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**CULTURAL IDENTITY,
CONSERVATION
APPROACHES, AND
DISSEMINATION:
CONSERVING THE WALL
PAINTINGS OF NAGOUR
FORT, RAJASTHAN,
INDIA**

Keywords: wall painting, Nagaur Fort, Sheesh Mahal, Rajput-Mughal, conservation methodology, conservation training

ABSTRACT

Nagaur's stunning complex of sprawling palaces, pools and ancillary buildings extends over 15 hectares, surrounded by massive fortification walls. From its 18th century golden period its decline continued through the 20th century until the Mehrangarh Museum Trust began its conservation in 1993. Following award-winning architectural interventions, the Trust moved on to its exceptional wall paintings. Gathering a range of international partners, the aim was to demonstrate how integrated architectural and wall painting conservation programmes can re-establish Nagaur Fort as a major regional cultural landmark. Here, conservation approaches are outlined and examined for the 18th century Rajput-Mughal wall paintings in the Sheesh Mahal. Knowledge transfer for wall painting conservation is discussed. The benefits of long-term and continuous collaboration on site between wall painting conservators from abroad and conservation professionals in India are emphasised.

RÉSUMÉ

Le remarquable complexe de Nagaur, qui comprend d'immenses palais, des bassins et des bâtiments annexes, s'étend sur plus de 15 hectares. Il est entouré de fortifications massives. Depuis son âge d'or au XVIII^e siècle, son déclin s'est prolongé tout au long du XX^e siècle, jusqu'à ce que le Mehrangarh Museum Trust entreprenne sa conservation en 1993. Après des interventions architecturales primées, le Trust s'est intéressé à ses peintures murales exceptionnelles. En collaboration avec plusieurs partenaires internationaux, le but était de montrer que des programmes de conservation intégrés de l'architecture et des

INTRODUCTION

The fort and palace complex at Nagaur is being reinstated as a major regional cultural landmark. Founded in the 4th century, later modifications reflect repeated waves of conquest and associated religious and political changes. Its current appearance is dominated by the ambitious building campaign of Maharajah Bakht Singh (1725–51) who established his court here. Superb 18th and 19th century wall painting schemes, adorning the interiors and indeed exteriors of many palaces, are being conserved within a multifaceted programme fostering collaboration between national and international professionals. Conservation literature often reflects the compartmentalisation of the various disciplines involved: art historians on history, iconography and style; conservators and conservation scientists on interventions, treatments and analytical findings; institutions and managers on guidelines, conservation approaches and practical issues, all while trying to conform to prevailing principles. However, issues relating to the transmission of appropriate knowledge from experts to a wider audience – whose understanding and valuation of their cultural heritage is so central to its long-term preservation – are less often reported through inter-disciplinary publications.

Conservation at Nagaur began in 1993 (Jain et al. 2009). Not only the scale of the project, but the diversity of the partners involved, and the complexity of conservation issues required this timeframe for a deliberately incremental approach. The aim of the present paper is to emphasise its singularity as a cultural landmark and outline the conservation approaches adopted by international and national wall painting conservators working together. Painting technology, alteration of original materials, deteriorogens, diagnostic investigations and remedial treatments will be touched upon but the paper will focus on the relevance of such findings to the wider community and how their dissemination is directly beneficial to the conservation of the wall paintings at Nagaur. The benefits and caveats related to the transfer of specialised knowledge from Europe to India will also be discussed.

NAGOUR FORT: A LANDMARK OF RAJASTHAN'S CULTURAL IDENTITY

The fort at Nagaur is significant because:

- its architectural characteristics testify to an extraordinarily rich and complex history;

peintures murales pourraient restituer au fort de Nagaur son statut de monument culturel majeur de la région. Cet article décrit et passe en revue les options de conservation pour la peinture murale rajput-moghole du XVIII^e siècle au sein du Sheesh Mahal. Le transfert des connaissances pour la conservation des peintures murales est discuté. Les avantages d'une collaboration continue à long terme sur le site entre les restaurateurs des peintures murales venus de l'étranger et les professionnels de la conservation de l'Inde sont soulignés.

RESUMEN

El impresionante complejo de enormes palacios, piscinas y edificios anexos de Nagaur tiene una extensión de más de 15 hectáreas y está rodeado de enormes murallas fortificadas. Después de su época dorada en el siglo XVIII empezó un periodo de declive que duró hasta el siglo XX, cuando en 1993 el *Mehrangarh Museum Trust* inició su conservación. Después de varias intervenciones arquitectónicas que fueron premiadas, el *Trust* continuó con las excepcionales pinturas murales del complejo. Reunió a una serie de socios internacionales con el objetivo de demostrar cómo los programas integrados de conservación arquitectónica y de pinturas murales pueden restablecer el Fuerte de Nagaur como un importante símbolo cultural de la región. Aquí se presentan y se analizan los acercamientos de conservación para las pinturas murales del Rajput-Mughal del siglo XVIII en el Sheesh Mahal. Se valora la transferencia del conocimiento en relación a la conservación de pinturas murales. Se destacan los beneficios de una colaboración *in situ* continuada y a largo plazo entre conservadores de pinturas murales extranjeros y profesionales de la conservación de la India.

- its wall paintings provide a rare insight into 18th century courtly life in Rajasthan;
- elements from both Mughal and Rajput artistic traditions coexist in a refined balance;
- it is being reinstated as an important and active cultural centre by the Maharaja of Jodhpur; and
- interdisciplinary conservation programmes have shed light on a multifaceted cultural identity.

Now spread over 15 hectares and encircled by 1.5 km of fortified wall, the site includes four major palaces and 60 other buildings: temples, reception halls, living quarters, bath houses, and stables (Figure 1). In 1119, Muslim invaders replaced the earlier earthen fortifications with stone. Subsequently, due to its strategic location, foreign and local rulers battled continuously for control. Consequently, the fort underwent major architectural phases of both construction and destruction. The Mughal Emperor Akbar, famous for his artistic patronage, is said to have visited Nagaur in 1572. The overall architectural layout undoubtedly reflects Mughal influence, with buildings interspersed with large elegant courtyards, gardens and sophisticated water features. Most surviving palaces are attributed to the patronage of Bakht Singh who reigned at Nagaur from 1725 until 1751 when he became (briefly) the Maharaja of Jodhpur. However, many structures retain characteristics from earlier periods, and consequently it remains unclear what precisely was built and what was altered during the second quarter of the 18th century. Bakht Singh commissioned manuscripts, 'portable paintings' (Diamond et al. 2008) and lavish wall paintings. Whether the artists came from Bikaner (Gupta 1962) or Jodhpur (Crill 1999) is unresolved and features from both schools are identified in the paintings. Yet it is the subtle combination of these elements with features specific to Nagaur that distinguishes it as an important artistic centre in its own right (Goetz 1949). While the quality and originality of the wall paintings and manuscripts illustrate Bakht Singh's longing for recognition as a major royal figure, the subject-matter – the daily life and revelries of Bakht Singh and the women of his harem – offers an unparalleled depiction of courtly life in the 18th century (Figures 2, 3).



Figure 1

Nagaur Fort in 2006, after completion of the main components of the architectural conservation programme. Photo: Courtauld and MMT

After this golden era, the fort fell gradually into disrepair, suffering drastic architectural alterations and damage to its wall paintings. This decline was only reversed when, due to the vision of Maharaja Gaj Singh II and the management of the Mehrangarh Museum Trust (MMT), its immense significance as a cultural landmark was finally recognized. The Maharaja, through the MMT and together with international partners, has taken on the challenge of addressing issues relating to the conservation of cultural heritage while recognizing the need to consider long-term sustainability, tourism, the involvement of specialised and foreign conservation expertise as well as the exchange and dissemination of knowledge among conservators, managers and the wider community.

CONSERVATION APPROACHES AT NAGOUR FORT

When the MMT assumed responsibility for the fort complex in 1985 it was faced with challenging conservation issues. Most architectural structures were derelict and structurally unsound. Original features of the palaces, courtyards, water systems and gardens were concealed by overgrown vegetation and modern architectural additions. While emergency measures were immediately taken, the MMT recognized the need for a more comprehensive, interdisciplinary and properly funded conservation programme. In 1993, a grant from the Getty Foundation enabled a complete survey, detailed documentation, and planning of the architectural conservation. Acknowledging the high quality of research and work undertaken by conservation architects Jain and Jain, the Getty Foundation exceptionally awarded two further grants, both matched by the MMT. The first project phase, completed in 2001, received the UNESCO Asia-Pacific Award of Excellence for Cultural Heritage Conservation (UNESCO 2002). The second phase (2003–2007) saw completion of interventions to principal palaces and courtyards. Their approach aimed to arrest decay, stabilise the structures and to re-establish the complex historicity of the fort in a spirit of minimum intervention (Jain et al. 2009, 141). Insights into the historic gardens and water system were provided by a research team from Cornell University (Cornell University 2006). Their findings led to replanting of indigenous plants (Figure 4), often represented in the 18th century paintings. Together with the architectural conservation work, these recent efforts made a major contribution to reinstating the fort – a luxurious Rajput-Mughal complex – as a key feature of Rajasthan’s cultural identity.

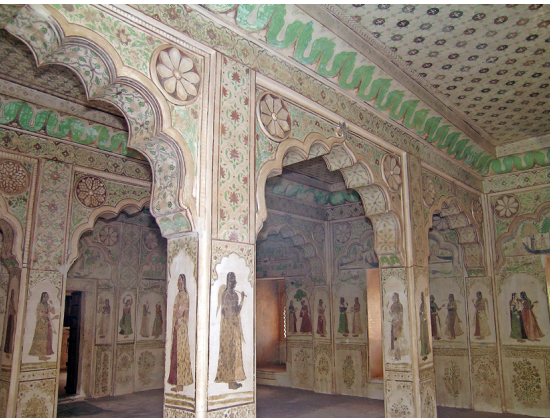


Figure 2

General view of the 18th century wall paintings on the first floor of Hadi Rani Mahal. Photo: Courtauld and MMT

Figure 3

Detail of the 18th century wall paintings on the second floor of Hadi Rani Mahal. Photo: Courtauld and MMT

The wall paintings are not only an outstanding feature, but key to appreciating the historic character of the site. No fewer than 14 wall painting schemes extend over thousands of square meters on both interior and exterior walls of the main structures. Recognising that their successful conservation would require both careful prioritisation and significant methodological and scientific input, in 2005–2006 The Courtauld Institute was invited to undertake two conservation campaigns, generously funded by the Helen Hamlyn Trust. Their aim was to produce an overall survey to identify the main conservation issues, and to allow planning for a targeted conservation programme (Bogin 2005, Bogin et al. 2006). Following site-wide condition

assessment and documentation, limited emergency interventions and preliminary investigations into original materials and causes of deterioration were carried out. Consequently, one of the principal palaces – the Sheesh Mahal – was selected as the focus for further conservation investigations and interventions (Tringham et al. 2007). This choice was motivated not only by the significance of the building and of its interior and exterior painted decoration, but also by their perilous condition. The wall paintings of the Sheesh Mahal also exhibited most of the conservation problems affecting other schemes at the fort, and its potential for informing future conservation methodologies at the site was therefore an important factor in its selection.

In 2007 the Getty Foundation awarded a further grant specifically for the conservation of the wall paintings in the Sheesh Mahal and for related training. The Getty, together with The Courtauld and MMT, recognised that a major component of the project should be devoted to training and research on a national and international level in order to lay the groundwork for a sustainable, long-term approach at the site and to extend the benefit of the programme beyond Nagaur itself.

WALL PAINTINGS IN THE SHEESH MAHAL: SIGNIFICANCE, MATERIALS AND CONSERVATION

The Sheesh Mahal – ‘Palace of Mirrors’ – owes its name to its exquisite inlaid mirrorwork (Figures 4, 5). The structure’s simplicity – a single vaulted hall with encircling veranda and fountain courtyard – contrasts with Nagaur’s more complex palaces. Its original function, a venue for leisure and entertainment, is suggested by the painting subject-matter which focuses on the monsoon season (Tillotson 2009), with women floating amidst swirling clouds, playing musical instruments, dancing, and exchanging betel leaves and wine (Figure 6).

Condition assessment revealed a complex physical history and multifaceted and challenging conservation issues. The stability of the original materials is severely compromised. Historic water infiltration led to the collapse of large areas of vault plaster and probably to current instability of surviving plaster. Salt-forming ions are present throughout the stratigraphy of the painting. Environmentally driven cycles of salt crystallisation and deliquescence led to significant powdering, flaking and loss of inherently fragile paint layers (Figure 7). The aesthetic integrity of the wall paintings is also compromised by water-related damage, previous interventions, pigment alterations and other non-original coatings.

Analysis revealed a sophisticated painting technology¹. The plaster, both in its components and stratigraphy, follows a traditional technique – *araish* plaster – still in use in Rajasthan. In accordance with primary sources and current practice, various aggregates are bound in lime, with trace amounts of proteins and gums. The final white plaster layer – containing a high quantity of powdered marble – was polished to produce a compact, shiny surface. The painting palette includes, among others, red and white lead



Figure 4

Exterior view of the Sheesh Mahal and the replanted garden in front of the palace. Photo: Courtauld and MMT

Figure 5

General view of the interior of the Sheesh Mahal, its wall painting and mirrorwork before conservation. Photo: Courtauld and MMT

Figure 6

Detail of the wall painting in the vault of the Sheesh Mahal showing women in Mughal costume exchanging wine glasses. Photo: Courtauld and MMT

pigments, applied with vermilion in the flesh-tones and garments, smalt, a green copper chloride, as well as gold and tin. Organic colorants (red, yellow and blue) were extensively used though are now mostly faded.

Pigment alterations have led to drastic changes in the appearance of the paintings. Red lead has altered to black, and vermilion now appears grey. The presence of organic materials is now only detectable with ultraviolet light or with false-colour imaging. The once-white and reflective plaster – a dominant feature of the wall paintings – is obscured by dirt and a grey layer identified as calcium oxalate. A coating of polyvinyl acetate, applied in the 1980s and a common practise in India, has now darkened and is compounding salt-related deterioration phenomena.

Conservation of the Sheesh Mahal follows an iterative and incremental approach (Cather 2003). Investigations into original and non-original materials, causes and mechanisms of deterioration and the impacts of potential conservation approaches are still ongoing. While the research relies in part on high-tech, ex-situ, analytical techniques and specialised expertise, preference is accorded to low-tech methods that can be employed in situ by the conservators. Treatment methodologies also take into account the need for sustainability in terms of materials and expertise available in India, compatibility with original materials and the desired long-term performance of conservation materials. Environmental control of salt-related deterioration is investigated alongside the feasibility of remedial treatments. Complete removal of synthetic coatings from porous materials is difficult, if not impossible, and research is underway to characterise the interaction of such materials with other deteriogens, such as salts (AHRC 2009). Further research also focuses on the impacts of calcium oxalate removal from original plaster layers using materials and methods mainly developed and tested on Western wall paintings (Martin de Fonjaudran forthcoming).

DISSEMINATION

Dissemination of appropriate levels of information to the wider specialised and non-specialised community is an integral part of the wall painting conservation programme at Nagaur. Collaboration with Indian wall painting conservators was recognised to be of paramount importance by all partners. The Courtauld emphasised the need for the continuous involvement of qualified professionals, whose educational backgrounds, previous experience and current positions within the conservation field in India would ensure positive knowledge transfer. Conservators who have joined the team work either privately or for INTACH, the national non-governmental, non-profit organization in charge of safeguarding India's cultural heritage (Figure 8). To ensure a critical approach, 'conservation recipes' are avoided and training focuses instead on methodologies for diagnostic investigations and for evaluation of the suitability of interventions and materials based on specific intervention criteria. Collaboration at Nagaur offers diverse benefits and the range of wall



Figure 7

Salt efflorescence on the paintings in the vault of the Sheesh Mahal leading to powdering and flaking of inherently fragile paint layers. Photo: Courtauld and MMT



Figure 8

Collaboration with Indian conservators is integral to the sustainability of the programme. Photo: Courtauld and MMT

painting schemes and conservation issues provides abundant opportunities for training and research. Consequently, it is hoped in future to fulfil the fort's educational potential and establish it as a regional centre for wall painting conservation and research.

The project also offers the opportunity for training non-Indian conservation students and recent graduates. The team has included professionals and students from five further countries: Colombia, France, Italy, the UK and the USA. Such experience provides invaluable insights into conservation problems and administrative infrastructures beyond those commonly encountered in the West. At The Courtauld, doctoral and post-doctoral research – the latter undertaken by a wall painting conservator and conservation scientist from India – are focusing on specific conservation issues at Nagaur and elsewhere in India.

Further dissemination initiatives have included a conference held at and organised by The Courtauld on Nagaur that brought together a range of international specialists who presented their latest insights into the architectural context at Nagaur, its wall paintings and portable paintings, and conservation approaches (Courtauld 2009). The conference complemented the 'Garden and Cosmos' exhibition of paintings from the Maharajah's collection at the British Museum (Diamond et al. 2008). Papers on Nagaur have also been presented by members of the conservation team at the SOAS Indian Art Circle (London) and at the Madras Crafts Foundation (Chennai).

For the past three years, the MMT has organised a festival of Sufi music performed at Nagaur with artists from Rajasthan, Iran and Jordan. Several in-situ presentations on the conservation of the fort and its paintings have been given during the festival to a general audience. These have facilitated discussions among the partners on the potential formats and value of aids for public interpretation at the fort and for supporting artistic traditions. Benefiting from the knowledge gained through conservation research, interpretive aids – such as interactive projections and web-based tools – should significantly reduce the need for undesirable intervention on the appearance of the original structures and wall paintings while increasing appreciation of previously undervalued heritage.

CONCLUSION

Together, these programmes of conservation and support of traditional arts, reveal the values and singular importance of Nagaur and thereby its notable contribution to Rajasthan's cultural identity. Due to the fort's relative obscurity throughout most the 20th century, it has been possible to adopt a slow but deliberate approach to its overall conservation, one unburdened by the demands of mass tourism or the political intricacies of world-famous sites. The commitment of the partners and funders to this approach has allowed design and implementation of a programme where conservation of immovable heritage can reach out to wider audiences in a manner more often encountered in a museum context.

There is still much to achieve, especially for the conservation of the wall paintings, dissemination to the public and generation of a sustainable financial framework which respects Nagaur's historic integrity. Long-term and continuous collaboration between wall painting conservators from Europe and conservation professionals in India is preferred over short-term treatment-based workshops as a more sustainable means to transfer knowledge and methodological approaches. From a Western point of view it allows the re-examination of our approaches to conservation within different social, political and economic frameworks, leading to mutual understanding through long-term commitments and direct in-situ collaboration.

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NOTES

- ¹ Analysis of original and non-original materials was carried out using ultra-violet light false colour imaging, light microscopy, scanning electron microscopy with energy dispersive x-ray spectroscopy, Fourier transform infrared spectroscopy, and gas chromatography-mass spectrometry. Research is still ongoing and complete findings will be presented in a forthcoming publication.

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