

The Energy Committee is beginning to visit all the town properties to identify “quick fix” energy saving opportunities and to catalogue longer term potential projects. At the request of Paul Roy the first building I visited was the Community Center. Issues with the boiler and possible occupation of the second floor were among the reason cited. I made four or five fact finding visits and was helped by Joe Deegan on another. Luckily, the days I went presented varied weather conditions that made problems stand out.

One of my visits was on a sunny morning with temperatures around 65°F. The large window area provided overheating on the east side, even with the shades closed. Windows were open and AC units were on. It’s obvious that climate control in the building is very difficult at best.

The boiler is on life support and in many locations the hot water pipes appear to be rusted and in bad need of maintenance. The radiators on the first floor were upgraded prior and included in some new HVAC units, but radiators on the second floor and basement are in poor shape (covers missing, damage, etc...). On visits I made with the heat on, the radiators were noisy and unevenly heated. On the second floor, there is some type of flow controls on the radiators but they don’t seem to work very well. Lucy McConologue mentioned that at times she would like to provide a couple of extra degrees for the seniors, but cost and a general fear of the boiler prohibit it. There is also a general feeling among those I talked to that the current plumbing maintenance contractor may not have eyes towards Seymour’s best interest.

There is an oil fired domestic water heater and storage tank in the boiler room that is supposed to be on twenty-four hours a day, seven days a week, yet I couldn’t find anyone who remembers the last time they got hot water. Either it’s not working properly or it’s too far from the faucets. I ran the hot water tap in the men’s bathroom (senior center side) for three minutes and never felt a temperature change.

The basement cafeteria has three ceiling mounted HVAC units. I’m told only one works. This room is isolated from the rest of the basement and appears to need better air circulation.

The gym area is heated off the boiler by three 2’x2’ radiator/fan units. I was told that groups using the gym have access to the thermostats and when heat is turned up, the rest of the building heats up as well. Also, these controls are unprotected and vulnerable to damage from gym activity.

Infiltration loss in the building is off the charts. Most of the first floor windows are new Thermopane units and are well caulked. However, just about every other window in the building, (gym, basement, second floor, etc...) and a few on the first floor leak, are single pane, have a plywood repair, or don’t close completely.

The three large entrances along the west side and the main entrance on the east all have interior door frames but no inside “weather doors”. I spent some time watching the main entrance in use and it appeared that parents with young children and those with difficulty walking held the door open for a prolonged length of time. This of course exposes the entire first floor to the outside. Although the floors are somewhat sealed via fire doors at the end of the hallways, The central stairway is wide open; this allows a large amount of warm air to flow from the first floor up and out.

The gym has two side exit doors (near stage). They are single panel metal doors with a metal side panel and air gaps all around. The two large exhaust fans don’t close when off. Extremely leaky and in poor condition at best describes the three door

main entrance. The outer doors and shed entrance is a needed asset, but also leak and may need repair to serve their function.

I was unable to find a single piece of insulation anywhere in the building, walls, or roof.

The light fixtures on the first floor and in the basement are being used as is. There have been leaky ballast issues in the senior center. It isn't known if the second floor light fixtures will be used in the future.

	<u># Bulbs</u>		<u>Type</u>
Cafeteria Open area	41	32w	T8
Cafeteria Kitchen area	60	40w	T12 (a large number of these didn't Go on)
Rest of basement	106	40w	T12
First floor	456	40w	T12
Second floor	456	40w	T12

The Good News

Incredibly in the eighty or so years in its life, virtually nothing has been done to its perimeter. The second floor is unoccupied and open. Even the exterior walls on the first floor and basement are mostly wide open. Only the radiators and some surface mounted electric stand in the way. These factors enable this building to be a perfect candidate for a makeover. In my opinion, we can transform this building from possibly our worst performing building to possibly our most energy efficient building with heat load reductions on insulated walls exceeding 75%.

Quick Fix Recommendations:

1. If the second floor won't be occupied by the upcoming heating season, close off the central stairway with a doorway on the first floor.
2. Remove the domestic hot water heater in the boiler room- nobody will even notice. Replace it with an "on demand" unit in the first floor kitchen so they can wash dishes. Think about adding one in the main bathrooms also, perhaps in phase two.
3. Although it has little energy savings impact, there is a window in the Recreation Department main office that needs caulk, rain comes in along the bottom.

Major Fix Recommendations:

1. Instead of replacing the boiler, consider electric HVAC units for each floor. The old radiators could be removed to make room for insulated walls. Once the walls are insulated the heating and cooling load will be reduced dramatically.
2. Frame and insulate the entire perimeter of all three floors including the stairwell outside walls. This would include window elimination and reduction. I believe this can be done utilizing the existing first floor windows. Most of the infiltration problems will go away with this step.

3. Insulate and ventilate second floor ceiling there is 11'6" of height in the addition and 12' in the main building. There is plenty of room for a drop ceiling, 24" insulation, and room for ductwork as well. Attempt to anticipate any need for ceiling work so once insulated, there will be no need to disturb the insulation.
4. If these measures are taken and occupancy of the second floor isn't resolved perhaps a raised floor system could be considered. The floor would need treatment anyway and a raised floor allows for wire to be run so the integrity of the insulated walls wouldn't be compromised by future use.
5. Obviously if the boiler were removed the gym would need a new heat source. There is room in the storage areas or perhaps the old coach's office for an HVAC unit. The gym is not a lost cause. The entire west wall could be framed and insulated; the stage and storage walls and the north facing side exit area could be treated this way as well. There are also options for the remaining wall and roof areas. *Interesting to note-* the south wall nearly has a perfect "sun south" orientation. Perhaps phase two efforts using savings from other reductions could fund these fixes, and perhaps the use of solar could be used in the future for heating the gym.
6. Evaluate a potential upgrade in lighting for both the first and basement floor.
7. The inside door frame may be too close to the main entrance door to be an effective "weather door", perhaps an exterior entrance to provide this function would be a better solution.
8. Every remaining door, including the 3 service type doors need attention. If the other steps are taken, these doors will become the major source of infiltration.

The following figures are meant to be ball park figures only. I rounded out the dimensions and assigned arbitrary insulation amounts. No calculations are included for exterior wall square footage used by interior walls, no calculations are made for infiltration reduction, and numbers are for thirty days of average outside temperatures of 30°F. Stairwells are calculated as wall space, and this is for the top floor only.