City of Charleston

Board of Architectural Review

Building Elevation Design Workshop
November 3, 2017

DEPARTMENT OF PLANNING, PRESERVATION & SUSTAINABILITY
City of Charleston
South Carolina

Department of Planning, Preservation & Sustainability

Building Elevation Design Workshop
Friday, November 3, 2017
9:00am
Gaillard Center, 2 George Street, 1st floor meeting room

AGENDA

- Introduction – Review the Agenda/Schedule of Workshops 9:00 – 9:15
- Public Comments/Concerns 9:15 – 9:45
- Guest Speaker: Laura Cabiness – Director of Public Service “FEMA Grants/Available Grant Sources” 9:45 – 10:15
- Guest Speaker: Roderick Scott of L&R Resources, LLC based near New Orleans, LA 10:15 – 10:45
- Review of Relevant Maps (Images):
  - Evolution of Peninsula
  - Historic Districts
  - National Register Expansion Area 10:45 – 11:15
- Challenges in Considering Elevating Historic Residential Structures (Images):
  - Lack of National “Best Practices” Guidance
  - Architectural Building Categories
  - Sister/Grouped Buildings
  - Adjoining Buildings
  - Freedman’s Cottages
  - Contractor Considerations 11:15 – 12:00
- LUNCH BREAK 12:00 – 12:30
City of Charleston
South Carolina

Department of Planning, Preservation & Sustainability

- Review of Successful/Unsuccessful Methods in Charleston and Other Communities (Images):
  - Mississippi Gulf Coast
  - Louisiana
  - Annapolis
  - Wilmington

- Case Study Scenarios for Historic Buildings in Charleston (Images):
  - 9 Savage – Beatrice Bernier
  - 15 Council – Buz Morris

- Discussion Toward Developing a Building Elevation Policy Statement And/or Guidelines:
  - Is a Policy Statement of the Board Enough Guidance?
  - Important Considerations to Include in a Policy Statement
  - Independent Work by Design Community to Develop Strategies
  - Upcoming Workshops
    - Review of Strategies
      - Single House
      - Freedman's Cottage
      - Adjoined/Grouped Buildings
      - New Construction
    - Review of Draft of Policy Statement
    - What can the Preservation Non-Profits Do To Facilitate Development of Comprehensive Guidelines

- Wrap-up

  12:30 – 1:30

  1:30 – 2:30

  2:30 – 3:00

  3:00 – 3:30
$1 DOLLAR OF FLOOD MITIGATION INVESTMENT EQUALS $4 DOLLARS OF SAVINGS IN DISASTER RECOVERY COSTS
FLOOD HAZARD MITIGATION

THE NATIONAL FLOOD INSURANCE PROGRAM - NFIP IS INCREASING FLOOD POLICY RATES UNTIL THEY REACH ACTUARIAL
FLOOD HAZARD MITIGATION

FLOOD POLICY RATES ARE BASED ON WHERE THE FIRST FLOOR SITS IN RELATION TO THE MINIMUM FEMA FLOOD MAP ELEVATION

<table>
<thead>
<tr>
<th>Premium at 4 feet below Base Flood Elevation</th>
<th>Premium at Base Flood Elevation</th>
<th>Premium at 3 feet above Base Flood Elevation</th>
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</thead>
<tbody>
<tr>
<td>$9,500/year</td>
<td>$1,410/year</td>
<td>$427/year</td>
</tr>
<tr>
<td>$95,000/10 years</td>
<td>$14,100/10 years</td>
<td>$4,270/10 years</td>
</tr>
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FLOOD HAZARD MITIGATION

NFIP EXCLUSION FOR MINIMUM ELEVATION

- THE NFIP ALLOWS AN EXEMPTION FROM MEETING THE MINIMUM FLOOD MAP ELEVATION REQUIREMENTS DUE TO THE POSSIBILITY OF THE MITIGATION PROJECT NEGATIVELY IMPACTING THE BUILDING HISTORIC DESIGNATION.
- THERE IS NO MEASURABLE CRITERIA FOR THIS EXEMPTION AND IT HAS BEEN USED BY HISTORIC BUILDING OWNERS WITH SUBSTANTIAL DAMAGE AND FOR SUBSTANTIAL IMPROVEMENT.
- THE EXEMPTION OPENS THE PROPERTY OWNER(S) UP TO FULL ACTUARIAL FLOOD POLICY RATES.
FLOOD HAZARD MITIGATION
THE INTERNATIONAL ASSOCIATION OF STRUCTURAL MOVERS – IASM IS THE WORLDWIDE ORGANIZATION WHOSE PROFESSIONAL MEMBERS ARE INVOLVED WITH FLOOD MITIGATION ELEVATION PROJECTS

International Association of Structural Movers
FLOOD HAZARD MITIGATION

ELEVATION

UNIFIED JACKING MACHINE SYSTEM

ELEVATED AWAITING NEW FOUNDATION FOUNDATION
FLOOD HAZARD MITIGATION

FINANCING THE PROJECT

• CASH, EQUITY, MORTGAGE
• INCOME TAX CREDITS/PROPERTY TAX EXEMPTIONS FOR HISTORIC REHAB
• INITIAL COST OF COMPLIANCE - ICC
• PRE/POST DISASTER FUNDING:
  • FEMA/HUD-CDBG/DR
  • SBA
• FUTURE SOURCES OF FUNDING:
  • LOW INTEREST LOAN POOLS
  • REVENUE BONDING
REVIEW OF RELEVANT MAPS
EVOLUTION OF THE PENINSULA

Today

Courtesy of Historic Charleston Foundation
CHALLENGES IN CONSIDERING ELEVATING HISTORIC RESIDENTIAL STRUCTURES
Lack of Federal Guidance

The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings

Documentation
Accurate Mapping
Maintain & Monitor
Mitigate Flooding
Prevent Damage
Minimize Alterations
Utilize Exemptions/Variances

Resilience to Natural Hazards

<table>
<thead>
<tr>
<th>RECOMMENDED</th>
<th>NOT RECOMMENDED</th>
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<tr>
<td>Documenting the restoration-period character of the property as a record and guide for future repair work, should it be necessary, and storing the documentation in a weatherproof location.</td>
<td>Failing to document the restoration-period character of the property with the result that such information is not available in the future to guide repair or reconstruction work, should it be necessary.</td>
</tr>
<tr>
<td>Ensuring that historic resources inventories and maps are accurate, up to date, and accessible in an emergency.</td>
<td>Failing to regularly monitor and maintain the restoration-period property and the building systems in good repair.</td>
</tr>
<tr>
<td>Maintaining the restoration-period building, its site, and setting in good repair, and regularly monitoring their condition.</td>
<td>Failing to regularly monitor and maintain the restoration-period property and the building systems in good repair.</td>
</tr>
<tr>
<td>Using and maintaining existing characteristics and features of the restoration-period building, its site, setting, and larger environment (such as shutters for storm protection or a site wall that keeps out flood waters) that may help to avoid or minimize the impacts of natural hazards.</td>
<td>Allowing loss, damage, or destruction to occur to the restoration-period building, its site, or setting by failing to evaluate potential future impacts of natural hazards or to plan and implement adaptive measures, when necessary to address possible threats.</td>
</tr>
<tr>
<td>Undertaking work to prevent or minimize the loss, damage, or destruction of the historic property while retaining and preserving significant features and the overall restoration-period character of the building, its site, and setting.</td>
<td>Carrying out adaptive measures intended to address the impacts of natural hazards that are unnecessarily invasive or will otherwise adversely impact the restoration-period character of the building, its site, or setting.</td>
</tr>
<tr>
<td>Ensuring that, when planning work to adapt for natural hazards, all feasible alternatives are considered, and that the options requiring the least alteration to the restoration-period character of the property are considered first.</td>
<td>Implementing local and regional traditions (such as elevating residential buildings at risk of flooding or reducing flammable vegetation around structures in fire-prone areas) for adapting buildings and sites in response to specific natural hazards which would negatively impact the restoration-period character of the property.</td>
</tr>
<tr>
<td>Using special exemptions and variances when adaptive treatments to protect buildings from known hazards would otherwise negatively impact the restoration-period character of the building, its site, or setting.</td>
<td></td>
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Architectural Building Categories

**Category 1: Exceptional**
Buildings of the highest architectural design quality. They are elegant and innovative, and **must be preserved and retained in situ** at all costs.

**Category 2: Excellent**
High style regional architecture—fine “Charleston Style.” Of irreplaceable importance, **to be preserved in situ at all costs**.

**Category 3: Significant**
Good architectural quality of the vernacular mode. Less sophisticated and refined than “Excellent.”

**Category 4: Contributory**
Buildings of architectural value without which the character of those buildings rated in groups 1-3 would be lessened.
CHALLENGES IN CONSIDERING ELEVATING HISTORIC STRUCTURES

- Grouped Buildings

Enston Homes (King St)

Grant Homes (Meeting St)
Sister Buildings

Eastside Neighborhood
Adjoining Buildings

Bull St

Rainbow Row
CHALLENGES IN CONSIDERING ELEVATING HISTORIC STRUCTURES

- Freedmans Cottages

Westside Neighborhood
REVIEW OF METHODS IN OTHER COMMUNITIES
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Site Design Guidelines

- Retain significant landscape features
- Retain relationship between buildings
- Protect significant vistas
- Protect large trees from construction activity
REVIEW OF METHODS IN OTHER COMMUNITIES

Architectural Guidelines

- Identify and integrate neighborhood character elements
- Minimize elevation change
- Examine successful elevations of similar buildings
- Minimize visual changes by maintaining proportions, relationships, and scale

Composition and scale of features provide design references. Library of Congress, Prints and Photographs Division, Historic American Buildings Survey. Reproduction Number (HABS,ALA,69-MOBIL,224-2)

The composition and scale of elevation design proposals should be consistently applied to adjoining homes.

Because the visual relationship between building features and the site may be changed by an elevation design plan, first evaluating the scale of existing features is important. Design efforts to manage the scale transition between the new elevation and existing grade will require appropriate architectural and landscape treatments.

Adjoining properties in Pascagoula illustrate the challenges of contrasting elevations.

Historic examples of context reveal neighboring houses with different elevations. Shown here are 502 and 504 Beach Boulevard in Bay St. Louis, destroyed in Hurricane Katrina.

Hancock County Historical Society
Foundation Design Guidelines

- Design & elevation height should be selected to preserve integrity of the building.
- Successful designs preserve visual and architectural significant features.
- Foundation components should complement existing façade features, such as columns, corners, trim & vertical elements.
  - Use existing elements as visual references to be repeated and extended throughout foundation design.
Elevation Design Guidelines
For Historic Buildings in the Louisiana GO Zone
Elevation approaches specific to Louisiana architecture

The composition and scale of elevation design proposals should be consistently applied to adjoining homes, Irish Channel Historic District, New Orleans (2014)

Adjoining properties in the Holycross neighborhood, New Orleans, illustrate the challenges of contrasting elevations, Holycross Historic District (2014)

Composition and scale of features provide design references, Esplanade Ridge Historic District, New Orleans (2014)

An additional example of adjoining properties with contrasting elevations, Bywater Historic District (2014)

Today a restaurant, the circa 1830’s Bechac House in Mandeville represents a pre-Hurricane Katrina elevation of approximately 9 feet above grade and exhibits a repetition of architectural forms, Mandeville Historic District (2014)

Lower Garden District, New Orleans (2014)

These houses offer excellent examples of foundations designed with a combination of architectural treatments and landscaping screening, Garden District, New Orleans (2014)
The City of Annapolis planning initiative, *Weather It Together: Protect Our Historic Seaport*, is an award-winning community-based planning program designed to adapt our historic community to minimize the risks associated with flooding...a Cultural Resource Hazard Adaptation and Mitigation Plan will identify and mitigate potential loss to historic resources associated with natural disasters, primarily threats to sea-level rise, subsidence, and flooding.
City of Annapolis

Flood Mitigation Strategies

- Focus on protecting existing structures
- Study downtown to determine the costs and benefits of public decision-making in mitigating property damage
- Evaluate the need and options for protecting historic structures
- Require floodproofing to the extent feasible
Weather It Together

Develop Adaptation Alternatives - Dry Floodproofing

Dry floodproofing involves sealing building walls with waterproof compounds and using shields (dams or perimeter barriers) to seal off doors, windows and other openings to keep the building watertight. This technique can only be used when the walls are strong enough to withstand the hydrostatic force of the water.
Weather It Together

Develop Adaptation Alternatives - Elevation

“Elevation may alter the appearance and scale of a historic building and redefine its relationship to its setting… If the building is raised only several feet, elevation should not severely alter scale.”

“A preservation-sensitive alternative would be the elevation of floors within the building, particularly feasible in historic commercial structures with tall ceilings…”
REVIEW OF SUCCESSFUL/UNSUCCESSFUL METHODS IN CHARLESTON
Successful or Unsuccessful?

Solid Foundation
Successful or Unsuccessful?

Pier Infill/Screening
Successful or Unsuccessful?
Foundation Vents
EXAMPLE ELEVATED BUILDINGS IN CHARLESTON

- Successful or Unsuccessful?

Fenestration in Foundation
Successful or Unsuccessful?

Fenestration in Foundation
Successful or Unsuccessful?

Elevated Full Floor
Successful or Unsuccessful?

Setback from Street
- **Successful or Unsuccessful?**
  - Setback from Street (New Street)
Successful or Unsuccessful?

Hybrid
- Successful or Unsuccessful?
  Transitional Porch
Successful or Unsuccessful?

Planter Bed/Knee Wall
Successful or Unsuccessful?
Creative Façade Treatment
 Successful or Unsuccessful?

Sister Houses
 EXAMPLE ELEVATED BUILDINGS IN CHARLESTON

- **42 Rutledge**: Category 2, c.1859
EXAMPLE ELEVATED BUILDINGS IN CHARLESTON

42 Rutledge: Category 2, c.1859

**EXISTING SOUTH ELEVATION: 3/16" = 1'-0"**

**PROPOSED SOUTH ELEVATION: 3/16" = 1'-0"**

**Construction Notes:**
1. All existing windows, doors, and trim to be retained and evaluated by archeologist prior to removal.
2. Category II trim, sagging, and soffit to be replaced where possible for visual.
3. Existing rear foundation walls to be retained where possible.
4. Existing rear foundation walls to be treated and backfilled to elevation 12.00.

**Architectural Notes:**
- New foundation to be constructed to meet code requirements.
- New roof to be constructed to meet code requirements.
- New deck to be constructed to meet code requirements.
- New stairs to be constructed to meet code requirements.
- New windows to be constructed to meet code requirements.
- New doors to be constructed to meet code requirements.
- New trim to be constructed to meet code requirements.
- New roof to be constructed to meet code requirements.
- New deck to be constructed to meet code requirements.
- New stairs to be constructed to meet code requirements.
- New windows to be constructed to meet code requirements.
- New doors to be constructed to meet code requirements.
- New trim to be constructed to meet code requirements.
42 Rutledge: Category 2, c.1859

Existing Rutledge Avenue sheet scope: 1/8" = 1'-0"

Proposed Rutledge Avenue sheet scope: 1/8" = 1'-0"
9 Savage Street: Category 3, c.1894-98
CASE STUDY SCENARIOS

- 9 Savage Street (Context)
9 Savage Street (Context)
Our home after Irma, third consecutive flooding in less than 2 years.

Our home is no longer sustainable. We are camping 3 to 6 months every year since 2015.

Our home is joining the increasing number of Repetitive Flood Loss properties and Severe Repetitive Loss properties, according to NFIP.

Our home will lose its integrity and might need to be demolished if nothing is done to save it.

This is about saving the house. To save it, the only solution is to raise it.
9 Savage Street elevation proposal to meet FEMA BFE height requirement

Left: our home, 9 Savage Street
Right: 11 and 9 Savage Street together.

Our home flood elevation is 7 feet, which means it lies 6 feet below current BFE and 4 feet or 5 feet below proposed 2018 FEMA flood zone map new BFE (11 feet).

The 2015 floodplains ordinance requires buildings to be elevated 1 foot above National Flood Insurance Program minimum height requirements (Freeboard) BFE+1’

Sec. 54-306. Old City Height Districts states that if a building is required to be raised per FEMA requirements, that same height shall be added to the maximum height allowed, up to a maximum of 6 feet. This measurement shall be taken from the highest curb elevation.

Savage street is listed under the Repetitive Loss Areas in the Charleston under Charleston Regional Hazard Mitigation Plan
9 Savage Street elevation proposal to meet FEMA BFE height requirement

below:

Existing piazza and step options, stairs could be integrated in many ways behind Piazza and front street door, steps location and height option will depend upon FEMA BFE final height.

Existing entrance piazzas for 9, 11, 13, 15. All have been altered over time, losing some or all of their original piazzas.

13 Savage was raised about 1 foot and vents added as part of an earlier remodel in the mid 1990s. It still flooded in 2017.

15 Savage lost its entire piazza
9 Savage Street elevation proposal to meet FEMA BFE height requirement

Below:
photos of existing facades and sketches illustrating possible elevation options about 5 feet with raised masonry foundation and vents that can be integrated in the existing house by bringing clapboard siding over part of new foundation. New steps to house could either be integrated behind piazza door or on the side. Final elevation height will be determined once we know what will be the final flood zone map for our area.

beatricembernier@yahoo.com
15 Council Street: Not Surveyed, early 20th Century
CASE STUDY SCENARIOS

- 15 Council Street
15 Council Street (Context)
Is a Policy Statement of the Board Enough Guidance?

Important Considerations for a Policy Statement

Independent Work by Design Community to Develop Strategies

Upcoming Workshops

- Review of Strategies:
  - Single House
  - Freedman’s Cottages
  - Adjoined/Grouped/Sister Buildings
  - New Construction

Review of Draft Policy Statement

What can the Preservation Non-Profits do to facilitate development of comprehensive guidelines?