

**Town of Watertown
School Building Committee
Elementary Schools and High School Project
Wednesday, July 7, 2021
6:00 p.m. – 8:00 p.m.**

M I N U T E S

Committee Members Present: Mark Sideris, (chair), John Portz (vice-chair), Vincent Piccirilli, Lindsay Mosca, Deanne Galdston, Heidi Perkins, Steven Magoon, Paul Anastasi, and Leo Patterson

Committee Members Absent: Thomas Tracy and Kelly Kurlbaum

Others Present: Joel Giacobozzi, HS Principal; Jim Jordan and Andrew Cunneen Ai3 Architects; Tim Bonfatti, Christy Murphy and Allyson Mahar, Compass Project Management

1. Call to Order and Roll Call

Chairman Mark Sideris called the meeting to order at 6:00PM. Mr. Portz took a roll call of Committee Members present. High School Project business started at 6:13PM.

2. Meeting Minutes Approval

Vincent Piccirilli made a motion to approve the School Building Committee Meeting Minutes (combined Elementary Schools and High School) dated May 19, 2021 as written. Steven Magoon seconded. All were in favor on a roll call vote.

Christy Murphy noted School Building Committee meetings with both Elementary Schools and High School business, meeting minutes will be separated going forward.

3. Elementary Schools Project – Lowell Elementary School Project

Ai3 gave a presentation on the Design Proposal for additional solar panels at the Lowell Elementary School.

4. High School Project Update – Path to Net Zero Energy

Jim Jordan gave a brief overview of recent policy decisions regarding net zero energy. In March 2021 Governor Baker signed the “Climate Legislation to Reduce Greenhouse Gas Emissions” which commits Massachusetts to Net Zero emissions by 2050. The Building Code is moving toward Net Zero Energy well before 2050 with a focus on new codes and regulations to address NZE projects. From 2010-2019 Massachusetts was ranked #1 in energy efficiency policies and standards and #2 in 2020 by the American Council for an Energy-Efficient Economy. Net Zero Energy is the total amount of energy used by the building on an annual basis is less than or

equal to the amount of renewable energy produced on the site. Mr. Jordan reviewed the energy usage and sustainable features designed in the Cunniff and Hosmer Elementary Schools. Both are lower Energy Use Intensity (EUI) than the National Average, Watertown Average, and Massachusetts Average. The recent advancements in technology are making achieving Net Zero Energy more attainable for large scale buildings.

Mr. Jordan reviewed the path forward to achieve Net Zero Energy on the Watertown High School project.

1. EUI target of 25 or lower
2. Select an all-electric mechanical system
3. Select a method of electricity generation using renewable energy.

Mr. Jordan reviewed the System comparisons of a code compliant system, a LEED Certified System, and a LEED Certified and NZE System including price ranges. A Life-cycle payback per HVAC system chart was also presented. Mr. Jordan mentioned the different assistance programs available for Federal, State and Utility Companies. The project will be focusing on the Solar Massachusetts Renewable Target (SMART) program that could offer a payback of about \$142K for the size of the system being proposed. The project also just signed up with the Mass Save Eversource sponsored Path 1 program. A chart comparing revenue sources of a non-NZE Building compared to NZE Building was presented and will continue to be updated.

The path to NZE would be a EUI of 25 which would be 1,422,927 kWh of energy used on site per year. A PV system designed could generate 1,478,600 kWh on site per year therefore the EUI is less than the energy produced so there is a viable path forward for the building. Mr. Jordan noted there will be a number of challenges that the project will have to face to achieve this. Challenges include limited roof area for PV, limited land area for PV canopies, High School has extended daily/yearly use beyond the typical school day. Some advantages include the building is subdivided into Community and Academic cores allowing an investigation into Hybrid Systems and the Southern exposure and alignment allowing for additional PV technologies. The first step will be maximizing roof areas for PV array. Building Integrated Photovoltaics (BiPV) was introduced as an option for the south facing façade. The output does not match the rooftop PV. Building Integrated Horizontal Sunscreens were also presented as an option. Sunshades will be required in the design but instead of using a standard aluminum material the sunshade could be designed as a PV array. If the project is still falling short, another option would be to place PV array on the Phillips Building Roof if needed.

Mr. Jordan discussed the building hours of operation during the school year, the summer and school vacation. There is a large difference in how the academic zone is used and the community zone. The community core will have a lot more use than the academic core. The community core would be more favorable for a Ground Source system. With the on/off schedule of the academic core, it is more conducive with Air Source heat pumps. There would be a cost savings with the hybrid system.

Mr. Jordan presented a summary of the proposed PV options. Based on this rough analysis, the target output is greater than the target consumption and although this may change, the design team thinks there is a viable path forward to achieve NZE on the campus. The next step is to eliminate the BIPV.

Chairman Sideris opened the meeting up to questions/comments from the Committee:

- **Comment:** Chairman Sideris said this is very exciting, the Ai3 team has done a great job presenting a path forward for NZE and he is looking forward to continued discussion and vetting of this option.
- **Comment:** Leo Patterson said it would be helpful to have the electrical usage on the Lowell school when weighing the solar payback.
- **Question 1:** Leo Patterson said he is concerned with creating outdoor spaces. Why wouldn't we solar canopy the ground level parking on parking entrance side of the building but we would solar canopy the early childhood? We should be conscious of the aesthetic of different views of the building. Mr. Patterson encouraged Ai3 to focus on massing of the building where we are limiting the solar heat gain on the south side and to do some study on the amount of glazing on the building and how that affects the efficiency of the building. Mr. Patterson agrees with eliminating the BIPV. Mr. Patterson asked about ledge on the site when we are talking about ground source heat pumps. Where would the well fields for ground source be located?
Response: Jim Jordan replied the design team would be glad to share the analysis that went into the tilting and angling on the front façade and how that plays into the energy model analysis and the window, glass, solid wall ratio. As far as the geothermal well, the design team is just starting to analyze it and whether or not it is possible and how many wells it would take. The design team is thinking of placing the wells along the south side, not under the building structure. A decision has not been made yet. A Phase 2 geotechnical package prepared for design development to get more data on the site. The wells will be between 600-720 ft deep. Groundwater height and ledge will need to be considered.
- **Question 2:** Leo Patterson asked if the solar panels would be raised on the roof with a rack system.
Response: Jim Jordan replied it is 8' to the bottom of the steel structure. The structure could be between 12"-16" deep. Multiple panels would be linked together with air space in between. The advantage is you can take over the whole roof surface and not be dictated by the compressor locations or roof drains. The benefit is if you have a roof issue or a roof replacement is required you won't have to remove the PV system.
- **Question 3:** Paul Anastasi asked if there is something that can be designed for BIPV to be added in the future?

Response: Jim Jordan replied there are a number of projects using BIPV in Europe and the technology has been tested and works. The design team's concern is that the tie in is complicated and it doesn't have the same output as the roof PVs. It is identified as a possible avenue if we can't get enough energy from other PVs. The priority has always been roof top or canopy PV.

- **Question 4:** Leo Patterson asked if a double skin façade has been studied?

Response: Jim Jordan replied they did on a project at Hingham Elementary School. It worked but had some problems that took a while to resolve. Mr. Jordan will reach out to the mechanical engineer to see if he has had any success with it on other projects.

Christy Murphy mentioned as part of the commitment to working with Eversource Path 1 program there is a split with the town and Eversource on additional engineering fees related to the Path to Net Zero. It is roughly a \$22K engineering fee that would apply to the Feasibility Study/Schematic Design budget that we have. The Amendment would be through Ai3 for a total of \$13,376 and \$10K is being paid for by Eversource so this is just the town's portion.

Chairman Sideris asked for a motion to approve Ai3 Amendment #2 in the amount of \$13,376. Vincent Piccirilli made a motion. Steven Magoon seconded. All were in favor on a roll call vote.

Jim Jordan clarified with the Building Committee about the Lowell School – The Building Committee would like the design team to proceed with structural engineering and analysis of the Lowell roof as a starting point as recommended as well as possible energy modeling services. That would be the minimum ask so we can continue to work and report back to the Committee what the viability of the roof carrying PVs as well as what the baseline energy usage is for Lowell.

The Building Committee discussed. John Portz asked about options for canopies at the Lowell Vinny Piccirilli noted the parking areas would be shaded by the building and he would not support PV canopies over existing open green space. Steve Magoon noted Lowell was never intended to be Net Zero and we should do what we can to make it as efficient as possible but going beyond the roof PV doesn't seem necessary. Paul Anastasi said his opinion is he would not like to see solar on the historic part of the building. Leo Patterson agreed and encouraged Ai3 to proceed but not with panels in that area. There is a small area along the playground side of the parking area that could have a canopy but cost wise it might not make sense. Vinny Piccirilli noted feedback from the public was that we maintain the classic look of the building. Chairman Sideris noted this was not going to be a Net Zero school and given the community input we chose not to do that.

Vincent Piccirilli made a motion for the analysis of solar panels on the Lowell School to exclude the sloped slate roof. Steven Magoon seconded. All were in favor on a roll call vote.

5. High School Project Update – Exterior Façade

Jim Jordan presented the proposed materials and colors for the exterior of the building. Similar materials used on the elementary schools were tested on the high school design with the idea that it would start to create a theme with the public school buildings in Watertown and complement each other. Wood, natural stone, split-face CMU and brick were included in the pallet. Building Integrated Photovoltaic metal panels were included in the study. The design team is trying to accomplish a modern look. Curtainwall and storefront glass systems are incorporated. Exterior elevation studies were presented showing Common Street and Columbia Street elevations. Exterior renderings were also shown from different perspectives around the building. The design team studied a number of options from a massing standpoint and material options.

Chairman Sideris opened the meeting up to questions and comments from the Committee:

- **Comment:** Chairman Sideris noted the design is very similar to the Hosmer and the Cunniff, there is no “wow” factor.
- **Comment:** Steve Magoon like the option with the checkerboard pattern of the panels.
- **Comment:** Lindsay Mosca would like the building to look different than the elementary schools. Ms. Mosca likes the idea of having some color on the building, the vertical orientation of the windows.
- **Comment:** Superintendent Galdston asked how the branding of Watertown High School being red and black will mesh together with the blue color shown. Superintendent asked that the end of the building be an eye-catching view so when you drive down Common Street the high school stands out.
- **Comment:** Leo Patterson suggested some connection to the geology of Massachusetts such as locally sourced brick or stone. It should have a distinct design different than the elementary schools that projects more importance and richness through materials. On the building itself, Mr. Patterson likes the idea of wrapping the base in brick. Mr. Patterson noted he does not understand the picture-framing of the canopies and the under projections of the canopies. Mr. Patterson suggested doing something unique, elegant, and preserved with this building.
- **Comment:** Paul Anastasi liked the red brick look and agrees it should look different than the elementary schools.
- **Comment:** Vincent Piccirilli is not sure about the look of the picture frame windows. Brick and metal seem to be a nice combination. Mr. Piccirilli suggested using the metal panels material more throughout if we are going to move forward with the BIPV and leave out the wood trim.

- **Question 1:** John Portz asked what the timeline is for decision making on the façade materials?
Response: Jim Jordan said Schematic Design is scheduled to be complete by Nov 3rd. We would have to have a meeting scheduled a month prior to make sure all materials are captured into the cost estimate. It would likely need to be decided by the September Building committee meeting. The design team will continue to work on it throughout the summer and continue to present options.
- **Comment:** Joel Giacobozzi noted concerns about how the copper wood material will age in terms of style.
- **Comment:** Heidi Perkins does not think the blue color fits in with Watertown. Ms. Perkins suggested using black with highlights of red. Ms. Perkins noted the balance of the center of the building and the ends does not align or pull together.

Chairman Sideris opened the meeting up to questions/comments from the public:

- **Comment:** Jolly wants the high school to be NZE, what would happen if the wells are not an option.
- **Comment:** Jolly noted there were Solar design canopies installed at Clark University. Jolly mentioned she is disappointed in the decision that was made by the Committee to not pursue PV at the slate roof at the Lowell.
- **Comment:** Elodia Thomas is disappointed in the design of the exterior. Ms. Thomas does not agree with having red and black on the exterior.
- **Question 2:** Lisa asked since we will be looking at planning changes to the Phillips site I am curious to see it included as possible solar that supports the high school.
Response: Jim Jordan replied it was an option because not all PV needs to be placed on the high school site. The analysis showed using the Phillips campus is not necessary.
- **Comment:** Lisa Feltner the framed squares look a lot like the North Beacon street condos and too similar materials to the new elementary schools.

Jim Jordan noted he truly appreciates all of the feedback that has been received at this meeting on the elevations, this is exactly what the design team wants to hear at this phase of the project. The design team will do their best job to deliver what the expectations are to Watertown. The renderings shown tonight are not final, they are just showing where we are in the design process.

6. Announcements

Christy Murphy provided an update on upcoming Building Committee Meetings:

- The Watertown School Building Committee will meet every two weeks.
- The next School Building Committee meeting is scheduled Wednesday, July 21st, 2021 @ 6:00PM.
- To confirm meeting dates, view agendas and obtain Zoom meeting links, please visit https://www.watertown.k12.ma.us/building_for_the_future/meeting_info

Christy Murphy added that the team is working to get the next meeting with town departments regarding Moxley. A community forum is also being targeted to be held in August.

7. Correspondence To/From Community

Christy Murphy acknowledged a meeting through the School Committee regarding the possibility of saving the class gifted trees at the high school on the corner of Columbia and Common. The design team is aware of it and it is something that will be considered and reviewed.

Christy Murphy noted several people have been asked to be on the email distribution list. The email is highschoolproject@watertown.k12.ma.us.

Chairman Sideris added that the Committee announced they are going to establish a design subcommittee and several inquiries have been received. Chairman Sideris is working to finalize a group that will assist with some of the design of the building.

8. Adjournment

Chairman Sideris asked for a motion to adjourn. Vinny Piccirilli made a motion to adjourn, seconded by Lindsay Mosca. All were in favor on a roll call vote. Meeting adjourned at 8:01PM.

APPROVED 8/4/21