

Williamsburg Energy Committee Minutes for October 4, 2021

Members Present: Neal Anderson, Dick Guzowski, Mimi Kaplan, Adin Maynard, Jim Piermarini (Chair),

Others Present: Kevin Chrobak (Justin Pope Frasier) , Bill Sayer (Selectman, PSCBC member), Pete Hanley (Justin Pope Frasier), Dan Bonham (liaison to Energy Committee from PSCBC.)

Called to Order: 6:00 PM

Minutes: Minutes from September 20 meeting approved unanimously.

Energy Considerations for Public Safety Complex: After a round of introductions, Chrobak shared some recent renderings of the building. A number of energy efficiency opportunities and issues were discussed, including cellulose insulation in cold attic, insulated hatch for attic access, interior wall air barriers and sealing, insulation under radiant slab, and boundary between garage and administrative area. There was also discussion of solar readiness — Chrobak noted that some of which is baked into the current building codes — and of possibility of having PV contractors price out full PV system including both panels and battery storage. Other issues discussed were installation of EV chargers and of necessity of 14' door height (which Chrobak will discuss with Fire Chief). Chrobak requested that Energy Committee summarize recommendations in writing. Piermarini sent the attached document summarizing recommendations to Bonham shortly thereafter.

Chrobak mentioned that he is starting to coordinate HVAC design and considering possibilities for a part time clerk of works during construction.

Adjourned: 6:45 PM.

Next Regular Meeting: Monday, October 25 at 5:30PM.

ATTIC FLAT INSULATION & AIR SEALING

- R60, 18" of Cellulose in attic flat, instead of 2x layer of fiberglass batts. Fiberglass batts maintain voids which induce convective looping through insulation. This is not aligned with Energy Star or residential code standards. Cellulose is low cost and fills in the voids.
- Perimeter chute vents should extend above final insulation layer and airsealed with 1-part foam to avoid wind washing at eaves.
- If a catwalk or other floored area is deemed necessary, frame it above the final cellulose install height.
- Insulated attic hatch for access, not pull down-stairs. Insulate to R40 with rigid board, gasketed to be made airtight. Dam around hatch and consider an insulated 'service deck' at top of hatch to ease transition to cat walk or for future service.
- Attic flat air-sealing should be a line item for the insulation contractor, and verified by GC (construction manager etc.) . Airsealing details to include: All penetrations in sheetrock air barrier, sealed with 1part foam including but not limited to: wiring/ plumbing/ other penetrations, chases, wall top plates (important).
- On section, detail primary air barrier as sheathing, adhered/gasketed to the frame. Example of one way to show this, attached here.
- Recommended to 'red line' air barrier around entire building, (I can support with this as needed)
- Zip sheathing should be treated as primary air barrier. Closed cell spray foam is secondary. If cavity fill insulation is opted for, zip sheathing is primary air barrier.

ALTERNATIVE EXTERIOR WALL WITH CONTINUOUS INSULATION

- R7 Zip-R board, or equivalent (insulated sheathing) with 3" closed cell foam , or batts/cellulose in interior stud wall bay. Continuous insulation will provide better performance than high-R in stud bays, due to thermal bridging. Note: Spec'd 4" of closed cell spray foam is a great approach too.

INTERIOR WALL AIR BARRIER NEEDS

- For health/ safety, sound, smells, and comfort, the demising wall between garage bay and office must be airtight. Detailing a double sheetrock wall to be airtight with typical stud cavity batt insulation is difficult and requires a robust airtight drywall strategy (putty packs, gasketed boxes, gaskets around entire perimeter of sheetrock/framing connections.)
- Due to the high surface areas and framing transitions (zig zags) of this demising wall(s) , it is recommended to rely on closed cell spray foam for primary air barrier between garage and office spaces. A 1" 'skim coat' may suffice, with a batt filled in for sound. OR 3" closed cell foam total in bays.

Note: Under and over wall air barrier details are still needed - gasket under bottom plate, and

ceiling joist bays, blocked and sealed. More comments upon review of section showing demising>garage transition.

PV READY AND FEASIBILITY/PROPOSAL

-It is recommended to engage a PV firm, or several, upon completion of envelope and mechanical system selection. This will help the team understand what size PV system is viable based on roof/orientation, and what amount of modeled loads a PV system might offset. Moreover, having a 'shovel ready' proposal in-hand will make grants for system purchase more viable. This sizing exercise, should include near and long term electric loads - EV chargers, EV police cruisers etc.

-Battery storage solutions should be presented by PV installation companies also.

-Recommended to consider PV Readiness as more than the code required conduit to the roof. Where will inverter and batteries might be stored in the building with adequate ventilation, access, and utility configuration.

EV CHARGING STATIONS

-Due to the low cost of EV chargers, and expected wide spread adoption of EV technology, it is recommended to make the building 'EV charger ready' . This includes electric panel capacity, siting for chargers, and perhaps conduit to chargers. EV charging may be revenue generating for the town, draw passersbyes on Rt 9 to stop and eat/shop local, and provide a service for the community.

-Consult National Grid for information on grants/funding to cover the electrical infrastructure costs for EV charging stations. Inquire about the 'EV Make Ready' program funding.

HVAC SIZING

-The energy committee would like to review system sizing reports from the project engineer upon completion.

AIR BARRIER TESTING AND TARGET

-Open to a discussion about a target for verifiable air barrier performance. We will look into appropriate standards and targets for a building with this use, and circle back to the building committee.

-At minimum, as construction scheduling allows, a midpoint blower door test to identify air leakage pathways, is recommended, (offered free of charge by Adin). More advanced testing, including zonal pressure diagnostics is available.

Example detail of sheathing sealed to frame

PROVIDE 2" OF CLOSED CELL FOAM
AGAINST EXTERIOR SIDE OF SHEATHING

PROVIDE CONT. TAPED AIR BARRIER UNDER
SLAB INSULATION, CLASS I AND LAP ONTO
FROST WALL AND SILL SEALER AS REQ'D
FOR CONTINUOUS SEAL

PROVIDE FLASHING WEEP

Seal sheathing to bottom plate

PROVIDE SILL SEALER CONT. AND BEAD OF
WATER MASTIC

yes, mastic is air seal here. Alt: rubber airtight gasket under plate (don't need sill
seal then)

PROVIDE STEP IN FOUNDATION AS
INDICATED. TYP.

PROVIDE ANCHOR BOLTS PER FOUNDATION
PLAN AND SPECIFICATIONS

PROPOSED 10" THK CONCRETE FROST WALL
PER FOUNDATION PLANS

CONT. 2" XPS HIGH COMPRESSIVE STRENGTH
INSULATION BOARD AT INTERIOR SIDE OF

