Appendix A

- Architectural Evaluation
- Field Observation Report
- Structural Evaluation
- Mechanical Evaluation
- Electrical Evaluation
- Site Issues
  - Review of New Building Sites

BARRINGTON TOWN OFFICES
STUDY FOR REMEDIATION, RENOVATION OR RELOCATION

EXISITNG BUILDING EVALUATION

ARCHITECTURAL EVALUATION

During our site visit and evaluation, we observed many "ADA Violations" that should be brought up to current design standards, and "reasonable accommodations" that should be replaced/updated to make the facility more user friendly. In addition, there were building envelope issues and minor architectural issues that were noticed. Should the building undergo alterations or renovation, the level of work done would determine if ADA upgrades are required under the International Building Code. Work involving new finishes, building envelope upgrades, additions, or modifications to the existing systems, such as the mechanical systems, would constitute "Level 2" alterations and thus under the code, requires the building to be upgraded to meet current ADA requirements.

Vertical Accessibility

Complete accessibility to all areas of the Town Office Building is currently not provided. The entire upper level is not accessible either from exterior grade, or from other levels within the building. The lower level has one room (Selectman's Meeting Room) that can be accessed from the exterior through double doors on the east side of the building. Once in the meeting room, the remainder of the 1930's wing (i.e. the east wing), which is approximately 2-feet higher in elevation, can be accessed by ascending a small steep ramp. The ramp is currently configured at an angle of 12.4 degrees, which far exceeds the ADA maximum of 4.76 degrees (1:12). The proper ramp would require a length of 24-feet in order to be in compliance with ADA.

The attached 1950's/1960's building (i.e the west wing) can be accessed from the lower level of the 1930's wing by ascending another ramp. This ramp is currently constructed at 8.8 degrees, again far exceeding the ADA regulations.

To solve this problem we recommend the installation of a multi-stop elevator near the connection between the original 1930's and the 50's/60's addition. This would require some reconfiguration of the corridor walls as well. In addition we recommend that a platform lift be installed in the "Selectman's Meeting Room" to allow for access from the lowest level of the east wing to the remainder of the building.

It is also important to provide access to the building from the upper parking lot at the rear, or north side of the building into the main entrance and up to the upper level of the east wing. This will require some site re-grading, the construction of a ramp with a proper enclosure such that the ramp is protected from the weather, and the relocation of the entrance door.

Rest Rooms Accessibility

The two existing restrooms on the upper level of the building located in the 1930's wing do not meet many ADA standards. There are numerous ADA violations including insufficient clear space in front of the door (both inside and outside of the restrooms), and a lack of rear and side transfer grab bars. The mounting heights and locations of existing toilet tissue dispensers, soap dispensers, paper towel dispensers, and mirrors do not meet minimum and/or maximum mounting height requirements. The "clear floor space" requirements for each fixture do not meet the current ADA requirements and the heights of the existing toilet and urinals do not meet the proper height requirements. Additionally, the flush controls on the men's toilet are on the wrong side.

There is one additional restroom at the "north" end of the lower level. This restroom is assumed to have met code when it was constructed, but if a major building modification is undertaken, it should be either brought up to current code or abandoned.

The are several small "convenience" toilet facilities in some of the major rooms of the 1960's wing upper level that do not meet code and therefore cannot be included in the total plumbing fixture count for the building.

Drinking Fountains Accessibility

We did not observe any accessible water fountains on any of the levels throughout the building. The best available option is to replace the existing fountain(s) with a new "hi-lo" fixture that meets ADA requirements on each level as required by code.

Stairs and Railings

All of the existing handrails and guardrails at each of the stairwells do not meet current code requirements. Per the building code, all handrails shall have a 1'-0" projection beyond the beginning and end of a stair or ramp run and shall be between 34" and 38" above the finished floor surface, measured perpendicular to the floor. Also, the shape of the handrails at existing stairs and ramps should be examined to insure they meet requirements for the minimum/maximum handrail diameter. There is no guardrail at the opening of the landing at the top of the stairs; a code violation. This handrail would need to be raised to guardrail height and a new handrail installed to the current code.

Building Envelope - Walls

During TTG's visit to the existing Town Office's site, the existing building envelopes of the original 30's school building and the 50's/60's building additions were analyzed and investigated. It was determined that there is no insulation in the existing exterior walls. The original 30's building's exterior wall construction was found to be Concrete Masonry Units (CMU) with a single wythe of brick on the exterior. There is no air space between the CMU and the brick. In the 50's/60's buildings the exterior walls are similarly

constructed with brick and CMU with no air space between. (Note: This has been confirmed by drilling holes into the walls at various locations throughout the building.) The existing wall construction makes for an R-rating of approximately R-4. It is recommended that more insulation be provided throughout the building. The are two ways to achieve this. The first and preferred method is to cover-up or "re-skin" the building. This is accomplished by adding a spray applied air and vapor barrier on the exterior of the brick, install rigid insulation over that, and then add strapping to provide an air space and a point of attachment for the new siding. The suggestion for a siding material would be a durable, maintenance free, metal panel or a cement board siding. The other method is to remove the finishes from the interior of the building, apply an air and vapor barrier, construct a new metal stud wall and add insulation to the interior face of the exterior wall of the building. New gypsum would be added and the interior finish restored.

Building Envelope - Windows

Also contributing to the poor thermal performance of the existing building envelope are the windows/glazing in both portions of the building. The existing windows are loosely fit, with air gaps, and air leakage around them. The windows are also not thermally broken. By removing the existing windows in the 30's building and replacing them with high performance double pane, double hung composite windows, you can improve thermal performance, cut down on air infiltration, and restore historical character to that portion of the building. Similarly, the 50's/60's building could benefit from replacing the existing glazing system with a new thermally broken curtain wall system with high performance double pane vision panels and spandrel panels backed with insulation and interior wall build-out. Both of these solutions will also stop water infiltration at the existing windows.

Building Envelope - Roof

There is approximately 12-inches of batt insulation in the roof space of the 30's building for an R-rating of R-30. There is evidence of approximately 1 to 2 inches of rigid insulation in the existing flat/low sloped roof over the 50's/60's building, for an R-rating of about R-10. (Note: This is assumed based on forensic evidence gathered. No destructive testing was done to confirm this.) The solution to improve the envelope in the 30's roof is to add/check the air seal around all penetrations and against all structures. If possible, adding a few additional inches of blown-in insulation would create an R-40 rating and diminish the thermal loss through the roof. In the 50's/60's wing, we suggest adding a new pitched roof with insulation at the roof plane. This will provide a tempered attic space for mechanical equipment as well as a better thermal rating to the roof system. With a new roof and new insulation a rating of R-35 to R-40 could be achieved. It is anticipated that the new pitched roof would be constructed of wood trusses spaced at 24-inches on center. The trusses would run north to south and be configured to overhang the face of the building by about 18 to 24 inches. This will help to keep water away from the face of the building.

Note: With the added insulation and the sealing of gaps to reduce air infiltration into the building, upgrades to the air handling system will be needed to achieve the correct amount of controlled air changes in the building.

Barrington Town Offices
Study for Remediation, Renovation or Relocation

Field Observation Report

Report By: Jay Doherty, The H.L. Turner Group Inc.
Persons in Attendance: Brian Lenzi, Paul Sanders and Peter Cook – Town of Barrington Building Committee
Date of Site Visit: January 6, 2011

I was out at the building on January 6, 2011 to look at the samples that Brian, Paul, and Pete were drilling. Brian had a hammer drill with a 1-1/2 inch drill bit and we had a scope camera to look inside the walls. We picked several locations that were away from the building occupants.

Hole 1 – 1950's Wing (old nurses office / under the back stairs). The wall thickness was 12-3/8 inches thick (with a true 8-inch Concrete Masonry Unit (CMU) block). We found no air space between the brick and the block. Every 6th course was a Flemish bond or a tie course that connected into the block. The block was cut to accept the brick. There were no brick ties. In addition, the cavity was very dry (as expected this time of year). We looked up and down the wall cavity with the scope camera and there was no visible mold in this area. We took two samples of the block at this location.

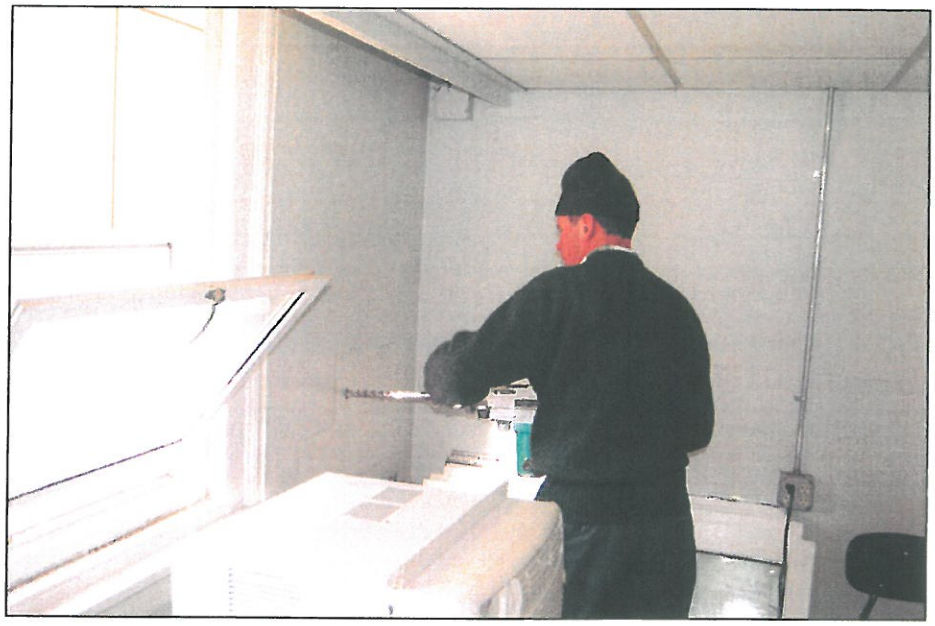
Hole 2 – 1960's Wing (2nd floor front side of building, mid-building). Very similar to the 1950's wing. The wall thickness was a little narrower (due to the CMU block being the modern 8-inch block or true 7-5/8 inches). We found no air space between the brick and the block. Every 6th course was a Flemish bond or a tie course that connected into the block. There were no brick ties. The cavity was very dry (as expected this time of year). We looked up and down the wall cavity with the scope camera and there was no visible mold in this area. We took two samples of the block at this location.

Hole 3 – 1960's Wing (2nd floor over the new door that was recently added in the temporary Selectman's office). Very similar to Holes 2 and 3. We found no air space between the brick and the block. Every 6th course was a Flemish bond or a tie course that connected into the block. There were no brick ties. The cavity was very dry (as expected this time of year). We looked up and down the wall cavity and there was no visible mold in this area. We felt an air draft. Through the camera, we could see the dust created during drilling, blowing around in the wall.

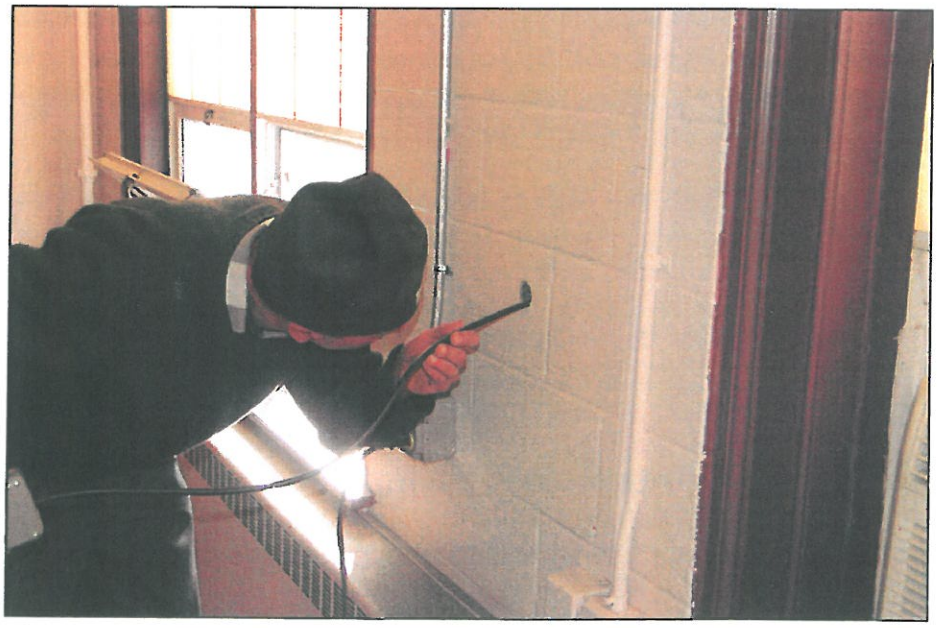
Hole 4 – 1930's Wing (parking lot side in Selectman's meeting room / at previous hole locations). Very similar to 1950's and 1960's wing. The wall thickness was 12-1/2 inches. We found no air space between the brick and the block. Every 6th course was a Flemish bond or a tie course that connected into the block. There were no brick ties. The cavity was very dry (as expected this time of year). We looked up the wall cavity and

there was no visible mold in this area. At this location there was a very strong air draft blowing out of the hole. We took two samples of the block at this location.

At the conclusion of the drilling, Paul was going to add some batt insulation in the holes and put a temp covering over them.



Drilling holes through the CMU.



Using a camera probe to view the wall cavity.

Screen for viewing the wall cavity.

Core of CMU block; visible brick is tie to brick veneer.

New Hampshire MATERIALS LABORATORY, INC.

Test Report

January 25, 2011

Mr. Bill Hickey
The HL Turner Group
27 Locke Road
Concord, NH 03301

File Number: 28182
Job # 3632
Phone: 603-228-1122

Overview:
Samples Received: (2) CMU samples
Work Requested: Determination of carbon content
Sample Disposition: Discard 30 days from date of report

Analysis Results:

The two samples were analyzed using energy dispersive spectroscopy with the following results.

	Composition (wt.%)	
Element	30'S	50's-60's
Carbon	8.3	0.9
Oxygen	60.3	68.2
Sodium	0.5	--
Magnesium	0.7	--
Aluminum	2.9	2.1
Silicon	8.6	10.1
Sulfur	0.8	0.5
Chlorine	0.3	--
Potassium	0.4	--
Calcium	16.0	16.7
Iron	1.1	1.4

Prepared by:

Timothy M. Kenney
Director of Laboratory Services

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800 334-5432 603-692-41[illegible]
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STUDY FOR REMEDIATION, RENOVATION OR RELOCATION OF TOWN OFFICES, BARRINGTON, NH

ASSESSMENT OF EXISITNG FACILITY

ARCHITECTURAL

COMPONENT	OBSERVATION	RECOMMENDATION	REMAINING USEFUL LIFE	REPLACEMENT/UPGRADE COST
ADA – Ramps In Hallway	Ramp slope is 15.5% or 1:3.5. Ramp should be 1:12 less than 5%.	Option 1: Remove the ramp and replace with much longer ramp. Option 2: Remove the ramp and add a small lift. Option 3: Remove the ramp and add Rail Rider. **Option 4: Remove the ramp and add multi-stop elevator.**	0 Years	See Elevator
ADA – Ramp into Selectmen's Meeting Room	Ramp slope is 22% or 1:2.5. Ramp should be 1:12 less than 5%.	Option 1: Remove the ramp and replace with much longer ramp. **Option 2: Remove the ramp and add a small lift.** Option 3: Remove the ramp and infill entire floor to bring up to level of hallway.	0 Years	$23,000.00
ADA – Male Bathroom Items	Bathroom does not meet today's ADA requirements ie: lack of grab bars, fixture mounting heights, clear space and reach ranges questionable, door clearances, etc.	Totally gut bathroom and replace with up-to-date fixtures and accessories.	0 Years	$17,000.00 (does not include ceiling, includes fixtures, accessories and wall & floor finishes.)
ADA – Female Bathroom Items	Bathroom does not meet today's ADA requirements ie: lack of grab bars, fixture mounting heights, clear space and reach ranges questionable, door clearances, etc.	Totally gut bathroom and replace with up-to-date fixtures and accessories.	0 Years	$17,000.00 (does not include ceiling, includes fixtures, accessories and wall & floor finishes.)

STUDY FOR REMEDIATION, RENOVATION OR RELOCATION OF TOWN OFFICES, BARRINGTON, NH

ASSESSMENT OF EXISITNG FACILITY

ARCHITECTURAL

COMPONENT	OBSERVATION	RECOMMENDATION	REMAINING USEFUL LIFE	REPLACEMENT/UPGRADE COST
ADA – Transition Between Floors	There is no way for people with physical issues to move between the levels of the building.	Add new multi-stop elevator.	0 Years	$122,500.00
ADA – Drinking Fountains	Drinking fountain does not meet ADA requirements.	Replace existing and add new fixtures as required so there is an ADA compliant drinking fountain on each floor.	0 years	$5,250.00
ADA – Main Entries	There are steps at back entry into upper floor and steps at front door to landing between floors.	Leave front entry as is. Make the back entry near parking the main entry / accessible entry by adding a new entry vestibule that extends to the parking lot and has a 1:12 ramp.	0 Years	$88,750.00
Windows	Large gaps and air leakage around all windows. Windows not thermally broken.	**Option 1: Remove existing windows and install new double hung windows to match the classic historical character of the building.** Option 2: Remove existing windows and install new thermally broken curtain wall system. Option 3: Remove existing windows and infill windows with high r-value materials.	0 Years	30's Addition: $177,000.00 50/60's Addition: $204,500.00

STUDY FOR REMEDIATION, RENOVATION OR RELOCATION OF TOWN OFFICES, BARRINGTON, NH

ASSESSMENT OF EXISITNG FACILITY

ARCHITECTURAL

COMPONENT	OBSERVATION	RECOMMENDATION	REMAINING USEFUL LIFE	REPLACEMENT/UPGRADE COST
Mold	Reports of mold in the building. Without destructive testing we are unsure if mold has formed on back side of interior walls.	1. Provide air and vapor barriers and increased insulation. 2. Provide ventilation and upgraded mechanical systems. 3. Remove interior finishes that contain high levels of mold spores, (assume 50% of interior walls will need to be removed and replaced).	0 Years	1. See Mechanical 2. See Mechanical 3. $53,750.00
Demolition and Abatement	Existing hazardous materials and substances at exterior walls.	Abate existing hazardous building materials (including but not limited to: flooring mastic, caulking, etc.) and substances (including but not limited to; mold, etc.).	0 Year	$111,520.00
Insulation Roof	Little insulation in roof.	30's wing - Add more blown-in insulation above the ceiling. 50's/60's wing – Add new pitched roof (includes roof shingles, insulation, and trim).	0 Years	30's = $6,000.00 50's/60's (Arch) = $41,700.00
Insulation Walls	Little to no insulation at exterior walls.	**Option 1. Add vapor barrier, insulation, and new exterior finish to all walls.** Option 2. Add insulation to interior and exterior of both wings of building.	0 Year	$350,000.00

STUDY FOR REMEDIATION, RENOVATION OR RELOCATION OF TOWN OFFICES, BARRINGTON, NH

ASSESSMENT OF EXISITNG FACILITY

ARCHITECTURAL

COMPONENT	OBSERVATION	RECOMMENDATION	REMAINING USEFUL LIFE	REPLACEMENT/UPGRADE COST
Moisture & Air Infiltration	At windows and through walls (see above).	Provide replacement windows and new insulated wall (see above).		See both above
Roof Membrane	Signs of edge and seem failures, and mechanical fasteners stressing membrane. Roof drain at high point.	Option 1. Fix / patch all seams. Option 2. Replace entire membrane, add additional insulation, and pitch to drain. **Option 3. Install new insulated pitched roof.**	5 Years	See Structure
Replace Carpet	Much of the carpet is worn, with the exception of the Selectmen's Meeting Room. All carpet may be harboring mold.	Remove all carpet and replace with anti-microbial carpet. Clean Selectmen's Meeting Room.	0 Years	$71,500.00 Carpet $19,000.00 Resilient
Replace Ceiling Tiles	Many of the ceiling tiles are damaged or warped due to moisture difference between occupied space and above.	Replace all ceiling tiles.	0 Years	$70,000.00

STUDY FOR REMEDIATION, RENOVATION OR RELOCATION OF TOWN OFFICES, BARRINGTON, NH

ASSESSMENT OF EXISITNG FACILITY

ARCHITECTURAL

COMPONENT	OBSERVATION	RECOMMENDATION	REMAINING USEFUL LIFE	REPLACEMENT/UPGRADE COST
Lighting fixtures throughout building	Lenses are discolored. No lighting sensors. Ceiling light fixtures are serviceable, but over time fluorescent lamps lose performance.	Clean, re-lamp, and provide new lenses. Replace bulbs.	10 years	See Electrical
Railings (Guardrails & ADA Handrail extensions)	No guardrails at upper level and in locations needed.	Modify existing rail to become guardrails, and add new handrails.	0 Years	$18,250.00
Stair Well	Stair well not enclosed for fire safety.	Add enclosure and fire rated doors at top and bottom.	0 Years	$10,000.00
Exterior Doors		Replace existing exterior doors with new thermally broken door system. Upgrade door hardware.	5 Years	$42,250.00
			Subtotal	**$1,448,970.00 ($77.00 sf @ 18,800 sf)**

BARRINGTON TOWN OFFICES
STUDY FOR REMEDIATION, RENOVATION OR RELOCATION

EXISITNG BUILDING EVALUATION

MECHANICAL/INDOOR AIR QUALITY

The existing boiler plant consists of two relatively new Buderus cast iron hydronic boilers. The boilers are fired by No. 2 oil fired burners. The oil tanks are located in a below grade enclosed space, below the main entrance at the rear or north side of the building. Both boilers are identical size with a capacity of approximately 100,000 BTU's each. The building is fitted with hot water piping and independent hot water system zone pumps. With having recently been replaced they are in very good condition, and thus it is recommended that they will be included as part of the new heating plant.

The hot water supply and return lines are not insulated and appear to be the original piping. It is recommended that all supply and return branch lines be replaced as part of the mechanical systems overhaul. The rooms are heated by wall-mounted, cast-iron radiators. As part of the new heating system it is recommended that these be removed and replaced with a radiant floor heating system. The radiant floor heating system can be installed directly over the existing concrete slabs at the lower levels. It is recommended that rigid insulation be placed over the slab with the radiant heat tubing over that. Everything would then be encapsulated with a lightweight concrete topping. A similar procedure could be accomplished on the second level without the need for the insulation.

In the 1930's wing of the building, two recently installed air-to-air heat recovery units serve two air handlers. It is believed that these were installed to serve the Town offices that were originally located on the second level on this wing. The 1950's/1960's wing has an infiltration-only system for ventilation with window mounted air conditioning units. A high efficiency central ventilation and air conditioning system is proposed which would replace the existing air handling units as well as all window mounted air conditioning units located throughout the building. During our site visits we counted thirteen separate window mounted units. There are various types of central systems that may be considered for the renovation. One such system that is recommended is a displacement type ventilation system. It provides superior air quality by providing a constant circulation of air throughout the building. Fresh tempered air is introduced into the building at the lower level of the rooms. The occupants in the room, as well as the heat supplied by the radiant floor, heat the air. As the air is warmed, it rises, and is collected and exhausted at the upper extremities of the space. Before the air is exhausted to the outside, the heat is recovered and used for tempering the incoming outside air. The system can be adapted to most spaces because of the ability to utilize smaller size ducts.

STUDY FOR REMEDIATION, RENOVATION OR RELOCATION OF TOWN OFFICES, BARRINGTON, NH

ASSESSMENT OF EXISTING FACILITY

MECHANICAL/IAQ

COMPONENT	OBSERVATION	RECOMMENDATION	Remaining Useful Life	Replacement/Upgrade Cost
Boiler Plant	Two new cast iron hydronic boilers with #2 oil fired burners. Equal sizing. Building zoned by independent HWS zone pumps. Fuel storage tank buried.	Reuse the existing boilers.	20 plus years	0
HWS & R Piping	Piping not insulated in mechanical room. Piping appears to be reused.	Replace branch piping.	0 years	$28,000
Heating Terminals	Cast iron wall mounted radiators.	Replace with radiant floor heating system. Provide zone control on a room-by-room basis.	0 years	$75,200
1930's Building Ventilation and Air Conditioning System	Two recent air-to-air heat recovery systems serve two air handlers (serving the second floor spaces only).	Replace as part of new central system. Provide central ventilation and air conditioning system. Displacement type.	0 years	$230,800

MECHANICAL/IAQ

COMPONENT	OBSERVATION	RECOMMENDATION	Remaining Useful Life	Replacement/Upgrade Cost
1960's Building Ventilation System: Both Floors	Infiltration only system for ventilation and window mounted A/C units.	Provide central ventilation and air conditioning system. Displacement type.	0 years	$267,600
			Subtotal	**$601,600.00**

NOTES:

Shell Energy Efficiency

In the interest of decreasing the heat loss of the facility, the following items need to be considered:

a.) The building is composed of a circa 1930 building with a circa 1960 addition. The building foundation is poured concrete (1930's) with a slab-on-grade addition. The building walls are not currently insulated and are 8" thick CMU block wall with a brick facade. This wall type will need further study to determine how to increase the walls thermal resistance without causing premature deterioration of the wall structure. It is likely that the walls will not be capable of being insulated sufficiently well to meet current energy standards as published in ASHRAE 90.1 without providing a new exterior facade. Moisture as vapor and liquid intrusions into the building through the walls appear to be ongoing.

b.) The foundation is not currently insulated, while new site work has recently been completed to improve water drainage away from the building. Additional footing drains may be required and additional insulation will need to be added to the floor and wall of the ground contact portions of the building.

New ventilation system:

The ventilation systems currently in use are recommended for removal. A new displacement ventilation system is recommended because of the ability to use smaller sized ducts and superior air quality. The ventilation systems include air-to-air heat recovery systems to be energy efficient and double wall air handlers to help keep the air handlers clean. The systems will provide ventilation air to all occupied spaces, and will incorporate demand control systems for larger meeting rooms. Cooling will be accomplished using dehumidification of the supply air.

New heating system:

The existing heating terminals and branch piping will be removed. A new low temperature radiant floor heating system will be installed to provide heat to the existing spaces. The floor will be a 2" thick concrete layer on top of rigid foam insulation over the existing slab-on-grade floor. The upper level floors will include a 2" thick layer of lightweight concrete. Radiant floor heating piping will be embedded in the new concrete layers. The system will incorporate manifolds to provide multiple zones of control. The existing oil fired heating plant and fuel storage system will remain.

BARRINGTON TOWN OFFICES
STUDY FOR REMEDIATION, RENOVATION OR RELOCATION

EXISITNG BUILDING EVALUATION

ELECTRICAL

The utility that serves the Town offices consists of three (3) pole mounted utility transformers with overhead service entrance conductors to the meter socket, located on the north or front side of the building. The transformers are located approximately 100-feet from the exterior of the main electrical room. The service equipment appears to be original to the building. There are no visible signs of deterioration and there are no reported problems. We observed that new exterior conduit for low voltage cabling had been installed.

The main service equipment appears to have been installed within the last five years. The main service is a Siemens type "S4" Series 400 ampere 120/208 volt, 3-phase distribution board with a 400 ampere main circuit breaker. There are no visual signs of deterioration and no reported problems. The utility, Public Service of New Hampshire (PSNH), has noted that the peak usage for a year is approximately 90 amperes, thus the existing 400 ampere service appears to be adequate for this building.

The panelboards consist of Siemens S1 Series type panels. The panels are in good condition and appear to have been installed within the last five years. The original recessed mounted panels are still in place. Many of the outer covers are screwed shut and some of these old panels are being used as junction boxes. We recommend that recessed junction/pull boxes be provided at these old panel board enclosures.

Remote battery units provide exterior emergency lighting for the building. In addition, there are battery-ballasted fixtures within the building. The exterior doors do not have emergency lighting fixtures and exit signs are a combination of LED and incandescent type lamped devices. We recommend that a normal power shutdown test be conducted during off hours to verify the existing emergency lighting levels throughout the building. Areas with insufficient lighting levels should be noted and additional remote battery units provided. We also recommend that new weatherproof emergency battery units/heads at each exterior door be provided to provide illumination at night during a loss of power. Furthermore, we recommend that the existing incandescent type emergency exit signs be replaced with LED type signs since the LED type signs are low maintenance, more energy efficient, and will provide longer life.

The site lighting consists of utility pole mounted floodlights and there are building mounted fixtures located at each door. The fixtures contain inefficient incandescent lamps. Utility pole mounted fixtures are typically leased from the utility. It is recommended that the Town review the lease agreement with PSNH to analyze the cost

comparisons of providing new pole mounted fixtures on-site. We also recommend that the Town install new energy efficient fixtures at each exit door.

The lighting in the offices and corridors is provided by 2 x 2, 2 x 4, and 1 x 4 lensed surface and recessed mounted fixtures. Many of the lenses on the fixtures are discolored. It was reported during our assessment that the energy efficient florescent T8 lamps are provided for each of the fixtures. The lamp quantity varies based on the fixture style, but lighting levels appear to be sufficient for the working environment. It is recommended that all fixtures be cleaned and re-lamped. Florescent lamps will lose performance over time. Lenses that are discolored should be replaced. We also recommend that the large open office areas be provided with ceiling mounted occupancy sensors to automatically control the lighting fixtures. Likewise, small standard size offices shall be provided with wall mounted occupancy switches and corridors shall be provided with ceiling mounted occupancy sensors as well.

The existing twelve-zone fire alarm control panel currently utilizes six zones, thus leaving six spare zone slots within the panel. Overall smoke/heat detector coverage and audio/visual coverage appears to be adequate. Various locations throughout the building such as outside the main electric room in the basement, the large open offices and area currently designated as "student services" and "finance" shall be provided with additional smoke and audio/visual coverage. Since the building does not have a sprinkler system it shall have adequate smoke and heat detectors throughout. We observed that the current horn and strobe devices in the tax collection and adjacent spaces are not providing adequate coverage due to the fact that the installed millwork inhibits the coverage of these devices. We recommend that additional audio/visual devices be installed in the large open office areas and that existing devices in the tax office and adjacent collection room that are currently being obstructed be relocated as required.

There is an existing security system on the second level in the former area occupied by the Town offices. This should be evaluated to determine if it is usable. The current tax department on the lower level has been fitted with new security devices that appear to be satisfactory.

The layout of the power receptacles throughout the building is a combination of flush mounted receptacles and the surface mounted type. There appears to be an adequate number of receptacles for most locations. Additional surface mounted "wiremold" receptacles may be added as required for additional computers and office equipment. With regard to cabling, all branch circuit feeders shall be metal clad cabling or in conduit for a building of this type/usage. There was no non-metallic cabling observed at the time of this assessment, but this should be verified, and all non-metallic cables should be replaced during the renovation work.

There are telephone/data outlets installed at the desk locations throughout the building. As computers, phones, and other equipment are added, additional outlets should be added.

Provisions for adding more telephone/data devices shall be made at the Tel/Data closet located in the lower level of the 1930's wing. Provide additional patch panels and switch hubs as required.

Finally, we recommend that a 100 Kw standby diesel generator be installed for powering non-life safety items such as boilers, pumps, water heaters, telephones, selected receptacles, etc. All life safety systems such as lighting and the fire alarm system are on existing battery back-up. To put these systems on the generator would require additional transfer switches, panelboards, and a two-hour rated closet. Existing lighting fixtures would have to be re-circuited or new lighting fixtures installed. Replacing the existing battery units is the most cost effective approach.

ELECTRICAL

COMPONENT	OBSERVATION	RECOMMENDATION	Remaining Useful Life	Replacement/Upgrade Cost
Electrical Utility Consists of (3) Pole-mounted utility transformers, service entrance conductors are overhead to the meter socket located at front of the building. Transformers are located approx. 100' from exterior of the Main Electric Room.	*Service equipment appears to be original to the building. No visible signs of deterioration shown and no reported problems. New exterior conduit for low voltage cabling has been installed.*	No recommendations at this time.		
Main Service Seimens, Type 'S4' Series 400 AMP, 120/208V, 3P, 4W distribution board with 400A Main Circuit Breaker	The service equipment appears to be installed within the last five years. No visual signs of deterioration shown and no reported problems. The utility (PSNH) has noted the peak usage for a year is	No recommendations at this time.	30-35 yrs	

ELECTRICAL

COMPONENT	OBSERVATION	RECOMMENDATION	Remaining Useful Life	Replacement/Upgrade Cost
	approximately 90 amps. The existing 400amp service appears to be adequate for this building.			
Lighting	Emergency Lighting – Remote emergency battery units are in place, in addition to battery ballasted fixtures within the building. The exterior doors do not have emergency lighting fixtures. Exit signs are a combination of LED type and incandescent lamped type.	Provide a building normal power shutdown during off hours to verify the existing emergency lighting levels throughout the building. Areas with insufficient levels shall be noted and additional remote battery units shall be provided. Provide new remote/weatherproof emergency battery units/heads at each exterior door to provide illumination at night during a loss of power. Replace existing incandescent type emergency exit signs with LED type. These energy efficient LED type units are low maintenance and provide longer fixture life.	Fixtures – 15 yrs. Ballasts – 7-8 yrs. EBU – 10 yrs. 10 years	**$2000.00** for shut down and testing $300.00 per emergency fixture (installed price) **(5) $300.00 - $1500.00** $300.00 per emergency LED exit sign (installed price) **(8) $300.00 - $2400.00**
	Site Lighting - Consists	Utility pole mounted fixtures		$1700.00 per fixture with

ELECTRICAL

COMPONENT	OBSERVATION	RECOMMENDATION	Remaining Useful Life	Replacement/Upgrade Cost
	of utility pole mounted flood lights. Building mounted fixtures are located at each exit door. Fixtures contain inefficient incandescent lamps.	are typically leased from the utility company. The town should review the lease agreement with PSNH to analyze the cost comparisons of providing new pole mounted fixture on site. Provide new energy efficient building mounted fixtures at each exit door.		pole(installed price). **(5) $1700.00 - $8500.00** $350.00 per exterior building mounted fixture (installed price) **(5) $350.00 - $1750.00**
	Offices and Corridors – Consists of 2X2, 2X4 and 1X4 lensed surface and recessed mounted fixtures. Many of the lenses on the fixtures are discolored. During the site survey it was referenced by a town employee that light fixtures are provided with energy efficient fluorescent T8 lamping. Lamping quantities per fixture vary based on fixture style. Lighting levels appear to be	Clean and relamp lighting fixtures throughout the building. Fluorescent lamps, over time, lose performance. Lenses that are discolored, shall be replaced with new. Large open office area shall be provided with ceiling mounted occupancy sensors to automatically control the lighting fixtures. Small/standard size offices shall be provided with wall mounted occupancy switches.	5 years	$75.00 per fixture to clean and relamp **(100) $75.00 - $7500.00** $50.00 per fixture to provide and install new lens. **(25) $50.00 - $1250.00** $240.00 per ceiling mounted occupancy sensor. **(12) $240.00 - $2880.00** $100.00 per wall mounted occupancy sensor. **(30) $100.00 - $3000.00**

ELECTRICAL

COMPONENT	OBSERVATION	RECOMMENDATION	Remaining Useful Life	Replacement/Upgrade Cost
	sufficient for the working environment. Lighting is switched via standard wall switches. -Light fixtures are controlled via wall switches located at various locations throughout.	Corridors shall be provided with ceiling mounted occupancy sensors to automatically control the lighting fixtures.		$240.00 per ceiling mounted occupancy sensor. **(24) $240.00 - $5760.00**
Fire Alarm System Fire Alarm control panel is a 12 zone analog panel manufactured by Honeywell 12 zone Panel. Key box located at main entrance. Digital Dialer is utilized for connection to the local fire department.	The existing (12) zone fire alarm control panel is currently utilizing (6) zones and leaves (6) spare zones slots within the panel. Overall smoke/heat detector coverage and audio/visual coverage appears to be adequate. Various locations throughout shall be provided with additional smoke and audio/visual coverage. (outside main electric room in	Provide additional smoke detectors in locations that have insufficient coverage. This unsprinklered building shall have smoke/heat detector throughout.	10-15 yrs	$250.00 per smoke detector **(10) $250.00 - $2500.00**

ELECTRICAL

COMPONENT	OBSERVATION	RECOMMENDATION	Remaining Useful Life	Replacement/Upgrade Cost
The building is unsprinklered.	basement, large open offices, Student services, finances) Horn strobe devices are not providing appropriate coverage in the tax collection and adjacent spaces. These areas have had new mill work provided which inhibits the coverage of the fire alarm devices.	Provide additional audio/visual devices in the large open office areas and relocate existing devices that are being obstructed in the tax office adjacent collections room.		$275.00 per audio/visual **(10) $275.00 - $2750.00**
Security System	There is an installed security system on the second floor in the vacant office area.(old tax office) There are new security devices located in the relocated tax department.	Evaluate the existing system on the second floor. May require service if used in the future. No recommendations at this time.	10-15 yrs.	**$5000.00**

ELECTRICAL

COMPONENT	OBSERVATION	RECOMMENDATION	Remaining Useful Life	Replacement/Upgrade Cost
Receptacles/Power Requirements	General receptacles layouts (flush)are installed with additional surface mounted devices throughout. There appears to be sufficient power requirements for the use of the building.	Provide additional surface mounted (wiremold) receptacles as required for additional computers and equipment. The town shall verify the use of non-metallic cabling within the building. There appeared to be none at the time of visit. Branch circuit feeders shall be in conduit or metal clad cabling within a building for this type/use.		$250.00 per receptacle installed. **(25) $250.00 - $6250.00**
Telephone/Data	Offices have telephone/Data outlets installed at the desk locations throughout the building Telephone/Data equipment is located in the "Tel/Data" Closet on the lower level, at the bottom of the ramp.	Provide additional surface mounted (wiremold) Tel/Data outlets as required for additional computers and equipment in the future. Make provisions for additional tel/data devices to be added. Provide additional patch panels and switch hubs as required.	20yrs.	$200.00 per tel/data location **(10) $200.00 - $2000.00** $2000.00

ELECTRICAL

COMPONENT	OBSERVATION	RECOMMENDATION	Remaining Useful Life	Replacement/Upgrade Cost
Panelboards	*Panelboards consist of Siemens S1 series type panels. These panels are new and appear to be installed within the last 5 years* *Original recessed mounted panels are still in place. Many of the outer covers are screwed shut. Some of these panels are being used as junction boxes.*	No remediation required at this time. Provide existing panelboard enclosures with recessed junction/pull box at these respective locations.	Panels 25yrs. Feeders 30yrs.	**(2) @$1000.00 = $2000.00**
				Total Range of **$85,000.00 - $95,000.00**

BARRINGTON TOWN OFFICES
STUDY FOR REMEDIATION, RENOVATION OR RELOCATION

EXISITNG BUILDING EVALUATION

STRUCTURAL EVALUATION

The existing Town office building located at 41 Province Lane is a brick masonry structure that was built in two phases. The original building, constructed during the 1930's served as a school for the Town of Barrington for many years. The overall size of the 1930's wing is approximately 47' by 93'. The walls of this wing are constructed of concrete masonry units (CMU) with a facing of brick on the exterior. Forensic investigation revealed that the brick is tight against the CMU with no air space. The first floor is a concrete slab-on-grade and the second floor is concrete supported by steel framing, spanning front to back. The roof is a hip style roof and the structure is primarily wood-framed with 1-3/4" x 9-1/4" rafters at 24" on center. There are two steel trusses, one at each end of the building, that span front to back. The steel trusses provide support for the hip rafters. The roof is sheathed with 1" boards and is covered with conventional asphalt shingles. The shingles appear to be in good condition.

In the early 1950's a new one-story wing was added to the west side of the original school. This portion of the building is approximately 60' by 85'. It is our understanding that a second story was added to the 50's wing sometime in the early 1960's. The 50's/60's wing is constructed of concrete masonry unit (CMU) walls with a brick façade. The brick is tight against the CMU with no air space, similar to the 30's wing. The first floor is a concrete slab-on-grade and the second floor is wood-framed with a steel beam line along both sides of the central corridor. The roof structure is composed of steel beams and bar joists with "tectum" panels covered by rigid insulation and an EPDM roof membrane. According to reports, the EPDM roof is only about 15 years old. Typically, a roof of this type has a useful life of at least 20 years. Even though the membrane material itself appears to be in reasonably good condition, we did observe that the edges of some of the seams are easy to lift, indicating that the adhesive is starting to fail. Usually in a roof of this type the seams are often the first to fail. The seams may be redone as a stopgap measure to extend the life of the roof, but in our opinion, there is about another 5 to 6 years of remaining life in the existing membrane. We also observed that the roof drains are located at the centerline of the roof and that there are low spots along the center of the roof where water can pond before it flows to one of the roof drains. One of the drains was clogged with leaves, thus impeding the flow of water off the roof. At the time of our investigation a sizable pond had formed around the drain.

Analysis of Existing Structural Elements

The existing structural components were analyzed for the current code required loadings. The publication TR-02-6 entitled "Ground Snow Loads for New Hampshire" calls for a "ground" snow load of 70 pounds per square foot for the Town of Barrington. Based on

several factors including the "Importance Factor" for the building type and the "Exposure and Thermal factors", the required roof snow load for the design is 50 pounds per square foot.

The building code also stipulates that office spaces should be designed for a live load of 50 pounds per square foot (psf) with a corridor load of 100 psf for the first floor and 80 psf for corridors above the first floor. Furthermore, the code requires that a partition load of 15 psf be included to account for office partitions and temporary portable partitions.

For this analysis we assumed that the steel used in the 30's wing has a yield strength of 32,000 pounds per square inch (psi) with an allowable bending stress of 19,000 psi. The steel used in the 50's/60's wing has a yield strength of 36,000 psi with an allowable bending stress of 21,000 psi.

1930's Wing

The capacity of the roof structure is limited by the strength of the 1-3/4" x 9-1/4" wood rafters than span from the ridge to a 6 x 10 timber that is located approximately 10'-6" off the ridge, and then down to the outside wall of the building. The maximum rafter span of 12'-6" is from the outside wall of the building to the 6 x 10 timber. The 6 x 10 beam is supported by a series of wood posts that carry down to the lower level. The analysis indicated that the rafters are capable of supporting the code prescribed snow load of 50 pounds per square foot (psf), plus the dead load of the decking and shingles.

The second floor framing consists primarily of 12" deep wide flange floor beams that span front to back from the outside walls to a central column supported beam line. The beams span approximately 23' and are adequate for the dead load of the 3" to 4" concrete slab and a live load of over 80 psf. The floor over the Selectman's meeting roof is framed similarly and is adequate for carrying a live load of over 80 psf, plus the dead load.

1950's/1960's Wing

The steel bar joists that support the roof of the 1960's wing are 14" deep over the offices and 8" deep over the corridor. In both cases the joists are capable of supporting a live load of approximately 80 pounds per square foot, considerably more than the code prescribed live load of 50 psf. The committee has expressed a desire to look into adding a simple wood-framed gable style sloped roof. This is feasible and could be achieved relatively easily. We would recommend that the existing roof covering and rigid insulation be removed and that the new roof trusses be configured in such a way that they would provide an attic space for mechanical equipment. We would also recommend a truss with an overhang to help keep the roof runoff away from the face of the building. Furthermore, we would recommend that the roof itself be insulated in order to create a tempered space for the mechanical equipment. The sloped roof is discussed in more detail below.

The second floor corridor is framed with 2 x 8 wood joists at 12" on center, spanning 8' between 10" wide flange beams. The live load capacity of the second floor corridor is well over the 80 psf required by the code. The framing over the office space consists of full dimension 1-1/2 x 13 wood floor joists at 12" on center. These joists span over 24' between supports. The wood floor joists are capable of supporting a live load of 45 pounds per square foot (psf) slightly less than the code prescribed basic live load of 50 psf, with no allowance for the required partition load allowance. Since most of the partitions are fixed and located over known load bearing walls or are located directly over partition walls below, this additional code required allowance can be safely ignored. However, since the existing second floor is slightly below capacity, the occupants should avoid placing heavy filing cabinets or a group of cabinets in any given office space on the second floor of the 60's wing.

New Sloped Roof for 60's Wing

The Building Committee has inquired about the possibility to add a sloped roof to the existing 1960's wing. The wing is approximately 60' x 85' for a total area of 5,100 square feet. A new gable style sloped roof could be added to the existing building by utilizing the existing bearing lines, which include the north and south exterior walls and the bearing lines on each side of the central corridor. The simplest approach would involve the installation of prefabricated wood trusses spaced at 24" on center. The existing roof would be removed including the membrane and rigid insulation prior to installing the wood trusses. The roof would have a pitch from 5:12 to 6:12 and the trusses could be constructed as attic style trusses, which would provide a space at the center for mechanical equipment. As mentioned above, the trusses would have an 18" to 24" overhang. The trusses would be sheathed with plywood, vented insulation board with a plywood backing and covered with ice and water shield and standard asphalt shingles. Insulating the roof provides a tempered space in the attic making it an ideal location for mechanical equipment. The projected cost for adding the new roof is broken down as follows:

- Prepare existing roof for installation of the trusses $21,000
- Install prefabricated wood trusses.....$31,000
- Plywood sheathing.....$ 6,500

Sub Total.....$58,500

Other costs (carried under architectural work)

- Ice and water shield .....$ 2,000
- Shingles.....$18,000
- Trim.....$ 6,000
- Insulation.....$15,700

Sub Total.....$41,700

BARRINGTON TOWN OFFICES
STUDY FOR REMEDIATION, RENOVATION OR RELOCATION

EXISITNG BUILDING EVALUATION

SITE ISSUES

This report summarizes our evaluation of the site issues present at the Barrington Town Hall, and the potential challenges they may present to the Town should they opt to renovate the building as a long-term solution to their municipal needs. On the day of our visit, the Town was in the process of having some site drainage improvements installed, to alleviate a problem with water infiltration into the building. The impact of these completed improvements has been considered in this investigation, which addresses the identified issues in detail in the following sections.

The Barrington Town Hall is situated on a 5.48 acre parcel identified as Lot 233-0044 on Town tax maps, which is located at the intersection of Route 9 and Ramsdell Lane (Province Lane); see Figures 1 and 2. The site slopes from north to south toward Route 9 with parking on two levels, connected by a paved ramp. Primary access to the building is adjacent to the lower parking area on the west side of the structure.

Stormwater runoff is allowed to flow overland from the north side of the site toward Route 9, with little infrastructure needed to address its management. A grassed slope on the south side of the lot intercepts runoff from the impervious surfaces before it reaches the roadway. The new drainage improvements include footing drains and yard drain inlets on the northeast side of the building, at the toe of an existing slope that pitches toward the structure.

Parking

The Barrington Town Hall site includes dedicated off-street parking for 46 vehicles in two separate lots, both accessed from Ramsdell Lane and connected by a steep asphalt ramp. The lower asphalt lot, which sits adjacent to the accessible building entrance on the west side of the facility, includes 23 designated spaces, one of which is delineated as an accessible space. The lot slopes from its northern boundary, abutting Ramsdell Lane, in a southerly direction at grades ranging from 9% to 2%, which allows for stormwater to flow off the lot and onto a sloping grassy lawn. Since the lot abuts Ramsdell Lane directly, there is little to no separation between the edge of the public street and the upper row of parking spaces. A separate entrance and exit provides for a smooth vehicular flow through what could potentially be a difficult lot to navigate. The dumpster for the facility is located at the southwest corner of the lot and is situated such that a garbage truck can access the vessel directly from the entrance, without having to drive along the travel lane between rows of parked vehicles.

The upper parking lot sits on the north side of the Town Hall, 8 to 10 feet higher than the lower lot, and consists of a paved section and a gravel section. The paved section includes 23 striped spaces, 2 of which are designated as van accessible, separated by an accessible aisle. The gravel area appears that it could accommodate up to an additional 30 to 40 vehicles. The lot is graded to intercept stormwater runoff before it can flow down against the building, and directs it eastward toward a grass swale that slopes toward Route 9. There are two entrances on the north side of the Town Hall facing this parking area; however, neither of them is compliant with ADA (Americans with Disabilities Act) accessibility regulations. An asphalt sidewalk provides pedestrians with access to the ramp connecting the two lots. The ramp slopes at 17% for approximately 40 linear feet, which does not meet current ADA guidelines. There is a second at-grade entrance on the east side of the building; however, there is no ADA accessible route to this door either. Utilizing this door from the upper parking lot requires one to walk down a gravel driveway with a 9% to 10% slope.

These lots appear to be functioning adequately for the Town Hall's needs, but to ensure long-term functionality we offer the following recommendations:

- If space permits, utilize the grassed slope on the south side of the lower lot (see Civil Photo 1) to reconstruct the lot further south from its current location and establish greater separation between the parking spaces and the public right-of-way. Construct a raised, curbed island between Ramsdell Lane and the lot to create a physical barrier as well (see Civil Photo 2). We understand that there is an existing leaching field in the grassed area south of the lower lot and therefore it may not be possible to reconstruct the subject lot further south. Further investigation is required in order to confirm the space available. We also understand that curbing is an impediment to efficient snow removal. This would have to be carefully considered along with input from the Facility Manager before implementing this recommendation.

- One option calls for the relocation of all accessible spaces to the lower parking area on the west side of the building. There are currently a sufficient number of spaces to meet ADA regulations, so if the total number of parking spaces isn't increased, additional accessible spaces are not required. To ensure compliance with ADA specifications, the portion of the lot with these spaces may require regrading to ensure the slope is 2% or less.

- Accessible spaces should not be maintained at the upper parking area; unless the paved ramp is reconstructed to be compliant with ADA guidelines (see Civil Photos 7 and 8). If a new ramp is constructed into the rear entrance on the north side of the building, the accessible spaces will be maintained and there would be no need to reconstruct the paved ramp that runs down to the lower lot on the west side of the building. Furthermore, some of the accessible spaces at the lower level could be eliminated.

- Construct a concrete dumpster pad to provide a more firm, impervious surface beneath the container. Provide a fence around the perimeter to establish visual screening (see Civil Photo 4).

- Install curbs around landscaped islands at upper parking lot to prevent damage to vegetation and to prevent soil from being flushed onto pavement (see Civil Photo 9).

- Pave gravel access drive on east side of structure, linking upper lot to paved driveway intersecting with Route 9. If the door on the east end of Town Hall is to be used as a means of accessible access, provide an ADA compliant pedestrian route from the parking spaces to the entrance (see Civil Photo 10).

- Pave the gravel parking area and stripe parking spaces. Additional accessible spaces may be required with an addition of delineated spaces (see Civil Photo 11).

Site Drainage

Because the site slopes consistently to the southwest toward Route 9, most of the runoff at this site flows overland, with very little infrastructure to provide control or management. A drainage swale along the shoulder of the State road keeps runoff from flooding the pavement. At the lower parking lot this has not appeared to create problems, because there is a clear path from the pavement to Route 9 along the west side of the facility; however, this absence of drainage measures has been particularly problematic on the north side of the Town Hall, where a vegetated slope angles sharply from the upper parking lot to the building, providing a direct path for runoff to approach the structure. In the fall of 2010, in order to address a problem with moisture infiltrating into the building, perforated footing drains were installed along the northern face of the building, yard drains were placed to collect any ponded surface water from the vegetated area on the north side of the facility, and a portion of the upper parking lot was regraded to intercept runoff and redirect it around the building. The installed pipes tie into an existing culvert and daylight below the building on its south side, routing collected surface water and groundwater onto the grassed lawn that slopes toward Route 9. Based on the design drawings provided to The H.L. Turner Group Inc., it does not appear that the existing foundation walls were treated with a waterproofing material, nor were any foundation drains installed along the below-grade spaces on the south and southeast sides of the Town Hall. Furthermore, the original Barrington School building has a sloping roof that directs rainfall and snowmelt directly onto the ground below the eaves, and there is an absence of stone drip zones with surface drains to collect the roof runoff.

The following additional recommendations should be implemented to eliminate building moisture intrusion:

- Install additional stone and geotextile-wrapped foundation drains around the perimeter of all sections of the building with below-grade rooms (see Figure 4).

- Apply a waterproofing membrane and drainage board to the exterior foundation walls for the entire length of the foundation drain. In other words, apply these measures to the foundation wall everywhere it is backed by a below-grade space. Backfill with a free-draining material (see Figure 4).

- Install a 6' to 8' wide, 12" deep stone drip edge beneath all sloped roofs. Place 2" to 3" diameter stone over non-woven geotextile fabric, and install a perforated surface drain at the bottom of the stone. Daylight the surface drains away from the structure. Ensure top of drip edge stone is at least 4" below the sill of all at-grade windows and drop grade at existing doorpad 2" to 3" to prevent water from ponding in front of the door. Slope grade away from sidewalk between stairs and door pad (see Civil Photo 14 and Figure 4).

- Construct stabilized outlet at daylighted culvert off southwest corner of building (see Civil Photo 13). Repair and reseed rill erosion in grassed slope.

Miscellaneous Site Issues

Should the Town of Barrington decide to make the investment in their current facility to utilize it for the future, there are some additional items that should be included in future designs for this site:

- Exterior site lighting should be added to illuminate the parking lots and pathways.

- The front steps at the employee entrance should be reconstructed or repaired and the railings should be replaced to meet current regulations (see Civil Photo 14).

- Replace railings at accessible ramp and stairways to be ADA compliant.

- Spring 2011 - Inspect the seed that was planted in the fall of 2010 to assess germination. If necessary, reseed and restabilize. Review performance of yard drains and their effectiveness at removing standing surface water, particularly during spring thaw and spring rains (see Civil Photos 15 - 18).

- Review performance of yard drains, particularly during spring thaw and spring rains.

STUDY FOR REMEDIATION, RENOVATION OR RELOCATION OF TOWN OFFICES, BARRINGTON, NH

ASSESSMENT OF EXISTING FACILITY

CIVIL/SITE

COMPONENT	OBSERVATION	RECOMMENDATION	Remaining Useful Life	Replacement/Upgrade Cost
Footing Drains	Installed in fall of 2010. Not installed around entire perimeter of below-grade spaces.	Install additional footing drains at perimeter of all below ground spaces. Pipe should be surrounded by stone-wrapped geotextile (installed foundation drain is so constructed). Approx. 120 if required.		**$6,000.00**
Foundation Walls	No waterproofing or insulation appears to have been installed against exterior face of foundation at below-grade spaces.	Apply waterproofing to exterior of foundation walls and install rigid insulation/drainage board. Backfill trench with free draining material. (340 lf +/-)		**$18,000.00**
Drip Edge/Surface Drains	Absence of stone drip edge beneath portion of building with sloping roofs. New yard drains installed in fall 2010 to manage surface runoff on north side of building.	Install 6' – 8' wide, 12" deep stone drip edge with 2" – 3" stone beneath all sloping roofs. Place perforated drain pipe at bottom of stone and daylight to drain. (230 lf +/-)		**$12,000.00**
Culvert Outlet - Southwest Corner of Facility	Absence of outlet protection creating rill erosion on vegetated slope facing Route. 9	Install outlet protection (riprap or similar) at outlet to prevent erosion. Repair existing erosion and reseed.		**$500.00**

STUDY FOR REMEDIATION, RENOVATION OR RELOCATION OF TOWN OFFICES, BARRINGTON, NH

ASSESSMENT OF EXISTING FACILITY

CIVIL/SITE

COMPONENT	OBSERVATION	RECOMMENDATION	Remaining Useful Life	Replacement/Upgrade Cost
Grade along north side of building.	Little separation between windowsills and finish grade. Finish grade flush with concrete door pad and asphalt walk on north side of building.	Provide minimum 4" vertical separation between finish grade and windowsills. Slope grade away from sidewalk and door pad.		**$2,000.00**
Accessible ramp from upper parking lot to entrance.	Ramp is not compliant with ADA regulations (too steep). Handrail is not compliant with ADA.	Reconstruct ramp and replace handrail in accordance w/ ADA specifications. Alternatively, relocate accessible parking spaces (see below).		**$10,000.00**
Accessible parking spaces.	One located at lower lot, two located at upper lot.	Restripe lower parking lot (west side of facility) so all accessible spaces are located adjacent to accessible entrance. Ensure new spaces meet all ADA regulations.		**$1,000.00**
Lower parking lot (lot on west side of building).	Virtually no separation between Ramsdell Lane travel way and row of parking spaces.	Reconstruct parking lot to shift it away from Ramsdell Lane. Provide a raised landscaped island between lot and public road to provide a physical barrier/separation.	**Note**: The relocation of the parking lot is dependent upon the location of an existing leaching field and the space available. Further investigation is required.	**$20,000.00**

STUDY FOR REMEDIATION, RENOVATION OR RELOCATION OF TOWN OFFICES, BARRINGTON, NH

ASSESSMENT OF EXISTING FACILITY

CIVIL/SITE

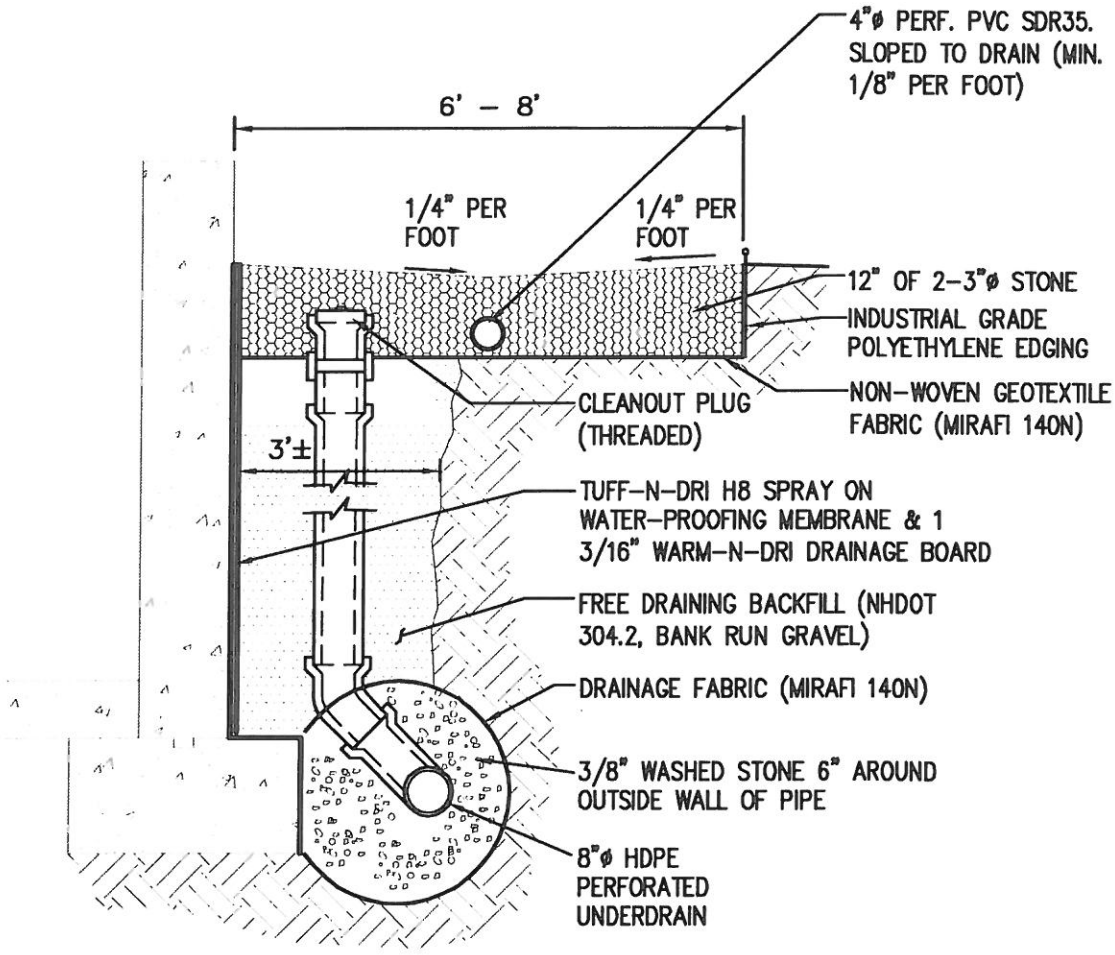
COMPONENT	OBSERVATION	RECOMMENDATION	Remaining Useful Life	Replacement/Upgrade Cost
Upper parking lot (north side of building).	Landscaped islands flush with pavement.	Install curbing to protect material planted in islands and to prevent soil/mulch from flushing onto parking area.		**Granite: $4,500.00** **Bituminous: $2,000.00**
Gravel driveway on east side of building, connecting upper lot and driveway off of Route 9.	Gravel material washed off of slope onto paved driveway by runoff.	Pave gravel driveway. Pave and stripe the gravel parking area, if the area is utilized as parking.		**Driveway: $8,000.00** **(Gravel Parking: $20,000.00)**
Dumpster	Well-situated for ease of access by garbage truck, but it is unscreened and sits on bare ground.	Place concrete pad for dumpster to sit upon. Install fence around dumpster to provide visual screening.		**$2,500.00**
Site Lighting	Extremely minimal.	Develop site lighting plan to provide greater visibility, security, and aesthetic appeal, while preventing off-site light spillage.		**Included in Electrical Costs**

CIVIL/SITE

COMPONENT	OBSERVATION	RECOMMENDATION	Remaining Useful Life	Replacement/Upgrade Cost
Exterior railings at stairs and walkways.	In various states of adequacy and ADA compliance.	Replace railings for safety and consistent ADA compliance.		**$4,000.00**
South side stairs (employee entrance).	Very weathered.	Repair or replace.		**Included in Architectural Costs.**
Fall 2010 seeding	Installed late in growing season.	Review status of germination in springtime. Reseed if unsuccessful.		--
Yard Drains	Installed during fall of 2010.	Review performance of drains during spring thaw and rainy season.		--
			SUBTOTAL	**$90,000.00 – $112,500.00**

CIVIL/SITE

COMPONENT	OBSERVATION	RECOMMENDATION	Remaining Useful Life	Replacement/Upgrade Cost
Undeveloped Site	Preliminary estimate of site development costs required to establish a new Town Hall facility with vehicular access and parking on an entirely undeveloped site.			**$350,000.00**

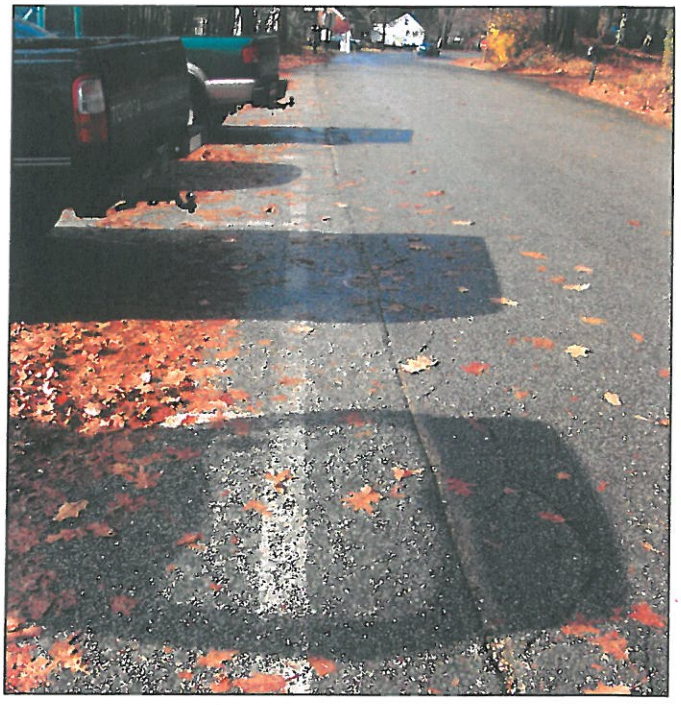


TURNER GROUP	THE H.L. TURNER GROUP Inc. ARCHITECTS • ENGINEERS • BUILDING SCIENTISTS 27 LOCKE ROAD CONCORD, NEW HAMPSHIRE 03301 T:603.228.1122 / F:603.228.1126 W:www.hlturner.com CONCORD NH • HARRISON ME • LYNDONVILLE VT LITTLETON MA • NEW HAVEN CT	FACILITY ASSESSMENT REPORT TOWN OF BARRINGTON, NEW HAMPSHIRE	TYPICAL FOOTING DRAIN & DRIP EDGE DETAIL SCALE: NONE	FIGURE: FIGURE 4 DATE: 12.09.10

Facility Assessment Report
Barrington, NH Town Hall

Civil/Site Photos

Civil Photo 1: Grassy expanse down slope from lower parking lot, looking east.



Civil Photo 2: Separation of lower parking area from Ramsdell Lane, looking west.

Civil Photo 3: Lower parking area on west side of Town Hall, looking east.

Civil Photo 4: Dumpster location, looking southeast from Ramsdell Lane.

Civil Photo 5: Accessible space at lower parking lot and accessible building entrance.

Civil Photo 6: Grassy expanse down slope from lower parking lot, looking north.

Civil Photo 7: Paved ramp connecting parking lots, looking northeast.

Civil Photo 8: Paved ramp connecting parking lots, looking north.

Civil Photo 9: Upper lot, uncurbed landscaped island at left side, looking northeast.

Civil Photo 10: Gravel drive from upper lot to driveway intersecting Route 9.

Civil Photo 11: Upper lot looking east toward gravel parking area.

Civil Photo 12: Finished grade at windows and door pad.

Civil Photo 13: Existing outlet from drop inlet.

Civil Photo 14: Existing stairs at employee entrance.

Civil Photo 15: Slope between building and upper parking lot.

Civil Photo 16: Existing drop inlet and non-ADA compliant handrail.

Civil Photo 17: Drainage improvements in progress (fall 2010).

Civil Photo 18: New sidewalk at upper lot, looking west.