

Whipple Memorial Town Hall

Existing Conditions Analysis & Recommendation

December 2014

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Contents

Executive Summary

Items Investigated & Findings

Drawings

- Current drawing reflecting existing layout
- Drawing set from 1999 project

Exhibits

A Envelope Assessment

B NHDHR Inventory

C Code Review

D Mechanical Report

E Electrical Report

F Pictures

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Executive Summary

Whipple Memorial Town Hall is located on the corner of Seamans Road and Main Street in New London. In addition to the meeting hall, the building houses the New London Police & Dispatching Department and Recreation Department (accessed via 25 Seamans Road entrances). The original Town Hall was built in 1917 and additions were constructed in 1985 and in 1999. Portions of the lower level of Town Hall were renovated in 2008.

In general, the building condition is what you would expect for a building of this age with very little maintenance. The biggest issue seems to have been the fact that the mechanical units are in the attic with disturbed insulation which results in ice dams that need to be addressed every winter. Codes have changed since the building was completed so as more significant work is done the building will need to be brought up to current codes.

The Recreation Department occupied the area vacated by the Court system. No work was done to modify the layout. The program requirements of the former court system such as the dedicated area for judges are no longer required. The available space could be used much more efficiently for the new programs.

Given the historic significance of Town Hall we assumed that would continue as a multi-purpose community space. Going forward both the Police Department and Recreation Department have space needs. Much of the Police Department infrastructure is in place here. It would seem logical their needs could be addressed by expanding into the current Recreation Department area. This would mean the Recreation Department would need to find a home elsewhere. When that kind of renovation takes place (next 3-5 years) the new mechanical system and code issues could be addressed in one project.

The near term investment may need to be in some deferred maintenance items, immediate code issues, finalizing a plan for the Recreation Department elsewhere and developing the long range plan for the Police Department at this location.

In the section on 'Items that need to be addressed' there is a more detailed description of the work that needs to be done. In addition a dollar value has been estimated in today's dollars for accomplishing the work. An estimated time frame for that work is also identified. It generally breaks down into work that should be done now and work that can take a little more time to plan and get done in the next 3-5 years and beyond. One could therefore imagine an immediate project and a project in the not to distant future. Both are summarized below by totaling the 'now' activities from the list for the immediate project and the 3-5 and beyond activities for the future project. Most of the work in the immediate project should be done soon with the Life Safety and Exit components being the most urgent.

The Immediate Project

Para.	a	Envelope Improvements	\$ 17,000
Para.	b	Roofing work	9,000
Para.	c	Exterior Finishes	20,000
Para.	d	Exit Components	7,000
Para.	e	Waterproofing	2,000
Para.	f	Life Safety Code	47,600
Para.	g	Interior - Exterior Damage Covered in f.	0
Para.	h	Building Components	19,500
Para.	i	Visible Structural Deficiencies Covered in h	0
Para.	j	General Improvements Longer Term	0
Para	k		0
Para	l		0
Para	m		0
Para	n		0
Para	o		0
			<hr/>
		Subtotal	\$122,100
		G.C. OH&P @ 15%	18,315
		+ Contingency @ 10%	14,000
		A & E Fees	10,000
			<hr/>
		Total Project Budget	\$164,415

The Longer Term Project 3-5 Years & Beyond

Para.	a	Envelope Improvements & Mechanical Systems	\$ 190,000
Para.	b	Roofing work	23,500
Para.	c	Exterior Finishes	19,000
Para.	d	Exit Components	5,000
Para.	e	Water Infiltration	0
Para.	f	Life Safety Code	4,000
Para.	g	Interior - Exterior Damage	0
Para.	h	Building Components	24,000
Para.	i	Visible Structural Deficiencies	0
Para.	j	General Improvements	35,000
Para	k		0
Para	l		0
Para	m		0
Para	n		0
Para	o		0
			<hr/>
		Subtotal	\$ 300,500
		G.C. OH&P @ 15%	45,075
		+ Contingency @ 10%	34,500
		A & E Fees	30,000
			<hr/>
		Total Project Budget	\$410,075

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Items that need to be addressed

The following information is a list of issues identified in the request at the outset that needed to be addressed.

- a. Energy audit of building envelope including an infrared scan and blower door test.
 - 1. See Envelope Assessment, Exhibit A prepared by Margaret Dillon of S.E.E.DS.

The report identifies a number of issues that can be addressed immediately. They all are geared to improve the envelope and most address the "leaks" around doors and windows. The other most significant area for benefit is the scaling of the ceiling plane, its insulation overlap with the outside wall and a 12" of cellulose insulation across the entire plane.

Related to the improvements of sealing and insulating the attic is the fact that the mechanical units are currently in the attic with extensive poorly insulated duct work creating significant heat loss. The recommendation as detailed in the Mechanical Report, Exhibit D, is to change the HVAC system in the Police/Recreation Department portion of the building to a new low temperature variable refrigerant flow (VRE) system. This would get all the mechanical equipment and duct work out of the attic. These improvements would be expected to reduce the total heating costs by over 50% to approximately \$7,500 per year at current costs. Not only does this reduce costs but it saves energy, improves comfort and eliminates ice dams.

The envelope items that can be done now are itemized in the Envelope Assessment page 11 under "Wall Plane Thermal Barrier" and "Community Hall Improvements" and total approximately \$17,000.

The "Attic Thermal Barrier" recommendations that total approximately \$10,000 are best done in concert with the new mechanical system. The new mechanical system should be programmed for execution in the next three to five years and is currently budgeted at \$180,000. This work should be coordinated with partition changes as a result of program needs. This could be combined into a capital project that addresses energy issues, program issues and current code issues.

<u>Summary</u>	<u>Estimate</u>	<u>Time Frame</u>
I. Wall plane thermal barrier	\$ 6,000	
Community Hall Improvements	<u>11,000</u>	
Subtotal	\$ 17,000	Now
II. Attic thermal barrier	\$ 10,000	
Replace Mechanical system	<u>180,000</u>	
Subtotal	\$190,000	3 - 5 years

- b. Current Condition of Existing Roof

- 1. Historic Town Hall

Existing slate roofing looks generally sound enough, but it is often what you can't see that causes failure. A review of the history (see NHDHR Inventory form, Exhibit B) indicates that chimney repairs have been completed at various times over the years, 1977, 2004, but the only roof repairs were reported in 1948 and 1960. There has been no evidence of slates falling off the roof which is often an indication it is time to replace the roofing. Given the age of the roof and expected wearing of the slate, but particularly the fasteners, it is time to have a detailed roof inspection by an experienced installer of slate roofs. Any minor repairs should be done at that time. Based on that inspection, a realistic time frame for replacing the roofing could be established.

2. Police Department & Recreation Department

The existing asphalt shingle roofing was new at the time of the addition and renovations in 1999. Three feet of ice and watershield was called for around the eaves and under the shingles. Significant ice dams caused that to be redone by taking ice and water shield further up the roof and reroofing. Asphalt shingles should have an expected useful life of at least 20 years and usually 25 years. The roof is approximately 15 years old so one would expect another 5 - 10 years of useful life. Given the history of ice dams and stories of people on the roof shoveling, one might expect to replace the roof in approximately 5 - 7 years. At that time the sheathing should be inspected and replaced where required.

The 'box' in the middle of the roof where the two ridges come together was originally envisioned as a way to resolve the different ridge heights. With its different material and flashing conditions it's another potential for leaks. When the roof is replaced it may be better to eliminate the 'box' and use ice and water shield and roofing to bring the higher ridge over the low ridge to a gable vent protected by an extended rake. See also para. N. Coordinate with Mechanical Report.

The membrane roof over the Sallyport appears to be shedding water and should last at least another 5 - 10 years. Its problem is at the scupper drains. It appears water is getting under the one piece scuppers and getting into the masonry wall below and showing up on the interior of the Sallyport. The membrane of the roof needs to be brought into the scupper as a continuous membrane and terminated with a positive drip. It also needs to be well sealed up the inside of the parapet wall as one could imagine these scuppers being blocked with snow and ice in the winter. It's a difficult condition. Another long term solution may be to remove the parapet on that low side of the roof and bring the roof over the wall with a built in gutter and downspouts. When the roofing solution is complete, the brick should be cleaned and coated with a penetrating water repellent.

<u>Summary</u>	<u>Estimate</u>		<u>Time Frame</u>
	a.	b.	
I. Slate roof inspection (2 days)	\$ 4,000	\$ 4,000	Now
II. Remove 'box' where ridges meet Replace asphalt shingle roof	\$ 3,500 20,000		When reroof 5 - 7 years
III. a. Reflash scuppers	\$ 4,000		Now
b. Remove parapet 1 side, provide gutter and downspouts		\$ 9,000	Now
c. Clean brick and coat	\$ 1,000	\$ 1,000	After a or b above
	Subtotal a.	<u>\$ 9,000</u>	Now
	b.	\$14,500	Now
		\$23,500	5 - 7 years

c. All Exterior Finishes

1. Historic Town Hall

The brick appears in good condition except where water stains from gutters and downspouts have darkened the brick. These areas can be cleaned after the source of the water is replaced. The areas that need to be put on a maintenance schedule include the cupola, gutters and downspouts, and painted doors and wood trim. At this time the paint is deteriorating under window sills and starting to fail. The vents above the basement windows that were never finished and at the gutters where water penetration is pushing paint off and deteriorating the joints in the gutters and junctions with down spouts also need attention. The short term fix may involve cleaning the gutters, repairing the joints, replacing the section at the downspout connection and sealing the inside of the gutter with a penetrating sealer. The longer term solution may be to replace all gutters when the roofing is replaced and that can be determined after the detailed roofing inspection.

The cupola appears to need to be addressed in the near future. It would involve inspecting and repairing the metal roof as required, reglazing the window panes, sealing the sash to the frame, preparing all surfaces and painting with a good three coat system. Base flashing should be inspected and repaired as required. The schedule for this work may also best be determined after the results of the roofing inspection where they can also do a close up inspection of the cupola conditions.

2. Police Department & Recreation Department

The brick appears to be in good condition with some staining near the base of the wall at roof/valley conditions with splashback. Serious staining exists at the scupper locations from the Sallyport roof. After the roof fixes described in b.2 above the brick can be cleaned and sealed with a penetrating water repellent. Roof trim, fascia and soffits that are painted will need to be on maintenance cycle. Today the paint generally looks sound.

<u>Item</u>	<u>Estimate</u>	<u>Time Frame</u>
<u>Town Hall</u>		
Fix gutters and downspouts & repaint	\$10,000	Now
Refinish cupola	\$12,000	With roof repair
Repaint trim	\$10,000	Now with gutter repair & storm windows
<u>Police</u>		
Repaint trim	\$ 5,000	3 - 5 years
Clean & treat brick	\$ 2,000	3 - 5 years
	<hr/>	
	Subtotals	\$20,000
		Now
		\$ 7,000
		3 - 5 years
		\$12,000
		With roofing

d. All Exit Components

The exterior exit doors have appropriate hardware in good working order in the current configuration. The Code Review Exhibit C indicates the existing exit across the roof of the Sallyport is no longer required. Therefore, the door should be replaced with a window and the decking, handrails, and steps can be eliminated. This would allow the wall at the door to be properly flashed with the roof and keep from having to clear the snow in Winter. We have given this a 3-5 year time frame since it currently is used as a secondary entry for the Police officers. Should the Police Department expand that might be rethought. Under the current code for new construction, the exterior door at the accessible entry to the Recreation Department and the Town Hall requires an automatic door operator. Since this is an ADA requirement this improvement should be done now.

The electrical components of exits are generally addressed under the Life Safe Code para. F. What we will add here and is still a life safety code requirement are the exterior emergency lights at each exit. These can be heads off of an emergency battery unit (EBU) located on the inside of the building.

Summary

<u>Item</u>	<u>Estimate</u>	<u>Time Frame</u>
Automatic door operator	\$ 5,000	Now
Exterior emergency heads at exits	\$ 2,000	Now
Replace Exit doors with window and remove walk, railings, and steps at Exit to Sallyport roof	\$ 5,000	3 - 5 years
	<hr/>	
	Subtotal	\$ 7,000
		\$ 5,000
		Now
		3 - 5 years

e. Lower Level Water Infiltration

The drawings indicate foundation drains and there are some catch basins around the building, as well as a working area drain outside the exterior entry to the lower level Training Room. These seem to be working with the primary issue being lower level exterior walls adjacent to the generator pad. It looks as if some attempt has been made by applying an exterior coating to a portion of the building foundation wall. The situation is aggravated by the failed gutter and downspout directly above at the high roof and possibly the lack of a snow guard along this portion of the high roof. In order to address this localized issue a waterplug type material should be applied at the joint between the generator pad and foundation wall, as well as all pipe penetrations through the wall from the generator. Then use a water resistive coating from the brick to and over the slab/wall joint from the Training Room door to the Sallyport wall.

<u>Item</u>	<u>Estimate</u>	<u>Time Frame</u>
Waterproofing	\$ 2,000	Now
High roof fix addressed above in b1		
	<hr/>	
	Subtotals	\$ 2,000
		Now

f. Life safety code as it applies to the current condition of the building.

A detailed code review can be found in Exhibit C with particular attention paid to the Summary at the end of that review. Electrical issues are discussed in Exhibit E, Electrical Report and summarized at the end of that report.

In summary, buildings that met the code at the time of their construction do not need to be brought up to current code unless there is a change of use or significant renovation or addition work being proposed.

The long term question of code compliance is related to the expected use of the Hall. No longer a court room, the code indicates we can have a capacity of 216 in this multi-purpose space. If we try and furnish the space theatre style we might get 154 seats. The current use schedule (see chart in p. 5 of Envelope Assessment Exhibit A) indicates fewer occupants than that at any one time. Given the limited parking and other venues in Town it is important to determine the potential uses for the Hall. When we exceed 130 occupants the code requires us to add toilet fixtures to support that population. They could be added to the toilet facilities in the lobby or possibly downstairs in the unfinished area. The decision will be based on the programmed capacity of the Hall and its related toilet room requirement.

The code review indicates the current building exceeds the maximum fire area of 12,000sf (all floors) without a sprinkler system. The solution is to provide sprinklers throughout the entire building or separate the building into compartments that do not exceed the 12,000sf limit. The logical location for that separation is at the rear masonry wall of the Hall. Provide a B label door and frame at the doorways from the Hall to the lobby at the first floor and at the bottom of the ramp at the lower level. This would provide code compliance without providing full sprinklers in the rest of the building. In order to provide a fully compliant sprinkler system the attics also have to be treated which means a dry system. A dry system is kept dry by being charged with air by a compressor. When a head opens the air escapes and the water flows. The system, therefore, requires more maintenance. In addition you may want to provide concealed heads in the historic Town Hall. This can add to the cost but does provide full sprinkler coverage of the building.

Given that we have identified safety issues that should be addressed now and other long term code compliance issues that can be addressed as part of a larger renovation project, the following represent the items that should be addressed now.

<u>Item</u>	<u>Estimate</u>	<u>Time Frame</u>
I. – Finish unfinished area in basement of Hall to enclosed stair and activate sprinkler heads 3,500sf	\$16,000	Now
– Build closed, secure storage along west wall of Sallyport so no maintenance materials/tools are exposed	\$ 6,000	Now
II. Electrical		
– Replace and add exit and emergency lights	\$10,000	Now
– Replace hallway fixtures either side of stage	\$ 1,400	Now
– Replace and rewire dimmers at stage and reclamp Hall fixtures with LED	\$ 5,000	Now
– Upgrade stage lighting	\$ 8,000	Now
– Replace, rewire lights on west wall of Sallyport (After wall fixed)	\$ 1,200	Now
Bring the building up to code as part of a larger project		
III. a. Install a sprinkler system throughout the building	\$35,000	3-5 years
Or		
b. Provide B label doors, frames and hardware at doors from Hall to lobby and bottom of ramp in Basement	\$15,000	3-5 years
Provide toilet rooms to meet hall design load 1 fixture/65 women 1 fixture/125 men	\$25,000	3-5 years

Summary

I & II	\$47,600	Now
III	\$40,000	3-5 years
or		
a.	\$60,000	3-5 years
b.		

g. Interior and Exterior Damage

Exterior Damage: Exterior issues noted above under b & c are generally maintenance and repair items that are budgeted under those line items.

Interior Damage: There isn't so much interior damage as the unfinished areas of the lower level of the historic town hall between the Training Room and the south egress stair. That area needs to be thought through and finished so walls can be closed up and the sprinklers activated to provide a code compliant condition. See line item I above in para. f.

h. Building Components and Finishes Nearing End of Life Cycle

This building is generally about 15 years old or 15 years since its had any significant work done except for the lower level of the Town Hall, which is more recent. Finishes of floors, walls and ceilings are generally good for 15 - 20 years and are often changed for aesthetic reasons before they need to be redone for wear.

Therefore we would recommend upgrading these finishes in the next 3-5 years when other significant work is scheduled to be done.

<u>Item</u>	<u>Estimate</u>	<u>Time Frame</u>
<u>Finishes</u>		
Flooring	\$ 7,000	3-5 years
Ceiling	\$ 6,000	3-5 years
Paint	\$ 6,000	3-5 years
<u>Mechanical</u> (see detailed report Exhibit D)		
Plumbing maintenance and repair	\$ 5,000	Now
Additional heat in Training Room	\$ 5,000	Now
Add mini splits in IT; Radio	\$ 8,000	Now
Replace seal at ejector in Janitor Room below Stair in Police	\$ 500	Now
<u>Electrical</u> (see detailed report Exhibit E particularly summary at end of report)		
<u>Town Hall</u>		
Remove lamps to reduce energy conservation (over___)	\$ 1,000	Now
Reevaluate lighting when layer project is done	TBD	3-5 years
Subtotal	\$19,500	Now
	\$24,000	3-5 years

i. Visible Structural Deficiencies

No visible structural deficiencies were noted. There is an issue where the joint between the slab on grade 1999 addition and the basement framed floor meet that tends to move and is noticed by a separation or crack in the floor. The concrete slab doesn't move and the wood frame shrinks and expands and contracts. Most of the movement should be done by now but a small expansion joint can be installed when the flooring is replaced. This work is accounted for in the finish budget 3-5 years in h above.

The structural issue that will need to be confirmed is to balance the sealing and better insulation of the ceiling plane with the structural capacity of the roof trusses. The attic insulation of continuous blown in cellulose not to exceed 12" is accounted for in Energy Envelope in a above.

j. Recommended General Improvements

The space that is currently occupied by the Recreation Department was originally laid out for the court system with dedicated space for the judge, etc. There should be a detailed review of the needs and program for both the Police Department and Recreation Department to determine how best to reconfigure the space to be more efficient programmatically. With that renovation would be the appropriate time to change the mechanical system as recommended in Exhibit D, seal the ceiling as recommended in Exhibit A, address the upgraded code issues as identified in Exhibit C and address the lighting and switching issues identified in Exhibit E.

In order to project an anticipated cost of reworking that area to benefit program, we have identified a value based on an cost/sf as summarized below:

Renovated approximately 1,200sf	\$35,000	3 - 5 years
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k. Maintenance Recommendations

Exterior

- Periodically inspect landscape to insure shrubs and trees are not touching building.
- Be sure accessible walk along north side of building is clear of leaves and snow to facilitate drainage from entry to police station.
- Periodically inspect painted trim to develop a touch up and/or repainting schedule.

Interior

- Develop a regular inspection and service program for the mechanical system based on the recommendations of the manufacture of the proposed system.
- Periodically test emergency lighting system and develop a schedule for battery replacement.
- Inspect ejector pumps once a year.

l. Moisture Infiltration Through the Building Envelope

The biggest impact on this issue will be to get the mechanical units out of the attic and properly seal and insulate at the bottom chord of the trusses. These issues are addressed under para. a. Moisture migration in Sallyport is addressed under para. b2 as a result of failed flashings at the scuppers. To avoid additional migration from splash back as identified in c2 above the brick can be cleaned and sealed with a penetrating sealer which is budgeted under c above.

m. Visual Inspection of Electrical, Communications & Fire Suppression Systems

- The fire suppression system entrance is located in what's labeled Radio Room, lower level, on our plan A1.
- See Electrical Report, Exhibit E. Life Safety issues are covered in para. f. Other issues are covered in para. h.
- The electric service is a 400 amp single phase service and based on historic peak loads has plenty of available capacity. There is a 75KW generator that provides backup for the entire building.
- The fire suppression system is for the basement only and appears in good shape. Heads need to be added at the plugged locations in the unfinished areas. See Life Safety para. f.
- The fire alarm system, installed with the 1999 work, appears to be fine.

n. Coordinate with Mechanical Report

The energy audit consultant and mechanical engineer have discussed the issues and all are in agreement to change the system as recommended in the Mechanical Report and properly seal and insulate at the bottom chord of the trusses.

o. Interview Staff

Police Chief, Ed Andersen, was interviewed on December 12, 2014. We discussed how right sizing Police Departments are often measured in officers per capita or officers per square foot. Special characteristics for New London that influence those ratios are the significant increase in population during the summer and the year round student population from Colby Sawyer College. Current year round population is approximately 4500. Officers represent approximately 9 FTE. The other distinguishing characteristic is that New London provides dispatch for the surrounding towns. Department has about 14,000 calls per year. As one evaluates the Police Department needs going forward an indepth analysis of these issues can help in right sizing the ongoing department.

In discussion and with a guided tour the following needs were noted:

- Provide a secure location for the cruiser download computer.
- Dispatch needs more space and better designed to be able to accommodate 2 -3 people and support the 24 hour service.
- Need conference room to meet with public.
- Need storage space for evidence, seasonal equipment, training aids, etc. Storage currently in room on Recreation Department side, on floor of Training Room and in corridors.
- Need to secure Sallyport so as to have no accessible storage.
- When evaluating space it is important to note that the booking and holding cell area is well done and in many ways more generous than some other departments. It is a result of the available basement space under the operations area and adjacent to Sallyport. It is expensive space and there seems to no reason to change it.

Scott Blewitt, Recreation Director, was interviewed on December 12, 2014. The Recreation Department occupied this space vacated by the court system without modification approximately two years ago. It is better space than he had and people are still discovering where he is located. Currently the Department schedules the Hall and uses it for several different kinds of activities serving residents of all ages. The large conference room is used for classes and he could use another classroom space. As is painfully evident, walking around, there is serious need for appropriate storage space for all sorts of equipment and materials used on site, as well as equipment that is used outdoors off site.

There was some discussion of a long history of looking at making some or all of the remaining space at the former elementary school a Community Center that could house the Recreation Department and serve all ages of the Community. That location would have the benefit of parking. The lack of parking at this location severely limits full participation in programs.

Richard Lee, Director of Public Works, and Jim Perkins, Town Archivist, provided a guided tour with commentary on December 12, 2014.