

# Contextual Fields: Environmental and Regulatory Systems

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Coastal areas are subject to a multitude of environmental conditions that are often constraining and difficult to mitigate in the design and construction process.

On a daily basis these environments are confronted with a corrosive salt infused atmosphere and intense solar heat. Often, several times a year coastal areas are subject to even harsher extreme weather with high velocity wind conditions and forceful water inundation. In the goal of protecting human life and property from these destructive environmental conditions many coastal municipalities have adopted rigorous design and construction criteria for the built environment. Such criteria, while protective of human life and the physical environment, often stifle and over burden the design process with highly restrictive parameters that result in a predictably banal built environment.

*Project: A Stainless Steel Structural Lattice Enclosure:*

An architect's application of construction criteria required to meet the extreme environmental demands of a coastal environment used to design and build a glass facade.

The project utilizes design, fabrication, and construction techniques that comply with the complex requirements of coastal building regulations while at the same time investigating materials and methods to achieve a specific architectural intent—an all glazed wall enclosure much greater in height than any approved and accepted system and with minimal structural support so as to prevent visual obstruction.

The project team collectively researched, tested, and analyzed parameters that impacted the building assembly. Material properties and dimensions were studied to evaluate the structural potential of code approved substrate options. Code compliant anchoring systems were tested for functionality and field application. All components were closely coordinated to bring about an interface between substrate and frame that provided protection against environmental conditions and met coastal building regulations.

The realized enclosure, designed and constructed of one inch wide stainless steel structural lattice, aluminum frames, 100 panes of low light transmitting impact glass, mechanical fasteners and silicon sealants, resulted in a glazed wall enclosure with spans over 100% greater than approved frame and glass components alone. The reduced size and staggered orientation of the lattice structural components provides a visually open continuous surface allowing for an uninterrupted connection between interior habitation and the exterior coastal environment.



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