



Acharya Shantisagar Foundation-Manuscripts Conservation and Restoration Project-Kumbhoj

1. Project Overview

- Project Title: Conservation of Manuscript
- Location: Kumbhoj Bahubali, Kolhapur, Maharashtra
- Start Date: 14/02/2022
- End Date: 30/09/2024
- Reporting Date: 20/09/2024
- Objective of the Project: To safeguard the valuable tangible heritage of Digambara Jain Tradition for the Future generation and the scholar for the research purpose.
- Total Time Taken: 2 Years 7 Months 15 Days
- Original Planned Duration: 2 years
- Project Completion (Met/Not Met): Met
- If Delayed, Reasons for Delay:
 - Irregular headcount during the complete timeline of the project. We were not able to maintain employee strength during the complete timeline of the project because of many reasons.
 - Some of them are, lack of increment policy, irregular payment of salary to the employees (sometime the salary is delayed by more than 30 days), sudden change of increment period from date of joining to start of financial year, lack of clarity on the promotion cycle.
 - During the course of whole project, we also witness the situation of lack of material on the site dues to the paucity of funds, this reason alone has affected our timeline of the project by more than 3 months.
 - Being the project site in the remote area it was very difficult to maintain the supply chain during the whole course of the project. Being service by very limited courier company and those to take longer than normal time to deliver the material.
 - Lack of equipment's and materials, i.e. there is only one camera and laptop in between 10 employees in the lab, we don't have a humidification chamber,



apart from it we don't have chemisafe cabinet and fume extractor in the lab for the safety of the employees and some other materials in the lab.

2. Conservation Team Details.

- Project Coordinator: Manan Jain
- Conservation Team Members (As on 20th October 24):
 1. Kartick Kayal
 2. Dipanjan Modak
 3. Sumanta Gayen Shekhar
 4. Tithi Sinha
 5. Mrinmoy Samaddar
 6. Priyabrata Chatterjee

3. Manuscripts Inventory

Sl. No.	Particulars	Nos. (Approx)
1	Granth <ol style="list-style-type: none">a. Palm Leafb. Handwritten Paper Manuscript*c. Archival Books	122 1018 259
2	<ol style="list-style-type: none">a. Palm Leaf Foliob. Handwritten Manuscript Folio*c. Archival Books Folios	14,185 77,326 19,680

*Total no. of Paper manuscript is 1024, because of lack of equipment and material we were not able to go for the conservation of 6 manuscripts.

4. Treatment Process:

4.1 Details of treatment process used in Palm Leaf Manuscripts:



- 4.1.1 Dry cleaning: A soft bristle brush is used to gently remove dust and dirt from the manuscript.
- 4.1.2 Mechanical cleaning: The manuscript undergoes mechanical cleaning to eliminate deposited dirt.
- 4.1.3 Solvent cleaning: After conducting patch tests on the manuscript using various solvents and reagents in different ratios (such as Ethanol, Distilled water, Isopropyl alcohol, Acetone, and gel technique), solvent cleaning is performed.
- 4.1.4 Mending: Holes and damaged areas of the manuscript are repaired by filling them with palm leaf or Japanese tissue paper and adhesive, such as CMC, starch paste, or EVA Art.
- 4.1.5 Enhancing flexibility: Essential oil, specifically citronella oil, is applied to increase the flexibility of the manuscript.
- 4.1.6 Re-inking: Essential oils and pigments, including citronella oil and lamp black, are utilized for re-inking the manuscript.
- 4.1.7 Replacement of deteriorated wooden planks: PH buffered acid-free mount board is used as a buffer between new wooden planks.
- 4.1.8 Wrapping in red cotton cloth: The manuscript is covered in red cotton cloth after de-starching the cloth.
- 4.1.9 Storage in Archival Corrugated Box: The conserved manuscript is finally placed in an Archival Corrugated Box, with a tag indicating its identification, for proper storage.

4.2 Details of treatment process used for Paper Manuscript:

- 4.2.1 If live insect activity is seen, then anoxia treatment is given to the manuscripts and if there are any other biological agencies like fungi then we first remove it with the help of different solution in an open area away from the lab.
- 4.2.2 Documentation of the objects includes capturing before photographs and conducting tests such as pH testing and solubility testing.
- 4.2.3 Dry cleaning is performed using a soft bristle brush to carefully remove dust, grime, and any dead insects present inside the manuscripts.
- 4.2.4 Solvent cleaning of the manuscripts is conducted by performing patch tests with different solvents and reagents, such as ethanol, distilled water, isopropyl alcohol, acetone, xylene, carbon tetrachloride, and gel techniques.
- 4.2.5 Alkalization of the objects is carried out using both aqueous and non-aqueous techniques, employing methods such as immersion, spray, and brush application. Calcium hydroxide, sodium tetra-borate, and barium hydroxide are used for this process.
- 4.2.6 Mending of the manuscripts involves filling holes and recreating areas of loss using Japanese tissue paper of various grammage and suitable adhesives such as Klucel-G and JinShofu.



- 4.2.7 Deteriorated wooden planks or cardboard are replaced with pH-neutral buffered acid-free mount boards to ensure long-term preservation.
- 4.2.8 The manuscripts are carefully wrapped in cotton paper to provide an additional protective layer.
- 4.2.9 Finally, the conserved manuscripts are stored in archival corrugated boxes, appropriately labelled with tags for easy identification and retrieval.

6. Consumables and Resources Used.

Here's a general outline of the materials and setup bought for the conservation lab:

1. Materials for Cleaning and Handling:

Soft brushes: Used for gentle cleaning of surfaces without causing damage.

Absorbent materials: Such as blotting paper or cotton pads, used for blotting and absorbing excess moisture during cleaning or treatment.

Microfiber cloths: For gentle wiping and cleaning of surfaces.

Latex gloves: To prevent oils and dirt from hands from transferring onto delicate materials.

Tweezers and spatulas: For handling delicate items and lifting small objects.

Erasers: Specifically designed for cleaning delicate surfaces, such as archival paper.

Solvents: Gentle solvents suitable for specific materials, used for removing stains or adhesives.

2. Materials for Repair and Treatment:

Archival adhesives: pH-neutral adhesives suitable for repairing tears or attaching loose fragments. i.e. Klucel-G

Japanese tissue paper: Strong, and pH-neutral paper used for reinforcing weakened areas or repairing tears.



Wheat starch paste: A reversible and archival-quality adhesive used for paper repairs.

Polyester film or Melanix: Transparent, inert material used for encapsulating fragile documents or protecting surfaces during treatment.

Non-woven materials or Bondina: Useful as a support fabric for repairs to works of art on paper, or in humidification practices.

3. Equipment:

Worktable: Clean, flat surface with adequate lighting for examination and treatment.

USB Microscope: For detailed examination of small areas and identifying microscopic damage or deterioration.

Light board: Backlit table for examining translucent materials or identifying defects in paper.

Precision measuring tools: Such as rulers, etc., for accurate measurement of dimensions.

Magnifying lamps: Magnifying lamps are specialized lighting tools that combine a magnifying glass with an adjustable light source its idle for detailed work.

4. Storage and Display:

Archival-quality folders and boxes: Acid-free and lignin-free containers for storing documents and artifacts.

Acid-free tissue paper: Interleaving material used to protect surfaces and prevent abrasion in storage.

Climate control systems: Data logger and silica gel. Microclimate enclosures for maintaining stable temperature and humidity levels in storage areas.

5. Personal Protective Equipment (PPE):

Lab coat or apron: Protective clothing to prevent contamination of materials.

Safety goggles: Eye protection when working with solvents or chemicals.



Respirator mask: Protection against inhalation of fumes or particulates when working with hazardous materials.

6. Other Basic Materials

Stationary, Trays, boxes, induction for making adhesive, etc.

8. Financial Summary

- Total Funds Allocated: ₹ as required for the project.
- Total Funds Utilized: ₹ 95,66,361
- Breakdown of Expenses:
 - Materials: ₹ 31,51,751
 - Salary : ₹ 69,04,879
 - Logistics and Transportation & Staff Travel: ₹ 91,500
 - Miscellaneous: ₹ 76,946

9. Outcomes and maintenance recommendations

9.1 Key Conservation Successes:

- Through Assessment and Documentation
- Ethical Considerations
- Effective Treatment Plans
- Public Education



- Long-term Monitoring and Maintenance

9.2 Maintenance Recommendations

Maintaining an art collection requires a comprehensive approach to ensure the preservation and longevity of the artworks. Here are some key recommendations for effective collection maintenance:

1. Environmental Controls

- **Temperature:** Maintain a stable temperature (ideally between 18°C and 22°C or 64°F and 72°F).
- **Humidity:** Keep relative humidity between 45% and 55% to prevent damage from Mold or brittleness.
- **Lighting:** Use UV-filtered lighting and limit exposure to low lux levels (ideally below 50 lux for storage).

2. Proper Handling and Storage

- **Use Gloves:** Always wear cotton gloves when handling artworks to avoid transferring oils and dirt.
- **Support Structures:** Use appropriate supports for objects to prevent sagging or bending.
- **Storage Materials:** Choose acid-free, archival-quality materials for packaging and storing items.

3. Regular Inspection

- Conduct routine inspections to identify signs of damage or deterioration. Look for issues like discoloration, mold, or insect activity.
- Document the condition of each piece regularly to track changes over time.

4. Cleaning Protocols

- Dust artworks gently with a soft brush or microfiber cloth. Avoid using chemical cleaners unless specifically recommended.
- Consult a conservator for any necessary cleaning or restoration to avoid unintentional damage.



5. Pest Management

- Implement an integrated pest management plan. Monitor for signs of pests and take preventive measures to keep them away from the collection.
- Use traps and non-toxic deterrents as needed.

6. Display Considerations

- Ensure that artworks are displayed securely and at appropriate heights to minimize risk of damage.
- Rotate displays periodically to reduce prolonged exposure to light.

7. Documentation and Inventory

- Maintain a comprehensive inventory of the collection, including provenance, condition reports, and treatment histories.
- Use digital tools or databases for easy access and updates.

8. Education and Training

- Train staff and volunteers on proper handling, storage, and maintenance practices to ensure consistent care across the collection.
- Foster an understanding of conservation ethics and practices.

9. Emergency Preparedness

- Develop a disaster response plan to address potential emergencies such as floods, fires, or other threats.
- Keep emergency kits accessible, including materials for immediate stabilization of artworks.

10. Consult with Conservators

- Regularly consult with professional conservators for advice on maintenance practices and treatment options when needed.
- Consider hiring conservators for specific assessments or restorations.
- Implementing these recommendations can significantly enhance the care and longevity of an art collection, ensuring that it can be enjoyed for future generations. If you have specific types of artworks or situations in mind, I can provide more tailored advice!

11. Appendices



- Appendix A: Detailed Manuscripts Inventory:
[Attach catalogue with detailed descriptions, conditions, and images.]
- Appendix B: Equipment List:
[List of all specialized tools and equipment used.]

12. Future Recommendations

- Suggestions for Future Conservation Projects:
 - Formation of policies to retain employees with the organisation.
 - Should form a WhatsApp group with for the timely approval of material purchase.
 - Need of chemisafe and Fume extractor for the health safety of the employees working at the site.
 - Should add some conservation equipment's in the lab to further speed up the work. It will also enhance safety of the employees.

Date: 01-Oct-2024

Approval: _____
(President of the Trust)