

February 7, 2003

Mr. Carlos Villalva
CCSF DPH
1001 Potrero Avenue
San Francisco, CA 94110

Re: Heliport Project

Dear Carlos,

We have reviewed the existing elevator hoistway plans of the proposed project that would include providing two elevators for roof top access. The scope of the upgrade is to provide rooftop access for medical personnel to a future helipad on the existing hospital building, and efficient transport of injured patients to lower floors of the hospital.

The elevators were installed in 1972 and have remained largely unchanged since their installation 30 years ago. The elevators are in average condition, and have several components at the end of their useful life. Any project that reconfigures existing elevators may have significant cost associated with upgrades of the subsystems.

There are three basic scenarios to accomplish this accommodation:

- A) Zone II – Raise two of the Zone II elevators approximately 3-1/2 feet and install two new landings at the roof elevation. This work poses two concerns. First, the existing machine slab structure is supported diagonally by steel beams that will require additional structural work to accommodate a new position. Second, the existing 11-foot overhead would be reduced to 7 1/2 feet. Code requires an 8-foot overhead. A Cal-OSHA variance would be required. We are unaware of the likelihood of the issuance of the variance. Otis highly recommends the modernization of the Zone II elevators. This work should be completed at the same time as the modification to provide roof top access. The modernization would include refurbishing the existing gearless hoist machine, installation of new 411MMS controls, new SCR DC drive, new ADA compliant operational fixtures, complete door upgrade, and all new wiring.
- B) Zone I – Raise two of the Zone I future elevators approximately 3-1/2 feet and install two new landings at the roof elevation. This elevator bank has two empty hoistways. The slab structure is supported in a simple span and would require modest structural work to accommodate the new slab position. The future cars could be added to the existing bank of four elevators. The same overhead problem would exist in Zone I. The new elevators would be installed using the

411MMS controls, SCR drive, ADA compliant fixtures, and state-of-the-art door operation. The new cabs would be built inside the existing hoistways. The existing entrances and landing doors would be re-used.

- C) Shuttle Elevator – Another possible scenario would be the installation of two new hole-less hydraulic elevators. The top landing would be on the roof and the bottom landing would be adjacent to the existing bank of elevators in Zone II. This is the most feasible scenario and would be the least expensive. The drawback here would be the necessity to transfer patients from the shuttles to the main Zone II elevators. The shuttle elevators would run at a speed of 125 feet per minute. Typical capacity for hydraulic elevators would be 2,500 pounds. The cabs would be designed to accommodate a gurney and additional personnel. Door operation would be single speed, center opening. In our estimation, the use of the shuttles would add about 45 seconds to the total flight time to OR.

In summary, option A is the most expensive, but provides direct access to the operating rooms and emergency department. Option B is somewhat less complex to install, but it would provide indirect access to OR's. Option C is the least expensive, but will impose additional time to transfer the patient.

Sincerely

Otis Elevator Company

David J. Sheehan
Account Manager