Architectural Evaluation

Of

<u>125 Hope Street, Bristol RI</u>

August 18th, 2025

Report Prepared by Madeline Melchert R.A.

Abstract

The “Herreshoff House” was built in 1930, and a “model room” addition was added with a one story connector in 1940. The property is listed in the National Register of Historic Places as a contributing structure in the Bristol Waterfront Historic District – nominated in 1974 (no image submitted for this property and it is not further discussed).

Described in the nominating papers as “Early 20th century style, 2 story, hip roof, wood shingle; south building contains half-models of all boats, drawings and instruments made by Captain Nathaniel G. Herreshoff; open to public by appointment.” Note that the structure was originally (and still is) constructed with asbestos shingle (not wood shingle), and no longer contains “half-model boats, drawings or instruments”.

The district is described as “wide, tree-lined streets with rows of close-set wood and brick sea-captains’ homes, great Federal and Greek Revival mansions, Victorian cottages and villas, and excellent public buildings from all periods, present(ing) a remarkably unified streetscape important both for the quality and quantity of historic buildings. Visually Bristol tells an exciting story of the growth, rise, and decline and rebirth of an old “Yankee” seaport. Today, Bristol is a modern community with heterogeneous population, balanced industrial, commercial, and residential development.”

The property is located in a VE flood zone. Substantial improvements to the existing structure are necessary, which would trigger building code 23-27.3-106.1 “substantial improvements... costing in excess of fifty percent of the physical value of the building, this code’s requirements for flood resistant construction for new structures shall apply.” In order to meet FEMA regulations, the structure would need to be elevated approximately 2’-0”, with a new foundation designed to withstand wave action. The findings of this report will prove that this house is not able to be restored in the present location. With the major reconstruction it would take for this house to be habitable and code compliant, the end result could be considered a replica.

The following report is based on the architectural, structural and construction team’s findings during deeper discovery into the structural condition of the building. By physically opening walls to view and analyze what was previously not visible the following points are determined and explained in further detail with supporting photos:

1. The professional land surveyors, civil engineers, and structural engineers have evaluated the existing home and foundation in relation to the FEMA mapped floodplains. The report entitled "Addendum to Flood Plain Survey 125 Hope Street Bristol RI June 22, 2025" by DiPrete Engineering summarizes the condition of the existing home as being approximately 35' from the

shoreline, in a mapped FEMA wave velocity zone, on a noncompliant foundation directly exposed to the horizontal loading from wave energy, with 8-9' vertical exposure to waves. It is the professional opinion of the design professionals, that no significant renovation, restoration, or replication should be done of this home on this foundation, and at this elevation.

2. The team has considered that there is a path for historic properties in some cases to be considered for variances in flood plains. Our conclusion and professional opinion is that variances in this case, given the type of flood plain, extensive exposure, and construction of the existing home are variances that should not be sought by the property owner, should not be granted by the approving authorities, are variances that no one understanding the conditions should want, and that this firm would recommend against.
3. Given the above, we have considered that any proposed work would require a code compliant foundation at the proper elevation. After that, the remaining home would need to be addressed. The first step in construction on this house – would be asbestos abatement, removing all siding, roofing, window glazing and some interior finishes. Secondly, the chimney would require dismantling, and the framing would require temporary shoring. The team has researched temporarily lifting the existing structure while a new foundation is constructed.
4. However, due to the significant amount of structural reinforcing required in every aspect of the structure (walls, floors, roof, connections) with the insertion of steel - the means and methods required to physically complete this work realistically requires a complete dismantling of the structure.
5. The report will show that the following character defining features are not salvageable and cannot be replaced in kind. Any proposed alteration would materially impair the historic value of the structure:
    a. Foundation
    b. Asbestos Siding
    c. Asbestos Roof Shingles
    d. Garage door facing the street (as is, due to height increase)
    e. Windows & wood trim

Existing Material Description

Roof:

The roof finish is a light gray rectangular asbestos shingle. Asbestos shingles were marketed to be lightweight, economical and fireproof as an alternate to traditional roofing materials. In 1975 asbestos was declared a carcinogen and is now an EPA banned material. Underneath the shingles is a layer of tar paper, on top of ¾" thick wood plank sheathing. To meet current building codes - asphalt roof shingles would be used in lieu of asbestos, the tar paper would be replaced with roofing felt.

Image of garage roof, missing asbestos shingles reveal tar paper and plank sheathing.

Exterior Walls:

The exterior walls are clad with a light gray asbestos siding (appears red due to red algae), on top of a layer of tar paper, on top of ¾" thick wood plank sheathing. To meet current building code – the siding would be replaced with a composite and the tar paper replaced with new house wrap.

Image taken at exterior wall sill plate – note exposed wood framing is more prone to rot.

Foundation:

The foundation is roughly 10” thick poured concrete (no applied finishes). To meet current building code, the foundation would need to be redesigned for flood zone and would contain concrete piers with breakaway walls. It would not be possible to reinforce the existing foundation - the footings are not deep enough. The new, reinforced concrete foundation would be compliant with RISBC flood zone requirements as described in the structural report. Cast in place insert anchors would be provided to attached wood framing with suitable capacity for wind uplift to meet building code requirements.

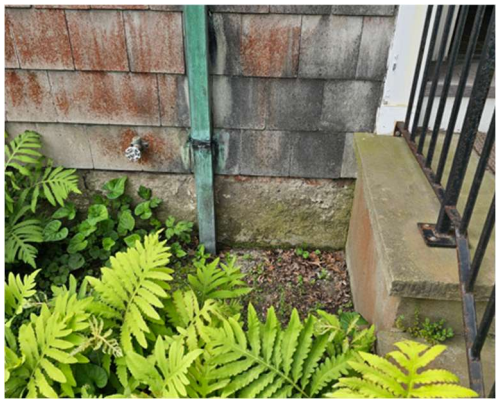

Image at street facing foundation wall.

Image at rear of house, east facing foundation wall.

Framing:

Roof framing & second floor ceiling joists are 2x8’s at 16” o.c. with ¾” thick plank sheathing. The main house has a chimney integral to the peak of the roof framing. In a reconstruction, the entire chimney would be dismantled and the roof framing would need to be temporarily supported and/or dismantled. The roof framing is undersized and would need to be reinforced with sistered 2x8s with application of a new layer of plywood on top of the plank sheathing (for diaphragm) with approved hurricane ties and strap anchors. The chimney at the peak would require steel support for a re-built chimney (above the roof only).

Image at main house chimney to roof connection.

Image at second floor top plate & window header.

Below the top plate, the exterior walls are balloon framed 2x4's at 16" o.c. with double 2x6 headers at windows (no jack studs). Balloon framing creates a fire hazard due to the continuous wall cavities between floors. Exterior corners of the house consist of continuous 4x4 wood posts (balloon framed). Much of the corner framing has deteriorated due to water infiltration. Exterior walls would need to be reinforced for wind load by including appropriate strap ties at the second floor, all studs would be sistered with new 2x4's and the plank sheathing would need to be covered with new 5/8" plywood. 4x4 corner posts would be replaced with HSS4x4 steel posts from foundation to roof. Any framing around windows would need to be re-worked to add jack studs (new header required to maintain window size).

The rear facing "bay window" walls are framed with 2x3's at 16" o.c. and are deteriorated significantly. The first floor and second floor framing both consist of 2x10's at 16" o.c. with ¾" thick plank sheathing. The floor framing is relying on the chimney for structural support, which does not meet building code due to fire hazard. The floor framing at both floors would utilize W10 steel beams where necessary (with HSS steel posts for support) and the floor joists would be sistered or replaced with new 9-1/4" LVL's. Alternatively, the first floor framing would be most structurally flood resistant if replaced with an 8" thick reinforced concrete slab.

There are no metal connectors at critical load path transitions – roof to wall, floor to wall, or wall to foundation – all of which would be required to meet current building codes. Again, due to the significant amount of structural reinforcing required in every aspect of the structure (walls, floors, roof, connections) with the insertion of steel - the means and methods required to physically complete this work realistically requires a complete dismantling of the structure.

Image at first floor framing.

Image at first floor window header.

Image at second floor corner window sill framing.

Gutters/Downspouts:

Gutters are rectangular copper with decorative brackets and gutters are half round copper. In a reconstruction, these materials would be replaced in kind.

Image at second floor windows facing Hope Street.

Windows, Doors & Trim:

There are double hung, casement and picture windows present. All are solid wood construction, single pane, 1.5” thick sashes. The front door is a vertical v-groove panel. Most weatherstripping is missing. Trim is generally painted wood flat stock. Very little of these materials could be salvaged. In a reconstruction, windows and doors would need to be stripped of paint to determine rotted wood that would require patching or replacement. All glazing would need to be removed and re-set. In many cases replicas would be produced to replace windows, doors, and much of the exterior trim.

Image at second floor rear facing corner window.

Image at street facing first floor window sill.

Image at side detail of second floor casement window patch.

Chimney:

In a reconstruction, the chimney would be re-built above the roofline using existing bricks, and removed below the roofline (used for aesthetic purposes only).

Misc.:

The house has recently had interior water damage due to burst pipes, rendering existing plumbing and electrical in disrepair. There are multiple waste line locations, which should be investigated to determine the quality of the connection to city sewer. To meet current building codes, all MEP items would need to be new.

Image of basement waste lines.

Images of both sets of exterior stairs facing the street.

Building Sections

(See attached)

Conclusion

The "Herreshoff House," architecturally demonstrates 'modern' design at the time of construction, is structurally deficient and uninhabitable in its current state. Exterior materials are part of the character defining features of a building – in this case the exterior materials cannot be replaced in kind and would therefore create a replica that would not be authentic. Along with the exterior materials being replaced, most of the "bones" would be required to be replaced as well. This house is unique to historic buildings located in a flood zone due to a number of reasons; the social significance (rather than architectural), the time period in which it was built (modern, lower quality materials) and the construction methods (outdated) that were used to build it. There is no economically feasible way to retain the structure on its present site.

The team sees an appropriate solution being a thoughtful, collaborative design that addresses the needs and intent of the district. A design that can both allow the district to thrive (rather than deteriorate or remain unusable), while maintaining a trace of the original 'modern' design intent to denote the socially significant site that it is. The neighborhood size, scale and massing have been analyzed, however there is a challenge in working around flood water safety and maintaining a human scale at the streetscape. Due to CRMC dimensional constraints at the rear of the property, any proposed structure would be required to be relatively close to the sidewalk, while the flood zone requires a higher first floor level. We believe that we can address the sensitivity of the street, the goals of the Historic District, and the public interest in being code-compliant by designing two separate, smaller homes that meet all regulations.

The neighborhood study along with Bristol's Codified Ordinance Chapter 14 – Historic Preservation are able to guide the design through the following points:

- "Maintain and foster the civic beauty of the town"
- "Stabilize and improve property values in established historic districts"
- "Strengthen the economy of the town"
- Maintain the architectural value of the surrounding structures/area
- Compatibility of exterior arrangement, design, texture, and materials used
- There is a pattern of tall but narrow structures with side yards in between on the street

- Two separated homes will result in 30% more view corridor from Hope Street, less mass of façade along Hope Street, no garage doors facing Hope Street, and will be more in line with the quality/architectural value of the historic district.

We hope to contribute to the neighborhood and ensure its quality for years to come.

Sincerely,

Madeline Melchert, Architect