Town Building Assessment Study and Capital Master Plan

Town of Topsfield, Massachusetts

February 2013







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D·R·A

TOWN BUILDING ASSESSMENT STUDY AND CAPITAL MASTER PLAN
Town of Topsfield, Massachusetts

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TOWN BUILDING ASSESSMENT STUDY AND CAPITAL MASTER PLAN
Town of Topsfield, Massachusetts

Introduction

Buildings included in this plan are as follows:

Town Hall
Police Department
Fire Department
Park, Cemetery
Highway Department
Library
Steward School
Proctor School

In 2012/13 DRA Architects with its team of engineers performed visits to each of the buildings and evaluated to determine the types of improvements that will be necessary for these buildings. Conversations were held with department heads and those in charge of maintenance. These improvements included such topics as:

Life Safety
Health
American's with Disabilities Compliance
Site Issues
Exterior Envelop Issues
Building Interiors
Energy and Water Conservation
Hazardous Materials
New Construction

With any renovation project it is necessary that Chapter 34 Existing Structures of the IBC be reviewed in light of the items of renovation work that are selected. In doing so it may be determined that other items of work will be necessary to achieve compliance.

Each of the improvements was then prioritized into the following categories:

Current Critical
Potentially Critical
Necessary – Not yet Critical
Recommended
Grandfathered

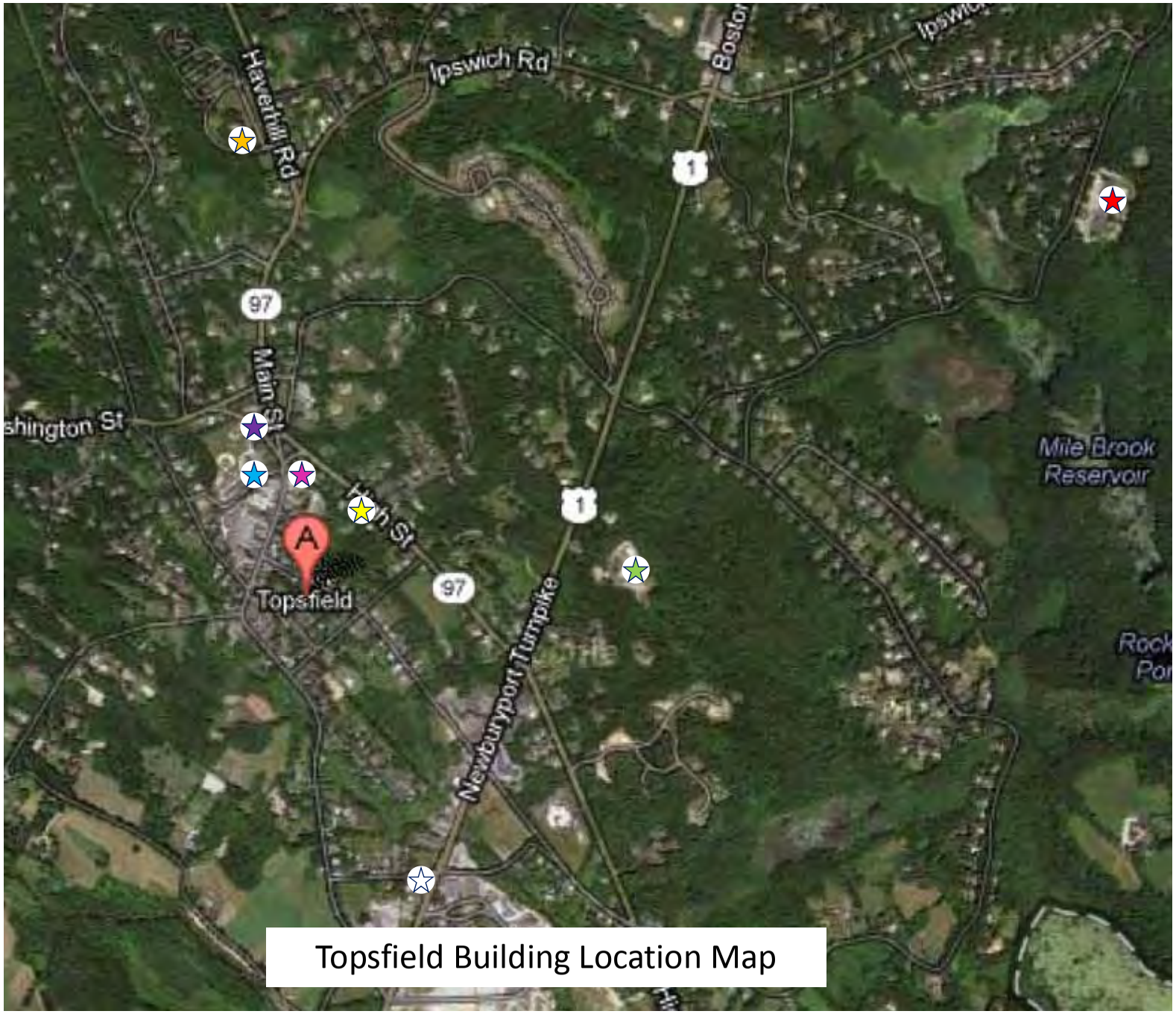
A detailed description of criteria used for each of the categories is included in the report.

For each of the improvements an independent cost estimate was obtained. The estimates are a projection of the costs and include soft costs associated with each item. (Soft costs are the miscellaneous costs associated with professional fees, contingency, bonding costs, bidding expense, testing etc.). The estimator does not have the advantage of detailed drawings for each of the items so the intent is to provide an order of magnitude that, should the improvement move ahead, will be refined up to the bid date. For many of the like items it will be possible to group them together and save on the soft costs. Similarly, there may be items that can be bid without professional drawings and specifications and, again, the soft costs can be reduced.
The cost should be used as an overall budget for each item.

This report is organized with the recommendations presented first followed by the reports for each of the buildings from the various engineers and then the cost estimate for the work.

* * *

- Town Hall
- Library
- Proctor School
- Cemetery
- Fire House
- Public Works
- Police
- Steward School



Topsfield Building Location Map

Priority Rating System

Priorities are listed to the left of each item:

Priority 1 – Current Critical: Conditions in this category require immediate action to:

- Correct a cited safety hazard
- Stop accelerated deterioration
- Return a facility to operation

Priority 2 – Potentially Critical: Conditions in this category if not corrected soon may result in:

- Intermittent Operations
- Rapid Deterioration
- Potential Safety Hazards

Priority 3 – Necessary, not yet critical.
Conditions in this category require appropriate attention to preclude a predictable deterioration or potential downtime and possible damage and higher costs.

Priority 4 – Recommended.
Conditions in this category include items that represent a sensible improvement to existing conditions. They are not required for the most basic function of the facility, but will improve overall usability and/or reduce long-term maintenance costs.

Priority G – Grandfathered (does not meet current codes/standards).
Conditions in this category include items that do not conform to existing codes, but have been "grandfathered" in requiring no action at the current time. Generally, if an item was constructed in accordance with code, but no longer complies with current code it may be possible for it to be grandfathered. If an item was not constructed in accordance with the codes active at the time of construction, and still does not comply with the current code it would not be grandfathered. However, should substantial work be undertaken in contiguous areas, certain existing conditions may require correction.

_ Comment only.

The need for swing space.

In this report we have summarized recommendations of the expansion of a number of buildings, of those The Town Hall, Police Department and Fire Departments will need to find temporary quarters while the renovation/expansion work is under way. The buildings are such that there are extensive renovations that will prohibit simultaneous occupancy while work progresses.

For the Town Hall the suggested addition should be constructed first and then used as swing space while the existing building is renovated.

The Police and Fire Departments will require a separate building in which to house their functions during the construction work. As long as the police and fire departments are not under construction at the same time one building will be able to satisfy the swing space requirements for each. First option would be to find a building in the community that could be rented during the course of construction.

Another option would be to construct the swing space. The recommendations for the Highway Garage call for a new metal building to be located on the current site. Although it may require dimensional changes, this building could be constructed larger to provide the minimum space for each of the two departments. Once construction is completed it would revert back to the Highway Storage Garage.

TOWN BUILDING ASSESSMENT STUDY AND CAPITAL MASTER PLAN
Town of Topsfield, Massachusetts

TOWN HALL

8 West Common Street

Year Constructed:	1873	
Construction Type:	V-B Sprinklered	
Building Area per Floor:	Third Floor:	1,021 SF
	Second Floor:	3,485 SF
	First Floor:	3,510 SF
	Basement:	3,451 SF
	Total Area:	11,467 SF

Documents Used in Study:

First and Second Floor Plans dated 5-28-02
Hazardous Material Survey dated 12-5-03
Assessor's Map and Aerial Photograph
Septic System Plan

General:

The building is not handicapped accessible:

3 A ramp is provided on the north side of the building. The ramp has a slope of 1" in 12" meeting code, but one section is slightly steeper at 1 1/8" in 12" and should be replaced. Handrails are not acceptable and should be removed and replaced with new guardrails and handrails. (37)(Refers to item number in summary chart).

2 Apart from the first floor, floors are not handicapped accessible. Provide an elevator. (34)

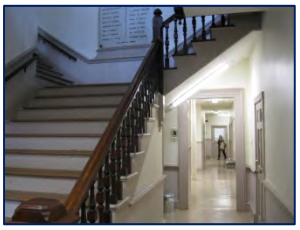
3 Town Clerks vault is not accessible. Provide adequate sized vault to allow for wheel chair access. (33)

3 Office furnishings in Town Clerk and Council on Aging do not allow for wheelchair access. Furnishings need to be reorganized to allow for appropriately sized aisles and turn-around spaces. (43)

3 Office counters for Conservation, Building Officials, Health Department, and Town Clerk do not have low areas for wheelchair use. (42)

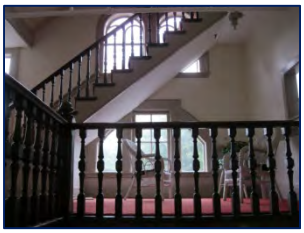
3 Second floor restrooms are not accessible. Provide separate restrooms for both women and men. (30)

3 Lunch room sink is not accessible. Sink and a portion of the counter needs to be lowered, a different sink and faucet should be provided and the cabinet provided with a knee space. (This space is not accessible unless an elevator is provided and therefore should be on the first floor, although there is no space available on that level). (25)



2 Interior stairs have nosings and handrails are not compliant. Infill risers with tapered wood panels to eliminate nosings. Provide separate guardrail and handrails inside wood railings. Low headroom exists under stair to second floor. Provide railing on underside of stair to second floor. (20) (21) (24)

3 Doors to second floor auditorium are too narrow and should be replaced with a wider door matching the style of the existing. Doors should be provided with closers. (28)



3 Stage area is not accessible. Provide a handicapped lift recessed into stage front. (35)

3 Steps to stage are too steep. Provide new steps to stage. (39)

3 Stair from stage to first floor has inadequate landings. Top door is too narrow. Handrails need to be replaced. Replace stair with new stair along with new elevator. (36)

__ Balcony is not accessible. Major renovations will be required to accomplish this so it is recommended that the balcony not be used.

Interior Finishes

1 9x9 vinyl asbestos tiles (VAT) throughout the first floor needs to be abated and replaced with sheet flooring. Include a plywood underlayment. (126)

1 First floor carpet is installed over VAT. Abate and replace with carpet tiles. (126)

1 Linoleum in Council on Aging contains asbestos. Remove and replace with sheet flooring. (130)(126)

1 Second floor restroom 1x1 VCT and mastic contain asbestos. Abate and replace with sheet flooring. Include plywood underlayment. (127)(126)

2 Interior plaster on the second floor (front of building) and on exterior wall of stage are badly cracked. Remove plaster, install 1/2" plywood and gypsum wallboard (GWB) on walls. Skim coat GWB and paint. (90)

Plaster ceilings exhibit cracks most of which have been filled. If a major renovation occurs these should be repaired.

4 Paint walls of Auditorium. (91)

Egress

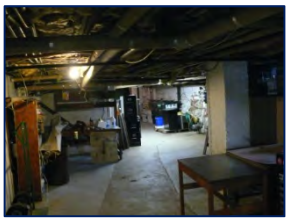
2 The stage end of the Auditorium should be provided with a second means of egress. (see notes above). (1)

Balcony does not have a second means of egress. Do not use for public space.

2 Front stair needs to be provided with an enclosure with self closing doors that are fire rated. (2)

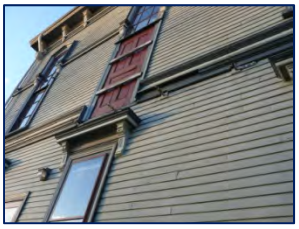
Miscellaneous

2 Insulation on basement pipe fittings contains asbestos and needs to be replaced. (133)



2 Basement occasionally has some flooding. Provide a perforated pipe for the full length of the basement, under the slab and surrounded by filter fabric and crushed stone. Connect drain to sump pump. Circuit for sump pump to be part of generator circuit. (15)

It was noted that sprayed insulation has been used to fill voids in stone foundation wall. This is not a good practice and could cause deterioration of the wall as water cannot escape.



2 The Proscenium wall at the Stage was poorly constructed. Wall should be properly reconstructed. (13)

4 Siding on three sides of building has been replaced but the south side was not done. This siding is stored in the old public work building. Reside and paint south side. Include air barrier under siding. (53)

3 Building is not insulated. Insulate cavities of exterior walls. Any new interior painting of the interior of exterior walls should be done with vapor retardant paint. (102)

3 Windows have been weather-stripped to reduce air infiltration. A significant number of windows need meeting rail latches and or better bottom weather-stripping. (117)

2 Windows have asbestos containing putty (2003 report) and it is noted that paint on the putty is failing and needs to be replaced. Paint should extend slightly onto glass to prevent water from getting behind paint. (131)

4 Only the first floor windows have storm panels. Storm panels need to be added on all upper level windows. (116)

2 Attic level windows need to be restored and refinished in the interior and exterior. (55)

4 Miscellaneous repairs are required to windows such as stool replacement where bowed, repairs to allow for sash to work, and minor painting work. (61)

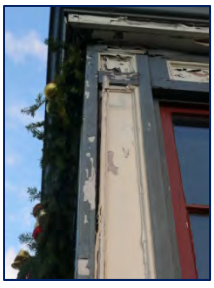
Roof

4 The current roof appears to be in good condition. There is some evidence of roof leaks but these appear to have been corrected. Daylight was visible at the top inside of the clock tower where plastic sheeting has been used to redirect leaks away from clock mechanism. This area should be further investigated. (62)

Exterior

☐ The current septic system is apparently operating at capacity. If the building is expanded then a new septic system will be required. (16)

2 Granite curbing is separating from concrete sidewalk at bottom of steps. In other areas granite curbs have been displaced. Reset granite curbs in concrete. (45)



4 Parking area is badly cracked. Replace paving. (46)

3 Porches over exterior steps on north side of building are in direct contact with steps and paving and are badly rotted. Other portions are deteriorating from water collecting behind trim. Although beneficial they will continue to

deteriorate. It is recommended that the walls be removed leaving just the support columns and roofs. Wood columns should be clad with durable materials that will not rot. Guardrails and handrails should be added to either side of the stairs. (68)

3 Rain leaders at the two porches need to be reconnected to the gutters. (71)

4 Basement windows on south side have been blocked up with plywood. Remove plywood and brick up openings, recessing brick by two inches. (72)

3 Brick foundation corners are cracked. (See structural report). (73)

4 Re-point interior of foundation walls (100)

4 Replace basement concrete slab. (94)

Electrical:

3 Replace existing zoned fire alarm system with new addressable fire alarm system to meet the latest codes. (8)

3 Upgrade existing building power distribution equipment. (107)

3 Upgrade existing emergency standby generator. (104)

2 Provide additional exit signs to meet the latest codes. (5)

Building Recommendations;

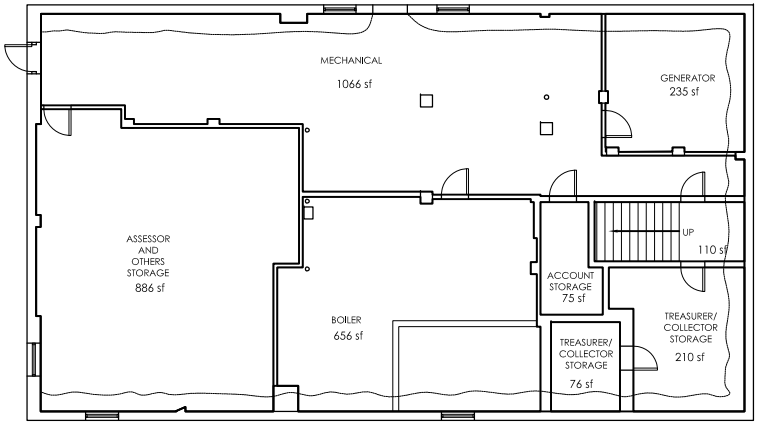
Currently the first floor spaces are located in individual offices but on the second floor the Auditorium has been taken over to provide open plan spaces for the Building, Conservation and Health Departments. In all cases throughout the building heads of departments do not have privacy for discussion of private issues with residents.
Record keeping is mandated by the Commonwealth but, for the most part, long term storage has to occur in the Basement where there has been issues with flooding and dampness. The Town Clerk has a vault space on the first floor but it is not handicapped accessible. Most departments have many file cabinets to house more recent materials within their offices.
The public have un-controlled access to all work areas. Ideally there should be a counter separating public from work areas for security purposes. Those offices on the third floor may be fully open to the public when no staff are present.

Meetings are typically held in other buildings. For example the Planning Board meets in the Library, and any files have to be removed from Town Hall and brought to the library, and then afterwards return to the Town Hall.

The first goal is to make the major floors accessible and to provide an appropriate second means of egress from the Auditorium. Returning the Auditorium to its intended purpose will provide space for various board meetings, but also provide a space that can be used by the public and Community TV.
An addition is recommended for departments to be accommodated at the ground level or first floor level. Long term record-keeping will need to remain in the Basement although the space available will be reduced. Vault space will be provided for Town Clerk and Assessor on the main level.
To overcome a reduction in storage space the addition has an option for a second floor that will accommodate this long term storage. High density storage is suggested to maximize the amount of storage.

An option for moving the Town Hall to the Police Department building was suggested. This option has validity as the building areas are very similar although parking will be slightly less. The requirements of the Town Hall would require basically the same renovations to the police building as would be required by the police but will creates the challenge of what to do with the current Town Hall Building. Our recommendation is to renovate the police building for Police use and keep the Town Offices at the Town Hall.

It has also been suggested that the current Town Hall is a "sick building". In the course of a renovation these issues can all be addressed. Over the course of various floods much of the paperwork stored in the basement has become moldy and may be the cause of such concern.



BASEMENT
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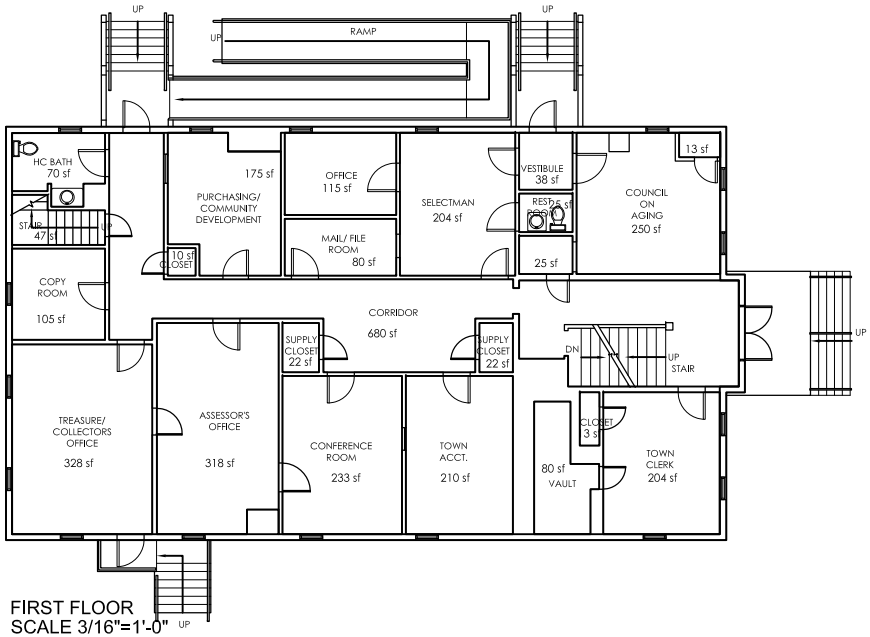

FIRST FLOOR
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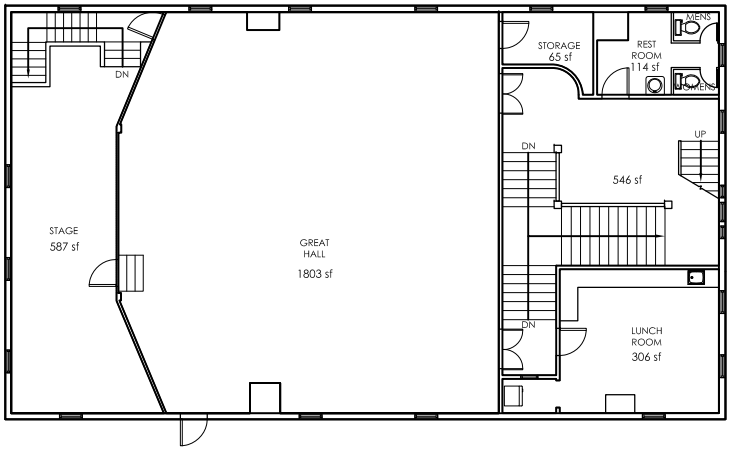

SECOND FLOOR
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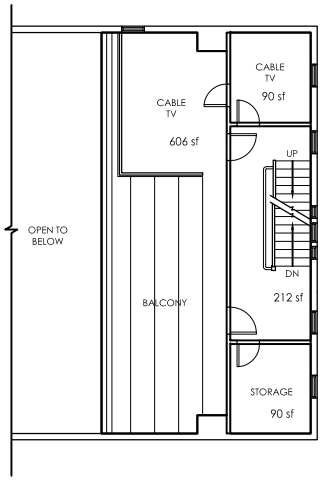

THIRD FLOOR
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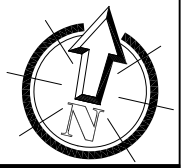

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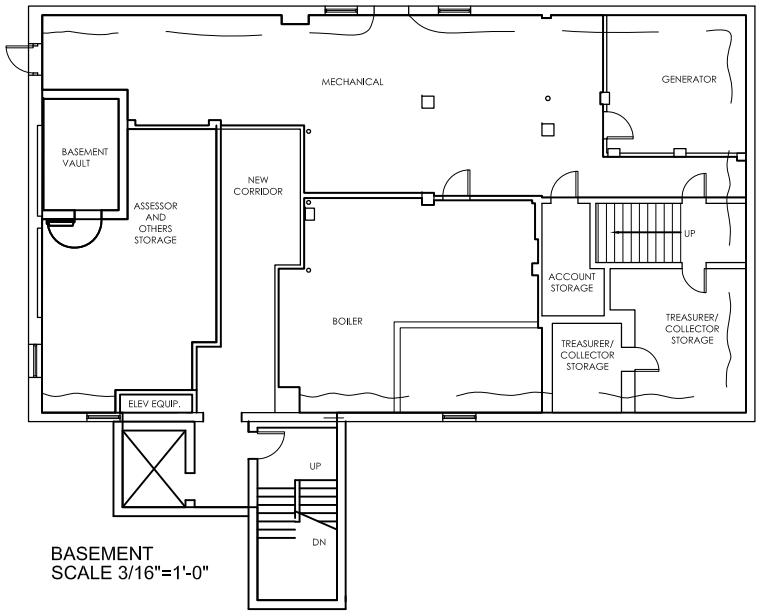
TOWN HALL

EXISTING

Topsfield, Massachusetts



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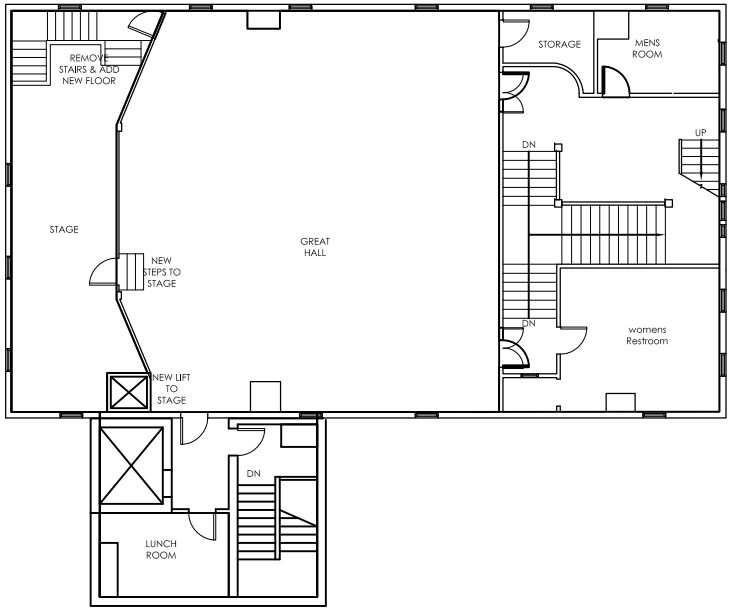

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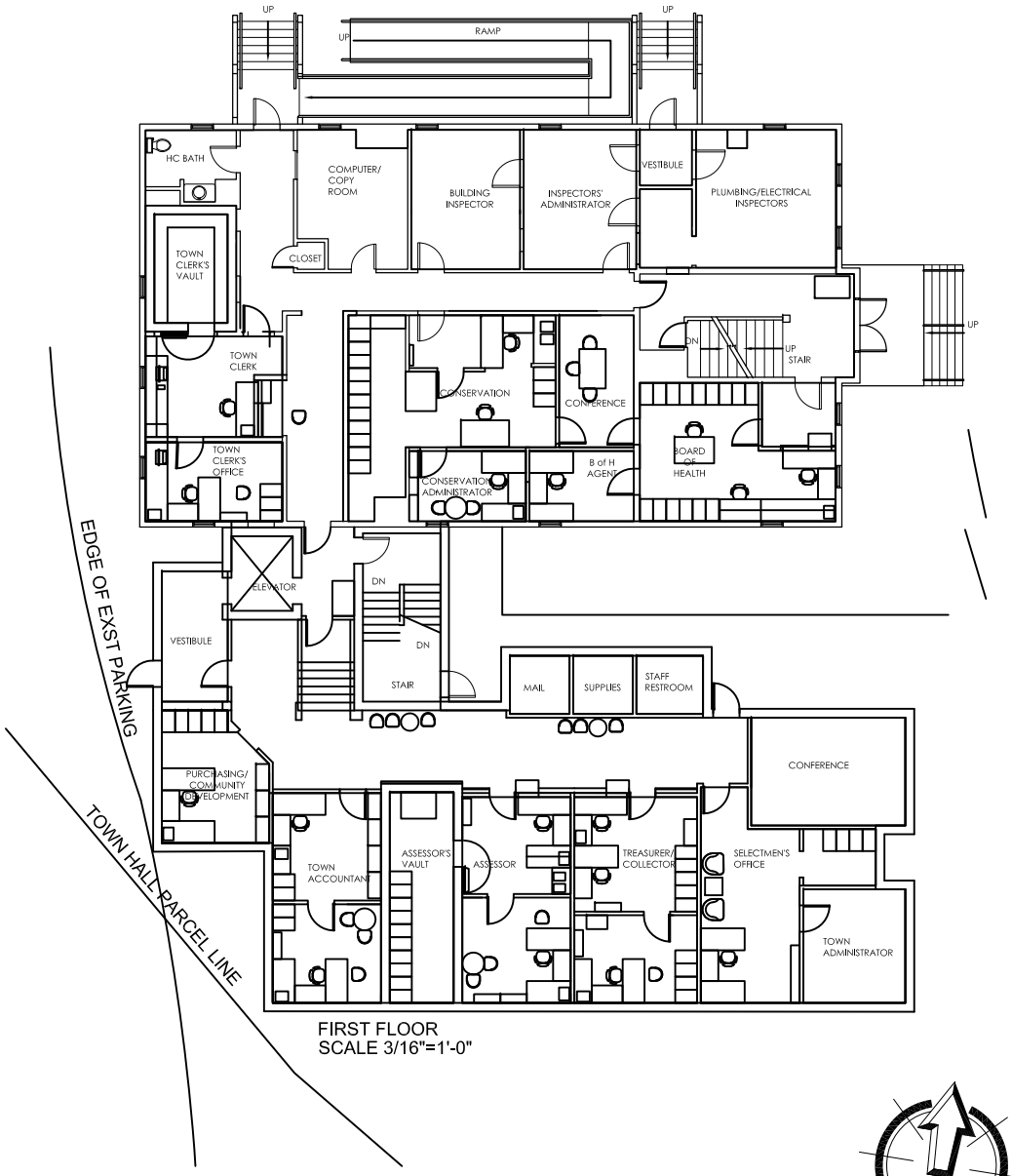

FIRST FLOOR
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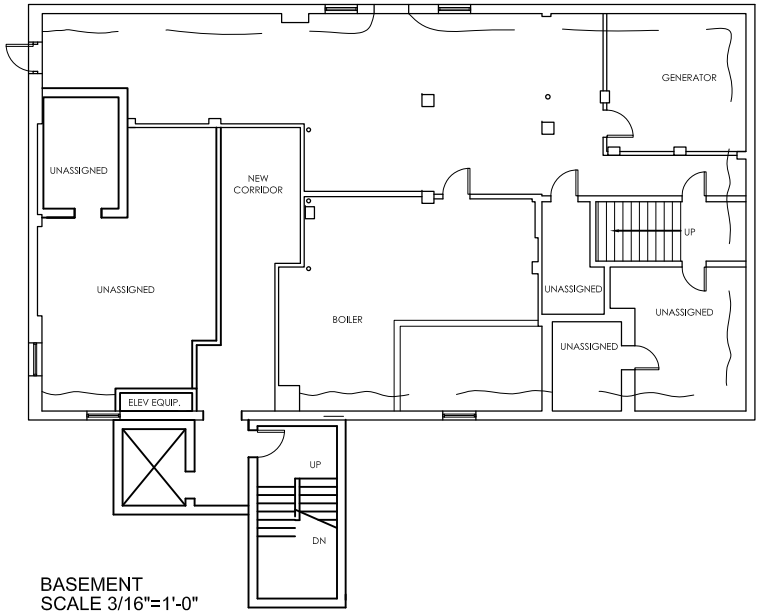
TOWN HALL PROPOSED

Topsfield, Massachusetts



BASEMENT
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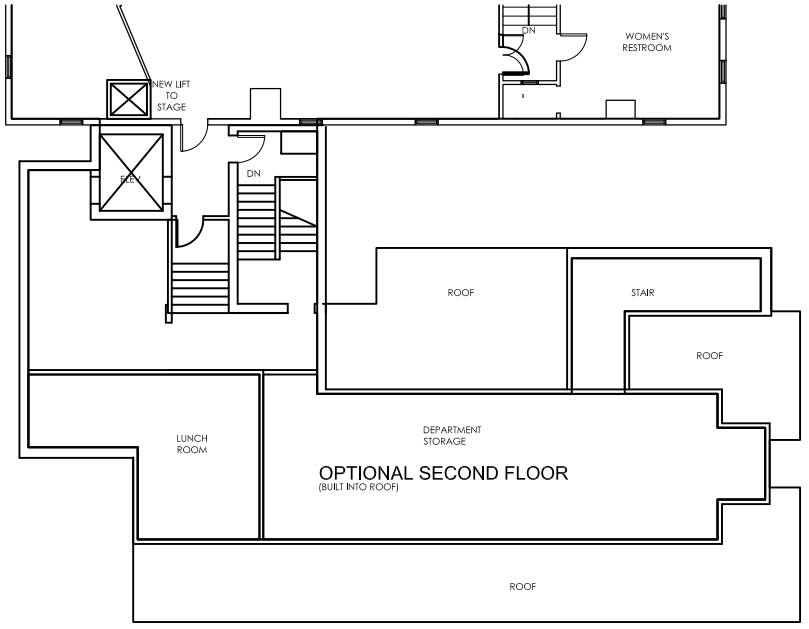

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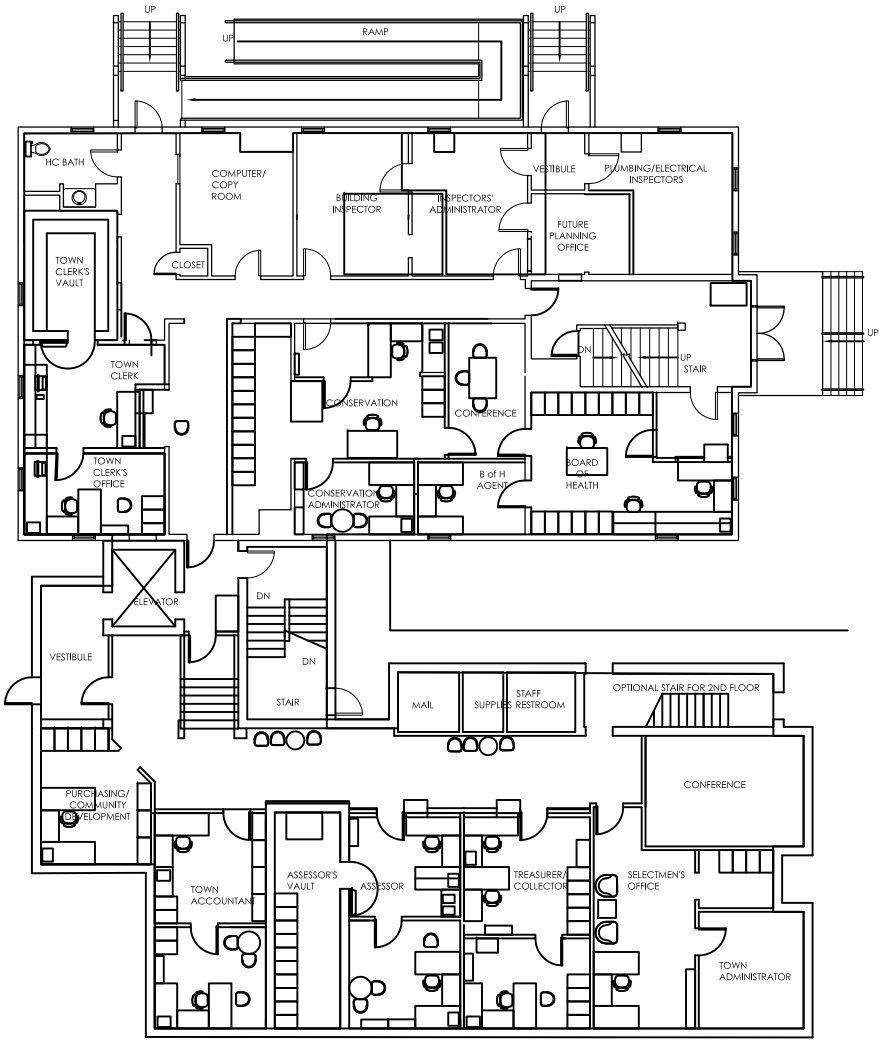

FIRST FLOOR
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TOWN HALL PROPOSED ALTERNATE

Topsfield, Massachusetts

Topsfield Public Building Study 1/10/2013

TOWN HALL

Program Statement

Spaces:	Existing Spaces					Renovations / Additions					Alternate Second Floor Renovations / Additions					*New Building			Comments
	BASEMENT	FIRST	SECOND	THIRD	TOTAL	BASEMENT	FIRST	SECOND	THIRD	TOTAL	BASEMENT	FIRST	SECOND	THIRD	TOTAL	FIRST	SECOND	TOTAL	
Assessor and Others Storage	886				886	473				473					0				
Boiler	656				656	656				656	656				656	300			
Generator	235				235	235				235	235				235	200			
Treasurer/ Collector Storage	286				286	286				286					0				
Mechanical	1066					1048					1048								
Accountant Storage	75		65	90	230	75		65	90	230			65	90	155		150		
H.C. Bath Room		70			70		70			70		70			70	160	160		
Copy Room		105			105					0					0	150			
Copy/ Computer Room							175			175		175			175	175			
Purchasing/ Community Development		175			175		166			166		166			166	175			
Office		115			115					0					0	120			
Mail/ File Room		80			80					0					0	80			
Mail							45					45				50			
Selectman		204			204		304			304		304			304	300			
Vestibule		38			38		148			148		148			148	200			
Rest Room		25	114		139		50			50		50			50				
Men's								114		114			114		114				
Women's								306		306			306		306				
Council on Aging		288			288					0					0	2000	0		Proposed move to Procter School
Treasure/ Collectors Office		328			328		330			330		330			330	330			
Assessor's Office		318			318		290			290		290			290	300			
Assessor's Vault							175					175				180			
Conference Room		233			233		344			344		344			344	350			
Town Accountant		210			210		295			295		295			295	300			
Town Clerk		217			217		178			178		178			178	180			
Town Clerk Office							140					140				140			
Vault		80			80	103	103			206		103			103	100			
Supply Closets		54			54		45			45		45			45	50			
Stage			587		587			564		564			564		564				
Great Hall			1803		1,803			1,807		1,807			1,807		1,807				
Lunch Room			306		306			134		134			346		346		300		
Cable TV				90	90				90	90				90	90				
Cable TV/ Balcony				606	606				606	606				606	606		300		
Building Inspector Office					0		197			197		197			197		200		
Inspectors' Administrator					0		204			204		204			204		200		
Plumbing/ Electrical Inspectors					0		300			300		200			200		200		
Future Planning Office												98			98		100		
Conservation					0		400			400		400			400		400		
Conservation Administrator					0		100			100		100			100		100		
Board of Health					0		283			283		283			283		300		
Board of Health Agent					0		95			95		95			95		100		
Board of Health Vestibule					0		61			61		61			61				
Town Administrator					0		150			150		150			150	150			
Department Storage					0					0			872		872		1600		
Unassigned Space					0					0	937				937				
					0					0					0				
$2					0					0					0				
Subtotal of net spaces:	**3,204**	**2,540**	**2,875**	**786**	**8,339**	**2,876**	**4,648**	**2,990**	**786**	**9,892**	**2,876**	**4,646**	**4,074**	**786**	**10,974**	**5990**	**4110**	**10100**	*New Building does not include any work in the existing Town Hall Building. The 35% is the unassigned space
Unasigned area (Partitions & Circulation)	247	970	611	236	3,130	915	2,198	1,004	236	5,761	915	2,336	1,690	236	6,585	2156.4	1438.5	3594.9	
TOTAL Building Area Per Code SF:	**3,451**	**3,510**	**3,486**	**1,022**	**11,469**	**3,791**	**6,846**	**3,994**	**1,022**	**15,653**	**3,791**	**6,982**	**5,764**	**1,022**	**17,559**	**8146.4**	**3944**	**12090**	
% Circulation and Structure					27%					37%					38%			36%	

Town Hall

Structural

Structural Description:

The Town Hall is a three-story (plus Basement), wood and steel framed building with interior steel pipe columns and perimeter, wood framed bearing walls. The building is rectangular in plan, with a combination hip/ mansard roof. A centrally located Clock Tower was constructed on the front (east) side of the building; there are clocks on all four sides of the tower. Covered entryways (and a handicap ramp) are located on the north (parking) side of the building. The Basement level is unfinished and is used for Storage, Archive and Mechanical Room spaces. Town offices are located at the First Floor. The original Auditorium/Stage is located at the Second Floor, along with several support spaces. The stage wall appears to have been constructed after at a later time. The Third floor consists of the upper Auditorium space, the Balcony and several additional support spaces. Access to the Clock Tower is from this level. It is proposed to restore the Second Floor to the original Auditorium use (currently open offices); access to the Balcony would be prohibited. The site is relatively level; the First Floor of the facility is approximately 4 feet above the average exterior grade. The Town Hall was constructed in the 1873; no original construction drawings were available. The building is fully sprinklered.

As observed from the Basement, it appears that there are three (3) interior, east-west column lines supporting the floors of the building (column locations vary). Typical (First Floor) support beams are 8 x 12 and typical First Floor joists are 2x10 (nominal) @ 16” o.c. Second and Third Floor construction appears to be wood framed; however, the details of this framing are unknown. Roof construction is wood framed, with heavy timber trusses clear spanning the Auditorium space in the north-south direction, supporting rafters and purlins. Foundation walls are rubble stone construction, changing to solid brick masonry at the level of the exterior grade. The Basement floor is a concrete slab on grade (thickness unknown). Supports in the Basement are typically steel pipe columns or 16” square brick piers.

Structural Conditions:

Structural conditions at the Town Hall were observed during a brief tour of the building on January 3, 2013. Generally speaking, primary floor and roof construction appears to be performing satisfactorily; there is no evidence of structural distress that would indicate significantly overstressed, deteriorated or failed structural members. Foundations appear to be performing adequately; there are no signs of significant, total or differential settlements. However, there are moisture/deterioration issues in the Basement that will need to be addressed (as noted below).

Structural/structurally related conditions observed during site visit are noted below:

- The condition of the exterior wood trim and siding appears to be satisfactory. Siding was recently replaced on the north, east and west walls. In anticipation of a future addition to the south, siding was not replaced on that wall (however, the existing siding appears to be in satisfactory condition).

- Reportedly, there are water issues in the Basement, with an inch or more of standing water accumulating at times. The brick masonry/rubble stone foundation walls and the brick piers in the Basement show signs of moisture related damage; mortar in the joints has significantly deteriorated in a number of locations. Further review is recommended. Repair of the foundation walls and piers is required. Proper drainage for the Basement slab is also recommended.

- The Basement slab on grade is in poor to fair condition. Depending on the scope of work proposed in the renovation, partial or full replacement of this slab may be required.

- There are a numerous cracks in the plaster on the inside face of the east (front) wall of the building at the Second Floor. These cracks are not recent; they have likely resulted from framing deficiencies and/or wind-induced movements of the Clock Tower. Further review is recommended. Stiffening the exterior wall construction with LVL framing and plywood sheathing (inside face) may be required.

- There are a numerous cracks in the plaster on the inside face of the west (back) wall of the building at the Second Floor (the back of the Stage). These cracks are not recent; they have likely resulted from framing deficiencies in the exterior wall. Further review is recommended. Stiffening the exterior wall construction with LVL framing and plywood sheathing (inside face) may be required.

- The brick foundation wall is in poor to fair condition on the exterior. Joints have been damaged by water infiltration and repointing is required in a number of locations. Conditions are noticeably worse at the building corners.

- Downspouts enter the ground adjacent to the building; however, it is not clear if water from the downspouts is piped away from the building foundations. Further review is recommended.

- The Proscenium wall at the Stage was poorly constructed. FBRA recommends that this wall be properly reconstructed (with a new opening), when the space is converted back to an Auditorium.

- The live load capacity of the Second Floor structure is unknown. As the space is returning to Auditorium use (100 psf live load required), FBRA recommends that the floor structure be reviewed and reinforced, if necessary to meet current code requirements.

Comments/Recommendations:

Massachusetts State Building Code Requirements – General Comments:

Proposed renovations, alterations, repairs and additions to the Town Hall would be governed by the provisions of the Massachusetts State Building Code (MSBC – 780 CMR 8th Edition) and the Massachusetts Existing Building Code (MEBC). These documents are based on amended versions of the 2009 International Building Code (IBC) and the 2009 International Existing Building Code (IEBC), respectively.

The MEBC allows the Design Team to choose one of three (3) compliance methods. Structurally, the Prescriptive Compliance Method is preferred. Regardless of the compliance method chosen, Section 101.5.4.0 of the Massachusetts Amendments (Chapter 34) requires that the existing building be investigated in sufficient detail to ascertain the effects of the proposed work on the area under consideration and, the entire building or structure and its foundations if impacted by the proposed work.

Additions – General Comments:

The design and construction of proposed additions would be conducted in accordance with the Code for new construction. Significant additions should be structurally separated from the existing building by an expansion (seismic) joint to avoid an increase in gravity loads and/or lateral loads to existing structural elements. Smaller additions can be structurally attached to the existing building, provided they do not increase the demand - capacity ratio of the existing lateral force resisting elements in the building by more than 10%.

Renovations/Alterations – General Comments:

Where proposed alterations to existing structural elements carrying gravity loads results in a stress increase of over 5%, the affected element will need to be reinforced or replaced to

comply with the Code for new construction. Proposed alterations to existing structural elements carrying lateral load (masonry walls in this case) which result in an increase in the demand - capacity ratio of over 10% should be avoided, if possible. Essentially, this means that removal of, or major alterations to the existing, unreinforced masonry walls in the building should be minimized. If this is not avoidable, more significant seismic upgrades/reinforcing will be required, potentially including the addition of lateral force resisting elements (braces, shear walls, etc.).

Proposed Addition - Anticipated Scope of Structural Work:

In addition to the repairs/issues noted in the *Structural Conditions* section above, the following scope of structural work relating to the proposed addition is anticipated:

- Construct a new, one-story addition on the south side of the building, which includes Town Offices and various support spaces. The floor of the new addition will be located at the present exterior grade level, approximately 4 feet below the existing First Floor. A new elevator/stair core will be included in the addition, servicing the Basement, First Floor (new and existing levels) and the existing Second Floor (Auditorium level). The new addition will be structurally separated from the existing building.

- The elevator/stair core in the new addition will be steel framed, with reinforced masonry bearing walls (8" thick, 100% solid grouted). Floor construction will be a concrete slab on steel deck supported by steel beams. Roof construction will be steel deck supported by steel beams. The new stairs will be concrete filled, steel pan construction. Portions of the existing, south foundation wall (to remain) will need to be underpinned to install the elevator pit. At the new/existing interface, the existing rubble stone wall will be removed (shoring/needling of the brick wall above required) and new foundations will be reconstructed.

- Roof construction for the balance of the new addition will be steel framed, with steel roof deck supported by steel beams and HSS steel columns. Exterior wall construction will be light gauge steel studs with composite siding.

- Foundations will be conventional spread footing construction with a 5" thick concrete slab on grade at the First Floor level.

End of Structural Report

TOWN BUILDING ASSESSMENT STUDY AND CAPITAL MASTER PLAN
Town of Topsfield, Massachusetts

Town Hall

8 West Common Street

Mechanical, Electrical, Plumbing, And Fire Protection Systems

Prepared By:
Consulting Engineering Services
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GENERAL

The mechanical, electrical, plumbing, and fire protection systems were reviewed in conformance with the requirements of the following State and National codes and regulations, as applicable:

- Massachusetts State Building Code 8th Edition
- Massachusetts State Fire Prevention Regulations
- NFPA Latest Editions
- Massachusetts Plumbing Code
- Massachusetts Mechanical Code
- Massachusetts Electrical code (NEC 2011 Edition)
- Illuminating Engineering Society of North America (IESNA) Lighting Handbook
- ASHRAE 90.1 Latest Edition

The scope of this study does not include operational assessment of the fixtures and equipment reviewed; it includes only a brief visual review of the fixtures and equipment. Therefore notes regarding the condition of the fixtures and equipment may or may not be indicative of the actual condition of the systems and equipment and/or the expected life of the fixtures and equipment. Therefore it is recommended that services of a qualified technician be retained to evaluate the actual condition of fixtures and equipment prior to replacement.

MECHANICAL

HEATING PLANT

The building is served by a natural gas fired condensing boiler located in the basement. A single pump circulates hot water throughout the building. Both the boiler and pump appear to be in good condition.

HEATING

The terminal heating units consist of perimeter fin tube convectors and wall/floor mount cabinet unit heaters that appear to be in fair condition.

AIR CONDITIONING

There are no central air conditioning systems. There are wall/window mounted air conditioning units serving the first floor and several portable floor mounted air conditioning units serving the open second floor office area.

VENTILATION

There are no outside air ventilation systems. Local exhaust fans serve the restrooms.

CONTROLS

The temperature controls consist of wall mounted local thermostats connected to a simple system of linked thermostat/control valve/boiler controllers in the basement.

ELECTRICAL

EXISTING SYSTEMS

The building is served by a single electrical service rated 125amperes, 240/120 volts, 1-phase, 3-wire and is located in the basement. The service equipment consists of utility metering equipment, 125amp main fused disconnect switch and distribution panelboard located in the basement. The predominance of the main distribution equipment is older and in fair to good condition.

There are a number of electrical panels located throughout the Town Hall. The predominance of these panelboards are G.E. panels and Federal Pacific. The G.E. panelboards are in fair to good condition with the some of the panelboards having spare circuit breakers available for new circuits to be added. The Federal Pacific panelboards are in poor to fair condition and do not have any spare circuit breakers available.

The lighting throughout the school consists of surface 1x4 lensed wraparound fixtures. The fixtures appear to be in good condition. The lighting in all offices and other spaces are controlled by light switches. The light levels appear to be within the recommended levels. The basement lighting does not meet the recommended levels.

The fire alarm system is a Spectronic zoned system. There are manual fire alarm pull stations, horn/strobes located through the building. Heat and smoke detectors are present in select areas. Sprinkler flow and tamper switches are present as well as monitoring of mechanical equipment. The fire alarm devices are in good condition. It appears that the system does not meet the requirements of today's codes.

Exterior lighting is accomplished via building mounted wall packs, decorative wall fixtures. The lighting appears to be in fair condition. It appears that there are not enough exterior fixtures to meet acceptable light levels.

There is currently a diesel fired emergency standby generator. This unit is older and appears to be in fair condition. The generator is sized to provide power to the whole building.

Life safety emergency lighting is provided by fixtures throughout the town hall being feed from the emergency standby generator.

Exit signage is installed throughout the town hall. The exit sign are being powered from the emergency standby generator. The exit signage does not comply with today code requirements.

There is currently a security system including magnetic contacts at all doors and motion sensor detection devices throughout the library. This system was noted during the walk through as operating without problem.

RECOMMENDATIONS

Replace existing zoned fire alarm system with new addressable fire alarm system to meet the latest codes.

Upgrade existing building power distribution equipment.

Upgrade existing emergency standby generator.

Upgrade existing interior and exterior lighting and controls to new more energy efficient lighting and controls.

Provide additional exit signs to meet the latest codes.

PLUMBING

The water closets are vitreous china, flush valve downstairs, tank type upstairs. The water closets are not low flow. They appear to be in fair to good condition.

The lavatories are vitreous china with manual faucets. They appear to be in fair to good condition.

A dual height drinking fountain located on the first floor appears to be in good condition.

A stainless steel sink in the employee lounge upstairs that appears to be in fair to good condition.

A 40 gallon electric water heater located in the basement adjacent to the boiler provides hot water for the building. It all appears to be in fair to good condition.

FIRE PROTECTION

The building is fully sprinklered. The sprinkler entrance is in the basement, and it includes a dry riser which serves the clock tower and a wet riser which serves the rest of the building. The system appears to be in fair to good condition.

END OF MEP REPORT