

**Arlington High School Building Committee**  
**AHS Sustainability/MEP Subcommittee Meeting**  
**Dec 10, 2018, 2:30-5:00pm**

**Skanska Meeting Notes – Recorded by Victoria Clifford and reviewed by Ryan Katofsky**

**In Attendance:** Ryan Katofsky, Lori Cowles (HMFH), Rob Diemer (InPosse), Brendan Giza-Sisson (Eversource), Ken Pruitt (Town Energy Manager), Rachel Oliveri (APS Sustainability Coordinator), Victoria Clifford (Skanska), Stephanie MacNeil (HMFH), Kevin Settlemyre, Kevin Caddle (Bala)

Focus: Define how the Accelerated Program will need to run with the Energy Model submission

Town Energy Manager, Ken Pruitt – noted that Alternative Energy Credits from the 2016 MA energy bill should be available and we may be able to pre-mint them and take them as a credit against the first cost. How would that affect the MSBA's reimbursements? -- Ken Pruitt to follow up with more information.

MSBA project advisory 54 provides some info on AECs

**InPosse Presentation**

- Designing for high performance
  - o Reduce loads
  - o Passive systems (harvest what is free)
  - o Optimize active systems
  - o Use only what is needed
  - o Enable users to achieve energy goals
- Investing in high performance
  - o Best investment is high performance and long life
- Project Goals:
  - o Electric HVAC or the option of converting to all electric
  - o ***Question from In Posse: How will we be procuring the renewable energy? Are we limited to what the third party wants to invest in. Example: what will we get out of maximizing the roof area for photovoltaics for a PPA. Ryan says he will look for the limitations in the current PPA for existing rooftop photovoltaics. Ken (town energy manager) to follow up. We also need to know limitation due to phasing of construction. Ken to schedule call with AMERESCO – Ryan and Jim Burrows would be good to have on the call***
- Belmont Current Energy Model:
  - o 100% geothermal hitting 34 EUI
  - o Uses less energy to move water than air
  - o Changes to the envelope are influencing the cooling and heating
  - o Next couple of weeks are critical to decide the increments on the MEP approach – not just the annual energy but the performance of the envelope / types of mechanical systems
  - o Belmont site does not have contamination – GSHP costs are lower than Arlington's cost

- Space for 400 wells has been identified for AHS - in design development is when we will start to schedule test wells
- Building Model Parameters:
  - Building geometry / envelope
  - Internal loads
  - HVAC
  - Domestic water heating
  - Control strategies and setpoints
  - Building utilization schedules
- Important to note that not one program has been the same – but InPosse has seen each of our program elements in school projects within the last three years
- how many classrooms / areas are engaged in the full year schedule? – We still need a deeper understanding on how the community ed program will evolve in the new building – still an unknown from Lori
- Model will run on two assumptions – capability and usage (InPosse needs to know about the usage)
- Assuming that some plug loads will be on separate circuits that can be switched off.
- Building Geometry
  - Using image of design “Concept C” which was voted down by the committee – we should follow up that the energy model will study “Concept A” (west facing glazing might not be beneficial for the project)
- Envelope Performance
  - Glass performance? Need HMFH to confirm
  - Glass application? Need HMFH to confirm (example: curtain wall is lower performing)
  - Arthur Duffy has a chart of the Baseline / alternates (HMFH to share)
  - HMFH & InPosse need a better understanding of windows
  - MSBA hires the commissioning agent:
    - Can we depend on the MSBA commissioning agent to study the envelope? Group says that it’s critical and we will need to follow up on how it fits in to the process. Because it is critical for the performance of the entire building and the longevity of the structure, we may want additional envelope commissioning. SKANSKA to follow up.
- Question on lighting (Not recorded)– Belmont will be used as a comparison
- Need to decide on mechanical systems – not a deciding factor today (time constraint)
- We will need to have good estimate on the geothermal
- Ryan - do we need to include an option using no geothermal or all electric (and gradations of each)? Is that a good solution? – InPosse thinks no.
- Energy modeling will help determine if different ECMs can help driver down peak loads enough so can get savings from fewer/smaller mechanical systems, e.g., 2 chilled beams instead of 3 per classroom.

#### Questions:

- Will the entire facility be fully air conditioned when occupied?

- Push from the full committee has been yes. In Posse mentions that stairs with glazing can become hot spots. Lori follows up that the building is designed to have stairwells with glazing to make the building feel more open
- Should the design optimize opportunities for natural ventilation / cooling? (should we optimize natural air?)
  - How far do we want to go?
  - Options: window interlocks / messaging / ceiling fans / cross ventilation opportunities
  - Do you want to encourage natural ventilations or not?
  - Lori believes that the PR campaign of the school has been that there will be air conditioning