Consensus

Green + Resilient Underwriting Standards’

Amendment for Buildings & Homes


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INTEGRATIVE PROCESS + HOLISTIC PLANNING
4. Short-Term Hazard Preparedness + Mitigation: prerequisite
5. Integrative Process: prerequisite

ACUTE / SHORT-TERM HAZARD PREPAREDNESS, MITIGATION + ADAPTATION
8. Back-up Power Above Flood Level: prerequisite
10. Sites of Avoidance, Flood Plain, Storm Surge + Sea Rise: prerequisite
11. Safe Design for Extreme Weather, Wildfire, Fire + Seismic Events: prerequisite
13. Stormwater and Flood Management – Conventional & natural systems
14. Transit + Transportation Connectivity + Protection

CHRONIC LONG TERM RESILIENCY + ADAPTATION
15. Protect Wetlands + Avoid Deep Slopes and Adverse Geology
16. Resilient Food Production Access, Edible Landscaping, Urban Agriculture
17. Legally Logged Wood Certification
18. No Pesticides, Herbicides

19. Intangibles

RESILIENT VALUE SCORE

APPENDIX
Safety+Resiliency Standard Amendment for Buildings & Homes

1. Sources / Referenced Standards

- Building Resiliency Task Force Report to NYC Mayor & Speaker© (Urban Green Building Council 2013)
- Eaton Outline of Safety Underwriting Attributes (2012)
- Fire Safe Adaptable Home (NAHB)
- Fortified© Home & Business Stds. (IBHS 2007-12). “IBHS fortified structures cannot be designated in the following areas: low-lying barrier islands and coastal regions, close proximity to known seismic fault lines, close proximity to major levees, and steep slopes potentially subject to either erosion or wildfire.” Fortified requires adherence to its compliance process including renewal after a designated term limit expires. Fortified accumulated by State the areas of peril defined with mandatory, strongly recommended and higher achievement level recognition by design and structural performance metrics for:
  - Hurricane prone regions
  - Tornado & Hail Regions
  - High wind regions with windspeed maps
  - Earthquake regions
  - Wildfire
  - Flood zones
  - Severe winter weather
- International Existing Building Code 2009 Edition
- National Electrical Code 2014 covering all electrical for buildings, homes & infrastructure including emergencies
- MTS ANSI 2.0 Integrative Process Standard for Sustainable Structures & Communities (2012)
- Natural Hazards, UnNatural Disasters: The Economics of Effective Prevention © (World Bank & UN 2010)
- NFPA 70 National Electrical Code 2011 Edition
- Perkins+Will Resiliency Framing Issues© (2014)
- Resilience Scoring Utility 2011 Edition
- UN Sustainable Development Goals (SDGs), Key Summary Points - EGM on Science & SDGs (Mar. 21, 2013)
- Wall Street Due Diligence© Peer-reviewed & Released at NYSE on Sustainable Investment Business Case & Dangerous Climate Risk (2009 & 2013)
- Weathering the Storm: Building Business Resilience to Climate Change©, Center for Climate and Energy Solutions (2013)
2. **Background / Perspective / Valuation Goals & Principles**

**Underwriting Defined:** standards for raising capital for debt & equity including to issue bonds.

**Resilient Defined:**

1. Able to bounce back after change or adversity.
2. Capable of preparing for, responding to, and recovering from difficult conditions.

   Syn.: TOUGH (New York City "Plan NYC" 2013)

The Australian mantra for adapting to climate change: Protect, Redesign, Rebuild, Elevate, Relocate and Retreat.

Resilient is also being defined as bouncing back from any extreme event which can include an internet crash, global epidemic, or climate change intensified events.

**For Purposes of This Standard, Resilient Means** both mitigation (carbon pollution reductions) addressing the need to prevent near term irreversible unmanageable dangerous climate change (climate bubble / crash), and adapting to the increasing intensified weather and climate events causing well-documented systemic damages to all economic sectors. This includes safety and acute and chronic events.

**Wall St. Due Diligence Released at NYSE on Added Sustainable Investment Value Documents:**

- High probability of imminent irreversible unmanageable dangerous climate change without 18 gigaton carbon pollution reduction in next 5-10 years estimated to cost $2 trillion. This is called the Climate Bubble / Crash. *Dangerous* climate change is a word of art referenced in the Kyoto Protocol and defined by leading climate scientists including Jim Hanson formerly of NASA, as the state of climate change when the Earth’s atmospheric CO2 concentrations exceed 350 ppm. Levels as of October 14, 2014 are near 400 ppm and rapidly rising.

- JPMorgan publication states it is a high probability Black Swan event.

- Green building secondary financing market can provide the $2 trillion because investors with over $70 trillion in assets under management want to invest in green buildings / buy green building bonds. Green Bonds are vibrant $20B+ market with all bonds quickly selling out.

- Secondary market is expected to create $1 trillion private sector stimulus

- Leading investors, insurers and governments publicly document that ongoing systemic climate damages exist in all economic sectors caused by more intense and severe weather / climate events.

- Fluctuating Deaths, Rising Damages—3.3 million deaths in the 40 years to 2010, Disasters can strike anywhere, & Damages are rising.