

<b>JOHN R. PIERCE SCHOOL – BROOKLINE, MA</b>	<b>MEETING MINUTES APPROVED 10.21.21</b>
--	--

<b>PIERCE SCHOOL BUILDING COMMITTEE</b>		<b>September 30, 2021</b>
Location:		Online Zoom Meeting
Time:		4:00 PM
<b>Name</b>	<b>Assoc.</b>	<b>Present</b>
Bernard Greene	Voting Member – Committee Co-Chair, Select Board	Y
Helen Charlupski	Voting Member – Committee Co-Chair, School Committee	Y
Melvin Kleckner	Voting Member – Town Administrator	Y
Andy Liu	Voting Member – School Committee	Y
Dr. Linus Guillory	Voting Member – Superintendent of Schools	N
Charlie Simmons	Voting Member – Director of Public Buildings	Y
Daniel Bennett	Voting Member – Building Commissioner	Y
Lesley Ryan-Miller	Voting Member – Pierce School Principal	Y
Carol Levin	Voting Member – Advisory Finance Committee	Y
Steve Heikin	Voting Member – Planning Board	Y
Ken Kaplan	Voting Member – Building Commission	Y
Aaron Williams	Voting Member – Pierce School Parent	Y
Nurit Zuker	Voting Member – Pierce School Parent	Y
Nancy O'Connor	Voting Member – Parks and Recreation Commission	Y
Sam Rippin	Voting Member – Assistant Superintendent of School Administration & Finance	Y
Jamie Yadoff	Voting Member – Pierce School Principal	Y
Melissa Goff	Non-Voting Member – Deputy Town Administrator	N
Michelle Herman	Non-Voting Member – Deputy Superintendent	N
Tony Guigli	Non-Voting Member – Building Department Project Manager	Y
Matt Gillis	Non-Voting Member – School Department Director of Operations	Y
Jim Rogers	LEFTFIELD	Y
Lynn Stapleton	LEFTFIELD	Y
Jen Carlson	LEFTFIELD	Y
Matt Casey	LEFTFIELD	Y
Will Spears	MDS Architects	Y
Amy Mackrell	MDS Architects	N
Margaret Clarke	MDS Architects	Y
Vinicius Gorgati	Sasaki	Y
Carla Ceruzzi	Sasaki	Y
Kate Tooke	Sasaki	Y
Tamar Warburg	Sasaki	Y
Deborah Rivers	Community Member	Y

The meeting was called to order at 4:00 PM.

A member of the committee asked whether the MSBA's comments on the Preliminary Design Program had been received and Leftfield noted that the comments had been received and the Project Team responded on September 3rd.

Approval of the Meeting Minutes from the August 4, 2021 School Building Committee meeting will be pushed to the next meeting.

Leftfield explained that after several discussions with Town stakeholders, it became apparent that the community needed more time for outreach prior to voting on a single preferred option. The Preferred Schematic Report (PSR) to MSBA was previously due October 28th, and the team has determined that the date to submit the PSR could be pushed to December 28th which would give an additional two months for the community outreach process. The end date would not push out as a Town Meeting vote could be tied into the existing September 2022 primary election. It was noted that the Schematic Design (SD) process would need to start before formal MSBA board approval in order to maintain progress to submit the SD report at the end of June 2022.

Sasaki presented slides with sustainability features that would be the same for all schematics: Certifications required by MSBA LEED/NE-CHPS, efficient electrification systems, possibly parking lot PV canopy, ventilation/filtration and general air quality, and sustainable transportation. Sustainability features that vary by schematic option include reduced energy demand (varying based on square footage and envelope), geoexchange potential, rooftop PV canopy based on space capacity and building orientation, initial embodied carbon (based on concrete and steel demolished and/or required to build new), and daylighting (varying based on orientation, geometry, and envelope design).

Sasaki presented shadow studies and thermal comfort studies to compare how light would contrast based upon time of day and season on all four options, and how that would affect interior lighting and temperature levels. Additional studies demonstrating the potentially negative effects such as daylight glare and passive solar heat gained were shared as well.

All schematic options were input into an energy model that separates the building into specific parts (i.e, garage, classroom, etc) which can then be assigned parameters that will help clarify the energy usage of the building per area, and what it's impact on the energy model would be when different variables are assigned.

An Energy Use Intensity (EUI) rating, which measures energy consumption per square foot per year, of 25 or less qualifies the project for significant MassSave incentives. For EUI without photovoltaics (PV), Option 1 has an EUI of 40, Option 2B an EUI of 24, Option 3b-H an EUI of 23, while Option 3b has the lowest load of the options available with an EUI of 22. Option 1 has the highest EUI as the team assumed less site would be available for a geothermal well installation.

The EUIs calculated with PV decreased the EUIs across all options - Option 1 decreased to 35, Option 2b decreased to 19, Option 3b decreased to 15, and Option 3b-H decreased to 14. In both studies, Option 1 consumed the most energy and upon review has less opportunity for renewables. When asked if the PV would adjust the shadow studies, Sasaki assured that it is likely they would be unaffected but would be monitored. A potential parking lot PV layout was presented and assumes that PV canopies cannot be built over the existing underground garage. Building EUIs presented that account for PV, do not account for the additional PV canopies that may be possible.

Sasaki showed charts regarding the embodied carbon levels and will be looking at operational and embodied carbon emissions to determine the environmental impact of each schematic option. A chart was shown using current New England energy grid calculations to demonstrate the use of carbon over time on new construction. A member of the committee noted that 20% of energy purchase from the grid currently is renewable, but the Town has committed to purchasing 100% renewable energy by 2050.

A member of the committee noted that Town Meeting is considering a Warrant Article that would require building projects to use low carbon concrete where feasible. Sasaki explained that use of supplemental cementitious materials where possible is included in this study as low carbon concrete is a Sasaki best practice.

Options were presented with conventional steel and concrete calculations vs hybrid steel and timber structure calculations, with the determination being that Option 1 has lowest emissions because the existing elements are reused, and that Option 3b is favorable due to compact massing. It was noted that 2b, 3b and 3b-h are all comparable.

- Option 1 - 5.8M|323 steel/concrete, 4.6M|247 steel/timber
- Option 2b - 10.4M|430 steel/concrete, 7.9M|323 steel/timber
- Option 3b - 9.9M|420 steel/concrete, 7.5M|312 steel/timber
- Option eb-H 11.4M|430 steel/concrete, 8.9 M|344 steel/timber

A chart was shown with total carbon emissions over time comparing the four options, demonstrating the similarities in carbon emissions for both steel/concrete options and steel/timber options.

Sasaki summarized how each option ranks in sustainability analyzing EUI with and without PV, Embodied Carbon, Operational Carbon, potential for Geothermal, potential for PVs, Daylight Thermal Comfort. A member of the committee asked why 3b-h scored lower in thermal comfort than 3b, Sasaki explained that the connector between the Historic Building and new construction creates more shadow and therefore less comfortable outdoor space. The new construction is also able to pull further away from the library which allows for more sunlight to the exterior space between the two buildings. Highlights from the slide are found here:

- Option 1, Minimal Reno, EUI 40 (with solar, 35), Embodied carbon of 5.6M, Operational carbon of 35 M, No geothermal, and 250kw PV. Thermal comfort 2.31 H
- Option 2B, Strategic Reno, EUI 24 (with solar, 19), Embodied carbon of 10.4M, Operational carbon of 18.2M, geothermal, and 250kw PV. Thermal comfort 2.34 H
- Option 3b, All new, EUI 22 (with solar, 15), Embodied carbon of 9.9M, Operational carbon of 11.3M, geothermal, and 250kw PV. Thermal comfort 2.3 H
- Option 3b-H, New & Historic, EUI 23 (with solar, 14), Embodied carbon of 11.4M, Operational carbon of 11.9M, geothermal, and 350kw PV. Thermal comfort 2.29 H

A member of the committee asked if a renovated existing building can ever be as efficient as new construction. Sasaki explained that while the envelope of a building can be insulated well, it would be insulated from the interior and thermal bridging would still carry temperature changes. It was asked how operational carbon can be calculated at this time without a design, the project team explained that the values shown are calculated by R values determined by existing conditions and the best practices that will be used in a new design. Leftfield emphasized that the assumptions made are carried across all options and that the numbers are comparative at this stage in the project.

Leftfield shared estimates received from PM&C and AM Fogarty showing comparative construction costs across options. Draft estimates were received by September 17<sup>th</sup> and reconciled by September 24<sup>th</sup>. Leftfield took the committee through the spreadsheet that shows total construction costs (trade costs), total estimated costs (trade costs plus construction related soft costs), and total costs with alternates. Leftfield emphasized the fact that the cost estimates are comparative across options and that there is no

design for the project yet. The images and options being shown are concepts showing how programmatic adjacencies could work together to create building massing. The comparison is only a tool that should be used to compare options, not to be confused as a project budget.

A member of the committee noted interest in seeing the usable square foot cost per student and added that decreasing the square footage of the project would decrease the cost and energy use of the project as well. Leftfield and others noted that the square footage of each space was outlined in the Space Summary that was submitted to the MSBA and significant changes would require a resubmittal. The MSBA has a very prescribed way of calculating square footage and does not allow spaces to decrease below their minimum square footage.

Leftfield explained that in option 3b, the Historic Building would no longer be part of the project, but would have cost associated with it. Part of the cost, shown to be \$1.5M in the comparative estimates, would be carried above the line as some work would need to be done even just to separate the systems of the two buildings. There is approximately \$10M in construction costs being carried below the line plus 25% in project soft costs to hire a project team for a standalone project to renovate the Historic Building to reuse it as a new function.

A member of the committee asked why the garage square footage varied across the options. MDS explained that the number varies based on trying to build within the existing garage footprint and under the footprint above.

MDS shared a tool that is being created to assist with determining the best option under consideration by comparing the options across major differentiators including pedagogical issues, sustainability, how the options fit into the urban fabric, among others. MDS discussed how they determined their grading system per each topic and category. Option 3B and 3b-H received the highest scores on both matrices based on available data. The SBC requested that the chart be updated to weight each category to compare projects across the Town's most important priorities.

Leftfield presented an outline of meetings to be scheduled between now and when the PSR is submitted to the MSBA at the end of December. Leftfield asked members of the committee to weigh in and add meetings that would be needed with groups that may not be on the list.

The meeting adjourned at 6:00PM