

BASE Line

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The work that we are most identified with is providing cost-effective structural solutions to new construction projects; however, our specialized engineering services also provide value by fulfilling unique needs. Some additional specialized engineering services include:

■ Value Engineering Reviews

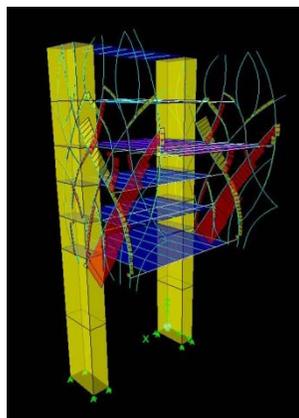
BASE has a proven track record of providing value engineering review services to bring best value to the project which is especially important in today's economy. Some of our VE review projects include:

- *Watermark*: Value engineering identified \$1.3 million in potential savings and helped lead to a revised layout of the structure's lateral load resisting elements to increase the sellable floor area.
- *909 Kapiolani*: Value engineering identified \$2.1 million in potential savings.

■ Schematic/Preliminary Design

From proving that new and innovative architectural designs are structurally possible, to design review to provide a more economical end product, we work with architects to develop the optimum structural system that will work with the architectural layout.

- Preliminary study and analysis renderings of a unique cantilevered hotel lobby for *W Hotel*.
- Analysis of the design of a leaning tower in Dubai for IBC requirements.



W Hotel



The Pad Dubai

Our principle of evaluating projects from the client's point of view enables us to assess and design structures with the goal of providing our clients with the required, or better, level of performance at a reduced cost or shorter construction duration. Look to BASE to provide economical and creative engineering solutions in all aspects of building structures.

Value Engineering



Pacifica

Optimizing a structure's design is more important than ever before in today's market. BASE collaborates with its clients to review projects while focusing on value engineering to create cost effective structures. Not only does value engineering result in more economical construction costs, it also can make a significant contribution to sustainable design. Examples of BASE's value engineering experience includes:

- The structural design of **Pacifica**, a new high-rise condominium that features 42 floors of residential units over six floors of parking. Quantity takeoffs on recent high-rise construction in Honolulu have demonstrated that this is likely the most efficient tower designed to current building codes. When compared to other recent high-rises in Honolulu, **the savings in reinforcing steel alone range are equivalent to \$1 to \$2.6 million.**



UH Frear Hall

Comparison of Various High-Rise Projects in Honolulu						
Project	Square Feet (SF)	Rebar	# SF	Post-Tension	# SF	Cost SF
Hokua	850,000	7,150,000	8.4	545,000	.65	\$14.04
Ko'olani	1,100,000	7,600,000	7.0	703,000	.65	\$12.08
Moana Pacific	1,540,000	12,000,000	7.0	1,200,000	.77	\$12.50
Capitol Place	800,000	7,000,000	8.8	665,000	.87	\$15.37
909 Kapiolani	396,000	2,900,000	7.3	263,700	.67	\$12.57
Watermark	435,000	4,000,000	9.2	263,000	.60	\$14.98
Pacifica	863,500	5,486,000	6.3	515,000	.60	\$10.92

- Through value engineering, BASE achieved a 31% reduction in concrete material and 18% reduction in reinforced material for the **University of Hawaii (UH) at Manoa Frear Hall Dormitory** by using a post-tensioned structural system instead of the conventionally-reinforced system typically used on campus. The 197,000 sq. ft., 810-bed dormitory facility located on the UH campus includes 12 stories and recently became the first UH facility to receive LEED Silver certification with the U.S. Green Building Council. The project received an Innovation in Design point toward LEED certification because of this significant reduction in use of materials.



Commonwealth Games Village

- Third party project peer review services for **Commonwealth Games Village**, a residential project near New Delhi, India consisting of 34 seven to nine-story buildings and a 1,000,000 sq. ft. underground car park in a 2,400,000 sq. ft. footprint. Structural working drawings were reviewed to prepare alternate designs in conventional flat slab cast-in-place concrete and hybrid steel and/or precast systems.





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