



BCOC Meeting Minutes

Date: June 18, 2020, 5:30pm

Location: Video Conference

Present

Committee Members: Tom Peterson, Marty Spaulding, Peter Bahrenburg, Nathan Lavery, Clare Woo, Kate Steidl

Members of the Public: Avalon Ashley, Isabel Vivanco, George Martin, Marcy Webster (RETN), Mark Barlow, Emma Barker, Neelie

Meeting Commenced at 5:30pm

Introductions:

Tom Peterson (TP) began the meeting by reviewing the current design, showing all of the new construction, focusing on the new large additions and what they contain. New connectors will be level and accessible. New, double loaded corridor connecting B and D, as well as a new connector between B and F.

HVAC and Energy Model:

- **TP:** The main focus of tonight's meeting is to discuss the HVAC and the energy model. George Martin (GM) from LN Consulting is here to help answer our questions. Karen Walkerman conducted the initial energy model, which helped guide our decision making process to this point. Now we need to choose the system. George Martin, can you help us understand what this energy model is really telling us?
- **GM:** We do energy modeling to make informed decisions around building envelope and energy usage and needs. These can help us give the owner the best bang for the buck. The other reason is incentives: BED and/or VT Gas will come in and provide incentives based on the energy model baseline and proposed systems.
- **GM:** First baseline is a fossil fuel baseline, including a central air handling unit and a chiller, as well as a gas boiler which provides hot water throughout the building. This system is included for the purpose of comparison - the lowest spec, code compliant system.
- **TP:** these models include all the equipment, lighting, etc.
- **GM:** Also included is a rooftop unit (RTU), which is BED's baseline. Notice that baselines do not include the woodchip plant. Some of the lighting is lower spec as well, again the minimum efficiency based on code. This system has a natural gas rooftop unit and DX cooling.
- **GM:** We are looking at two different proposed systems, a high efficiency rooftop unit and the water source heat pump (WSHP)
- **GM:** The WSHP is essentially a refrigerator that can heat or cool. The heat energy can be shared throughout the loop, making it more efficient. Ventilation air would go through a rooftop ERV which preconditions the incoming outdoor air, which also boosts efficiency. The high efficiency WSHP that is proposed is very high efficiency, so too is the

ERV. It is the most expensive, but saves you money over time - That said, the payback period is extremely long.

- **GM:** The proposed rooftop unit is similar to the BED unit, but higher efficiency. We also have a superior envelope specified, especially in terms of infiltration, by making the envelope tighter and adding insulation in the roof.
- **TP:** The cost difference between the systems, divided by the annual operating cost difference tells us the payback time.
- **GW:** right. The incentives probably would not be able to get us even close to a 30 year payback period.
- **TP:** The woodchip plant will help cut the emissions as well.
- **GW:** right. Assuming you have a sustainable source of chips, it makes a rooftop system much more environmentally friendly. The times that the woodchip plant is not active is when the difference will be made with the WSHP (non-heating months).
- **TP:** LN is known for their work in high efficiency / low emissions projects. Theirs, and Karen Walkerman's, initial impression was that the WSHP is the most efficient, but they both came to the conclusion that the RTU system was coming out ahead in terms of cost/benefit.
- **TP:** First questions from the committee, and then I would like to change the agenda around a bit to allow members of LEAP to ask their questions so they don't need to wait until the end.
- **Kate Stein (KS):** Do you need to drill for the WSHP?
- **GW:** No, this option is a conventional WSHP and not geothermal.. Gas or wood chip fired boiler, along with electric based cooling.
- **Nathan Lavery (NL):** What is the budget for the HVAC system at present?
- **Marty Spaulding (MS):** Initial cost estimate was about 10m. Once we got further along, we ended up estimating a 14m WSHP option. The current budget carries the full cost of the high efficiency WSHP (14.4m).
- **TP:** There are also some ancillary costs associated with each system. The rooftop unit will likely require some structural reinforcement. The WSHP option would probably require some interior space being set aside for them.
- **Emma Barker (EB):** On behalf of the Leap environmental club at BHS, I would like to read this letter we prepared (please find letter on file). We think that the building design must adhere to the CHPS standard at a minimum. The city had been planning on holding city place to LEED gold, why should this be lower?
- **Isabel Vivanco (IV):** Cutting CHPS may save some money, but holding us to that standard is important for the long term, especially with a shifting leadership team. We need change now.
- **TP:** It gives me hope that young people like yourselves are so interested, passionate, and knowledgeable about this work. CHPS has not been cut, and we are very serious about making the facility as efficient as possible, as well as being accessible, functional, and maintainable.
- **MS:** The RTU system would easily surpass the CHPS certification requirements, correct GM?

- **GM:** yes.
- **TP:** There is no question that the WSHP is more efficient, but by saving money now, we can take better care of the building, which in the end, will make it much more efficient.
- **GW:** The RTU system also has the flexibility to convert to being fossil fuel free in the future.
- **NL:** (To LEAP members) Is the higher efficiency more important to you than putting that money into programming space?
- **MS:** For example, we were also considering an auxiliary gym - by gaining roughly \$1.5m in savings here, we may be able to add back in the gym or other programming space.
- **EB:** I of course can't speak for the whole student body, but I personally think that the energy efficiency piece should be prioritized.
- **IV:** I completely agree, and I think the rest of the student body should be consulted.

Hazardous Materials:

- **TP:** next update is on hazardous materials, particularly on Asbestos and PCBs. Our local consultant ATC has a lot of experience with asbestos, but not as much with PCBs in building materials. We brought on another consultant very familiar with PCBs: Fuss and O'Neill. They are providing a 3rd party review. They are recommending additional sampling and testing which will help refine the remediation plan. More upfront cost, which will hopefully save us some money down the line. And a better application package to the EPA region 1. We are expecting results in 3 weeks.

Lot Coverage:

- **TP:** Currently, BHS is in a recreational zone, which allows for very little lot coverage. The existing coverage exceeds the limit by over 20%. New plan increases lot coverage by a little more than than 1%. VT law limits the town review. MS wrote a great letter making the case for BHS's lot coverage. The lot coverage added is in the course of improving the facility's function as a school. MS asked zoning staff and the city attorney to weigh in, and the attorney agreed with MS' assessment, as did the director of the zoning department. The Stormwater plan is state of the art, and is way better than current, which will hopefully make city staff not too hung up on the increased lot coverage.

Design Development:

- **TP:** The design team has been meeting with BHS depts and BRD is quickly turning that feedback around and finalizing the design. They have also been meeting with city departments: Stormwater, BED, and DPW. Thank you to Kate Stein for coordinating these department meetings.
- **MS:** For design development to continue, we are hoping to get a sense from the committee members as to what the mechanical decision is. My recommendation would be to go with the RTU so we can hopefully add some programming back in. Seeing the modeling made that decision easy.
- **NL:** to what extent does the cost estimate include any offsetting savings from incentives?

- **MS:** BED / VT Gas will be incentivizing this project by adding additional dollars to the envelope, as opposed to giving us money to upgrade from the RTU to the WSHP.
- **TP:** BED was clear that they would come to the table with some incentives, but we aren't sure what they'll be yet. Since this project is so complicated, and recognizing that the RTU is a better fit, they may propose to incentivise different efficiency upgrades.
- **NL:** so they are supporting going with the RTU plus additional efficiency upgrades. Since the payoff doesn't seem to be there, I'd be comfortable moving forward with the RTU system.
- **KS:** I will support the RTU if that means additional programming for the students.
- **CW:** I agree with the majority that it should be the RTU.
- **TP:** That is all of the committee members on the call tonight. Weighing all the factors, I think the RTU option is the best way to go. In the past, the committee's decision making has been consensus based - we don't have full participation now, however. I'd propose writing a brief summary to the rest of the committee and asking them to agree or speak up. I can put a deadline on responses.

Meeting adjourned at 6:52pm