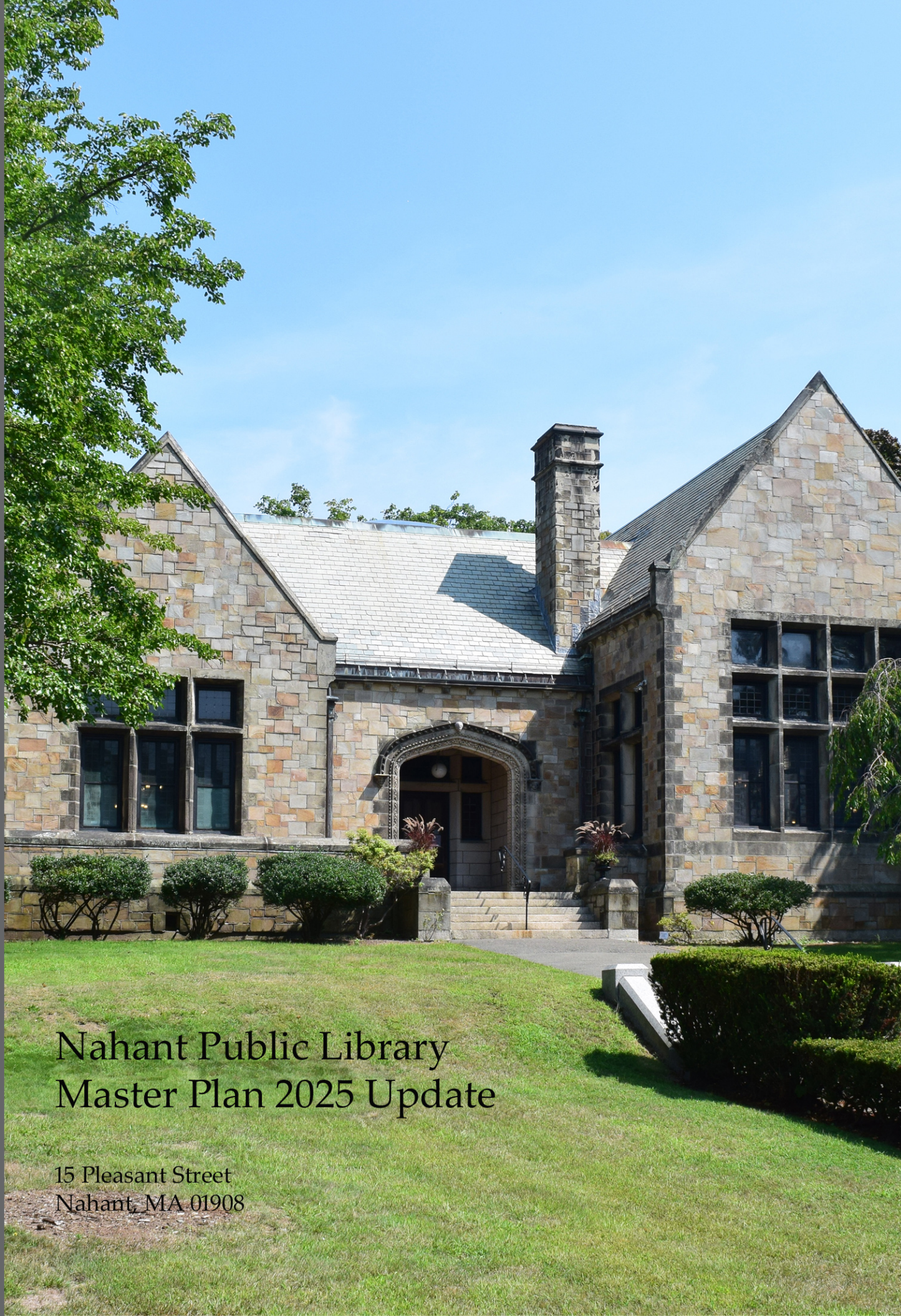




Nahant Public Library Master Plan 2025 Update

15 Pleasant Street
Nahant, MA 01908

Nahant Public Library
Updated Master Plan Study
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31 March 2025

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Executive Summary

The Nahant Public Library is one of the central institutions of the Town of Nahant. Founded in 1819, it is the third oldest public library institution in Massachusetts. From 1819 to 1850, it was housed in the old Stone School and served the school and the community. It later moved to a school building adjacent. Since 1895, it has been housed in the present historic library building.

The present library has served the town for almost 125 years. It is showing its age, however, and the libraries of today face far different service demands from those of 1895. The library's Long Range Plan is based on a prediction of the future of the community, and it describes that future as follows:

"Nahant will be a vibrant town that balances its island beauty and small town charm with forward-thinking technology. Many people will work virtually from home. Improved communications will make it easy to stay informed and participate in local government. People of all ages will continue to seek interaction through lifelong education, the arts, nature studies, outdoor sports, and community events. From young, first-home families to seniors aging in place, Nahant will continue to grow as an inclusive and supportive community."

The basis for the Library's planning is to envision the town 10 years in the future, and then create a library plan that will help the community move toward that vision. To create a library that supports this future Nahant, two major issues need to be considered:

- The deterioration of the building fabric and the obsolescence of mechanical and electrical systems in the existing building need to be addressed.
- The programmatic library needs of the community, which exceed the space available and do not fit well in the 1895 design, need to be appropriately housed.

Accordingly, the 2019 study envisioned a two stage process for the revitalization of the Nahant Public Library. The first phase addresses the existing building, repairing the historic structure, exterior and finishes and replacing mechanical, electrical and life safety systems to bring the building up to modern standards. A future second phase creates new space that appropriately houses modern library services that do not fit effectively into the existing historic building.

Since 2019, two phases of renovation/restoration have addressed a number of the priorities for the historic building envelope. With the help of grants from the Massachusetts Historical Commission, the terrace has been reconstructed, stormwater management repairs made, windows restored, repairs made to critical areas of masonry, and roofing repairs were made. Bid documents are complete for a third phase focusing on masonry restoration to be bid in early 2025. Once this is done, the major issues in the historic building envelope will have been addressed.

From here, the focus needs to turn to the issues of library function. These fall into two categories-building systems and space planning. The inadequacy of the existing mechanical and electrical systems has long been apparent to the Town. The next phase of renovations would replace utility connections, plumbing mechanical, fire alarm and electrical systems with modern, code compliant systems, and it would add a new elevator and sprinkler system. These systems would need to be designed with the capacity to service the proposed addition as described below. The proposed construction budget for this work, including all new building systems, is \$3,962,865. This includes \$412,693 for utilities and \$104,850 allowance for hazardous waste removal. To this must be added architectural and engineering fees, construction contingency and administrative costs. With these, the recommended Phase 4 project budget is \$4,867,835. It should be noted that the installation of the elevator and reconfiguration of the stack room stair included in this estimate are priced at \$1,128,829.

To address the programmatic deficiencies, Phase 5 would expand the existing building, creating a vibrant new space to house a Children's Room, and add toilet facilities that are sorely lacking today. This would allow reorganization of the uses in the existing building to make the best use of existing space and expand Adult Services. The proposed construction budget for this work, is \$3,313,750 in 2025 dollars. To this must be added architectural and engineering fees, furnishings, construction contingency and administrative costs. With these, the proposed Phase 5 project budget is \$4,216,750.

Existing Conditions

The Nahant Public Library was built in 1895. To quote from the MACRIS inventory form (NAH 77): "The Nahant Public Library stands in a small cluster of public buildings at a location continuously occupied by school and town buildings since 1819. Founded in 1819, the library is the third oldest public library in Massachusetts, having been housed in the series of school and town buildings nearby until the construction of this building in 1895. A competition was held to select a design for the library, with the library trustees assisted by the head of the MIT Architecture Department. Boston architectural firm Ball and Dabney designed the building, and the landscape architect was E.W. Bowditch of Boston. Henry Cabot Lodge, Sr. served on the Board of Library Trustees for many years, including the period when the building was designed and constructed. The Nahant Public Library retains a strong tradition as the town's cultural center."

The architectural character is described in the inventory form as follows: "The Nahant Public Library is the town's only building in the turn of the century Jacobethan Revival style, and is a richly detailed example. The building is constructed of vari-colored granite ashlar with sandstone trim including quoins, sills, lintels and belt courses. It is one story high, with a slate gable roof and two projecting gabled sections at the facade (south). The main entry is between the two front gables, recessed within a Tudor arched opening; a side entry exists at the west elevation. Fenestration is characteristic of the style; casement windows are arranged in groups of three and four, with multiple lights and transoms. A veranda extends west from the main entry to the side entry, enclosed by a granite wall. Other features include a chimney near the main entry, flush eaves and decorative copper gutters and downspouts. The prominent corner lot is beautifully landscaped."

The building as it stands today is largely unchanged from its 1895 design. The original functions of the building included a Town Clerk's office in the west room with access to a side entrance; this has been given over to library uses. The bookstacks were built as a closed stack room, with books retrieved for patrons by library staff. The stacks are now open to the public. Separate children's services were not part of the original library design, and the space available for children's services are not well suited to this population.

The exterior, while it is very substantially built, is showing signs of age. As documented in the Building Envelope Study conducted by Design Associates in 2018, there were a number of areas in the walls and roof that need repairs. As of 2025, the issues noted in 2018 with the terrace have been addressed by a 2020 reconstruction of the terrace deck and parapet wall. In 2022 critical areas of masonry, window repairs and roofing and gutter repairs were made. The current package bidding in Spring 2025 will address the remaining masonry issues on the exterior, as well as floor framing and plaster repairs in the Non-Fiction room.

On the interior, the wall and ceiling finishes are largely intact. The basic structure of the building is sound, and there is no sign of differential settlement or structural overloading of floors or walls. The

floor construction appears to be adequate for the uses that currently occupy various spaces. The wall plaster exhibits deterioration in a number of areas that are probably the result of water penetration through the exterior masonry. The original wood paneling and door and window casings are still intact, but the wood finishes are aging and in need of renewal.

The original heating system was steam, feeding radiators in underfloor boxes that heated air ducted from the outside. These have been replaced by conventional radiators, with no ventilation other than that provided by the windows and by infiltration.

The electrical system is served by a 200 amp single phase main panel, which is barely adequate for the present electrical system and usage. The original Shreve, Crump and Low chandeliers remain in use, but evening light levels are fairly low, and the quality and quantity of the light does not meet today's expectations. The wiring is of uncertain age and quality.

The fire alarm and emergency lighting systems are fairly modern, and much of the wiring was done in surface raceways. These systems do not meet current codes.

Zoning Code Compliance

Zoning

Zoning district: P- public. Adjacent Town owned playground is NR (Natural Resources); adjacent house lot is R-2. Under MGL Chapter 40A, section 6, the existing Nahant Public Library building predates zoning and is not required to alter any existing non-conforming elements of the building.

Uses: Government uses and buildings under the jurisdiction of the Town of Nahant are permitted in this district.

Dimensional Requirements for P District: none.

	Existing	Proposed
Lot area	28,490 sf	28,490 sf
Frontage	379 feet	379 feet
Front yard setback	84.2 & 21.6 feet	84.2 & 21.6 feet
Side yard setback*	32.1 & 39.8 feet	
Rear yard setback	N/A (corner lot)	
Building height	38 feet	
Parking	On street; Town Hall lot	

(Lot dimensions to be verified)

**Adjacent R-2 district side yard setback is ten feet*

Building areas: (to outside face of wall at basement and 1st floors)

Basement:	1985 sf gross (+1764 sf crawl space)
First floor	3722 sf gross
Mezzanine	753 sf (net)
Top level stacks	603 sf (net)
Attic	591 sf
Attic storage	1018 sf (50%? usable)

Building Use

Town facility- allowed in this P district.

Parking

The Nahant Library provides no space for parking. The existing parking is on the street and in the Town Hall parking lot. Because of the small physical size of the town, a large proportion of the library's users walk to the library.

Building Code Compliance

Ex. height and area:	Gross <u>inside</u> exterior walls- 1,649 sf (basement), 3,248 sf (first floor), 753 sf mezzanine), 2,214 sf (attic, book sale & storage); 7,864 sf total. 2 stories plus mezzanine in stack block; 38 feet to roof peak
Occupancy: (Ch 3, sect 303, Ch. 10, Table 1004.2)	Existing: A-3, Assembly. At 50 sf/person in reading rooms, 100 sf/person in stacks & 300 sf/ person in storage and mechanical areas: 5 in basement, 58 on 1 st floor, 11 on upper floors. Total occupancy 74.
Allowable area (Ch 5, Tab 505.4, 506.2)	For A-3 Assembly occupancy without sprinklers, 5,000 sf, 2 stories; with sprinklers 28,500 sf per floor, 3 stories (See MA amendments)
Construction Type: (Ch. 6, Sect 602)	Type 3B; Non-combustible exterior walls, rated; combustible floor construction, unprotected
Separations: (Ch 7, table 705.8)	±30 feet to east property line; openings are 20% of exterior wall. No restrictions on unprotected wall openings at east wall.
Means of egress: (Ch 10, sections 1006, 1007)	2 per floor provided, which is adequate for the occupancies. Door widths are adequate for occupancy; exterior doors swing in and should swing out. Stairs do not comply with current codes.
Sprinklers: (Ch 9, Table 903.2)	Required for A-3 assembly occupancy, over 5,000 sf. Consider installing for risk mitigation; addition would trigger requirement. (See MGL Chapter 148/ Section 26G).
Fire alarm system:	Existing system does not meet current standards
Toilets:	1 toilet existing. Current Massachusetts Plumbing Code would require 1 fixture per 50 women and 1 per 100 men, which equals 2 fixtures. Would recommend adding one separate staff toilet, and one for children if a separate childrens room is added; occupancy should be reevaluated for impact of any additions, especially with large meeting rooms.
Accessibility:	See section following; most stack areas and upper level are not in compliance.

Library Program

A library building program was developed in 2015-2018 by independent consultant Mary Braney and the Library staff. It is based on an assessment of library service needs of the Town of Nahant, with attention to the particular character of the town, including its demographics, existing collections, library service utilization, meeting room demands, and staff working conditions. Recent review and updates to the building program have not changed the total area requirements.

The gross area called for in the building program is about 9,600 square feet. This is approximately double the existing building's functional area, which is not unusual for a community that has never expanded a 19th century library. The expectations for library services today are very different from those of 1895, and the character and functionality of those spaces is quite different. In this library, several functional issues stand out.

Children's Services: The original building did not consider a need for children's services separate from adult services. The primary public spaces have a formality and traditional library character that is at odds with creating space appropriate to children, and the juxtaposition of adult and children's areas create space and noise conflicts. They also make the provision of children's programs difficult. None of the existing spaces come close to meeting the area requirement of the building program, and the most obvious solution is to create new space suitable for children's services.

Collection access: The 1895 library was designed with closed stacks, and items desired by patrons would be retrieved from the stacks by staff. Today the stacks are accessible to the public. The aisle widths are unusually generous for this type of stack system, and if clearances at the door can be achieved, the first floor stacks could be considered accessible if the dead end aisles are acceptable. On the second level, the glass floored aisles have slots along the sides for ventilation, which makes accessibility more problematic. Creating accessibility here may require alteration to the floor system, which is more feasible with a mechanical ventilation system, as well as an elevator.

Meeting space: The existing space does not provide for meetings beyond the size that can fit in the Nahant Room. Most libraries today have meeting spaces for a variety of group sizes. While there are offsite meeting spaces in Nahant, meetings and presentations that involve library programs or staff would preferably take place at the library.

Staff work space: The 1895 design provided only a small room behind the desk for one or two staff members. A modern library has to have space for preparing material for various age groups, interlibrary loan materials handling, deliveries and processing of materials, data systems management, and staff break space. Accommodating these and putting them in accessible locations requires significant alterations to the existing space and/or creation of new space.

The existing building seems best suited to housing Adult Services, including the adult collections. As noted above, a new wing could house:

- A Children's Room designed for children's needs
- Staff work space
- New accessible toilet rooms
- An elevator to provide accessibility, including for materials handling to the basement

Nahant Public Library Building Program

Summary from library building program April 2015

	Area	Items	Estimated NSF
Adult	Books	15,225	1,460
	Media	1,400	90
	Periodicals	60	120
	Seats	38	1,190
	Public Computers	2	90
	SUBTOTAL		2,950
Young Adult	Books	600	50
	Media	550	30
	Periodicals	10	20
	Seats	12	340
	Public Computers	1	45
	SUBTOTAL		485
Children	Books	1,175	455
	Media	10	70
	Periodicals	12	20
	Seats	22	570
	Public Computers	1	40
	Story Hour/Crafts		
	SUBTOTAL		1,155
SUBTOTAL LIBRARY			4,590
	Meeting /Story Hour/ Multipurpose Room	60	1,440
	Local History/ Conference/Trustees Room	8	285
	Quiet Study	6	180
	Photocopier/Business Area		100
	SUBTOTAL		2,005
Staff		8	1,410
TOTAL NET SF			8,005
Auxiliary Space*			1,607
TOTAL ESTIMATED GROSS SQUARE FEET			9,612

*This multiplier is 0.2, which assumes an 83% efficiency ratio (useable area divided by gross area to the outside face of exterior walls). This is very difficult to achieve for a small historic building renovation. A more realistic multiplier for this type of project is 0.3-0.35, which gives a gross building area of 10,400 to 10,800 sf and a 74-77% efficiency ratio.

Existing Shelving Capacities

Fixed shelving only

<i>Space</i>	<i>Original lf</i>	<i>Capacity</i>	<i>Added lf</i>	<i>Capacity</i>	<i>Total</i>
Delivery hall	67.5	459	0	0	459
Reading Room	218.5	1485	75.5	513	1,998
Vault	35	238	0	0	238
Children's Room	104.5	711	69.5	473	1,186
Stacks 1 st floor*	1080	7,344	0	0	7,344
Stacks 2 nd floor	1080	7,344	0	0	7,344
Stacks 3 rd floor	0	0	936	6,365	6,365
Totals	2585.5	17,581	1081	7,351	24,934

* Southerly face of first stack range assumed for staff use and not included

N.B.- attic shelving has been disregarded for this analysis.

Program Requirements

	<i>Books</i>	<i>Non-print media</i>
Adult	15,225	1,400
Young Adults	600	550
Children	6,415	1,165
Totals	22,240	3,115

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
- Expansion of the building to address library service needs

The renovation work completed or in process 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, to be bid 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 has 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 should include the following systems scope:

- *Structural:* The existing wood floor framing is in good condition, except in areas slated for repairs in Phase 3 above. 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 area 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 office use or library seating, but it is not adequate for bookstack floor loading. An option could be the renovation of the top floor to increase its load capacity for flexibility of use. It would, however, be limited in occupancy to 49 persons due to the proposed stair configuration, which replaces the existing stair with winders with an elevator and upgrades the stair in the stack room.
- *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 if any expansion of the building is undertaken.
- *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.
- *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.
- *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 800 amp three phase service and panel; size to be

verified as the scope of the project is developed. This will require a pad mounted transformer, and the location of that should be considered in relation to any proposed 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.

Finishes Restoration Scope

The scope of finishes restoration is generated by two things- the deterioration of existing plaster and wood finishes by age, sunlight and water penetration from the exterior, and the cutting and channeling that will be required by the installation of modern mechanical and electrical systems. An inventory of the restoration scope follows; the cutting and patching for mechanical and electrical installation will be determined by the available locations for piping and wiring. In general, these can be installed from the basement and attic, minimizing chases and channeling of walls.

Space	Area (sf)	Floor	Wall plaster	Wall paneling	Ceiling
Delivery Hall	667	Carpet	875 sf; repair 10%	624 sf, refinish	15'-6" high Pl & wd; Good condition
Children's Room	694	Carpet	432 sf, repair 20%	1650 sf, 15'-3" high; refinish	19'-3" high; Good condition
Reading Room	449	Carpet	1407 sf, repair 30%	Running trim, refinish	15'-6' high Plaster; good condition
Entry hall	115	Carpet	Plaster, repair 30 sf above ext door	Running trim, refinish	15'-6" high Plaster, repair west end
Nahant Room	201	Carpet	882 sf, repair 80%	Running trim, refinish	15' high; plaster, good cond
Librarian	73	Carpet	Paint failure, prep and repaint		Plaster, prep and repaint
Book Stacks	620	Wood	None- remove effluorescence, repaint		Glass floor, wood deck

Prep and repaint all plaster

Assume plaster penetrations for new HVAC, fire protection and electrical systems

Phase 5– Proposed Expansion Design

As noted in the programming section, an addition is proposed to provide for program elements that do not fit into the existing building and would require alterations to existing historic spaces and finishes to appropriately house them within the existing footprint. The most urgent needs include:

- A new Children’s Room, separated from adult services and flexible to support both normal library services and children’s programming within its new space
- A new workroom for the children’s librarian that allows for book processing space
- New accessible toilet rooms to meet the current code

Architecturally, the addition has been conceived as a children’s garden, expressed as a garden pavilion with a pergola treatment to enhance the garden character and reduce its scale relative to the original building. The gable roofed form on the playground side houses the children’s story area, the signature element of the new space. Between the gabled children’s room and the existing building, the garden can become a venue for outdoor programming. The new building touches the existing building minimally, with a glazed link between the addition and the back wall of the stack block.

On the first floor, the front reading room would be returned to Adult Services as reading and collection display space. With moveable furniture, it could also double as meeting space for library events. The Director’s office would be moved to the Nahant Room, and the existing Director’s Office would be repurposed as a book processing space.

The existing basement is of little value for housing any library program space and is really useful mostly for bulk storage of low value items. The book sale level in the stack room is also of marginal value, due to egress and accessibility concerns. The finished attic space can be improved for library uses, but there are limitations posed by egress and floor loading capacity that must be considered. With elevator access, it could be used for a reading room or staff work space, archival storage and other non-public uses. Providing elevator access removes one stair, which is not code compliant; with one reconfigured stair its occupancy would be limited to 49 persons. Adding floor loading capacity would require rebuilding the floor system.

A separate meeting room would be desirable to support library services. However, the Trustees do not feel that there is community support for building more meeting space, especially with Town Hall across the street. Consideration should be given to furnishing the large reading room with seating and shelving on casters for mobility, so it can be used for meetings and events.

Proposed building areas (gross):

<i>Floor</i>	<i>Existing</i>	<i>New</i>	<i>Total</i>
Basement	1,985	0	1,985
First Floor	3,722	2,118	5,840
Second floor	940	0	940
Third floor*	1,742	0	1,742
Total	8,389	2,118	10,507

*Existing total includes book sale level and finished attic. Unfinished attic is 968 sf

Construction Costs

Cost estimates for the renovations phase 4 and expansion phase 5 projects were developed by A.M. Fogarty, an independent cost consultant, in March 2025. The estimates assume that each phase would be carried out as a single project with a general contractor and conform to the requirements for public construction in Massachusetts. The costs are based on early 2025 construction industry pricing and prevailing wage; if the time frame is extended cost escalation should be factored in. Given the preliminary nature of the documentation of the project, the estimate includes a 12% design contingency.

Phase 4, restoration and new systems for the existing building, is budgeted as follows:

<i>Division</i>	<i>Item</i>	<i>Markup</i>	<i>% total</i>	<i>Amount</i>
2	Demolition		2.27%	151,750
3	Concrete		0.00% \$	\$62,850
			-	
4	Masonry		3.52%	\$ 93,295
5	Metals		0.00%	\$223,462
6	Wood & Plastics		2.12%	\$85,224
7	Thermal & Moisture Protection		3.03%	\$ 21,952
8	Doors and windows		0.97%	\$ 23,900
9	Finishes		9.88%	\$ 253,598
10	Specialties		0.00%	\$4,812
11	Equipment		0.12%	\$0
13	Special Construction		0.00%	\$0
14	Conveying Equipment		0.00%	\$225,000
21	Fire Protection		6.92%	\$ 147,705
22 `	Plumbing		0.73%	\$ 64,245
23	HVAC		15.01%	\$ 525,214
26	Electrical		12.46%	\$ 506,310
31	Earthwork		2.92%	\$ 104,963
32	Exterior Improvements		3.74%	\$ 0
33	Utilities		2.17%	\$ 295,150
	Hazardous Materials allowance			\$75,000
	Subtotal		70.29%	\$2,864,430
	Design/Estimating Contingency	12%	12%	\$330,981
	Escalation to midpoint	5.0%	5.0%	\$154,457
	General Conditions	8%	2.46%	\$259,489
	General Requirements	3.00%	2.18%	\$105,093
	Insurance	1.75%	0.97%	\$64,767
	Builders risk (by owner)			\$0
	Permit	nic	0.77%	\$0
	G.C. profit	5%	3.87%	\$183,648
	Subtotal		81.30%	\$1,098,435.00
	TOTAL		100.00%	\$ 3,962,865

Alternate 1: reinforce Quiet Study floor: +77,976

Breakout costs of vertical transportation (contained in costs above):

New passenger elevator- \$745,034

Rebuild stair to basement and attic- \$383,795

This work should be evaluated for costs vs. benefits, since the space made accessible is limited.

Phase 5, the new expansion to accommodate the children's room and other program spaces, is budgeted as follows:

<i>Division</i>	<i>Item</i>	<i>Markup</i>	<i>% total</i>	<i>Amount</i>
2	Demolition		0.66%	0
3	Concrete		3.53%	\$ 141,285
4	Masonry		0.55%	\$ 197,125
5	Metals		4.79%	\$9,829
6	Wood & Plastics		6.31%	\$ 410,791
7	Thermal & Moisture Protection		11.13%	\$ 365,252
8	Doors and Windows		3.53%	\$ 168,355
9	Finishes		9.24%	\$ 188,763
10	Specialties		0.53%	\$8,806
11	Equipment		0.00%	\$ 0
12	Furnishings		0.35%	\$ 8,541
13	Special Construction		0.00%	\$0
14	Conveying Equipment		6.40%	\$0
21	Fire Protection		0.98%	\$ 34,525
22	Plumbing		3.38%	\$ 67,560
23	HVAC		5.96%	\$ 248,920
26	Electrical		5.58%	\$ 184,788
31	Earthwork		3.90%	\$ 148,100
32	Exterior improvements		1.85%	\$ 157,028
Subtotal			70.84%	\$ 2,339,667
	Design/estimating contingency	20.0%	12%	\$ 293,511
	Escalation to midpoint	2.5%	2.44%	\$ 136,972
	General Conditions	8.0%	2.46%	\$ 230,112
	General requirements	3.0%	1.61%	\$ 93,196
	Bond and GL insurance	1.795%	0.97%	\$ 57,435
	Builder's risk (by owner)			\$ 0
	Permit	1.0%	0.77%	\$ 0
	G.C. markup	5.0%	3.87%	\$ 162,857
Subtotal			81.30%	\$974,083
Total				\$3,313,750

Grand total for both phases

\$7,276,614

Summary of Renovation and Expansion Construction Costs

Renovation 6,731 SF @ \$ 370.57 /SF + utilities

Expansion 2,146 SF @ \$ 948.06 /SF + sitework

Total 8,877 SF @ \$ 819.72 /SF overall

In addition to construction costs, there are other costs that need to be factored into an overall project cost. These include architectural and engineering fees, property survey, owner's construction contingency, furniture, IT systems, project manager (for Phase 2) and administrative expenses. The recommended budgets for Phase 1 and 2 are as follows

<i>Item</i>	<i>Phase 4</i>	<i>Phase 5</i>
Construction cost	\$ 3,962,835	\$3,313,750
Architectural/engineering fees	\$400,000	\$335,000
Property survey	\$5,000	0
Owner's contingency (10%)	\$390,000	\$330,000
Furniture	15,000	\$98,000
IT systems	\$60,000	\$25,000
Project manager*	0	\$65,000
Administrative expenses	\$35,000	\$50,000
Project cost	\$4,867,835	\$4,216,750

*Add \$60,000 for a halftime site representative in Phase 4

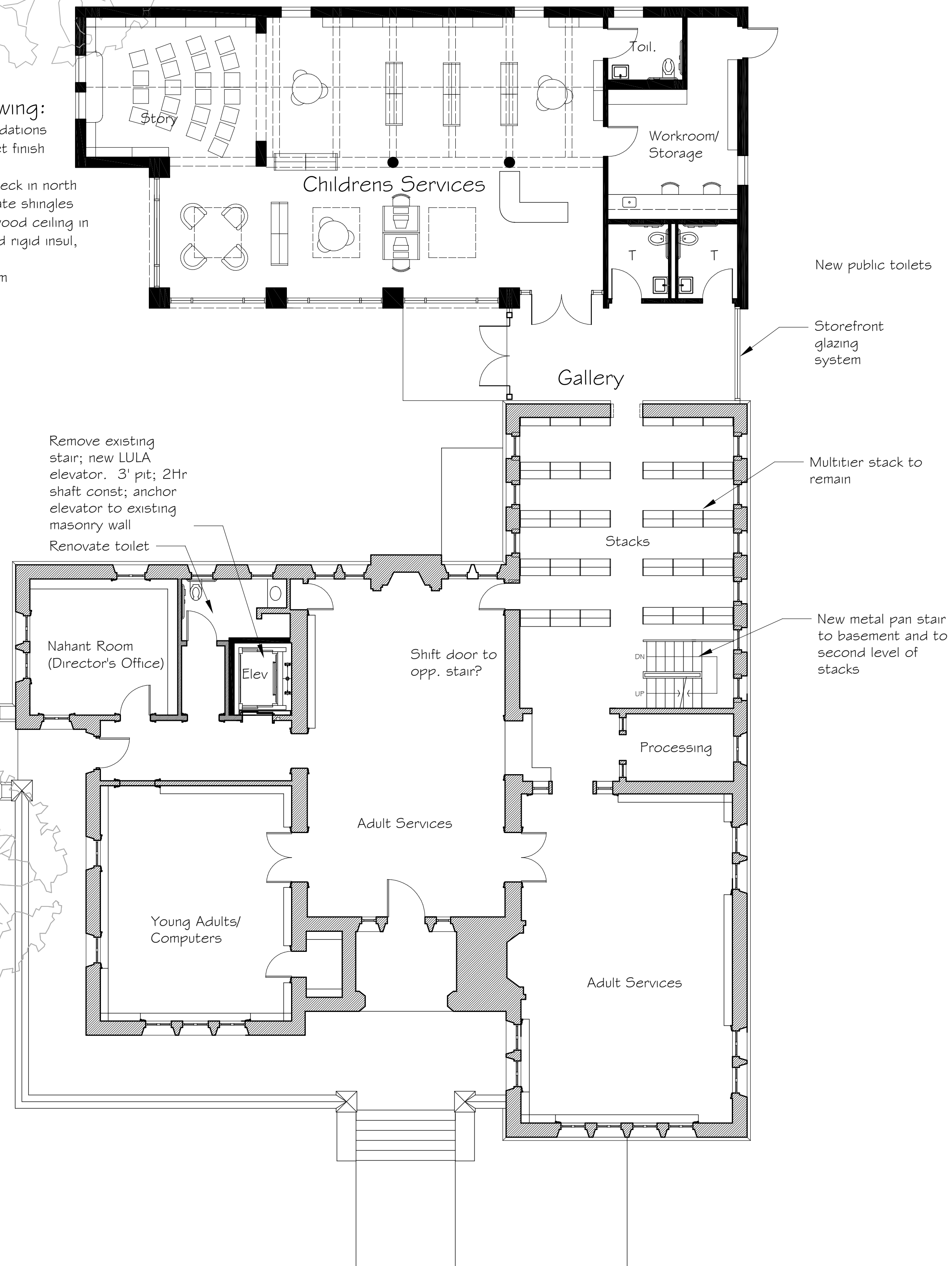
Depending on the schedule of the two phases, inflation may impact the ultimate cost. For planning purposes, the cost estimator recommends carrying 5% per year inflation, compounding over time.

The Phase 4 estimate includes, with markups, \$412, 693 for site utilities. This bears further analysis and field investigations to assess the size and condition of the sewer connection and whether the extensive on site stormwater management in the estimate will be required. A new water connection will be required for the fire protection system.

The Phase 4 construction estimate also includes \$745, 034 for the elevator and related construction, and \$383,795 for the stack room stair reconstruction. The benefit of this is accessibility and improved code compliance for the top floor Quiet Study room and the basement; there should be some analysis of whether the benefit justifies the cost.

New Children's wing:

Conc footings and foundations
5" slab on grade, carpet finish
GWB walls typical
Timber truss and T&G deck in north
bay; R30 rigid insul, slate shingles
Standard framing and wood ceiling in
south bay, R30 tapered rigid insul,
EPDM membrane
ACT ceiling in stackroom



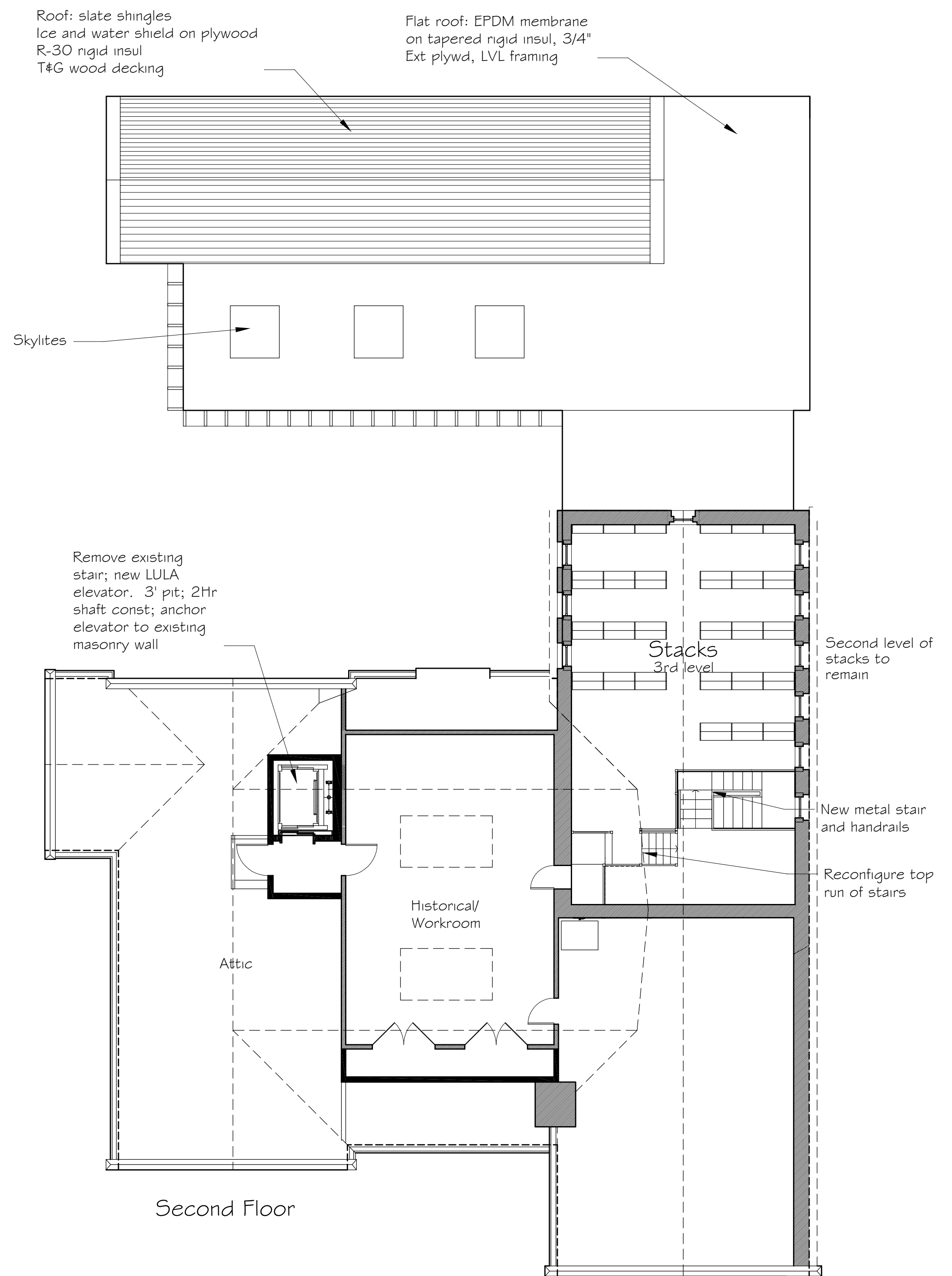
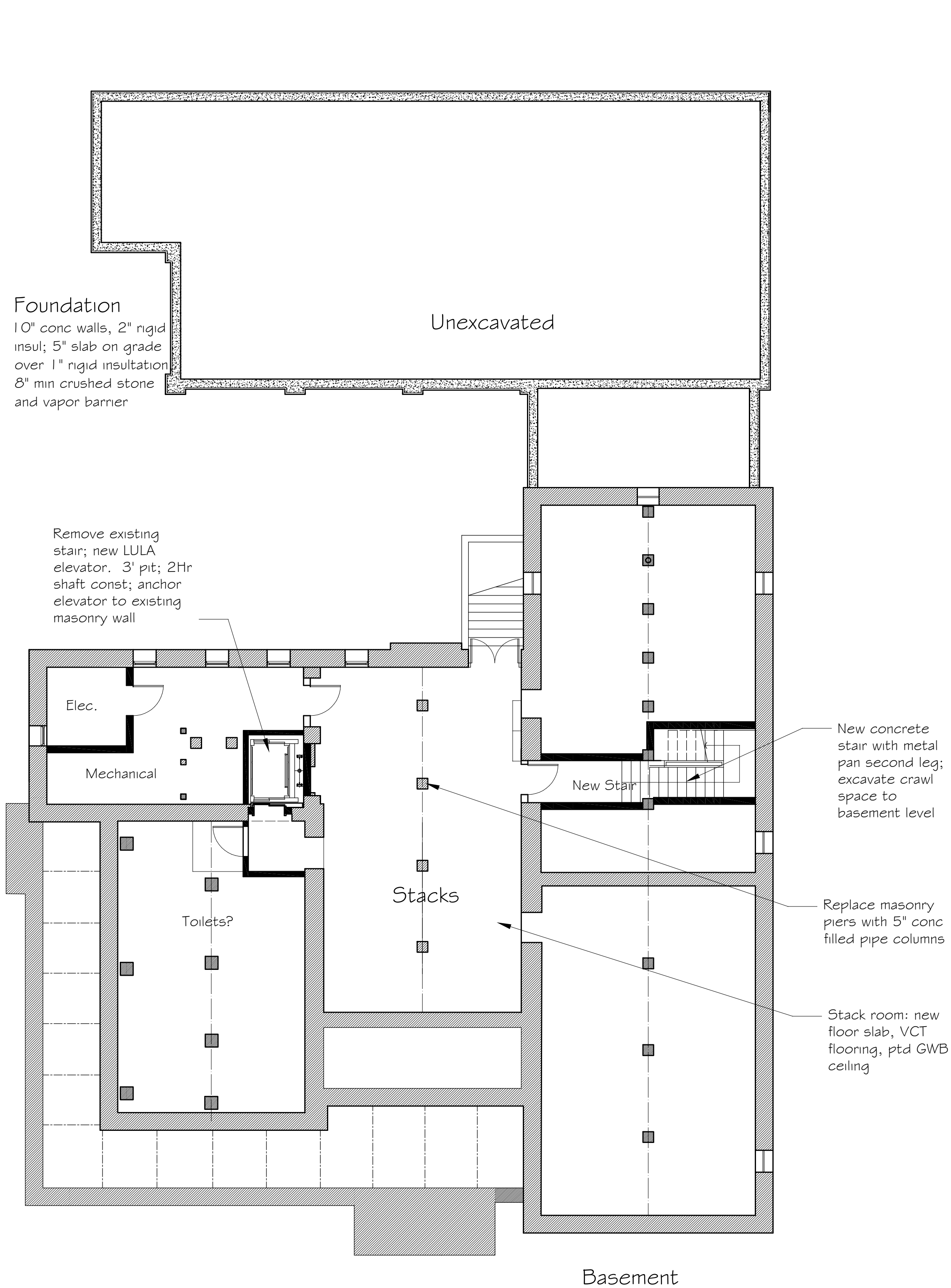
Alternate E:

- Children's Room is housed in a new wing marked by the Story Hour house facing the street; wing is treated as a garden pavilion with a pergola.
- Space between the historic library and the new wing is an outdoor program space
- No basement or large meeting room in the addition
- Addition does provide public toilets for adults and children's room
- Historic stacks remain in their existing location, capacity is slightly reduced by new stair to the basement
- The existing stair is replaced by a new elevator and shaft serving the basement and the top floor
- The basement remains storage space.
- The top floor becomes a reading/quiet study space that can also house small meetings; option to reinforce the floor system for more dense occupancy (max 49).
- The Director moves to the Nahant Room, which also houses historic collection shelving.
- The current Director's office becomes a processing space.
- The present Children's room becomes an adult reading room again with the potential to have meetings.
- The present Non-fiction Room also houses Young Adults, as well as computers.

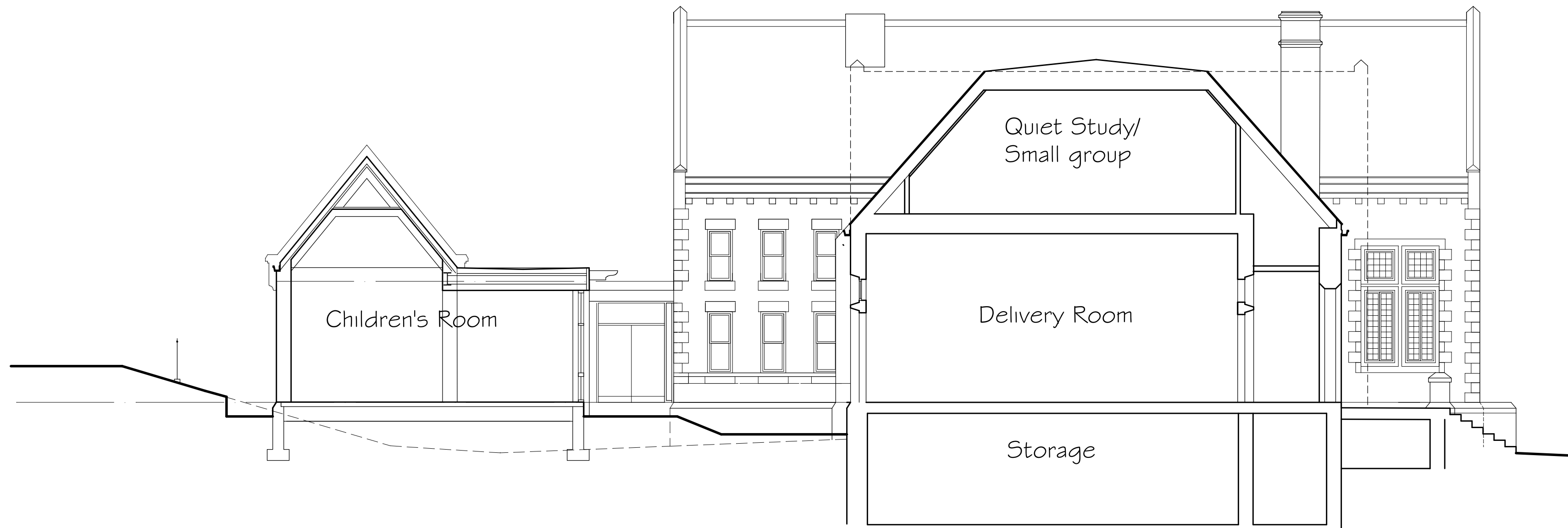
Nahant Public Library Master Plan Alternate E First Floor

1/8" = 1'-0"

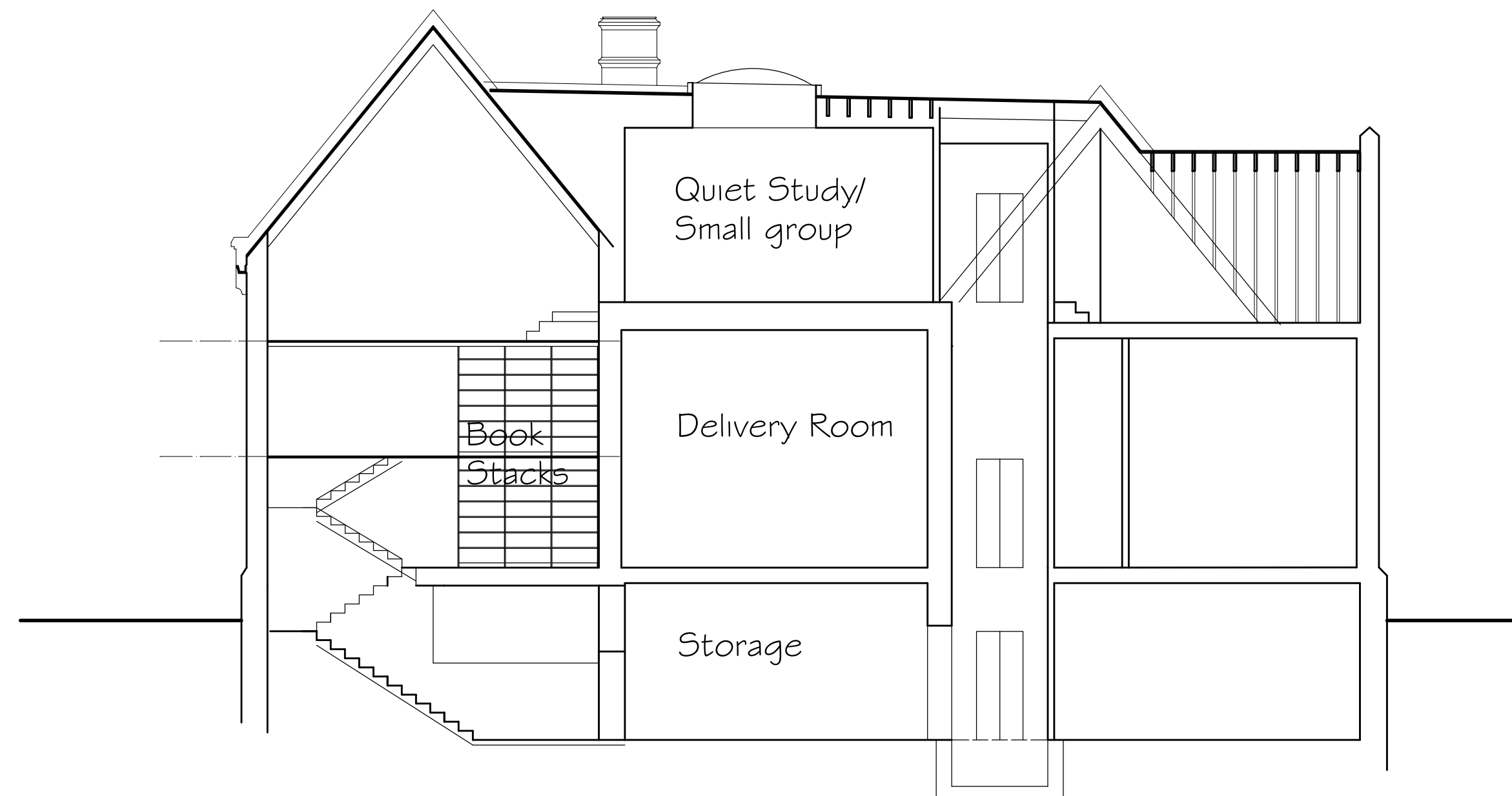
2 February 2025



Nahant Public Library
Master Plan Alternate E
2nd Floor & Basement
1/8" = 1'-0"
2 February 2025



North-South Section



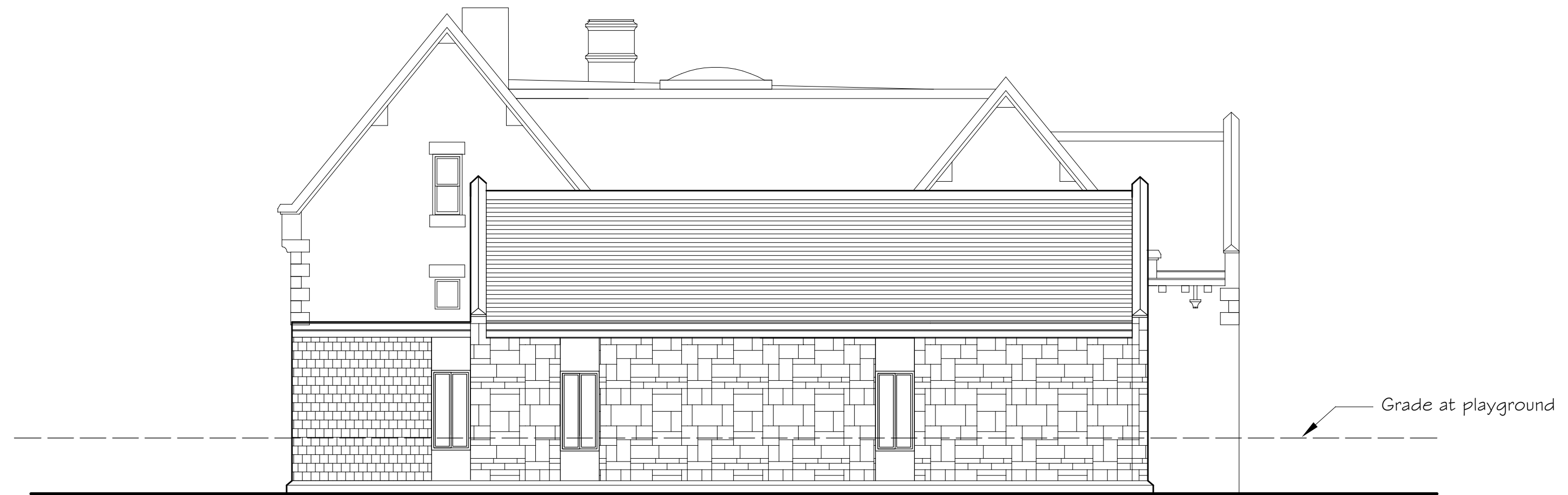
East- West Section at Existing Building



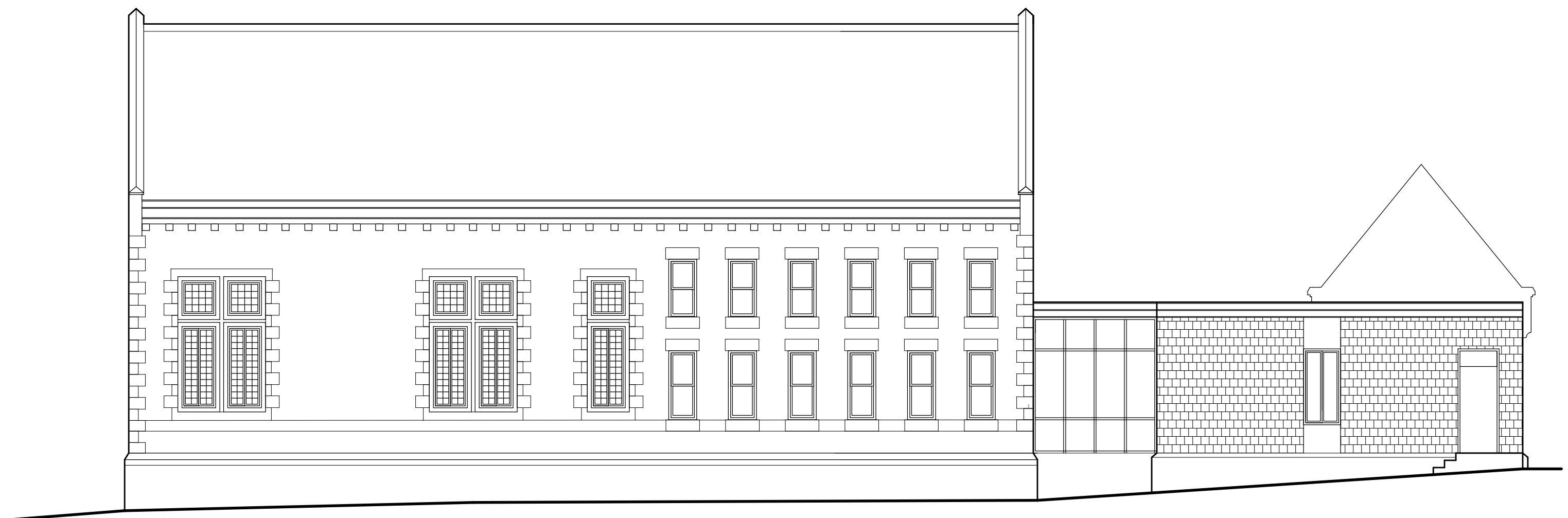
Proposed



Existing



Proposed North (Playground) Elevation



East Elevation



Nahant Public Library
Proposed addition



Nahant Public Library
Proposed addition



300 Wildwood Avenue
Suite 230
Woburn, MA 01801

781.933.2555 PHONE
781.932.9402 FAX
www.trcsolutions.com

January 22, 2019

Mr. Richard Smith
Adams & Smith, LLC
55 Thomas Road
Swampscott, MA 01907

RE: TRC Project 277027
Hazardous Building Materials Survey Report
Interior Planning and Space Need Assessment Project
Nahant Public Library
15 Pleasant Street, Nahant, Massachusetts

Dear Mr. Smith:

The enclosed report presents the findings of the hazardous building materials survey performed at the above-referenced location by TRC Environmental (TRC). The survey was performed on December 3, 2018 in support of the Library Interior Planning and Space Needs Assessment.

Should you have any questions or require additional information, please call at your convenience.

Sincerely,
TRC Environmental

Robert Thomson
Field Services Manager

Reviewed By:

Thomas Roche
Senior Project Manager

Enc.

Hazardous Building Materials Survey Report

Interior Planning and Space Need Assessment Project Nahant Public Library 15 Pleasant Street Nahant, Massachusetts

Prepared For:

Adams & Smith, LLC
55 Thomas Road
Swampscott, MA 01907

Prepared By:

TRC Environmental
300 Wildwood Avenue
Woburn, Massachusetts

TRC Project 321516

January 22, 2019

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Appendix A: Analytical Laboratory Report for Asbestos Bulk Samples

Appendix B: Lead Paint Testing Results by XRF Analysis

Appendix C: Summary of Observed Potentially Hazardous / Regulated Building Materials

EXECUTIVE SUMMARY

TRC Environmental (TRC) performed a survey for asbestos-containing materials (ACM), testing for lead paint and a visual inspection for mercury-containing devices, liquid polychlorinated biphenyl (PCB) containing electrical equipment, and other building materials that may require special handling and/or disposal as part of the Nahant Public Library Interior Planning and Space Needs Assessment Project. The asbestos survey and the hazardous/regulated building materials assessment was performed on December 3, 2018 by Commonwealth of Massachusetts Department of Labor Standards (MA DLS) certified asbestos inspector Mr. Robert Thomson (Certification No. AI-031431). The lead paint testing was performed by Mr. Thomas Roche on December 3, 2018. Mr. Roche is a Massachusetts Department of Public Health licensed lead inspector (License # 1676) and is factory trained in the use of the X-Ray Fluorescence (XRF) Spectrum Analyzer.

Asbestos Survey

Representative bulk samples of suspect ACM were collected from accessible interior and exterior areas of the building and analyzed to determine asbestos content. Asbestos-containing materials identified at the site include:

- Fibrous paper in the Attic above the Children's Room
- Exterior window glazing compound and caulking associated with brick molding on the Stack Area double hung windows

Due to the limited nature of the asbestos survey, additional site inspection and bulk sampling using destructive sampling methods is required prior to the start of any future renovation/demolition activities.

Note that TRC's survey was limited to readily accessible, representative areas of the building and did not include destructive investigation. Due to the limited nature of the asbestos survey, additional site inspection and bulk sampling using destructive sampling methods is required prior to the start of any future renovation/demolition activities.

The US EPA and MassDEP regulations require that regulated ACM be removed from a facility prior to renovation/demolition activities that may disturb the materials. Removal of ACM is required to be performed by a licensed asbestos contractor in accordance with federal, state and local regulations.

Lead Paint Testing

Lead paint testing was performed using an x-ray fluorescence spectrum analyzer (XRF) to determine the lead content of accessible interior and exterior painted building components. The purpose of the lead paint testing is to provide information for compliance with OSHA and US EPA requirements during renovation or demolition activities where painted surfaces will be disturbed. Renovation/demolition work that disturbs lead requires compliance with the OSHA lead standard (29 CFR 1926.62).

The lead content of the surfaces tested in a range from less than the lower limit of quantification for the XRF instrument of less than 0.05 milligrams per square centimeter of sampled surface area (mg/cm^2) to $35.0 \text{ mg}/\text{cm}^2$. Demolition waste containing lead must be characterized to determine disposal requirements (as construction debris or as hazardous waste). This can be accomplished by performing the toxicity characteristic leaching procedure (TCLP) or using other methods that accurately characterize the lead content of such waste.

Hazardous/Regulated Building Materials

TRC visually inspected accessible building areas and observed suspect potentially hazardous/regulated building materials including, but not limited to, mercury-containing devices, liquid PCB-containing electrical components, an above-ground storage tank and various stored items. These items should be removed from the building and either recycled or disposed in accordance with the Massachusetts Department of Environmental Protection (MA DEP) hazardous waste regulations, 310 CMR 30.000 and other applicable regulations.

1.0 SURVEY DESCRIPTION

1.1 Introduction

TRC Environmental (TRC) performed a survey for asbestos-containing materials (ACM), testing for lead paint and a visual inspection for mercury-containing devices, liquid polychlorinated biphenyl (PCB) containing electrical equipment, and other building materials that may require special handling and/or disposal as part of the Interior Planning and Space Needs Assessment Project at the Nahant Public Library, 15 Pleasant Street, Nahant, Massachusetts.

The asbestos survey and the hazardous/regulated building materials assessment was performed on December 3, 2018 by Commonwealth of Massachusetts Department of Labor Standards (MA DLS) certified asbestos inspector Mr. Robert Thomson (Certification No. AI-031431). The lead paint testing was performed by Mr. Thomas Roche on December 3, 2018. Mr. Roche is a Massachusetts Department of Public Health licensed lead inspector (License # 1676) and is factory trained in the use of the X-Ray Fluorescence (XRF) Spectrum Analyzer.

1.2 Purpose and Scope of Work

A visual survey was performed to determine the locations and approximate quantities of ACM in the building. The survey included accessible interior and exterior areas of the building. Bulk samples of suspect ACM were collected and submitted for analysis to determine asbestos content.

TRC used non-destructive inspection methods, which generally included lifting of ceiling tiles, peeling back carpet in corners of rooms and opening of access hatches to inspect concealed areas such as above ceilings, beneath finished floors and behind walls. Due to the limited nature of the asbestos survey not all building areas were inspected; additional site inspection and bulk sampling using destructive sampling methods is required prior to the start of any future renovation/demolition activities.

TRC performed testing of representative accessible interior and exterior painted building components to determine lead content using an x-ray fluorescence (XRF) spectrum analyzer.

TRC performed a visual inspection of accessible interior and exterior building areas and noted the presence of building materials that may require special handling and disposal prior to, or in conjunction with building renovations.

1.3 Survey Procedures

The asbestos survey was performed using guidelines established by the EPA guidance document "Guidance for Controlling Asbestos-Containing Materials in Buildings" (EPA 5605-85/024), 40 CFR Part 61 National Emission Standards for Hazardous Air Pollutants (NESHAP), Paragraph 61.145, Standard for Demolition and Renovation, EPA AHERA 40 CFR 763 and OSHA 1926.1101 regulations.

A visual survey was conducted of accessible interior and exterior areas of the building to identify the types, locations, and approximate quantities of ACMs, presumed ACM (as defined in 29 CFR 1926.1101), and otherwise suspect ACM. Building materials including thermal systems insulation; surfacing materials, and miscellaneous building materials were assessed as potential ACM. Where feasible, bulk samples of suspect ACM were collected in a random manner and submitted for laboratory analysis to determine asbestos content.

Note that multiple bulk samples are collected from each homogenous area of suspect ACM observed. In accordance with U.S. EPA guidelines, a minimum of two samples are collected from each homogenous area of miscellaneous and thermal system insulation materials and either three, five, or seven samples for each type of surfacing materials, depending on the quantity. If one percent or more asbestos is detected in any sample within a homogenous area of suspect ACM, then all of the suspect ACM within that homogeneous area must be treated as asbestos-containing material.

Concentrations of lead in paint were measured on site by portable XRF analysis. Lead paint testing was performed to determine the lead content of selected painted building components that may be impacted by demolition activities and may not be used to determine compliance with the Massachusetts Department of Public Health Childhood Lead Poisoning Prevention Program Regulations.

Visual observations of potentially hazardous/regulated materials were made to inventory these materials. Sampling of any suspect liquids or bulk materials was not performed as part of the inventory.

1.4 Analytical Methods

Asbestos bulk sample analysis was performed by EMSL Analytical, Inc., located in Woburn, Massachusetts, using Polarized Light Microscopy with Dispersion Staining (PLM/DS) in accordance with the United States Environmental Protection Agency (US EPA) "Method for the Determination of Asbestos in Bulk Building Materials", EPA/600/R-93/116. The EMSL laboratory is accredited through the National Institute of Standards and Technology, National Voluntary Laboratory Accreditation Program (No. 101147-0). The EMSL laboratory is certified by the Massachusetts DLS as a provider of asbestos analytical services. The bulk sample analysis report is provided as Appendix A.

The lead content of painted surfaces was determined using a portable XRF Spectrum Analyzer (NITON XLp 303AW; Serial No. 18580). The XRF Spectrum Analyzer uses a radioactive source to excite the electrons of lead atoms (if present) in paints. As the lead atom electrons return to their normal state, they emit X-rays, which are counted by the XRF Spectrum Analyzer. This data is processed and the results are converted to milligrams of lead per square centimeter (mg/cm²) of sampled surface area. Lead paint testing results are provided as Appendix B.

2.0 ASBESTOS SURVEY RESULTS

2.1 Summary of Observed Asbestos-Containing Materials

The US EPA defines ACM as any material that contains greater than one percent asbestos. The Massachusetts Department of Environmental Protection (DEP) defines ACM as any material that contains greater than or equal to one percent asbestos. A summary of observed suspect ACM, location, approximate quantity and laboratory analysis results are presented in the following summary table.

**Summary of Observed Suspect Asbestos-Containing Materials
Nahant Public Library
15 Pleasant Street
Nahant, Massachusetts
December 3, 2018**

Material Description	Location(s)	Approx. Quantity	Analytical Result	Condition
Ceiling and wall plaster	Basement, Stairwell, First Floor, Attic Storage Room	NQ	NAD	NA
Gypsum board	Basement	NQ	NAD	NA
Skim coat on brick columns	Basement	NQ	NAD	NA
Parge coat on stone foundation walls	Basement	NQ	NAD	NA
Interior window glazing compound	Stack Area, Children's Room, Reading Room	NQ	NAD	NA
Exterior window glazing compound, window sash	Stack Area	21 windows	Positive 2% Chrysotile Asbestos	Good
Caulk on wood brick mold	Stack Area	21 windows	Positive 10% Chrysotile Asbestos	Good

Summary of Observed Suspect Asbestos-Containing Materials
Nahant Public Library
15 Pleasant Street
Nahant, Massachusetts
December 3, 2018

Material Description	Location(s)	Approx. Quantity	Analytical Result	Condition
Caulk on wood brick mold	Casement windows	NQ	NAD	Good
Grout associated with red tile	Veranda	NQ	NAD	Good
Fibrous paper	Attic, above Children's Room	10 sq ft	Positive 70% Chrysotile Asbestos	Damaged
Ceramic floor tile grout and bedding mastic	First Floor Restroom	80 sq ft	Not Sampled Assumed positive	Good

Table Notes:

NQ = Not Quantified
NAD = No Asbestos Detected
NA = Not Accessible
sq ft = square feet

Note that additional suspect ACM may be present in the building in inaccessible areas including the space behind walls, above solid ceilings, in chases, below finished flooring, or in areas not included in our scope of work. Due to the limited nature of the asbestos survey, additional site inspection and bulk sampling using destructive sampling methods is required prior to the start of any future renovation/demolition activities.

2.2 Asbestos Recommendations

TRC recommends the following:

1. Perform additional asbestos inspection using destructive inspection techniques prior to any future renovation or demolition activities.
2. A Massachusetts DLS certified Project Designer should prepare a work plan for removal of all ACM that may be disturbed by any future renovation/demolition activities.
3. Additional suspect materials may be present in inaccessible areas such as within mechanical and electrical components, behind floor, wall, and ceiling finishes, inside chases and soffits, buried areas, etc. If additional suspect materials are encountered

during building maintenance, renovation, or demolition activities, then precautions should be taken to prevent disturbance of the suspect materials and bulk sampling and laboratory analysis should be performed to determine the materials asbestos content.

4. The US EPA Regulation 40 CFR Part 61 National Emission Standards for Hazardous Air Pollutants (NESHAP), Paragraph 61.145, Standard for Demolition and Renovation, and MassDEP requires that all regulated ACM be removed from a building prior to the start of renovation or demolition activities if the materials may be disturbed by these activities. Removal of ACM must be performed by a licensed asbestos contractor in accordance with federal, state, and local regulations.
5. A copy of this survey report must be maintained by the Town of Nahant at the building for review by or submittal to the MassDEP upon request at all times during any related asbestos abatement activities and for a minimum of two years following completion of abatement activities.

3.0 OTHER POTENTIALLY HAZARDOUS MATERIALS

TRC performed a visual inspection in representative, readily accessible interior areas for suspect mercury containing devices and suspect liquid polychlorinated biphenyl (PCB) containing electrical components and other potentially hazardous/regulated materials. Note that sampling and laboratory analysis was not performed to confirm our visual observations for mercury and PCB or other potentially hazardous building materials, except for lead paint, which was tested in the field using a portable XRF analyzer.

3.1 Mercury

Fluorescent lamps, a mercury switch on the boiler and flow meters associated with the gas and water meters are present in the building and are assumed to contain mercury.

All suspect mercury containing devices that are removed from the building should be treated by retort and distillation processes to recover and recycle the elemental mercury at an EPA permitted facility. Fluorescent lamps should be stored in containers specially designed for the intact storage of fluorescent lamps. Properly packaged fluorescent lamps may be stored for up to one year in a secure building location. Dispose of spent lamps at an authorized recycler, hazardous waste transporter, or other universal waste handler within one year of the date marked on the storage containers.

3.2 Polychlorinated Biphenyls (PCB)

A visual inspection of electrical equipment/components was performed to identify components that may contain suspect liquid PCBs. PCB-containing lamp ballasts are assumed present in the light fixtures.

Light fixture ballasts should be inspected for labels indicating “no-PCBs”. If ballasts are unmarked, they must be assumed to contain PCBs. At the time of the inspection, dismantling of fluorescent lamps was not performed to inspect for ballasts indicating “no-PCBs” due to building use and occupancy.

3.3 Additional Hazardous Materials

TRC noted the presence of other potentially hazardous/regulated building materials or stored items that may require special handling and/or disposal prior to future renovation/demolition activities.

White goods, refrigerants, smoke detectors, exit signs, an above-ground storage and various containers were observed in the building. Prior to any renovation or demolition, these items should be removed from the building, properly stored and evaluated for proper disposal.

White goods are banned from disposal by the Massachusetts DEP. Refrigerants are required to be removed from appliances in accordance with EPA protocols.

3.4 Potentially Hazardous/Regulated Materials Recommendations

Prior to any future renovation activities, mercury-containing lamps should be removed for recycling in accordance with MA DEP Universal Waste Rule, 310 CMR 30.1000.

All potentially hazardous building materials and stored items must be removed from the building prior to renovation activities for proper disposal in accordance with MA DEP hazardous waste regulations, 310 CMR 30.000 and other applicable federal and state regulations.

4.0 LEAD PAINT TESTING

4.1 Lead Paint Testing Results

Testing for lead paint was performed on representative interior and exterior painted surfaces. The lead content of painted surfaces was determined using a portable XRF Spectrum Analyzer. The results of the XRF testing are presented in Appendix B in milligrams of lead per square centimeter (mg/cm^2) of sampled surface area. XRF testing results indicate that levels of lead on the surfaces tested range from less than $0.05 \text{ mg}/\text{cm}^2$ (the lower limit of quantification of the XRF) to $35.0 \text{ mg}/\text{cm}^2$. Elevated levels of lead are present on exterior window sash and trim, exterior door frames, plaster and brick walls, wood and metal stair components and interior doors, windows and frames.

4.2 Lead Recommendations

1. Renovation/demolition work that disturbs lead requires compliance with the OSHA lead standard (29 CFR 1926.62). This standard applies to demolition where an employee may be occupationally exposed to lead. This standard does not establish a minimum threshold for the lead content below which an initial exposure assessment is not required. Note that specific work practices required under the OSHA Lead Construction Standard (29 CFR 1926.62) will depend on the actual worker's lead exposures, which are determined by initial exposure monitoring during the work activity.
2. Minimum OSHA requirements for workers exposed to lead include having a competent person, monitoring and documenting worker exposures, having a written lead compliance program, using proper housekeeping (e.g. HEPA vacuuming/wet cleaning methods), providing hygiene facilities (e.g. hand/face wash station), and hazard communication training for lead. Additional requirements apply to workers exposed above the lead Action Level or the Permissible Exposure Level (PEL) and to some trigger activities (torch burning, etc.).
3. Debris containing lead generated from construction activities must be characterized to determine disposal requirements (construction debris or hazardous waste). This can be accomplished by performing the toxicity characteristic leachate procedure (TCLP) or using other methods, which accurately characterize the waste.

5.0 LIMITATIONS

Services performed by TRC were conducted in a manner consistent with “state of the industry” practices, recognizing that even the most comprehensive inspection may not detect all suspect materials in a building. Reasonable measures were taken to detect the presence of normally suspect materials within the inspection areas, however, additional materials may be enclosed in solid walls and ceilings, or otherwise may be inaccessible and materials that are not normally suspect may contain hazardous materials. TRC cannot act as an insurer or certify that the site is free of asbestos or other hazardous materials. No expressed or implied representation or warranty is included in our report except that the services were performed within the limit of the scope of work authorized by the client and the encountered site conditions.

Lead testing was performed to evaluate OSHA worker protection requirements and may not be used to determine compliance with the Massachusetts Department of Public Health Childhood Lead Poisoning Prevention Program.

TRC did not disassemble mechanical or electrical equipment. Sampling and analysis of other suspect materials was not included in our scope of work.

APPENDIX A

ANALYTICAL LABORATORY REPORT FOR BULK SAMPLES



EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801

Tel/Fax: (781) 933-8411 / (781) 933-8412

<http://www.EMSL.com> / bostonlab@emsl.com

EMSL Order: 131809842

Customer ID: COVI50

Customer PO: 321516

Project ID:

Attention: Tom Roche

TRC

300 Wildwood Avenue

Woburn, MA 01801

Phone: (781) 933-2555

Fax:

Received Date: 12/03/2018 3:50 PM

Analysis Date: 12/06/2018

Collected Date: 12/03/2018

Project: 321516 / Nahant Public Library, 15 Pleasant St., Nahant, MA

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
01A 131809842-0001	Stairwell Wall - Plaster	Gray Non-Fibrous Homogeneous	2% Hair	98% Non-fibrous (Other)	None Detected
01B 131809842-0002	Attic Storage Rm Wall - Plaster	Gray Fibrous Homogeneous	2% Hair	98% Non-fibrous (Other)	None Detected
01C 131809842-0003	Bsmt Wall - Plaster	Gray Fibrous Homogeneous	2% Hair	98% Non-fibrous (Other)	None Detected
01D 131809842-0004	Stairwell Ceiling - Plaster	Gray Fibrous Homogeneous	2% Hair	98% Non-fibrous (Other)	None Detected
01E 131809842-0005	Attic Storage Area Ceiling - Plaster	Gray Fibrous Homogeneous	2% Hair	98% Non-fibrous (Other)	None Detected
02A 131809842-0006	Bsmt Ceiling - Plaster	Gray Fibrous Homogeneous	2% Hair	98% Non-fibrous (Other)	None Detected
02B 131809842-0007	Bsmt Ceiling - Plaster	Gray Fibrous Homogeneous	2% Hair	98% Non-fibrous (Other)	None Detected
02C 131809842-0008	Bsmt Ceiling - Plaster	Gray Fibrous Homogeneous	2% Hair	98% Non-fibrous (Other)	None Detected
03A 131809842-0009	Bsmt Wall - Gypsum Board	Gray Non-Fibrous Homogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
03B 131809842-0010	Bsmt Wall - Gypsum Board	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
04A 131809842-0011	Bsmt Column - Skim Coat on Brick	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
04B 131809842-0012	Bsmt Column - Skim Coat on Brick	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
04C 131809842-0013	Bsmt Column - Skim Coat on Brick	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
05A 131809842-0014	Bsmt Stone Foundation - Parged Coating	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
05B 131809842-0015	Bsmt Stone Foundation - Parged Coating	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
05C 131809842-0016	Bsmt Stone Foundation - Parged Coating	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 12/06/2018 16:52:52



EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801

Tel/Fax: (781) 933-8411 / (781) 933-8412

<http://www.EMSL.com / bostonlab@emsl.com>

EMSL Order: 131809842

Customer ID: COVI50

Customer PO: 321516

Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos % Type
			% Fibrous	% Non-Fibrous	
06A 131809842-0017	Stairwell Attic Interior Double Hung Window - Glazing Compound	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
06B 131809842-0018	Stairwell Attic Interior Double Hung Window - Glazing Compound	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
07A 131809842-0019	Stack Area Double Hung Window - Exterior Glazing Compound	Gray Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
07B 131809842-0020	Stack Area Double Hung Window - Exterior Glazing Compound				Positive Stop (Not Analyzed)
08A 131809842-0021	Bsmt Window - Exterior Glazing Compound	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
08B 131809842-0022	Bsmt Window - Exterior Glazing Compound	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
09A 131809842-0023	Children Rm Casement Window - Interior Glazing Compound	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
09B 131809842-0024	Reading Room - Interior Glazing Compound	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
10A 131809842-0025	Stack Area Double Hung Window - Caulk on Brick Mold	Black Non-Fibrous Homogeneous		90% Non-fibrous (Other)	10% Chrysotile
10B 131809842-0026	Stack Area Double Hung Window - Caulk on Brick Mold				Positive Stop (Not Analyzed)
11A 131809842-0027	Reading Room Casement Window - Caulk on Brick Mold	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
11B 131809842-0028	Side Entry Door - Caulk on Brick Mold	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
11C 131809842-0029	Childrens Room Casement Window - Caulk on Brick Mold	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
12A 131809842-0030	Veranda Exterior - Grout Assoc. w/Red Tile	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
12B 131809842-0031	Veranda Exterior - Grout Assoc. w/Red Tile	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
13A 131809842-0032	Attic Above Childrens Room - Fibrous Paper	White Fibrous Homogeneous		30% Non-fibrous (Other)	70% Chrysotile
13B 131809842-0033	Attic Above Childrens Room - Fibrous Paper				Positive Stop (Not Analyzed)

Initial report from: 12/06/2018 16:52:52



EMSL Analytical, Inc.

5 Constitution Way, Unit A Woburn, MA 01801

Tel/Fax: (781) 933-8411 / (781) 933-8412

<http://www.EMSL.com> / bostonlab@emsl.com

EMSL Order: 131809842

Customer ID: COVI50

Customer PO: 321516

Project ID:

Analyst(s)

Kevin Pine (30)

Steve Grise, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-139, VT AL998919, Maine Bulk Asbestos LB-0039

Initial report from: 12/06/2018 16:52:52

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (Lab Use Only):

131809842EMSL ANALYTICAL, INC.
5 CONSTITUTION WAY, UNIT A
WOBURN, MA 01801

PHONE: (781) 933-8411

FAX: (781) 933-8412

Company : TRC		EMSL#: COVI51		EMSL-Bill to: ☒ Same ☐ Different If Bill to is Different note instructions in Comments**	
Street: 300 Wildwood Avenue				Third Party Billing requires written authorization from third party	
City: Woburn	State: MA	Zip: 01801	Phone #: 781-933-2555	Purchase Order:	
Report To (Name): T Roche			Project Name: Nahant Public Library		
Email Address: T.Roche@tresolutions.com			Project Number: 521516		
Please Provide Results: ☒ Email ☐ Other:			Project Address: 15 Pleasant St., Nahant		
			U.S. State Samples Taken: MA		
Turnaround Time (TAT) Options - Please Check					
☐ 3 Hour*	☐ 6 Hour*	☐ 24 Hour	☐ 48 Hour	☒ 72 Hour	☐ 96 Hour ☐ 1 Week ☐ 2 Week
*Same Day - Rush - 3 Hour - 6 Hour Turnaround Time Not Available Due to Method, Matrix and/or Laboratory Restrictions					
PLM - Bulk (reporting limit)			TEM - Bulk		
☒ PLM EPA 600/R-93/116 (<1%)			☐ TEM EPA NOB - EPA 600/R-93/116 Section 2.5.5.1*		
☐ PLM EPA NOB (<1%)*			☐ NYS NOB 198.4 (TEM)*		
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)			☐ Chatfield Protocol (semi-quantitative)*		
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)*			☐ TEM % by Mass - EPA 600/R-93/116 Section 2.5.5.2*		
☐ NIOSH 9002 (<1%)			☐ TEM Qualitative via Filtration Prep Technique*		
☐ NY ELAP Method 198.1 (friable in NY)*			☐ TEM Qualitative via Drop Mount Prep Technique*		
☐ NY ELAP Method 198.6 NOB (non-friable-NY)*			Other:		
☐ OSHA ID-191 Modified			☐		
☐ Standard Addition Method*					
☒ Check For Positive Stop - Clearly Identify Homogenous Group				Date(s) Sampled: 12-3-18	
Samplers Name: Robert Thomsen			Samplers Signature: [Signature]		
Sample #	HA #	Sample Location	Material Description		
01 A		Stairwell wall	Plaster		
01 B		Attic Storage Rm wall	Plaster		
01 C		Basmt wall	Plaster		
01 D		Stairwell ceiling	Plaster		
01 E		Attic Storage Area ceiling	Plaster		
02 A		Basmt ceiling	Plaster		
02 B		" "	" "		
02 C		" "	" "		
03 A		Basement wall	Gypsum board		
03 B		" "	" "		
Client Sample # (s): 01-13		Total # of Samples: 34			
Relinquished (Client): [Signature]		Date: 12-3-18		Time:	
Received (Lab):		Date:		Time:	
Comments/Special Instructions:					



EMSL ANALYTICAL, INC.
LABORATORY PRODUCTS-TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (Lab Use Only):

131809842

EMSL ANALYTICAL, INC.
5 CONSTITUTION WAY, UNIT A
WOBURN, MA 01801

PHONE: (781) 933-8411
FAX: (781) 933-8412

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
04A		Bsmt column	Skim coat on Brick
04B		" "	" "
04C		" "	" "
05A		Bsmt Stone foundation	Painted coating
05B		" "	" "
05C		" "	" "
06A		Stairwell Attic Interior Double Hung window	Glazing compound
06B		" "	" "
07A		Stack area Double Hung window	Exterior Glazing compound
07B		" "	" "
08A		Bsmt window	Exterior Glazing compound
08B		" "	" "
09A		Children's Rm Casement window	Interior Glazing compound
09B		Reading Room	" "
10A		Stack Area Double Hung window	Caulk on Brick mold
10B		" "	" "
10C		Reading Rm Casement window	" "
11B		Side Entry door	" "
11C		Children's Rm Casement window	" "
12A		Veranda: Exterior	Grout Assoc with Red Tile
12B		↓	" "
13A		Attic Above Children's Room	fibrous paper
13B		" "	" "
*Comments/Special Instructions:			

Page ____ of ____ pages

APPENDIX B

LEAD PAINT TESTING BY XRF ANALYSIS

Lead Testing Results by XRF
Nahant Public Library
15 Pleasant Street
Nahant, Massachusetts
December 3, 2018

<u>Location/Component</u>	<u>Substrate</u>	<u>Result (mg/cm²)</u>
Basement		
Wall	Stone	< 0.05
Wall	Stone	< 0.05
Wall	Brick	< 0.05
Wall	Brick	< 0.05
Wall	Plaster	< 0.05
Wall	Plaster	< 0.05
Column	Brick	< 0.05
Column	Brick	< 0.05
Ceiling	Plaster	< 0.05
Ceiling	Plaster	< 0.05
Door surround	Gypsum	< 0.05
Door surround	Gypsum	< 0.05
Door	Wood	< 0.05
Door casing	Wood	< 0.05
Beam	Wood	< 0.05
Beam	Wood	< 0.05
Newel post	Wood	0.18
Handrail	Wood	< 0.05
Stair tread	Wood	0.26
Stair riser	Wood	0.20
Stair stringer	Wood	0.05
First Floor		
Wall panel	Wood	0.13
Wall panel	Wood	< 0.05
Wall	Plaster	0.05
Wall, hallway at Trustees Room	Plaster	35.0
Wall	Brick	15.2
Wall	Brick	18.9
Chair rail	Wood	< 0.05

Lead Testing Results by XRF
Nahant Public Library
15 Pleasant Street
Nahant, Massachusetts
December 3, 2018

<u>Location/Component</u>	<u>Substrate</u>	<u>Result (mg/cm²)</u>
Chair rail	Wood	< 0.05
Lower wall panel	Wood	0.18
Lower wall panel	Wood	< 0.05
Wall, Trustee's Room	Plaster	19.5
Wall, Restroom	Plaster	< 0.05
Wall, book stacks	Plaster	17.1
Windowsill	Wood	< 0.05
Window sash	Wood	< 0.05
Window casing	Wood	0.20
Windowsill	Wood	0.21
Window sash	Wood	0.13
Window casing	Wood	< 0.05
Windowsill	Wood	0.11
Window sash	Wood	0.19
Window casing	Wood	0.10
Door	Wood	< 0.05
Door casing	Wood	0.10
Door	Wood	0.05
Door casing	Wood	< 0.05
Mezzanine		
Ceiling	Wood	< 0.05
Ceiling	Wood	< 0.05
Wall	Brick	16.5
Wall	Brick	16.9
Bookshelves	Metal	< 0.05
Bookshelves	Metal	< 0.05
Windowsill	Wood	< 0.05
Window sash	Wood	0.12
Windows casing	Wood	0.16
Stair railing	Metal	3.2

Lead Testing Results by XRF
Nahant Public Library
15 Pleasant Street
Nahant, Massachusetts
December 3, 2018

<u>Location/Component</u>	<u>Substrate</u>	<u>Result (mg/cm²)</u>
Stair stringer	Metal	9.8
Book Sale		
Floor	Wood	< 0.05
Floor	Wood	< 0.05
Truss	Wood	0.09
Truss	Wood	0.07
Ceiling/roof	Wood	0.09
Ceiling/roof	Wood	0.06
Storage		
Ceiling	Plaster	< 0.05
Ceiling	Plaster	< 0.05
Wall	Plaster	< 0.05
Wall	Plaster	< 0.05
Baseboard	Wood	0.05
Door	Wood	0.06
Door casing	Wood	< 0.05
Floor	Wood	0.12
Back Stair		
Wall	Plaster	9.7
Exterior		
Windowsill	Wood	3.6
Window casing	Wood	4.3
Window sash	Wood	0.5
Window sash	Wood	0.6
Window sash	Wood	0.6
Window sash	Wood	0.4
Window sash	Wood	0.5
Window sash	Wood	1.3
Windowsill	Wood	13.5
Window casing	Wood	14.1

Lead Testing Results by XRF
Nahant Public Library
15 Pleasant Street
Nahant, Massachusetts
December 3, 2018

<u>Location/Component</u>	<u>Substrate</u>	<u>Result (mg/cm²)</u>
Windowsill	Wood	11.1
Window casing	Wood	8.8
Door	Wood	< 0.05
Door casing	Wood	1.8
Door	Wood	< 0.05
Door jamb	Wood	5.0

- <0.05 = less than the limit of quantification of the XRF.
- mg/cm² = milligrams of lead per square centimeter of sampled surface area.

APPENDIX C

INVENTORY OF OBSERVED POTENTIALLY HAZARDOUS/REGULATED BUILDING MATERIALS

**Inventory of Observed Potentially Hazardous Equipment and Stored Items
Nahant Public Library
15 Pleasant Street
Nahant, Massachusetts
December 3, 2018**

Item	Size	Approximate Quantity
Fluorescent lamps	4' x 2	8 lamps 4 ballasts
	1' x 1	1 lamp 1 ballast
Stored Lamps	N/A	2 each
Fire Alarm (battery)	N/A	2 each
Mercury Switch (on boiler)	N/A	1 each
Oil tank	275 gallon	2 each
Paint cans	Gallon	8 each
	5-Gallon	4 each
	Quart	4 each
Flow meter	Water meter	1 each
	Gas meter	1 each
Smoke detector	N/A	4 each
Fire extinguisher	N/A	3 each
Emergency lights (battery)	N/A	2 each

27 November 2018

Attn: Richard Smith
Adams & Smith LLC
55 Thomas Road
Swampscott, MA 01907

Reference: Nahant Public Library
15 Pleasant Street
Structural Conditions Assessment & Load Ratings

Dear Richard:

We recently met with you and library director Sharon Hawkes to observe the existing interior structural conditions of the library. For the purposes of this report the building faces south. Following is a summary of our noted conditions and *recommendations*, which are described in italics.

General Description

The Nahant Public Library is a two-story mass masonry building that was originally constructed in the late 1800s. The building has two gables that run north-south with a flat roof section in between; the flat roof section is flanked with sloping sections that create valleys with each adjacent ridgeline. The first floor framing generally spans east-west and is supported by bearing pockets at the exterior masonry walls and interior timber beams at the approximate midpoint of the three main basement areas. One exception is the area immediately below the bathrooms spans north-south. The timber beams span north-south and are supported at their ends by bearing pockets at their ends and intermediate brick piers along their lengths. One exception is the north end of the delivery room beam, which cantilevers just past the north-most brick pier and does not extend to the exterior wall. The interior basement is separated into three areas: a full basement below the delivery room and bathrooms, a section below the reading room that has low headroom and a crawlspace below the book stacks and children's room. A separate basement space below L-shaped exterior terrace is accessed from a small hole in the west wall of the reading room section. The terrace is supported by brick masonry arches that span between steel beams that run perpendicular to the exterior wall. Supplemental CMU pier supports were added at the mid-span of the terrace steel beams, and a supplemental beam supported by CMU piers was added under the west edge of the reading room. The piers below the terrace and beam below the reading room were likely installed to alleviate issues with the rusting steel beams and rotted joist ends, respectively. This supplemental work was likely performed sometime before 1997 since this work does not appear to be part of the scope shown in the available drawings from that time.

Noted Conditions and *Recommendations*

The steel beams that support the areaway brick arches are severely corroded and causing rust-jacking in several locations (see photos #1 & 2 on page 1 of the Appendix). The drain pipe for the rain leaders has broken in several locations and sections are lying on the ground. The excessive amount of water due to the broken pipe in this space has likely accelerated the corrosion of the steel beams.

The terrace will need to be completely reconstructed. One option is installing a new cast-in-place concrete structural slab, either formed or on galvanized corrugated metal deck. The slab would then receive a waterproofing membrane and drainage mat, then and a finish such as tiles or pavers. Another option is to place a cast-in-place concrete slab-on-grade, filling the space below the slab with crushed stone. Both options are viable and have costs and benefits associated with each; for example, the framed slab will likely be more expensive, yet will provide better access for any future maintenance of drainage pipes. Maintenance concerns may be alleviated if the drains can be re-routed in a more direct manner, however their outfall should be verified to determine if this is a viable option.

For either option the masonry will require substantial repair and reconstruction due to the existing damage from rust-jacking beam ends.

Use of the L-shaped terrace should be limited until permanent repairs and reconstruction can be completed. Since the main entrance cannot be shut down without causing an egress issue, temporary shoring should be added under this area.

The original framing of the reading room consists of full-dimension 2x10 joists at 14-16" on-center that is supported by a full-dimension 6½x10¾ timber beam supported by masonry piers. The supplemental beam consists of a nominal triple 2x12, however there are several splices in this member, and therefore it was evaluated as a double 2x12. There were a few locations where bridging was not nailed and there is no bridging or blocking over the beams (see photo #3 on page 2 of the Appendix). Foundation conditions are unknown and were not evaluated.

Per the 2015 International Existing Building Code (IEBC), the existing framing does not need to be evaluated if the stresses are not being increased by more than 5%. Currently there are no planned modifications to the layout of this area, however the original framing in the reading room has sufficient capacity to support current code-prescribed live loads of 60 pounds per square foot (psf) at the reading room with an allowance for 150 psf live load at the perimeter where the bookshelves are located with a dead load allowance of 20 psf.

The supplemental beam does not meet the requirements of the current code. While stresses are not being increased per any proposed modifications, a new laminated veneer lumber (LVL) sister, re-nailing of existing bridging where required, and the addition of solid blocking over the bearing lines should be considered to improve the performance of the floor system in this area. Any new sistering should span from support-to-support with no splices in the middle of the span.

The framing of the delivery room consists of full-dimension 2x10 joists at 18" on-center that is supported by a timber beam supported by masonry piers. The timber beam is partially concealed by the plaster ceiling, and therefore its exact size is unknown, however it a minimum of 6x8, and likely greater. The ceiling in the southeast corner above the HVAC system has failed, however this does not appear to be related to any structural failure, but rather is likely due loss of plaster strength and/or strapping fasteners failing in withdrawal. The north end of the main beam does not extend to the exterior wall and it is unclear whether or not the last joist is supported at its mid-span.

Similar to what is noted above for the reading room, the framing does not need to be evaluated, however the floor joists have a live load capacity of at least 100 psf, which is specified in the code for first floor corridors (a dead load allowance of 20 psf is included in this analysis). The ceiling in the southeast corner will need to be removed and replaced, at which time the main beam size can be verified and evaluated. Additionally, an exploratory hole should be made at the north end of the main beam to verify if there is any existing flush-framed support for the last joist, and if not additional support should be added. Blocking may be considered above the bearing line, similar to that noted above.

The framing of the stack area and children's room is similar to the rooms described above, yet below the stack room the brick piers are spaced more frequently and align with steel beams that support the stacks.

Similar to what is noted above for the reading room, the framing does not need to be evaluated, however the floor joists and center beam have sufficient capacity to support current code-prescribed live loads of 60 pounds per square foot (psf) at the reading room with an allowance for 150 psf live load at the perimeter where the bookshelves are located. The steel beams have a sufficient capacity to support the two levels of stacks and the glass floor section between stacks on the second floor. Blocking may be considered above the bearing line, similar to what is noted above.

Attic joists are framed east-west similar to the delivery room below, yet without any center support.

Similar to what is noted above, the framing does not need to be evaluated, however the floor joists and center beam have sufficiently less capacity due to the lack of center support that exists at the first floor. The live load capacity of this floor framing is 37-psf with a dead load allowance of 20 psf. Use of the space should be monitored and clarified as to avoid being overloaded in a storage capacity.

Many of the mortar joints at the interior face of the basement have eroded.

The foundation walls will require a deep cut & pointing operation at the stone portions, and a more conventional repointing at the brick sections above. A "deep" cutting and pointing operation is recommended for the stone portions of the foundation walls due to the thickness of the stone units and the likelihood that the original soil backfill has settled and/or eroded and caused voids on the soil-side of the wall. For this process a bonding agent should replace 1/3 of the mix water in order to improve the bond with the relatively low porosity rubble stones. A compatible mortar, such as Type N (1:1:6, cement: lime: sand) should be used for the more conventional repointing at the brick sections. The mortar should be hand-batched per the proportion spec of ASTM C1713 should be used as most pre-bagged mortars do not list the proportions of components and most are intended for use in modern masonry applications. If pre-bagged mortars are used, they should be specifically intended for historic masonry with the proportions clearly listed. While this area is not visually exposed, the exact proportions of the mortar (or product if an acceptable pre-bagged mortar is used) and all admixtures or pigments used should be recorded so that they can be replicated if necessary for any future work, particularly if sections are phased. All repointing work should follow removal of any existing coatings, which usually inhibit moisture transportation and accelerate deterioration.

We trust this information will help in determining your next steps. Please let us know if we can be of further assistance. If you have any questions regarding this report, please do not hesitate to contact us.

Report Limitations

This report is a summary of readily visible observations conducted during a single visit to the property. No finishes were removed to expose hidden structure and no calculations have been performed to determine if the overall building framing or foundations of the structure comply with past or present building codes except where specifically noted. This report is strictly limited to interior structural considerations unless specifically noted otherwise. Egress, guard rails, fire protection, and other building systems were not reviewed, and they are beyond the scope of this report.

Respectfully Yours,
Structures North Consulting Engineers, Inc.



Greg Nowak, E.I.T
Project Manager

Attachment: Appendix, 3-pages, including cover

APPENDIX

Page 1

Photo #1: Corroded steel beam end at interior/west edge of reading room

Photo #2: Damaged masonry at exterior, likely due to rust-jacking beam end

Page 2

Photo #3: Bridging missing nailing and lack of bridging at bearing line

Photo #4: Deteriorated joints in masonry foundation wall



Photo #1

Corroded steel beam end at interior/west edge of reading room



Photo #2

Damaged masonry at exterior, likely due to rust-jacking beam end



Photo #3

Bridging missing nailing and lack of bridging at bearing line



Photo #4

Deteriorated joints in masonry foundation wall

**Nahant Public Library
Nahant, MA**

2018

MEPFP Systems Evaluation



Prepared For:
Adams & Smith LLC
55 Thomas Rd.
Swampscott, MA

Prepared By:

BLW Engineers, Inc.

311 Great Road

P.O. Box 1551

Littleton, MA 01460

11/12/2018

FIRE PROTECTION

Summary of Existing Conditions

Currently the building is not provided with an automatic fire suppression system.

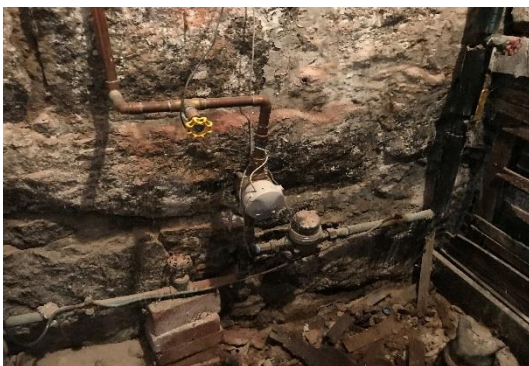
Recommendations

Should the proposed renovations be deemed substantial and/or required by the local fire dept. a new NFPA-13 system would be provided. A new water service would be required from the municipal main. New backflow and alarm check valves would be installed in the basement utility room. Care would be required to keep the ornate details and preserve the historic nature of the building while running the proposed sprinkler piping. It is assume the distribution for first floor would be run in the attic to avoid disrupting the ceilings. Any unheated areas would be provided with a dry type system. All levels of stacks, small rooms and crawl spaces would require sprinkler coverage.

PLUMBING

Summary of Existing Conditions

Domestic water enters the building in (1) location. A 1" service and associated meter is provided. Piping is a combination of steel and copper piping. The piping was noted to be in fair to poor condition.



Water Meter

Domestic hot water was produced via (2) 10 gal electric tank type hot water heaters installed in the ceiling of the basement. The tanks were showing signs of age and appear to be outside of their warrantee period.



Hot Water Heater

Sanitary piping is a mixture of cast iron, copper and PVC. It is noted that PVC should not be used in this commercial application per 248 CMR. The remainder of piping was in fair to poor condition.



Sanitary Piping

Natural gas appears to be the current fuel source. A single gas meter is provided and a 2" main serves the existing steam boilers. The gas piping appeared to be in good condition.



Gas Meter

There were no flat roofs or roof drains, all storm water was conveyed via gutters and downspouts to the site system.



Typical Plumbing Fixtures



Typical Plumbing Fixtures

Plumbing fixtures were standard grade tank type toilets and counter mounted vanities. Fixtures appeared close to the end of their useful life and are not ADA compliant.

Recommendations

In general the plumbing systems are obsolete for any major renovations. Due to the assumed age of the existing domestic water and sewer mains BLW would recommend new services be brought into the building. New water conserving/ADA/commercial grade plumbing fixtures would be provide in the facility. Either high efficient heat pump type water heaters or tankless water heaters would be utilized to provide the system with hot water. The system would be fully recirculated. Should the gas meter be in a suitable position, this could remain as it appears in good condition pending the gas load is not increased. Due to the existing sanitary invert elevations, it should be noted any basement plumbing fixtures would be required to be pumped. All water piping would be insulated copper, sanitary/vent would be copper/cast iron and gas piping would be specified as schedule 40 black iron.

End of Section

HEATING, VENTILATING AND AIR CONDITIONING

Summary of Existing Conditions

The building is heated with a natural gas boiler located in the basement. Steam is distributed throughout the building with a steam supply and condensate return piping system. Spaces are heated by steam radiators. Ventilation is through ductwork and floor grille.

Bathroom ventilation is through operable windows and there is no exhaust fan.



Steam Radiator



Boiler Feed



Steam Boiler

Recommendations

The heating system appears to be past its useful life expectancy and should be replaced in its entirety.

BLW would recommend a new Variable Refrigerant System to provide heating and cooling throughout the building consisting of fan coils and heat pumps. New fan coils and ductwork would be provided for each space to provide zone control. Refrigerant pipe would extend from each fan coil to the outdoor heat pump.

Ventilation air would be provided through an energy recovery ventilator, exhaust and supply air ductwork and wall louvers.

Bathroom exhaust shall be provided with an exhaust fan, exhaust ductwork and wall louvers.

ELECTRICAL SYSTEMS

Electrical Service and Distribution

Summary of Existing Conditions

The main service originates from a 240 volt, 1-phase utility pole mounted transformer on Pleasant Street, runs overhead to another utility pole located at the rear of the property, continues overhead to a weatherhead attached to the back of the building and terminates at an exterior Utility Meter. The service enters the basement through a 2" conduit and terminates in a loadcenter. The service size is unmarked, but believed to be a 200 amp, 120/240 volt, 1-phase, 3-wire service.



The main panelboard is a Murray 200 amp 120/240 volt, 1-phase, 3-wire, 30-circuit load center with no spares or spaces available. There is a second load center located directly to the right of the main panel which contains (24) spaces. Both panels appear to be in good condition and are approximately 5-10 years old.



Recommendations

The service entrance feeders and main service equipment are not of sufficient size to provide adequate power to a building of this size and type and the distribution is outdated and has no spare capacity. A new 800 amp, 120/208 volt, 3-phase, 4-wire service shall be provided in the

basement with underground feeders to a new utility pad-mounted transformer.

Fire Alarm

Summary of Existing Conditions

The building has an existing conventional 4-zone fire alarm control panel located at the entrance off Pleasant Street. The FACP is of an obsolete vintage and is past its expected life. The fire alarm system is connected to the Nahant fire department via a fire alarm communicator.



There are manual pull stations located within 5'-0" of existing doors in accordance with NFPA 72, however, many of the pull stations are at the incorrect ADA-required height. There are horn/strobe devices located sporadically throughout the building, but the notification coverage appears inadequate and does not meet current code requirements. The system also contains smoke and heat detectors throughout the facility.



Recommendations

It is recommended that the entire system be replaced with a new addressable Fire Alarm system to meet the requirements of UL, Nahant Fire Department Bylaws, NFPA, Massachusetts State Building Code, 2015 International Building Code, ADA and 2015 International Fire Code.

The system would consist of a new addressable fire alarm control panel, remote annunciator, addressable devices for common areas including manual pull stations, smoke and heat detectors, horn/strobe devices and addressable modules for tamper and flow switches.

If a sprinkler system is not installed, smoke detectors would be provided throughout the entire facility, including all closets, as to provide the required coverage for a facility without a sprinkler system.

Lighting

Summary of Existing Conditions

There is a multitude of existing fixture types throughout the building which all appear to be inefficient and have surpassed their expected useful life. Fixture types include; decorative pendants, jelly jar type fixtures in the stack area and decorative wall sconces. All fixtures appear

to contain incandescent lamping or have been replaced with LED replacement bulbs.



Recommendations

The fixtures have exceeded their expected usefulness and should all be replaced with new energy efficient LED-source light fixtures.

Life Safety/Emergency

Summary of Existing Conditions

The existing fixtures consist of fluorescent acrylic exist signs and wall mounted emergency battery units located throughout the facility. The coverage appears inadequate to meet the lighting levels required to meet current codes.

Recommendations

New emergency lighting shall be provided the facility. Fixtures provided would consists of LED exit signs and egress lighting, consisting of emergency battery units and/or new light fixtures with integral emergency ballasts. Lighting levels shall be provided to meet the Massachusetts State Building Code 780 CMR Articles 1023 and 1024.

End of Section

END OF REPORT

**Schematic Design
Nahant Public Library
Nahant, MA**

March 31, 2025

GRAND SUMMARY

			<u>TOTALS</u>
ADDITION			\$2,034,538
RENOVATION			\$2,494,279
SITework			\$600,278
HAZARDOUS WASTE REMOVAL	ALLOWANCE		\$75,000
TOTAL DIRECT COST			----- \$5,204,096
Chptr 149 d/b			
DESIGN CONTINGENCY	12%		\$624,492
ESCALATION (bid Fall 2026)	5.0%		\$291,429
GENERAL CONDITIONS	8%		\$489,601
GENERAL REQUIREMENTS	3%		\$198,289
BOND AND GL INSURANCE	1.795%		\$122,202
BUILDER RISK			by owner
PERMIT	nic		\$0
PROFIT	5%		\$346,505
TOTAL CONSTRUCTION COST			----- \$7,276,614
COST PER SF			\$819.72

ALTERNATES:

ALTERNATE NO. 1 - ADD REINFORCE QUIET STUDY FLOOR \$77,976

BREAKOUT COST (INC ABOVE):

NEW PASSANGER ELEVATOR/LIFT \$745,034
NEW INTERIOR STAIR CONSTRUCTION \$383,795

PROJECT: Nahant Public Library
LOCATION: Nahant, MA
CLIENT: Adams & Smith LLC
DATE: 31-Mar-25
No.: 23019

DIVISION SUMMARY

SUMMARY

	ADDITION TOTAL	RENO TOTAL	SITEWORK TOTAL	COST TOTAL
DIVISION 02 - EXISTING CONDITIONS	0	151,750	0	151,750
DIVISION 03 - CONCRETE	141,285	62,850	0	204,135
DIVISION 04 - MASONRY	197,125	93,295	0	290,420
DIVISION 05 - METALS	9,829	223,462	0	233,291
DIVISION 06 - WOOD, PLASTICS & COMPOSITES	410,791	85,224	0	496,015
DIVISION 07 - THERMAL & MOISTURE PROTECTION	365,252	21,952	0	387,204
DIVISION 08 - OPENINGS	168,355	23,900	0	192,255
DIVISION 09 - FINISHES	188,763	253,598	0	442,360
DIVISION 10 - SPECIALTIES	8,806	4,812	0	13,618
DIVISION 11 - EQUIPMENT	0	0	0	0
DIVISION 12 - FURNISHINGS	8,541	0	0	8,541
DIVISION 13 - SPECIAL CONSTRUCTION	0	0	0	0
DIVISION 14 - CONVEYING EQUIPMENT	0	225,000	0	225,000
DIVISION 21 - FIRE SUPPRESSION	34,525	147,705	0	182,230
DIVISION 22 - PLUMBING	67,560	64,245	0	131,805
DIVISION 23 - HVAC	248,920	525,214	0	774,134
DIVISION 26 - ELECTRICAL	184,788	506,310	0	691,098
DIVISION 31 - EARTHWORK	0	104,963	148,100	253,063
DIVISION 32 - EXTERIOR IMPROVEMENTS	0	0	157,028	157,028
DIVISION 33 - UTILITIES	0	0	295,150	295,150
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DIRECT COST	2,034,538	2,494,279	600,278	5,129,096

PROJECT: Nahant Public Library
 LOCATION: Nahant, MA
 CLIENT: Adams & Smith LLC
 DATE: 31-Mar-25

NO. OF SQ. FT.: 2,146
 COST PER SQ. FT.: \$948.06

No.: 23019

ADDITION

SUMMARY

	DIVISION TOTAL	PERCENT OF PROJECT	COST PER SF
DIVISION 03 - CONCRETE			
033000 CAST IN PLACE CONCRETE	141,285	7%	65.84
DIVISION 04 - MASONRY			
042001 MASONRY*	197,125	10%	91.86
DIVISION 05 - METALS			
050001 MISCELLANEOUS & ORNAMENTAL IRON*	4,829	0%	2.25
051200 STRUCTURAL STEEL FRAMING	5,000	0%	2.33
053100 STEEL DECKING	0	0%	0.00
054000 COLD FORMED METAL FRAMING	0	0%	0.00
DIVISION 06 - WOOD, PLASTICS & COMPOSITES			
061000 ROUGH CARPENTRY	291,211	14%	135.70
062000 FINISH CARPENTRY	94,830	5%	44.19
064000 ARCHITECTURAL WOODWORK	24,750	1%	11.53
DIVISION 07 - THERMAL & MOISTURE PROTECTION			
071000 DAMPPROOF., WATERPROOF. & CAULKING*	47,019	2%	21.91
070002 ROOFING AND FLASHING*	243,769	12%	113.59
072100 THERMAL INSULATION	34,657	2%	16.15
072600 VAPOR RETARDERS	2,361	0%	1.10
074200 SLATE WALL FINISH	30,223	1%	14.08
078100 APPLIED FIREPROOFING	0	0%	0.00
078400 FIRESTOPPING	1,824	0%	0.85
079513 EXPANSION JOINT COVERS	5,400	0%	2.52
DIVISION 08 - OPENINGS			
080005 METAL WINDOWS*	121,545	6%	56.64
080152 ALUM CLAD WOOD WINDOW	0	0%	0.00
081113 HOLLOW METAL DOORS AND FRAMES	1,160	0%	0.54
081416 WOOD DOORS	36,700	2%	17.10
083100 ACCESS DOORS AND PANELS	750	0%	0.35
083323 COILING DOORS	0	0%	0.00
087100 DOOR HARDWARE	4,800	0%	2.24
088000 GLAZING*	2,500	0%	1.16
089000 LOUVERS AND VENTS	900	0%	0.42
DIVISION 09 - FINISHES			
090002 GYPSUM WALLBOARD & PLASTER PATCHING	77,326	4%	36.03
090003 TILE*	25,110	1%	11.70

090006 RESILIENT FLOORING*	2,310	0%	1.08
090009 PAINTING*	20,376	1%	9.49
095100 ACOUSTICAL CEILINGS*	53,480	3%	24.92
096429 WOOD STRIP FLOORING	0	0%	0.00
096800 CARPETING	10,161	0%	4.73
098400 ACOUSTIC ROOM COMPONENTS	0	0%	0.00

DIVISION	PERCENT	COST
TOTAL	OF PROJECT	PER SF

DIVISION 10 - SPECIALTIES

101116 MARKERBOARDS	0	0%	0.00
101400 SIGNAGE	4,015	0%	1.87
102228 FOLDING-PANEL OPERABLE PARTITIONS	0	0%	0.00
102813 TOILET ACCESSORIES	3,461	0%	1.61
104400 FIRE PROTECTION SPECIALTIES	1,330	0%	0.62
105113 METAL LOCKERS	0	0%	0.00
109000 MISCELLANEOUS SPECIALTIES	0	0%	0.00

DIVISION 11 - EQUIPMENT

113100 APPLIANCES	0	0%	0.00
115213 PROJECTION SCREENS	0	0%	0.00

DIVISION 12 - FURNISHINGS

122400 WINDOW SHADES	8,541	0%	3.98
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DIVISION 13 - SPECIAL CONSTRUCTION

130000 SPECIAL CONSTRUCTION	0	0%	0.00
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DIVISION 14 - CONVEYING EQUIPMENT

142000 ELEVATORS & LIFTS*	0	0%	0.00
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DIVISION 21 - FIRE SUPPRESSION

210000 FIRE SUPPRESSION*	34,525	2%	16.09
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DIVISION 22 - PLUMBING

220000 PLUMBING*	67,560	3%	31.48
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DIVISION 23 - HVAC

230000 HVAC*	248,920	12%	115.99
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DIVISION 26 - ELECTRICAL

260000 ELECTRICAL*	184,788	9%	86.11
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DIVISION 31 - EARTHWORK

310000 EARTHWORK	0	0%	0.00
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DIRECT COST	2,034,538	100%	948.06

*DENOTES FILED SUB-BID

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
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DIVISION 02 - EXISTING CONDITIONS

022820 ASBESTOS REMEDIATION See Grand Summary

0

024119 SELECTIVE DEMOLITION

*Connector demolition is with Renovation Estimate

0

DIVISION 03 - CONCRETE

033000 CAST IN PLACE CONCRETE

Spread Footing (5' x5' x' 18" D 6 ea):

4,500 psi, NW, (incl. placement) 9 CY 325.00 2,925

Formwork 240 SFCA 15.00 3,600

Rebar 1,125 LBS 1.65 1,856

**unit cost \$931.25*

Wall Footing (1' x 2'-6" - 210 LF):

4,500 psi, NW, (incl. placement) 20 CY 325.00 6,500

Formwork 420 SFCA 15.00 6,300

Rebar 1,000 LBS 1.65 1,650

**unit cost \$722.50*

Frost Wall (16" thick x 6'd - 210 LF):

4,500 psi, NW, (incl. placement) 62 CY 325.00 20,150

Formwork 2,520 SFCA 22.50 56,700

Tie into exisitng 2 LOC 1,500.00 3,000

Rebar 3,100 LBS 1.65 5,115

**unit cost \$1,370.40*

5" Slab on Grade:

4000 psi, NW, (incl. placement) 33 CY 345.00 11,385

6x6 W 2.9 X W 2.9 2,146 SF 2.65 5,687

Control Joint 150 LF 4.15 623

Trowel Finish 2,146 SF 2.70 5,794

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
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*unit cost \$10.95

Winter Conditions	1	LS	10,000.00	10,000

				141,285

DIVISION 04 - MASONRY

042001 MASONRY*

Exterior Masonry Veneer:

Stone Veneer	1,159	SF	125.00	144,875
Stone Gabel Cap	55	LF	325.00	17,875

Rebuild New Additon Opening	1	LS	15,000.00	15,000
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Architectural Precast:

Window Surround	1	LS	7,500.00	7,500
Gable meddalion	2	EA	2,500.00	5,000
Masonry flashing	250	LF	27.50	6,875

197,125

DIVISION 05 - METALS

050001 MISCELLANEOUS & ORNAMENTAL IRON*

Misc. bldg. metals	2,146	GSF	2.25	4,829

				4,829

051200 STRUCTURAL STEEL FRAMING

Addition Opening

Lintel beam at opening	5	LS	1,000.00	5,000

				5,000

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
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053100 STEEL DECKING

NOT USED

0

054000 COLD FORMED METAL FRAMING

*see gypsum drywall

0

DIVISION 06 - WOOD, PLASTICS & COMPOSITES

061000 ROUGH CARPENTRY

Timber Truss Roof Framing:

Sloped Roof Truss Frame	1,538	SF	90.00	138,420
3" T&G Decking	1,538	SF	23.00	35,374

Glu lam Frame:

Flat Roof Frame	1,295	SF	65.00	84,175
3/4" CDX Roof sheathing	1,295	SF	8.00	10,360

Roof Blocking @ :

Base Flashing	108	LF	15.00	1,620
Flat roof coping	138	LF	22.00	3,036
Gable Cap blocking	55	LF	45.00	2,475
Fascia and soffit blocking	310	SF	20.00	6,200
Misc Sloped roof blocking	2,833	SF	1.00	2,833

Ext wall blk perim CW, S,F louver, windc	340	LF	12.50	4,250
Interior Blocking	2,146	GSF	0.65	1,395
Interior Carpentry	2,146	GSF	0.50	1,073

291,211

062000 FINISH CARPENTRY

Exterior:

Fascia and Soffit	310	SF	75.00	23,250
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DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Wood panels at window infill	60	SF	60.00	3,600
Misc. Exterior Carpentry	1	LS	5,000.00	5,000
* exposed rafter framing to be glu-lam structure				
Interior Wall Finish:				
Childrens Rm wall panel	350	SF	100.00	35,000
Gallary wall panel	100	SF	100.00	10,000
Interior Trim:				
Wood wall base	187	LF	20.00	3,740
Custom int. col. encl - base, rail & capitol		n/a		
Ceiling trim	W / Clg Systems			
Solid surf. window sill/apron	60	LF	74.00	4,440
Window trim	280	LF	25.00	7,000
Applies Door trim at HM Frames	160	LF	17.50	2,800
*Excludes book storage shelving				

				94,830

064000 ARCHITECTURAL WOODWORK

Custom Casework:				
Childrens Circulation desk	10	LF	1,300.00	13,000
Workroom:				
Solid surface counter	13	LF	275.00	3,575
Base Cabinet	13	LF	250.00	3,250
Wall Cabinet	13	LF	225.00	2,925
Misc. Shelving	1	LS	2,000.00	2,000
Book shelving		NIC		

				24,750

DIVISION 07 - THERMAL & MOISTURE PROTECTION

071000 DAMPPROOF., WATERPROOF. & CAULKING*

Foundation dampproofing	1,260	SF	3.00	3,780
Air & vapor barrier - ext. wall	1,800	SF	9.50	17,100

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Air & vapor barrier - perim. ext. open	340	LF	10.00	3,400
Roof vapor barrier	2,833	SF	6.50	18,415
Joint sealants - interior	2,146	GSF	0.85	1,824
Joint sealants - exterior	1	LS	2,500.00	2,500
*Perimeter exterior alum. window sealants are included with 088000				
*Includes Sections 071353, 072713 & 079200				

				47,019

070002 ROOFING AND FLASHING*

Flat Roof:

PVC .6mil Membrane w/ R 35 Insul.	1,295	SF	32.00	41,440
1/2" Protection bd	1,295	SF	4.00	5,180
Roof Drain Flahing	2	EA	275.00	550
Walkway pads - allow	1	LS	750.00	750
Membrane Flashing	200	SF	7.50	1,500

Slate Shingle Roofing :

Slate shingle	1,538	SF	75.00	115,350
Ridge cap	55	LF	100.00	5,500
Ice & water	1,538	SF	4.50	6,921
8" Nailable rigid Insulation	1,538	SF	17.50	26,915
Roof vapor barrier		w/ 071000		

Flat Roof Flashing & Accessories:

Roof Coping	138	LF	35.00	4,830
Base flashing @ new wall	108	LF	32.00	3,456
Expansion joint	24	LF	48.00	1,152

Sloped / Rail Roof Flashing & Accessories:

Thru wall Gable cap flashing	55	LF	45.00	2,475
Copper flashing at slate roof	1,538	SF	5.00	7,690
Copper gutter		nic		
Alum Downspout		nic		
Snow fence	95	EA	52.00	4,940

Alum Skylight	3	EA	4,000.00	12,000
Skylight curb	48	EA	65.00	3,120

243,769

072100 THERMAL INSULATION

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
2" Rigid slab insul. - 100%	2,146	SF	3.35	7,189
2" Rigid found insul.	2,520	SF	3.90	9,828
4" Mineral wool - ext wall	1,800	SF	5.30	9,540
6" Mineral batt at stud cavity	1,800	SF	4.50	8,100

				34,657

072600 VAPOR RETARDERS

15 mil stego wrap @ SOG	2,146	SF	1.10	2,361

				2,361

074200 SLATE WALL FINISH

Grey slate	385	SF	65.00	25,025
15 lbs felt paper	385	SF	1.00	385
3/4" plywood w/ thermal girt	385	SF	12.50	4,813

				30,223

078100 APPLIED FIREPROOFING

Spray fireproofing		not used		

				0

078400 FIRESTOPPING

Firestopping	2,146	GSF	0.85	1,824

				1,824

079513 EXPANSION JOINT COVERS

Expansion jt assemblies - roof	24	LF	225.00	5,400
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DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
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5,400

DIVISION 08 - OPENINGS

080005 METAL WINDOWS*

Aluminum Triple Glaze storefront:

Alum punch windows	109	SF	185.00	20,165
Aluminum storefront	548	SF	185.00	101,380

121,545

081113 HOLLOW METAL DOORS AND FRAMES

7' HM Door Frame:

Int Door - sgl	4	EA	290.00	1,160
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1,160

081416 WOOD DOORS

Wood Door:

Bathroom - sgl	3	EA	750.00	2,250
Workroom (1/2 lite) - sgl	1	EA	1,350.00	1,350

Interior Wood Storefront :

Children service door - dbl	1	EA	8,500.00	8,500
Alum Storefront sidelight, transom	24	SF	150.00	3,600

Exterior Wood Door, Frame, Hdw, Glass & Glazing:

Main Entry - dbl	1	EA	14,500.00	14,500
Work rm egress - sgl	1	EA	6,500.00	6,500

36,700

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
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083100 ACCESS DOORS AND PANELS

Access panels	1	LS	750.00	750

				750

087100 DOOR HARDWARE

Interior:

Bathroom - sgl	3	EA	1,200.00	3,600
Workroom - sgl	1	EA	1,200.00	1,200

				4,800

088000 GLAZING*

Misc. glass & glazing	1	LS	2,500.00	2,500

				2,500

*Glass and glazing also included in Sections 080005 & 081113

089000 LOUVERS AND VENTS

Alum. louvers	10	SF	90.00	900

				900

DIVISION 09 - FINISHES

090002 GYPSUM WALLBOARD & PLASTER PATCHING

Exterior Wall:

6" Stud Framing	1,800	SF	13.00	23,400
3/4" Plywood	1,800	SF	4.20	7,560
1 lyr 5/8" gyp	1,800	SF	4.15	7,470

Partitions:

Interior Partiton	854	SF	23.50	20,069
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DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Chase Partition	390	SF	19.00	7,410
Allow for Column Enclosure	200	SF	24.00	4,800
Gyp ceiling:				
Gyp Ceiling - bathroom	150	SF	15.50	2,325
Misc. GWB	2,146	GSF	2.00	4,292
*GWB includes sound attenuation, tape and joint compound finish				
*Excludes veneer plaster				

				77,326
090003 TILE*				
Toilet Room (3 EA):				
Porcelain mosaic floor tile	150	SF	42.00	6,300
Wpg membrane	150	SF	8.25	1,238
Ceramic wall tile - wet wall	192	SF	32.00	6,144
Marble threshold	3	EA	150.00	450
Tile backer bd premium	490	SF	2.20	1,078
Gallary::				
Stone Tile	220	SF	45.00	9,900
*Thin set installation				

				25,110
090006 RESILIENT FLOORING*				
LVT - Storage	200	SF	10.00	2,000
4" resilient wall base - allow	62	LF	5.00	310

				2,310
090009 PAINTING*				
Int. painting	2,146	GSF	6.00	12,876
Paint Ext Trim	1	LS	7,500.00	7,500
*Excludes wall covering				

				20,376
095100 ACOUSTICAL CEILINGS*				

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
ACT Systems:				
ACT 2 x 2	200	SF	10.00	2,000
Wood Ceiling - gallery and partial childre	792	SF	65.00	51,480

				53,480
096800 CARPETING				
Carpet	1,344	SF	6.50	8,736
Carpet tile vestibule mat	75	SF	19.00	1,425

				10,161
DIVISION 10 - SPECIALTIES				
101116 MARKERBOARDS				
		NIC		

				0
101400 SIGNAGE				
Code way finding	2,146	GSF	0.24	515
Interior signage		w/ ff&e		
Dedication plaque -allow	1	EA	3,500.00	3,500

				4,015
102228 FOLDING-PANEL OPERABLE PARTITIONS				
Operable partition		N/A		

				0

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
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102813 TOILET ACCESSORIES

New Toilet Rm Furnish & Install Accessories (3 EA):

Grab bars	6	EA	115.00	690
Tilt Mirror	3	EA	320.00	960
Changing table	1	EA	650.00	650
Coat hooks	3	EA	45.00	135
Paper towel dispenser/disposal	3	EA	250.00	750
Toilet tissue dispenser	3	EA	44.00	132
Soap dispenser	3	EA	48.00	144

3,461

104400 FIRE PROTECTION SPECIALTIES

Fire extinguishers & cab	2	EA	465.00	930
Diffibulator cabinet	1	EA	400.00	400

1,330

109000 MISCELLANEOUS SPECIALTIES

High density shelving unit	NIC
Library shelving system	NIC
Return sorting equipment	NIC
Book security sys. rough in	NIC
Book security sys.	NIC

0

DIVISION 11 - EQUIPMENT

113100 APPLIANCES

Kitchenette	NIC
Staff Room	NIC

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
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0

115213 PROJECTION SCREENS

NIC

0

DIVISION 12 - FURNISHINGS

122400 WINDOW SHADES

Exterior Windows:

Storefront Window shades - manual op	657	SF	13.00	8,541
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8,541

DIVISION 13 - SPECIAL CONSTRUCTION

130000 SPECIAL CONSTRUCTION

N/A

0

0

DIVISION 21 - FIRE SUPPRESSION

210000 FIRE SUPPRESSION*

4"Isolation valve	1	EA	975.00	975
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Sprinkler head inc. branch pipe	32	EA	550.00	17,600
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Sched: 10

4" Main	70	LF	85.00	5,950
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Misc. Trade Requirements

Connection to main service	1	LS	5,000.00	5,000
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Supervision/ Coordination with other trad	1	LS	5,000.00	5,000
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Dry attic system		N/A		
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DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
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34,525

DIVISION 22 - PLUMBING

220000 PLUMBING*

Fixtures:

Water closet ADA	3	EA	2,100.00	6,300
Lavatory ADA	3	EA	1,450.00	4,350
Work rm sink	1	EA	1,500.00	1,500
Electronic Sensor Flush Valve	3	EA	510.00	1,530
Electronic Lav Faucet	3	EA	485.00	1,455

Elec. POU Water Heater:

Water Heaters	2	EA	2,500.00	5,000
Mixing Valve:	2	EA	550.00	1,100

Water accessories:

FP wall hydrant	2	EA	1,200.00	2,400
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Sanitary System

Underground D/W/V Pipe:

4"	55	LF	75.00	4,125
FCO	2	EA	500.00	1,000

Above Ground D/W/V Pipe:

1-1/2"-4"	200	LF	55.00	11,000
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Copper Pipe Type L (inc. insul.):

Branch Piping	80	LF	65.00	5,200
Main Piping	80	LF	95.00	7,600

Tie into exisitng plumbing	1	LS	7,500.00	7,500
Test, clean up, permit, misc	1	LS	7,500.00	7,500

67,560

DIVISION 23 - HVAC

230000 HVAC*

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Air Equipment:				
ERV-1	1,500	CFM	28.00	42,000
VRF System				
Condenser	8	TONS	2,400.00	19,200
Stands	2	EA	2,000.00	4,000
BCC-1 Branch Controller	1	EA	12,500.00	12,500
Indoor Units	6	EA	3,800.00	22,800
Refrigerant Piping:				
Main	75	LF	45.00	3,375
Line set	6	EA	2,950.00	17,700
Condensate pump	6	EA	300.00	1,800
Condensate Pipe	120	LF	36.00	4,320
Misc. VRF Accessories	1	LS	5,000.00	5,000
Electric Heat:				
ERP-1 - 24"x24"	4	EA	3,500.00	14,000
Ductwork:				
Galvanized Ductwork	1,800	LBS	22.00	39,600
Supply duct insul.	1,500	SF	6.50	9,750
Dampers	4	EA	210.00	840
Grills, Registers and Diffusers	15	EA	240.00	3,600
RH	1	EA	2,000.00	2,000
Exhaust fan	1	EA	3,500.00	3,500
DDC Controls:				
Temperature Control	2,146	SF	7.50	16,095
Test and Balance	16	HRS	115.00	1,840
Supervision, BIM, Misc. hvac	1	LS	25,000.00	25,000

				248,920

DIVISION 26 - ELECTRICAL

260000 ELECTRICAL*

ELECTRICAL:

Lighting	2,146	GSF	20.00	42,920
Light Control	2,146	GSF	3.00	6,438
Branch wiring	2,146	GSF	2.75	5,902

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Misc. Power Wiring Devices:				
Duplex	16	EA	112.00	1,792
Floor box mtd t/d & power	6	EA	1,800.00	10,800
GFI recept	4	EA	124.00	496
GFI WP recept	2	EA	125.00	250
MC-12/2 w/G	775	LF	2.57	1,992
EMT-3/4"C-3#12	75	LF	7.50	563
Panels and Feeders	2,146	GSF	9.50	20,387
PV Rough - in		NIC		
Fire Alarm System:	2,146	GSF	6.00	12,876
BDA System	2,146	GSF	2.00	4,292
Low Voltage System:				
CCTV	2,146	GSF	10.00	21,460
Intrusion Detection	2,146	GSF	6.00	12,876
Tele data system	2,146	GSF	9.00	19,314
Childrens Room:				
AV System		NIC		
Mechanical Wiring	2,146	EA	3.00	6,438
Lightning Protection		NIC		
SITWORK:				
AA - Primary PVC- (2) 5"C w/P.S.	60	LF	16.30	978
EE-Generator Feed		N/A		
Pole dressing	1	EA	2,150.00	2,150
Xfmr pad grndg	1	EA	1,200.00	1,200
Xfmr pad sleeves	1	EA	650.00	650
BB - Secondary		w/ sitework		
CC - PVC- (2) 4"C w/R.S. (tel & CATV)	150	LF	16.30	2,445
Site Lighitng:				
Site Fixture	2	EA	3,000.00	6,000
PVC-1"C - 2#8 & 1#10	200	LF	12.00	2,400
J WP - J-box w/sign conn	1	EA	170.00	170

				184,788

PROJECT: Nahant Public Library
 LOCATION: Nahant, MA
 CLIENT: Adams & Smith LLC
 DATE: 31-Mar-25
 No.: 23019

NO. OF SQ. FT.: 6,731
 COST PER SQ. FT.: \$370.57

*GSF Excludes exterior wall

RENOVATION

SUMMARY

	DIVISION TOTAL	PERCENT OF PROJECT	COST PER SF
DIVISION 02 - EXISTING CONDITIONS			
024119 SELECTIVE DEMOLITION	151,750	6%	22.54
DIVISION 03 - CONCRETE			
033000 CAST IN PLACE CONCRETE	62,850	3%	9.34
DIVISION 04 - MASONRY			
042001 MASONRY*	93,295	4%	13.86
DIVISION 05 - METALS			
050001 MISCELLANEOUS & ORNAMENTAL IRON*	168,462	7%	25.03
051200 STRUCTURAL STEEL FRAMING	55,000	2%	8.17
053100 STEEL DECKING	0	0%	0.00
054000 COLD FORMED METAL FRAMING	0	0%	0.00
DIVISION 06 - WOOD, PLASTICS & COMPOSITES			
061000 ROUGH CARPENTRY	26,924	1%	4.00
062000 FINISH CARPENTRY	58,300	2%	8.66
064000 ARCHITECTURAL WOODWORK	0	0%	0.00
DIVISION 07 - THERMAL & MOISTURE PROTECTION			
071000 DAMPPROOF., WATERPROOF. & CAULKING*	16,231	1%	2.41
070002 ROOFING AND FLASHING*	0	0%	0.00
072100 THERMAL INSULATION	5,721	0%	0.85
072600 VAPOR RETARDERS	0	0%	0.00
074200 METAL WALL PANELS	0	0%	0.00
078100 APPLIED FIREPROOFING	0	0%	0.00
078400 FIRESTOPPING	0	0%	0.00
079513 EXPANSION JOINT COVERS	0	0%	0.00
DIVISION 08 - OPENINGS			
081416 WOOD DOORS	23,900	1%	3.55
	DIVISION TOTAL	PERCENT OF PROJECT	COST PER SF
088000 GLAZING*	0	0%	0.00
089000 LOUVERS AND VENTS	0	0%	0.00

DIVISION 09 - FINISHES

090002 GYPSUM WALLBOARD & PLASTER PATCHING	154,614	6%	22.97
090003 TILE*	9,776	0%	1.45
090006 RESILIENT FLOORING*	5,000	0%	0.74
090009 PAINTING*	60,483	2%	8.99
095100 ACOUSTICAL CEILINGS*	0	0%	0.00
096800 CARPETING	23,725	1%	3.52

	DIVISION TOTAL	PERCENT OF PROJECT	COST PER SF
DIVISION 10 - SPECIALTIES	0		
101116 MARKERBOARDS	0	0%	0.00
101400 SIGNAGE	1,615	0%	0.24
102115 TOILET COMPARTMENTS	0	0%	0.00
102123 CUBICLE	0	0%	0.00
102228 FOLDING-PANEL OPERABLE PARTITIONS	0	0%	0.00
102813 TOILET ACCESSORIES	937	0%	0.14
104400 FIRE PROTECTION SPECIALTIES	2,260	0%	0.34
105113 METAL LOCKERS	0	0%	0.00
107500 FLAGPOLE	0	0%	0.00
109000 MISCELLANEOUS SPECIALTIES	0	0%	0.00
DIVISION 11 - EQUIPMENT			
113000 LOADING DOCK EQUIPMENT	0	0%	0.00
113100 APPLIANCES	0	0%	0.00
114000 FOOD SERVICE EQUIPMENT	0	0%	0.00
115213 PROJECTION SCREENS	0	0%	0.00
115300 LABORATORY EQUIPMENT	0	0%	0.00
116143 STAGE CURTAINS	0	0%	0.00
116623 GYMNASIUM EQUIPMENT	0	0%	0.00
119000 MISCELLANEOUS EQUIPMENT	0	0%	0.00
DIVISION 12 - FURNISHINGS			
122400 WINDOW SHADES	0	0%	0.00
123000 CASEWORK	0	0%	0.00
124813 ENTRANCE FLOOR MATS & FRAMES	0	0%	0.00
126100 FIXED AUDIENCE SEATING	0	0%	0.00
DIVISION 13 - SPECIAL CONSTRUCTION			
130000 SPECIAL CONSTRUCTION	0	0%	0.00
DIVISION 14 - CONVEYING EQUIPMENT			
142000 ELEVATORS & LIFTS*	225,000	9%	33.43
DIVISION 21 - FIRE SUPPRESSION			
210000 FIRE SUPPRESSION*	147,705	6%	21.94
DIVISION 22 - PLUMBING			
220000 PLUMBING*	64,245	3%	9.54

DIVISION 23 - HVAC			
230000 HVAC*	525,214	21%	78.03
DIVISION 26 - ELECTRICAL			
260000 ELECTRICAL*	506,310	20%	75.22
DIVISION 31 - EARTHWORK			
310000 EARTHWORK	104,963	4%	15.59

DIRECT COST	2,494,279	100%	370.57

*DENOTES FILED SUB-BID

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
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DIVISION 02 - EXISTING CONDITIONS

022820 ASBESTOS REMEDIATION See Grand Summary

0

024119 SELECTIVE DEMOLITION

Crawl Space Stair Addition:

Cut in new egress opening	1	LOC	5,000.00	5,000
Shore at column removal	2	LOC	5,000.00	10,000
Remove Int Columns	2	LOC	1,200.00	2,400
Misc. Crawl Space demolition	1	LS	5,000.00	5,000

New Stair Egress:

Remove slab at stair Opening	2	LVLS	7,500.00	15,000
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New Elevator:

Remove stairs	2	FLTS	4,000.00	8,000
Misc. Baement Demolition	1	LS	10,000.00	10,000
Remove Basement slab	750	SF	20.00	15,000
First Floor demolition	1	LS	10,000.00	10,000
Second Floor Demolition	1	LS	10,000.00	10,000

Basement Level

Cut in Utility opening	1	LS	3,500.00	3,500
Remove Select Plaster Ceiling	1,870	SF	5.00	9,350
Misc. MEP demo	1,870	GSF	3.00	5,610

First Floor:

Remove Floor Finish	3,265	SF	2.00	6,530
Cut in Addition opening	1	LS	5,000.00	5,000
Remove Plumbing Fixtures	3	EA	195.00	585
Remove Select Plaster Ceiling	1,000	SF	5.00	5,000
Misc. MEP demo	3,265	GSF	3.00	9,795

Second Floor

Remove deteriorated plaster finish - allow	750	SF	4.00	3,000
Remove Floor Finish	1,596	SF	2.00	3,192
Remove Select Plaster Ceiling	1,000	SF	5.00	5,000
Misc. MEP demo	1,596	GSF	3.00	4,788

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
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151,750

DIVISION 03 - CONCRETE

033000 CAST IN PLACE CONCRETE

Crawlspace Stair Addition:

Wall Footing	7	CY	800.00	5,600
5" Slab on Grade	150	SF	22.00	3,300
Stair Pan Fill	2	FLTS	3,000.00	6,000

New Elevator:

12" Elevator mat	6	CY	1,200.00	7,200
12" Elev pit wall	6	CY	2,000.00	12,000
Patch slab	750	SF	25.00	18,750

Slab on grade infill / patching - allow	1	LS	10,000.00	10,000
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62,850

DIVISION 04 - MASONRY

042001 MASONRY*

Crawlspace Stair Addition:

8" CMU Stair Partition	460	SF	48.00	22,080
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Interior :

8" CMU Elevator Shaft	1,113	SF	55.00	61,215
Misc. Interior Patching	1	LS	10,000.00	10,000

Exterior Masonry Restoration (scope per design associate chart 5/18):

Scope Undefined		tbd		
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93,295

DIVISION 05 - METALS

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
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050001 MISCELLANEOUS & ORNAMENTAL IRON*

Crawlspace Stair Addition:

Basement Metal pan stair and rail	1	FLTS	45,000.00	45,000
First Floor Half turn stair	1	FLTS	62,000.00	62,000
Reconfigure top run of second floor stair	1	LS	20,000.00	20,000

Configure Book stack Floor at New Stair	1	LS	20,000.00	20,000
Elevator pit ladder and framing	1	LS	8,000.00	8,000

Sesmic Upgrade		NIC		
Misc. bldg metals	6,731	GSF	2.00	13,462

168,462

051200 STRUCTURAL STEEL FRAMING

New Stair Egress:

Reframe stair opening	2	LVLS	15,000.00	30,000
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New Passanger Elevator:

Reframe First Floor Opneing	1	LVLS	10,000.00	10,000
Reframe Second Floor Opneing	1	LVLS	15,000.00	15,000

55,000

DIVISION 06 - WOOD, PLASTICS & COMPOSITES

061000 ROUGH CARPENTRY

Misc. rough carpentry	6,731	SF	4.00	26,924
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*Includes Section 061600

26,924

062000 FINISH CARPENTRY

Restore Exterior Trim - Allow:

Restore Exisitng trim	1	LS	5,000.00	5,000
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DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
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New Interior Trim:

Nahant Room Shelving	14	LF	950.00	13,300
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Reconfigure Book stacks as necessary	1	LS	10,000.00	10,000
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Misc. new interior/restore trim	1	LS	30,000.00	30,000
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58,300

DIVISION 07 - THERMAL & MOISTURE PROTECTION

071000 DAMPPROOF., WATERPROOF. & CAULKING*

Elevator pit waterproofing	1	LS	9,500.00	9,500
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Joint sealants - interior	6,731	GSF	1.00	6,731
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16,231

070002 ROOFING AND FLASHING*

Roof Restoration (scope per design associate chart 5/18):

Scope Undefined tbd

0

072100 THERMAL INSULATION

Ext. foundation rigid insul.

NIC

Ext. wall insul.

NIC

Roof insul

NIC

Firestopping	6,731	GSF	0.85	5,721
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5,721

079513 EXPANSION JOINT COVERS

W/ ADDITION

0

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
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DIVISION 08 - OPENINGS

080005 METAL WINDOWS*

Window Restoration (scope per design associate chart 5/18):

Scope Undefined

tbd

0

081416 WOOD DOORS

Doors Frames and Hardware:

Attic - sgl	1	EA	2,500.00	2,500
Bathroom - sgl	1	EA	2,100.00	2,100
Egress - sgl	3	EA	3,500.00	10,500
MEP - sgl	3	EA	2,100.00	6,300
Office - sgl	1	EA	2,500.00	2,500

23,900

DIVISION 09 - FINISHES

09100 LATH AND PLASTER

Ceilings:

Cut and Patch for new MEP	6,731	SF	10.00	67,310
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Walls:

Repair Failed plaster	750	SF	25.00	18,750
Misc. Plaster Repair	1	LS	25,000.00	25,000

090002 GYPSUM WALLBOARD & PLASTER PATCHING

Interior Partitions:

Furr and Gyp @ Elev shaft	1,113	SF	18.00	20,034
Interior Partitions	980	SF	24.00	23,520

154,614

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
090003 TILE*				
Toilet Room (1 EA):				
Porcelain mosaic floor tile	56	SF	35.00	1,960
Wpg membrane	56	SF	8.25	462
Ceramic wall tile - full height	217	SF	31.00	6,727
Marble threshold	1	EA	150.00	150
Tile backer bd premium	217	SF	2.20	477

				9,776
090006 RESILIENT FLOORING*				
LVT - Allow	500	SF	10.00	5,000

				5,000
090009 PAINTING*				
Int. painting (incl. wd trim)	6,731	GSF	7.50	50,483
*Excludes wall covering				
Exterior Painting (Scrape, prepared & paint):				
Trim and Windows	1	LS	10,000.00	10,000
*Includes Lead paint awareness				

				60,483
096800 CARPETING				
Carpet:				
First Floor	2,900	SF	6.50	18,850
Second Floor	750	SF	6.50	4,875

				23,725

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
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101400 SIGNAGE

Code way finding	6,731	GSF	0.24	1,615
Interior signage		w/ ff&e		

				1,615

102813 TOILET ACCESSORIES

New Toilet Rm Furnish & Install Accessories (1 EA):

Grab bars	2	EA	115.00	230
Tilt Mirror	1	EA	320.00	320
Coat hooks	1	EA	45.00	45
Paper towel dispenser/disposal	1	EA	250.00	250
Toilet tissue dispenser	1	EA	44.00	44
Soap dispenser	1	EA	48.00	48

				937

104400 FIRE PROTECTION SPECIALTIES

Fire extinguishers & cab	4	EA	465.00	1,860
Diffibulator cabinet	1	EA	400.00	400

				2,260

DIVISION 12 - FURNISHINGS

122400 WINDOW SHADES

Window shades - manual op		n/a		

				0

DIVISION 14 - CONVEYING EQUIPMENT

142000 ELEVATORS & LIFTS*

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
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New Int LULA (3 stop)	1	LS	225,000.00	225,000

				225,000

DIVISION 21 - FIRE SUPPRESSION

210000 FIRE SUPPRESSION*

Fire protection - renovation:

6" BFP	1	EA	9,500.00	9,500
4" FCVA	3	EA	6,500.00	19,500
2 1/2" fdv	2	EA	1,250.00	2,500
4" Isolation valve	3	EA	750.00	2,250
2" drain test line	70	LF	44.00	3,080

Heads	75	EA	550.00	41,250
Allow for dry attic system	1	LS	15,000.00	15,000

Sched: 10

4" Main	225	LF	85.00	19,125
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Misc. Trade Requirements

Coring and firesafing	1	LS	3,500.00	3,500
Hydraulic Calc	1	LS	3,500.00	3,500
CAD/As-built	1	LS	3,500.00	3,500
Supervision/ Coordination with other trad	1	LS	25,000.00	25,000
Fire Pump		NIC		

147,705

DIVISION 22 - PLUMBING

220000 PLUMBING*

Fixtures:

Water closet ADA	1	EA	2,100.00	2,100
Lavatory ADA	1	EA	1,450.00	1,450
Electronic Sensor Flush Valve	1	EA	510.00	510
Electronic Lav Faucet	1	EA	485.00	485

Elec. POU Water Heater:

Water Heaters	1	EA	2,500.00	2,500
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DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Mixing Valve:	1	EA	550.00	550
Water accessories:				
FP wall hydrant	2	EA	1,200.00	2,400
Sanitary System				
Underground D/W/V Pipe:				
4"	50	LF	75.00	3,750
FCO	1	EA	500.00	500
Above Ground D/W/V Pipe:				
1-1/2"-4"	200	LF	55.00	11,000
Copper Pipe Type L (inc. insul.):				
Branch Piping	150	LF	65.00	9,750
Main Piping	150	LF	95.00	14,250
Test, clean up, permit, misc	1	LS	15,000.00	15,000

				64,245
DIVISION 23 - HVAC				
230000 HVAC*				
Selective Demolition	6,731	GSF	1.00	6,731
Air Equipment:				
ERV-2,3	2,000	CFM	28.00	56,000
VRF System				
Condenser	20	TONS	2,400.00	48,000
Stands	4	EA	2,000.00	8,000
BCC-1 Branch Controller	2	EA	12,500.00	25,000
Indoor Units	12	EA	3,800.00	45,600
Refrigerant Piping:				
Main	150	LF	45.00	6,750
Line set	12	EA	2,950.00	35,400
Condensate pump	12	EA	300.00	3,600
Condensate Pipe	250	LF	36.00	9,000
Misc. VRF Accessories	1	LS	15,000.00	15,000
Electric Heat:				
ERP-1 - 24"x24"	8	EA	3,500.00	28,000

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Ductwork:				
Galvanized Ductwork	4,000	LBS	22.00	88,000
Supply duct insul.	3,500	SF	6.50	22,750
Dampers	4	EA	210.00	840
Grills, Registers and Diffusers	45	EA	240.00	10,800
RH	1	EA	2,000.00	2,000
Exhaust fan	3	EA	3,500.00	10,500
DDC Controls:				
Temperature Control	6,731	SF	7.50	50,483
Test and Balance	24	HRS	115.00	2,760
Supervision, BIM, Misc. hvac	1	LS	50,000.00	50,000

				525,214

DIVISION 26 - ELECTRICAL

260000 ELECTRICAL*

ELECTRICAL:

Lighting	6,731	GSF	20.00	134,620
Light Control	6,731	GSF	3.00	20,193
Branch wiring	6,731	GSF	2.75	18,510
Misc. Power Wiring Devices:				
Duplex	42	EA	112.00	4,704
Floor box mtd t/d & power	8	EA	1,800.00	14,400
GFI recept	4	EA	124.00	496
GFI WP recept	2	EA	125.00	250
MC-12/2 w/G	1,800	LF	2.57	4,626
EMT-3/4"C-3#12	300	LF	7.50	2,250
Panels and Feeders	6,731	GSF	9.50	63,945
PV Rough - in		NIC		
Fire Alarm System:	6,731	GSF	6.00	40,386
BDA System	6,731	GSF	2.00	13,462

Low Voltage System:

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
CCTV	6,731	GSF	10.00	67,310
Intrusion Detection	6,731	GSF	6.00	40,386
Tele data system	6,731	GSF	9.00	60,579
Mechanical Wiring	6,731	GSF	3.00	20,193
Lightning Protection		NIC		

				506,310

DIVISION 31 - EARTHWORK

310000 EARTHWORK

Crawl Space Stair Addition:

Excavate to lower stair area (hand)	95	CY	120.00	11,400
Load and Haul Spoil	95	CY	85.00	8,075
Soil disposal	162	TONS	25.00	4,038
12" Gravel slab fill	20	CY	135.00	2,700

New Elevator:

Excavate Elevator Pit	1	LS	25,000.00	25,000
Prep sub base at new slab	750	SF	5.00	3,750
Foundation underpinning	1	LS	50,000.00	50,000

104,963

PROJECT: Nahant Public Library
 LOCATION: Nahant, MA
 CLIENT: Adams & Smith LLC
 DATE: 31-Mar-25
 No.: 23019

SUMMARY

SITEWORK

	DIVISION TOTAL	PERCENT OF PROJECT
DIVISION 02 - EXISTING CONDITIONS		
022820 ASBESTOS REMEDIATION	0	0%
024119 SELECTIVE DEMOLITION	0	0%
DIVISION 31 - EARTHWORK		
310000 EARTHWORK	46,175	8%
311000 SITE PREPARATION & CLEARING	101,925	17%
DIVISION 32 - EXTERIOR IMPROVEMENTS		
320000 PAVEMENT, CURBING & EDGING	25,571	4%
323100 SITE IMPROVEMENTS	56,750	9%
328000 IRRIGATION	0	0%
329000 LANDSCAPING	74,707	12%
DIVISION 33 - UTILITIES		
330000 UTILITIES	295,150	49%

DIRECT COST	600,278	100%

*DENOTES FILED SUB-BID

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
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DIVISION 02 - EXISTING CONDITIONS

022820 ASBESTOS REMEDIATION See Grand Summary

0

024119 SELECTIVE DEMOLITION See Grand Summary

0

DIVISION 31 - EARTHWORK

310000 EARTHWORK

Over Excavate Unsuitable Soil:

Excavate to a 4' depth	325	CY	12.50	4,063
Load and Truck Spoil	325	CY	12.00	3,900
Dispose of surplus	553	TONS	25.00	13,813
Structural fill	325	CY	52.00	16,900

General Site:

Excavate site amenities	1	LS	7,500.00	7,500
				----- 46,175

311000 SITE PREPARATION & CLEARING

Construction fence	900	LF	18.00	16,200
Dbl Construction entrance- 12'w	1	LOC	1,500.00	1,500
Gravel Construction Entrance Pad	1,200	SF	15.00	18,000
Remove Utilities	1	LS	15,000.00	15,000
Cut and cap utilities	1	LS	3,000.00	3,000
Selective tree removal	1	LS	10,000.00	10,000
Strip and stack topsoil 6"	850	CY	15.00	12,750
Tree Protection	10	EA	750.00	7,500
Erosion control	850	LF	8.50	7,225
CB Protection	10	EA	125.00	1,250
Erosion control maintance	1	LS	2,000.00	2,000

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
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Site - Remove Existing:				
Minor site demolition allowance	1	LS	7,500.00	7,500

				101,925

DIVISION 32 - EXTERIOR IMPROVEMENTS

320000 PAVEMENT, CURBING & EDGING

Additioon Courtyard Paving:				
Courtyard Paving	500	SF	45.00	22,500
Bit Sidewalk	300	SF	6.00	1,800
8" Gravel paving base	20	CY	65.00	1,271

				25,571

323100 SITE IMPROVEMENTS

Addition Courtyard:				
Decorative Metal Bench	4	EA	3,500.00	14,000
Trash Receptacle	1	EA	3,000.00	3,000
Remove, Restore Reinstall site fence	1	LS	10,000.00	10,000
Bike Rack	2	EA	875.00	1,750
Bollard @ mech pad	2	EA	1,500.00	3,000
Site sign	1	LS	7,500.00	7,500
Traffic / parking signage - allow	1	LS	2,500.00	2,500
Misc. improvements	1	LS	15,000.00	15,000

				56,750

328000 IRRIGATION		N/A		-----
				0

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
329000 LANDSCAPING				
Planting Bed (1,000 SF):				
12" Loam - import	37	CY	165.00	6,105
3" Mulch	10	CY	100.00	1,000
New Lawn:				
6" Loam - import	463	CY	85.00	39,352
Hydro seed	25,000	SF	0.65	16,250
Planting allowance	1	LS	12,000.00	12,000

				74,707

DIVISION 33 - UTILITIES

330000 UTILITIES

Sewer Service:				
Street Connection	1	LS	25,000.00	25,000
6" PVC San line	150	LF	125.00	18,750
Sewer manhole	1	EA	4,500.00	4,500
Water:				
Street Connection	1	EA	22,000.00	22,000
2" Domestic service	25	LF	91.00	2,275
6" Fire service	150	LF	105.00	15,750
Fire Hydrant		N/A		
6" Gate valave	1	EA	3,950.00	3,950
2" Gate Valve	1	EA	3,500.00	3,500
Site Drainage:				
8" - 12" HDPE	750	LF	105.00	78,750
Infiltration Field	750	SF	50.00	37,500
Drain Manhole	2	EA	4,200.00	8,400
Catch Basin	2	EA	4,200.00	8,400
Water Quality Chanber	1	EA	15,000.00	15,000
Electric:				
Primary	30	LF	110.00	3,300
Secondary	75	LF	265.00	19,875
T/D Ductbank	100	LF	95.00	9,500
Generator Ductbank		N/A		

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
Transformer pad	1	EA	4,500.00	4,500
Light Pole Base	2	EA	850.00	1,700
Trench Lighting Loop	500	LF	25.00	12,500
*Utilities include excavation and backfill				
*Excludes Utility Co. back charges				

				295,150

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
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ALTERNATE NO. 1 - ADD REINFORCE QUIET STUDY FLOOR

Remove subfloor to expose framing	640	SF	10.00	6,400
Remove wall base	90	LF	10.00	900
Sister and reinforce framing	640	SF	45.00	28,800
New 3/4" T&G Underlayment	640	SF	8.50	5,440
Reinstall Wood Base	90	LF	38.00	3,420
Repair Plaster below from possible destructive c	640	SF	20.00	12,800

SUBTOTAL				57,760
MARKUPS		35 %		20,216

TOTAL				77,976

Nahant Public Library

Construction Cost Estimate by Phase

Phase 4

<i>Division</i>	<i>Item</i>	<i>Markup</i>	<i>% total</i>	<i>Amount</i>
2	Demolition		3.83%	\$151,750
3	Concrete		1.59%	\$62,850
4	Masonry		2.35%	\$93,295
5	Metals		5.64%	\$223,462
6	Wood & Plastics		2.15%	\$85,224
7	Thermal & Moisture Protection		0.55%	\$21,952
8	Doors and windows		0.60%	\$23,900
9	Finishes		6.40%	\$253,598
10	Specialties		0.12%	\$4,812
11	Equipment		0.00%	\$0
13	Special Construction		0.00%	\$0
14	Conveying Equipment		5.68%	\$225,000
21	Fire Protection		3.73%	\$147,705
22	Plumbing		1.62%	\$64,244
23	HVAC		13.25%	\$525,214
26	Electrical		12.78%	\$506,310
31	Earthwork		2.65%	\$104,963
32	Exterior Improvements		0.00%	\$0
33	Utilities		7.45%	\$295,150
	Hazardous Materials allowance		1.89%	\$75,000
	Subtotal		72.28%	\$2,864,429
	Design/Estimating Contingency	12%	8.35%	\$330,981
	Escalation to midpoint	5.00%	3.90%	\$154,457
	General Conditions	8%	6.55%	\$259,489
	General Requirements	3.00%	2.65%	\$105,093
	Insurance	1.75%	1.63%	\$64,767
	Builders risk (by owner)		0.00%	\$0
	Permit	nic	0.00%	\$0
	G.C. profit	5%	4.63%	\$183,648
	Subtotal		27.72%	\$1,098,435
	TOTAL		100.00%	\$3,962,864

Phase 5

<i>Division</i>	<i>Item</i>	<i>Markup</i>	<i>% total</i>	<i>Amount</i>
2	Demolition			0
3	Concrete		4.26%	\$141,285
4	Masonry		5.95%	\$197,125
5	Metals		0.30%	\$9,829
6	Wood & Plastics		12.40%	\$410,791
7	Thermal & Moisture Protection		11.02%	\$365,252
8	Doors and Windows		5.08%	\$168,355
9	Finishes		5.70%	\$188,763
10	Specialties		0.27%	\$8,806
11	Equipment		0.00%	\$0
12	Furnishings		0.26%	\$8,541
13	Special Construction		0.00%	\$0
14	Conveying Equipment		0.00%	\$0
21	Fire Protection		1.04%	\$34,524
22	Plumbing		2.04%	\$67,560
23	HVAC		7.51%	\$248,920
26	Electrical		5.58%	\$184,788
31	Earthwork		4.47%	\$148,100
32	Exterior improvements		4.74%	\$157,028
Subtotal			70.60%	\$2,339,667
	Design/estimating contingency	12.00%	8.86%	\$293,511
	Escalation to midpoint	5.00%	4.13%	\$136,972
	General Conditions	8.00%	6.94%	\$230,112
	General requirements	3.00%	2.81%	\$93,196
	Bond and GL insurance	1.80%	1.73%	\$57,435
	Builder's risk (by owner)		0.00%	\$0
	Permit	nic	0.00%	\$0
	G.C. markup	5.00%	4.91%	\$162,857
Subtotal			29.40%	\$974,083
Total			100%	\$3,313,750

Grand total

\$7,276,614