

Phase 4– Renovations to the Existing Building

The Nahant Public Library project going forward is conceptualized as two separate projects-

- Restoration and renovation of the existing building to address repairs and restoration of the fabric and replacement of mechanical and electrical systems
- Provisions for future expansion of the building to address library service needs

The renovation work completed previously includes the following:

- Phase 1 focused on the reconstruction of the terrace; that was completed in late 2020.
- Phase 2 addressed window repairs, roofing issues and some of the most urgent masonry work. This was completed in 2022.
- Phase 3 work, completed this year, includes more extensive cleaning and repointing of masonry, anchorage of masonry walls to the attic floor and roof assemblies, repairs to the first floor in areas where decay of framing members had resulted in sagging floors and bookcases, and repairs to plaster finishes of damage resulting from water penetration of the masonry.

Beyond the building envelope, improvements to building systems are required for modern library services, and the capacities of systems installed in the renovation phase should include the capacity to handle an addition. Phase 4 will include the following systems scope:

- *Structural:* The existing wood floor framing is in good condition. At the first floor, it has a live load capacity of 60-100 pounds per square foot, which is adequate for current uses. The bookstack room is structured with steel beams under the stack ranges and wood floor construction in between; this is adequate for present uses. The attic floor framing has a loading capacity of 37 pounds per square foot, which is acceptable for staff work space and historic collections, but it is not adequate for dense bookstack floor loading. The option of adding elevator access was considered, but the cost was prohibitive for the benefit to the library.
- *A new sprinkler system:* The present building lacks this protection, and this leaves the potential for catastrophic loss. A fire protection system would be required by code for a new building of this size and assembly occupancy.
- *Plumbing:* The existing piping is at the end of its service life, and the plastic waste piping in the basement is not allowed in non-residential occupancies. Additionally, the fixture count does not meet current codes and needs to be augmented. Any substantial renovation should incorporate the complete replacement of the plumbing system. Additional toilets would be provided in a future addition.
- *HVAC system:* the present heating system is inefficient and does not address ventilation or summer cooling. The engineers have recommended a variable refrigerant system for heating and cooling throughout the building. Such a system could be modular, with an initial phase that installs a new system in the existing building in the near term and adds systems for any addition as part of that construction. This system would also include climate control for the historic collections and work space on the top floor.
- *Electrical system:* The existing service and main distribution panel are essentially of residential scale. While they are in good condition, they are barely adequate for existing loads and could not handle the demands of a new HVAC system, let alone a future elevator and an addition. We recommend a new 600 amp service and panel; size to be verified as the scope of the project is

developed. National Grid will provide a new pole mounted transformer and underground service; the location of that should allow for a future addition.

- *Lighting and power distribution:* The engineers' assessment is that all of the lighting is obsolete and should be replaced. This needs to be tempered by consideration of the character of the historic interior spaces, and it should consider approaches that restore and reuse the historic decorative fixtures in conjunction with discreet new lighting to improve light levels. Convenience power throughout the building will require rewiring. Data wiring will be needed, although modern wifi networks can limit the hard wiring needed.
- *Fire alarm system:* The existing system is obsolete and should be replaced with an addressable system compliant with current codes. If a sprinkler system is not installed, smoke detectors should be installed throughout the building, including closets.
- *Emergency lighting:* The existing exit signage and emergency lighting is inadequate. New emergency lighting could be battery powered, potentially with remote batteries, or incorporated into new light fixtures. Current exit signs with lettering floating on a clear plastic background can blend more gracefully into the historic finishes.
- *Tel/data systems:* Network and internet access are essential elements of a modern library. These would be provided with a mix of wired and wireless connections, in wireways that can provide for replacement of devices and cabling as the technology changes.
- *Intrusion systems:* For the prevention of theft and threats to occupants, a network with door and window contactors and motion sensors, monitored by the alarm vendor.