



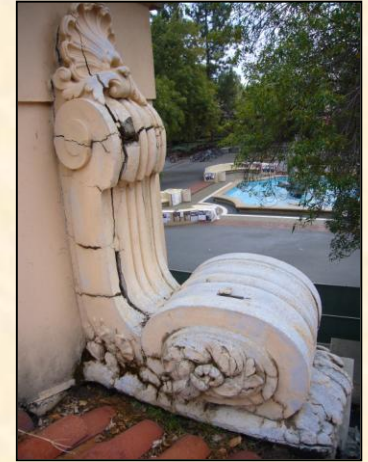
"Beauty is everlasting and dust is for a time."

Stanford University's Old Union Restoration of Decorative Corbels Stonesculpt, 2007



Before restoration

Originally built circa 1922, the two large corbels adorning the main entrance of Stanford's first student union have experienced severe deterioration over the past 85 years. The corbels were constructed from precast concrete, and were designed to be hollow inside with steel bars running throughout for reinforcement. As water penetrated through the corbels, the steel reinforcements began to rust and expand, causing severe cracks throughout. In many places, large chunks of the corbels had fallen off, or were sitting loose in place. Additionally, the tops of the corbels were separated from the wall and slowly falling forward.



Before restoration



Realigning top, replacement of loose pieces with pins, and crack repair



Restoration of these corbels involved multiple approaches. The tops were reset in their original position and pinned against the wall. Cracks were opened with a grinder, injected with epoxy, and filled with Thinfill 55 or Jahn M70 repair mortar, depending on the size. Where access was available, the inside was covered with grout and fiber mesh to provide extra support. Loose pieces were epoxied back in place, with the addition of stainless steel pins to support the larger pieces. Finally, any missing pieces were patched with Jahn M70 repair mortar, and shaped to match the original design.



Reinforcement of loose pieces with pins, and crack repair



Composite patching with Jahn M70, and crack repair



After restoration



After restoration