YOUNG LIVING ESSENTIAL OILS HQ

SEAU 8th ANNUAL CONFERENCE
PRESENTED BY: JOSH OGLE, SE

ARCHITECTURE: SCHOLZ & ASSOCIATES ARCHITECTURE
STRUCTURAL ENGINEER: DUNN ASSOCIATES
CONTRACTOR: OKLAND CONSTRUCTION
STEEL DETAILER: GEM BUILDINGS

PHOTO CREDIT: YOUNG LIVING ESSENTIAL OILS
PROJECT OVERVIEW

- 263,000 sq ft
- 5 story
- Steel Special Moment Frame
PROJECT HIGHLIGHTS

- Risk Category
- Framing Layout
- Wing Walls
- Skylights
- Interior Waterfall
- Team Insights
RISK CATEGORY

• Structural jargon boiled down
• Discussion of significance with the owner
• Risk Category III chosen
  • I=1.25 (instead of I=1.0)
FRAMING LAYOUT

- Radial grids
- Early structural evaluations
- Framing/decking optimization
FRAMING LAYOUT

- MF Anchorage
WING WALLS

- +/- 37’ tall wing walls
- +/- 20’ tall parapets
WING WALLS

- Building column extensions and space frames
- Loads back into building roof/floor diaphragms
WING WALLS

• Weak axis begins for some columns...
• Cruciform columns used
SKYLIGHTS

• Courtyard skylight
• 40’ x 100’
SKYLIGHTS

- Spans across entire courtyard
- Evaluated for snow, wind, etc.
- Buttresses supported perimeter
SKYLIGHTS

- Octagon skylight
- 24’ x 24’
INTERIOR WATERFALL

• Grew in size to be +/- 200,000 lbs
• Horizontal jointing difficulties
INTERIOR WATERFALL

- Varying “Rockwall” skin support structure
INTERIOR WATERFALL

- Slim down footings
- Helical piers
INTERIOR WATERFALL

- Buy epoxy and couplers
- Tie footings together
- Create mat footing
INSIGHTS FROM THE ARCHITECT

Favorite Feature
“The balconies... The ‘stepping back’ adds visual interest and movement. It helps the building feel less massive and oppressive.”
– Florence (Scholz)

Major Challenge
“The fast track delivery method. Working with BIM was helpful in minimize the difficulties of this approach.”
– Florence (Scholz)

Advice for Structural Engineers
“Architects greatly appreciate structural engineers who understand and respect Design Intent. When a design needs to be adjusted because of structural concerns, it is helpful to hear the engineer specifically address ways that the design intent can be retained.”
– Florence (Scholz)
INSIGHTS FROM THE CONTRACTOR

Major Challenge
“The most challenging aspect was the lack of straight walls. On most jobs tradesmen are able to pull tape measures off of grid lines to double check locations, but with all the curves the only way to do layout is with GPS.”
– Andrew (Okland)

Advice for Structural Engineers
“Have patience with the builders because it takes some brain power to truly understand and create the vision.”
– Andrew (Okland)
INSIGHTS FROM THE CONTRACTOR

Major Challenge

“One of the most challenging and concerning aspects of the project was to make sure that all of the steel connected and fit up properly... It was imperative that ALL of the anchor bolts were placed accurately. So we put forth a quality control procedure to triple check (at a minimum) each anchor bolt setting.”

– Randy (Okland)

Advice for Structural Engineers

“There is a significant shortage of skilled tradespeople. Anything that can be done to shift the burden from craft workers will ultimately benefit the industry... Anything that can be done to streamline the process for repetition and efficiency helps.”

– Randy (Okland)
INSIGHTS FROM THE STEEL DETAILER

Major Challenge

“All the different coordinates to close the perimeter and interior atrium. It took several RFI’s, conference calls and face to face meetings to get all the required information to close the loop.”

– Trent (GEM)

Advice for Structural Engineers

“Slab plans and coordinates are key with a building this complicated. We had most of them, but this seemed to be the most challenging. Also the changes the owners/architects continue to make when you are detailing and in fabrication are hard to swallow. We manage change, so this is not new to us, but we feel the projects would go smoother if some of this could be eliminated.”

– Trent (GEM)
INSIGHTS FROM THE OWNER

Major Challenge

“The curvilinear shape of the building. Making the building efficient and comfortable while maintaining that look. We had many features (café, log cabin, waterfall, gym, water feature, museum, open courts, receiving dock, Spa, etc.) which added to the complexity.”
– Ron (Young Living)

Advice for Structural Engineers

“Understanding seismic classes and being able to quantify the costs of moving from commercial to government/school ranking. Also, advice on additional costs of reducing vibrations throughout the building.”
– Ron (Young Living)
QUESTIONS?