and Rubber Drive Rollers						•	

\*<sup>1</sup>. UPS: Uninterruptible Power Supply System (Unit)

\*<sup>2</sup>. AVR: Automatic Voltage Regulator

Item	Frequency of Maintenance (Clean & check once as noted)						Remarks
	1 day	1 week	1 month	6 month	1 year	As needed	
<b>Audio Visual Equipment</b>							
Projector -Check for normal switching & fan operation						●*	*Check after each use
Projector -Check for picture definition						●*	*Check after each use
Amplifier - Clean surface by damp out with neutral detergent			●				
TV set - Clean screen surface by damp cloth with neutral detergent			●				
TV rack with caster - Clean surface by damp out with neutral detergent			●				
AVR* <sup>4</sup> - Clean outer surface with soft brush			●				
VCR* <sup>5</sup> - Clean recording head by head cleaning kit			●				
Projector - Clean surface with soft dry cloth			●				
Projector - Clean lens surface by lens cleaning kit			●				
Screen - Clean surface with soft brush			●				

\*<sup>4</sup>. AVR: Automatic Voltage Regulator

\*<sup>5</sup>. VCR: Videocassette Recorder

### Appendix: LIST OF REGULAR MAINTENANCE FOR MAJOR ITEMS (Exhibition Equipment and Furniture Works)




Basically and more preferably,  
follow the instructions described in manufacture's service manual provided.

Item	Frequency of Maintenance (Clean & check once as noted)						Remarks
	1 day	1 week	1 month	6 month	1 year	As needed	
<b>Exhibition Items</b>							
Exhibition Items - Clean surface by damp cloth with neutral detergent	•						
Exhibition Items - Check for fixation stability, Damage or Corrosion			•				
Exhibition Show Case, Model and - Clean surface by damp cloth with neutral detergent		•					
Exhibition Show Case and Model - Clean surface by damp cloth with neutral detergent			•				
Exhibition Show Case and Model - Check for blown-out light bulb						•	

**Appendix: Annual Inspection Maintenance Schedule for M/E Works**

Annual Inspection & Maintenance Schedule for M/E Installations														
M/E Installation		Times / Year	January	February	March	April	May	June	July	August	September	October	November	December
Civil	Irrigation System	2			Cleaning						Q'lty / Cng			
	Rain Water Drainage	2			Cleaning						Cleaning			
Plumbing	City Water Tank	2			Q'lty / Cng						Q'lty / Cng			
	City Water Pumps	2			Gen. Insp						Gen. Insp			
	Water Supply System	2			Gen. Insp						Gen. Insp			
	Drainage System	2			Cleaning						Cleaning			
HVAC	Water Cooled Chillers	3				High Season						Off Season		
	Chilled / Condenser Water Pumps	3				High Season						Off Season		
	Cooling Towers	2				Filter						Filter		
	AHUs	2				Filter						Filter		
	FCUs	2				Filter						Filter		
	Fans	2				Gen. Insp						Gen. Insp		
Electrical	BMS	2				Closed Day						Closed Day		
	Sub-Station	1	Closed Day											
	Emergency Generator	12	Monthly											
	Emergency Lighting	1			Batteries									
	Exit Lightings	1			Batteries									
Fire Services	Public Address System	1			Fire Drill									
	Fire Water Tank	2			Cleaning						Gen. Insp			
	Fire Hose Reel System	2			Fire Drill						Gen. Insp			
	Fire Hydrant System	2			Fire Drill						Gen. Insp			
	Fire Alarm System	2			Fire Drill						Gen. Insp			
	Fire Extinguishers	2			Fire Drill						Gen. Insp			
Security System	Periodical Function Testing	24	Fortnightly											
Elevator/Escalator	Periodical Safety Inspection	24	Fortnightly											

Abbr: Q'lty Quality Control  
 Cng Cleaning  
 Gen Insp. General Inspection  
 Filter Cleaning of Filters  
 Batteries Measurements of Battery Voltage  
 Closed Day Museum Closed Day  
 Ofc Office

 Winter Season  
 Summer Season  
 Rain Season

November, December, January, February and March (5 months)  
 April, May, June and October (4 months)  
 July, August and September (3 months)

Daily Daytime Routine Maintenance for AVC		
Activity Description		Man-Day / 17,936m <sup>2</sup>
Management	Management Plan & Working Schedule	1.0
	Meeting & Periodical Report	
Operation	Operation, Monitoring & Record	3.0
	Operation of Central Control Panel	
Daily Inspection	Routine Inspection	1.0
	Inspection Record	
Sub-Total		5.0
Repairing	Small Repairing Work	2.0
	Touch-Up & Fixing Up	
Total		7.0

Daily Daytime Routine Maintenance for EVC		
Activity Description		Man-Day / 14,090m <sup>2</sup>
Management	Management Plan & Working Schedule	0.8
	Meeting & Periodical Report	
Operation	Operation, Monitoring & Record	2.4
	Operation of Central Control Panel	
Daily Inspection	Routine Inspection	0.8
	Inspection Record	
Sub-Total		4.0
Repairing	Small Repairing Work	1.5
	Touch-Up & Fixing Up	
Total		5.5 → 6.0



## Appendix: Job Profile of the Visitor Centre Staff

Job profiles with related duties and required qualifications for the staff are shown in the following table:

<p>Position:</p> <p>Director of Visitor Centre</p>	<p>Required Qualification:</p> <ul style="list-style-type: none"> <li>• Master's degree in Museology and/or Ancient Indian History &amp; Culture or Indian Archaeology or History of Art, Post Graduate diploma in Museology or Ph.D degree.</li> <li>• Minimum 10 years experience in Curatorial capacity in a Museum of repute and considerable administrative and business experience in a responsible position.</li> </ul>
<p>Job duties and responsibilities:</p> <ul style="list-style-type: none"> <li>• Direct and realizing the mission statement of the visitor centre.</li> <li>• Direct and encourage leadership through special knowledge of the VC's mandate.</li> <li>• Recommending and planning policies and new developments, and their revisions to the Board.</li> <li>• Direct and implementing policies and plans approved by the Board.</li> <li>• Staff planning, organizing and recruiting.</li> <li>• Direct the issue of directives on corrective actions to the related section heads and monitoring of implementation of the corrective actions directed.</li> <li>• Report to the Board the results of monitoring the implementation of policies and plans, quality audits and corrective actions.</li> <li>• Directing and coordinating day-to-day operations through the Department Heads.</li> <li>• Direct and implement financial management and funding activities.</li> <li>• Liaison with relevant governmental, institutional and industrial coordination in the interest of the visitor centre.</li> <li>• Responsible for achieving agreed Organisational performance with cost effective, efficient, economic, smooth execution and creating a stimulating &amp; challenging work environment nurturing knowledge, growth &amp; team work through leadership role.</li> <li>• Conceptualization, planning and preparation of annual and mid-term operating business plan with Executive Committee; review periodically and present the performance dashboards as and when required</li> <li>• Responsible for establishing the organizations brand equity internally &amp; externally in consultation with Operating Consultants.</li> <li>• Ensure implementation and compliance of HR &amp; operational policies across the Organisation</li> <li>• Represent the visitor centre at the appropriate forums and meetings;</li> <li>• Support marketing team in order to spread the organizations awareness.</li> <li>• Support team/s in dealing with crucial issues and make critical decisions related to</li> </ul>	

<p>operations and should be able to solve queries of the customers for ensuring high customer satisfaction.</p> <ul style="list-style-type: none"> <li>• Review the achievements in terms of targets, and initiate appropriate corrective measures required to achieve the targets.</li> <li>• Manage and control expenditure within agreed budgets and analyze the operations in terms of targets.</li> <li>• Focus on building relationship with different organizations in and outside India (education societies, schools, colleges, regional institutions and other institutions which can be potential clients).</li> <li>• Develop employee/research exchange program or bilateral agreements with similar institutions in and outside India in order to understand and further implement best practices.</li> <li>• Manage client relationships at top level and handle key client escalations and solutions.</li> <li>• Monitor resource planning to ensure the effective utilization of the resources.</li> <li>• Provide leadership to the cross functional teams and be instrumental in developing their capabilities.</li> </ul>	
<p>Position:  Deputy Director (Administration/PR)</p>	<p>Required Qualification:</p> <ul style="list-style-type: none"> <li>• Master's degree in Accounting and Business Administration and/or Public Relations or Administration</li> <li>• Experience in a non-profit making cultural organization or related institutions.</li> <li>• Knowledge of accounting and administration.</li> <li>• Knowledge of legal aspects of museum operations and relevant institutions.</li> </ul>
<p>Job duties and responsibilities:</p> <ul style="list-style-type: none"> <li>• Assisting the Director in conducting his/ her duties as described above.</li> <li>• Responsible for all financial management aspects of VC operations. Provide leadership and coordination in the administrative, business planning, accounting and budgeting efforts of the VC.</li> <li>• Formulating and establishing financial objectives and accounting system.</li> <li>• Control and manage financing, budgeting, accounting, purchasing, human resources, salaries and benefits of personnel, taxes and contracts.</li> <li>• Continually assess Organization's SWOT and prepare plans in consultation with the Marketing and Finance teams in order to roll out new initiatives.</li> <li>• Perform quality audits of Employer, other Departments of PMC, consultants and contractors involved in the Project including preparation of audit reports.</li> <li>• Develop strong fund raising programs to generate corpus and manage the same to ensure the steady inflow of the revenue.</li> <li>• Supervising the performance of staff within administration, accounting and PR division.</li> </ul>	

<ul style="list-style-type: none"> <li>• Administer routine functions (financial, legal and administrative) at museum including attendance and leave, expense approvals, travel, etc of his team.</li> <li>• Preparation of standard operating procedures/ manuals for all aspects of operations and ensure its smooth implementation and compliance.</li> </ul>	
<p>Position:</p> <p>Deputy Director (Exhibition/Education)</p>	<p>Required Qualification:</p> <ul style="list-style-type: none"> <li>• Master's degree in Museology and/or Ancient Indian History &amp; Culture or Indian Archaeology or History of Art.</li> <li>• Experience of organizing Museum exhibitions (National/International), Seminars, Workshops and Lectures.</li> </ul>
<p>Job duties and responsibilities:</p> <ul style="list-style-type: none"> <li>• Assisting the Director in conducting his/ her duties as described above.</li> <li>• Development and management of exhibitions and AV programming, activities, materials for a wide range of audiences and school students.</li> <li>• Liaison with the school principals to increase cultural heritage awareness of the visitor centre and the cave site as educational resources.</li> <li>• Direct and liaison with curators, exhibition planner and fabricators, education officer and artists.</li> <li>• Supervising the performance of staff within exhibition and education division.</li> </ul>	
<p>Position:</p> <p>Administration Manager (Department Head)</p>	<p>Required Qualification:</p> <ul style="list-style-type: none"> <li>• Master's degree in Museology and/or Ancient Indian History &amp; Culture or Indian Archaeology or History of Art.</li> <li>• Experience of organizing Museum exhibitions (National/International), Seminars, Workshops and Lectures.</li> </ul>
<p>Job duties and responsibilities:</p> <ul style="list-style-type: none"> <li>• Assisting the Deputy Director (Administration/PR) in conducting his/ her duties as described above.</li> <li>• Monthly Provisions/estimation of Admin. Cost and monitoring Actual vs. Budgeted.</li> <li>• Participate in negotiations with vendors to minimize cost.</li> <li>• Initiate and implement cost cutting measures in areas of operations like electricity, stationary etc.</li> <li>• Oversees the work of contractors engaged by the VC Board.</li> <li>• Ensures compliance with building, operating and regulatory standards remains apprised of statutory and regulatory enactments and amendments and recommends appropriate action.</li> <li>• Manage all general administration activities including the followings and ensure utmost utilization of the resources</li> </ul>	

<ol style="list-style-type: none"> <li>1. Pantry and housekeeping management</li> <li>2. Stationary &amp; printing stationary inflow &amp; Outflow.</li> <li>3. Tracking of company assets record</li> <li>4. Cafeteria &amp; Parking Management</li> <li>5. Local Transport</li> </ol> <ul style="list-style-type: none"> <li>• Appoint Local transport service providers; continuously monitor services and choose new service providers if required.</li> <li>• Make arrangements of local transport for employees through cab service provider. Ensure timely reporting and take corrective action on day to day basis as required.</li> <li>• Plan, develop and implement strategy for HR management and development in line with the Business Strategy, including:             <ol style="list-style-type: none"> <li>1. Recruitment, Retention &amp; Development</li> <li>2. HR Policies</li> <li>3. Performance Management System (PMS)</li> <li>4. Compensation and benefits, employment contracts</li> <li>5. Learning and development</li> <li>6. Retention</li> <li>7. Employee Welfare</li> <li>8. Organization Culture</li> <li>9. Performance Management</li> </ol> </li> </ul>	
<p>Position:</p> <p>General Affaires (Section Chief)</p>	<p>Required Qualification:</p> <ul style="list-style-type: none"> <li>• Bachelor</li> <li>• Desirable Qualification: PGDBA ( Human Resources)</li> <li>• Total Experience: 4-7 Years</li> </ul> <p>2-3 years of experience in managing personnel, HR and general administration</p>
<p>Job duties and responsibilities:</p> <ul style="list-style-type: none"> <li>• Assisting the Administration Manager (Department Head) in conducting his/ her duties as described above.</li> <li>• Responsible for plan, develop and implement strategy for HR management and development in line with the business strategy and also manage all general administration activities.</li> <li>• Monthly Provisions/estimation of Administration Cost and monitoring actual in relation to budgeted.</li> <li>• Participate in negotiations with vendors to minimize cost.</li> <li>• Initiate and implement cost cutting measures in areas of operations like electricity, stationary, etc.</li> <li>• Ensures compliance with building, operating and regulatory standards remains apprised of statutory and regulatory enactments and amendments and recommends</li> </ul>	

<p>appropriate action.</p> <ul style="list-style-type: none"> <li>• Manage all general administration activities including the followings and ensure utmost utilization of the resources             <ol style="list-style-type: none"> <li>1. Pantry and housekeeping management</li> <li>2. Stationary &amp; printing stationary inflow &amp; Outflow.</li> <li>3. Tracking of company assets record</li> <li>4. Cafeteria &amp; Parking Management</li> <li>5. Local Transport</li> </ol> </li> <li>• Appoint Local transport service providers; continuously monitor services and choose new service providers if required.</li> <li>• Make arrangements of local transport for employees through cab service provider. Ensure timely reporting and take corrective action on day to day basis as required.</li> <li>• Plan, develop and implement strategy for HR management and development in line with the Business Strategy, including:             <ol style="list-style-type: none"> <li>1. Recruitment, Retention &amp; Development</li> <li>2. HR Policies</li> <li>3. Performance Management System (PMS)</li> <li>4. Employment contracts</li> <li>5. Employee Welfare</li> <li>6. Payroll Management</li> <li>7. Attendance &amp; Leave Management</li> <li>8. Ensure the compliance with the statutory compliances</li> </ol> </li> </ul>	
<p>Position:</p> <p>Accounting (Section Chief)</p>	<p>Required Qualification:</p> <ul style="list-style-type: none"> <li>• B.Com, M.Com</li> <li>• Desirable Qualification:M.Com</li> <li>• Total Experience: 3-6 Years</li> </ul> <p>Should have experience on Accounts &amp; Taxation.</p>
<p>Job duties and responsibilities:</p> <ul style="list-style-type: none"> <li>• Assisting the Administration Officer (Department Head) in conducting his/her duties as described above.</li> <li>• Responsible for all Accounting operations.</li> <li>• Provide leadership and coordination in the administrative, accounting and budgeting efforts of the company.</li> <li>• Develop and implement finance, accounting, and auditing procedures.</li> </ul>	

<ul style="list-style-type: none"> <li>• Establish and implement short- and long-range departmental goals, objectives, policies, and operating procedures.</li> <li>• Plan, organize and carry out the internal audit function and coordinate with the external auditors.</li> <li>• Ensure all compliances on related taxes and to advice on all aspects of taxation in order to create the best tax strategies.</li> <li>• Carry out detailed computations to calculate tax liability, submit tax returns by the relevant deadline</li> <li>• Research, analyze and interpret changing tax legislation.</li> <li>• Comply with tax laws and revenue provisions.</li> <li>• Responsible for tax Accounting.</li> <li>• Supervise tax Audit.</li> <li>• Create an environment conducive to continuous improvements and implements systems to nurture quality excellence.</li> <li>• To take care of direct tax related matters, tax planning issues, tax compliance etc.</li> <li>• Ensure reporting and accounting as per regulatory and legal requirements including taxation, accounts, audit and other financial activities.</li> <li>• Plan and ensure efficient management of funds, treasury management, commercial activities, customs and insurance.</li> <li>• Liaison with government and administrative machinery for licenses and permits, banks and other financial institutions for funds and other local bodies.</li> <li>• Prepare annual budget and cash flow forecast and variances against budgets so as to assist in decision-making.</li> <li>• Ensure timely consolidation and submission of MIS and year-end accounts / taxation reports so as to meet the legal requirements.</li> </ul>	
<p>Position:</p> <p>Building &amp; Site Manager (Section Chief)</p>	<p>Required Qualification:</p> <ul style="list-style-type: none"> <li>• Master degree in Engineering or Architecture.</li> <li>• Experience in building management, facility operations and maintenance systems in large and complex facilities.</li> </ul>
<p>Job duties and responsibilities:</p> <ul style="list-style-type: none"> <li>• Assisting the Administration Officer (Department Head) in conducting his/her duties as described above.</li> </ul> <p><b>Facility Management:</b></p> <ul style="list-style-type: none"> <li>• Formulating and establishing facility management plan, objectives and operating and maintenance system.</li> <li>• Managing contracts for maintenance and repairing services.</li> <li>• Managing lease/rentals of facilities and spaces for revenue generating purposes.</li> <li>• Directing day-to-day monitoring and supervising outsourced firms and maintenance staff.</li> </ul>	

- Directing periodical monitoring and inspections.
- Responsible for the operational, maintenance and technical upkeep of the premises and equipments installed.
- Oversee and ensure timely and accurate completion of all vendor related services. Serve as liaison with all related service providers.
- Coach, advise, and guide facilities staff on civil maintenance to upkeep VC facilities.
- Co-ordination for building maintenance.
- Planning of preventive maintenance schedule & its implementation.
- Responsible for ensuring that the VC sites are properly preserved and maintained.
- Investigates and evaluates new materials, systems, or equipment which may benefit the VC in its facilities.
- Manage routine cleaning and maintenance of facilities after hours.
- Responsible for managing special projects such as painting and repairs, as assigned.
- Facilitate training curriculum for new facilities employees.
- Keep domain knowledge up to-date with contemporary technologies and practices, and bring in the knowledge where required.
- Act as a technical reference point for providing any inputs/guidance to civil & plumbing team of the outsourced vendor, if required.

**Security:**

- Managing contracts for security and cleaning services, if these are outsourced.
- Follow and adhere to policies and procedures needed to maintain security within the VC's galleries, throughout the building, loading dock, and around the VC perimeter.
- Monitor security equipment (exterior doors, security alarms, door/window contacts, keys, and radios) and use them efficiently to secure the building and to facilitate communication between staff.
- Opening and closing of VC galleries, including turning on and off lights.
- Complete a daily opening and closing check of the VC and the artwork within the galleries as directed by the Curator and Registrar.
- Assure VC and galleries remain secure and that no damage occurs to the artwork on view due to visitor negligence or vandalism. Report all damage immediately.
- Ensure adoption of all safety measures by concerned contractors at site.
- Assure effective protective measures for security are in place and that the building is secured in the best possible manner.
- Recommend improvements to security procedures as needed.
- Is responsible for setting alarms, checking for object location and damage to a collection object.
- Patrols exhibition, public and non-public spaces for building and patron safety, vandalism, damage to artwork or potential theft.
- Must be observant of objects out of place or exhibits that need maintenance such as lighting or labels requiring repair.
- Greets visitors and monitors traffic, records attendance, and offers general assistance for the building.
- Handles problem or disruptive behaviour.

<ul style="list-style-type: none"> <li>Registers participants for special events, classes, programs and tours.</li> <li>Performs first response safety if necessary and contacts emergency personnel.</li> <li>Reports to the information desk staff or next security guard to continue information flow.</li> <li>Participate in site meetings and highlight safety aspects, wherever required.</li> </ul>	
<p>Position:</p> <p>Mechanical &amp; Electrical Supervisor</p>	<p>Required Qualification:</p> <ul style="list-style-type: none"> <li>B. Tech ( Mechanical/ Electrical)</li> <li>Desirable Qualification: M. Tech ( Mechanical/ Electrical)</li> <li>Total Experience: 3-7 Years</li> <li>Should have 2-3 years of experience in the mechanical and electrical equipments operation and maintenance</li> </ul>
<p>Job duties and responsibilities:</p> <ul style="list-style-type: none"> <li>Assisting the Building &amp; Site Manager in conducting his/her duties as described above.</li> <li>Responsible for the operational, maintenance and technical upkeep of the premises and equipments installed.</li> <li>Coach, advice, and guide facility management and security staff on maintenance, cleanliness and upkeep of VC facilities.</li> <li>Responsible for operational control and maintenance of all utilities like DG, UPS, HVAC fire fighting, lightings and allied machinery like softening plant, Air compressor.</li> <li>Responsible for the management of AMC records.</li> <li>Planning of preventive maintenance schedule &amp; its implementation.</li> <li>Responsible for ensuring that the VC sites are properly preserved and maintained.</li> <li>Evaluates proposal and bids for various maintenance, design, and contracting services as required.</li> <li>Directs and works with architects, staff consultants, and contractors in the design and development of new facilities.</li> <li>Manage vendor (Outsourced Agency) services and maintenance tasks for the VC.</li> <li>Investigates and evaluates new materials, systems, or equipment which may benefit the VC in its facilities.</li> <li>Serve as liaison with all related service providers.</li> <li>Ensure that all work by external vendors is completed accurately, timely, and within established budget constraints.</li> <li>Supervise routine cleaning and maintenance of facilities after hours.</li> <li>Facilitate training curriculum for new facilities employees.</li> <li>Keep his/her domain knowledge up to-date with contemporary technologies and</li> </ul>	



<p>practices, and bring in the knowledge where required.</p> <p>Act as a technical reference point for providing any inputs/guidance to mechanical &amp; electrical team of the outsourced agency, if required.</p>	
<p>Position: Service Engineer (BMS)</p>	<p>Required Qualification:</p> <ul style="list-style-type: none"> <li>• Diploma Engineer</li> <li>• Desirable Qualification: B. Tech (Mechanical &amp; Electrical)</li> <li>• Total Experience: 5-7 Years</li> <li>• 2-3 years of experience in handling entire maintenance and operation.</li> </ul>
<p>Job duties and responsibilities:</p> <ul style="list-style-type: none"> <li>• Assisting the Building &amp; Site Manager in conducting his/her duties as described above.</li> <li>• Ensuring the timely and accurate delivery of services in which preventive and corrective maintenance actions, planned system. Facilitating the design and implementation of building system repair and replacement solutions, using the professional services of staff.</li> <li>• Oversee and ensure timely and accurate completion of all vendor related services. Serve as liaison with all related service providers.</li> <li>• Supervising the implementation of the Maintenance &amp; Operation plans, as well as ensuring their compliance with the VC's rules and policies.</li> <li>• Developing the Maintenance &amp; Operation work plan; assigning work activities, and monitoring work flow within the department to serve the VC's goals and plans.</li> <li>• Proposing plans and programs that improve the effectiveness of the Maintenance &amp; Operation Section.</li> <li>• Ensuring that instructions and administrative and technical decisions are followed and applied by the subordinates.</li> <li>• Ensuring that work activities are carried out according to the pre-set performance goals, and suggesting any necessary actions to the Supervisors.</li> <li>• Responsible for the preparation of annual maintenance budget.</li> <li>• Impart training to the supervisors.</li> <li>• Apply system for monitoring and measuring personal and team performance and set standards for the development of the maintenance team to meet the criteria set by the visitor centre.</li> <li>• Ensure where performance standards have not been met that the correct plans are in place to resolve.</li> </ul>	
<p>Position: Security Supervisor</p>	<p>Required Qualification:</p> <ul style="list-style-type: none"> <li>• Desirable Qualification: Diploma in Security Services.</li> </ul>

	<ul style="list-style-type: none"> <li>• Total Experience: 6-9 Years</li> <li>• Preferably from Ex- Armed force background and should have 3-4 years of experience in managing the security facility of approx. 15,000 m<sup>2</sup></li> </ul>
<p>Job duties and responsibilities:</p> <ul style="list-style-type: none"> <li>• Assisting the Building &amp; Site Manager in conducting his/her duties as described above.</li> <li>• Responsible for safeguarding the property, implementing preventing measures, educating the team members, liaisoning with government &amp; police officials, adhering to the VC standards, complying with VC policies.</li> <li>• Ensure that the contractors at site hold proper awareness / briefing sessions for their workmen.</li> <li>• Ensure regular inspections of all fire fighting equipments at site.</li> <li>• Follow and adhere to policies and procedures needed to maintain security within the exhibition galleries, throughout the building, loading dock, and around the VC perimeter.</li> <li>• Monitor security equipment (exterior doors, security alarms, door/window contacts, keys, and radios) and use them efficiently to secure the building and to facilitate communication between staff.</li> <li>• Opening and closing of the visitor centre, including turning on and off lights.</li> <li>• Complete a daily opening and closing check of the visitor centre and the artwork within the galleries.</li> <li>• Assure visitor centre and exhibition galleries remain secure and that no damage occurs to the artwork on view due to visitor negligence or vandalism. Report all damage immediately.</li> <li>• Ensure adoption of all safety measures by concerned contractors at site.</li> <li>• Ensure effective protective measures for security are in place and that the building is secured in the best possible manner.</li> <li>• Recommend improvements to security procedures as needed.</li> <li>• Responsible for setting alarms, checking for object location and damage to a collection object.</li> <li>• Patrol exhibition, public and non-public spaces for building and patron safety, vandalism, damage to artwork or potential theft.</li> <li>• Monitor traffic, records attendance, and offers general assistance for the building.</li> <li>• Responsible for handling problems and resolving disruptive issues.</li> <li>• Registers participants for special events, classes, programs and tours.</li> <li>• Performs first response safety if necessary and contacts emergency personnel.</li> <li>• Reports to the reception desk staff or next security guard to continue information flow</li> <li>• Participate in site meetings and highlight safety aspects, wherever required.</li> </ul>	

<p>Position: PR Manager (Department Head)</p>	<p>Required Qualification:</p> <ul style="list-style-type: none"> <li>• Post Graduate</li> <li>• Desirable Qualification: MBA Marketing</li> <li>• Total Experience: 15-20 Years</li> <li>• Having handled 3-4 years as head of Marketing &amp; PR</li> <li>• Excellent communication/inter-personal relationship skills</li> </ul>
<p>Job duties and responsibilities:</p> <ul style="list-style-type: none"> <li>• Assisting the Administration Officer (Department Head) in conducting his/her duties as described above.</li> <li>• Manage the VC's marketing and communication efforts for exhibitions, educational programs, and special events.</li> <li>• Implement and oversee a facility rental program for the VC.</li> <li>• Coordinate public relation efforts on behalf of the VC.</li> <li>• To stimulate interest in, and promote a greater understanding of, the culture and history of the World Heritage site.</li> <li>• To consult with VCs Boards/Advisory Committee on matters that may impact on theme and concept of operations.</li> <li>• To secure external funding to support VC operations and development initiatives.</li> <li>• Proper promotion of VC activities to encourage a wide audience.</li> <li>• Opportunities are sought to secure external funding for VC and project development.</li> <li>• Familiar with protocol for contacting and working with the media</li> <li>• Delivering public programs will include curricula-related school programs, special events, workshops, outreach programs, guided tours, and site interpretation, etc. that have district and State-wide application.</li> <li>• Initiating research and making use of information such as the VC's mandate, visitor feedback, demographic trends, participation rates, staff and facility capacity, identified current and historic economic and social trends to assess, develop, and improve VC programming.</li> <li>• Optimizing use of existing facilities and identifying operational needs, modifications, repairs/maintenance, and improvements to achieve programming objectives and meet community needs.</li> <li>• Developing and administering contracts for the acquisition of goods/services and supplies required in the promotion and implementation of education and special event programs, outreach activities, guided tours, etc.</li> <li>• Supporting and assisting in the preparation of marketing and communication strategies in order to effectively promote educational and special event programming; creates, prepares, and coordinates the distribution of promotional material and communications for distribution internally and externally. This includes identifying and seeking sponsorship opportunities where appropriate.</li> <li>• Responsible for writing press releases, compiling newsletter, Write newsletter articles and other pieces as assigned.</li> <li>• Support marketing team in order to spread the organizations awareness.</li> </ul>	

<ul style="list-style-type: none"> <li>• Liaising with Corporate Communications and the media as a spokesperson for education activities and special events.</li> <li>• Managing and delivering group tours and school programs for visitors.</li> <li>• Developing and supervising the implementation of program/visitor surveys to obtain feedback on the quality and effectiveness of site interpretation, events, educational programs, tours, etc.</li> <li>• Maintaining statistical records and providing ongoing analysis of visitor patterns; performs research to identify and understand the audiences and communities the VC serves.</li> <li>• Providing monthly and yearly reports on visitor data and patterns.</li> </ul>	
<p>Position:</p> <p>Promotion Officer (Section Chief)</p>	<p>Required Qualification:</p> <ul style="list-style-type: none"> <li>• Post Graduate</li> <li>• Desirable Qualification: MBA (Marketing/communications)</li> <li>• Total Experience: 10-15 Years</li> <li>• Candidate should have the sense of cultural and artistic passion</li> </ul>
<p>Job duties and responsibilities:</p> <ul style="list-style-type: none"> <li>• Assisting the PR Manager (Department Head) in conducting his/her duties as described above.</li> <li>• Managing the Organisation with a focus on revenue, growth and VC awareness at domestic and global level.</li> <li>• Management of media relations and strategy for using media.</li> <li>• Responsible for promotion of all VC products and services.</li> <li>• Design and implement the visitor centre marketing plan.</li> <li>• Coordinating and directing the fundraising activities of the visitor centre including sponsorship, membership drives, endowments, capital projects and grant applications to government, corporations and foundations.</li> <li>• Planning and supervising special fundraising events.</li> <li>• Assessment of public and visitor perception of the VC image, experience and its services and products.</li> <li>• Preparation of promotional materials and tools.</li> <li>• Formulating marketing and advertising strategy in relation to trend and needs of cultural tourism.</li> </ul>	
<p>Position:</p> <p>Visitor Services Officer (Section Chief)</p>	<p>Required Qualification:</p> <ul style="list-style-type: none"> <li>• Graduation</li> <li>• Desirable Qualification: MBA</li> <li>• Total Experience: 5-8 Years</li> <li>• Should have 2-3 years of experience in customer service with NGO/Museum</li> <li>• Should have good knowledge in develop customer centric</li> </ul>

	programs and activities
<p>Job duties and responsibilities:</p> <ul style="list-style-type: none"> <li>• Assisting the PR Manager (Department Head) in conducting his/her duties as described above.</li> <li>• Manage the VC's marketing and communication efforts for exhibitions, educational programs, and special events. Implement and oversee a facility rental program for the VC. Coordinate public relation efforts on behalf of the VC.</li> <li>• Ensure smooth operations of Ticketing Booth; dealing with telephone callers, visitor enquiries about exhibitions, programmes and events at information office and help desk.</li> <li>• Dealing with visitor comments and complaints.</li> <li>• Disable access and assistance.</li> <li>• Responsible for developing, delivering and improving a wide range of educational and interpretive programs for varying audiences in support of the VC's mandate and educational objectives to increase the understanding and enjoyment of the VC, the collections, local history, and local heritage resources.</li> <li>• Initiating research and making use of information such as the VC's mandate, visitor feedback, demographic trends, participation rates, staff and facility capacity, identified current and historic economic and social trends to assess, develop, and improve VC programming.</li> <li>• Coordinate with vendors and ensure the timely supply of required materials used in education programs, events, workshops, day-to-day interpretive programs and outreach kits.</li> <li>• Managing and delivering group tours and school programs for visitors.</li> <li>• Develop and supervise the implementation of program/visitor surveys to obtain feedback on the quality and effectiveness of site interpretation, events, educational programs, tours, etc.</li> <li>• Maintaining statistical records and providing ongoing analysis of visitor patterns; performs research to identify and understand the audiences and communities the VC serves.</li> <li>• Monitoring the overall quality of the visitor experience in collaboration with PR staff.</li> <li>• Providing monthly and yearly reports on visitor data and patterns.</li> </ul>	
<p>Position: Exhibition Manager (Department Head)</p>	<p>Required Qualification:</p> <ul style="list-style-type: none"> <li>• Master degree in Arts, Architecture, Graphic Design or related to the museum studies.</li> <li>• Experience in curatorial activities, exhibition design, exhibition fabrication and production, model-making and/or media in a museum or cultural attractions.</li> <li>• Knowledge of specifications and nature of materials used for displays and conservation technique and practice.</li> <li>• Ability to plan and design special exhibitions including audio-visual and interactive techniques.</li> </ul>
<p>Job duties and responsibilities:</p>	

<ul style="list-style-type: none"> <li>Assisting the Deputy Director (Edutainment) in conducting his/her duties as described above.</li> <li>Conceptualization, planning and preparation of annual and mid-term exhibition plan with Advisory Committee; review periodically and present the special and thematic exhibition concept as and when required.</li> <li>Development and management of exhibitions and audio-visual programming, activities, materials and events which attract and serve a wide range of audiences including school children.</li> <li>Liaison with exhibition officer and fabricator, technical programme suppliers and artists.</li> <li>Monitoring the overall functioning of processes/operations, identifying improvement areas and implementing adequate measures to maximize customer satisfaction level.</li> <li>Develop research exchange program or bilateral agreements with similar institutions in and outside India in order to understand and further implement best practices.</li> <li>Creating exhibition and public programmes.</li> </ul>	
<p>Position: Exhibition Officer</p>	<p>Required Qualification:</p> <ul style="list-style-type: none"> <li>Bachelor degree in Arts, Architecture, Graphic Design or related to the museum studies.</li> <li>Experience in exhibition design, exhibition fabrication and production, model-making and/or media in a museum or cultural attractions.</li> <li>Knowledge of specifications and nature of materials used for displays and conservation technique and practice.</li> <li>Ability to plan and design special exhibitions including audio-visual and interactive techniques.</li> </ul>
<p>Job duties and responsibilities:</p> <ul style="list-style-type: none"> <li>Assisting the Exhibition Manager (Department Head) in conducting his/ her duties as described above.</li> <li>Planning, managing and developing a programme of exhibitions in collaboration with curators and ASI to meet with the VC's exhibition objectives.</li> <li>Setting and formulate exhibition design and communication standards.</li> <li>Planning and implementation of audio-visuals and interactive components of exhibits and public programmes.</li> <li>Supervise production and fabrication of exhibitions including design development, costing and scheduling and maintenance and repairs.</li> <li>Manage contracts with technical suppliers and creative producers.</li> <li>Supervising the performance of exhibition and gallery staff.</li> </ul>	
<p>Position: Education Officer</p>	<p>Required Qualification:</p> <ul style="list-style-type: none"> <li>Master's degree in Education or related to the museum studies.</li> <li>Experience in education and/ or cultural and museum activities and seminars.</li> </ul>

	<ul style="list-style-type: none"> <li>• Knowledge of cultural heritage and ancient Indian culture and history.</li> <li>• Ability to design and create educational programmes including the preparation of guiding tools and materials.</li> </ul>
<p>Job duties and responsibilities:</p> <ul style="list-style-type: none"> <li>• Assisting the Deputy Director (Exhibition/ Education) in conducting his/ her duties as described above.</li> <li>• Managing and developing partnerships with schools to offer curriculum-based programmes related to the VC exhibitions.</li> <li>• Setting and formulating standards and SOP for educational and events programmes for both children and adults.</li> <li>• Liaison with schools, local community groups, tourists and other target audiences to arrange education programmes, seminars, demonstrations, performances and workshops.</li> <li>• Preparation of handouts, publications, media-based contents and products for the education and events programmes.</li> <li>• Focus on building relationship with different organizations in and outside India (Education societies, Schools, colleges, regional institutions and other institutions which can be potential clients).</li> <li>• Researching, developing, planning, delivering, evaluating, and improving a wide range of educational and interpretive programs for varying audiences in support of the VC's mandate and educational objectives to increase the understanding and enjoyment of the VC, the collections, local history, and local heritage resources.</li> <li>• Liaising with other museum and tourism related professionals, school boards, operating consultants, teaching staff, community groups, heritage trades professionals, volunteers and associations who assist in the development and delivery of programs.</li> <li>• Preparing and/or supervising the preparation of educational and interpretive materials for teachers, students, volunteers and other members of the visiting public.</li> <li>• Keeping informed of and evaluating current interpretive, teaching and promotional techniques and strategies.</li> <li>• Recommending implementation of new methods and practices for site interpretation, educational programs, events, outreach activities, guided tours, etc.</li> <li>• Developing sources and maintaining supplies and materials used in education programs, events, workshops, day-to-day interpretive programs and outreach kits.</li> </ul>	