

INDOOR FITNESS FACILITY, P-235
MCB CAMP PENDLETON, OCEANSIDE, CA

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This was a FACD (Functional Analysis Conceptual Development) project that was such a prime example of how a FACD should be conducted, it was recommended as a “model” for others to follow.

It was conducted for 10 days, over a period of 7 weeks, beginning with bubble diagrams of personnel and traffic movement, and spatial relationships between functions within the facility. 12 Conceptual Schemes were ultimately evaluated in an iterative and interactive process that allowed changes to be progressively reviewed and modified. New (at the time) ATFP street set back requirements were incorporated, and the end result was a document that would provide the basis for a design-build bidding process.

In addition to all the Function / Space / System Requirements narratives (22 in all), the final report contained a summary and differentiation of needs / wants, and Additive Features that could be used in the bidding and selection process. Block diagrams and the matrix used in evaluating the various schemes were also included, as were the Value Engineering function list and FAST Diagram, all as “aids” to the project bidders.

One example of the breakthrough results this Team accomplished was a major redirection in the form of the basic gyms. What started as a “twin gym” concept with two identical spaces, bleacher seating, scoreboards, etc. was converted to two spaces with identical playing areas, but differing amenities. A functional review of the “WOW” factor (the impression this facility would make on visitors / spectators) led the Team to realize this could be accomplished by just one of the gyms. This resulted in a Competitive Gym with specialized lighting, Press and TV accommodations and more seating , and a distinctly different Recreation Gym, with “improved value”, lower cost and less area.

The site was also more fully utilized by converting a parking lane along the building to a “turn out” lane onto the main street. By not allowing parking in that area, the ATFP 80’ “stand-off” requirement was reduced / eliminated. This not only provided more useable site area, it enhanced vehicular traffic into and out of the access street to the parking area. Building entrances were also set back and turned away from the parking areas to meet ATFP requirements, and in doing so provided an enlarged lobby gathering area.

CHANNEL DREDGING AT NORTH ISLAND, P-706
NAVAL AIR STATION NORTH ISLAND, CORONADO, CA

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This was a 3 day (24 hour) VE Study that addressed dredging requirements to deepen the San Diego Channel from the Carrier Turning Basin to the open sea. It is the project that resulted in the clean dredged materials that were used to replenish sand along many San Diego beaches.

The dredging effort was limited by an established “no spill zone” designated by the Regional Water Quality Control Board (RWQWCB) within San Diego Bay. To prevent or limit turbidity in the inner channel, dredging was originally limited to clamshell and/or cutterhead suction techniques, both expensive operations.

The Value Engineering Team proposed using a technique developed in Japan, where hopper dredges are used by adapting the dredge with a decant recycle pipe that would return fines to the bottom of the channel, rather than spilling over the sides of the barges. This reflected almost \$9 Million savings for a \$15 Million project cost element. Another option presented was to return decant water to a separate collection and/or treatment barge. In both cases, dredging time would also be reduced from 13 to 6 months by using the more efficient hopper dredging method.

Another creative proposal suggested that hopper dredging could be used for the inner channel, but to fill the barges to a point just before water would dump overboard. Then move the barges to a point outside the “no spill zone”, dump the water and refill with spoils from a hopper dredging operation in that area. This method of “skip” dredging did allow more extended use of the more efficient hopper dredging method, would save about 4 months of construction time and \$5 million, all without any equipment modifications.

PORT OF SAN DIEGO
MARINE CORPS RECRUITMENT DEPOT
SAN DIEGO INTERNATIONAL AIRPORT
LAND EXCHANGE AND MODIFICATIONS

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This project was driven by the San Diego International Airport's need to extend Taxiway C, in the area of the Fedex Terminal. To do this SDIA required additional land owned by MCRD, so an exchange was negotiated. Since that area was where recruits were trained, a 25' high, 7500' long sound wall had to be constructed between the taxiway and the training area. A number of obstacle courses and playing fields also had to be relocated.

One proposal that resulted from this VE Study was a major change in the sound wall construction. It was originally planned as a continuous CIP wall on spread footings, which would be very susceptible to cracking from settling and / or minor earthquake shock. It was also not conducive to repair or replacement of damaged sections from such factors, or blast and vibration from passing aircraft.

The VE proposal was to build a 15' panel wall on top of a 10' high reinforced earthen berm. With precast / prefabricated wall panels supported between concrete columns, the wall would have "give" to reduce settling / quake influences, and sections could be taken out and replaced with comparative ease. Wall construction was also greatly simplified.

This approach reduced estimated wall costs by 50% (\$3.5 Million), provided a more aesthetic wall (panels which could have cast features in lieu of CIP), and the berm was better sound proofing where it was most needed, at ground level. This approach also allowed excess soils and recycled materials from the taxiway reconstruction to be used in the berm, rather than be hauled away at added expense and construction time / truck activity.