

THE DORIS DUKE FOUNDATION FOR ISLAMIC ART
AND THE WINTERTHUR / UNIVERSITY OF
DELAWARE PROGRAM IN ART CONSERVATION

THE DAMASCUS ROOM,
SHANGRI^{LA}

PHASE IV: FILLING AND
INPAINTING

LAUREN FAIR, WUDPAC 2010
LAURA KUBICK, WUDPAC 2010

SUPERVISED BY
BRIAN BAADE, INSTRUCTOR

Summer 2008

INTRODUCTION

The final phase for the conservation of the Damascus Room at Shangri La addressed the aesthetics of the room by carrying out all necessary loss compensation, inpainting, and final documentation. The completion of this phase marked the end of the ongoing Damascus Room conservation project, which began with a three-day symposium held at Shangri La in August of 2004. Phase II of the project occurred during the summer of 2005 when the room's construction and condition of the painted surfaces was closely examined and analyzed, and the extent of damage was carefully documented. After testing various materials, a plan was devised for treatment, consisting of two more phases. Phase III occurred over the summer of 2007, at which time the painted surfaces of the room were successfully stabilized by consolidation of all flaking and friable media. During this phase recommendations were made for the final phase of treatment, which focused on visually reintegrating the room as a unified space.

This report outlines the final phase of treatment, Phase IV, which occurred during the summer of 2008. It discusses the materials chosen and reasons for these decisions, outlines the procedure of the treatment done during this phase, supplies future recommendations for care of the Damascus Room, and includes digital documentation of the executed fills and inpainting. The digital images show all fills administered to large areas of loss and their locations on the walls. The included after treatment photography corresponds to the grid sections created during Phase II of the project, when the room was professionally photographed to document the before treatment condition. These images are saved to a compact disc included with this report.

PHASE IV GOALS

The primary objective of Phase IV was to assess the aesthetic appearance of the room and bring the decorative surfaces of the walls and ceiling to an appropriate level of finish. The final level of finish was determined in consult with the curators and staff at Shangri La throughout the duration of Phase IV. Although much analysis has been done to determine the materials and construction of the walls and ceiling, much remains unclear about the extent of restoration material present, when these restorative treatments were done, and by whom. Therefore "correct" historical interpretation of the aesthetic appearance proved to be a complicated and difficult task to achieve. The established goal was to approach a level of finish that effectively unified the decorative surfaces so that no one area would draw particular attention to the viewer. The aesthetic treatment sought to reduce the visual impact of damage, but did not attempt to make the room look new. The inpainting during Phase IV sought to diminish distracting imprecise overpaint and fill materials by inpainting large areas of loss and toning back heavily discolored areas so that all the design elements appeared unified.

Deinstallation of all museum objects in the Damascus room, along with several other rooms in the house, occurred in the summer of 2001 in preparation for renovations of the entire house. With the final phase complete, reinstallation can occur. Another goal of this project was to leave the Shangri La staff with useful recommendations for future care and preservation of the space. These have been outlined at the end of this report.

Completion of the ongoing conservation project in the Damascus room will also allow for the space to be viewed by visitors, as has long been the goal of the Shangri La staff. The public is able to visit Shangri La by signing up for tours that occur five days a week, Wednesday through Sunday. Inclusion of the Damascus room on the tour will provide an important addition to the public's educational and aesthetic experience of Islamic art and architecture.

CONDITION ISSUES TO BE ADDRESSED IN PHASE IV

While the Damascus room was in stable condition after Phase III, the room still had many condition issues that needed to be addressed so that the room could function as an aesthetically integrated space suitable for public exhibition. Several types of damage such as loss, darkened or inappropriate fill materials and overpaint, distracted the viewer from enjoying the design motifs on the walls and ceiling. The following types of damage were addressed in Phase IV of the Damascus Room treatment:

A) Losses in gesso elements



Photo by Groll and Headley

B) Losses in the paint layer



Photo by Groll and Headley

C) Mismatched brown fill material



Photo by Groll and Headley

D) Mismatched hard tan fill material



Photo by Groll and Headley

E) Abraded Varnish obscuring design motifs



F) Cloudy Varnish obscuring design motifs



G) Two types of varnish abutting each other in the same panel



H) Mismatched blue overpaint



After consulting with Shangri La's curator, Sharon Littlefield, and Phase IV supervisor, Brian Baade, it was determined that the overpaint, abrasion, mismatched fills, and areas where the varnish had darkened unevenly would be toned instead of being removed or ignored. Curator Littlefield guessed that some overpaint may have been applied by Doris Duke herself or by her staff under her direction, and therefore it should not be removed. However, the overpaint was distracting enough to be addressed. All of the materials used during the treatment are reversible, allowing for the easy removal of the applied restoration toning if so desired.

MATERIALS: CHOOSING APPROPRIATE MEDIA

During the summer of 2007, pilot treatments for filling and inpainting were conducted on the Diamond Head wall Grid Areas C1 and B1. It was found that the slight topographical difference created by areas of lost paint was not distinguishable from normal viewing distance. Therefore the decision was made to not fill losses in the paint layer and only apply fills to losses to the gesso and wood components.

The Phase III team worked out a process of inpainting whereby an isolating layer of Golden MSA Varnish in mineral spirits was applied. The inpainting then consisted of layering Reeves Acrylic paint and MSA colors. Varnish was applied, as needed, for achieving appropriate levels of gloss.

During Phase IV this filling and inpainting protocol was reevaluated. It was determined that while the prescribed method for inpainting was successful, it was not a feasible program of treatment given the time constraints of Phase IV, which needed to be completed within 8 weeks. Furthermore, there are other conservation quality paints appropriate for the project that could be reversed without harming the original media, making the use of an isolation layer unnecessary.

Golden PVA Conservation Paints were chosen because they are stable and reversible. Another advantage was that they could be applied in ethanol, which were safe to work with and would not harm the original paint. Should the inpainting need to be reversed, it can be removed in toluene or ethanol, two solvents which will not harm the original painted surfaces in the Damascus Room. The level of gloss could be adjusted with the use of a 1:1 mixture of Poly(vinyl acetate) AYAA:AYAC medium.

Modostuc, a proprietary product that is calcium carbonate-based was chosen as the fill material because it is stable, easily reversible, can be applied in water and is easy to work with. It also allows the transfer of moisture, which will help it stay in place on the wall as the layers move with fluctuations of RH and temperature.

TREATMENT PROCEDURE: PHASE IV

There were two major segments of the Phase IV treatment: 1) Filling of three dimensional *al ajami*¹ losses on the walls and 2) inpainting or toning these fills, and other losses and damages on the walls and ceiling of the Damascus Room.

Filling

The filling stage of the treatment was primarily carried out during the first week of the project. Large and distracting losses in *al ajami* decoration were filled using Modostuc diluted with water and applied with small sable brushes. After the Modostuc dried, the fills were shaped using water and cotton swabs, metal files and sanding sticks. Fills were only applied to losses on the walls that were at or below approximately seven feet from the ground, i.e. in areas easily detected from normal viewing height and distance.



Detail of Mauka grid area C3 with fill material applied

Inpainting

All inpainting and toning was carried out using Golden PVA Conservation Paints diluted with an 80:20 (v/v) mixture of ethanol and diacetone alcohol.² In areas where metallic paints or gilding had been lost, mica pigments in 1:1 PVA AYAA:AYAC media were also used. When a glossier surface was necessary, Golden MSA Varnish diluted with mineral spirits was applied with



Detail of Mauka grid area C3 with inpainting the fill material

brushes. (*See appendix for examples of varnish application*)

Areas of the room were assigned priority levels to determine the order in which treatment would be carried out. The first priority was to inpaint the white fills and other large glaring losses on the walls in grid levels B and C, which are the areas that are most visible to the viewer.

After the most obvious losses were addressed on the walls, the second priority was to inpaint the upper portions of the walls (grid level A) and the ceiling with the use of scaffolding. Only areas of loss and damage that were visible from normal viewing distance were addressed during this stage of treatment.

¹ *Al ajami* is thickly applied gesso to create three-dimensional ornamentation. It is usually achieved by dripping gesso into a form.

² Inpainting refers to the application of conservation paints inside areas of loss. Toning refers to the application of conservation paints over damaged areas of original material and areas with mismatched overpaint in order to create a unified appearance.

After the ceiling and upper sections of the walls were aesthetically addressed, further inpainting was carried out on the middle and lower portions of the walls (grid levels B and C) to bring these areas to the desired level of finish.

Consolidation

During the course of the treatment, it was necessary to consolidate areas of flaking paint or gesso. There were only a few small areas that needed consolidation, primarily on the ceiling. A solution of Acryloid B-72 in acetone was used for consolidation of areas of flaking gesso. B-72 was chosen because it could be applied with a syringe and it set quickly enough so that work could be completed in a timely manner.



Consolidation of lifting gesso on Mauka Wall

Photographic Documentation

After treatment photographs and photographs during treatment were taken using a Canon Powershot A620 camera with 4X optical zoom and 7.1 megapixels.

MATERIALS AND EQUIPMENT LIST

Denatured alcohol

Modostuc, a water-soluble putty composed of calcium carbonate, kaolin, and poly(vinyl acetate)

Golden Poly(vinyl acetate) AYAA/AYAC conservation paints (20% diacetone alcohol, 80% denatured alcohol as the diluent)

Poly(vinyl acetate) AYAA/AYAC in ethanol

Mica pigments by Sepp leaf

Acryloid B-72, 50% (w/v) in acetone

Golden MSA varnish, a solution of iso-butyl and n-butyl methacrylate, in mineral spirits

Sable brushes, variety of sizes

Cotton

Bamboo skewers

TREATMENT TIME

Man Hours to complete filling: 57

Man Hours to complete inpainting/toning: 412

Man Hours to complete photodocumentation: 80

Total Man Hours: 549

RECOMMENDATIONS FOR FUTURE CARE

In order to keep the Damascus Room in the best possible condition, the following practices are recommended.

1. **Continue the practice of keeping the *jali* screens and glass doors closed when visitors are not present.** This will help to limit the amount of dust and debris entering from the outside and reduce the frequency with which the room needs to be dusted.
2. **Keep adequate circulation in room.** Having fans going at all times when the room is not in use will help to prevent mold growth. Isolated spots of mold were found on the ceiling and were removed with mineral spirits during Phase III. The room should continue to be monitored in order to ensure that the mold does not return. Adequate circulation should hinder any new mold growth.
3. **Establish a regular schedule for dusting and maintaining the room.** Dusting of the walls at eye level should be done quarterly. Visitor access to the space will increase the chances of dust and dirt entering the space. The ceiling and upper portions of the walls should be dusted and examined annually. Dusting can be carried out carefully with a soft bristle brush and a vacuum equipped with a HEPA filter. During dusting, the room should be carefully examined for damage that may have occurred to increased visitor access.
4. **Monitor temperature and relative humidity.** HOBO data loggers can be placed around the room to record the daily highs and lows of temperature and relative humidity data. Perhaps this information can guide future maintenance of the room with regards to opening or closing doors at certain times of the day when it is less humid.
5. **Ensure proper lighting in the room and the display cases.** It is recommended that light levels in the room be kept low (150 lux or less) when the room is in use. Lights should be off when visitors are not present. A new lighting system should be installed in the niches before reinstallation of museum objects. The new lighting should be kept to levels appropriate to the nature of the objects being housed in the niches (50 lux or less for paper objects and textiles, 100 lux or less for light-sensitive painted objects and Asian lacquers, 150 lux for paintings and painted surfaces, 300 lux or less for non sensitive materials such as metals and ceramics). The lighting should have UV protection so that exposure of the objects to UV rays is limited. Lights that do not generate a great deal of heat, such as LCD lights, are recommended.
6. **Place furniture or objects in the room so that access to the walls is limited.** This will minimize the risk of visitors touching or brushing against the painted surfaces, inadvertently causing damage.

ACKNOWLEDGEMENTS

Thank you to the following people and groups for their assistance and support:

- The Doris Duke Foundation for Islamic Art and the Doris Duke Charitable Foundation for financially supporting the project.
- Brian Baade, Limited Term Researcher and Instructor of Paintings Conservation at the University of Delaware and supervisor for this project, for his guidance and direction of the treatment.
- Richard Wolbers, Associate Professor of Paintings Conservation at the University of Delaware for work in establishing this project.
- Paola Garcia, Executive Assistant at Shangri La, for providing us with the supplies required of the project and for offering daily assistance. Paola also arranged for our housing in Hawaii and worked out many everyday details of our stay.
- Molly Lambert, Consulting Architectural Conservator, consulted with us and Sharon Littlefield about the projects and provided us with the opportunity to examine two frescoes at the East West Center with her.
- Deborah Pope, Executive Director; Sharon Littlefield, Curator; Linda Gue, Collections Technician; Maja Clark, Registrar; Elizabeth Uyeda, Administrative Assistant, and the rest of the staff at Shangri La who made us feel welcome and were so enthusiastic about the project. We would also like to give special thanks to Billy Rees for the use of his two bicycles.

APPENDIX

In order to aesthetically integrate certain areas on the walls, a mineral spirits acrylic (MSA) varnish was employed. The MSA varnish aided in reaching the appropriate level of gloss to match surrounding areas where the PVA paints alone could not. Listed below are instances where varnish was applied, showing each locations according to the grid sections of the wall.

1. Some wall panels had later applications of coatings that covered only part of original material; these later coatings have darkened and were visibly different colors from the original coatings.



Detail of Diamond Head grid area B2 before toning



Detail of Diamond Head grid area B2 after toning

2. One panel on the Makai wall in particular had a cloudy varnish that did not match any other coating in the Damascus room. This was coated with Golden MSA varnish to reduce the cloudy appearance.



Detail of Makai grid area B1 during varnish application



Detail of Makai grid area B1 after saturating cloudy varnish

3. Coatings that were heavily abraded were inpainted, and varnish was applied to unify the overall appearance.

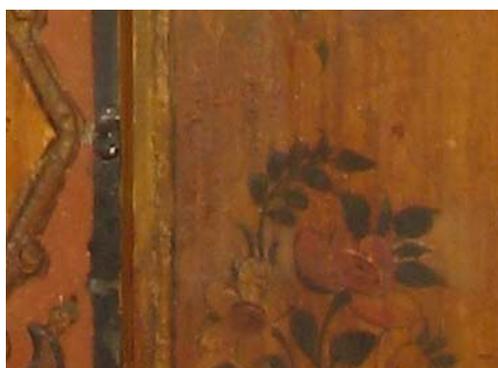


Panel in Koko Head grid area A3 before inpainting/varnish application



Panel in Koko Head grid area A3 after inpainting/varnish application

4. Three cleaning tests had been carried out in previous years. These are illustrated in the following grid sections: two in Mauka B2 and one in Koko B2. These areas were inpainted, and varnish was used to achieve the appropriate level of gloss. The inpainting of the cleaning test in the Koko Head B2 section is pictured here.



Cleaning test on Mauka grid area B2
before inpainting/varnish application

Mauka grid area B2 after
inpainting/varnish application

5. Cracks and losses were filled with Modostuc, a matte, water-reversible putty. Varnish was used in conjunction with PVA paints to achieve the appropriate level of gloss when inpainting these fill materials.



Detail of panel on Mauka grid section
B2 before inpainting/varnish
application



Mauka grid section B2 after
inpainting/varnish application