Volume II

Comprehensive Conservation Management Plan

THE RED FORT, DELHI

March 2009

A collaborative project of

Archaeological Survey of India

&

Cultural Resource Conservation Initiative

CRCI

COMPREHENSIVE CONSERVATION MANAGEMENT PLAN

REDFORT, DELHI

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ASI and CRCI

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9 CONSERVATION MANAGEMENT POLICY GUIDELINES

The conservation management policy guidelines proposes some strategic objectives to guide future decision making and action. These objectives seek to ensure the protection of the outstanding universal value of the Fort complex as also address the opportunities and challenges currently faced by the site.

9.1 Conservation of the historic fabric

At first glance the built fabric of the Fort complex, looks robust and capable of bearing the footfall of very large numbers of visitors. But, building materials decay over time from the effects of erosion and pollution. The areas of extreme vulnerability include the embellishments on the buildings (Khas Mahal and Diwan-i-Khas), areas exposed to water (terracing and the rainwater drainage system) and areas of high visitor use.

From the archaeological perspective the complex is susceptible to erosion resulting from processes of repair and renewal, replacement of services and from building activity requiring ground disturbance and other interventions for research purposes. In the case of archaeological deposits of national importance, efforts should first be made to preserve them in situ; only where this is not possible should recourse be taken to preservation by record.

The fort complex has vast open spaces that can accommodate large numbers of visitors, and internal spaces that are currently restricted in use. Visitor amenities within these areas need to be enhanced. It is however necessary that the signage, hardware and services required for visitor comfort do not impinge on the historic character of the site.

There is a need for putting in place a programme for periodic monitoring, inspection and review of the historic built fabric. Under this programme, conservation works— both minor and major - could be carried out. For instance some minor works are necessary because of past neglect, the detrimental effects of past works such as application of cement based mortars for repair, etc. Major works would include projects such as conservation of the colonial barracks, removal of accretions and incompatible additions made to the Lahori gate and ramparts by the army. Apart from the above large projects would include the adaptive reuse of the colonial buildings into museums and other visitor facilities.

Demands arising from visitor pressure and multifunctional occupancy of the Fort complex will always present the need for effective use of open spaces and for adaptive reuse of the historic buildings. In the context of the Mughal (currently protected by the AMSR Act , 1958) and colonial buildings (currently unprotected by the AMSR Act, 1958), thresholds for acceptable change need to be established so as to ensure the value of the historic buildings is not compromised. Similarly guidelines need to be established for archaeological deposits as well. This applies equally to the floorscape of the open spaces; the balance between soft, paving and tarmac; the desirability of having more or fewer trees; etc.

The built fabric of the Fort is a historic document with potential to explain its origin and evolution and thereby demonstrate its significance. The tangible aspect of the site is of immense cultural significance and communicates directly to the visitor. The Mughal and colonial layers of building activity vary in degree of significance. This aspect determines the interventions and acceptable degree of change.

Proposed changes should always be subject to cultural impact assessment. Regular maintenance and minor repair, alterations associated with larger projects, etc. should always be undertaken after consideration of the significance of the building and detailed studies and investigation of history, development, construction and material studies . Removal of historic material must be avoided or kept to a minimum; such material should also not

be subjected to unconsidered disposal. New work must be in appropriate materials and, construction systems and where possible, be reversible. Full records must be kept of all works containing appropriate details, both to inform the history of the fabric and for future reference for conservation works. These records should be maintained in the archives/ library of ASI site office and at its Delhi circle office.

Excessive visitor movement can be detrimental to the historic fabric. There is therefore a need to determine the carrying capacity of the various features of the site. Wall paintings (Rang Mahal, Naubat Khana), gold work on the stone surfaces (Diwan-i-Khas, Khas Mahal), stone floors (floors between the royal pavilions on the eastern edge of the fort) etc. are extremely vulnerable to wear and tear.

The Fort complex needs preservation in perpetuity. This however does not mean that the site must be preserved completely unaltered. It has infact, been a dynamic site subject to change of use. The plan ensures that changes do not detract from the significance but retains and where possible enhances it. Any developments, no matter how small, must therefore meet stringent design and heritage criteria and be in line with the objectives of the plan.

The broad conservation and maintenance guidelines could be common to the entire Fort complex; detailed plans for interventions would need to be developed for individual areas/ buildings and incorporated in the conservation plans of these areas/ buildings. This is demonstrated in the Detailed Conservation Plans of the Lahori Gate, Chatta bazaar, Naubat Khana, Diwan–i– Am, Rang Mahal.

Regular inspections and planned maintenance are prerequisite for effective management of the site. For instance in the past, a large number of electrical cables, pipes and fittings have been provided in the fort complex with little or no regard for the significance or the character of the site. The plan stresses a need for a sensitive approach in future. It recommends the removal of intrusive or redundant items as part of the implementation of the conservation plan.

Scores of buildings and structures were built in the fort complex by the Indian army after the independence . Most of these structures are of little or no value and many of them disturb the character of the historic spaces and architecture. Many of these buildings are recommended to be systematically and carefully removed after detail and appropriate documentation.

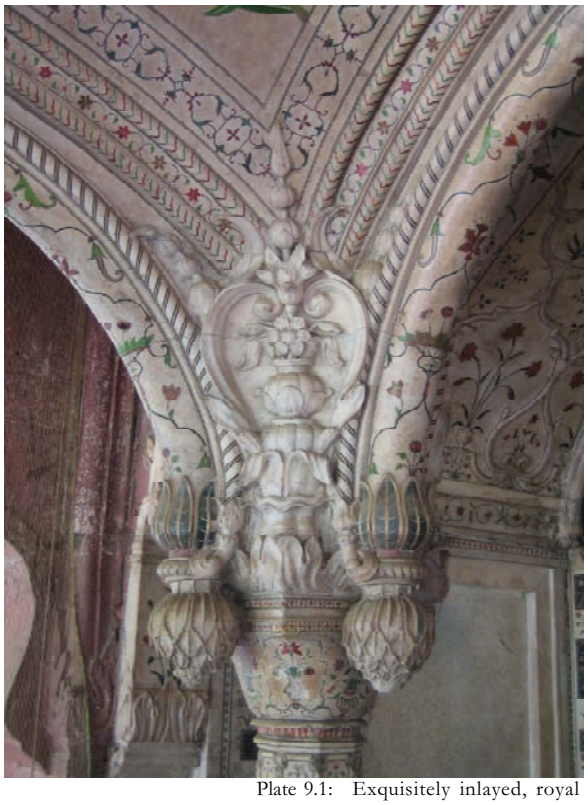

Plate 9.1: Exquisitely inlayed, royal throne, Diwan-i-Am; CRCI 2006

Plate 9.2: The royal pavilions as seen from the Moti Masjid; CRCI 2006

9.2 Conservation of historic gardens and open spaces.

The gardens and open spaces within the Fort complex originally had a distinct cultural identity. As we know from archival and historical sources the Mughal gardens of the Red Fort reflected a highly refined aesthetics of Mughal culture and, more specifically, the *chahar bagh* style of seventeenth century Mughal gardens . Thus the conservation of these gardens needs to comply with the international conservation standards. The Florence Charter on historic gardens (adopted by ICOMOS in December 1982) is one of the key documents containing the principles for historic garden restoration. The objective should therefore be to follow the Florence Charter in spirit and content. This will ensure that the historic gardens are conserved at all levels – form and shape, plantation, garden furniture and above all spatial aesthetics.

9.3 Preservation of the archaeological deposits in the Fort complex and the environs

Excavations undertaken by the ASI in 2007 have revealed invaluable remains in the Fort complex (in the Naubat Khana forecourt and Mehtab bagh). These remnants are of great significance for their potential to reveal aspects of history of the site. These excavations endorse the authenticity of the 1850 Map. Given the extent of demolition during the colonial period, the site is a repository of information of the Mughal period. Non invasive techniques for archeological investigations must be preferred over invasive. All archaeological works should be documented in appropriate detail and these records be maintained in the archives/ library of ASI site office and at its Delhi circle office .

9.4 Protection of the traditional uses with reference to rights and responsibilities of stakeholders and caretakers of the Fort complex in the management system.

The Fort complex has traditionally housed a market in the Chatta bazaar building. Post independence, several categories of stakeholders and caretakers have emerged in the complex over decades – e.g. the site managers (multiple departments of ASI site office), the Delhi circle office of ASI, students and the staff of Institute of Archaeology, CISF and SIS staff and other service providers. Also there are 3000 to 5000 visitor daily visitors to the Fort complex. In light of the diversity of groups and their varied roles, needs and responsibilities, conflicts arise between them out of perceived differences about each others concerns and needs. The security providing agencies at times do not consult the ASI about the uses and interventions into the site which can be detrimental for the historic fabric.

Further in the case of the Chatta bazaar, while the building is recommended to continue to be used as a market, the Chatta Bazaar Market Association should ensure that shopkeepers do not make any interventions detrimental to the historic building. The SIS provide security to the complex and the visitors, they currently live in deplorable conditions in significant historic buildings in the Salimgarh Fort.

Since all the groups on the site are interdependent, the management system should provide for a process of consultation and collaboration.

9.5 Ensure sustainable visitor management

The Red Fort is a premier national icon and an international tourism destination. Given the large numbers of visitors, it is imperative to minimize their impact on the historic fabric of the fort and at the same time provide high quality of experience to them. Monitoring of visitor flows within the fort is necessary to ameliorate congestion when it arises.

In coordination with tour operators and tourism companies timed ticketing for tourist groups may be considered to alleviate the problem of long queues that occasional takes place at the Lahori gate and the Naubat Khana gateway. Though the free flow nature of the site allows the visitors to explore alternative areas once they enter the Diwan-i-Am enclosure points of overuse and congestion arise in certain areas (e.g. all the three museums, the terrace between the Rang Mahal and Khas Mahal).

It is recommended that varied areas of interest (museums, restaurants, gardens, etc.) be developed across the entire Fort complex through a program for use to prevent points of congestion and overuse.

9.6 Improve visitor amenities

At the forecourt of the Lahori gate, the ticket counters become congested at peak times causing discomfort to the visitors. Further the security system currently operational at the gate is insensitive to visitors and to the nature of the site. Catering, toilets and other facilities for visitor comfort need too be appropriately located, designed and maintained. It is recommended that guidelines be developed for the appropriate location, design and maintenance of visitor facilities which have no detrimental impact on the historic fabric. Current facilities which have a negative impact on the historic fabric or disturb the visual qualities of a historic space or a building are recommended to be carefully removed.

9.7 Improve and augment public access and movement

There are problems faced by visitors coming to the site by both public and private vehicles. The was parking in the forecourt of the Red Fort till about 5 years ago. Statistics available with the ticket office of ASI reveal that the number of visitors to the site fell by almost 30% when the parking was removed. Vehicular and pedestrian access to the site is currently highly inconvenient and unsafe. Particularly for the later.

It is recommended that the access be improved and movement between the parking (currently under construction) be organized for visitor ease and safety.

From top to bottom:

Plate 9.3: The forecourt to be made visitor friendly and easily accessible; CRCI 2006

Plate 9.4: Sustainable visitor management, one of the goals of the CCMP; CRCI 2006

9.8 Prepare and adopt an agreed interpretation strategy for the Fort complex and its environs.

Interpretation is a key contributor to the experience of the site. A proper appreciation and understanding of the layers of history of the site and coexistence of parallel narratives of the site and its setting can come only through high quality interpretation. This would entail clear and accurate explanations, in multiple languages and address the needs of the diverse types of visitors including the disabled.

It is recommended that the formal interpretation strategy should first set its interpretation objectives, leading to themes and stories, presentation style, medium options and so on. The strategy should be that of integrating history with the site features .

This needs to include:

1: Provision at the place of arrival for displaying information on the history and evolution of the site, and its relationship with the city of Delhi. This would also encourage passers-by to visit the Fort. Further, this will help decongest the point of entry to the fort.

2: A narrative to establish the relationship between the buildings and spaces of the same period and between buildings and spaces of different periods.

3: Live interpretation including tours, talks and events; audio interpretation, particularly for foreigners; as well as appropriate interpretive material for those seeking more in-depth information.

4: Opening of more areas and buildings for an enhanced experience and understanding of the Fort.

5: Avoidance of on site clutter of information and signage, beyond that which is necessary to orient and direct visitors.

6: The site interpretation techniques and systems should be time tested and great care taken to ensure that the techniques and systems to be used are in no way archaeological remnants.

Plate 9.5: Interpretative material to present 350 years of continuous historical narrative - Mughal, colonial and story of Independence; CRCI 2006

9.9 Ensure the protection of the site from hazards.

9.9.1 Prepare a comprehensive and an integrated risk management strategy for the Red Fort complex:

The Fort complex is vulnerable to many natural and human induced hazards such as earthquake, fire, terrorism and theft besides slow and progressive hazards such as pollution, weathering and vandalism. These would have detrimental affects on various heritage attributes of the site. Risk assessment, prevention and mitigation measures should be incorporated in the periodic maintenance and monitoring systems for the site. An integrated risk assessment for museums is also necessary to determine the needs and priorities for structural and non-structural mitigation of the museum building and its objects. The operational guidelines would be determined based on a comprehensive assessment of needs and challenges of the various attributes of the site.

9.9.2 Need for an emergency preparedness and response plan

This plan needs to be put in place through the engagement of various internal and external stakeholders including fire services, police, health services through effective coordination. The focus of the plan should be on 'operational procedures', which are regularly rehearsed and tested through drills and other exercises. Though protection of lives is the first priority, the plan should strive for salvaging and protecting heritage fragments/objects from further damage or destruction during the disaster situation. The recovery plan should include provision for storage and treatment of damaged historic structures, fragments and objects.

9.9.3 Security during special events

Security is a major issue in the site. Security is provided to the site by numerous security agencies which is extremely complex for 8 weeks before the independence day celebrations. It is also important to ensure that these security arrangements are not visually overwhelming for the visitors to the site.

9.9.4 Training and capacity building for coordinated action.

Maintaining and reviewing appropriate emergency and security plans as a coordinated process between the various security agencies and the site managers are a priority for the site.

Plate 9.6: An integrated strategy for risk management, between all security agencies deployed at the site; CRCI 2006

9.10 The setting of the Red Fort complex

9.10.1: Reintegrate the Red Fort with its setting, restating critical physical, visual and historic linkages towards the eastern edge (Yamuna) as well as on all the other edges (Shahjahanabad).

In the case of the Red Fort complex, this would include restating the relationship between the Red Fort and Salimgarh, the river edge, Jama Masjid, Chandni Chowk (the market space) as well as the historic sites associated with colonial period located in the northern parts of the walled city. The existing visual relationship of the Fort and the visible heritage features in its surrounding (Jama Masjid) can be the starting point for this restatement.

The reintegration of the Red Fort with its setting should reflect:

1. The intrinsic visual-interest qualities of the Red Fort and the immediately surrounding heritage features (e.g. Jama Masjid).

2. The visual relationship and historic associations of the Red Fort with the character of the wider surrounding townscape (relationship between the Red Fort and the city of Shahjahanabad)

3. The visual relationship of the Fort with the features of the current surrounding urban landscape which protect the site and contribute to the historic integrity of the setting (the green areas on eastern and western edge of the Fort).

Convenient public accessibility (safe access from the public parking, safe access for those traveling by various modes of public transport—both fast and slow.

It is recommended that the strategic planning framework for the Red Fort complex include the following:

1: A positive and coherent strategic planning framework for the Red Fort complex to ensure consistent advice and context for local planning authorities, developers and influence over the dynamic processes of change in the urban environment.

2: A co-ordinated strategy which gives the cultural heritage values of the Fort complex and its setting a greater significance and relevance to the life of the wider community (Shahjahanabad in particular)

3: Seek to promote greater coherence in the definition, adoption, application and monitoring of the national, state and local planning policies and mechanisms. It is important to ensure that all future development appropriately takes into account the historic, townscape, environmental and riverside context of the Fort. For example the concerns of the Fort and its setting are adequately addressed in the zonal plans of Shahjahanabad (designated as the 'Heritage Zone' in the Master Plan 2021). The municipal corporation by-laws need to be sensitive to the architecture of Shahjahanabad so as to ensure that the historic character of the urban context of the Fort is not compromised.

The Red Fort complex and its environment improvement principles-

1: To rediscover the relationship between the Fort complex and its setting (the historical precinct).

2: To improve visitor approach to the Red Fort complex from the existing parking as well as from the Metro in Chandni Chowk

3: To improve access to the buffer zone of the Fort complex for the various modes of transport—both private and public.

4: To create a convenient and comfortable civic space adjacent to Lahori gate for security check, ticket counters and other visitor facilities.

5: To maximize visitor enjoyment and understanding of the Fort complex and its relationship with its setting.

6: To give first right of use of the buffer zone to pedestrians.

7: To have regard to the cultural, commercial and security interests and requirements of the site managers.

9: To ensure that the site development plan provides adequately for the special requirements during the activities held in the buffer zone of the Red Fort on Independence Day on 15 August and Republic Day on 26 January.

9.10.2: Ensure protection of the significant views

The management plan recommends protection of the significant views of and from the Fort complex.. It is recommended that all building and landscaping activities must ensure that these views are not impacted adversely by any development works. The following are the key views of and from the Fort complex- and are of particular importance:

1: The view from Ring road of the eastern edge of the Red Fort, along what was the river front is almost unaltered to date (inspite of all the demolitions during the colonial period).

2: The view of Lahori Gate from Chandni Chowk.

3: The view of the southern and western ramparts from Darya ganj, was disconnected because of the realignment of the road during the colonial period. It is recommended that this view be recovered.

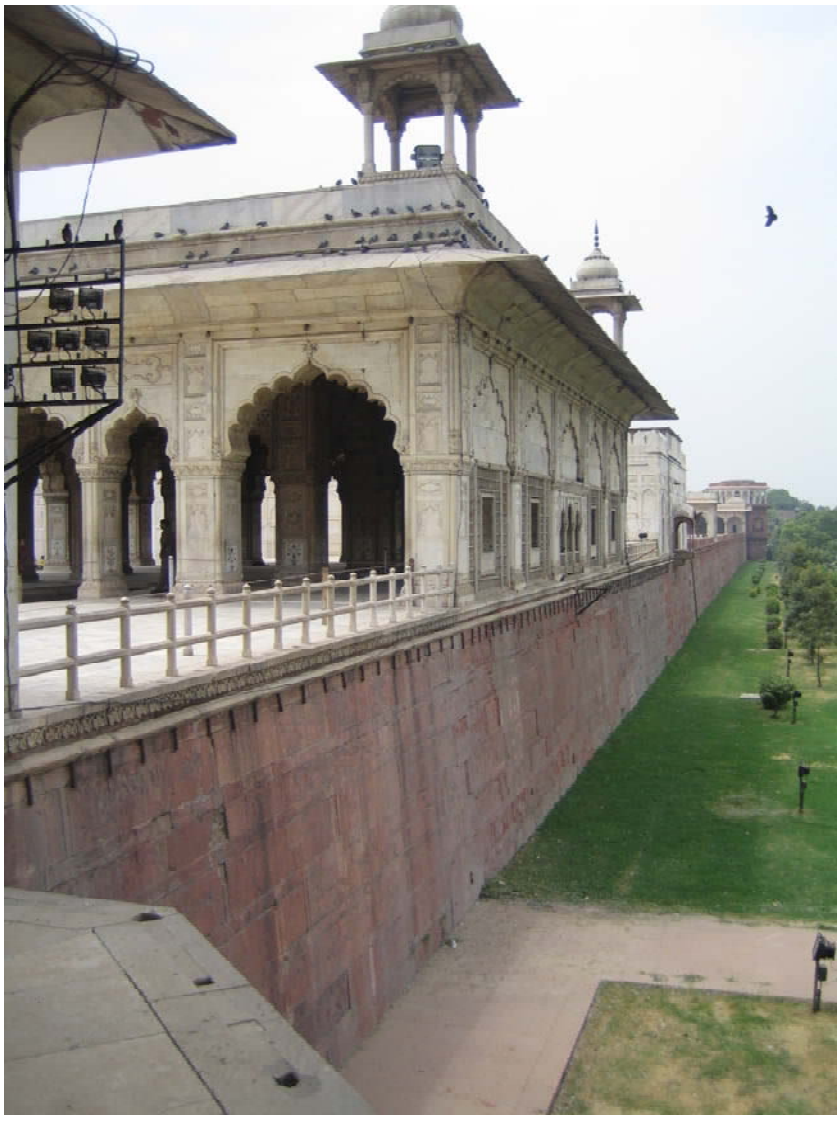

Plate 9.7: Eastern edge of the Fort seen from the Ring road, a significant view; CRCI 2006

9.11 Urge local authorities to ensure that the significance of the Fort complex as a national icon is the key determinant in the planning and development of Shahjahanabad.

Multiple agencies are involved in the planning and development, in areas which are part of the historical setting of the Red Fort. These agencies include the ASI, MCD, DDA, PWD, CPWD, HUDCO, Indian Railways and the Wakf Board. This division of administrative responsibilities is clearly vulnerable to inconsistency in both definition and application of policy objectives. This situation is compounded by the absence of site specific policies for management, protection and enhancement of the 'Red Fort Historic Precinct' the jurisdiction of which lies with the multiple agencies.

The objectives therefore need to be agreed upon between all relevant agencies and uniformly expressed in strategic, regional and local planning policies and guidelines. To ensure sensitive development around the Fort complex, the ASI with the local planning authority/ies would require to formulate specific planning and development guidelines under statutory provisions (Government of India notification through the Archaeological Survey of India, Order No. S.O. 1764 dated June 16, 1992). These guidelines should be incorporated within the development plans including the zonal plans of the Master plan, 2021.

At the local planning level, this management plan therefore endeavors to:

i Stimulate the preparation of specific planning polices and supplementary guidelines to protect the Fort complex and the adjoining 'Red Fort Historic Precinct', and ensure that the development proposals are carefully scrutinized for their likely effect on the site, wider setting and cultural context in the longer term;

ii Ensure that plan's objectives are enlarged through a vigorous process of public participation and that this process is enshrined in the development plan (in the spirit of the 73 rd and 74 th amendments of the Constitution of India);

iii Establish a cohesive approach to the implementation of planning policies and supplementary guidelines across all the relevant organizations to promote consistency;

iv Encourage periodic review of planning policies and guidelines across all the relevant organizations and introduce coordinated mechanisms for amendment and improvement of the policies and programs;

Plate 9.8: Anguri bagh, need for building guidelines; CRCI 2006

9.12 Achieve a high quality environment for the Fort complex by promoting the highest standards of new development

There are sites and buildings around the Fort complex which have a major impact on the setting of the fort. There are many ongoing projects in the 300 m, regulated zone of the Fort complex, and of other protected monuments in the area. In these projects, particular attention must be taken to preserve and enhance the setting of the Fort and the other landmark monument, the Jama Masjid, and to improve the views and connectivity between them as a historic continuum. All necessary steps must be taken to ensure that the unique character of the Fort and its setting is preserved when development proposals are considered within this area.

The Management plan implementation framework seeks to ensure:

a. The preparation and submission by thedevelopers/ designers of design statements, photomontages and other illustrative material to evaluate proposals for development located close to the Fort.

b. Cultural and environmental impact assessments of the proposed projects.

c. Creation of design briefs and supplementary guidelines by the local planning authorities, in consultation with ASI for sites where major development is anticipated or important opportunities are identified for environmental or urban design improvements (e.g. Chandni Chowk, Anguri Bagh, on the north-western edge of the Fort).

9.13 Reduce the impact of air pollution on the Red Fort complex

Sand stones with calcareous cementing material seems to have been affected by hydrolytic processes i.e. hydration, dehydration, oxidation (clamps, pin, etc.), hydrolysis, leaching, etc. leading to exfoliation of slabs, efflorescence, loss of adhesion/cohesion, loss of resistance to abrasion, physico-mechanical and micro-biological growth etc. Deposits of aerosols/ SPM further compound this deterioration as salts have been detected (sulphates, carbonate, and chlorides). At what stage gaseous pollutants initiate their characteristics deterioration is difficult to understand. In all decay processes water which acts both physically and chemically plays the most important role (reaction between cementing material and water or capillary water). Joints form a very sensitive part to change by water or gaseous pollutants. From the data available it is observed that SO_2 concentration levels remain low during winter months while Noxes at some stage marked exceedance a number of times and may result in conversion from carbonate to nitrate (plasters, mortars, joints and calcareous cementing materials of sand stone) which is soluble and may result in voids, leaching, gaps. It is well known that SO_2 is more damaging to marble than NO_2. Various experiments conducted in many laboratories here concluded that the presence of oxides of Sulphates and Nitrates increase the weight loss in marble and the total loss is more when it is attacked by SO_2 alone. This holds good for all concentration levels. It seems the main culprit is SPM while SO_2 has very little part to play. It is possible to reduce this rate of deterioration of physical parameters i.e. shelters, screen, trees, water repellency, reduce the penetrating water, the use of consolidants and surface coats to reduce the chemical reaction of pollutants etc. One important point to keep in mind is that even if we eliminate the air pollutants entirely; stones, plaster, mortars exposed to outdoor environment will continue to decay because of wind, temperature and biological factors etc

Recommendations:

1. It is very important to understand that whatever conservation technique with the latest

scientific aids is used for stone preservation in the monuments, it is difficult to change the environments damaging behaviour. However the life of the materials can certainly be enhanced by the use of techniques along with the improvement in eco system around the Red Fort complex. It is important to set up an observatory cum monitoring station that will help to analyze the air profile and thus suitable measures can be taken accordingly.

- Regular inspection by visual examination.
- In depth inspection every two years
- Continuously monitoring in respect of SO_2, Noxes, SPM etc., moisture, rainfall, Relative Humidity (RH), temperature.
- Undertake Photographic documentation annually.

2. Long term Conservation strategy is essential in case of Red Fort where deterioration is governed by many factors and takes long period for visible effect.

3. The source of SPM and how best the deposition on the surfaces could be prevented should be researched. The nature and % composition through analyzed procedure in respect of PH, total soluble salts, inorganic insoluble materials, volatile substance, salts acid insoluble; etc along with cations should be done.

4. A physical barrier should be created between the complex and the surrounding roads by planting Cassia species in groves , which can filter out sand and other high diameter particles, absorb salts/ moisture, SPM and minimize the wind velocity and abrasion rate.

5. Low level pollution strategy is to be worked out and mechanism should be identified on priority basis.

9.14 Detailing and Implementation of the 'Comprehensive Conservation Management Plan' and Detail Conservation Plans, in phases.

The CCMP recommends an integrated and a phased programme for conservation of historic buildings, open spaces, historic gardens, adaptive reuse of historic buildings, site interpretation and improvement of visitor amenities. The conservation projects require to be undertaken at multiple levels to include research, documentation, investigation, conservation planning, project implementation. This is to be followed by monitoring and maintenance.

Detailed conservation plans for the five Mughal buildings on the central axis have established the standards and methodology for documentation and conservation planning for all the Mughal buildings in the complex. These buildings form part of phase I (short term) of the project. The conservation plans are yet to be prepared for the open spaces and gardens between these buildings, Khas Mahal, Diwan-i-Khas, Hammam, Moti Masjid; and two colonial barracks (to house the Red Fort museum); and the interpretation centre in the Naubat Khana forecourt.

The phasing for implementation was done on the basis of significance, building condition, vulnerability, visibility, access, etc.