

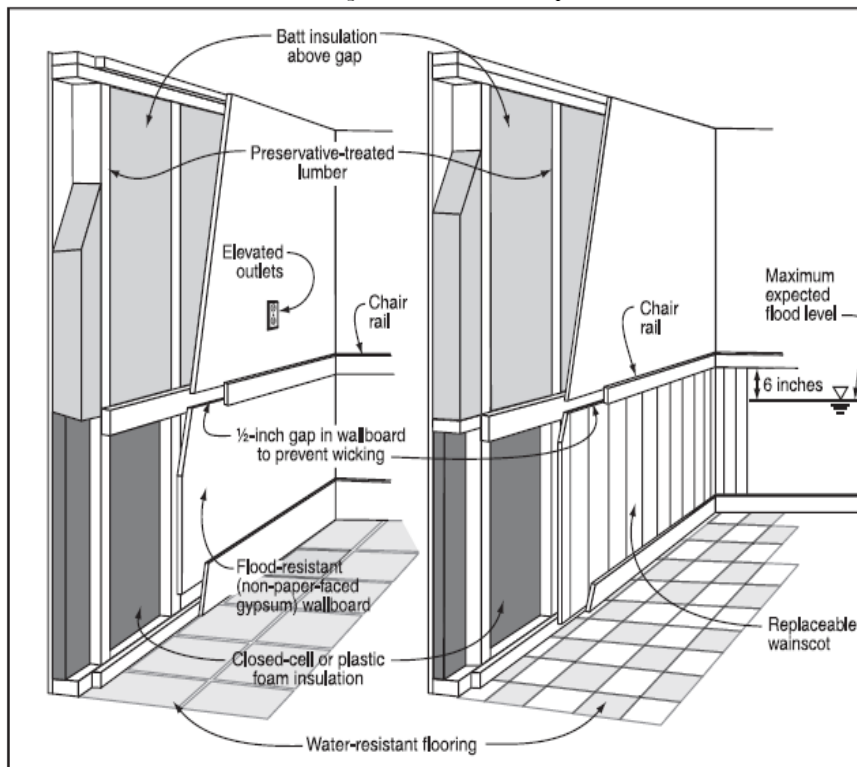
Homeowner Advisory: *the value of storm-proofing*

What you do or don't do to a storm-impacted house will be reflected in insurance rates, property value and mortgage accessibility.

Changes in the Flood Insurance Program - FEMA *Preliminary Considerations for Rebuilding*

“Under the new law (7/6/12), flood insurance rates on many properties in special hazard areas will increase.... Save money on flood insurance by reducing your flood risk: One specific way is to raise your building above required elevation standards or to floodproof.... Other ways to reduce premiums could include adding vents to enclosures or installing breakaway walls.... ***Home and business owners would be missing out on a significant opportunity*** to mitigate their future flood risk and thereby lower their future insurance premiums.”

FEMA: “Flood Damage-Resistant Material Requirements”



- ✓ Remove compromised material, dry out and sanitize.
- ✓ Outlets, mechanicals, appliances should be replaced well above flood line, out of basements and crawl spaces.
- ✓ Consider efficient mechanicals, like on-demand hot water unit.
- ✓ Replacement floor & wainscoting should be impermeable material.
- ✓ Use waterproof, moisture-proof, fire retardant construction board, instead of drywall.
- ✓ Insulate with closed-cell or high-density foam.
- ✓ Install back-flow valves on sewer lines.
- ✓ Oil tanks should be secured to ground and bottled gas contained in cages.
- ✓ Seek sign-off from municipal building officials and determine whether contractors heed FEMA best practices & local guidelines.

<http://www.fema.gov/library/viewRecord.do?fromSearch=fromsearch&id=1580>

FEMA's Building Science Helpline: (866) 927-2104 or FEMA-Buildingsciencehelp@dhs.gov

HOMEOWNERS GUIDE TO RETROFITTING <http://www.fema.gov/library/viewRecord.do?id=1420>
{The following are in ascending order of cost}



Making uninhabited portions of home resistant to flood damage, allowing flooding to flow through, & using flood damage-resistant materials, sealants, and shields to protect the part of your home below the design flood elevation (DFE) or other specified elevation.

Wet Floodproofing



Prevent floodwaters from entering by making home watertight which requires sealing walls with waterproof coatings, impermeable membranes, or supplemental layers of masonry or concrete. Equip openings below DFE with permanent or removable shields.

Dry Floodproofing



Floodwalls are built of manmade materials, such as concrete & masonry which can be designed proportionally to complement the home. Requiring more land, levees are embankments of compacted soil that can be blended into the landscape.

Floodwalls & Levees



Elevation

Two Primary Approaches: (1) lifting the structure and extending the existing foundation or building a new one; (2) leaving in place and either building an elevated “false” floor within the home or adding a new upper story and converting the ground level to a compliant enclosure.

Design Stage: Evaluate condition, stability, and strength of the existing foundation to determine whether it can support the increased load of the elevated home, including any wind and seismic loads or designing a new foundation.

Contract Stage: Disconnect utilities; jack home up; increase height of the foundation or build new one; reconnect utilities.



Relocation



Demolition

Tips for New Construction:

- Build above the design or base flood elevation; space below flood stage would be unconditioned without any services.
- Rebuild back from the water edge and provide marsh grass and/or other “buffers”.
- The most efficient form of reconstruction will be system-based, providing within structure moisture air and thermal control in one onsite step. Consider modular-type construction using insulated concrete forms (ICF) or structural insulated panel system (SIPS), made with impermeable board. SIPS & ICF yield weather tight and livable structures in rapid turn-around time.
- Modular offers the opportunity to erect an on-site shell that could be livable in a short period of time; it should, of course, be constructed in a manner anticipating possible future flooding.

*These pointers are based on sources from FEMA and input from local building inspectors and contractors.
Caveat: retrofitting or rebuilding ‘as is’ may be a lower first cost, but outweighed by subsequent costs.*