



**Hoover Pavilion opened its doors as Palo Alto Hospital in 1931 and was expanded in 1939. Stanford University co-owned and operated the hospital for a decade until 1968, when it purchased the facility, subsequently converting it to medical offices. Designed in the Art Deco style, the 85,000 gsf building features distinctive ziggurat massing, comprising three flat-roofed, four-story wings that radiate from a five-story central block and six-story tower.**

Page & Turnbull served as the preservation architect for the adaptive re-use of the Old Palo Alto Hospital, now known as Stanford Hoover Pavilion. The project goals set by the client, the Stanford University Medical Center, included: a historic restoration as part of the mitigation for a nearby expansion of the Stanford Hospital, and the creation of a state of the art Medical Office Building with new building systems.

The board formed concrete building with art deco detailing was constructed in 1930 with a second wing added in 1939. Page & Turnbull researched the history of the building and provided photographs, reports and diagrams that clarified which features of the building were defined as historic. This information guided the design of the project and was used by the project team to acquire unanimous approvals from the City of Palo Alto and in presentations to the Architectural Review Board. A separate scope of work was performed by Page & Turnbull staff in regard to the rehabilitation of the exterior and significant interior spaces.

The rehabilitation work included documenting and specifying the exterior envelope including terra cotta tile wall panels, cast stone, board form concrete, wood windows, copper clad entry canopy, historic light fixtures, and the replacement tile at the pyramidal roof.

During the project, issues with contaminated concrete aggregate used in the 1939 addition were discovered. Page & Turnbull provided the design team with a cost effective and aesthetically pleasing repair of the concrete.



Before



After



Reactive Aggregate Patch Matching Texture



Reactive Aggregate Close-Up



Reactive Aggregate Removal

## The Hoover Pavilion presented adverse concrete conditions in the form of pitting and staining across all facades of the building, but most prevalent at the 1939 addition wing.

Through laboratory analysis, Page & Turnbull determined that the original concrete mix included iron pyrite within the aggregate. When subjected to moisture this reactive aggregate would oxidize and expand, resulting in pop-outs and staining. This condition is perhaps nothing new to the experienced concrete repair expert, as it has been observed at slabs and sidewalks on past projects and well documented. However, the extent of this condition present on a building façade was neither previously encountered in our 50-year office history, nor could be found in scholarly documentation. Over 400 pop-outs were identified through survey prior to construction and additional reactive aggregates were identified during the repair process. These quantities do not include the extensive previous repairs conducted by the University prior to our intervention.

The testing determined that locating potentially reactive aggregate prior to the oxidization process was not possible. Therefore, locating the pyrite could only take place once the damage had already been done. As a result the repair approach focused on preventative measures by limiting the wet/dry cycles (exposure to water) to arrest the process of oxidization. The project accomplished this by careful preparation and repair of the concrete pop-outs and an exhaustive mock-up process to select the appropriate coating as well as removal of the existing paint systems.

Page & Turnbull worked with skilled masons to fine-tune the patch repairs so they would match the board form texture of the concrete, a historical character defining feature. The final condition is a façade where even the trained eye cannot perceive the concrete repairs.



Due to previous renovations that gutted the building's original interiors, existing walls were demolished and reconfigured without violating the Secretary of Interior's Standards for the Treatment of Historic Properties. To carve out deeper floor plates, the design team eliminated the central corridor, placing circulation along the side of the building instead, bringing ample daylight inside via triple-height windows. The new corridor doubles in width at intervals to provide waiting areas. Mechanical systems were collected into the middle of the floor plate and concealed in a dropped ceiling, enabling the public circulation area to benefit from high ceilings.

To address the atypically narrow building floor plate, the design team modified the standard medical module's sequence: waiting area, check-in station, diagnostic and treatment areas, and physician offices. Instead, the waiting rooms were compressed in size, benches were added to the hallway for supplemental seating, and physician offices were consolidated. Designed in accordance with SUMC's innovative scheduling system -- which organizes less patients at any given time to facilitate on-time delivery of care -- the building did not require as much space for waiting areas as is typical, and the café, library, and lobby provide additional places and amenities for waiting.

The new interior walls incorporate motifs found on the historic Art Deco exterior. The design team integrated a variety of materials to create a non-institutional feel, delineate intimate neighborhoods, and give each space its own identity, with changes to ceiling patterns and carpet color and texture.

The exterior was restored, deteriorated windows replaced with new matching ones, and a replica of the original iron finial returned to the top of the highest tower. The renovation met the California Green Building Code Tier 1 standards, employing sustainable strategies such as high-efficiency lighting, natural light, and use of recyclable materials.

