

St. Joseph's Apache Mission Restoration Project

Illustrated Progress Report: Summer 1999



Ernest Martinez and Pete Mold mix high calcium hydrated lime into lime putty.

Sand from Saenz Family arroyo in Bent, NM collected and sieved. Richard and Estefana Saenz have offered to donate all the sand necessary for the restoration of St. Joseph's Apache Mission church.



Lime putty and sand was mixed together in a wooden bin, then transferred into a plastic bin and covered with plastic sheeting for storage.



Rented scaffolding provided access to the wall. The work of re-mortaring began at the top and proceeded downward. We will investigate the feasibility of purchasing scaffolding for future work.

The mortar joints are cleaned, scrubbed, and then wet down before new mortar is applied.



A great deal of mortar has washed away over the years. Lumps of white lime indicate areas where the sand and lime was not well mixed in some of the original mortar.

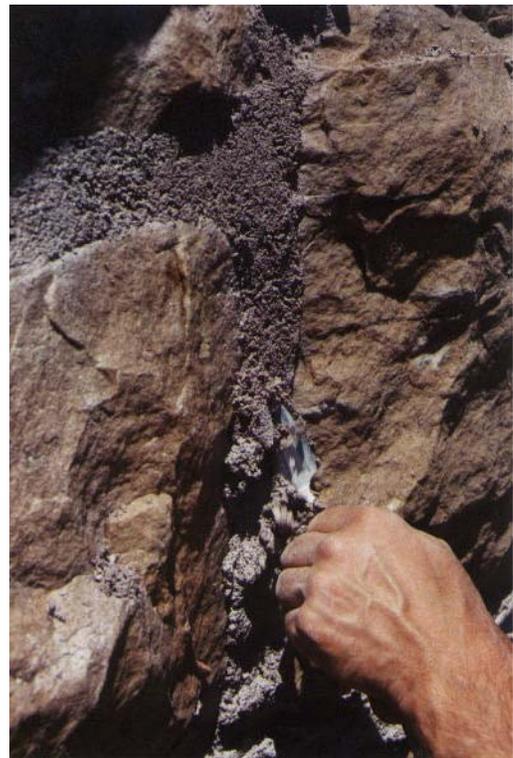


Lime mortar is pushed into joints using various trowels, and even hands. Small pieces of clay roof tile were pushed into wet mortar to add strength and limit cracking.

Tarps were used to protect wet mortar from sun and wind. Mortar must dry slowly for a strong, thorough cure.



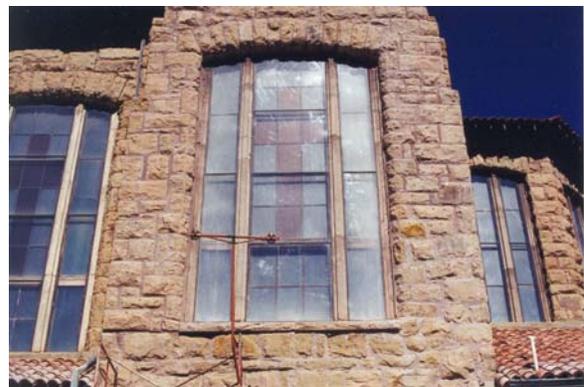
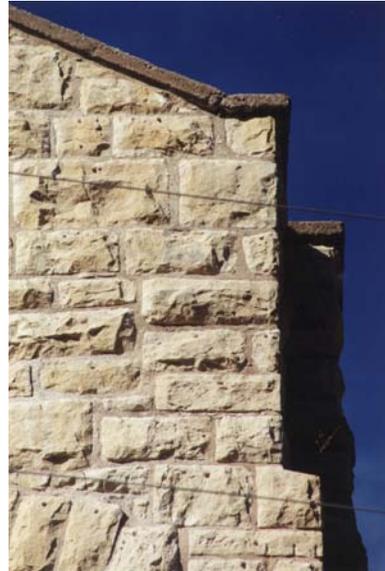
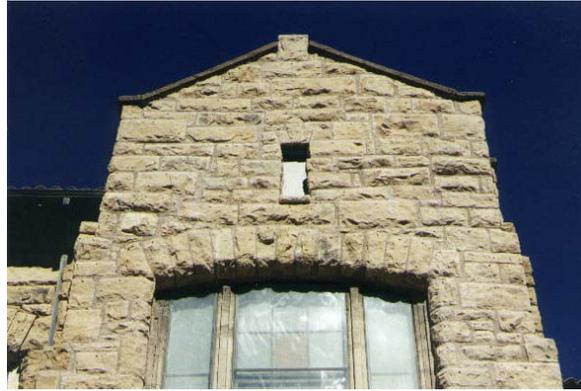
Mortar is applied in layers, depending on the depth of the joint. The top layer is “over applied” then scraped back after several hours of drying. Scraping back the top layer results in a flat surface that will allow rainwater to freely run off the wall. The exposed sand gives the mortar joint an attractive texture and color.



Before



After



St. Joseph Apache Mission Restoration Project Progress Report: Summer 1999

I am writing to give you a progress report on the preservation of St. Joseph's Apache Mission church. To begin the physical work of re-mortaring the stonework has been very exciting for the restoration committee, and for everyone associated with this historic church. We have learned a great deal this summer. Thank you for helping make this work possible.

Bar-M Construction, the contractor for this restoration project, proposed a two-week re-mortaring project for the summer of 1999 as a test of materials and technique. To assist in this test panel project Mr. Pete Mold, an expert in the use of lime mortar, was contracted to train the owner and employees of Bar-M Construction in the art of stone building preservation. Mr. Mold was involved in the lime plastering of the rebuilt Globe Theatre in London, and has many years of experience in the use of lime mortar. We were most fortunate to have his leadership and expertise as we began the restoration of our church.

One month before the scheduled re-mortaring work was to begin Mr. Mold arrived in New Mexico to help locate and prepare the materials for the lime mortar. Ernest Martinez, owner of Bar-M Construction, spent a great deal of time with Mr. Mold in this preparation. A suitable sand, or aggregate, was located near the place where the stones for the church were originally quarried. This aggregate was tested by a local sand and gravel quarry and found to have the desirable properties for a strong mortar. High calcium hydrated lime was located and mixed into a putty several weeks before work was to begin, to allow for the necessary maturing. One week before work began approximately three cubic yards of lime mortar was made from the lime putty and aggregate. This mortar was stored in a large plastic bin covered with plastic sheeting. The beauty of lime mortar is the fact that it can be stored indefinitely, as long as it is not exposed to air. The lime mortar hardens (cures) when it is allowed to absorb carbon dioxide from the atmosphere.

Scaffolding was erected on the face of one of the most deteriorated sections of wall: the south transept exterior end. On May 17, 1999 the entire crew began work on the church. The first job was to prepare the mortar joints by removing loose mortar and brushing away dirt and organic material. It was interesting to see that the original mortar had endured the elements quite well in places, and had been washed away in other places. We noticed that in areas where much of the mortar had washed away the remaining mortar had large lumps of lime, indicating that the lime and aggregate had not been well mixed. A good lesson to learn. After cleaning the mortar joints for two days the application process of new mortar began. During this application process we made of videotape of Mr. Mold demonstrating the re-mortaring technique. This video turned out quite well, and will be a valuable resource in the future.

As in any construction project, problems were encountered during this two-week project. We discovered that great care must be taken while applying fresh mortar so as not to stain the surrounding stone. The stains can be cleaned, but the cleaning involves a fair amount of scrubbing with a wire brush, time better spent doing other things. The mortar must be protected from sun and wind so it does not dry out too rapidly. For two weeks after application the lime

mortar must be regularly moistened to ensure a slow and thorough cure. Plastic tarps were used to cover the drying mortar. It was determined that using some type of tarp to enclose the entire working area, scaffolding and all, would save time and provide a better environment for the curing process.

Bar-M Construction charged \$24,265.00 for this two-week test project. Enclosed with this progress report is a copy of the project contract, containing an itemized listing of expenses. During this project Ernest Martinez has been sufficiently trained by Mr. Mold in the art of lime mortar preparation and use. Mr. Martinez is now able to combine his knowledge of the construction trade with his new knowledge in the particulars of stone building preservation, and teach these skills to young adults.

To date \$72,852.00 has been raised for the restoration of St. Joseph's Apache Mission church. \$24,265.00 was spent in two weeks on the test panel project. The majority of this money was spent on labor, as shown in the itemized listing. At the present time funding does not permit hiring Bar-M Construction to continue the restoration work and train young adults in the art of stone building preservation. However, the restoration committee feels that it is important to continue the work, if only in a small way.

It was decided to retain Mr. Mold for an additional two weeks to train Bro. Peter, Chair of the Restoration Committee, in the art of stone building preservation. Looking ahead, Bro. Peter will be able to use this skill to train young adults in stone building preservation in a small, low budget manner. By working with one or two laborers the work will proceed and the project will continue to attract donors. During the two weeks when Mr. Mold was training Bro. Peter several New Mexico State Monument maintenance workers from nearby Lincoln, NM spent a day in Mescalero learning about lime mortar. These workers will use this knowledge in preservation work at the historic adobe courthouse in Lincoln, site of the famous escape of Billy the Kid during the Lincoln County Wars.

A great deal of publicity was received during the work this summer. Short news clips for the local CBS and ABC television affiliates aired several times out of Roswell and Albuquerque. Newspaper articles appeared in the Ruidoso News, Alamogordo Daily News, Roswell Record, and the El Paso Times. Small donations have been received from individuals as a result of this publicity.

The work of fundraising continues. Many grant requests have been denied, but we will continue to search for grant funding. The funds on hand will be used to begin work on the church interior during the coming months.

Respectfully yours,

Peter A. Boegel, OFM
Restoration Chair