

August 22, 2005

Deerfield Heritage Commission  
Deerfield Town Hall  
8 Raymond Road  
Deerfield, New Hampshire 03037-0159

RE: Deerfield Town Hall  
Continued Use Study

Dear Heritage Commission Members:

Enclosed is a copy of the completed Town Hall Continued Use Study. We have prepared three design options that address issues that have been raised relative to the life safety code, handicap accessibility and other functional deficiencies. Options One and Two are similar. They differ in toilet and elevator location, utility, storage space and stair location. Option One also relocates the existing kitchen to the new addition to further reduce fire hazard to the existing building. Option Three is a simpler, stripped-down approach that would cost less and have minimal visual impact on the building.

Perhaps the most difficult obstacle to overcome is the requirement for a complete fire suppression system. There is no doubt that the assembly classification with wood construction does mandate a fire suppression system. What is difficult to justify is the expense and intrusive impact the system will have on the building given that the building is not served by a reliable water source, thus requiring a pump to pressurize the system. No emergency generator needs to be provided to back up the system if there is an electrical disruption.

Through Michael Greene and the Deerfield Fire Chief, we have attempted unsuccessfully to appeal our case to the State Fire Marshall's office. Apparently, the Fire Marshall's office no longer makes house calls or they have lost interest in this project. With time running out on the three year reprieve by the Fire Chief, we need to address this issue reasonably soon.

Please feel free to contact me if you have any questions. I have enjoyed working with the Deerfield Heritage Commission and would welcome the opportunity to work with you again in the future.

Sincerely,

  
John W. Merkle, AIA  
Principal

**Deerfield Heritage Commission - Deerfield Town Hall**  
**Continued Use Study**  
**August 12, 2005**

The purpose of this study effort is to develop a plan for the continued use of the historic Deerfield New Hampshire town hall. As of this writing, the existing town hall exists in fine condition. It is used by the town for numerous activities, not unlike those for which it was originally designed and constructed in 1856. The building has been well maintained and cared for however, modifications may need to be made that address present day building code and life safety code standards. These current issues include the following:

Accessibility:

Currently only the buildings' first floor is handicap accessible via a recent un-sympathetic wooden ramp installed on one of the buildings' front entrances.

Life Safety Code Issues:

Many of these issues have been brought forth in the September 29, 2003 letter from Michael Stark, an investigator with the State Marshall's Office. Issues on concern include:

- a) occupant load
- b) fire suppression system
- c) exit stairs and doors
- d) emergency lighting
- e) minor electrical issues

Functional improvements:

Primarily toilet facilities, storage, utility issues, lobby space, etc.

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John Merkle, AIA, of TMS Architects, was retained to undertake the study. He consulted with Michael Greene, a local designer who had previously volunteered his time and expertise in 2003. Together they developed three design options.

Prior to beginning the design process, John and Michael met with the Deerfield Heritage Commission, visited the town hall to determine field conditions and set objectives to be followed as part of the design process. These objectives included:

- a) cause minimal disturbances to the existing building
- b) undue prior un-sympathetic design efforts and attempt to restore displaced original design elements
- c) reduce or eliminate contemporary elements and utilities that place the original building at risk
- d) consider site improvement that would enhance or improve the building's use, function and longevity
- e) consider cost impact to the town

#### Code Considerations:

In executing the design options, we explored non-conventional opportunities to satisfy life safety code requirements to minimize risk and hazards to building occupants and the historic structure. Incorporation of these suggestions needs to be reviewed with the local fire chief and town officials for their approval prior to being incorporated. These suggestions include:

- a) In addition to the new fire rated stair enclosures shown on all three options, a two hour fire separation would be constructed separating the new additions shown on Options 1 and 2 from the main body of the town hall. The present furnace, electric service entrance, hot water heater and any required internal fuel storage would be relocated to a fire rated space inside the new additions. Additionally, Option 1 would also relocate the existing kitchen to the new addition. Undertaking these measures would significantly reduce the risk of fire within the town hall building. Option Three would retain the existing furnace and utilities at their present locations.
- b) Consider using historically sympathetic hardware that allows for the latching mechanism to be secured in the open position when the building is occupied and equip each door with a door closer (pot-bellied type). This would allow the doors to remain free to open without the need of an exist device (panic hardware).
- c) Have the doors servicing the rooms to either side of the circular front stair placed on magnetic hold open devices and equip them with door closers. Upon activation of the fire alarm systems these

doors, if open, will immediately close allowing for an enclosed exit- way.

- d) Some of the existing light fixtures could be re-wired to function as emergency lighting during a power disruption. This practice is utilized in many historic commercial buildings. Conventional means would be incorporated with the new additions.
- e) Rather than remove the replace the existing curved stair handrail, consider installation of a simple non-descript iron rail to accompany the existing wood railing. This may not fully conform to the specifics of the codes but it could approach meeting the intent of the codes while maintain historic fabric.
- f) At this point in time, consider a type 13R sprinkler system for the new additions shown on Options 1 and 2 and the existing rear appendage and addition on Option 3 only. With no public water supply and only limited water storage capability the practicality of installing sprinklers in the entire building does not appear possible within the requirements of life safety code. As an added measure of safety, perhaps the town could institute a policy that a special use permit would be required for use of the town hall when the number of occupants exceeds a predetermined number . In granting this permit the users would be required to provide trained fire watch personnel and bear the cost of this detail. If in the future a municipal water source becomes available, a sprinkler system for the entire building could again be considered. There is also the possibility of installing a dry hydrant from a local pond that could service not only the town hall but the entire town center.
- g) The existing ceiling heights suggest that an additional level could be possible between the first and second floors within the additions of Options 1 and 2. Currently, such a space exists within the existing rear appendage that is serviced via the present exit stair. With all these proposed options we have elected not to utilize this space because it is accessed solely by the new egress stair.
- h) The three existing sets of granite entrance steps may require modification to meet code requirements. The simplest solution would involve removal of the steps and constructing a granite landing, then the reinstallation of the original steps.

Additional Design Considerations:

- a) It is our understanding that the town-owned property to the right side of the building is often used for public functions, often with a large tent to provide a protective exterior enclosure. To support such activities we are recommending that the existing vehicular access and parking along this side of the building be eliminated. This will allow for a stronger unification of this exterior space with the town hall. This will also eliminate any possible vehicular damage to the foundation that might cause damage to the building's foundation.

Design Options 1 and 2 provide at least one toilet on the lower level of the new additions with access to additional toilets at the main town hall level. These can be accessed while maintaining security of the town hall proper.

- b) With the additional toilets indicated in Options 1 and 2, the capacity of the existing septic system will need to be evaluated.
- c) With all Options the existing handicap ramp will be removed and the original entrance restored.



**Conceptual Cost Estimate**  
**Option One (Option 2 Similar)**

1.	General Conditions	\$22,500
2.	Demolition	7,500
	Site Work	55,000
	Excavation	5,500
3.	Concrete Footings, Foundation and Slabs	10,500
4.	Masonry Chimney	3,500
	Rear Entrance Terrace	2,500
5.	Miscellaneous Metals	1,500
	Supplemental Stair Railing	2,500
	New Exit Stairs	6,500
6.	Rough Carpentry	21,000
	Finish Carpentry	10,500
	Patching Existing	4,500
7.	Roofing and Flashings	8,500
8.	Windows	10,500
	Doors	8,800
	Hardware Modifications	2,500
9.	Plaster Repairs	2,800
	Drywall	7,500
	Flooring	10,500
	Painting	18,500
10.	Toilet Accessories	1,500
	Toilet Partitions	3,600
	Miscellaneous Accessories	1,000
11.	Furnishings (none)	-0-
12.	Special Construction	-0-

**Option One**  
**Page Two**

13.	Elevator (LULA) (Astops)	26,000
14.	Plumbing	19,000
	Heating System (New and Modifications)	8,500
	Fire Suppression System (13R, partial)	7,800
15.	Electrical	<u>11,500</u>
	Subtotal	\$302,000
	O & P (12%)	36,240
	A/E Fees	29,000
	Permits/Misc.	5,000
	Septic System	<u>25,000</u>
		\$397,240
	10% Contingency	<u>39,724</u>
	Total	\$436,964

**Notes:**

1. Retaining the existing toilets and kitchen at the present locations would result in an estimated \$8,500 savings.
2. Estimated additional costs of conventional sprinkler system with limited water reserve and pump system is \$52,000. Emergency generator with automatic transfer switch is estimated to cost an additional \$8,500.
3. New addition = 2140 square feet  
Porch = 260 square feet  
Existing Building Space Impacted (Rear Appendage) = 660 square feet  
Existing Kitchen and toilet rooms = 400 square feet



**Conceptual Cost Estimate**  
**(Option Three)**

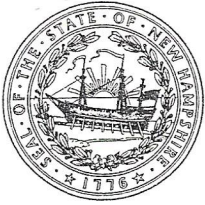
1.	General Conditions	\$19,600
2.	Demolition	4,500
	Site Work	55,000
	Excavation	4,500
3.	Concrete Footings, Foundation and Slabs	8,500
4.	Masonry Chimney	Note 3
	Rear Entrance Terrace	12,500
	Entrance Steps	6,500
5.	Miscellaneous Metals	500
	Supplemental Stair Railing	2,500
	New Exit Stairs	6,500
6.	Rough Carpentry	15,500
	Finish Carpentry	7,500
	Patching Existing	1,500
	Interior Casework	-0-
7.	Roofing and Flashings	4,500
8.	Windows	2,400
	Doors	5,400
	Hardware	3,600
9.	Plaster Repairs	1,000
	Drywall	5,500
	Flooring	5,200
	Painting	8,500
10.	Toilet Accessories	750
	Toilet Partitions	-0-
	Miscellaneous Accessories	500
11.	Furnishings (none)	-0-

**Option Three**  
**Page 2**

12.	Special Construction	-0-
13.	Elevator (LULA)	26,000
14.	Plumbing	8,500
	Heating System (Modifications)	3,500
	Fire Suppression System (partial)	
15.	Electrical	<u>6,500</u>
	Subtotal	\$226,950
	O & P (12%)	27,234
	A/E Fees	22,000
	Permits/Misc.	<u>2,000</u>
	Conceptual Estimated Total Cost	\$278,184

**Notes:**

1. New toilets to be connected to existing septic system. Existing kitchen and toilets to remain.
2. Assumes scope of site work Similar to Options One and Two
3. Assumes existing utilities to remain in place. New addition would be serviced by existing utilities.
4. New addition = 810 square feet (includes entry porch)  
Impacted existing space = 1000 square feet



STATE OF NEW HAMPSHIRE DEPARTMENT OF SAFETY

Richard M. Flynn, Commissioner

**Division of Fire Safety & Emergency Management**

Office of the State Fire Marshal

Donald P. Bliss, State Fire Marshal



Office: Richard M. Flynn Fire Academy, Route 106, Concord, N.H.

Mailing Address: 10 Hazen Drive, Concord, N.H. 03305

603-271-3294, FAX 603-271-1091

September 29, 2003

Michael Greene  
53 Babb Road  
Deerfield, NH 03037

Re: Deerfield Town Hall Renovation, FMO # 3030152

Dear Mr. Greene:

I have reviewed the plans of the Deerfield Town Hall renovation as you requested. Below is a list of comments that will need to be taken care of as part of this renovation project. Most of these issues need to be addressed regardless of the upcoming project, as they are code violations as the building stands right now. It should be noted, that the Deerfield Fire Department is the authority having jurisdiction for this building, so all plan of action and scheduling of compliance related issues should be addressed to Chief Mark Tibbetts. If a variance is needed for the project, which means you intend not to conform to code, that must come to this office. In order to make it easier for everyone to understand where I am getting this information, I have included copies of the cited portions of the Code when available.

- 1.) The use of the building as an assembly occupancy requires an automatic sprinkler system to be installed in accordance with NFPA 13, Automatic Sprinkler Systems, 1999 ed. This is based on having an assembly space one floor above the level of exit discharge in a wood frame (Type V (000)) building. (NFPA 101:13.1.6 and Table 13.1.6) Because of the expense of this element, it is commonplace for there to be a period of time allowed for compliance. Chief Tibbetts would approve the specific timeline, but we have granted up to three years in a number of cases.
- 2.) The occupant load of a building is what determines what systems and requirements will be imposed by the Code. For this building the occupant load was determined using NFPA 101:7.3.1.2. The first floor occupant load was determined using a factor of 15 ft<sup>2</sup> (less concentrated use). The occupant load was found to be 171 people. The second floor was also determined using a factor of 15 ft<sup>2</sup> because there is no fixed seating and if 7ft<sup>2</sup> is used there would be over 200 people allowed. Because of this the occupant load on the second floor was found to be 115 people. (NFPA 101:13.7.8.2) The occupant load factor for a stage is also 15ft<sup>2</sup> so that occupant load is 22 people. By these calculations the total

- capacity of this building is 308 people, but 101:13.1.6 limits the total capacity of the building to 300 people. The Deerfield Fire Department will determine the final occupancy loads for each floor and the permit will be posted on each floor.
- 3.) The exits and doors appear to adequately meet the needs of the building.
  - 4.) All of the exit doors must have panic hardware installed, and none of the doors can be locked in such a way that the panic hardware would not open the doors from the inside when operated without a key.
  - 5.) The exit to stage left must be marked in such a way that it is clear that it is not an exit. This is because the elevator is the only way out from this exit, upon activation of the fire alarm system, the elevator will be recalled to the first floor and would be useless to those trying to exit. It should also be marked as an area of refuge for handicapped individuals, and the fire department should be trained to check in this location for people during alarm activation. Please reference NFPA 101:7.2.12 for more on areas of refuge.
  - 6.) Emergency lighting and exit signage must be installed in accordance with NFPA 101:7.8, 9, and 10.
  - 7.) The stairway exits shall be protected in accordance with NFPA 101:7.1.3.2. Under this section the doors opening into the vertical openings must be on automatic closers and not held open, and the walls shall be of the specified rating.
  - 8.) The vertical openings shall be protected in accordance with NFPA 101:8.2.5
  - 9.) The fire alarm system shall notify the fire department automatically upon activation.
  - 10.) The electrical panels must have 36" of clearance all around it. I understand that this may be difficult to achieve with the panel in the kitchen, but as we discussed, there are a number of ways to take care of this.
  - 11.) The groups that regularly use the facility shall be regularly trained in the use of fire extinguishers.
  - 12.) Stair handrails shall be no shorter than 30 inches, but not higher than 38 inches. And the cross section shall be between 1 ¼ inches and 2 inches. This is particularly important on the curved stairway because it appeared that the handrail was too low.
  - 13.) The access way to the window on the second floor by the curved stair should be blocked so people are directed down the stairs.
  - 14.) The granite steps shall be in accordance with NFPA 101:7.2.2.3.

- 15.) The lights on the stage platform shall be protected from damage.
- 16.) Although there is no code prohibiting the suggested back stairway configuration, as we discussed, a more straight forward design that does not require the occupants to "change stairs" half way down would be preferred.

If you have any further questions, please feel free to give me a call at (603) 271-3294.

Sincerely,

A handwritten signature in cursive script, appearing to read "Michael Stark".

Michael Stark  
Investigator

Cc: Chief Mark Tibbetts, Deerfield Fire Department  
Investigator William Clark, NHFMO