Energy committee meeting 2/13/18

Called to order: 5:30
Present: Susan O'Connor, Lynn Hansell, Steve Roberto, Annie Chappell, Judy Wagner, Andrew Vernon
Janice Kurkowski (phone) from Warwick Energy Committee, Julia Blythe, Select from the Select Board, and Ben Weil from CEE as guests.

1. Motion to wave review of minutes until the next meeting- passed

2. Green Community Grant review/Susan

- Jim Barry suggested that Warwick and Northfield could enter a combined $500,000 grant for the schools, but Susan suggests this is complicated with Janice being out of town. We agreed that each applying for their own $250,000 would be best.
- Judy mentions readiness to submit the eligibility criteria for the selected projects. This includes background information, relevant studies and reports. We are missing information from ECI and the school study about the specific motors and drives noted in their report. We do have enough information about potential for weatherization and building envelope improvements from the CEE report and the ECI report from Charley Casey.
- NOTE: we may need staff support to help manage the grant, but we can only dedicate 10% of available funding for this.
- Susan reiterates that we need to ID projects that reach for a 20% energy redux, and payback period of 10 years of less. At the very least, the life of the project must exceed the payback period.
- Janice mentioned a $10,000 tech support possibility from FRCOG. Mentions of META grant.

3. SCHOOLS/ Susan

- We should have proposals A and B, so we have some flexibility with our choices. Too much information is NOT available, and there is some frustration with ECI and their lack of attention to our deadlines, need for clarification about their study.
- NES lighting- $50,000 is going into wiring and capacity based on the OWL Audit requested by the Town. Our committee should focus on the building envelope for now and address lighting at NES for 2020.
- Ben suggests that we can also consider energy savings with occupancy controls, VFDs (variable frequency drives) on motors, and basically a systems approach to the whole building with regard to energy requirements, building envelope, potential changes in equipment, building usage, etc.

He mentions Control systems based on Affinity Laws.
NES – Ben suggests that the old boiler and pump should at least use control strategies with these components. This should include pneumatic controls for valves.

NOTE: an air compressor is an inefficient mechanism to move energy. An ECM, or electrically computed motor would supply a more constant DELTA T (power supply) since it can convert AC to DC and constantly adjust the energy influx.
The High School has pumps working well enough so they can be managed with VS or Variable Speed controls.
Ben also suggests a VFD for the air handler in the NES attic.
NOTE: the biggest expense is OIL, but in order to adjust our energy use and costs, we need more specific information on the motors and drives mentioned in the ECI report.
Ben mentions that when the NES boiler need to be replaced, it could be improved by using a condensing propane boiler since it is 85-90% efficient.
- We could consider using some DESTRAT fans where they would be most efficient in various school spaces. Though the fans are not expensive, it is wise to do a long term study (a week with monitors) to see if there actually is stratification of the air before deciding on the need for the fans.
- NES attic – Ben does not agree with the ECI recommendation for insulation at the roof. He suggests instead that an air barrier (TYPAR) be installed between the classroom space and the attic floor, with insulation on top of that. This is because the attic air space is difficult to control for moisture and temperature, and an air barrier at the roof would cause problems with both heat and humidity.
Ben estimates (loosely) that it would cost roughly $75,000 to insulate all three attic spaces at NES with a TYPAR air barrier and blown cellulose insulation.
He mentions the companies ENERGIA and CO-OP Power as possible contractors for consideration. Ben also mentioned that there is no such thing as medium pack cellulose (as recommended by ECI) only loose pack and that the 4" ECI recommends is not enough to garner much savings in energy.
- WES /Janice mentions similar issues at WCS.
- Julia suggests that some of the weather stripping for doors and windows might be addressed using Town facility maintenance help.
Ben could help us with a cost calculation for the proposed projects for the schools.

Conclusion for Schools projects/ Susan

1. Address ceiling/ wall envelope issues at PVRS
2. Properly insulate all attic spaces at NES
3. Properly insulate all attic spaces for WCS
4. Destrat fans where most efficient (well insulated spaces)

4. LIBRARY/ Steve /Bowman report

Insulation.

Steve notes that the Trustees and historic requirements would make it difficult to do anything structural to change the walls such as drilling holes for blowing insulation. Bowman does not suggest that we pursue insulation because of the moisture issues. Ben - believes that insulation is possible and a positive idea. He warns against fiberglass, but using cellulose requires a proper air barrier to prevent mold growth. This could be accomplished with special paints called 'vapor open' or 'closed' depending on which side of the building is painted.

ASHPS (air source heat pumps)

Ben - notes that ASHPS should be sized for cooling demands, and partial help with heat. They are best used when walls are properly insulated. They are less efficient with more than two heads.

Susan suggests that maybe we could do a pilot insulation test on the wall facing the parking area.

Phase I plan would address the downstairs meeting room and office with ASHPs for comfort. Steve suggests divided glass swinging doors for the office to help hold heat or AC.

Annie - suggests window inserts in the office for insulation and daylight.

Ben would also want to consider ground source heat for the library when the time comes to change the heating system in a subsequent phase.

Steve- mentioned that pellet boilers might have payback incentives if we decide to go that route with boiler replacement.

Phase I also includes adding on-demand hot water tanks for bathrooms and any other sinks and perhaps even moving the library's GeoSpring hot water tank to Town Hall for use there since it is so efficient.

Costs

Steve estimates Phase I costs, including two ASPH units, doors, window inserts to come in around $20,000.

Annie notes that the doors (Steve est. $4000) would probably not be funded by GC grant.

Final revised ERP and Annual reports are due for GC Friday Feb 15th
GC grant proposal Due March 9th
Meeting adjourned 8pm.