



CASE STUDY

Nano Modification of Cement & Concrete Materials

THE PROJECT

Venetian Island, Miami Beach, Florida USA – Restoration of deterioration / cracking / spalling to concrete slab work at parking garage and foundations of the main building. Components include complex civil engineering and architectural members such as thin membranes, supporting beams & columns, concrete frames and foundation work.

Location: Nine Island Avenue, Miami Beach, FL 33139



THE CHALLENGE

Project required concrete beams, footers and foundation work. To restore and rehabilitate the existing structure by replacing rebar inside structural concrete without raising or jacking up the existing building. No structural bracing.

THE OUTCOME

JBS used nano material in pure carbon fibre matting which adhered to existing failed areas.

Nano matting was used as the form work & poured with high strength bonding concrete containing JBS nano particles in the concrete. This restored the existing failed areas saving over 90% of the restoration time, achieving more than 200% tensile strength improvement.

Due to the increased fineness of cement, nano enhanced concrete develops super high strength, high resistance to water, sulfate, chloride and acids. This enables construction of complex civil and architectural members such as thin membranes.

The effect of the nano cement improves the impermeability of concrete that increases service life of the structure.

