Energy Audit Report
Lee Public Safety Complex
20 George Bennett Road, Lee NH
August 16, 2011

SDES Group
2 Washington Street
Suite 206
Dover, NH 03820
603-617-3767

SDES Group
Sustainable Development & Energy Systems

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Lee Public Safety Complex

Description:

Building: 1.75 Story, with Police Garage
Fire Station Garage
Year built: 2003
Foundation: Concrete Slab
Framing: Wood
Roof: Gable, Hip, Dormers, Valley
Exterior: Vinyl Siding

Interior: Drywall
Flooring: Carpet, linoleum or Similar
Bathrooms: four
Heat: Propane Forced Hot Air
Oil Forced How Water, Radiant Slab
A/C: Yes

Finished Area:	17,103 Sq. Ft.
Planned Finished Area:	1,875 Sq. Ft.
Total:	18,978 Sq. Ft.

Test Results: To be determined

Blower Door Reading
Winter-time conditions:

Air Sealing Limit
Building Airflow Standard:
Ventilation required for occupants:
Ventilation required for building:

1. Attic – Above the Main Building (Offices, Current Gym, Planned Gym and Bunk Room)

Existing Conditions:

- The current gym space has a suspended ceiling and two layers of 8” fiberglass cross batt insulation, poorly installed, Nominal R-value of 36 (R-value 3.0 per inch); effective R-value 24 (R-value 1.0 per inch).
- There are places where there is no insulation and air sealing – at the juncture of the two roofs (eaves) and the at the gable end.

- The planned gym space and bunk room has fiberglass batt insulation in the ceiling joist bays.
- The OSB behind the gable vents has not been sufficiently removed to provide for air flow through the vents

Recommendation:

- Air seal attic floor penetrations
- Add proper vents in rafter bays at the eaves
- Close soffits around proper vents with "burrito" fiberglass batts preventing air flow through the attic insulation.
- Add 16" of loose fill cellulose insulation (R-value 3.7 inch) in the places with no insulation; and over the existing fiberglass batt insulation - effectively covering the HVAC ducts and providing an additional R-value of 60.
- Weatherize the attic hatch
- Remove the OSB in the area of the gable vents for proper air flow in the attic

2. Attic – Above the Fire Station Garage

Existing Conditions:

- Blown-in fiberglass insulation – average installation of 16" providing an approximate R-value of 45 (R-value of 2.8 per inch).
- No visual air sealing has been completed
- The OSB behind the gable vents has not been sufficiently removed to provide for air flow through the vents.
- The attic hatch is not weatherized.

Recommendation:

- Air seal all wiring chases and penetrations through to the attic space
- Install 4"of blown-in cellulose insulation (R-value of 3.7 / inch) – achieving a combined R-value of 60.
- Removed the OSB in the area of the gable vent.
- Weatherize the attic hatch.

3. Attic – Space between the Main Building Attic and the Fire Station Garage Attic

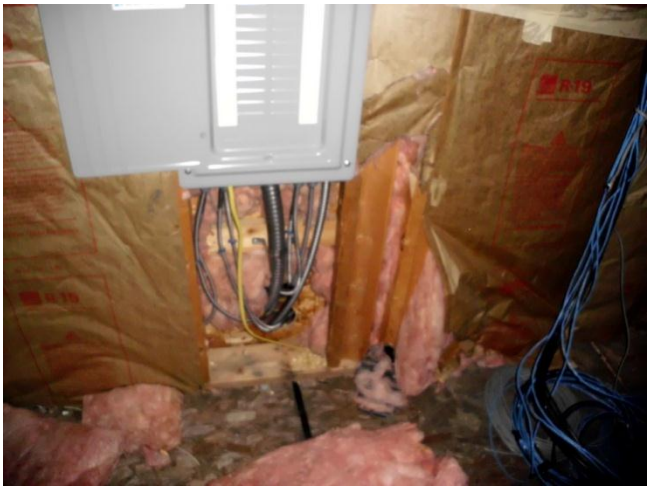
Existing Conditions:

- No air sealing competed, air is leaking through wire chase penetrations in wall framing / top plates.
- Minimal Insulation is installed, some places with no insulation.
  - Above the Fire Station Offices – where ice dams occur and heat tape is installed on the roof.
  - And at the juncture of the Fire Station garage roof and the roof above the Police Station garage.
- A horizontal roof valley is created at the juncture of Fire Station garage and Police Station garage roofs.
    - A third roof also drains into this horizontal roof valley
    - This horizontal roof valley accumulates snow and ice during the winter
    - Rubber membrane roofing material was installed in this area to prevent water leaks that were occurring (10 ft. or more on the slopes of the adjoining roofs).
    - The exhaust chimney for the Buderus Commercial Boilers next to the horizontal valley – adding to the cycle of melting and freezing snow and ice.

Recommendation:

- Air seal all wire, plumbing and vent penetrations through to the attic
- Add 16" of loose-fill cellulose insulation in the areas without insulation (or with minimum insulation) – achieving an R-value of 60.
- Consult with an architect and/or builder about creating a new pitched roof plane in the horizontal valley sufficient to drain water (not necessarily snow) toward the eave and off of the roof.

4. Unfinished Space – Planned Gym and Bunk-room area



Existing Conditions:

- The walls are insulated with fiberglass batt insulation
- The ceiling is insulated with fiberglass batt insulation and strapped for sheet-rock.
- There is an un-insulated wire chase underneath the electrical panel in the planned gym space

Recommendation:

- Air seal and insulate underneath the electrical panel (at the wire chase to the panel) in the gym space.
  - With fire retardant spray foam, according to code.
- Air seal and insulate around the window openings with low-expanding spray foam.
- Tape all fiberglass batt seams and joints for more effective air sealing and vapor barrier.

5. Walls

Existing Conditions:

- The walls are 2 x 6 construction with 5 ½ " of fiberglass batt insulation (R-value 3.0 per inch). There is vinyl siding on the exterior and drywall on the interior (except for the unfinished space).

Recommendation:

- The greatest benefit per cost is derived from air sealing and insulating at the basement/crawl space and the attic level – where the building pressures and air infiltration and exfiltration are the greatest. The benefit per cost of accessing and installing additional wall insulation is marginal and is not recommended at this time.

6. Windows

Existing conditions:

- The windows were installed in 2003, when the building was built, and are of sufficient quality and efficiency. Any window replacement would not be cost effective.
  - The majority of windows are double hung, double glazed (3/8” space) with vinyl frames and storm windows/screens.
  - There are three fixed windows, double glazed, 45” x 60”.

7. Doors - Exterior

Existing Conditions:

- The doors are of sufficient quality and efficiency to not merit any replacement consideration
  - There are metal exterior doors. The doors with window panels or side windows are double glazed.
  - The building manager will be replacing all of the door kits (weatherization strips, sweeps)

8. Lighting – Exterior:

Existing Conditions:

- The building has two sizes of halogen type lights on the exterior walls
  - With 175 watt flood lights and 150 watt bulbs at the pedestrian door-ways.
- There are three halogen type lights on poles in the parking lot.
  - 400 watts each

9. Lighting – Interior:

Fire Station Garage

Existing Conditions:

- The fluorescent light bulbs were replaced by PSNH recently with high efficiency bulbs.
- The fluorescent light panels in the garage are on occupancy sensors. The occupancy sensor is activated by slight motions, e.g. a pull-cord motion in a breeze, and the lights tend to stay on when not needed.

Recommendation:

- Replace the fluorescent light panel motion sensor with a lumen sensor to activate lights based on lighting conditions rather than motion activated.
  - This would activate the lights based on lighting requirements rather than motion.

Main Building

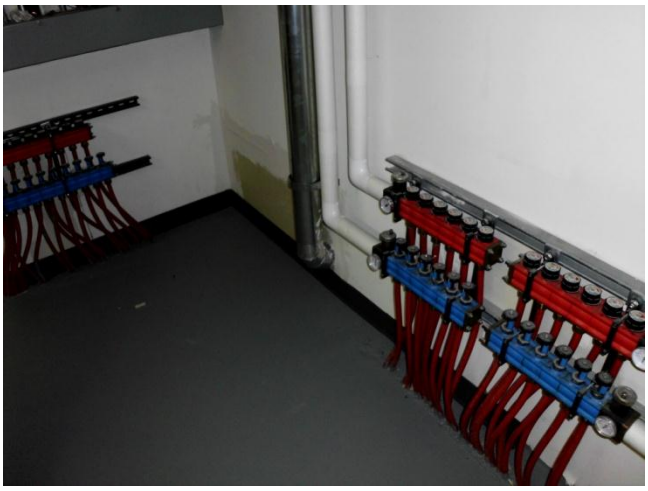
Existing Conditions:

- The vast majority of the interior lighting consists of efficient fluorescent light panels and bulbs, on occupancy sensors.

Recommendation:

- Install occupancy sensors in rooms without sensors.

10. Mechanical – Heating, Ventilation and Air Conditioning (HVAC)



Fire Station Garage

Existing Conditions

- Furnaces: Two, Fuel Oil #2 fired, Buderus Logano GE315 Boiler; Gross output: 454 Mbtu/hr; provides hot water for the Fire Station garage radiant slab hydronic heating system.
    - These two boiler units were installed in 2009, to replace the original heating system after six years of use (installed in 2003).
    - Includes two 250 gallon oil tanks
    - Located in the furnace room at the corner of the Fire Station Garage.
    - The exhaust are vented through a stainless steel vent pipe through the roof
- There is no sprinkler system installed in the furnace room
- There is insufficient make-up air provided to the boiler room (particularly when the garage ventilation system is operating).
    - When the garage ventilation system is activated in winter-time conditions (doors closed) the boilers have back-drafted

Main Building

Existing Conditions

- Furnace: Propane fired, American Standard, suspended, horizontal, dual heating and air conditioning unit in main building above the current gym.
    - There is a propane fuel tank at the front of the building (right side).

- Air-Conditioning Units:
    - One American Standard: Volts 200/230; 1 Phase, 60 HZ; 13 Amps; Fan motor 1/8 HP
    - Two York: Volts 200/230; 3 Phase, 60 HZ, 17.3 Amps; Fan motor ¼ HP
    - One York: 200/230 Volts; 3 Phase, 60 HZ, 35.1 Amps, Fan motor ¾ HP

- There is an emergency generator for the building:
    - CAT D100 – 6
        - Manufactured 2010
        - Rated power – stand by: 125 KVA
          100 KW
          ,80 COS O
        - Rated voltage 208/120
        - Phase 3

Recommendation:

- **See Recommendations provided by Revolution Energy for heating system and electrical generation improvements**
- Ensure that floor, ceiling or wall registers are not blocked by furniture or other related items. If they are blocked the heating or cooling system will not function to its peak performance when it was installed.

11. Indoor Air Quality

Existing Conditions

- Ventilation in the Fire Station Garage is provided by an electric powered exhaust vent system – 48” x 48” with louvers that open and vent through a duct that in the unfinished shed area to exterior of the building. The ventilation system is activated by a carbon monoxide (CO) sensor (located near the fire station lockers at the corner of the garage).
    - The sensor is quickly activated (30 seconds) when a gas engine truck is started and the garage doors are closed
    - There is no make-up air provided for the ventilation system

        - When the garage doors are closed and the ventilation system is activated this creates severe depressurization in the garage area.
- All of the large fire trucks have diesel engines, which emit a minimal amount of CO, and do not trigger the CO sensor for the garage ventilation system.
    - According to the Environmental Protection Agency, www.epa.gov
        - The inhalation of diesel exhaust causes acute and chronic health effects from both short term or acute exposures and also long term chronic exposures, such as repeated occupational exposures.
        - Based on human and laboratory studies, there is considerable evidence that diesel exhaust is a likely carcinogen.
            - Human epidemiological studies demonstrate an association between diesel exhaust exposure and increased lung cancer rates in occupational settings.
        - See also:
            - The National Institute of Occupational Safety and Health. www.cdc.gov
            - National Cancer Institute. www.cancer.gov
            - Occupational Safety & Health Administration. www.osha.gov

Recommendation:

- Ventilation systems should be installed to control vehicle exhaust. Two types of ventilation systems are dilution and local. Local exhaust is preferable because it removes the diesel exhaust at the source
    - Reference: http://nj.gov/health/peosh/documents/dieselib.pdf
    - Local Exhaust Ventilation:
        - An exhaust filter hose system is connected to the tail pipe of the truck. It should remain on the tail pipe until the truck has left the building.
        - Make-up air must be supplied to replace exhausted air.
        - The exhaust opening should be situated to prevent re-entry of exhaust through windows or fresh air intakes.
- Install a combination gas Carbon Monoxide (CO) and Nitrogen Oxide (NO2) detector
    - (e.g. http://www.braschmfg.com/products/detectors/GSE-ND.htm).
- Install a heat recovery ventilation (HRV) system in the Fire Station garage, activated with a combination CO and NO2 Sensor.
    - The HRV provides a balanced exchange of exhaust air and make-up air, and transfers heat from the exhaust air to the make-up air through a radiator/grid system – saving on heating costs.

12. Fire Safety – Fire Station Garage and Main Building

Existing Conditions

- There is no sprinkler system installed in the building – including the fire station garage, the furnace room or the main building.

Recommendation:

- Install sprinkler systems throughout the building according to code.
    - Emphasis on the furnace room sprinkler system for fire safety.

13.Water Conservation

Existing Conditions

- The fire trucks and police cruisers are washed on a regular based
    - During the winter the fire trucks are washed every time they return to the station

- There is a significant amount of roof surface for water collection:
  - With a building footprint of approx. 15,000 sq. ft. and an annual rainfall for Lee at 43.76" (2010), this generates approx. 423,000 gallons a year. A good source of water for washing trucks, etc**.**

Recommendation

- Consider a rain catchment system, including a series of gutters and downspouts, a storage tank or tanks, and an electric pump.

14. Electrical Machines and Appliances

Existing Conditions:

- There is a vending machine in the front entry

Recommendation:

- Replace the vending machine with an energy efficient LED bulb vending machine
- When replacing appliances and electronic equipment replace with Energy Star rated units.
- Utilize automatic computer shutdown systems to turn off all computers at the end of each day
- Turn off all, printers, cable modems, TVs and other media equipment when not in use.
- Quarterly clean refrigerator coils. This will ensure the appliance is running in its intended condition.
  - A good way to remember this, is when you get your property tax you'll know it's time to clean the refrigerator coils!

(*Turn Cycle Solutions does not permit or take responsibility of any of work that is done without a trained weatherized specialist or trained professional to oversee weatherization work stated above.)

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Energy Audit Report
Lee Town Hall Annex
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Lee Town Hall Annex

Description:

Building: 1 story
Year built:
Foundation: Concrete Slab
Framing: Wood
Roof: Gable
Exterior: Vinyl siding

Interior: Drywall
Flooring: Carpet, concrete slab
Bathrooms: one
Heat: Propane Gas, Forced Hot Water
A/C: window units

Finished area: _____

Test Results:

Blower Door Reading
Winter-time conditions: 2786 CFM 50

Air Sealing Limit
Building Airflow Standard: 924 CFM 50
Ventilation required for occupants: 60 cfm
Ventilation required for building:

1. **History:**
   The building was originally built as a three sided, open faced, highway shed, then renovated as a police station. Subsequently, the building was renovated as the Town Hall Annex, housing the Lee Planning and Zoning Department.

2. **Attic**

Existing Conditions:

- The building has a gable roof.
- There is a suspended ceiling throughout the interior of the building. An attempt was made to lay fiberglass batts on top of the suspended ceiling. Given discontinuous thermal barrier, interrupted by wiring and other obstructions, the effective R-value of this insulation is nil.
- The attic has no apparent access hatch, though is visible and accessible if necessary through either of two gable windows at the attic level. Initial inspection through the gable window reveals attic floor boards over an indeterminate type and amount of insulation, with a projected minimal insulation value, if any.
- The attic is partially obstructed with random storage items.

Recommendation:

- Remove storage items from the attic floor.
- Air seal all roof penetrations.
- Temporarily remove one of the gable windows for access to the attic.
- Add 14" of loose-fill cellulose insulation (R-value 3.7 per inch) for an R-value of 50.

3. Walls

Existing Conditions:

- The walls of wood framed with vinyl siding exterior, fiberglass insulation and drywall on the interior.

Recommendation:

- The greatest benefit per cost is derived from air sealing and insulating at the basement/crawl space and the attic level – where the building pressures and air infiltration and exfiltration are the greatest. The benefit per cost of accessing and installing additional wall insulation is marginal and is not recommended at this time.

4. Windows

Existing Conditions:

- There are a combination of wood framed, double hung, double glazed (5/16" gap), with no storm windows; and wood framed single pane windows with no storm windows.

Recommendation:

- Consider replacing single pane window(s) on the first floor with double glazed windows, with storm windows.
- Add storm windows to the existing double pane windows (on the first floor).
- Consider replacing one of the gable window at the attic level with an access door (or window) to the attic.

5. Doors

Recommendation:

- **Add weatherization kits to the doors.**

6. Heating Ventilation and Air Conditioning

Existing Conditions:

- Propane fired – Burnham America boiler; Btu/hr 96,000 output
    - Well-Rite water storage tank; 30 gallon maximum drawdown capacity.
- Electric hot water heater, 40 gallon capacity (estimated)
- Portable dehumidifier – runs regularly throughout the year.
    - Regular operation dehumidifiers can significantly increase electric cost

Recommendation:

- Wrap the electric hot water tank with insulation.
- Ensure that floor, ceiling or wall registers are not blocked by furniture or other related items. If they are blocked the heating or cooling system will not function to its peak performance when it was installed.

- **See Recommendations provided by Revolution Energy for heating system and electrical generation improvements**

7. Lighting

Recommendation:

- Consult with a lighting expert (e.g. PSNH) for high efficiency replacement fluorescent bulb options.
- Replace all incandescent lighting with Compact Fluorescent Lighting (CFL). There are many new colors and designs that don't flicker or cause headaches!

8. Electrical Machines and Appliances

Recommendation:

- When replacing these units opt for an energy star unit. (Energy Star units are certified by the federal government to have met certain energy reduction criteria.)
- Utilize automatic computer shutdown systems to turn off all computers at the end of each day
- Turn off all, printers, cable modems, TVs and other media equipment when not in use.
- Quarterly clean refrigerator coils. This will ensure the appliance is running in its intended condition.
    - A good way to remember this, is when you get your property tax you'll know it's time to clean the refrigerator coils!

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Lee Town Hall

Description:

Building: 1.5 Story
Year built: 1850
Foundation: Granite slab
Framing: Wood
Roof: Gable
Exterior: Brick (1st floor); Cedar Siding (2nd floor)

Interior: Wall Board, Drywall
Flooring: Hardwood
Bathrooms: two
Heat: Propane Gas, Forced Hot Water
A/C: No

Finished area: 2,891 Sq. Ft.

Test Results:

Blower Door Reading
Winter-time conditions: 7204 CFM 50

Air Sealing Limit
Building Airflow Standard: 2310 CFM 50
Ventilation required for occupants: 150 cfm
Ventilation required for building: 134 cfm

Crawl-Space:

Existing Conditions:

The crawl space walls are granite slabs, dry fit, with no mortar and many gaps/air spaces. The first floor and rim joists are wood framed. There is 6" of fiberglass batt insulation in the floor joist bays, in poor condition, with the Kraft paper facing incorrectly to the outside. Some areas have no insulation – floor boards are exposed to outside conditions in the crawl space.

Recommendation:

- Install, 6 mil poly sheeting as a vapor barrier over the dirt floor and 1 ft. up the foundation walls.

- Install 2” of Urethane spray foam on the foundation walls from the dirt floor to the subfloor (as an air and vapor barrier, and secondarily as a thermal barrier).
- Remove the existing fiberglass batt insulation from the joist bays.
- Air Seal the crawl space ceiling / subfloor
- Install R-30 fiberglass batts between the joist bays (with the vapor barrier facing the subfloor).
- Add 2” of rigid foam board insulation at the bottom of the floor joists, and foam the joints, enclosing the
- This method creates a vapor barrier at the dirt floor and along the walls, significantly reducing the moisture level in the crawl space area. The 2” of spray foam on the walls continues the vapor barrier and creates an air barrier, (and provides some additional insulating value). The primary thermal barrier is at the subfloor, continuous with the rest of the building envelope.

Note: An alternative recommendation is:

- Install min. 3” (consider cost/benefit of 4”- 5”) of closed cell spray foam insulation in the joist bays, and cover the remainder of the joists and beams with a 1” minimum.
- This method effectively provides an air and vapor barrier as well as insulation (6.2 R-value per inch).
- Cost and accessibility for spray foam installation is the primary concern. The crawl space ceiling is approximately 1900 sq. ft. versus the crawl space walls at approximately 510 sq. ft. A cost comparison and consultation with the installer regarding installation may be warranted.

Attic – Knee-wall space.

Existing Conditions:

The soffit vents at the eaves are effectively sealed with paint (from the exterior) preventing ventilation to the attic area. The knee-wall space of the second floor is unfinished and Unconditioned. The thermal envelope is at the 2nd floor level, and consists of 8” fiberglass batt insulation in the joist bays and 2” -3” of loose-fill fiberglass above. The knee-walls are insulated with fiberglass batt insulation. The 7” rafter bays are open from the eave through to the attic space above.

Recommendation:

- Install closed cell spray foam insulation in the 7” rafter bays, from the eaves, closing the soffits, to above the second floor knee-wall through to the floor insulation in the attic area. This reestablishing the thermal boundary from the floor and knee-wall to the roof slope, at an approximate R- value of 6.0 per inch.

Attic – Furnace Room and Computer Room

Existing Conditions:

The soffit vents at the eaves are effectively sealed with paint (from the exterior). The rafter bays are insulated with Kraft-faced fiberglass batt insulation from the eaves to the attic area. There is a section of the rafter bay insulation in the furnace room where the insulation has been removed away from the furnace ventilation pipe. The attic floor extending the hallway partition walls to the rafters is partially framed and open to the attic above. The furnace ventilation pipe is not secured.

Recommendation:

- Seal all joints in the furnace ventilation pipe, replace the hangers and secure the ventilation pipe.
- Complete the framing of the second floor ceiling from the hallway partition walls to the roof slope.
- Remove the insulation in the area of the furnace ventilation pipe and install 5/8” fire-rated gypsum board, according to code.
- Urethane spray foam at the eaves, closing the soffits.
- Add 2” Poly-isocyanurate rigid board insulation (R-value 7.0 per inch) to the rafters (in the computer room and furnace room, from the eaves/soffit area to the second floor ceiling, and air seal the joints.
- Replace the pipe wrap in the furnace room with closed cell pipe wrap and install closed cell pipe wrap on the copper pipes in the computer room and throughout the building where accessible.

Attic:

Existing Conditions:

There is an existing roof leak at the dormer (east side) in the middle section of the building. The rafter bays are insulated with Kraft-faced fiberglass insulation to the ridge. There is an attic floor/second floor ceiling in the front and middle section of the building, and the hallway of the back section. The attic floor / second floor ceiling in the back section, where the computer room and furnace room are located, is partially framed. There is no access to the attic area.

Recommendation:

- Repair the roof leak at the dormer.
- Create temporary access to the attic area
- Complete framing the attic floor / second floor ceiling in the computer and furnace rooms from the hallway partition wall to the roof slope.
- Air-seal penetrations through the second floor ceiling.
- Remove the 6” fiberglass batt insulation from the rafter bays in the attic area and install at the attic floor.
- Add 8” of blown-in cellulose insulation (R-value 3.7 per inch) on top of the fiberglass batts at the attic floor.

Walls

Existing Conditions:

The walls of the main building are brick/masonry exterior and wallboard and drywall on the interior.

Recommendation:

The greatest benefit per cost is derived from air sealing and insulating at the basement/crawl space and the attic level – where the building pressures and air infiltration and exfiltration are the greatest. The benefit per cost of accessing and installing additional wall insulation is marginal and is not recommended at this time.

Windows

Existing conditions:

The windows on the main building are double hung, vinyl frame replacement windows – double glazed. One window in the front of the building was removed and is covered with a wood panel and antique style metal brackets. The windows in the addition, at the back of the main building, are single glazed with storm windows. There is a window on the East wall (toward the back) with a temporary panel and flex-tube exhaust pipe to the outside.

Recommendation:

- Air seal and insulate the window opening with the wood panel covering in the front of the building.
- Replace the temporary panel and flex-tube ventilation pipe through the window opening with a permanent hard pipe ventilation through the wall; then air seal and insulate.

Doors

Existing Conditions:

Front/South: The front door is not in use. The front door is a wood panel door (4 wood panels, 2 window panels). There is an enclosed entry has metal storm door.
Back/North: At the first and second floor, there is a metal exterior door with a 21” x 35” window – double hung, double glazed with a storm/screen window. To the left of the first floor door is a metal mail slot.
Side/East: A metal exterior door with a 21” x 35” window – double hung, double glazed with a storm/screen window.

Recommendations:

- Install weatherization door kits at the four doors (front, side, back 1st floor and 2nd floor).
- Remove the mail slot (to the left of the back door – 1st floor), air seal and insulate.

Lighting – Exterior:

Existing Conditions:

- Three quartz halogen type flood lights (approx. 7" H x 11" W x 4" D, with 500 watt bulb – estimated)
- One quartz halogen type flood light at the back/north wall, 2nd floor door location (approx. 4" H x 5" W x 4 " D, with a 150 watt bulb – estimated)
- Three incandescent type flood lights at three door locations with 150 watt bulbs – estimated)

Recommendation:

- Replace all incandescent bulbs with Compact Fluorescent Lights (CFL's) or other high efficiency exterior lights (e.g. LED's)
- Consult with a lighting specialist for high efficiency flood lights.

Lighting – Interior:

Existing Conditions:

- First Floor:
  - Main Room: There are 8 fluorescent light panels – 4 ft. length with 2 bulbs each
  - Tax Assessors Office – estimated 4 fluorescent light panels – 4 ft. length with 2 bulbs each
  - Hallway: 2 recessed lights; 1 fluorescent light 4' length with 1 bulb
  - Restrooms: 2 incandescent bulbs
- Second floor:
  - Front Room: 1 fluorescent light panel – 4 ft. length with 2 bulbs
  - Middle Room: 4 fluorescent light panels – 4 ft. length with 2 bulbs each.
  - North Hallway: 1 incandescent bulb
  - Furnace and Computer Rooms: 1 incandescent bulb each.

Recommendation:

- Replace all incandescent lighting with Compact Fluorescent Lighting (CFL). There are many new colors and designs that don't flicker or cause headaches!

Mechanical – Heating Ventilation and Air Conditioning (HVAC)

Existing Conditions:

Furnace: Liquid Propane fired Weil-McLane furnace, 167,000 Btu/hr capacity

Air conditioner units: four window units

- One in the North/back wall (under the stairs)
- Two on the West wall, one on the first floor, one in the second floor dormer
- One in the South/front wall at the second floor.

Recommendation:

- Ensure that floor, ceiling or wall registers are not blocked by furniture or other related items. If they are blocked the heating or cooling system will not function to its peak performance when it was installed.

Electrical Machines and Appliances

Existing Conditions:

Office area:

- One large copier
- Six printers
- Six desktop computers
- Poland Springs water fountain

Kitchen area:

- Large refrigerator
- Microwave
- Curator
- Toaster oven

Recommendation:

- When replacing these units opt for an energy star unit. (Energy Star units are certified by the federal government to have met certain energy reduction criteria.)
- Utilize automatic computer shutdown systems to turn off all computers at the end of each day
- Turn off all, printers, cable modems, TVs and other media equipment when not in use.
- Quarterly clean refrigerator coils. This will ensure the appliance is running in its intended condition.
    - A good way to remember this, is when you get your property tax you'll know it's time to clean the refrigerator coils!

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