

**Town of Jaffrey, NH
Town Offices Comparative Site Study**



45 Knight Street - the Printegra Building



85 Fitzgerald Drive. the Somero Building

**Weller & Michal Architects Inc.
July 30, 2010**





WELLER & MICHAL ARCHITECTS INC.

222 West Street Keene, NH 03431

ARCHITECTURE ● PLANNING ▼ INTERIORS

July 30, 2010

Randall Heglin, Director of Public Works
Jaffrey Public Works Department
23 Knight Street
Jaffrey, NH 03452

re: Jaffrey Phase I Property Assessments

Dear Randy,

Enclosed is our dual-property assessment and pre-schematic feasibility study comparing two existing buildings as possible locations for newly relocated Town Offices.

We hope these results will enable the Selectboard to decide on next steps, and guide them in future planning.

We thank you for the opportunity to work with the Town of Jaffrey.

Please contact us if we can be of help with any follow-on work.

Sincerely,

Weller & Michal Architects INC.

A New Hampshire Corporation

Tom Weller
Principal-in-Charge

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EXECUTIVE SUMMARY

This report evaluates two existing buildings under consideration for use as relocated Jaffrey Town Offices. Our work relied on review of available copies of original plans from different periods of construction, and visual observations during several walk-through audits of both buildings. We exercised due-diligence to establish the accuracy and completeness of information provided. We did not perform or have others perform destructive testing or investigate concealed conditions.

In order to provide an assessment of the overall quality of the buildings, we completed several tasks.

- We observed and photographed interior and exterior construction details and finishes.
- We observed typical roof conditions, roof-wall junctions, air barrier conditions and related areas to identify possible structural issues, energy and heat loss potential and ice dam/moisture.
- We developed a summary set of recommendations to address anticipated repairs, upgrades and remodeling necessary to accommodate the Town Offices at each building.
- We contrasted the existing energy efficiency of each building's shell (roofs, windows and walls), and the potential for improvement.
- We developed summary costs budgets for all measures recommended.

A snap-shot comparison of the two buildings is provided in Table 1 - Snapshot .

At first look, the former Somero building on Fitzgerald Drive appears to be more readily usable than the former Printegra plant on Knight Street. Both buildings, however, are similar in age and basic construction quality. Both buildings need improvements, systems upgrades and repairs to properly accommodate relocated municipal offices. Neither building should be viewed as in 'move-in' condition.

Recommendations in this report are consistent with investment in public infrastructure intended to serve the community over a 30-year plus life. The intent is to identify costs which reasonably should be expected to create a quality public facility laid out in a manner that supports the specific functions of town government.

More up-front costs are expected at the Knight Street location. In round numbers, \$765,000 for 'bricks and mortar' costs is itemized in the Appendices. With an added 30% allowance for bond costs, design, engineering, contractor's general conditions, construction management fees and contingencies, the recommended budget to occupy the Printegra building is \$1,000,000.

Corresponding up-front costs are less at the Fitzgerald Drive location. In round numbers, \$530,000 for 'bricks and mortar' costs is itemized in the Appendices. With an added 30% allowance for bond costs, design, engineering, contractor's general conditions, construction management fees and contingencies, the recommended budget to occupy the Somero building is \$700,000.

Because the buildings are different in size, costs can be viewed two ways. If the total available area of each building is considered, the Printegra site will cost only \$30 per square foot to develop (plus acquisition costs). The Somero building, which is smaller, will cost \$42 per square foot (plus acquisition costs). If, however, the recommended costs for each building are associated ONLY with the expected allocation of floor area needed for Town

Office functions only, the Fitzgerald Drive location costs less, at \$78 per square foot of 'allocated program area', and the Knight Street location is more expensive, at \$112 per square foot.

The likely floor area needed for Town Offices is 8,900 square feet. The upper level of the Printegra building is 11,000 gross square feet in size, and consequently both the Town Office Program and the DPW Administrative functions (at 2,100 square feet) appear to fit nicely into this area. Since the existing Department of Public Works site is next-door, this is a logical and reasonable use of this additional floor area. The entire lower level of the Printegra building, consisting of 22,000 square feet (gross) of mixed high-bay and conventionally height space, would be available for future uses.

At the Somero building, the existing conventional height office wing is only 6,600 square feet in size. Consequently, portions of the Town Offices would need to be located in the rear warehouse section. Most likely this would be the larger public meeting spaces and necessary core functions. A second public entrance would be highly recommended. Of the total 16,380 square foot of building area, about 7,500 square feet would be available for future uses. The 3 acre site permits an expansion to the rear, so this unassigned and unused area could be increased by a future building expansion.

Each building's current energy efficiency can be significantly improved by proposed and budgeted modifications. However, the LEED criterion for energy efficiency is energy use intensity – or annual energy use per square foot of building area. Differences in the plan layout, geometry and existing window areas of the two buildings make the Printegra building on Knight Street a far better candidate for a low-energy use building. The anticipated EUI (Energy Use Intensity) will undoubtedly be higher at the Somero building. Heating loads could be as much as 50% higher per square foot, primarily due to more exposed wall and window area per usable footprint.

Table 1 - Snapshot Statistics

Parameter	Printegra Building Knight Street	Somero Building Fitzgerald Drive
Constructed	1984	1985
Assessed value	\$899,851	\$504,578
Land area	2 acres	3 acres
Building Size (GFA)	33,600 square feet	16,380 square feet
Allocation to Town Offices	8,900 square feet	8,900 square feet
Allocation to DPW Administration	2,100 square feet	none
Recommended Renovations Budget	\$1,000,000	\$700,000
Cost per SF Town Office program	\$90 to \$112	\$78
Cost per SF GFA building	\$30	\$43
Available for Future Uses	22,600 square feet	7,480 square feet

45 KNIGHT STREET LOCATION

This location is the site of the former Printegra printing plant and offices, but was originally developed and occupied by Precision Forms. The site is approximately 2 acres, located adjacent to the Town's existing Department of Public Works facility about 0.6 miles from the existing Town Offices. The building gross floor area is 33,600 square feet.



Figure 1 – East Side from North East



Figure 2 – Main Entrance Landscaping

The building is a two-story structure built into a steep grade to provide at grade access to both levels. The second floor area (upper floor at grade at the building's main entrance) extends over only ½ the building footprint, providing a double height area for half the lower level. Floor-to-floor heights are between 11 and 12 feet. The building was constructed after 1984.



Figure 3 – Rear Lower Level Access

SITE AMENITIES AND UTILITIES

The site is served by Town water and sewer, and has adequate land area for all required parking. Two paved areas provide for parking and vehicle circulation. The larger area to the rear of the building provides loading dock access to the lower level, and includes a small accessory building (not a subject of this study).



Figure 4 – Propane Storage Tanks



Figure 5 – Parking at Knight Street Entrance

The upper paved area provides access and parking to the main entrance, facing east off Knight Street. It is currently laid out with 31 parking spaces. Free-standing parking lot lighting or site lighting is limited and fixtures appear in poor condition.

Landscaping around the building to the east is limited, and on the north and south is mature and plentiful. A repairable wood deck on the north provides an employee amenity adjacent to an existing breakroom.



Figure 6 – Wood Deck at North

EXTERIOR SHELL

The construction of the building is generally non-combustible Type 5, consisting of masonry bearing walls, masonry and non-bearing lightweight interior partitions, and steel framed roofs. The building is constructed on deep concrete foundations and concrete slab-on-grade floors.

Roofs are low-slope (flat) roofs with 2 ¾ inches of rigid insulation above a steel deck covered with stone-ballasted EPDM rubber membranes. Roofs are drained to interior storm drains.



Figure 7 - Ballasted Stone EPDM Roof

Roofs are in good condition but are likely near the end of their useful life.

Exterior walls are brick veneer on CMU backup, apparently insulated with 2-inch rigid insulation within the wall cavity. The exterior rear wall overlooking the larger parking lot is 12 inch CMU which drawings indicated contains insulating inserts in the CMU cells. The poured concrete foundation walls have 2-inch rigid insulation exterior to the wall below grade.

Walls are in good condition. Two small defects were noted. A brick arched window head at the north wall shows unrepaired settlement cracks. The lower level north foundation wall shows a previously repaired settlement crack.



Figure 8 - Settlement Damage to Arched Window Head



Figure 9 - North Foundation Wall Crack



Figure 10 – Exterior Hollow Metal Doors

Exterior Doors are typical commercial hollow metal, with aluminum storefront at the Knight Street entrance. Loading docks with sectional OH doors serve the lower level from the rear.



Figure 11 – Loading Dock OH Doors

Windows are typical rectangular punched opening in masonry, with late 1980's vintage 'TwinPane' insulated glass in aluminum clad wooden frames. Most windows are fixed, but a few are double casements.



Figure 12 – Frost Damaged Rowlock Brick Sills



Figure 13 - Typical Fixed Aluminum Clad Window

INTERIOR PARTITIONS AND FINISHES

The interior of the Printegra building is in poor shape. Original partitions are typical drywall on light-gage metal framing, and extend above hung ceilings. Additional partitioning by subsequent tenants is typically drywall on wood stud and terminates at the hung ceiling.

Original finishes were low to mid-range in quality, and show excessive wear and damage.



Figure 14 Interior Finishes at Existing Breakroom



Figure 15 - Interior Finishes at Work Rooms



Figure 16 - Interior Finishes at Offices and Corridors

Ceilings at the upper level are typically 2x4 suspended grid with acoustic panels, 8 feet high. Floor finishes at the upper level are carpet at offices and corridors, VCT at work rooms and restrooms, and unfinished concrete at the lower level.

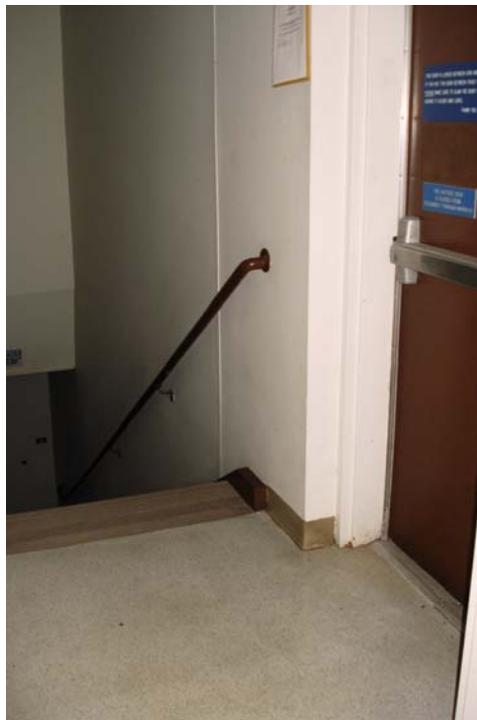


Figure 17 - Exit Door Conflict with Stair Landing

Two interior stairwells communicate and provide a second means of emergency egress from the lower level. These stairs have adequate width, rise and run but may need better enclosure at the top level to meet current fire codes.

INTERIOR DOORS AND HARDWARE

Doors are solid core in knock-down HM (hollow metal) frames. Door hardware predates most accessibility codes, and should be replaced.

MECHANICAL SYSTEMS

Consulting mechanical engineers Kohler & Lewis visited the building to observe existing conditions. Their report is provided as one of the appendices.

The building is served by older propane gas heat, DX cooling roof top units (RTUs). Two units, a 10-ton and a 15-ton serve the office space at the upper level and two 10-ton units serve the industrial space in the lower level.



Figure 18 - HVAC Roof Top Units

Because the rooftop units serving the office level are old and use a phase-out, environmental unfriendly refrigerant, and because zoning and ductwork changes would be needed to accommodate necessary plan changes for Town Offices, we recommend a complete replacement of the HVAC systems. The two RTUs serving the lower level can remain until a programmatic use for this extra floor area is established.



Figure 19 - Lower Level

The lower level also contains specialized process equipment used in the former occupant which appeared to be in decent condition. Some of the equipment may have residual value to the Town.

ELECTRICAL SYSTEMS

Consulting electrical engineer Russ Downing visited the building to observe existing conditions. His report is provided as one of the appendices.



Figure 20 - Pad Mounted Transformer

The existing 800 amps three phase 4 wire 277/480 volts electrical service is more than adequate for the proposed building uses. The pad mounted transformer on the north side is closer to existing windows than currently allowed by utilities, however need not be replaced.



Figure 21 - Electrical Service

Distribution panels are original equipment or date from numerous tenant modifications. They are considered to be in poor condition and should be replaced.



Figure 22 - Electrical Distribution Shows Non-Code Tenant Modifications

The existing electrical distribution system shows extensive tenant modification that is not code compliant and should be replaced. New distribution to new lighting and power panels located as needed for the new uses is recommended. This need only be done for the upper level as the lower level should be redesigned around specific uses yet to be identified.



Figure 23 - Parabolic Troffer Lighting

Lighting in offices are older fixtures with three T8 lamps, originally provided with inboard and outboard switching. Ballasts show signs of failure. Installed wattage and fixtures are non energy efficient by current standards and should be replaced during necessary floor plan modifications.

Devices for the existing fire alarm system, for the most part, are no longer code compliant. Emergency battery units and exit signs are inadequate.

PROBABLE COSTS FOR REPAIRS AND REMODELING

Based on observations made, our consulting engineer's recommendations and our professional judgment we prepared a Facilities Audit of Probable Costs to use each building for new Town Offices. The recommendations include items that can be postponed until failure (a prime example is reroofing) but which should be budgeted now to minimize the operating costs of the building from the start.

The full audit is provided as one of the appendices. A summary is provided in Table 2 below. The recommended budget for 45 Knight Street after acquisition and before design, engineering, permitting and construction management fees is \$764,000. This is about \$68 per square foot of assigned area, or \$23 per square foot of gross building area.

Table 2 - Facilities Audit Cost Summary for 45 Knight Street

Work Scope		unit cost	estimate	cost per SF GFA
DEMOLITION and WASTE MANAGEMENT	1 ALLOW	\$ 10,000.00	\$10,000	\$0.30
FOUNDATIONS	1 LS	\$0	\$0	\$0.00
SLABS	1 LS	\$0	\$0	\$0.00
COLUMNS and BEAMS	1 LS	\$1,000	\$1,000	\$0.03
ROOF STRUCTURE	1 LS	\$0	\$0	\$0.00
EXTERIOR WALLS	1 LS	\$10,685	\$10,685	\$0.32
WINDOWS / GLAZING	1 LS	\$20,000	\$20,000	\$0.60
EXTERIOR DOORS	1 LS	\$2,345	\$2,345	\$0.07
ROOFING	1 LS	\$145,600	\$145,600	\$4.33
INTERIOR PARTITIONS	1 LS	\$97,040	\$97,040	\$2.89
WALL FINISHES	1 LS	\$19,125	\$19,125	\$0.57
CASEWORK	1 ALLOW	\$ 3,500.00	\$3,500	\$0.10
DOORS/FRAMES/HARDWARE	1 LS	\$14,652	\$14,652	\$0.44
FLOOR FINISHES	1 LS	\$59,600	\$59,600	\$1.77
CEILINGS	1 LS	\$26,800	\$26,800	\$0.80
STAIRS AND ELEVATORS	1 LS	\$5,108	\$5,108	\$0.15
PLUMBING	1 LS	\$18,700	\$18,700	\$0.56
FIRE PROTECTION	1 LS	\$33,600	\$33,600	\$1.00
HVAC	1 LS	\$130,000	\$130,000	\$3.87
ELECTRICAL SERVICE AND DISTRIBUTION	1 LS	\$65,000	\$65,000	\$1.93
LIGHTING AND POWER	1 LS	\$33,575	\$33,575	\$1.00
ALARM SYSTEMS AND COMMUNICATION	1 LS	\$35,000	\$35,000	\$1.04
SPECIALITIES	ALLOW	\$ -	NA	NA
PAVING AND FLATWORK	1 LS	\$22,217	\$22,217	\$0.66
SEWER AND WATER	1 LS	\$0	\$0	\$0.00
DRAINAGE AND DETENTION	1 LS	\$0	\$0	\$0.00
SITE LIGHTING	1 LS	\$5,000	\$5,000	\$0.15
LANDSCAPING	1 LS	\$5,500	\$5,500	\$0.16
sum of cost items			\$764,046	\$23
COST PER SF ASSIGNED AREA				\$68

85 FITZGERALD DRIVE LOCATION

This location is the site of the former Somero concrete equipment warehouse and offices. The site is approximately 3 acres, located in the Drumlin Industrial Park about 0.8 miles from the existing Town Offices. The building is a single story, with a low-bay front office zone and a high-bay back warehouse zone. The gross floor area is 16,380 square feet. The building was constructed after 1985.



Figure 24 – East Side Entrance



Figure 25 – Main Entrance Landscaping

SITE AMENITIES AND UTILITIES

The site is served by Town water and sewer, and has adequate land area for all required parking. Two paved areas provide for parking and vehicle circulation. The larger area to the south of the building off of Plantation Drive provides loading dock access to the rear warehouse section, and the bulk of the potential parking (74 spaces).

The smaller paved area provides access and parking to the main entrance, facing east off of Fitzgerald Drive. It is currently laid out with 38 parking spaces, including one marginal accessible parking space near the front entrance.



Figure 26 – Accessible Parking Needs Upgrades

Pole mounted parking lot lighting is provided at the east lot only. Above grade propane tanks at the rear provide fuel for space heating.



Figure 27 – Existing Drainage Structures



Figure 28 – Propane Storage Tanks

Landscaping around the building to the east and north is mature and plentiful. Land to the west of the building is available for expansion. The potential for expansion is about 10,000 square feet.

EXTERIOR SHELL

The construction of the building is generally non-combustible Type 5, consisting of masonry bearing walls, masonry and non-bearing lightweight interior partitions, and steel framed roofs. The building is constructed on concrete frost-walls and concrete slab-on-grade floors. Neither foundations nor the floors appear to be insulated against heat loss.



Figure 29 - CMU Cracks Need Repair

Roofs were last inspected in 2008.¹ Roofs are low-slope (flat) roofs with 2 inches of rigid insulation above a steel deck covered with stone-ballasted EPDM rubber membranes. Roofs are drained to interior storm drains which are missing protective baskets. Roofs are in good condition but are likely near the end of their useful life.

¹ Melanson Roofing of Keene did test cores of the roofs in September 2008.



Figure 30 - Ballasted EPDM Roofing



Figure 31 - HVAC Roof Top Units

Exterior walls are brick veneer on CMU or metal stud backup, probably insulated with 2-inch rigid insulation within the wall cavity. The exterior rear warehouse/high-bay walls are 12 inch CMU which may be un-insulated.



Figure 32 - Brick Veneer Exterior



Figure 33 – CMU Warehouse Section

Windows at the front office section are banks of fixed and operable late 1980's vintage 'TwinPane' insulated glass in aluminum clad wooden frames. Window are plentiful and provides nice views from occupied spaces.



Figure 34 - Office Windows

Windows in the rear warehouse section are fixed square punched openings in CMU walls.



Figure 35 - Warehouse Windows Need Replacement

Exterior doors are commercial hollow metal and include both overhead sectional doors and roll-up doors accessing the warehouse, along with a loading dock.



Figure 36 - Exterior Doors



Figure 37 – Loading Dock Door

INTERIOR PARTITIONS AND FINISHES

The interior of the Somero building is in very good shape. Original finishes were above average in quality and with few exceptions (such as water damage to ceiling tiles) they show little evidence of excessive wear or damage.



Figure 38 - Interior Partitions

Original partitions are typical drywall on light-gage metal framing. At the main entrance interior glass and aluminum partitions were used.



Figure 39 – Entry Area Finishes

Ceilings in the office areas are typically 2x2 suspended grid with acoustic panels and are only 7'-10" high. Architectural Decorative 2x2 acoustical tiles may be hard to match during maintenance and renovation if the original style is no longer or offered by vendors.

Floor finishes are carpet and ceramic tile at gang toilet rooms, polished sealed concrete in the warehouse area and vinyl tile at some corridors and secondary rooms.



Figure 40 – Side Entry Finishes

INTERIOR DOORS AND HARDWARE

Doors are commercial solid core in knock-down HM (hollow metal) frames. Door hardware predates most accessibility codes and should be replaced.



Figure 41 - Door Hardware

MECHANICAL SYSTEMS

Consulting mechanical engineers Kohler & Lewis visited the building to observe existing conditions. Their report is provided as one of the appendices.



Figure 42 - Possibly Original Roof Top Units

Most of the Somero building is served by older Carrier and York propane gas heat, DX cooling roof top units. Three smaller (fairly new) efficient York rooftop units serving the south part of

the front office section with a total capacity of about six tons were recently installed to allow for current leases to multiple tenants. With the exception of the newer York units the zoning is limited.



Figure 43 - New Roof Top Units

Because the rooftop units are old and use a phase-out, environmental unfriendly refrigerant, and because zoning and ductwork changes would be needed to accommodate necessary plan changes for Town Offices, we recommend a complete replacement of the older rooftop units.

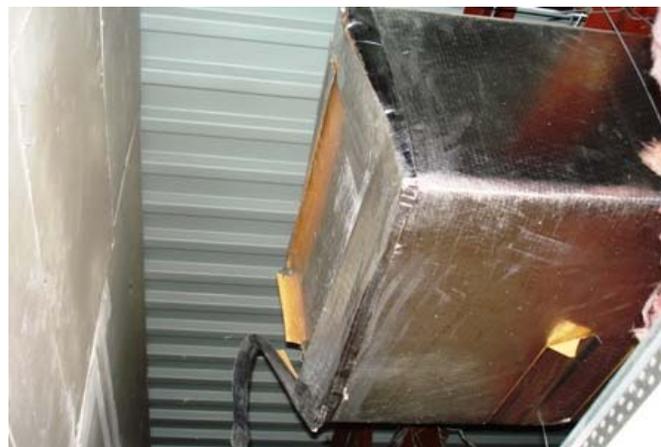


Figure 44 - Fiberglass Board Ductwork

The ductwork inside the building is mostly fiberglass ductwork. This ductwork is obsolete, considered unhealthy and should be removed and replaced with metal ductwork.

Existing toilets are in good condition with ceramic tile floors. Fixture count is adequate or even in excess of likely need. The toilet rooms for both office and warehouse areas occupy about 8% of floor area. However, it is not likely to be economically justifiable to relocate or significantly remodel these toilet rooms.



Figure 45 - Existing Toilet Rooms

ELECTRICAL SYSTEMS

Consulting electrical engineer Russ Downing visited the building to observe existing conditions. His report is provided as one of the appendices.

The existing service entrance is 400 amps, 3 phase, 4 wire 277/480 volts. The overall service rating is more than adequate to feed the electrical loading requirements for the proposed building uses



Figure 46 – Pad Mounted Transformer



Figure 47 - Electrical Service

Main panel boards in the electric room and step-down transformers appear to be in good condition. The existing electrical distribution system needs modifications only as needed to accommodate any proposed renovations.



Figure 48 - Parabolic Troffer Lighting

Lighting in areas already used as offices have been recently upgraded to fixtures with T8 lamps and electronic ballasts. Major modifications are only needed to accommodate any proposed renovations.

Devices for the existing fire alarm system, for the most part, are located as required by current codes and regulations. Emergency battery units and exit signs appear to be located mostly where required by current codes and regulations and appear to be in good condition.

An existing Telecomm room is served by raceways and a split-system HVAC unit dedicated to cooling computer and data rooms. This equipment is assumed to be in good condition; however, it is unlikely that the room layout and location will suit a newly reconfigured floor plan around the Town Office program.



Figure 49 - Existing Telecommunications Room

PROBABLE COSTS FOR REPAIRS AND REMODELING

Based on observations made, our consulting engineer's recommendations and our professional judgment we prepared a Facilities Audit of Probable Costs to use each building for new Town Offices. The recommendations include items that could be postponed until failure (a prime example is reroofing) but which should be budgeted now to minimize the operating costs of the building from the start.

The full audit is provided as one of the appendices. A summary is provided in Table 3 below. The recommended budget for 82 Fitzgerald Drive after acquisition and before design, engineering, permitting and construction management fees is \$530,000. This is about \$47 per square foot of assigned area, or \$32 per square foot of gross building area.

Table 3 - Facilities Audit Cost Summary for 82 Fitzgerald Drive

Work Scope		unit cost	estimate	cost per SF GFA
DEMOLITION and WASTE MANAGEMENT	1 ALLOW	\$ 5,000	\$5,000	\$0.31
FOUNDATIONS	1 LS	\$0	\$0	\$0.00
SLABS	1 LS	\$0	\$0	\$0.00
COLUMNS and BEAMS	1 LS	\$0	\$0	\$0.00
ROOF STRUCTURE	1 LS	\$0	\$0	\$0.00
EXTERIOR WALLS	1 LS	\$36,000	\$36,000	\$2.20
WINDOWS / GLAZING	1 LS	\$10,000	\$10,000	\$0.61
EXTERIOR DOORS	1 LS	\$2,045	\$2,045	\$0.12
ROOFING	1 LS	\$111,930	\$111,930	\$6.83
INTERIOR PARTITIONS	1 LS	\$58,576	\$58,576	\$3.58
WALL FINISHES	1 LS	\$7,425	\$7,425	\$0.45
CASEWORK	1 ALLOW	\$ 3,500.00	\$3,500	\$0.21
DOORS/FRAMES/HARDWARE	1 LS	\$10,989	\$10,989	\$0.67
FLOOR FINISHES	1 LS	\$27,100	\$27,100	\$1.65
CEILINGS	1 LS	\$19,365	\$19,365	\$1.18
STAIRS AND ELEVATORS	1 LS	\$0	\$0	\$0.00
PLUMBING	1 LS	\$325	\$325	\$0.02
FIRE PROTECTION	1 LS	\$17,280	\$17,280	\$1.05
HVAC	1 LS	\$115,000	\$115,000	\$7.02
ELECTRICAL SERVICE AND DISTRIBUTION	1 LS	\$55,000	\$55,000	\$3.36
LIGHTING AND POWER	1 LS	\$19,395	\$19,395	\$1.18
ALARM SYSTEMS AND COMMUNICATION	1 LS	\$5,000	\$5,000	\$0.31
SPECIALITIES	ALLOW	\$ -	NA	NA
PAVING AND FLATWORK	1 LS	\$25,344	\$25,344	\$1.55
SEWER AND WATER	1 LS	\$0	\$0	\$0.00
DRAINAGE AND DETENTION	1 LS	\$0	\$0	\$0.00
SITE LIGHTING	1 LS	\$0	\$0	\$0.00
LANDSCAPING	1 LS	\$0	\$0	\$0.00
sum of cost items			\$529,274	\$32
COST PER SF ASSIGNED AREA				\$47

ENERGY EFFICIENCY

Both buildings were originally designed and built in the early to mid 1980's prior to real changes in commercial energy codes. They appear to have been competently constructed as low-to-mid level budget commercial-industrial projects.

By current standards, they are not energy efficient, but they are likely no worse and may be somewhat better than many other available buildings. The energy efficiency of either building will be improved by the recommended renovations. New HVAC equipment can be designed and specified at much better levels of efficiency. New lighting fixtures can be selected to use the best available current technology. Additional insulation can be added to the roofs during re-roofing work. Any new windows installed can be far superior to those existing.

By way of comparing the two buildings, we calculated probable skin or shell² heating load calculation, both for existing conditions and after possible improvements in roofs, walls and windows.

The Somero building on Fitzgerald Drive is characterized by an elongated footprint, which means that it has a significantly greater amount of exterior surface area per square foot of useable interior space than a more compact shape. The Printegra building on Knight Street is both compact in shape (a nearly square footprint without projecting wings) and partially below grade. Consequently, the exterior surface area exposed to heat loss and gain is lower per square foot of useable interior space than at the Somero building.

Both buildings have about the same exposed perimeter length (600 feet) but that perimeter encloses only 16,380 SF at Fitzgerald Drive location, against 33,600 SF at Knight Street.

Another distinguishing characteristic is that the Somero building has greater areas of windows and poorly insulated CMU walls.

The shell heat losses of the two buildings in their existing state are actually similar. Consequently the Somero heating load per square foot of occupied space is higher, and the building less efficient, than the Printegra building.

This comparison gets more extreme if the recommended measures are implemented and the heat losses are compared again. Because we did NOT recommend or budget to replace ALL the windows at the Somero building, the losses associated with these older windows become more significant after other improvements are made.

Because the losses through the insulated roof is a higher percentage of the total shell loads at the Printegra building, improvements to that component have a greater overall impact at Printegra than at Somero.

² Shell loads are the heating (or cooling) losses that must be met by mechanical equipment and that are caused by heat flow through the roof, windows, doors and walls of the building. The insulation levels (R-values) and the relative air-tightness of construction. Shell loads are not the total heating or cooling loads. Additional energy is needed to heat and cool ventilation air, or to deal with various internal heat sources.

APPENDICES

ARCHITECTURAL PROGRAM FOR NEW TOWN OFFICES

Several iterations of review with Town officials led to a consensus estimate for future Town Office space needs appropriate for current and near-term functions. The total estimated gross building area needed is 8,900 square feet. Gross building areas include the thicknesses of necessary walls, the 'hidden' areas occupied by mechanical equipment, and the often overlook area necessary for hallways and other forms of circulation. The net area which can be occupied by each function is less.

The summary allocation by major functional groups or departments within Town Government is as follows:

PROJECT **Jaffery Municipal Facilities Study**
 LOCATION **Jaffery, NH**
 CLIENT **Town of Jaffrey**

Design Program		Total	8,895 sf	SF GFA	100%
Town Offices (Both Buildings)	1 <u>Planning / Zoning / Land Use</u>		1,183 sf	<u>SF GFA</u>	13%
	2 <u>Health and Code Enforcement</u>		494 sf	<u>SF GFA</u>	6%
	5 <u>Community Services</u>		1,216 sf	<u>SF GFA</u>	14%
	7 <u>Administration and Finance</u>		1,382 sf	<u>SF GFA</u>	16%
	5 <u>Town Clerk and Revenue Collection</u>		1,170 sf	<u>SF GFA</u>	13%
	<u>Public Common Spaces</u>		2,392 sf	<u>SF GFA</u>	27%
	<u>Building Support Areas</u>		1,058 sf	<u>SF GFA</u>	12%
20	Town Office Subtotal		8,895 sf		
	<u>Public Works - Administration</u>		2,086 sf	<u>SF GFA</u>	
	Town Office + JPWD Subtotal		10,981 sf		



**Jaffrey Town Hall
Site Visit
Site Visit Date: July 14, 2010
Report Date: July 19, 2010**

I made a site visit to inspect the mechanical systems at the Printegra Building at 45 Knight Street in Jaffrey and the Somero Building on Fitzgerald Street, Jaffrey. The result of my investigation is summarized below.

Printegra Building

Existing Conditions. The Printegra is a 33,000 square foot building. The front of the building is a single story 11,000 square foot office space with a basement space of equal size below. The rear of the building is 11,000 square foot industrial space two stories high.

The building is served by four York propane gas fired roof top units. Two units, a 10-ton and a 15-ton serve the office space in the front of the building and two 10-ton units serve the industrial space in the basement. These are all older units that use R-22 refrigerant that is being phased out. The office space appears to be ducted into two zones, one serving the left side of the building and the other the right side.

The basement industrial space is served by a roof top unit. It also has an extensive dust collection system complete with cyclone and bag house, as well as an exhaust system. It also has a compressor and filter dryer system. It was not possible to verify if this equipment is in working condition, but it appeared to be in decent condition.

The Options and Recommendations. For the lowest cost approach it would be possible to use the existing system serving the offices. It should be recognized that there is very little zoning and many rooms would be on a single thermostat. There could be comfort issues with this system. If architectural changes are substantial then it probably would not make much sense to try to use the ductwork. Of course, the rooftop units are fairly old at this point and may need maintenance and repairs.

If extensive renovations are planned it would make sense to install a new system for the office area to improve efficiency and zoning (comfort). There are two basic approaches (1) new rooftop units set up to provide better zoning or (2) a new VRF heat pump system with room by room zoning and energy recovery ventilation for rooms in the core. The rooftop system for the offices would be expected to cost in the order of \$100,000. The heat pump system, which should be more efficient and provide better comfort, would be expected to cost \$150,000. The mechanical systems in the basement are quite flexible and could support a variety of uses with some modification. The rooftop units should be inspected and serviced or replaced.

Somero Building

Existing Conditions. The Somero building has a 6,600 square foot front office section and a 9,800 square foot rear warehouse section. It is also served by York rooftop units. There are three smaller, fairly new, efficient York rooftop units serving the south part of the front office section with a total capacity of about six tons. An older 6- ton unit serves the north end of the front. The warehouse section is served by one older York unit and one very old unit.

The ductwork inside the building is mostly fiberglass ductwork. Zoning is rather limited, so several offices share one thermostat. It was also observed that the ceiling insulation consists of fiberglass batts on top of the suspended ceiling tiles.

Options and Recommendations. These systems are similar to the system at the Printegra building and the same options and recommendations apply, with the following exceptions. The fiberglass ductwork is unhealthy and should be removed and replaced with metal ductwork.

The fiberglass insulation in the ceiling is ineffective and unhealthy and should be removed. Rigid insulation should be fitted to the deck.

The system serving the south part of the front of the building is fairly new and could certainly be reused.

We would estimate the cost of fitting the remainder of the front of the building with new ductwork and roof top units at about \$50,000, and the warehouse section \$100,000.

We would estimate the cost of a heat pump system, for this building to be \$175,000 with energy recovery ventilation.

Printegra Pictures

<p>Electric baseboard was retrofit to some rooms, indicative of a comfort problem.</p>	 <p>4504</p>
<p>Typical ceiling diffuser.</p>	 <p>4505</p>
<p>Ceiling fan typical in offices.</p>	 <p>4506</p>
<p>There are good bathrooms with the shower in the office space.</p>	 <p>4524</p>

As well as janitor's sink.



4525

A cyclone collector in the industrial space could be used for dust collection.



4508

A bag house is part of the system.



4509

As is extensive ductwork system for dust collection.



4511

<p>More ductwork for dust collection that could also be adapted for other exhaust.</p>	 <p>4512</p>
<p>Roof drain system.</p>	 <p>4514</p>
<p>Air supply duct to downstairs space.</p>	 <p>4515</p>
<p>Additional air supply duct to the downstairs space.</p>	 <p>4516</p>

Sink in emergency shower are useful and in good condition.



4517

This bathroom in the industrial space looks to be in pretty decent shape.



4518

The water heater is fairly new.



4519

<p>Main sprinkler entrance</p>	 <p>4520</p>
<p>There is a nice compressor</p>	 <p>4522</p>
<p>And filter dryer system.</p>	 <p>4521</p>
<p>These are exhausts and intakes for the compressor room.</p>	 <p>4523</p>



3499



3484



3489



3486



3490



3496

Solermero Pictures

Fiber glass ductwork in shipping and receiving area. This is typical of ductwork in the building.



4526

Fiberglass ductwork is dirty, unhealthy and should be replaced with metal.



4532

Gas fired unit heater near door.



4529

Sprinkler and water entrance.



4531

Wash sink and drinking fountain.



4533

Bathrooms are in good conditions.



4535

Insulation appears to be on top of the suspended ceiling tiles. This type of installation is thermally ineffective and not healthy and should be replaced.



4536



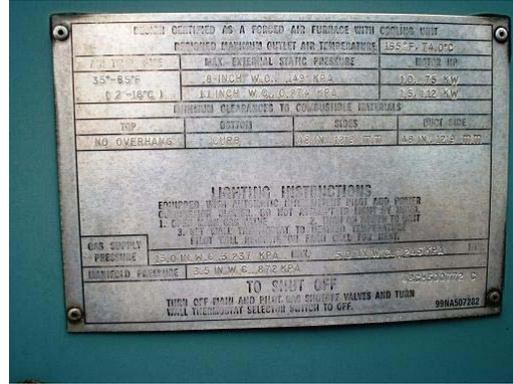
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4357



3583



3584



3594



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3597



3603



3604



3610

Review of Electrical Systems

Building #1 @ 45 Knight Street
Jaffrey, NH

Building #2 @ 82 Fitzgerald Drive
Jaffrey, NH

Prepared by:
Russell G. Downing
Downing Engineering P.A.
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July 2010

Building #1 @ 45 Knight Street Jaffrey, NH

Summary of Existing Electrical Systems

Electrical Service Entrance System

Existing Condition

The building electrical service entrance originates at a pad mounted transformer located on at about the mid-point of the building, on the North side. The transformer is located physically closer to the wall of the building than present regulations allow, but should be considered “grandfathered” and therefore would not have to be relocated. It does not appear to present any life safety danger or potential for physical damage. The underground primary electric lines and the pad mounted transformer are utility owned. The secondary conductors are installed in conduit, and extend underground from the transformer to a main circuit breaker distribution panel in the Basement, rated for operation at 800 amps three phase 4 wire 277/480 volts. The overall service rating is more than adequate to feed the electrical loading requirements for the proposed building use.

There are a series of panelboards and step down dry type transformers in the Electric Room, most of which have been modified, added to, and repaired. Some of the transformers feed non-grounded 3 phase 3 wire 240 volts panelboards. Most of the equipment in the Electric Room is in poor condition, is not particularly suited for the proposed building usage, and is in violation of present day codes with respect to working clearances around the panels and the transformers.

There are remote panelboards scattered throughout the building, and most of these panels have also been modified, repaired, and added to. Most of the panels are original equipment from the time of initial building construction, and, for the most part, would be considered to be in poor condition and should be replaced.

There is no emergency or standby generation system for the building.

Recommendation

Remove and replace the existing electrical distribution system, from and including the main distribution panel, out to new lighting and power panels located as needed for proper distribution for the proposed building usage.

Budget

Budget estimate for new electrical service and distribution: \$15,000

Light Switches, Receptacles, and Branch Wiring

Existing Conditions

With a few exceptions, the wiring devices in the building seem to be original, and range from poor to fair condition. The condition of the branch wiring is unknown, but based on observations of other systems, is probably in need of replacement, especially as areas are renovated.

Recommendations

Replace and rewire older devices as areas of the building are renovated and upgraded, add new as needed.

Budget

Budget estimate for wiring devices and branch wiring \$10,000

Lighting Systems

Existing Conditions

Most of the lighting in the upper level area has been upgraded in the past to 3 lamp parabolic louver fixtures with T8 fluorescent lamps. Branch lighting circuits and switching is unusual due to past renovation projects, and existing switching was not changed to accommodate said renovations. Lighting technology has progressed rapidly in the past few years, and the light fixtures do not meet current standards with respect to efficiency and visual comfort.

Lighting for the lower level warehouse/plant areas consist of eight foot industrial strip lights, with a mixture of T8 and T12 lamps.

Recommendations

The light fixtures for the proposed upper level office areas should be upgraded with new fixtures, in keeping with current energy codes and standards.

The lower level light fixtures should be replaced as uses are determined for these spaces.

Local utility companies should be contacted about the possibilities of energy rebates for the application, and replacement, of newer, more energy efficient lights and lighting controls.

Budget

Budget estimate for new upper level lighting systems \$22,500

Emergency and Exit Lighting

Existing Conditions

The emergency lighting systems generally consist of battery packs with unit mounted heads in varying degrees of operating condition (some are not operable). Many areas that are now required to have emergency lighting by code and regulation are not presently covered, such as common toilet rooms, the exterior side of exit way doors, and common conference rooms.

Exit signs generally tend to be installed where needed, but some, or most, of the units are not of the latest energy saving types, with led lamps.

Recommendations

Replace and upgrade the emergency and exit lighting systems for the entire building. Again, energy rebates should be available for the installation of newer, more energy efficient, exit signs.

Budget

Budget estimate for new Exit and Emergency Lighting for the upper level \$7,500

Fire Alarm System

Existing Conditions

The existing fire alarm system is minimal, with basically no detector coverage, pull stations located at Egress doors, and no evacuation signaling systems.

Recommendations

Provide a new fire alarm and smoke detection system in accordance with current codes and regulations.

Budget

Budget estimate for a new building wide fire alarm system \$27,500

SUMMARY OF PROPOSED ELECTRIC WORK

RECOMMENDATION	BUDGET ESTIMATE
NEW ELECTRIC SERVICE ENTRANCE AND DISTRIBUTION	\$15,000
NEW WIRING DEVICES AND BRANCH WIRING	\$10,000
NEW LIGHTING FOR UPPER LEVEL	\$22,500
NEW EMERGENCY AND EXIT LIGHTING	\$7,500
NEW FIRE ALARM SYSTEM	\$27,500
TOTAL FOR RECOMMENDATIONS	\$82,500

Building #2 @ 82 Fitzgerald Drive Jaffrey, NH

Summary of Existing Electrical Systems

Electrical Service Entrance System

Existing Condition

The building electrical service entrance originates at a pad mounted transformer located on the west side of the building, just south of the front office area. The transformer does not appear to present any life safety concerns. The underground primary electric lines and the pad mounted transformer are utility owned. The secondary conductors are installed in conduit, and extend underground from the transformer to a main circuit breaker distribution panel in the Electric Room just inside the west wall of the back part of the building, rated for operation at 400 amps three phase 4 wire 277/480 volts. The overall service rating is more than adequate to feed the electrical loading requirements for the proposed building use.

There are 3 phase 277/480 panelboards, a step down transformer, and 120/208 volt panelboards in the electric room, and all of the equipment appears to be in good condition. Additionally, there are remote panelboards scattered throughout the building that also appear to be in reasonably good condition.

It was not clear on visual observation if the system was properly grounded.

There is no emergency or standby generation system for the building.

Recommendation

Make modifications to the electrical distribution system only as needed to accommodate any proposed renovations.

Budget

Budget estimate for modifications to electrical service and distribution: \$5,000

Light Switches, Receptacles, and Branch Wiring

Existing Conditions

Most of the wiring devices were observed to be in good condition, and many in the front office part of the building have recently been replaced. It is assumed, then, that the branch wiring circuits are also in good condition.

Recommendations

Make modifications to wiring devices and branch wiring only as needed to accommodate any proposed renovations.

Budget

Budget estimate for wiring devices and branch wiring \$5,000

Lighting Systems

Existing Conditions

Most of the fluorescent lighting has been upgraded to fixtures with T8 lamps and electronic ballasts, and much of the lighting in the front office areas has been recently replaced with newer fixtures.

Recommendations

Make modifications to lighting systems only as needed to accommodate any proposed renovations. (Note – this could change if it is determined that the proposed renovations would benefit from a different approach to the lighting for the space).

Budget

Budget estimate modifications to the lighting systems \$5,500

Emergency and Exit Lighting

Existing Conditions

Emergency battery units and exit signs appear to be located mostly where required by current codes and regulations and appear to be in good condition. There may have to be a few battery units added to comply with current standards, and to accommodate renovations.

Recommendations

Make modifications to emergency and exit lighting only as needed to accommodate any proposed renovations.

Budget

Budget estimate for new Exit and Emergency Lighting for the upper level \$1,500

Fire Alarm System

Existing Conditions

The devices for the existing fire alarm system, for the most part, are located as required by current codes and regulations. There will be requirements for additional horn/strobe devices, depending on proposed renovations. The equipment appears to be in good condition.

Recommendations

Make modifications to wiring devices and branch wiring only as needed to accommodate any proposed renovations.

Budget

Budget estimate for modifications to the existing fire alarm system \$3,500

Security System

Existing Conditions

A security system was installed in the building in 2008, and appears to be in good working order.

Recommendations

None.

SUMMARY OF PROPOSED ELECTRIC WORK

RECOMMENDATION	BUDGET ESTIMATE
MODIFICATIONS TO ELECTRIC SERVICE ENTRANCE AND DISTRIBUTION	\$5,000
MODIFICATIONS TO WIRING DEVICES AND BRANCH WIRING	\$5,000
MODIFICATIONS TO LIGHTING SYSTEMS	\$5,500
MODIFICATIONS TO EMERGENCY AND EXIT LIGHTING	\$1,500
MODIFICATIONS TO FIRE ALARM SYSTEM	\$3,500
TOTAL FOR RECOMMENDATIONS	\$20,500

Prepared by:
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July 2010

FACILITIES AUDIT COSTS OF REPAIRS AND RENOVATIONS

Facilities Audit Summary Cost Items

CLIENT Town of Jaffrey
LOCATION 45 Knight Street
PROJECT Assessment of former Printegra Building
AGE OF STRUCTURE built approximately 1985
ASSIGNED FLOOR AREA (SF) 11,200
UNASSIGNED FLOOR AREA (SF) 22,400
GROSS FLOOR AREA (SF) 33,600
PERIMETER (LF) 600
Floor-to-floor or STORY HEIGHT (FT) 12
NUMBER OF STORIES 2
approximate EXTERIOR OPAQUE WALL above grade 9,450
floor area per LF of perimeter 56
town water yes
town sewer yes
backflow prevention yes
fire-sprinkler system yes

Work Scope	unit cost	estimate	cost per SF GFA	percent of cost
DEMOLITION and WASTE MANAGEMENT	1 ALLOW	\$ 10,000.00	\$10,000	1%
FOUNDATIONS	1 LS	\$0	\$0	0%
SLABS	1 LS	\$0	\$0	0%
COLUMNS and BEAMS	1 LS	\$1,000	\$1,000	0%
ROOF STRUCTURE	1 LS	\$0	\$0	0%
EXTERIOR WALLS	1 LS	\$10,685	\$10,685	1%
WINDOWS / GLAZING	1 LS	\$20,000	\$20,000	3%
EXTERIOR DOORS	1 LS	\$2,345	\$2,345	0%
ROOFING	1 LS	\$145,600	\$145,600	19%
INTERIOR PARTITIONS	1 LS	\$97,040	\$97,040	13%
WALL FINISHES	1 LS	\$19,125	\$19,125	3%
CASEWORK	1 ALLOW	\$ 3,500.00	\$3,500	0%
DOORS/FRAMES/HARDWARE	1 LS	\$14,652	\$14,652	2%
FLOOR FINISHES	1 LS	\$59,600	\$59,600	8%
CEILINGS	1 LS	\$26,800	\$26,800	4%
STAIRS AND ELEVATORS	1 LS	\$5,108	\$5,108	1%
PLUMBING	1 LS	\$18,700	\$18,700	2%
FIRE PROTECTION	1 LS	\$33,600	\$33,600	4%
HVAC	1 LS	\$130,000	\$130,000	17%
ELECTRICAL SERVICE AND DISTRIBUTION	1 LS	\$65,000	\$65,000	9%
LIGHTING AND POWER	1 LS	\$33,575	\$33,575	4%
ALARM SYSTEMS AND COMMUNICATION	1 LS	\$35,000	\$35,000	5%
SPECIALTIES	ALLOW	\$ -	NA	NA
PAVING AND FLATWORK	1 LS	\$22,217	\$22,217	3%
SEWER AND WATER	1 LS	\$0	\$0	0%
DRAINAGE AND DETENTION	1 LS	\$0	\$0	0%
SITE LIGHTING	1 LS	\$5,000	\$5,000	1%
LANDSCAPING	1 LS	\$5,500	\$5,500	1%
sum of cost items		\$764,046	\$23	100%
		COST PER SF ASSIGNED AREA	\$68	per SF GFA

Facilities Audit Site and Utilities Cost Items

CLIENT Town of Jaffrey
 LOCATION 45 Knight Street
 PROJECT Assessment of former Printegra Building

OBSERVATIONS item	DRAINAGE AND DETENTION comment	count	unit	recommendation	estimate	item subtotal
drainage structures none noted						\$0
						\$0
						\$0
Category Subtotal						\$0
OBSERVATIONS item	PAVING and EXTERIOR CONCRETE comment	count	unit	recommendation	estimate	item subtotal
	lack of maneuvering space at front entrance and ADA access excessive cross slopes	1	LS	provide new paved stoop and sidewalk cut	\$ 4,000.00	\$4,000
	front parking asphalt cracked	1,333	SY	resurface existing lot	\$ 12.50	\$16,667
	front parking	31	EA	restripe for 31 vehicles	\$ 50.00	\$1,550
	rear parking	2,000	SY	existing to remain		\$0
	rear parking			restripe for 16 vehicles (existing config)		\$0
	south parking lot optional expansion lot (16 spaces)					
	terior concrete stepped stoop replace for use as accessible public 2nd exit	300	SF	install new SOG	\$ 8.00	\$2,400
Category Subtotal						\$22,217
OBSERVATIONS item	SEWER AND WATER comment	count	unit	recommendation	estimate	item subtotal
	existing Town sewer and water			existing to remain		\$0
						\$0
Category Subtotal						\$0
OBSERVATIONS item	SITE LIGHTING comment	count	unit	recommendation	estimate	item subtotal
	parking lot lighting none	2	EA	install new 16 ft poles with 150W MH	\$ 2,500.00	\$5,000
	building mtd security lighting					\$0
Category Subtotal						\$5,000
OBSERVATIONS item	LANDSCAPING and SITE AMENITIES comment	count	unit	recommendation	estimate	item subtotal
	building plantings limited mature shrubs at entrance face			existing to remain		\$0
	parking shade trees few at perimeter only	2	EA	plant at new landscaped raised bed at entry	\$ 500.00	\$1,000
	ting wood deck at break room handrails and decking deteriorated	1	LS	replace decking and handrails	\$ 4,500.00	\$4,500
Category Subtotal						\$5,500

Facilities Audit Shell and Structure Cost Items

CLIENT Town of Jaffrey
 LOCATION 45 Knight Street
 PROJECT Assessment of former Printegra Building

OBSERVATIONS item	FOUNDATIONS comment	count	unit	recommendation	estimate	item subtotal
north foundation wall	previously repaired settlement crack			leave as is		
Category Subtotal						\$0
OBSERVATIONS item	AT GRADE FLATWORK comment	count	unit	recommendation	estimate	item subtotal
interior industrial slab	on grade in good condition			leave as is		\$0
Category Subtotal						\$0
OBSERVATIONS item	PRIMARY STRUCTURE comment	count	unit	recommendation	estimate	item subtotal
concrete on steel deck, steel truss girders	elevated floors and long span truss joists					\$0
elevated floors uneven slab on metal deck near entrance		1	LS	grind slab and prepare for new floor finish	\$ 1,000.00	\$1,000
Category Subtotal						\$1,000
OBSERVATIONS item	ROOF STRUCTURE comment	count	unit	recommendation	estimate	item subtotal
15 interior columns - steel truss girders	roof support and long span truss roof					\$0
Category Subtotal						\$0
OBSERVATIONS item	EXTERIOR WALLS comment	count	unit	recommendation	estimate	item subtotal
painted CMU some localized efflorescence	brick arched window heads masonry needs pointing above window at north wall	3,350	SF	repaint	\$ 1.10	\$3,685
brick veneer on CMU in good condition	brick sills at windows	1	LS	rebuild arched head	\$ 1,000.00	\$1,000
brick sills at windows	freeze/water damage	5,900	sf	replace with precast during window replacement	\$ 300.00	\$6,000
concrete basement walls above grade	settlement crack in north wall	300	SF	leave as is		
Category Subtotal						\$10,685

Facilities Audit Interior Construction Cost Items

Category Subtotal \$59,600

OBSERVATIONS	CEILING FINISHES	comment	count	unit	recommendation	estimate	item subtotal
acoustic ceilings	damaged and unsightly, removed during demolition		12,000	SF	demo existing hung ceilings	\$ 0.25	\$3,000
acoustic ceilings			8,500	SF	install new 2x2 gird T-bar acoustical ceiling	\$ 2.80	\$23,800
							\$0
							\$0
							\$0
							\$26,800

OBSERVATIONS	STAIRS AND ELEVATORS	comment	count	unit	recommendation	estimate	item subtotal
	stair one	needs new handrails	1	LS	new painted tubular steel handrail	\$ 850.00	\$850
	stair two	needs new handrails	1	LS	new painted tubular steel handrail	\$ 850.00	\$850
	stair two	needs new riser and treads	1	LS	R&R with new vinyl treads and risers	\$ 408.00	\$408
	freight lift	not suited to new uses	1	LS	demolish existing	\$ 3,000.00	\$3,000
							\$0
							\$5,108

Facilities Audit Electrical Cost Items

CLIENT Town of Jaffrey
 LOCATION 45 Knight Street
 PROJECT Assessment of former Printegra Building

OBSERVATIONS	ELECTRICAL SERVICE and DISTRIBUTION	existing service characteristics				estimate	item subtotal
item	count	unit	recommendation	volts	phase	amps	
site transformer and service entrance panels and distribution	1	LS	existing to remain	277/480	3	800	\$0
standby by power	1	LS	R&R with new provide transfer switch and genset				\$15,000
							\$50,000
							\$0
							\$0
							Category Subtotal \$65,000

OBSERVATIONS	LIGHTING AND POWER	count	unit	recommendation	estimate	item subtotal
lighting at upper level existing older T8 lighting in poor condition	8,500	SF	upgrade with new T5 technology	2.50		\$21,250
lighting at lower level old T8 and T12 fixtures		SF	existing to remain until new uses determined	-		\$0
switching unsuited to new uses	8,500	SF	1.2 switches per 1000 SF	0.20		\$1,700
receptacles in poor condition unsuited to new uses	8,500	SF	R&R with new in renovated areas	1.25		\$10,625
						\$0
						Category Subtotal \$33,575

OBSERVATIONS	COMMUNICATION AND ALARM	count	unit	recommendation	estimate	item subtotal
fire alarm	existing FA system out of date with limited coverage	1	LS	R&R with new code compliant system	27,500	\$27,500
emergency lighting	substandard and inadequate battery packs	1	LS	R&R with new systems in renovated areas	7,500	\$7,500
						\$0
						Category Subtotal \$35,000

Facilities Audit Summary Cost Items

CLIENT Town of Jaffrey
LOCATION 82 Fitzgerald Drive
PROJECT Assessment of former Somero Building
built approximately 1986

AGE OF STRUCTURE	11,200	
ASSIGNED FLOOR AREA (SF)	5,180	floor area per LF of perimeter
UNASSIGNED FLOOR AREA (SF)	16,380	town water
GROSS FLOOR AREA (SF)	556	town sewer
PERIMETER (LF)	12	backflow prevention
Floor-to-floor or STORY HEIGHT (FT)	1	fire-sprinkler system
NUMBER OF STORIES	6,504	

approximate EXTERIOR OPAQUE WALL above grade

Work Scope	unit cost	estimate	cost per SF GFA	percent of cost
DEMOLITION and WASTE MANAGEMENT	1 ALLOW	\$ 5,000	\$0.31	1%
FOUNDATIONS	1 LS	\$0	\$0.00	0%
SLABS	1 LS	\$0	\$0.00	0%
COLUMNS and BEAMS	1 LS	\$0	\$0.00	0%
ROOF STRUCTURE	1 LS	\$0	\$0.00	0%
EXTERIOR WALLS	1 LS	\$36,000	\$2.20	7%
WINDOWS / GLAZING	1 LS	\$10,000	\$0.61	2%
EXTERIOR DOORS	1 LS	\$2,045	\$0.12	0%
ROOFING	1 LS	\$111,930	\$6.83	21%
INTERIOR PARTITIONS	1 LS	\$58,576	\$3.58	11%
WALL FINISHES	1 LS	\$7,425	\$0.45	1%
CASEWORK	1 ALLOW	\$ 3,500.00	\$0.21	1%
DOORS/FRAMES/HARDWARE	1 LS	\$10,989	\$0.67	2%
FLOOR FINISHES	1 LS	\$27,100	\$1.65	5%
CEILINGS	1 LS	\$19,365	\$1.18	4%
STAIRS AND ELEVATORS	1 LS	\$0	\$0.00	0%
PLUMBING	1 LS	\$325	\$0.02	0%
FIRE PROTECTION	1 LS	\$17,280	\$1.05	3%
HVAC	1 LS	\$115,000	\$7.02	22%
ELECTRICAL SERVICE AND DISTRIBUTION	1 LS	\$55,000	\$3.36	10%
LIGHTING AND POWER	1 LS	\$19,395	\$1.18	4%
ALARM SYSTEMS AND COMMUNICATION	1 LS	\$5,000	\$0.31	1%
SPECIALTIES	ALLOW	-	NA	NA
PAVING AND FLATWORK	1 LS	\$25,344	\$1.55	5%
SEWER AND WATER	1 LS	\$0	\$0.00	0%
DRAINAGE AND DETENTION	1 LS	\$0	\$0.00	0%
SITE LIGHTING	1 LS	\$0	\$0.00	0%
LANDSCAPING	1 LS	\$0	\$0.00	0%
sum of cost items		\$529,274	\$32	100%
			COST PER SF ASSIGNED AREA	\$47 per SF GFA

Facilities Audit Site and Utilities Cost Items

CLIENT Town of Jaffrey
 LOCATION 82 Fitzgerald Drive
 PROJECT Assessment of former Somero Building

AGE OF STRUCTURE built approximately 1985
 ASSIGNED FLOOR AREA (SF) 11,200

OBSERVATIONS item	DRAINAGE AND DETENTION comment	count	unit	recommendation	estimate	item subtotal
drainage structures	catch basins at front parking lot drain to daylight on site, no obvious defects	2	EA	existing to remain		\$0
						\$0
Category Subtotal						\$0
OBSERVATIONS item	PAVING and EXTERIOR CONCRETE comment	count	unit	recommendation	estimate	item subtotal
ADA access curb ramp rough		1	LS	provide new paved stoop and sidewalk cut	\$ 4,000.00	\$4,000
front parking asphalt cracked		1,556	SY	resurface existing lot	\$ 12.50	\$19,444
side parking asphalt cracked		38	EA	restripe for 38 vehicles	\$ 50.00	\$1,900
		3,667	SY	existing to remain		\$0
		74	EA	restripe for 74 vehicles (existing config)	\$ 50.00	\$3,700
						\$0
new sidewalk and entry slab needed for south side entry public access		500	SF	install new SOG	\$ 8.00	\$4,000
Category Subtotal						\$25,344
OBSERVATIONS item	SEWER AND WATER comment	count	unit	recommendation	estimate	item subtotal
	existing Town sewer and water			existing to remain		\$0
Category Subtotal						\$0
OBSERVATIONS item	SITE LIGHTING comment	count	unit	recommendation	estimate	item subtotal
parking lot lighting	2 20' poles at front parking	2	EA	existing to remain	\$ -	\$0
building mtd security lighting						\$0
Category Subtotal						\$0
OBSERVATIONS item	LANDSCAPING comment	count	unit	recommendation	estimate	item subtotal
building plantings	mature landscaping at entrance façade			existing to remain		\$0
parking shade trees	many mature trees			existing to remain		\$0
Category Subtotal						\$0

Facilities Audit Shell and Structure Cost Items

CLIENT Town of Jaffrey
 LOCATION 82 Fitzgerald Drive
 PROJECT Assessment of former Somero Building

OBSERVATIONS item	FOUNDATIONS comment	count	unit	recommendation	estimate	item subtotal
					Category Subtotal	\$0
OBSERVATIONS item	AT GRADE FLATWORK comment	count	unit	recommendation	estimate	item subtotal
interior industrial slab on grade	in good condition			leave as is		\$0
						\$0
					Category Subtotal	\$0

OBSERVATIONS item	PRIMARY STRUCTURE comment	count	unit	recommendation	estimate	item subtotal
elevated floors	none					\$0
						\$0
					Category Subtotal	\$0

OBSERVATIONS item	ROOF STRUCTURE comment	count	unit	recommendation	estimate	item subtotal
	3 interior columns - steel beam and long roof support span truss roof					\$0
						\$0
					Category Subtotal	\$0

OBSERVATIONS item	EXTERIOR WALLS comment	count	unit	recommendation	estimate	item subtotal
	12 inch CMU uninsulated and shows water intrusion	3,600	SF	Insulate and finish with EIFS	\$ 10.00	\$36,000
	12 inch CMU masonry shows unexplained stress cracks at punched openings	200	SF	existing to remain	\$ -	\$0
	brick veneer on backup appears in good condition	1,335	SF	existing to remain	\$ -	\$0
	metal clad soffit at infill above appears in good condition office perimeter	1,570	SF	existing to remain	\$ -	\$0
					Category Subtotal	\$36,000

Facilities Audit Shell and Structure Cost Items

OBSERVATIONS	item	comment	count	unit	recommendation	estimate	item subtotal
	WINDOWS and STOREFRONT SYSTEMS						
ribbon windows at low office bay		insulated glass in alum clad wood frames			existing to remain		\$0
fixed windows at highbay	10	failed seals at insulating glass, significant deterioration of wooden frames from condensation		EA	replace with commercial thermally broken insulated units	\$ -	\$0
						\$ 1,000.00	\$10,000
					Category Subtotal		\$10,000

OBSERVATIONS	EXTERIOR DOORS	item	count	unit	recommendation	estimate	item subtotal
		exterior doors OH rollup doors at rear	1	EA	existing to remain		\$0
		exterior doors sectional OH doors at rear	1	EA	existing to remain		
		exterior doors steel / HM	4	EA	paint existing	\$ 100.00	\$400
		exterior doors aluminum glazed entrances	3	EA	existing to remain		
		door hardware hardware-hinges need replacement	1	SETS	full mortise 4-1/2 x 4-1/2 USP steel	\$ 45.00	\$45
		hardware-locksets need replacement	4	SETS	HD cylindrical keyed single cylinder	\$ 200.00	\$800
		hardware-door closer missing	4	SETS	rack and pinion regular arm w/ hold-open	\$ 200.00	\$800
					Category Subtotal		\$2,045

OBSERVATIONS	ROOFING	item	count	unit	recommendation	estimate	item subtotal
		roof insulation 2" (R12) rigid insulation	17,220	SF	existing rigid to remain		\$0
		roof membrane			48 mil PVC mech fastened over exist rigid insulation to metal deck over new 3"		
				SF	isocyanurate (R19)	\$ 6.25	\$0
		roof membrane stone ballasted EPDM may be near end of useful life	17,220	SF	60 mil PVC mech fastened over exist rigid insul to metal deck over new 3" isocyanurate and facia	\$ 6.50	\$111,930
					Category Subtotal		\$111,930

Facilities Audit Interior Construction Cost Items

ceramic tile floors existing in good condition	1,700	LF	R&R with 4-inch vinyl base	\$	2.00	\$3,400
existing carpet and VCT to be demolished		SF	existing to remain	\$	-	\$0
wall base	2,500	SF	remove existing and prep floors	\$	1.00	\$2,500
			Category Subtotal			\$27,100

OBSERVATIONS	item	comment	count	unit	recommendation	estimate	item subtotal
		acoustic ceilings layout not suited to new uses	5,300	SF	demo existing hung ceilings	\$ 0.25	\$1,325
		acoustic ceilings layout not suited to new uses	5,300	SF	install new 2x2 gird T-bar acoustical ceiling	\$ 2.80	\$14,840
		acoustic ceilings existing in good condition	3,200	SF	existing to remain	\$ -	\$0
		acoustic ceilings remove tile	3,200	SF	remove and reuse tile after HVAC mods	\$ 1.00	\$3,200
						\$0	\$0
					Category Subtotal		\$19,365

OBSERVATIONS	item	comment	count	unit	recommendation	estimate	item subtotal
		none none required					\$0
							\$0
					Category Subtotal		\$0

Facilities Audit Mechanical Cost Items

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OBSERVATIONS	item	comment	count	unit	recommendation	estimate	item subtotal
					PLUMBING		
	roof drains existing - missing baskets, some partially blocked by H'		5	EA	R&R baskets existing to remain	\$ 65.00	\$0
	service sink/janitor sink adequate number in good condition		1	EA	existing to remain		\$325
	lavatories adequate number in good condition		6	EA	existing to remain	\$ -	\$0
	toilets adequate number in good condition		6	EA	existing to remain	\$ -	\$0
	water heater existing gas fired storage units		2	EA	existing to remain	\$ -	\$0
	floor drains existing		4	EA	existing to remain	\$ -	\$0
					Category Subtotal		\$325

OBSERVATIONS	item	comment	count	unit	recommendation	estimate	item subtotal
					FIRE PROTECTION		
		HAZARD OF CONTENTS			average coverage (SF) per sprinkler head		
					ordinary		
					200 light hazard		
					120 ordinary hazard		
					80 extra hazard		
					Category Subtotal		\$325

OBSERVATIONS	item	comment	count	unit	recommendation	estimate	item subtotal
	office area wet pipe sprinkler system	about 1/2 area will need to be reworked around plan revisions	3,330	SF	rework distribution around revised floor plan existing to remain	\$ 3.00	\$9,990
	office area wet pipe sprinkler system		3,330	SF	existing to remain		
	industrial area wet pipe sprinkler system	approximately 1/4 area will need to be converted to office uses	2,430	SF	rework distribution around revised floor plan existing to remain	\$ 3.00	\$7,290
	industrial area wet pipe sprinkler system		7,290	SF	existing to remain	\$ -	\$0
					Category Subtotal		\$17,280

OBSERVATIONS	item	comment	count	unit	recommendation	estimate	item subtotal
		HEATING/VENTILATION AND AIR CONDITIONING					
	outside fresh-air ventilation	available through RTU outside air dampers	1	LS	add new heat-recovery ventilation system	\$ 30,000.00	\$0
	roof-top heating/cooling office section	existing new 2-ton and older 6-ton gas fired DX RTU	1	LS	replace old units with at least 2 new RTU existing to remain	\$ 35,000.00	\$35,000
	roof-top heating/cooling rear industrial section	existing gas fired DX RTU approximately 1/4 area will need to be converted to office uses	2	EA	existing to remain	\$ -	\$0
	roof-top heating/cooling rear industrial section	office uses obsolete fiberglass ductwork layout not suited to new existing distribution ductwork uses	1	LS	provide at least 1 new RTU	\$ 25,000.00	\$25,000
	existing distribution ductwork uses	on site fuel storage existing above ground propane tanks	1	LS	provide new ductwork along with new HVAC syste re-use existing	\$ 25,000.00	\$25,000
					Category Subtotal		\$115,000