



STRUCTURAL ENGINEERING DESIGN



FEATURED PROJECT *BLUE WHALE*

The Blue Whale retail store in Surfside Beach, SC is a 15,000 SF building constructed from concrete masonry walls, steel columns and roof joists, and custom built structural steel trusses for the three main towers. The foundation was a mixture of driven timber piles and large concrete pile caps and footings due to the relatively soft soils present at the sites and the large column loads from the roof. The wall systems were designed to be structurally independent from the roof due to fire rating concerns.

The MEP systems featured 7 electrical subpanels for lighting circuits and environmental systems, 9 separate HVAC package systems (7.5 ton units each) to keep the building cooled, and over 80 high-intensity discharge lights in the ceiling to illuminate the inside of the store. The clients were extremely satisfied with the level of detail on the plans, which made the construction process much simpler to track.

Structural Design Services

The EARTHWORKS Group provides structural engineering for commercial and residential buildings, including wood, steel and concrete structures. EARTHWORKS offers a full range of structural, mechanical, electrical and plumbing design services under one roof, making us your one stop provider. Our Building Design Team takes your plans and develops detailed construction documents for the foundation, framing and truss systems, including specifications and details required by 2012 International Building Code. EARTHWORKS uses the latest CAD technology to find and eliminate conflicts during the design process and ensure accurate designs.

EARTHWORKS' team members are familiar with the design of all materials including timber, steel, reinforced concrete and engineered lumber. We utilize the latest modeling software to provide quick, accurate analysis of engineered systems.

Typical Engineering services include:

- **Building Structural Assessments**
- **Foundation Design**
- **Floor Framing Plans**
- **Roof Framing Plans**
- **Shop Drawings Review**
- **Bulkhead and Retaining Wall Design**
- **Marine Structures Design**
- **Metal Building Foundations**
- **Structural Failure Analysis**

We also provide forensic services to assist in determining cause of failure and remediation of structural issues. We are guided by strong ethical principles and a cooperative spirit with our client, design team, construction partners and the code enforcement agencies. Careful monitoring during the construction process allows us to provide outstanding quality assurance.

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