BASE *Line*

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Independent project review

Independent project reviews are becoming more commonplace in our industry. These reviews can take many forms including peer reviews for code compliance, value engineering studies, and constructability reviews. Other forms of project reviews include those required for construction, such as shoring and reshoring requirements, tower crane and manhoist support and attachments, and framing modifications required for temporary openings in a structure for construction equipment. All of these reviews require a structural engineer with an appreciation of the importance of construction means and methods, who can quickly provide unbiased and beneficial input to a project team. BASE has a proven track record of successful involvement in a wide range of project reviews focused on meeting clients' needs and requirements.

The Grand Islander
Honolulu, HI

Structural peer review on a new timeshare tower at the Hilton Hawaiian Village. The project consists of a 38-story tower with the first three floors comprising a larger footprint containing lobbies, offices, retail, guest drop-off, landscaped plaza and an outdoor pool. The tower portion of the building starts at Level 4 and is fairly typical over the remaining height. The tower has 418 typical, executive, and penthouse units, corridors, common areas and amenity spaces.

Ross University School of Medicine
Portsmouth, Dominica

BASE was retained to provide peer review and value-engineering services on the $13.4 million expansion project, which subsequently led to producing fast-track construction documents as the engineer of record to keep the project on schedule. The building's framing system consists of hollowcore precast planks supported on cast-in-place concrete shear walls and exterior precast load bearing walls. The building is designed to withstand high seismic (seismic design Category D) and wind loads (172 mph).

1333 S Wabash
Chicago, IL

The project includes construction of a new 30-story residential tower. The tight site in the South Loop of Chicago required integrating some of the contractor's vertical transportation equipment within the building footprint. BASE was retained to review and modify the post-tensioned slab system to accommodate large temporary openings at multiple levels for a material hoist. BASE's contributions included modeling the existing slabs and modifying the slab reinforcement and post-tensioning for the temporary openings. BASE also reviewed shoring and reshoring requirements and provided the design for the final condition when the construction equipment is removed and the temporary opening must be filled back in.

IREO
Hyatt Residences
Gurgaon, India

Peer review services including design review, value engineering, and structural audit certificate for five (5) interconnected towers having a floor area ratio of approximately 1,000,000 SF. The branded Hyatt Residences – the first in India – take the form of five towers elevated above the lush green landscape and oriented to maximize views. The top of the towers are connected by a garden deck that supports five penthouses, each with their own pool and garden terraces.

Ward Village Gateway Towers
Honolulu, HI

Structural peer review on two mixed-use residential towers with a total of 236 units, commercial space and parking. One tower is 400 feet tall with 35 stories while the other is 28 stories tall with a roof height of 314'-8".

The Watermark
Honolulu, Hawaii

BASE performed value engineering on this 38-story residential project to optimize the shear wall layout, reducing encroachment of walls into unit layouts and creating additional sellable space. 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, providing the potential for an additional $500,000 in sales revenue.

MGM Grand and the Bellagio at Maker Maxity
Mumbai, India

Peer review services for the 1.5 million SF Phase 3 of the Maker Maxity mixed use development complex. This phase consists of the Bellagio and the MGM Grand Hotels. Both structures are 22-stories (17 hotel/ apartment floors atop a 5-story podium) plus 3 basement levels for back-of-the-house, parking, and services. The 22nd floor roof decks of both structures include a pool and restaurant.

BASE's contribution included value engineering of the hotel's floor framing from a composite steel staggered truss sytem to a more conventional long span concrete beam and slab system. Optimization of the tower's lateral load resisting system included commissioning of wind tunnel studies along with a seismic performance based design analysis by BASE.

OMG
Noida, India

Peer review services for a 200-meter tall, 46-story mixed-use development that includes multi-level shopping, several levels of parking above and adjacent to the retail space creating a large podium over most of the site. Above the podium the structure steps in to create a tower of Serviced Super Studio apartments and two 7-story studio residence wings surrounding a recreation deck. The total areas of structural construction is approximately 2,050,000 SF.

BASE's contributions included value engineering the floor framing from a beam and slab system that would be slow to construct to a clean post-tensioned flat slab. The modifications reduced the cycle time for casting floors while also reducing formwork and material costs.

Tritvam
Kochi, India

Value engineering studies for a residential development that includes three levels of parking covered by a large landscaped podium. Above the podium are two 23-level residential towers. The total area for these two towers, their podium and parking is approximately 2,600,000 SF. Structural framing of the floor system was simplified by eliminating beams at many locations. This resulted in reduced formwork and reinforcement costs and improved slab cycle times. BASE also assisted the contractor with tower crane foundation design and review of crane tie-backs to structural elements.

Keells City
Colombo, Sri Lanka

Horizontal framing system for all towers were reviewed to minimize costs and enable construction with locally sourced materials. BASE proposed changes that had the potential to save the project $16-18 million while not affecting the overall design concept or space usage of this iconic hotel. The 16m+ spans were revised to shallow post-tensioned concrete beams supporting metal deck slabs from the original castellated steel beams. This change reduced formwork costs and assisted in faster slab cycle times. The removal of steel beams eliminated the significant cost of fire-proofing as well.

The floor system for the residential and office towers consisted of a voided slab system. Although an efficient system for longer spans, it did not appear viable for the 8m spans. As a result, a post-tensioned flat plate was considered for these towers, which allowed for reduced floor-to-floor heights, lower material costs, and a more familiar and constructible construction system.

Wave City Centre 3A
Noida, India

Wave City Centre 3A is a commercial development with a gross area of approximately 6,820,000 SF. It includes five- and four-star hotels, retail and entertainment areas, offices, serviced apartments, and several levels of below- and above-ground parking.

The hotel, office, and residential structures consist of three towers. Tower A is a 40-story, 890,000 SF tower that includes 25 levels of serviced apartments and a 15-level luxury hotel. Tower B is a 33-story, 954,000 SF office tower. Tower C is a 13-story, 140,000 SF themed hotel. Additionally, the six-level retail/entertainment complex includes a multi-screen cinema, snow park, water park, night club, and convention space.

BASE provided third party peer review services to determine general conformance with building code requirements. The peer review also provided value engineering and constructability recommendations.

LULU Grand Hyatt & Convention Center
Kochi, India

BASE provided value engineering services for this luxury hotel located on Bolgatty Island in Kochi, Kerala. This project includes a 250-room hotel on a podium that consists of 60,000 SF of event and meeting space, including a 26,000 SF ballroom. The total square footage of structure is approximately 1,027,295 SF.

The PAD
Dubai, UAE

BASE conducted a structural study of concrete shear wall reinforcement for a 22-story building designed to lean at an 18-degree angle from vertical. BASE's contributions included creating 3-D analysis models of the structure to evaluate value engineering alternatives for the project. The model was used for both design and quantity takeoffs.

Hyatt Regency Guwahati
Guwahati, India

Peer review of a new 244,300 SF, 13-story hotel featuring 220 guest rooms, dining and meeting facilities, outdoor gardens, business center, and spa and fitness facilities.

Albatros
Chennai, India

The original structural design for this 50-story residential tower consisted of a traditional beam and slab system. The complicated geometry of the tower resulted in complex formwork designs and longer slab cycle times. Through a value engineering exercise conducted as part of pre-construction services, BASE was able to simplify the floor framing and convert a large majority of areas into a flat slab system. This simplification resulted in lower formwork and material costs and improved constructibility, all without compromising the original design.

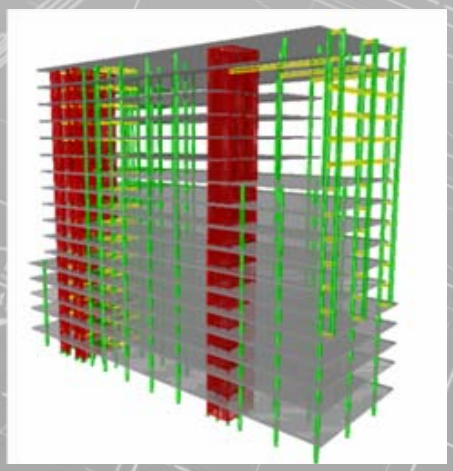
909 Kapiolani
Honolulu, Hawaii

A 29-story, 225-unit residential tower over a six-story parking structure. An alternate framing scheme was modeled to validate the overall design concept. BASE built a BIM model and provided material quantities to the contractor for rapid estimating. The review also included optimizing the foundation, wall and slab design to achieve a potential $2.1 million in savings. Additional benefits were achieved by eliminating dropped slabs in the tower allowing for more efficient and reduced cycle times for the forming systems.

Capitol Place
Honolulu, Hawaii

Capitol Place is a 39-story mixed use development that includes a seven-story podium featuring an automobile dealership, its service area and residential tower parking.

BASE provided third party peer review services for one of the project's financing partners. The objective of the review was to determine general conformance with building code requirements. Value engineering and constructability recommendations were also made.



TCS IT Park
Kolkata, India

Value engineering review for the office complex consisting of several mid-rise towers (6-15 stories) over a large basement area supporting a landscaped podium. BASE proposed to use a banded flat slab system on an 11m x 8m grid, resulting in lower material costs and lighter floors. These lighter floors, combined with a proposed reduction in hydrostatic uplift pressures, resulted in a 30% reduction in pile quantities.