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# Town Offices Space Needs Assessment

Town Of Lee, New Hampshire 03824

October 2007

Sumner Davis Architects Inc.  
959 Islington Street  
Portsmouth, NH 03801



**DENNIS MIRES, P.A.**  
**THE ARCHITECTS**

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## Summary

In July 2007 the Town of Lee hired Sumner Davis Architects Inc. to conduct an analysis of the current and future space needs of the Lee Town Offices, including activities housed in the Town Hall Annex.

The design team interviewed administration and staff, prepared existing condition drawings and created a space program for the future needs of Town departments.



Town Hall

## Existing Lee Town Hall

The Town Hall and Town Hall Annex buildings share a common parking lot with the Town Library, the Historical Society building and a storage garage situated behind the Town Hall. (See attached site plan)

The Town Hall is housed in a former brick schoolhouse and a newer, wood frame addition at the rear. The main first floor room houses the Town Administrator, Town Bookkeeper, Town Secretary, files, a public access area and a meeting space. The wood clapboard rear addition includes two (2) toilet rooms, a small kitchenette, and the Town Clerk's office.

Accessed through an interior open stair, the 2nd floor area includes an office and open workroom for the Town Planner and his secretary. Above the newer addition is a mechanical room and storage room. An exterior stair at the rear provides a 2nd means of egress.

The Town Hall Annex building is used for offices, janitorial storage and maintenance workspace. It houses the Town Hall fire alarm and telephone systems, and includes a toilet room, Town Conservation Committee room, General Assistance Director office, two meeting rooms shared by the Recreation, Agricultural, and

## Town of Lee, New Hampshire

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Heritage Committees, and a room that stores 2 fire proof safes for the Town Hall, and file cabinets for the Heritage Committee. (See Attached Floor Plans)

Deficiencies in the Town Hall include noncompliance with ADA (handicap accessibility to the 2<sup>nd</sup> floor, & ADA bathrooms); inadequate stair widths and hand railings, stair riser and tread dimensions; and other building and life safety code violations. There is a lack of sufficient, secure filing space, and public areas and staff workspaces are small and cramped.

Of real concern is the lack of privacy and security for several departments. Also, there is an overall lack of meeting space for employee use and for public meetings, as well as no maintenance supply room or employee break room.



Town Hall & Storage Garage

### Department Descriptions

#### Town Administrator

The Town Administrator provides customer services to residents, reports to the Selectmen, and has responsibility for assessing matters, finance/accounting, human resources, and the administration of town business. The Town Administrator interacts closely with the Town Planner, Building Department, Health, Welfare, Town Clerk/Tax Collector, Treasurer Department, and outside organizations including the Highway Department, Transfer Station, and the Fire and Police Departments. Direct staff includes the Town Secretary, Town Bookkeeper, and Janitor. The Administrator's tasks include daily public interaction, but also require security and privacy. A small meeting room is needed, as well as additional filing and working space.

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The Treasurer does not require public access, but is currently in the open plan business area. Secure space and additional lateral files are needed. A secure vault is required for Assessor vital documents and would be shared with the Town Clerk. Currently there is a main copier, a smaller copier, a printer, and open storage of paper supplies. The network computer is not in a secure space as is required.

The Town Bookkeeper does payroll and other normal bookkeeping duties. Additional lateral files are needed, as well as secure storage for checks.

The Supervisor of the Checklist, composed of three part time employees, registers new voters, maintains a voter database and assists at elections. The Department interacts with the Town Clerk. Some secure filing cabinets and storage bin space is required, as well as access to a meeting room. The area used for public enrollments is required to be ADA accessible. A copier, shredder, and computer are required to access to the NH State database.

### Selectmen

The Selectmen work directly with the Town Administrator, meeting several times a month. They require a publicly accessible meeting room with a head table and chairs to sit a minimum of 15 persons, seating for an additional 75 persons, storage space for television broadcasting equipment, and miscellaneous storage.

### Town Clerk/Tax Collector

The Town Clerk's office, currently with two employees, processes car registrations, dog registrations, marriage certificates, liens, and voter registrations, maintains all vital records, collects taxes for the Town, and swears-in appointees and elected officials. While public contact is required, limited and restricted access is necessary. Visual contact to the public from all areas of the office is necessary, but private workspace is also needed. A walk-in fireproof safe is required for vital file storage. The Town Clerk has verbal contact with the Town Bookkeeper, but needs physical access to the Assessor files. As the town grows the number of employees and filing requirements will grow.

### Planning/Zoning/Health/Code Enforcement

The Department covers all planning/zoning functions, health official functions, and code enforcement operations, as well as serving as the information center for all land use related matters. The Department is currently housed on the 2<sup>nd</sup> floor of the main building. Access to this area is not code conforming.

Many people come into the office to meet with staff and view plans and other documents. The staff's responsibilities cover a wide range of activities and enforcement including other work as directed by the Selectmen and other committees and boards.

Space needs for the Department includes an additional room for files and plan storage, a meeting area with large table and large eraser board, a private office for meetings and work, and additional filing cabinet space.

### General Assistance

General Assistance is a financial assistance and counseling service for individuals and families, requiring office and meeting space for employees. Other Departmental contact may be by phone or through the Internet. Personal security is needed because of potentially hostile clients. The Department should have a waiting room, reception counter with shared secretary and private office areas.

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## Committees

The Conservation Committee supports land protection and provides recommendations to Zoning and Planning for town owned properties, as well as conducting education and outreach programs. Currently the Committee has an office and adjacent room for meetings. Monthly meetings are held with the public. Lockable file cabinets are required. This Committee could share an office and meeting room.

The Heritage and Agricultural Committees meet once a month and can share office and meeting space. Additional storage space is required.

The Recreation Department currently does not have its own office space and could share space with another committee provided that locked file and storage space is available for health and contact information of participants in Town recreational activities.



Town Hall Annex

## Existing Town Hall Square Foot Calculations

<i>Use</i>	<i>Room Assignment</i>	<i>Square Feet</i>	<i>Comment</i>
FIRST FLOOR			
Entry	Front Vestibule	20 sf	Not ADA accessible
Public	Public Access/ Information	183 sf	inadequate space
Public	Town Meeting Room	314 sf	Seats 25, head table seats 8
Office	Secretary	152 sf	Inadequate workspace

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Office	Town Administrator	162 sf	Inadequate security, and privacy
Office	Treasurer	132 sf	Shared space & inadequate security
Office	Book Keeper	126 sf	Shared space & inadequate security
Office	Assessor Files	72 sf	Secured vault, additional files required
Storage	Supervisor of the Checklist	22 sf	Secure area required, computer access
Office	I T/ Network Server	65 sf	Secured area required
Toilet	Handicapped Toilet (Addition)	45 sf	Room width deficient
Toilet	Toilet/ Storage (Addition)	46 sf	2 <sup>nd</sup> H/C Toilet required, currently shared
Circulation	Hall (Addition)	36 sf	General circulation lacking, undersized
Circulation	Coffee Nook (Addition)	45 sf	Break room and kitchen required
Office	Town Clerk/Tax Collector (Addition)	301 sf	Larger secure vault, storage required
Circulation	Stair	45 sf	Code deficient
Net SF		1,752 sf	

**SECOND FLOOR**

Office	Planning, Zoning, Health, Depts.	472 sf	No ADA access, no public reception
Office	Code Inspector Office	260 sf	Adequate size, but no security or privacy
Storage	Storage	51 sf	Moldy, sloping rafters
Circulation	Stair	30 sf	Code Deficient
HVAC	Mechanical Room (Addition)	196 sf	Attic space
Storage	Storage (Addition)	196 sf	Unused attic space
Circulation	Hall (Addition)	93 sf	Rear access to stair, code deficient
Net SF		1,349 sf	

Circulation	Exterior Stair	75 sf	Unprotected, Code deficient
Walls, chases etc.	Multiplier	335 sf	Added to net square footage

**EXISTING TOWN HALL Gross SF** **3,436 GSF** Net SF plus .11 multiplier

**Existing Town Hall Annex Square Foot Calculations**

<i>Use</i>	<i>Room Assignment</i>	<i>Square Feet</i>	<i>Comment</i>
Entry	Front Vestibule	48 sf	Second airlock door missing
Office	Meeting Room	200 sf	Central room
Office	Conference	187 sf	Exterior door without airlock
Office	Conservation Office	134 sf	Sufficient space
Office	Welfare Office	126 sf	Lacking security
Maintenance	Janitor/ Phone/ Fire	133 sf	Inadequate storage, no security

Toilet	Toilet	31 sf	Not ADA accessible
HVAC	Furnace	25 sf	Access through Toilet
Storage	Storage Vault	93 sf	Inadequate storage
Net SF		977 sf	

Walls, chases etc. Multiplier 127 sf Added to net square footage

**EXISTING TOWN HALL ANNEX Gross SF** **1,104 SF** Net SF plus .13 multiplier

**Town Hall Proposed Square Footages**

<i>Use</i>	<i>Room Assignment</i>	<i>Square Feet</i>	<i>Comment</i>
Vestibule	Front Vestibule	49 sf	Energy saving airlock
Circulation	Main Lobby/Reception	140 sf	Map display; directories
Circulation	Corridors	200 sf	Serves offices
Public	Town Hall with TV storage	800 sf	Seats 75, head table seats 15
Public	Public Access/ Information	240 sf	Includes computer, file access, table
Toilet	ADA Accessible Bathroom	128 sf	Serves public and offices (Men)
Toilet	ADA Accessible Bathroom	128 sf	Serves public and offices (Women)
Maintenance	Janitor Closet	100 sf	Equipment, supplies, slop sink
Electrical	Telephone/Electrical Room	40 sf	Building systems
Fire Alarm	Fire Alarm Closet	10 sf	Building systems
Mechanical	Mechanical Room	200 sf	Serves entire facility
Office	Town Administrator	180 sf	Workstation, mtg. area w/ table & chairs
Office	Conference Room	160 sf	Shared meeting room
Office	Secretary (Shared)	210 sf	File storage; workstation
Office	Bookkeeper	180 sf	File storage; two (2) workstations
Office	Treasurer	100 sf	File storage; workstation
Office	Assessor	120 sf	File storage; workstation
Office	Assessor Files	220 sf	Secure file room
Office	Copy/Mail Room	160 sf	Office supplies; layout counter; mail
Office	IT/Network Server Room	120 sf	Office Systems; workstation
Office	General Assistance – Welfare	180 sf	Workstation, meeting area, security
Office	Employee Break Room	180 sf	Kitchenette; table & chairs
Storage	Supervisor of the Checklist	60 sf	Secure storage; handicapped booths
Circulation	Reception Area (Town Clerk)	120 sf	Waiting area
Circulation	Waiting/Line Cue	120 sf	Adequate public counter, security glass
Office	Town Clerk/ Tax Collector	300 sf	Four (4) workstations; files; copiers
Office	Vital Records	60 sf	Secure, fire rated vault
Office	Town Clerk Storage	192 sf	General storage
Office	Town Clerk Office	120 sf	Separate office w/ meeting area
Circulation	Reception Area (Planning Dept)	80 sf	Waiting area, service counter
Office	Planning/Code Inspector Office	180 sf	Plan review table; flat files; shelves
Office	Planning/Code Assistant	150 sf	Work area; files; secure behind counter
Office	Conference Room	150 sf	Multi-use meeting space
Office	Planning Department File Room	300 sf	Storage for plan files, etc.
Storage	Planning Dept/Storage	60 sf	Secure Storage
Circulation	Existing Town Hall Stair	<u>45 sf</u>	Maintain Existing Stair
Net SF		5,782 sf	
<b>PROPOSED TOWN HALL Gross SF</b>		<b>6,534 GSF</b>	Net SF plus .13 multiplier

**Town Hall Annex Proposed Square Footages**

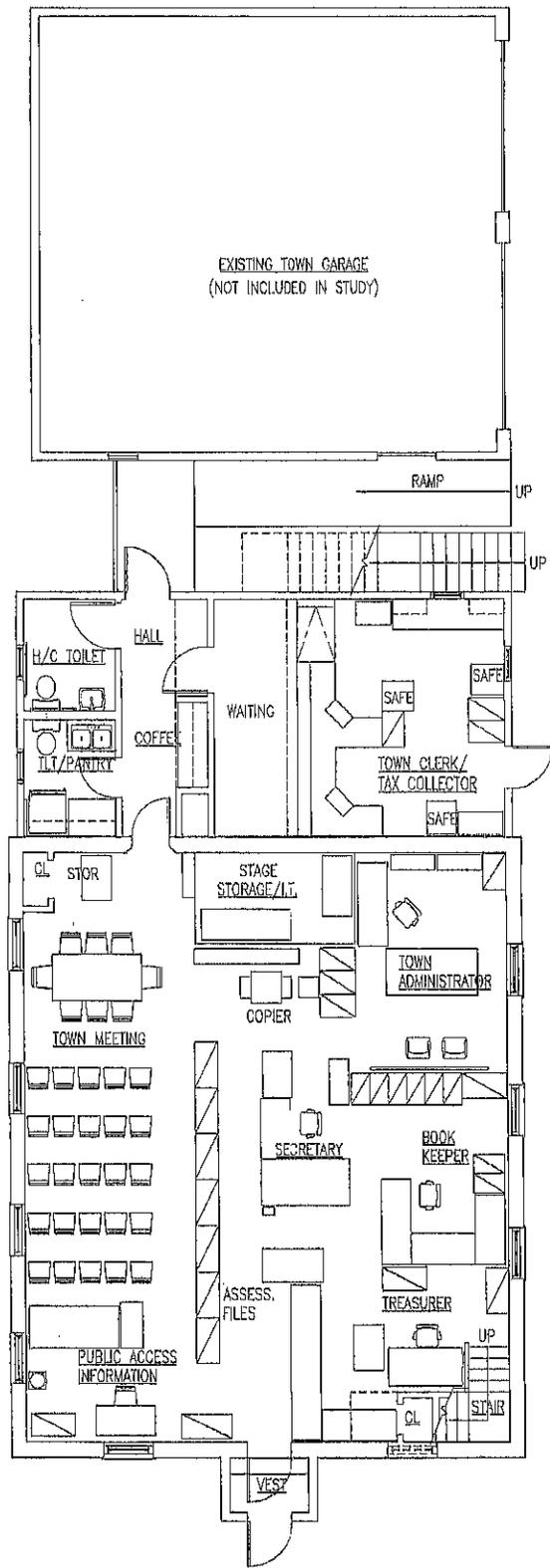
Entry	Front Vestibule	48 sf	Add second door for airlock
Office	Meeting Room	200 sf	Shared central room
Office	Conference	187 sf	Shared committee use
Office	Conservation Office	134 sf	Sufficient space
Office	Committee	126 sf	Shared committee room
Maintenance	Janitor	115 sf	Equipment; supplies for annex only
Toilet	Toilet	49 sf	Enlarge, make ADA accessible
HVAC	Furnace	25 sf	Access through central room
Storage	Storage	93 sf	Shared storage
Net SF		<u>977 sf</u>	
<b>TOWN HALL ANNEX Gross SF</b>		<b>1,104 GSF</b>	Net SF plus .13 multiplier

**Second Floor Design Consideration**

Town Hall Building

The Town Hall Proposed Square Footages are based on a single floor layout. If a second floor is desired, an ADA accessible Elevator, two (2) Egress Stairs, and additional circulation space will be required.

<i>Use</i>	<i>Room Assignment</i>	<i>Square Feet</i>	<i>Comment</i>
<b>FIRST FLOOR</b>			
Circulation	Main Stair	200 sf	Serves offices
Circulation	Elevator	50 sf	Provides ADA access to second floor
Elevator	Elevator Machine Room	50 sf	Building systems
Stair	2 <sup>nd</sup> Egress from Second Floor	180 sf	Serves offices
Circulation	Elevator Lobby and Corridor	120 sf	Serves offices
<b>SECOND FLOOR</b>			
Circulation	Main Stair	200 sf	Serves offices
Circulation	Elevator	50 sf	ADA accessible
Stair	2 <sup>nd</sup> Egress	180 sf	Serves offices
Circulation	Elevator Lobby and Corridor	<u>120 sf</u>	Serves offices
Net SF		1,150 sf	
<b>PROPOSED TOWN HALL</b>			
<b>SECOND FLOOR SUPPORT Gross SF</b>		<b>1,300 GSF</b>	Net SF plus .13 multiplier



**TOWN HALL FIRST FLOOR PLAN**

SCALE: 1/8"=1'-0"

**Lee Town Offices Needs Assessment**

Lee, New Hampshire 03861

SDA Sumner Davis Architects, Inc.  
 959 Millington Street,  
 Portsmouth NH 03801  
 603-436-8891 603-436-1121 fax

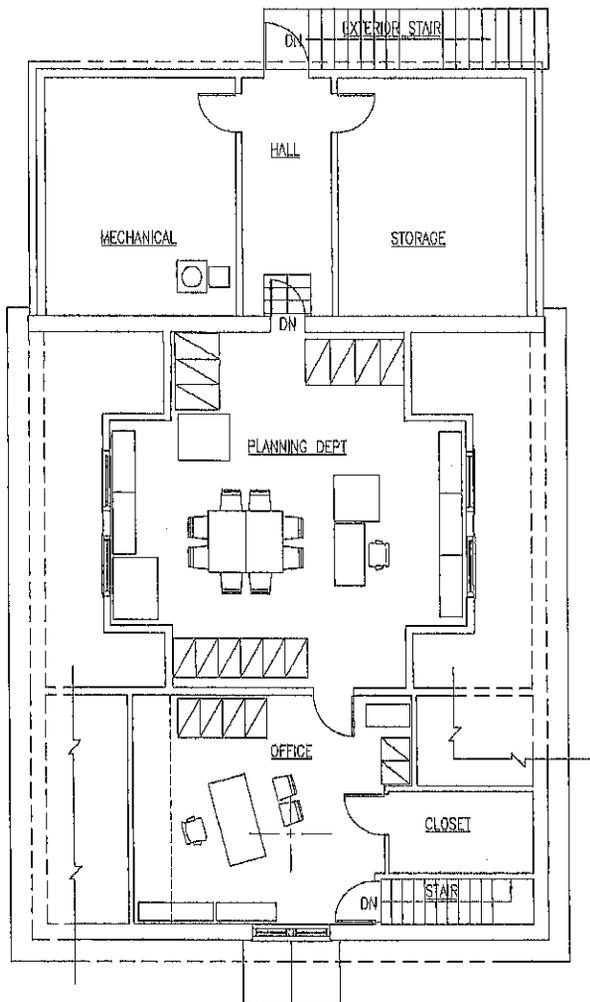
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DRAWN BY: GWL

DATE: October 16, 2007

CHKD BY: WKD

PROJECT NO.: 27-045



TOWN HALL SECOND FLOOR PLAN

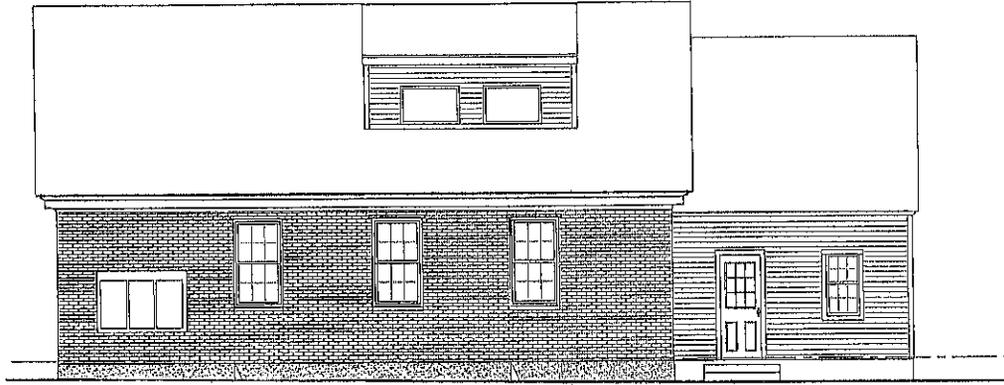
SCALE: 1/8"=1'-0"

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TOWN HALL SIDE ELEVATION

SCALE: 1/8"=1'-0"



TOWN HALL STREET ELEVATION

SCALE: 1/8"=1'-0"

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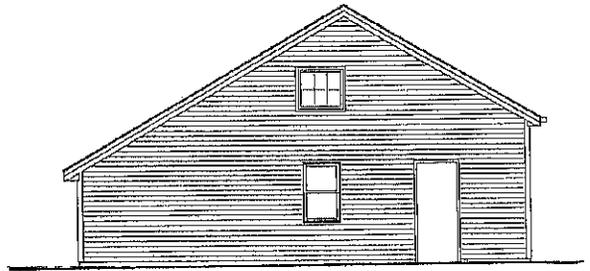
SCALE: As Noted

DRAWN BY: GWL

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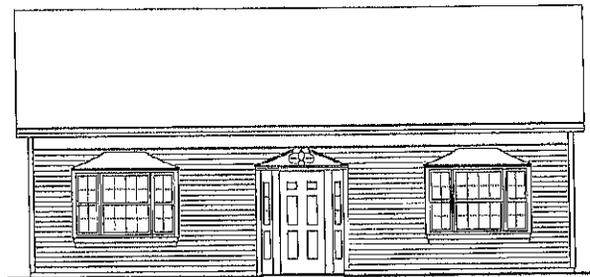
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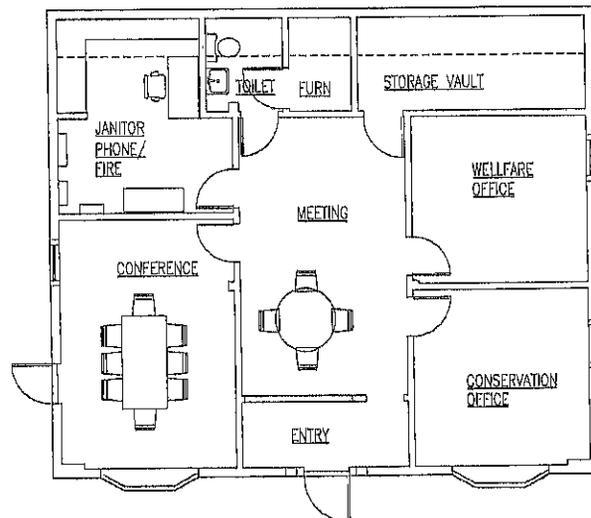
ANNEX SIDE ELEVATION

SCALE: 1/8"=1'-0"



ANNEX STREET ELEVATION

SCALE: 1/8"=1'-0"



ANNEX FLOOR PLAN

SCALE: 1/8"=1'-0"

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EX4



**Town of Lee**  
**Town Hall, Library and Bricker Parcel Overview**  
**July 20, 2009 Site Walk**

**Town Hall**

- Built in 1846, at original Mast Road/Town Center location
- Greek Revival style of architecture, stone foundation, brick exterior, clapboard gable roof
- Underpinnings and granite doorstep came from the town's first meeting house, built about 1766
- Tramp House (Garage) constructed in 1920s with remodel/addition sometime in the 1950s
- Two story, clapboard addition constructed in 1968
- Library established in 1892 and located in second floor of town hall until 1962
- Currently serves as work space for town administrator, secretary, bookkeeper, welfare officer, tax assessor, IT administrator, town clerk/tax collector and assistant and the Code Enforcement officer and secretary

**Library**

- Center School House, constructed in 1897. was moved from Lee Hook Road to present Town Center/Mast Road location in 1962 and remodeled for use as a library
- Gable roof, wood frame, clapboards
- Small addition constructed to rear of schoolhouse in 1972
- Small addition, featuring new main entrance, constructed in 1984
- Rear addition, featuring basement meeting room, constructed in 1996
- Collection features 25,000 +/- items
- 1 full-time library director, four part-time staff

**Bricker Parcel**

- 5.11 acres located on North River Road/Rte 155
- Adjacent to Little River Park, future site of town recreation fields and nature trails
- Purchase approved at March 2006 Town Meeting, for \$215,000, with up to \$5,000 for transaction costs, for a total of \$220,000
- No conservation easements or restrictions placed on property; town has full discretion as to how to develop this parcel
- Southern exposure, sloped landscape with a great view overlooking Little River Park lends itself to possible "green" construction

Lee Town Buildings - Structural Inspection Summary

Main Rafters      Ceiling Joists/Beams      Shed Rafters      Floor Joists      Floor Beam      Floor Columns

Annex	30% overstressed excessive deflection	stress ok deflection ok	unknown	n/a	n/a	n/a
<p>Gables and the front eave lines appear straight and the eave line appears level. The rear eave line is bowed outward. The ridge line appears to be level. Rear shed rafters have a noticeable permanent center span deflection.</p>						

Garage	stress ok excessive deflection	n/a	40% overstressed excessive deflection	n/a	n/a	n/a
<p>Gables and the rear eave lines appear straight and the eave line appears level. The front eave line is bowed outward. The ridge line is deflected downward. Large door headers are adequately sized. Studs are undersized with respect to wind loads. The two 4x6 ties at the top plate provide insufficient strength to support lateral forces in the main rafters. There is insufficient lateral strength in the structure's long direction.</p>						

Historical Building (50 psf live load)	unknown	unknown	n/a	stress ok excessive deflection	60% overstressed excessive deflection	170% overstressed
<p>Eave lines appear straight and level except at all four corners where deflection is noticeable. The ridge line appears to be level. Additional posts and footings will be required to support the first floor beam.</p>						

Library (150 psf live load)	stress ok (original) excessive deflection	stress ok deflection ok	n/a	overstressed (original) excessive deflection 20% overstressed (97) deflection ok	stress ok deflection ok stress ok deflection ok	stress okay (original) stress ok (97)
<p>All building lines appear straight and true. Roof framing for three additions used pre-engineered trusses. Joists and beams in the two earlier additions were not accessible.</p>						

Town Office (65 psf live)	stress ok (original) excessive deflection stress ok (addition) deflection ok	unknown unknown	n/a	stress ok excessive deflection	stress ok excessive deflection	n/a
<p>Gable lines appear straight. Eave lines appear straight and level. There is noticeable permanent deflection in the high ridge. The low ridge line appears to be level. Areas under the original floor joists will require additional support to decrease deflection.</p>						

October 4, 2009

## **TOWN OF LEE, NH – TOWN CENTER STUDY OF EXISTING ELECTRICAL SYSTEMS**

### **INTRODUCTION**

On September 22, 2009, we visited the Lee Town Center site, talked with Town officials and examined the five Town Buildings; the Town Hall/Offices, the Garage/Barn, the Library, the Historical Society Building and the Town Hall Annex. Most of these buildings are older, historic structures. I believe the Town Hall was a school house from 1766, the Library had also been a school and the Historical Society building had been the railroad depot train station. All were moved to this site. The Annex is a relatively new building. We examined each buildings electrical systems and the following report documents our findings.

### Site Electrical Distribution

There is single phase electrical power at 120/240 volts to each building. Electrical utility primary power comes from the south overhead on utility poles. The high voltage primary power stops at the pole to the south of the Town Hall with a pole mounted transformer that provides secondary, 120/240v single phase power to all five buildings. This is done with overhead secondary power and service laterals run to each building, with the exception of the Historical Society Building which is fed underground from the Library panel. The telephone and CATV cables come overhead from the south with the secondary power. Comcast is the TV cable provider. The nearest three phase primary utility power is five poles away to the north, about 1500 feet.

### **TOWN HALL**

The Town Hall Building was originally a school house from 1766. It has been renovated and an addition was put on the back.

- The Town Hall building has a 100 amp, 120/240 volt, single phase service coming in overhead from a pole to the south at the street.
- The main panel is an old Federal Pacific (FPE) 125 amp panel with a 100 amp main breaker and 24 single pole full size positions all full with one 30/2 (30 amp, 2 pole) breaker for the kitchen range; 60/2 breaker feeding an upstairs sub panel; a 20/2

breaker feeding something marked "Library"; a 20/2 breaker marked "A. Couttet" and the rest are 20 amp, single pole, 120 v breakers for general power and lighting.

- The upstairs sub panel is an ITE Load Center, 100 amp, 20 position panel with seven 20/1 breakers; six 15/1 breakers and seven available spaces.
- Almost all the wiring in the building is NM cable ("Romex"). There may be some problems with overloaded circuits.
- Data and telephone wiring in the building is not code compliant with wires and cables being draped over doorways and randomly in and through spaces – see pictures attached.
- The lighting is primarily fluorescent, surface "wrap" fixtures – two lamp, acrylic lensed fixtures with older T12 fluorescent lamps and magnetic ballasts. There are some older incandescent fixtures. There are exterior, HID (High Intensity Discharge) wall packs for exterior lighting.
- There are exit signs and emergency lights from self contained emergency battery units (EBU) which generally appear to meet current code requirements.
- The fire alarm system consists of pull stations at exits, and a mix of heat and smoke detectors, with relatively new horn/strobe alarm indicators. The main fire alarm control panel (FACP) is a Silent Knight 5207 addressable system and is actually located in the Annex with interconnecting cables to each building, so all buildings are on the same system with the main FACP in the Annex. There are fire alarm/security interface panels in each building. The one in the Town Hall is located in the north eave/attic space where the computer servers are located.
- There is an Ademco security system with door contacts and motion detectors. There is also an emergency call system with push buttons for initiation and automatic call to the local police.
- There is automatic notification for a fire or security alarm condition.
- Sea Coast Lock and Safe Company at 800-698-3818 appears to be the installer and service company for the fire alarm systems and the security systems.

## **LIBRARY**

The Library has been added on to several times, in 1974, the 1980s and the 1990s. The original building was a school house from 1846.

- The Library has a 200 amp, 120/240 volt, single phase service coming in overhead to a meter on the front of the building and a relatively new main electrical panel in the basement.
- The main panel is a Siemens ITE G4040MB 1200 CU panel with a 200 amp main breaker and 42 breaker positions.
- There are the following breakers: 70/2 breaker which feeds the Historical Society Building; 30/2 breaker for the range; 100/2 feeding a sub panel in the new addition (basement); 50/2 breaker for the central air conditioning; and the rest are 20 amp and

15 amp single pole breakers for general lights and power. There are five (5) spaces for additional breakers.

- The main panel has surge protection.
- There is a remote plug connection for connecting a mobile generator during a power outage to maintain heat.
- Most of the wiring is NM cable (“Romex”)
- The sub panel in the basement is located in a boxed in enclosure which does not allow adequate, code required access and clearance.
- The lighting is primarily fluorescent, surface “wrap” fixtures – two lamp, acrylic lensed fixtures with older T12 fluorescent lamps and magnetic ballasts. There are exterior, HID wall packs for exterior lighting.
- There are exit signs and emergency lights from self contained emergency battery units (EBU) which generally appear to meet current code requirements.
- The fire alarm system consists of pull stations at exits, and a mix of heat and smoke detectors, with relatively new horn/strobe alarm indicators. The main fire alarm control panel (FACP) is a Silent Knight 5207 addressable system and is actually located in the Annex with interconnecting cables to each building, so all buildings are on the same system with the main FACP in the Annex. There are fire alarm/security interface panels in each building. The one in the Library is located in the basement under the original building.
- There is an Ademco security system with door contacts and motion detectors.
- There is automatic notification for a fire or security alarm condition.
- Sea Coast Lock and Safe Company at 800-698-3818 appears to be the installer and service company for the fire alarm systems and the security systems.

## **ANNEX**

The Annex is a relatively new one story building.

- The Library has a 200 amp, 120/240 volt, single phase service coming in overhead to a meter on the south end of the building and a relatively new main electrical panel in the utility room – see photos.
- The lighting consists primarily of fluorescent fixtures – most are 2’x4’ 3 and 4 lamp recessed “troffers” which have older T12 lamps and magnetic ballasts.
- The Silent Knight main fire alarm control panel is located here in the Utility Room – see photos.

## **HISTORICAL SOCIETY BUILDING**

This building was originally the train station depot.

- The electrical service and panel here is a 100 amp, 120/240 volt panel fed from the Library with a 70 amp, 2 pole breaker. There is a main breaker and six single pole breakers for general power and lights. There are 18 or 20 spaces for additional breakers.
- The lighting consists of residential fixtures and some track with incandescent lamps.
- There is really minimal electrical wiring in this building.

#### **GARAGE/BARN (Behind the Town Hall)**

There is very minimal wiring to this building coming over from the Town Hall. There are a few lights and outlets. The wiring does not meet current National Electric Code (NEC) requirements.

#### **GENERAL DISCUSSION AND CONCLUSIONS**

These are old, historic buildings that have been renovated and fitted out with electrical power, lights, exit and emergency lights and fire alarm systems to serve as office space, Library and other spaces for Town operations.

There are some limits to what can be done with these buildings electrically. Currently, there is no three phase electrical service easily available and it could cost tens of thousands of dollars to get it to the site. This means that there are very limited options for elevators and larger HVAC systems with only single phase power available.

If these buildings are to remain in use, the lighting in the buildings could and should be upgraded and improved. The use of more modern, linear indirect/direct fixtures in some of the spaces, like the Town Hall main floor, with the new T8 “High Performance” lamps and electronic ballasts would save operating costs while providing much improved lighting quality.

If these buildings remain in use, it would be worth considering “cleaning up” the electrical and telephone site services to the buildings by putting these services underground to the buildings, and a permanent emergency generator system to power all or some of the buildings automatically.

Other than that, there are no major problems or hazards, and the Life Safety systems that have been added (fire alarm, exit and emergency lighting) are essentially code compliant.

End of Preliminary Report

**LEE TOWN CENTER**

**ELECTRICAL REPORT – PHOTOS**

OVERHEAD SERVICE TO TOWN HALL – LAST PRIMARY LINE AND TRANSFORMER





**LIBRARY SERVICE ENTRANCE AND METER**

**TOWN HALL DATA/TEL AND CATV HEAD END IN ATTIC**



TOWN HALL ILLEGAL WIRING TO RECEPTACLE



TOWN HALL ILLEGAL WIRING AND CABLING BEHIND AIR GRILLE



TOWN HALL ILLEGAL WIRING AND CABLING ALONG HEAT PIPES EXPOSED



LIBRARY MAIN PANEL WITH TRANSFER SWITCH ON LEFT FOR  
EMERGENCY GENERATOR TO HEATING CIRCUIT



LIBRARY BASEMENT SUB PANEL



HISTORICAL SOCIETY UPSTAIRS LIGHTING



ANNEX FIRE ALARM MAIN PANEL AND ELECTRICAL SERVICE PANEL (AND QUESTIONABLE WIRING)

# DESIGN DAY MECHANICALS INC

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10/2/09

Dennis Mires The Architects, PA  
697 Union Street  
Manchester, NH 03104

Attention: Dennis Mires

Re: Lee, New Hampshire Town Offices, Library, Zoning & Planning, and Historical Society Buildings – Existing Mechanical Systems

I visited the above referenced site to observe existing heating, ventilating, air conditioning and plumbing systems on Tuesday, September 22, 2009. The following was noted.

## **Existing Common Utilities:**

- Heating fuel for the four buildings on this site is propane, supplied from a common 1000 gallon tank located behind the
- Also located behind the Zoning and Planning Building is a domestic water well head. The well water expansion tank appears to be located in the mechanical room of the Zoning and Planning Building, and distribution piping for domestic water to the other three buildings appears to originate in this same room as well.
- There is a sump tank cover also located behind the Zoning and Planning Building. I assume this houses a septic system pump that pumps sewage to a septic system settling tank and drainage field. Perhaps this can be confirmed with State approved septic system design plans that should be kept on file, if not in Lee, then at the New Hampshire DES Wastewater Engineering Bureau.

## **Recommendations for the Common Utilities:**

- If the Town of Lee chooses to reuse any or all of these buildings, propane continues to be a cleaner fossil based fuel, though more expensive than either fuel oil natural gas, which I don't believe is available.
- If the Town would like to entertain alternative sources of energy such as biomass (wood chips or pellets), or geothermal, the relatively close proximity of these four buildings would lend itself to a district style heating plant with underground distribution of heating water, and heating and cooling water if geothermal systems are installed.

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## **Existing Heating Systems:**

### **Town Offices:**

- The Town Offices are heated with a Weil McLain standard efficiency propane fired boiler with three zone circulator pumps with controlling night setback thermostats connected to fin tube radiation, two zones on the first floor, front and back, and one zone on the second floor.

### **Library:**

- The Library is heated with two forced warm air standard efficiency propane fired furnaces each with controlling night setback thermostat, a Magic Chef unit for the original parts of the building with a ductwork system located in the basement and adjacent crawl space, and an Olsen unit with ductwork in the ceiling of the lower level reading room for the lower Reading Room level and main level of the latest Library addition. Diffusers and grilles are in the floor for the main level, and in the exposed ductwork in the lower level Reading Room

### **Historical Society Building:**

- The Historical Society Building is heated with an Empire direct vent through the wall propane furnace .

### **Planning and Zoning Building:**

- The Planning and Zoning Building is heated with a Burnham standard efficiency propane fired boiler with one zone circulator pump with controlling night setback thermostat connected to fin tube radiation.

## **Recommendations for Existing Heating Systems:**

- If the Town decides to continue with the traditional propane fired heat systems they currently use, they should consider upgrading them to higher efficiency condensing type furnaces and boilers. These existing systems have a normal life expectancy of 15 years for the furnaces, and 20 years for the boilers. The Historical Building unit is relatively new and would be the last unit I would recommend replacing.
- If a centralized biomass heating plant is used, the existing systems, except for the Historical Building unit, can be retrofit to accommodate the new centrally produced hot water energy. The baseboard systems would remain essentially as they are, and the furnaces could have duct mounted hot water coils. In the case of the Library, that would allow for separate control of the lower level Reading Room, which is currently controlled by the heating thermostat located upstairs. The

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Historical Building would need a cabinet hot water unit heater to replace the through the wall furnace.

- If a centralized geothermal system is used, more extensive changes will be required for the Town Offices and Planning and Zoning Building as the existing hot water baseboard would not be sufficient to heat the buildings with the lower temperature water that a geothermal system produces. New radiant floor heating systems may be a good option, though more problematic in the Planning and Zoning Building with its concrete slab floor.

## **Existing Air Conditioning Systems:**

### **Town Offices:**

- The Town Offices are air conditioned in the normally occupied spaces with through the wall air conditioning units.
- The unfinished eave area of the attic houses a computer server, and is air conditioned with a free standing air conditioning unit with condenser heat air ducted to the outside through the building eave.

### **Library:**

- The original parts of the Library that are heated with the Magic Chef propane furnace, are also cooled with a Lennox packaged air conditioning unit located on the ground immediately outside the basement area that houses the furnace. This unit is connected with ductwork that runs through the basement wall and connects to the supply and return ductwork system for the furnace. There are two sets of dampers, one set on the supply and one set on the return, that are opened and closed depending on whether the building is using heat or cooling.
- There are also two supplementary through the wall air conditioning unit for the upper level Library addition.

### **Historical Society Building:**

- The Historical Society Building has no occupied space air conditioning, but does have a stand-alone dehumidifier for the basement.

### **Planning and Zoning Building:**

- The Planning and Zoning Building is heated with a Burnham standard efficiency propane fired boiler with one zone circulator pump with controlling night setback thermostat connected to fin tube radiation.

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## **Recommendations for Existing Air Conditioning Systems:**

- The existing Library packaged air conditioning unit appears to be relatively old. If it fails, or requires significant service, and new higher efficiency unit should be installed. Rebates are available from the electric utilities for higher efficiency air conditioning unit.
- The through the wall units are hard to beat for inexpensive air conditioning for short periods of the year. If more permanent air conditioning systems are desired, ones that do not need to be taken in and out of windows every season, either for aesthetic or efficiency reasons, ductless split systems are available with higher efficiency ratings that are also eligible for utility company rebates.

## **Existing Ventilation and Exhaust Systems:**

- There is no apparent mechanical ventilation for any of the buildings. Outside air requirements are provided, or not, by opening windows, or relying on uncontrolled building outside air infiltration.
- Toilet exhaust is required for code compliance in toilet rooms, and appear to be operable in the toilet rooms in the Town Offices, Library, and Planning and Zoning. There is no toilet in the Historic Building.

## **Recommendations for Ventilation and Exhaust Systems:**

- With the current building envelopes in these four buildings, there is probably sufficient uncontrolled infiltration to provide sufficient minimum required amounts outside air for the occupants. If however the building envelopes are tightened as a part of energy saving measures, as they should be, the amount of infiltration would hopefully be reduced so that mechanically provided outside air would be required for a healthful inside environment. Outside air can be provide with energy recovery ventilators, or, in the case of the Library that has ducted heating systems, with direct connections from the return air ductwork system to the outside with motor operated dampers that open and close in response to carbon dioxide levels within the occupied spaces.

## **Existing Plumbing Systems:**

- Domestic hot water is provided by a propane fired water heater in the Town Offices, and by electric heaters in the Library and Planning and Zoning Building. There is not domestic water hot or cold in the Historical Society Building.
- The only toilet facility that appears to be fully ADA compliant is in the Library.

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## Recommendations for Plumbing Systems:

- If high efficiency boilers are used to replace the existing boilers in the Town Offices and Planning and Zoning Building, indirect fired water storage tanks could be used to replace the existing standard efficiency propane and electric water heaters in these buildings. High efficiency propane fired domestic water heaters are available to replace the electric water heater in the Library. However, due to the limited usage of domestic hot water in all these facilities, significant expenditure on new domestic water heating systems would have a relatively long economic payback.
- Instantaneous electric water heaters are also a good consideration to standard electric water heater storage tanks as they have no standby losses. These should only be considered when the current systems fail.
- New ADA accessible plumbing fixtures should be included as a part of new additions and renovations.

Respectfully submitted,

DESIGN DAY MECHANICALS, INC.



Douglas C. Waitt