

MATRIX MARINE, LLC

The Official Newsletter of Matrix Marine, LLC



Structural Integrity & Safety

by Behruz Vahdani. Managing Member

Most of the mid and high-rise residential and commercial buildings in coastal areas were built with concrete based on the latest building code with respect to earthquake and hurricane effects at the time of inception.

The structural integrity of the building will come to question for various reasons, such as the condition of the soil under the building, regions susceptible to known earthquake or hurricane, losing strength of major gravity carrying elements due to weather condition, integrity of the critical elements such as beam-column and floor to beam connections, foundation settlement, inadequate structural design, poor quality construction, etc.

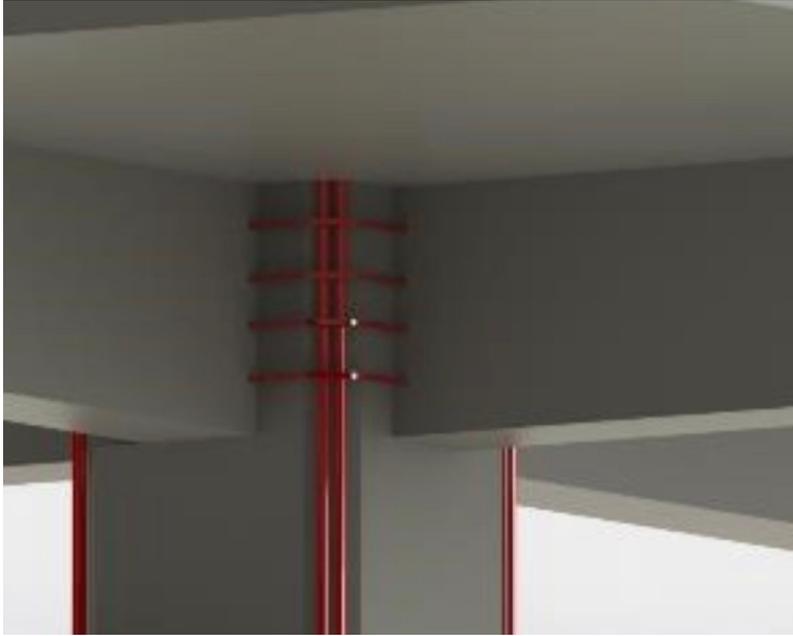
You cannot address all of these issues by visual inspection or certification. The guideline introduced by municipal entities such as certification or ordinance can only address the base minimum structural safety.

**HERE'S WHAT YOU
SHOULD KNOW:**

*Structural Integrity
& Safety
Innovative Design
Approach*



www.matrixmarinellc.com



Innovative Design Approach

Matrix Marine, LLC can address all your concerns about different methods of design, inspections, certifications and cost effective construction by utilizing a new design approach to strengthen major structural elements (columns, beams, connection of concrete floor to concrete walls, repairing of foundation, strengthening the retaining walls and repair of balconies) by use of patented FRP by QuakeWrap at a fraction of the regular construction cost.

The above picture represent strengthening of concrete Beam-column connection which can be applied on every floor by QuakeWrap company.

Matrix Marine, LLC can evaluate the structural conditions of your coastal property caused by the ocean or sea in a timely manor .

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Most of the building departments in US have the original structural plans for major structures in their archive system which are essential for building inspection in addition to testing the strength of the concrete elements by crash test in laboratory, investigating the existing reinforcement in beams to column connections and floor diaphragm to beams either by electronic instruments or X-ray.

To address the deficiencies, structural engineers usually model the building based on the latest building code. By having the existing original structural plans, actual capacity of the strength of the concrete in various elements and amount of existing reinforcement, the engineering analysis defines where the additional new elements are needed to be added to the existing structure for the building in order to be safe per the latest building code.

There are several concerns to be addressed when the actual design is done and the construction plans were approved as follows:

- Cost
- Asbestos abatement due to soft demolition in order to add new elements to the structure
- Losing spaces by introducing new structural elements
- Housing relocation during construction phase
- Accessibility in commercial buildings per Federal or State code.

A valued engineering and competitive construction price due to latest construction innovation material can address these concerns.