



Green and Resilient Building Standards

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Rehabilitation Project Standards

WHAT IS THE HUD GREEN BUILDING RETROFIT CHECKLIST?

- For homes being rehabilitated, the HUD Green Building Retrofit Checklist is a list of construction standards that work performed using federal funds must adhere to in order to meet certain energy efficiency and indoor air quality standards.
- The HUD Green Building Retrofit Checklist is used to ensure the construction and appliances used in rehabilitation meet energy efficiency standards.
 - These standards may include Energy Star labeled, Water Sense labeled, or Federal Energy Management Program (FEMP) designated products or appliances.

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RESTORE LOUISIANA
Homeowner Assistance Program

GREEN BUILDING RETROFIT CHECKLIST CERTIFICATION
Solution 2 Rehabilitation



What is the Green Building Retrofit Checklist?

For homes being rehabilitated, the HUD Green Building Retrofit Checklist (GBR Checklist) is a Federal construction standard **requiring that work performed when receiving Federal funds must meet certain energy efficiency and indoor air quality standards.** The GBR Checklist standard does not apply to reconstruction projects. This standard impacts homeowners in the following circumstances.

Your Estimated Cost of Repairs (ECR) includes costs and specifications that allow you to comply with the GBR Checklist.

- The itemized scope of work in your ECR report includes costs for the labor and materials necessary to meet the required specifications of the GBR Checklist.
- Use the GBR Checklist to ensure your construction is built to energy efficient and healthy standards, including the use of mold resistant products when replacing surfaces such as drywall. Products and appliances replaced as part of the rehabilitation work must be ENERGY STAR labeled, WaterSense labeled, or Federal Energy Management Program (FEMP)-designated products or appliances.
- During Program inspections, a Program inspector will inspect for compliance with the GBR Checklist to the extent applicable for the ECR items.
- Any items in your house that are **not being repaired or replaced** during construction do **NOT** need to meet GBR Checklist requirements.

Prior to starting any further construction with your contractor:

Solution 2: Homeowner-Managed

- The homeowner informs the contractor that they must comply with GBS.
- The homeowner's contractor completes the work in conformance with GBS.
- The Program inspector completes the GBR Checklist.

By Signing below, I certify that I have read and acknowledged my obligation to comply with the above mentioned Green Building Checklist Standards as applicable:

SIGNATURE _____ DATE _____

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The Restore Louisiana Homeowner Assistance Program is administered by the Louisiana Office of Community Development and funded by the U.S. Dept. of Housing and Urban Development.

 866.735.2001 | Restore.La.Gov

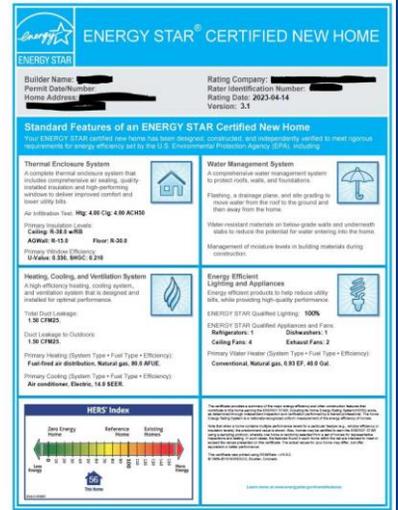
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Rehabilitation Project Standards

ENERGY STAR

- An ENERGY STAR certified home has been designed, constructed and independently verified to meet rigorous requirements for energy efficiency set by the U.S. Environmental Protection Agency (EPA).
 - ENERGY STAR home features include:
 - A Thermal Enclosure System
 - A Heating, Cooling, and Ventilation System
 - A Water Management System
 - Energy-Efficient Lighting and Appliances
 - Third-Party Verification
- The Restore Louisiana Homeowner Assistance Program has adopted the ENERGY STAR Certified Home standard for projects that were substantially damaged or where reconstruction is required.



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Reconstruction Project Standards

FORTIFIED GOLD

- FORTIFIED is a construction program designed to strengthen homes against specific types of severe weather such as high winds, hail, hurricanes and even tornados.
 - FORTIFIED Home is designed to create a singular, solid structure requiring a continuous load path, meaning the roof will be tied to the walls and then anchored to the foundation.
 - This method is the key to keeping the roof on and the building in place when the structure experiences high winds and/or hurricanes.
- In all reconstruction projects, Restore Louisiana contractors are required to meet FORTIFIED Home Gold standards and achieve certification.



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What is IBHS Fortified Gold Roof?

FORTIFIED GOLD ROOF

- Stronger Edges
 - FORTIFIED requires specific materials and installation methods, including a wider drip edge and a fully adhered starter strip, that when used together create a stronger system.
- Sealed Roof Deck
 - FORTIFIED requires roof decks to be sealed to prevent water damage.
- Better Attachment
 - FORTIFIED requires ring-shank nails, installed in a specific pattern, to help keep the roof deck attached to your home in high winds. Using ring-shank nails nearly doubles the strength of a roof against the forces of winds.
- Impact-Resistant Shingles
 - ***In hail-prone areas***, FORTIFIED requires shingles tested by IBHS to show they can withstand hail up to 2 inches in diameter. These shingles outperform typical Class 4 shingles.

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What is IBHS Fortified Gold Roof?

FORTIFIED GOLD RECONSTRUCTION

- Contains all the elements of FORTIFIED Gold Roof and reinforces the most vulnerable areas of a home to give it the best chance to keep wind, rain and storm pressures out.
- FORTIFIED Gold™ meets the National Standard for Resilience. It was specifically designed to reinforce the areas of a home that conventional construction may leave susceptible to damage from high winds and wind-driven rain.
 - Impact & Pressure-Rated Protection for Windows and Doors*
 - Impact* & Pressure-Rated Garage Doors
 - Chimney Bracing
 - Reinforced Soffits*
 - Anchored Attached Structures
 - Gable End Bracing
 - Stronger Exterior Sheathing*
 - Engineered Roof-to-Wall Connections
 - Engineered Story-to-Story connections
 - Engineered Wall-to-Foundation connections

*Hurricane Prone Areas Only

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FORTIFIED Resource Links

- <https://ibhs.org/fortified/>
- FORTIFIEDHome.org
- FORTIFIEDMultifamily.org
- FORTIFIEDCommercial.org

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Reconstruction Project Standards

ELEVATION

- Elevation funding will be provided for reconstruction projects that are within a Special Flood Hazard Area (SFHA) that must be elevated greater than 3' from grade.
 - The SFHA is the area where the National Flood Insurance Program's (NFIP's) floodplain management regulations must be enforced and the area where the mandatory purchase of flood insurance applies.
 - The SFHA includes Zones A, AO, AH, A1-30, AE, A99, AR, AR/A1-30, AR/AE, AR/AO, AR/AH, AR/A, VO, V1-30, VE, and V.

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Rehabilitation Project Standards

FORTIFIED / ELEVATION

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• Number of reconstructions:	Current	Projected	Cumulative
• Population	374	400	774
• Required Elevation Funding	138	148	286
• Costs attributed to mitigation:			
• FORTIFIED Gold			
• Average costs	\$5,054.60	\$5,054.60	\$5,054.60
• Total costs	\$1,890,420.00	\$2,021,840.00	\$3,912,260.00
• Elevation			
• Average costs	*\$52,163.94	*\$52,163.94	*\$52,163.94
• Total costs	*\$7,198,623.72	*\$7,720,263.12	*\$14,918,886.84

*Elevation costs based on current Funds Disbursed population and their average cost of additional elevation funding.



Federal Register Notice 6303-N01 III.C.1.i Resilience Planning

Resilience is defined as a community’s ability to minimize damage and recover quickly from extreme events and changing conditions, including natural hazard risks. At a minimum, the grantee’s action plan must contain a description of how the grantee will:

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- a) emphasize high quality design, durability, energy efficiency, sustainability, and mold resistance;
- b) support adoption and enforcement of modern and/or resilient building codes that mitigate against natural hazard risks, including climate-related risks (e.g., sea level rise, high winds, storm surge, flooding, volcanic eruption, and wildfire risk, where appropriate and as may be identified in the jurisdiction’s rating and identified weaknesses (if any) in building code adoption using FEMA’s [Nationwide Building Code Adoption Tracking Portal](#) and provide for accessible building codes and standards, as applicable;
- c) establish and support recovery efforts by funding feasible, cost-effective measures that will make communities more resilient against a future disaster;
- d) make land-use decisions that reflect responsible and safe standards to reduce future natural hazard risks, e.g., by adopting or amending an open space management plan that reflects responsible floodplain and wetland management and takes into account continued sea level rise, if applicable,
- e) and increase awareness of the hazards in their communities (including for members of protected classes, vulnerable populations, and underserved communities) through outreach to the MID areas.



Restore Louisiana Completed Projects

Audubon Estates

New Isle

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FRN 6303-N01 II.A.2.c Resilience

- Resilience Planning & Implementation
- Les Maisons de Bayou Lafourche
- Fortified Gold Build – Post Ida

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Resilient Characteristics

- Raised concrete foundations – elevated and built 3 feet above BFE
- Impact rated windows and doors – withstand impacts by windborne debris. Allows residents to shelter in place
- Paperless Drywall – resists mold; soaks up less water; dries quickly
- Metal Hurricane Connectors – adds stability to structure in high wind event
- Unventilated Soffit/sealed attic – Wind-resistant: winds are unable to lift roof off
- Elevated Equipment – vital equipment elevated above the BFE
- Borate and Mold Treatment on lumber
- Solid Wood Interior Doors
- Infrastructure to capture storm water greater than would be experienced in a 25-year flood event.
- Underground electrical service – avoids compromised electrical grid

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Using the FRN, best practices and data as our guides, what has Louisiana implemented?

2016 Homeowner Program

- Required elevation of ABFE +2' or jurisdiction requirement, whichever is higher
- Dirt fill not used as an elevation method
- All reconstructions built as pier and beam elevated to a minimum of 3' unless prohibited by jurisdiction/HOA
- Use of Energy Star rated appliances
- Use of Green Building Standards

2020-21 Homeowner Program – additions

- All program reconstruction plans reviewed to ensure use of Value Engineering and Universal Design
- Communicating Program elevation requirements immediately
- FORTIFIED Gold Roof – used for full roof repair
- FORTIFIED Gold Reconstruction

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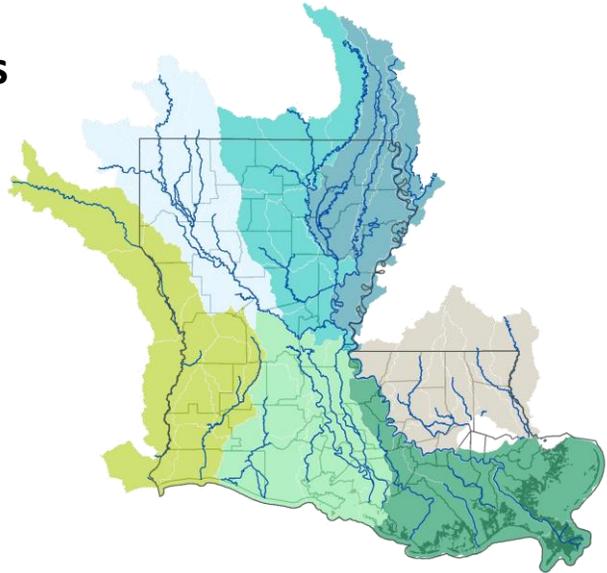
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Mitigation Opportunities

- Fundamentally change the state’s approach to flood risk reduction
- Proactively address flood risk and improve floodplain management through a watershed-based approach



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Funding Focus Areas

Regional Water Management

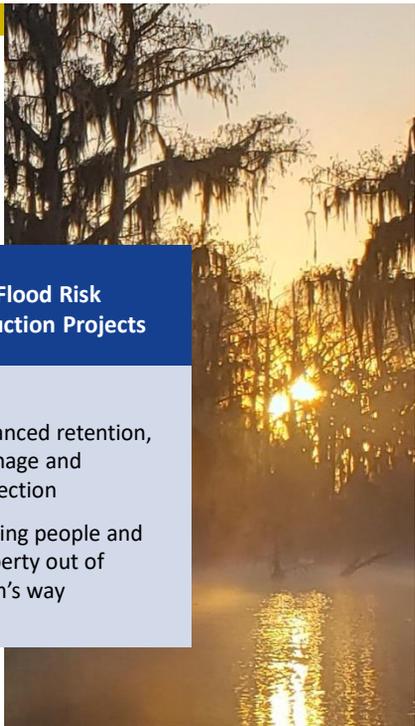
- Regional watershed management
- Improved building and land use practices to reduce flood risk

Modeling and Data

- High-quality gauge network
- Watershed models and maps
- User-friendly data portal

Flood Risk Reduction Projects

- Enhanced retention, drainage and protection
- Moving people and property out of harm’s way



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