
Las Flores Adobe National Historic Landmark

Carriage House Stabilization Program

2003-2004

COMPLETION REPORT

Post-it® Fax Note	7671	Date	# of pages 3
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EXECUTIVE SUMMARY

Under the terms of a Cooperative Ecosystem Studies Unit (CESU) task agreement, graduate students, faculty, and staff of the University of Vermont (UVM) Historic Preservation Program are currently participating in the stabilization and restoration of Las Flores National Historic Landmark, a project conducted by the National Park Service (NPS), Historic Architecture Program, Intermountain Support Office-Santa Fe (IMSF-HAC). Las Flores is located on Camp Pendleton, near Oceanside, California. The United States Marine Corps (USMC), which has jurisdiction over this property, retained the National Park Service to assist with the multi-year restoration effort.

In 2004, this collaborative effort between the National Park Service and the University of Vermont involved the structural and seismic stabilization of the adobe carriage house. The carriage house is a contributing structure in the NHL complex at Las Flores, despite substantial changes made to the building in the 1970s. This is principally due to surviving early adobe fabric and the placement of the building in the complex, forming one side of an historic courtyard.

Documentation of the carriage house was begun by student interns during the 2003 season. Additional field survey work was conducted in January 2004. In a supervised project at UVM, graduate students began analyzing and organizing field survey data. It was determined that project goals for the carriage house project were to include structural and seismic stabilization, conservation of adobe wall materials, reinstatement of the connection between the carriage house and the north end of the house, retention of the c. 1970 roof and portal frames and decks, and replacement of the existing roof covering with cedar shingles. Because of the deleterious effects of cementitious interior and exterior plasters and a concrete *contra pared* installed in the 1970s, long-range goals include their removal; stucco and interior plaster will be replaced with traditional earthen and lime plasters finished with limewash.

In May 2004 a crew was assembled onsite, consisting of UVM staff, student interns, and recent graduates participating in advanced conservation training. The crew began by removing the existing roof covering and a portion of the deck; deck materials were

salvaged for reinstallation. This permitted access to the tops of the walls for installation of a seismic retrofit. The retrofit consisted of a series of threaded rods that pass vertically through a continuous wooden plate, through the bond beam, and into the adobe wall below. Rods were grouted in place using a soil-cement grout. Using commercially available ties, the existing roof structure was fastened to the new wooden plate, effectively tying roof structure to the walls.

Sampling of the adobe walls demonstrated that, despite the presence of a concrete *contra pared*, the wall materials were relatively dry. Several small voids in the walls, due primarily to cracking and burrowing rodents, were filled with earthen grout. A large concrete infill on the south wall was removed and replaced with adobe; the new infill was carefully "laced" into historic materials and header courses were installed to prevent separation of the two wythes that make up the twenty-inch thick walls. Adobe infill materials were covered with earthen or lime plaster (depending on weather exposure) and then limewashed.

Decayed roof and portal frame materials were repaired using dutchman splices, or were replaced in kind; in some instances, replacement members of slightly larger dimension were installed to improve structural performance. A failed window lintel on the south wall of the carriage house was replaced. A new connection between the carriage barn and the hacienda block of the house was constructed to replace work lost in a 1974 repair project. The connection was adapted to new wall heights and rooflines that resulted from the 1974 renovation. The portal on the south wall of the carriage barn was extended to connect with new work, so that the south wall is now protected from weather along its entire length. The carriage barn and portal roofs were covered in cedar shingles, to match the roof covering on the house.

In the time allotted for this project, the crew was not able to address every issue associated with building envelope elements. Except for repairs made to the south wall, cementitious plasters were not removed from interior and exterior walls; ultimately they will be replaced with softer earthen and lime plasters. All of the windows and doors in the carriage house are in need of conservation. Survey work was completed during the 2004 project and this report includes recommendations for repairs. In the interim, non-functioning windows have been replaced with temporary ventilation panels. The concrete *contra pared* installed at the base of each adobe wall probably contributes to erosion of wall materials in the lowest courses. A method for removing the *contra pared* was developed in 2004 and is described in this report. The schedule did permit some conservation of interior plasters and finishes in the ranch house. In rooms 8, 9, and 10 the crew undertook cleaning of wall surfaces, conservation of earthen and lime plasters, and reinstatement of a limewash wall finish.

In addition to meeting all high priority construction goals, the carriage house stabilization project produced training opportunities for the students and volunteers involved. By pairing trainees with skilled craftspeople, trainees received instruction while a high level of workmanship was maintained. During the course of the research project conducted at UVM and the seven weeks that the crew spent onsite, student interns, volunteers, and

recent graduates of the Historic Preservation Program at UVM were afforded the opportunity to participate in advanced conservation training.