



#Hurricanestrong all Hazard housing solution
114 Oceanside Avenue Breezy Point Queens

Hurricanestrong home is an all hazard design response that provides a resilient and sustainable solution that is relatable, attainable, and affordable for all families. The house is the result of using best practices and guidance from a broad spectrum of sources on resilient construction along with innovative industry collaborators. The house provides 4-dimensional resilience and is a prototype or artifact that can be cited as an example, serve as a platform for further innovation, and studied for long-term performance against shocks and stresses along with energy savings.

All Hazard Assessment and Response:

- Flood Water and water driven debris impacts
- High Wind Speed and Wind driven debris impacts
- Temperature - Extreme Heat & Cold
- Lightning
- Fire
- Earthquake
- Social
- Shelter in Place

Resilient Features: 4 dimensional responses

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- Continuous load path (Simpson strongties)
- Insulated Concrete Formwork (ICF) - Floor Deck & Vertical Walls
- Spray foam insulation + neo-pour
- Concrete Reinforcing Admixture - Helix (first NYC use)
- Roof Assembly Innovation - Zip System, ICP seaming & Eagle Concrete Roof Tile
- Fiber Cement Exterior Siding - Impact Resistant (envelope)
- Impact Rated Fenestration. (Windows, Doors, Skylights)
- Flood Vents, protected service delivery
- Addition to Base Flood Elevation (BFE) +3' Freeboard
- Fire Protection, 4hr rated non-combustible construction + Sprinkler System
- Back-up Power Generator
- Passive survivability (meets 80x50)
- Exterior decking, Social response
- Storm Shelter construction for Shelter in place
- Radiant Floor Heating + Dual Function HVAC Units
- TIME: additional elevation for sea-level rise and return period +50, +100 years
- Economic (ROI) 47-55% insurance reduction, Power and Operations est. 70% reduction
- Social: Decking and historic neighborhood hub

Guidance / Selected Reference:

- FORTIFIED Institute for Home Building Standards (Double GOLD) - IBHS
- FEMA Library, Coastal Construction Manual, Technical Bulletins
- FEMA 361 Storm Shelter and safe room guidance
- Federal Alliance for Safe Homes resilient construction guide (FLASH)
- Passive House Guidelines (PHI)
- Miami Dade Product Rating throughout
- NYC, DCP retrofit for flooding, HHS - ASPR THAM, NDPTC

Industry Partners

- IBHS, FORTIFIED, ***NJIT
- FLASH, Home Depot, Anderson Windows, TREX, Kohler
- PCA, HardiePlank, Simpson Strongtie, Smartvent
- BASF, ICFMA, Quadlock, LOGIX, VTeCH, Airseal, Spraytite, Neopour, ICP adhesives
- FEMA Material Science Branch

What's Missing? What is needed? Improving this prototype

- Water Harvesting - Grey and Rain

