THE PUBLIC SCHOOLS OF BROOKLINE
BROOKLINE, MASSACHUSETTS
Town Hall, Fifth Floor, 333 Washington Street Brookline, MA 02445
Telephone: 617-730-2430 Fax: 617-730-2601
www.brookline.k12.ma.us

Meeting Notice
Pierce School Building Committee

Meeting Date: Thursday, October 14, 2021
4:00 pm – 5:30 pm

Access the Meeting:

Log on: https://brooklinema.zoomgov.com/s/1604823155?pwd=azhIalB2MUFoZEt5R3JTR0FCZzlydz09
Passcode: 5fCEvnQs
Call In Number: +1 669 254 5252
Webinar ID: 160 482 3155
Access Code: 87201235

Agenda:

1. Project Approvals:
    - August 4, 2021 Meeting Minutes
    - September 9, 2021 Meeting Minutes
    - September 30, 2021 Meeting Minutes
    - Budget Revision Requests (BRRs) #1, #2, #3, #4
2. Sustainability Update
3. Cost Comparison
4. Decision Matrix
5. Schedule and Public Process Update
6. Public comment

To receive meeting notifications, please sign up and select Pierce School Building Committee.
https://www.brooklinema.gov/list.aspx

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LEFTFIELD
THE RIGHT CHOICE IN PROJECT MANAGEMENT

JOHN R. PIERCE SCHOOL – BROOKLINE, MA	MEETING MINUTES DRAFT

PIERCE SCHOOL BUILDING COMMITTEE	August 4, 2021
Location:	Online Zoom Meeting
Time:	3:00 PM

Name	Assoc.	Present
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	N
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	N
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	N
Will Spears	MDS Architects	Y
Amy Mackrell	MDS Architects	Y
Margaret Clarke	MDS Architects	Y
Vinicius Gorgati	Sasaki	Y
Carla Ceruzzi	Sasaki	Y
Kate Tooke	Sasaki	Y
Tamar Warburg	Sasaki	N
Deborah Rivers	Community Member	Y
Tima McLaren	Community Member	Y
Tal Kenet	Community Member	Y

The meeting was called to order at 3:00 PM.

Meeting Minutes from the June 14, 2021 School Building Committee meeting were unanimously approved by roll call vote contingent upon an update addressing an incomplete sentence.
A member of the committee asked if the team has received the MSBA's comments back on the Preliminary Design Program submission. Leftfield explained that typically, the MSBA turns comments

around in 2 to 3 weeks, and at this point it has been approximately 7 weeks. Leftfield has followed up with the MSBA, they expect comments back next week.

Miller Dyer Spears (MDS) presented a design update. MDS started with a layout of buildable areas on the existing Pierce site as well as the surface parking area and turnaround. The surface parking area is located over underground parking for Town Hall making alterations to the parking garage necessary to support any structure above it. Any improvements to the surface parking area and drop off loop would improve the approach to the school, but would not be appropriate space on which to build.

A member of the committee asked whether it is possible to incorporate the Health Department building and associated site. She asked if the Health Department functions could be moved into the Historic Pierce Primary building to allow the school project to incorporate the Health Department building and site for more buildable area. It was noted that the Health Dept building was recently renovated. It was also noted that if the Pierce Primary building is not used for the Pierce School project, the School Department would like to use the building for functions they currently lease space for. MDS explained that moving the building to the Health Dept building site would take the school further away from the Pierce Park and Playground, the Health Dept site is approximately a third of the size of the site of the existing school, and the program on the existing site is already a tight fit.

A member of the committee asked if there is any potential to use the basketball courts across the street. MDS explained that while there is a potential to put some of the program in that location, it does pull that program away from the main school building which would also lengthen the travel time for students which eats into learning time.

MDS reviewed the options shown in the Preliminary Design Program (PDP) submission. MDS noted that while Option 1, an option that keeps both unit A and unit B while building an addition to infill where C currently is, was explored in the PDP submission, it does not meet the school's programmatic needs or allow for the programmatic adjacencies identified in the Educational Program, so today's focus will be on the development of the other options.

In the PDP, the following options beyond just a full renovation were explored. Option 2b keeps unit A (the portion of the existing building housing the multi-story library space) and the Historic Pierce Primary building while infilling between with an addition. Option 3 explored demolishing the existing building and building a new structure while keeping the Historic Pierce Primary Building, and Option 4b explored building the school in the park across the street and replacing the park on the existing site consistent with Article 97.

MDS reviewed key issues identified to date. MDS noted that through discussion with the Working Group, entrance locations were identified. A main entrance near the drop-off loop with secondary entrances on Harvard Street and School Street were most advantageous to allow for access from all directions. This would also allow for separable public access to gyms and multipurpose space.

Building Organization is a priority for the project as grade bands for Pre-K to grade 2, grades 3 to 5, and grades 6 to 8 should ideally be maintained in a new design. The building program needs to be laid out in a way that minimizes student travel time and maximizes student learning time. A media commons should be centrally located to encourage some of the quirkiness and connectedness that occurs at the existing unit A. Daylight and views should be maximized. The ability to separate the public spaces from the core school activities.

Use of the Historic Pierce Primary building on site has been discussed at length. Either the building can be reused as part of the new design, or it can be repurposed as a separate project for other Town use. Reusing the building takes pressure off the density of the site development, but also spreads out the building and would increase travel times for some students. It was noted that connecting to the Historic building also is in conflict with improving the permeability of the site.

Program use of outdoor space should consider the creation of congregation space near main entrance or entrances, secure play areas for youngest grades, recreation space adjacent to dining spaces, outdoor classrooms and amphitheater, an education garden, and outdoor extension of the maker space.

Other priorities that have been identified to date. The civic connections through the site can be improved through the design of the project. The building massing should be shaped to mitigate the impact on the surrounding neighborhood. Parking and service access should be maintained on site including service access to the Library.

The reuse of the Historic Building was reviewed. The first idea was to move Pre-K and K to the building only. This would pull the smallest children away from shared building resources including dining which would significantly increase travel time for them and isolate the teaching staff for that grade band. The team explored reusing the building for 7th and 8th grade, this would require an infill of the courtyard to be able to house the appropriate program. It has been noted that grades 7 and 8 are more easily separated and given the age of the students transition time would be easier.

Preferred Schematic Report (PSR) Options Development was reviewed with visuals of the schemes shown.

Option 2b – Keep A and H – MDS reviewed the building program and how it interacts with the surrounding site. The multipurpose room is located at grade level off School Street allowing for easy access to the public. The drop off loop entrance is located one level up to navigate the grade across the site. There would be parking garages under building as they are located now. MDS noted that there is a bridge connection to the second floor of the Historic building that allows for better permeability through the site. Green space concepts were reviewed.

Option 3 – s – New Building over New Garage – MDS reviewed the building program and how it interacts with the surrounding site noting that this scheme does not connect to the Historic building, meaning that building would be repurposed for Town purposes and would need to be renovated as a separate project. MDS noted that the goal was to create a presence at the corner of School and Harvard Streets with the gymnasium and multipurpose spaces pushed to the corner. The cafeteria pulls back along School Street breaking up the massing along that side of the building and introducing more green space. MDS noted that the core of the building could be developed to create connections through shared building resources.

Option 3 – cube - New Building over New Garage – This scheme uses the media center/reading room as a central core with grade bands located around it. The gym is pulled away from the core of the building with the cafeteria connecting between. The roof of the cafeteria could be occupiable green space. Massing would resemble a cube along the corner of Harvard and School Streets. This scheme allows for less permeability across the site.

Option 4b – New Building on Existing Pierce Park – MDS showed that the massing of a new building on the park site would take up much of the site. They explained that the drop off entrance experience would be a difficult and given the need for a drop off loop, would mix pedestrian and vehicle access at the main entrance. The existing school site would need to be redeveloped with similar program to what is on the park site now. A 20' retaining wall would be necessary to create an even site to allow for ball fields and basketball courts. Vehicular traffic would be pushed into the residential neighborhood with informal drop offs happening in the surrounding streets. This option would not include connection or reuse of the Historic Building given the increase in distance.

A member of the committee asked if the team could provide a slide that compares massing across all options in future presentations.

The Pierce School interim Principal noted that Option 3 – S is the most programmatically advantageous scheme from the school's perspective. She noted that she would like to see the media center/reading room as the core of the building, more central to the school. The scheme creates nice adjacencies in grade bands, and minimizes transitions within school and from the building to the playground across the street. She noted that it allows for collaboration across grades and allows all grade bands to be maintained. She added that Option 3 – S maintains the curiosity that the existing building has while addressing the many issues of the existing building.

MDS explained that there is a possibility to combine the quirkiness of Option 3 – S with the efficiency of Option 3 – Cube and added that they would combine the two options.

A member of the committee noted that benefits of Option 3 – S include the potential to allow for views and daylight in both the media/reading center and the gymnasium. He noted that the option also allows for more permeability of the site.

There was discussion about the massing of the options and how the massing would relate to the heights of the surrounding neighborhood. MDS noted that the massing of the building closest to the Library will match up to the four story height of that side of the site, but all would be taller than the residences across School Street. MDS added that these studies are massing only and the articulation of the building façade will be sensitive to the surrounding buildings. A member of the committee noted that using the Historic building in the new design may allow the building to become shorter.

A member of the committee asked if, given the height along School Street across from a number of shorter residences, is it possible to pull the building back off of the street a bit to allow for softer connection along sidewalk with a buffer of more vegetation.

A member of the committee asked about the connectivity to the green space and playground across School Street. MDS explained that there are several treatments of the street that are being considered and will need to be developed in any of the schemes that are chosen. The traffic consultant is looking at narrowing the street by only allowing turn lanes at intersections which will calm traffic and allow for more robust sidewalks. They are also starting discussions about installing flashers and a raised crossing will also indicate strongly to vehicular traffic that the space is meant for pedestrians to cross.

MDS added that each option has good potential to relate to the park. Making a fluid connection between the park and the Historic building through a view corridor and a universally accessible route to move between school street and the rest of the civic campus. Great potential to connect a robust plaza

and welcoming space with the park along School Street. MDS showed how students would travel to the park from the school, the principal noted that when PE uses the park for a class, the class usually meets at the park rather than meeting in the gym and transitioning together to the park.

A member of the committee noted that there is an underground connection from the existing 1970s school building to the Historic building, but MDS noted that it would be a difficult transition to make it accessible.

MDS reviewed the probable garage entrance locations. MDS noted that there would likely be a need to enter/exit on Harvard Street with the Washington Street entrance to the Town Hall garage maintained. A member of the committee noted that there are upcoming projects that are being considered that may push more traffic from route 9 to the surrounding streets.

A member of the committee asked if the garage under the building in the scheme that keeps unit A remains in the same location. MDS noted that this condition is not fully resolved, but the goal would be to maintain a service area between the building and the library in order to share the space with the library. Another member of the committee noted that there was a discussion during the working group meeting that if there are chances to share amenities like the library loading dock area, we should take advantage to utilize the site in the most efficient way.

Sasaki noted that there is a current connection between the civic campus and the Pierce playground via a dark staircase that allows the community to pass through the site if they choose. A member of the committee noted that because the passage is not a welcoming experience, it is not a connection that is used very often. MDS added that there is a connection through to Harvard Street that will likely not exist in the new design as it would be difficult to create an accessible path in that location.

A member of the committee noted that if the Historic Building is not being used in the project, a cost would need to be assigned to that separate project for reuse. This cost would need to be shown as additional to the cost of the scheme.

Matt Gillis, project manager for the School Department, noted that there are likely two ways the Historic Building would be reused if it was not used for the Pierce School project. The first of which would be for School Dept. offices, which the Town leases space for at this time, and the other option would be for BEEP.

Another member of the committee noted that he was not sure that there is a financial benefit to using the Historic Building as part of the Pierce School project, though another member noted that it would house some of the necessary program which would spread out the massing and lower the height of the building a little. It was noted that the MSBA pays for Pre-K space as it is part of the Pierce Educational Plan.

A member of the committee asked about the renovation and reuse of unit A and whether the team has considered building on top of it. MDS explained that the structural engineer has looked into this, but significant structural improvement would be necessary to allow building above.

A member of the committee asked if there is an opportunity to reskin to allow more light in and upgrades the efficiency of the building. MDS noted that the exterior walls of the building are bearing

walls and every change to those walls is particularly expensive as they would need to account for structural improvement as well.

The Pierce Principal noted that keeping parts of the existing building as proposed in Options 1 and 2b are the worst from an educational perspective as it does not promote teacher and student collaboration, it increases transition times within the building, creates the least organization of program. She added that she has taught in the Pierce School for many years and these options would keep a lot of the negative aspects of Pierce and the building would not be functional for the next 50 years. Other members of the committee noted that while there are a lot of skilled construction professionals on the committee and project team, it is of the utmost importance to listen to the principal as the client to ensure the building functions as it should.

Leftfield reviewed a high level schedule showing upcoming milestones and meetings that will occur through the end of October when the PSR is scheduled to be submitted. It was noted that the options will be submitted to two estimators at the end of the month with draft estimates due by September 17th and reconciled estimates due by September 24th. During the month of September, more meetings will be held to review the options with the wider community. The PSR is due to the MSBA on October 28th.

Leftfield presented a budget update noting that invoices are approved monthly through the Building Commission. Amendments are also approved through the Building Commission and then are up for approval at the School Committee and Select Board.

A member of the committee asked what the process is to decide on a single schematic. The schedule shows the School Building Committee voting on a single preferred option in early October which would allow the project team to develop the PSR to submit to the MSBA by the end of October.

A member of the committee asked which options would be developed further based on comments the team has heard to date. MDS explained that they are working with Sasaki to develop a scheme that combines the best aspects of options 3 – s and 3 – cube to present next time, and will develop another option that demolishes the 1970s building but also attaches to the Historic Building.

Deborah Rivers, member of the public, noted that the 4 story wall at School Street is very tall related to the surrounding neighborhood. She noted that the building could be set back 15’ – 20’ with greenery and trees added to soften the feel in the neighborhood.

Tal Kenet, member of the public, noted a preference for option 3 – S. They noted that there may be locations in the scheme that do not receive daylight, it is not obvious from the images. It was added that existing unit A has a looming, overwhelming presence along the street and that windows and openness will help soften the presence on the street based on what she has seen at new High School. They noted that it might be helpful to consider closing School Street to through traffic during pick up and drop off hours. The question was asked if Pre-K was moved to the Historic Building, how would this work with the rest of the Pierce School. The principal noted that she believed the 3 preK classrooms would be included in the main building, but other PreK classrooms that the Town is currently leasing space to run could be moved into the Historic Building. The site is accessible by public transportation and is fairly central for all Brookline families which could make this a good location for the rest of the BEEP program.

A member of the committee noted that she is not in favor of keeping unit A as it is a large and imposing presence on the site. She added that as the project progresses, she is confident that the design team will

consider the pedestrian experience along the building. She also thanked the Pierce principal for the excellent and caring feedback to the project.

Tima McLaren, member of the public, noted that the traffic on School Street needs to be slowed to allow for safe pedestrian crossing to the park. She added that she would like to encourage the traffic consultant to watch the traffic in Brookline Village where drivers become frustrated by congestion points, she added concern about adding a garage exit/entrance on Harvard Street.

Other members of the committee noted agreement about the traffic around the site moving too fast and that the safety of the pedestrian crossing at School Street needs to be a priority.

The meeting adjourned at 5:04 PM.

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THE RIGHT CHOICE IN PROJECT MANAGEMENT

JOHN R. PIERCE SCHOOL – BROOKLINE, MA	MEETING MINUTES DRAFT

PIERCE SCHOOL BUILDING COMMITTEE		September 9, 2021
	Location:	Online Zoom Meeting
	Time:	4:00 PM

Name	Assoc.	Present
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	N
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	N
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	Y
Margaret Clarke	MDS Architects	Y
Vinicius Gorgati	Sasaki	Y
Carla Ceruzzi	Sasaki	Y
Kate Tooke	Sasaki	Y
Tamar Warburg	Sasaki	N

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

MDS presented an update on options that have been developed based on feedback received through previous meetings with the SBC and the Working Group.

Option 3 – S/Cube

In this option, the music rooms and multi-purpose room would be located on a street level. This option features entrances on Harvard and School Streets, with a main entrance on the floor above from the drop off circle. The

Cafeteria faces a public green space and the Pre-K classrooms are located off of a new courtyard. The loading drive will remain in its current location between the school and the library. The second floor would be the location for the K, 1 and 2 grade band, a two-story reading room, and tech lab facing an interior courtyard. The third floor would have the fab lab, art rooms, grades 3, 4, and 5, and 4th floor would house grades 6, 7, and 8. Massing has been stepped back on both School Street and Harvard Street.

Option 3 - S-H

This option includes the historic building. The design features a three story structure that shares similar floor plans for the ground level as 3 S/Cube. A glass passageway leads to grades K through 2 classrooms in the Historic Building, a reading room and tech lab facing an indoor courtyard leads to a two-story entrance hall visually connected to the cafeteria below and to the floor above. The third floor has two grade bands, grades 3, 4, and 5 which would be in the cube section of the layout and grades 6, 7, and 8 in a diagonal section bridging over to the Historic Building. Designs are in progress for the green space and MDS is working on how to accessibly connect to surrounding spaces. Massing would be lowered and broadened over the entire building due to the connection to and reuse of the Historic Building.

A member of the committee inquired how the indoor courtyard would be maintained. MDS explained that it would be a paved courtyard which would be an extension of the lab space utilizing hard scape and planters in addition to light maintenance grass and compared it to a plaza paved area. The gym, located on the second floor, could have a row of clearstory windows and screened which would both block light for the classrooms, bring natural light into the gym, and a visual connection to the courtyard.

A member of the committee asked if there were plans to have outdoor learning spaces in the raised area. MDS said this would be designed based on the option selected, but expressed that outdoor learning spaces were in all options being considered.

A member of the committee asked if the staircase down to Harvard street that currently exists would be included to maintain access through the site. Sasaki explained that this would not be an option for a number of options as there is too steep a grade change at that location to install an accessible path between spaces.

A member noted potential security concerns regarding street level access or potential unwanted access to the rooftop play area. Sasaki/MDS explained that because of the new lines of sight and the open space that security was not anticipated as an issue. It was suggested that a set of fences and gates similar to pocket parks in New York be considered to restrict access to spaces at night. The design team added that the green space located by the wedge building and the existing Wing C has been extended from 30' wide to 67' wide in this option.

Members discussed preferences between the schemes, with an emphasis placed on the ease of movement around the larger campus. School leadership also noted the importance of maximizing time for learning through shorter transitions between classrooms.

Concerns were expressed regarding the height of the construction and what impact it may have on the neighborhood, particularly along School Street with residences located directly across the street. MDS explained that as the building develops, more consideration will be given to façade articulations that could result in a nicer experience along School Street.

A committee member expressed concern regarding the traffic by Cyprus Street, and how the potential narrowing of School Street would affect traffic in the area. MDS explained that there has not been discussion with the Transportation Department yet but that will be coming.

A member asked if there would be mechanical structures on top of the four-story option. MDS commented there would be some air handlers on the roof. A follow up meeting with the MSBA is needed to determine if mechanical units can be enclosed within the building, though early conversations suggest that the MSBA will not allow it.

A member expressed concerns regarding embodied carbon across options, noting that even if a new building is more efficient, the disposal of existing building materials and operating costs over the life of the building need to be considered when comparing sustainability. Sasaki noted that sustainability of each option will be discussed at length in future meetings.

Leftfield noted that by the next SBC meeting there will be cost information to begin analyzing. Draft cost estimates from two firms are due on September 17th with a final estimate reconciled by the 24th.

The meeting adjourned at 5:30PM

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THE RIGHT CHOICE IN PROJECT MANAGEMENT

JOHN R. PIERCE SCHOOL – BROOKLINE, MA	MEETING MINUTES DRAFT

PIERCE SCHOOL BUILDING COMMITTEE		September 30, 2021
	Location:	Online Zoom Meeting
	Time:	4:00 PM

Name	Assoc.	Present
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 17th and reconciled by September 24th. 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

TO: Director of Capital Planning

FROM: James Marini, Interim Superintendent of Schools, Public Schools of Brookline

Brookline

John R. Pierce School

MSBA Project ID Number: 201800460040

DATE: February 9, 2021

RE: Feasibility Study Agreement (FSA) Budget Revision Request, NUMBER: 1

Pursuant to the Feasibility Study Agreement between the TOWN OF BROOKLINE (the "District") and the MASSACHUSETTS SCHOOL BUILDING AUTHORITY (the "Authority"), the District hereby requests a revision to the Feasibility Study Budget, Exhibit A, dated August 12, 2021, for the John R. Pierce School Project. As required, the District has provided the information outlined in the table below to indicate the Feasibility Study Budget categories (line items) affected, the amounts needed and the reasons for the proposed revision.

The District acknowledges and agrees that it will not seek reimbursement from the Authority for any costs that exceed the already approved line item limits set forth in Exhibit A until after the Authority has accepted this Feasibility Study Budget Revision Request, and the Authority's ProPay system has been adjusted accordingly.

The District further acknowledges and agrees that in accordance with Section 3.3 of the Feasibility Study Agreement, any revisions to the Feasibility Study Budget will not result in an increase to the grant amount set forth in Section 2.1 of the Feasibility Study Agreement.

The District further acknowledges and agrees that the need for these revisions to the Feasibility Study Budget has been identified in the OPM monthly report as required pursuant to the Contract for Owner's Project Management Services between the District and the OPM.

The District further acknowledges and agrees that all of the information contained in this Feasibility Study Agreement Budget Revision Request has been reviewed and approved by the TOWN OF BROOKLINE's School Building Committee, and it further certifies and acknowledges that the funds to pay for the costs associated with these proposed revisions are available as indicated by the signatures noted below.

The Total Budget in the Current Feasibility Study Budget, Exhibit A of the FSA dated August 19, 2021 is 2,000,000.00.

From Class' Code	From Classification Name	To Class' Code	To Classification Name	Budget Revision Amount	Reason for transfer (Attach all supporting documentation, e.g., executed contracts, amendments and or supporting invoices for reimbursable expenses)	Amount Remaining in Other	Ineligible/Cost/Scope Items excluded from the Total Facilities Grant
0004-0000	Other	0001-0000	OPM Feasibility Study/Schematic Design	$225,000	Transfer needed to align FSA budget with the approved OPM contract and scope of services	$575,000	

0004-0000	Other	0002-0000	A&E Feasibility Study/Schematic Design	$344,466	Transfer needed to align FSA budget with the approved A/E contract and scope of services	$230,534	

By signing this Total Project Budget Revision Request, I hereby certify that I have read and understand the terms of this Request and further certify that the information supplied by the District in the tables is true, accurate and complete.

By: **Bernard Greene**

Title: **Chief Executive Officer**

Date:

By signing this Total Project Budget Revision Request, I hereby certify that I have read and understand the terms of this Request and further certify that the information supplied by the District in the tables is true, accurate and complete.

By: **James Marini**

Title: **Interim Superintendent of Schools**

Date:

By signing this Total Project Budget Revision Request, I hereby certify that I have read and understand the terms of this Request and further certify that the information supplied by the District in the tables is true, accurate and complete.

By: **Suzanne Federspiel**

Title: **Chair of the School Committee**

Date: 2-4-2021

MASSACHUSETTS SCHOOL BUILDING AUTHORITY

By: **John F. Jumpe Jr.**

Title: **Director of Project Management**

Date: **3/17/21**

TO: Director of Capital Planning

FROM: Linus J. Guillory Jr., Ph.D., Superintendent of Schools, Public Schools of Brookline

Brookline

John R. Pierce School

MSBA Project ID Number: 201800460040

DATE: August 10, 2021

RE: Feasibility Study Agreement (FSA) Budget Revision Request, NUMBER: 2

Pursuant to the Feasibility Study Agreement between the TOWN OF BROOKLINE (the "District") and the MASSACHUSETTS SCHOOL BUILDING AUTHORITY (the "Authority"), the District hereby requests a revision to the Feasibility Study Budget, Exhibit A, dated August 12, 2020, for the John R. Pierce School Project. As required, the District has provided the information outlined in the table below to indicate the Feasibility Study Budget categories (line items) affected, the amounts needed and the reasons for the proposed revision.

The District acknowledges and agrees that it will not seek reimbursement from the Authority for any costs that exceed the already approved line item limits set forth in Exhibit A until after the Authority has accepted this Feasibility Study Budget Revision Request, and the Authority's ProPay system has been adjusted accordingly.

The District further acknowledges and agrees that in accordance with Section 3.3 of the Feasibility Study Agreement, any revisions to the Feasibility Study Budget will not result in an increase to the grant amount set forth in Section 2.1 of the Feasibility Study Agreement.

The District further acknowledges and agrees that the need for these revisions to the Feasibility Study Budget has been identified in the OPM monthly report as required pursuant to the Contract for Owner's Project Management Services between the District and the OPM.

The District further acknowledges and agrees that all of the information contained in this Feasibility Study Agreement Budget Revision Request has been reviewed and approved by the TOWN OF BROOKLINE's School Building Committee, and it further certifies and acknowledges that the funds to pay for the costs associated with these proposed revisions are available as indicated by the signatures noted below.

The Total Budget in the Current Feasibility Study Budget, Exhibit A of the FSA dated August 12, 2020 is 2,000,000.00.

From Class' Code	From Classification Name	To Class' Code	To Classification Name	Budget Revision Amount	Reason for transfer (Attach all supporting documentation, e.g., executed contracts, amendments and or supporting invoices for reimbursable expenses)	Amount Remaining in Other	Ineligible/Cost/Scope Items excluded from the Total Facilities Grant
0004-0000	Other	0002-0000	A&E Feasibility Study/Schematic Design	$1,650	Transfer needed for survey of interior slab deflection in Wing A of existing school to assist Structural Engineer in determining cause	$228,884	

By signing this Total Project Budget Revision Request, I hereby certify that I have read and understand the terms of this Request and further certify that the information supplied by the District in the tables is true, accurate and complete.

By: **Heather Hamilton**

Title: **Chief Executive Officer**

Date:

By signing this Total Project Budget Revision Request, I hereby certify that I have read and understand the terms of this Request and further certify that the information supplied by the District in the tables is true, accurate and complete.

By: **Linus J. Guillory Jr., Ph.D.**

Title: **Superintendent of Schools**

Date: 9.28.21

By signing this Total Project Budget Revision Request, I hereby certify that I have read and understand the terms of this Request and further certify that the information supplied by the District in the tables is true, accurate and complete.

By: **Suzanne Federspiel**

Title: **Chair of the School Committee**

Date:

MASSACHUSETTS SCHOOL BUILDING AUTHORITY

By:

Title: **Director of Capital Planning**

Date:

TO: Director of Capital Planning

FROM: Linus J. Guillory Jr., Ph.D., Superintendent of Schools, Public Schools of Brookline

Brookline

John R. Pierce School

MSBA Project ID Number: 201800460040

DATE: September 14, 2021

RE: Feasibility Study Agreement (FSA) Budget Revision Request, NUMBER: 3

Pursuant to the Feasibility Study Agreement between the TOWN OF BROOKLINE (the "District") and the MASSACHUSETTS SCHOOL BUILDING AUTHORITY (the "Authority"), the District hereby requests a revision to the Feasibility Study Budget, Exhibit A, dated August 12, 2020, for the John R. Pierce School Project. As required, the District has provided the information outlined in the table below to indicate the Feasibility Study Budget categories (line items) affected, the amounts needed and the reasons for the proposed revision.

The District acknowledges and agrees that it will not seek reimbursement from the Authority for any costs that exceed the already approved line item limits set forth in Exhibit A until after the Authority has accepted this Feasibility Study Budget Revision Request, and the Authority's ProPay system has been adjusted accordingly.

The District further acknowledges and agrees that in accordance with Section 3.3 of the Feasibility Study Agreement, any revisions to the Feasibility Study Budget will not result in an increase to the grant amount set forth in Section 2.1 of the Feasibility Study Agreement.

The District further acknowledges and agrees that the need for these revisions to the Feasibility Study Budget has been identified in the OPM monthly report as required pursuant to the Contract for Owner's Project Management Services between the District and the OPM.

The District further acknowledges and agrees that all of the information contained in this Feasibility Study Agreement Budget Revision Request has been reviewed and approved by the TOWN OF BROOKLINE's School Building Committee, and it further certifies and acknowledges that the funds to pay for the costs associated with these proposed revisions are available as indicated by the signatures noted below.

The Total Budget in the Current Feasibility Study Budget, Exhibit A of the FSA dated August 12, 2020 is 2,000,000.00.

From Class' Code	From Classification Name	To Class' Code	To Classification Name	Budget Revision Amount	Reason for transfer (Attach all supporting documentation, e.g., executed contracts, amendments and or supporting invoices for reimbursable expenses)	Amount Remaining in Other	Ineligible/Cost/Scope Items excluded from the Total Facilities Grant
0004-0000	Other	0002-0000	A&E Feasibility Study/Schematic Design	$26,400	Transfer needed for surveys of Garages A, B, D and E, to locate subsurface utilities and to tie the garage surveys to the surface level surveys to better inform design and pricing.	$202,484	

By signing this Total Project Budget Revision Request, I hereby certify that I have read and understand the terms of this Request and further certify that the information supplied by the District in the tables is true, accurate and complete.

By: **Heather Hamilton**

Title: **Chief Executive Officer**

Date:

By signing this Total Project Budget Revision Request, I hereby certify that I have read and understand the terms of this Request and further certify that the information supplied by the District in the tables is true, accurate and complete.

By: **Linus J. Guillory Jr., Ph.D.**

Title: **Superintendent of Schools**

Date: 9.14.21

By signing this Total Project Budget Revision Request, I hereby certify that I have read and understand the terms of this Request and further certify that the information supplied by the District in the tables is true, accurate and complete.

By: **Suzanne Federspiel**

Title: **Chair of the School Committee**

Date: 9-14-2021

MASSACHUSETTS SCHOOL BUILDING AUTHORITY

By:

Title: **Director of Capital Planning**

Date:

TO: Director of Capital Planning

FROM: Linus J. Guillory Jr., Ph.D., Superintendent of Schools, Public Schools of Brookline

Brookline

John R. Pierce School

MSBA Project ID Number: 201800460040

DATE: October 12, 2021

RE: Feasibility Study Agreement (FSA) Budget Revision Request, NUMBER: 4

Pursuant to the Feasibility Study Agreement between the TOWN OF BROOKLINE (the "District") and the MASSACHUSETTS SCHOOL BUILDING AUTHORITY (the "Authority"), the District hereby requests a revision to the Feasibility Study Budget, Exhibit A, dated August 12, 2020, for the John R. Pierce School Project. As required, the District has provided the information outlined in the table below to indicate the Feasibility Study Budget categories (line items) affected, the amounts needed and the reasons for the proposed revision.

The District acknowledges and agrees that it will not seek reimbursement from the Authority for any costs that exceed the already approved line item limits set forth in Exhibit A until after the Authority has accepted this Feasibility Study Budget Revision Request, and the Authority's ProPay system has been adjusted accordingly.

The District further acknowledges and agrees that in accordance with Section 3.3 of the Feasibility Study Agreement, any revisions to the Feasibility Study Budget will not result in an increase to the grant amount set forth in Section 2.1 of the Feasibility Study Agreement.

The District further acknowledges and agrees that the need for these revisions to the Feasibility Study Budget has been identified in the OPM monthly report as required pursuant to the Contract for Owner's Project Management Services between the District and the OPM.

The District further acknowledges and agrees that all of the information contained in this Feasibility Study Agreement Budget Revision Request has been reviewed and approved by the TOWN OF BROOKLINE's School Building Committee, and it further certifies and acknowledges that the funds to pay for the costs associated with these proposed revisions are available as indicated by the signatures noted below.

The Total Budget in the Current Feasibility Study Budget, Exhibit A of the FSA dated August 12, 2020 is 2,000,000.00.

From Class' Code	From Classification Name	To Class' Code	To Classification Name	Budget Revision Amount	Reason for transfer (Attach all supporting documentation, e.g., executed contracts, amendments and or supporting invoices for reimbursable expenses)	Amount Remaining in Other	Ineligible/Cost/Scope Items excluded from the Total Facilities Grant
0004-0000	Other	0001-0000	OPM Feasibility Study/Schematic Design	$19,800	Transfer needed for reimbursable expense for independent estimating for the PSR and SD Submissions.	$182,684	

By signing this Total Project Budget Revision Request, I hereby certify that I have read and understand the terms of this Request and further certify that the information supplied by the District in the tables is true, accurate and complete.

By: **Heather Hamilton**

Title: **Chief Executive Officer**

Date:

By signing this Total Project Budget Revision Request, I hereby certify that I have read and understand the terms of this Request and further certify that the information supplied by the District in the tables is true, accurate and complete.

By: **Linus J. Guillory Jr., Ph.D.**

Title: **Superintendent of Schools**

Date:

By signing this Total Project Budget Revision Request, I hereby certify that I have read and understand the terms of this Request and further certify that the information supplied by the District in the tables is true, accurate and complete.

By: **Suzanne Federspiel**

Title: **Chair of the School Committee**

Date:

MASSACHUSETTS SCHOOL BUILDING AUTHORITY

By:

Title: **Director of Capital Planning**

Date:

Pierce School Building Committee

Meeting

10/14/2021

PIERCE SCHOOL
Learning & Growing Together.

MDS ARCHITECTS

SASAKI

Agenda

- Schedule - 2 min
- Sustainability Priorities and Update - 20 min
- Costs - 2 min
- Decision Matrix - 60 min
- Public Process Discussion - 10 min

MDS ARCHITECTS SASAKI

Sustainability Priorities

from March workshop

Sustainability Priorities

Zero Carbon Emissions:

- Minimizing loads / energy use
- Electrification of all building systems, including the kitchen
- Maximizing renewable energy generation onsite: PV, geothermal
- Purchasing any additional electricity from renewable resources

Minimizing Embodied Carbon Emissions from Materials:

- Potential reuse of existing building elements
- New construction with low-carbon materials for structure, envelope and interiors

Health and Wellness

- Maximizing daylighting
- Indoor Air Quality, ventilation/filtration, healthy materials, acoustics
- Sustainable transportation, encouraging non- car transportation

Certifications

- Certifications Required by MSBA: LEED or NE-CHPS
- Possible ILFI Zero Carbon: aligns with Town of Brookline and MSBA goals

Sustainability Priorities

Sustainability Features that are the same for all Options

- Certifications Required by MSBA: LEED or NE-CHPS
- Electrification, efficient systems
- Possible parking lot PV canopy, possible geothermal bore fields in park or under existing pickup/dropoff loop
- Health and Wellness: Indoor Air Quality, ventilation/filtration, healthy materials, acoustics
- Sustainable transportation, encouraging non-car transportation

Sustainability Features that vary by Option

- Reduced Energy Demand: Varies based on square footage and envelope
- Geoexchange Potential: Assumes all options except Option 1 have this potential
- Energy Generation
  - Rooftop PV opportunity varies based on roof shape, capacity, HVAC equipment
  - Building-Integrated (Facade or Overhang) PV opportunity varies based on building orientation
- Initial Embodied Carbon
  - Varies based on amounts of concrete and steel reused, demolished or newly constructed
- Health and Wellness: Daylighting varies based on building orientation, geometry, and envelope design

Energy Use

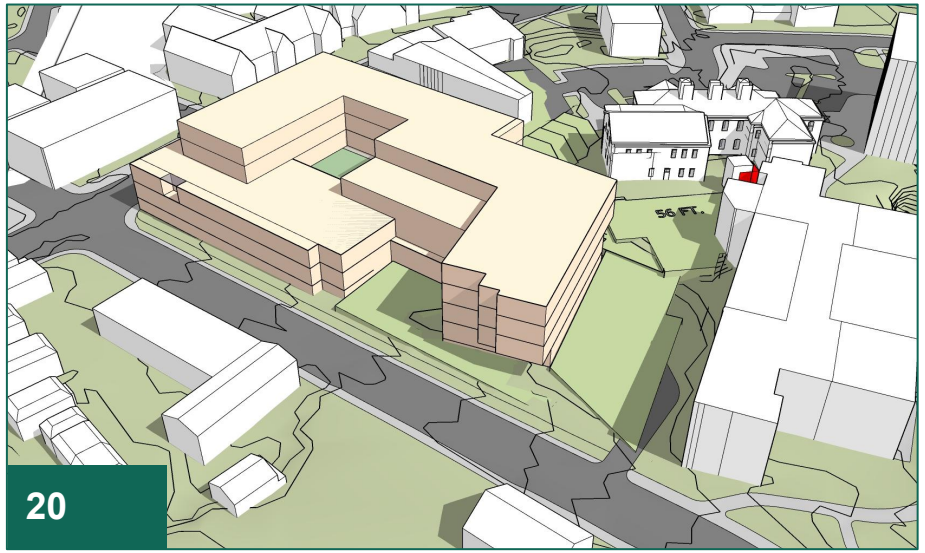
Energy Use Intensity (EUI) Without PV

Energy consumption per square foot, per year (kBTU/sf/year)

EUI 25 or below qualifies the project for MassSave incentives

Option 1

Option 2b



Option 3b

Option 3b-H

Conclusion:
Option 1 consumes the most energy.
New construction options reduce EUI with new envelope, GSHPs.

Total Energy / Year Without PV

Energy consumption per per year (kBTU/year)

Energy use does not include Garage SF

23 x 208,227 SF = 4.7 M kBtu/yr

Option 1

21 x 210,754 SF = 4.4 M kBtu/yr

Option 2b

20 x 151,359 SF = 3.0 M kBtu/yr

Option 3b

21 x 180,672 SF = 3.8 M kBtu/yr

Option 3b-H

Conclusion:
Option 1 consumes the most energy.
New construction options reduce EUI with new envelope, GSHPs.

Energy Use Intensity Summary, Without PV

PS - Option 1

Whole Building EUI

Historic Building	25.5 kBtu/ft²/yr
New Construction	21.12 kBtu/ft²/yr
A B	23.54 kBtu/ft²/yr

PS - Option 2B

Historic Building	25.44 kBtu/ft²/yr
New Construction	19.57 kBtu/ft²/yr
Keep A	24.67 kBtu/ft²/yr

PS - Option 3B

New Construction	19.66 kBtu/ft²/yr

PS - Option 3BH

Historic Building	27.46 kBtu/ft²/yr
New Construction	19.68 kBtu/ft²/yr

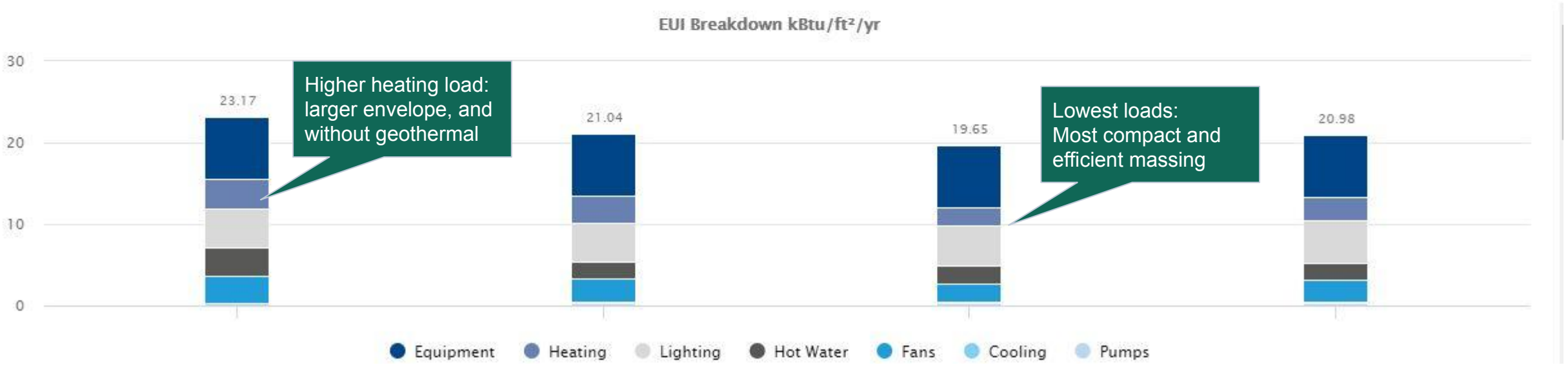
Energy Use Intensity Breakdown, Without PV

PS - Option 1

PS - Option 2B

PS - Option 3B

PS - Option 3BH



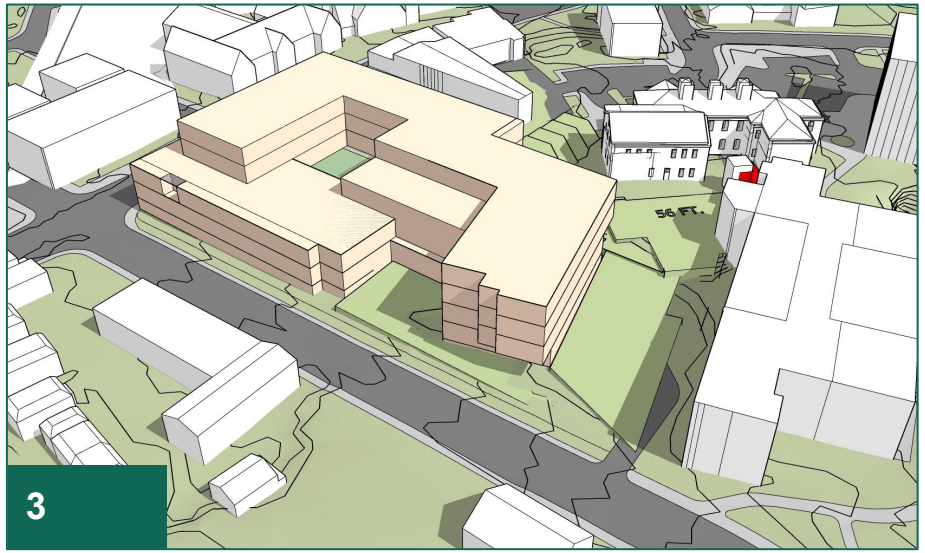
Energy Use Intensity (EUI) With PV

Energy consumption per square foot, per year (kBTU/sf/year)

EUI 25 or below qualifies the project for MassSave incentives

Option 1

Option 2b



Option 3b

Option 3b-H

Conclusion:
Option 1 consumes the most energy and has less opportunity for renewables.
New construction options reduce EUI with new envelope.

Total Energy / Year With PV

Energy consumption per per year (kBTU/year)

Energy use does not include Garage SF

11 x 208,227 SF = 2.3 M kBtu/yr

Option 1

16 x 210,754 SF = 3.4 M kBtu/yr

Option 2b

3 x 151,359 SF = 0.5 M kBtu/yr

Option 3b

7 x SF 180,672 = 1.3 M kBtu/yr

Option 3b-H

Conclusion:
Option 1 consumes the most energy and has less opportunity for renewables.
New construction options reduce EUI with new envelope.

Embodied Carbon

Embodied Carbon

CO2 emissions associated with sourcing new materials and constructing the building **(kgCO2 | kgCO^2/m2)**

Structure:
Conventional steel /concrete
vs.
Hybrid steel/timber structure

Conclusion:
Option 1 has lowest emissions
3b is also favorable due to compact massing

5.9M | 323 steel/concrete, 5 | 280 steel/timber

Option 1

10.4M | 430 steel/concrete, 8.8 | 366 steel/timber

Option 2b

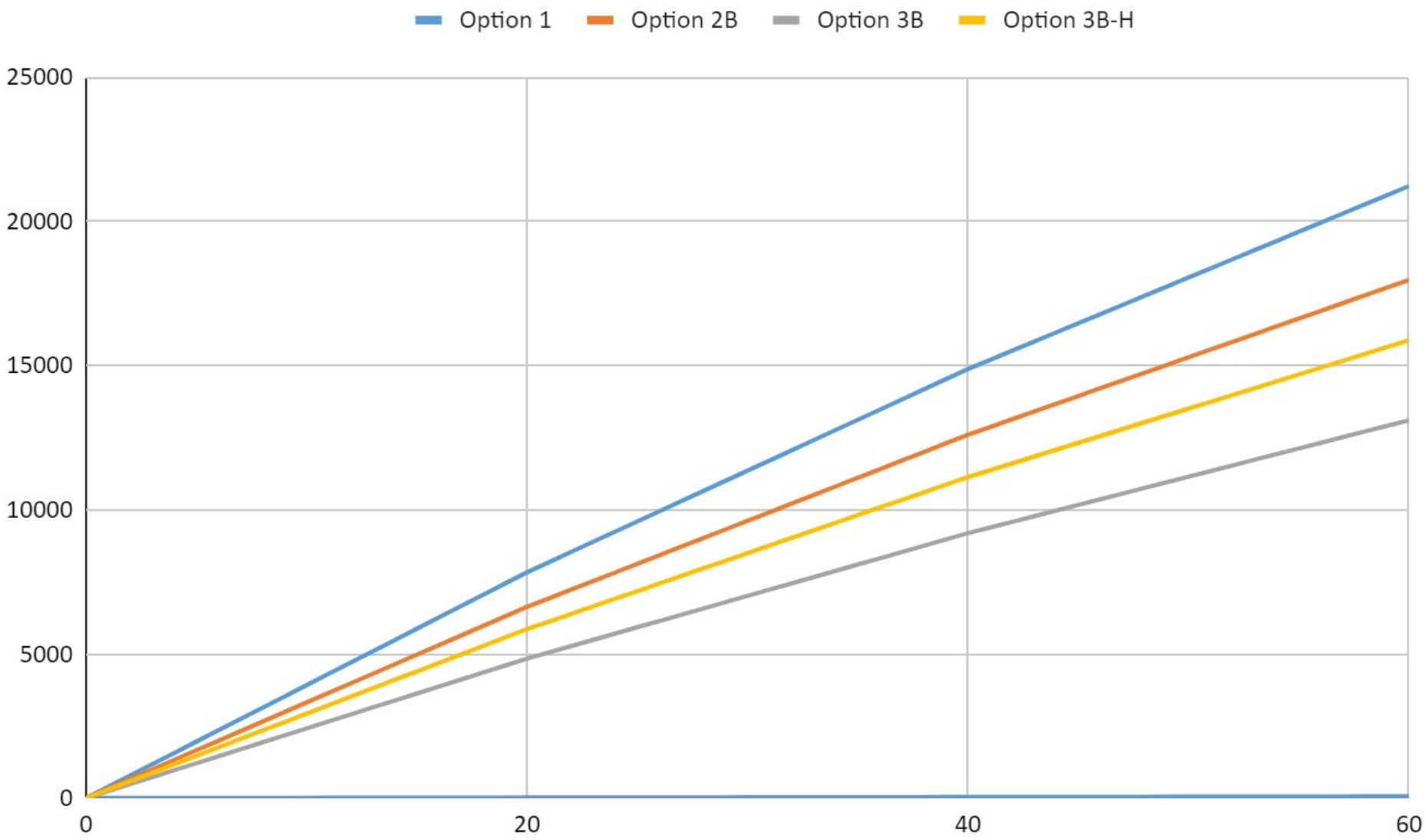
9.9M | 420 steel/concrete, 8.3 | 355 steel/timber

Option 3b

11.4M | 430 steel/concrete, 9.8 | 377 steel/timber

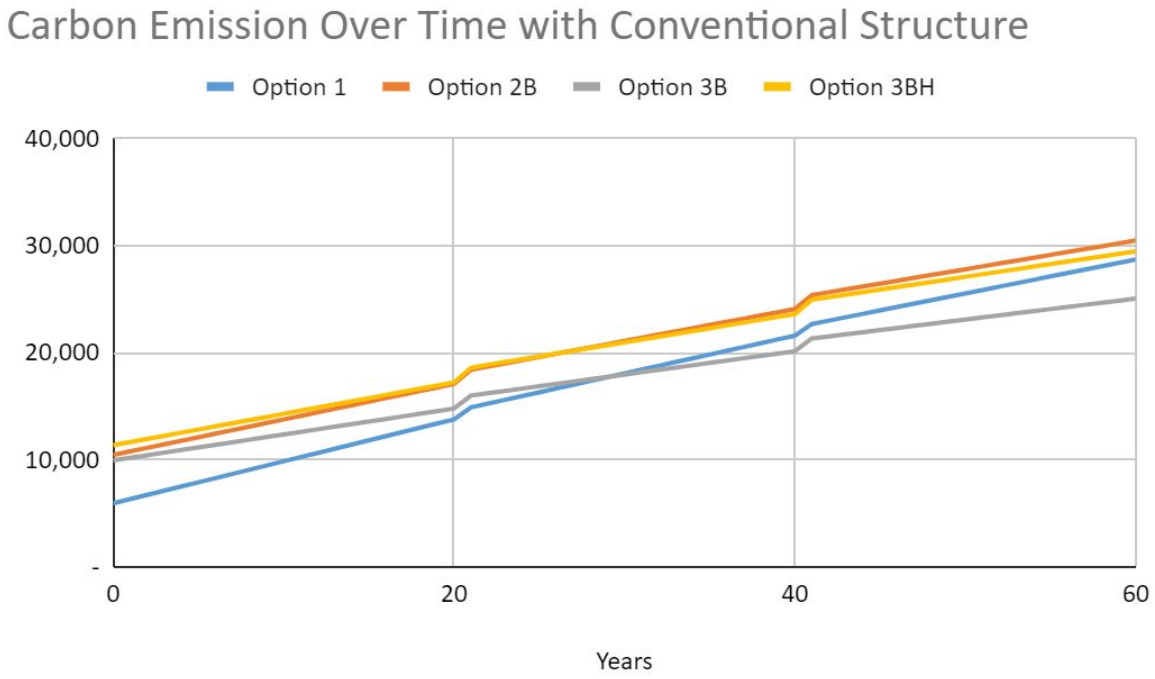
Option 3b-H

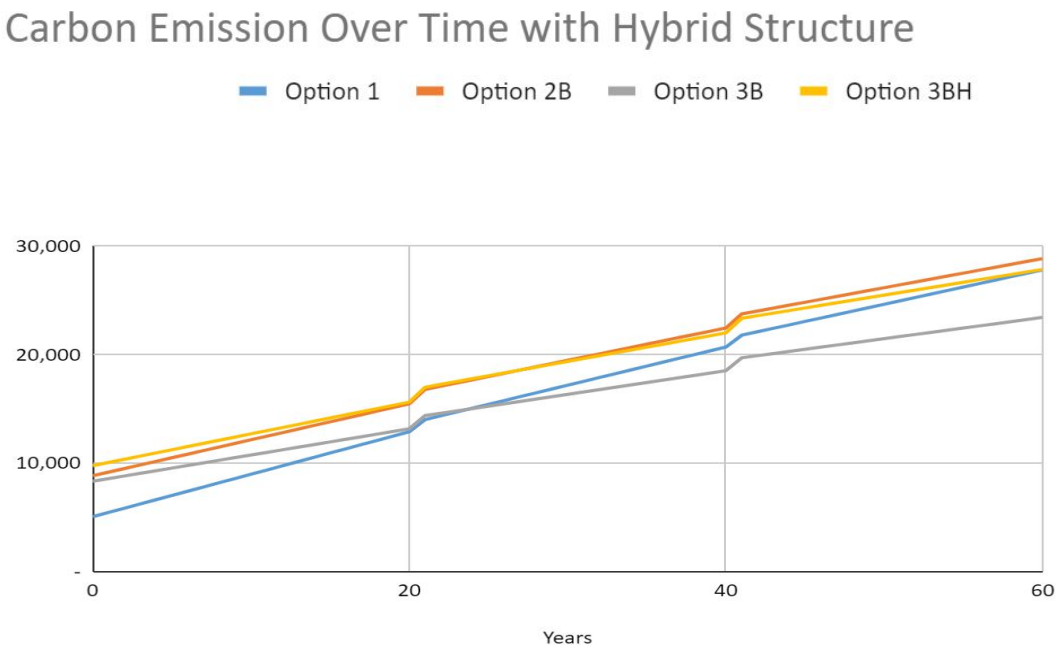
Operation Carbon Emissions



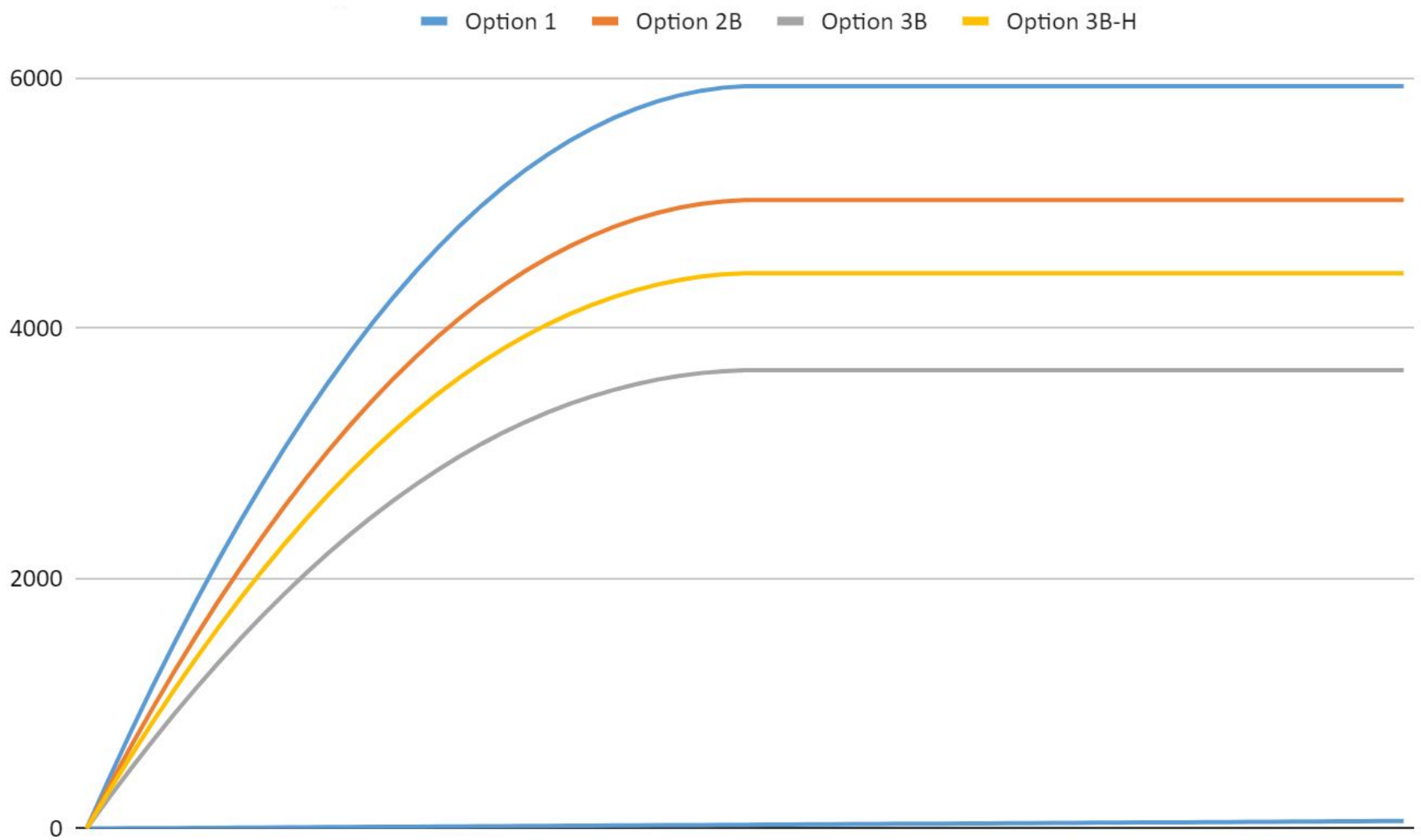
Total Carbon Emissions: Operation + Embodied Carbon
Comparison of the 4 Options

Life cycle includes embodied carbon from initial construction and periodic renovations (every 20 years)
Operational Carbon during the lifespan of the building



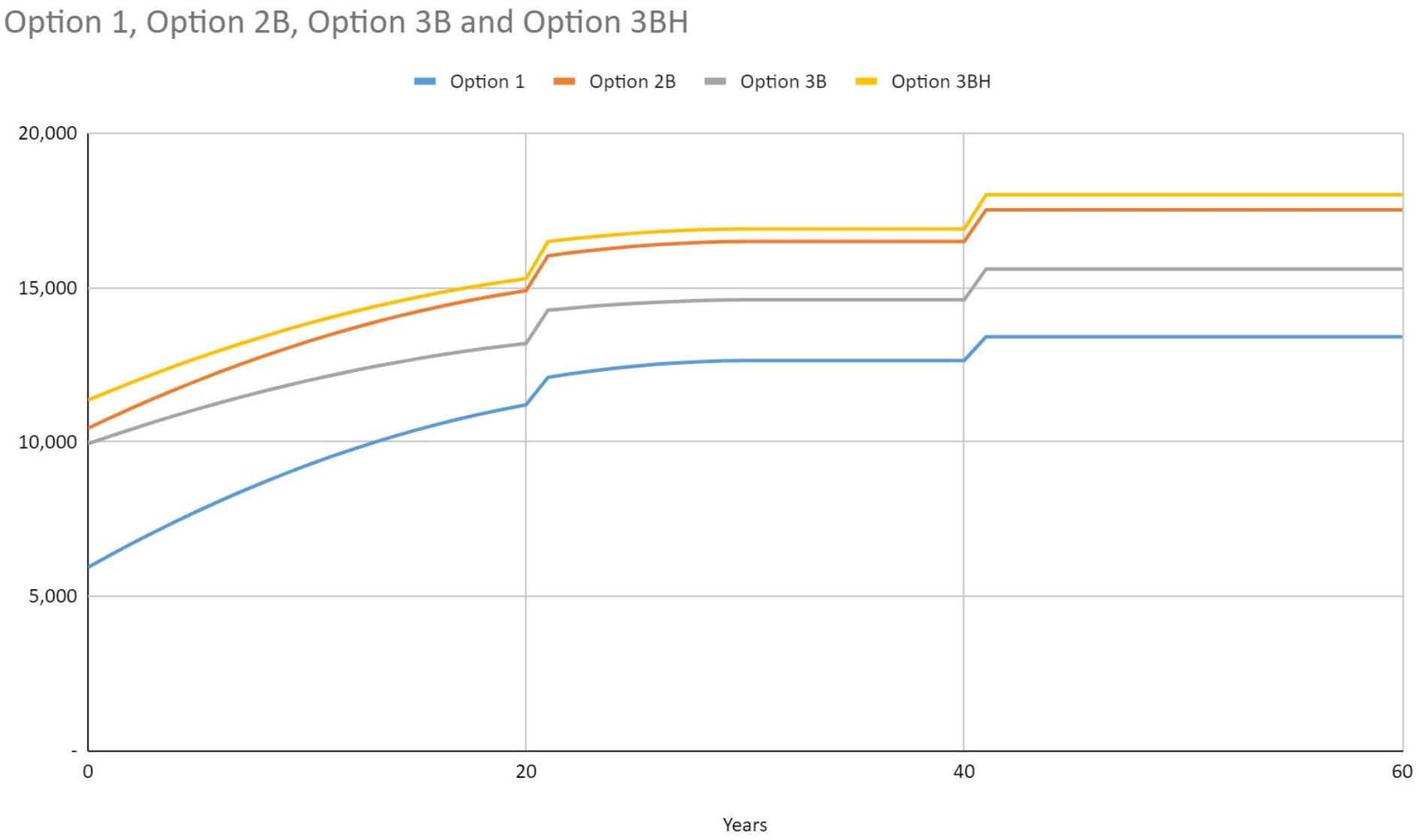


Operation Carbon Emissions with Commitment to Purchase all Electricity from Renewable Sources by 2050



Total Carbon Emissions: Operation + Embodied Carbon
Comparison of the 4 Options

Life cycle includes embodied carbon from initial construction and periodic renovations (every 20 years)
Operational Carbon during the lifespan of the building



Decision Matrix

Pierce School - Preferred Schematic Report - Options Matrix

October 14, 2021

Notes:
1. Each subset of criteria is given a score from 1-5 based on the compliance of items in the subset.
2. Each subset of criteria is prioritized as a portion of 100% and that percentage is the multiplier on that subset.
3. Subtotals are provided for each overall category.
4. Category subtotals are added into a Total Score for each option.

			Best	Better	Good	Fair	Poor
			5	4	3	2	1
			DESIGN OPTIONS				
		Type	REPAIR	ADD/RENO		NEW	
		Option	R	1	2b	3b	3b-H
		Description	Repair/ Code Only	Add/Reno Keep A & B	Add/Reno Keep A	New w/o historic	New w/ historic
Category	Criteria	Criteria Multiplier					
Pedagogy/Program	**Educational Program**	15	1	1	2	5	4
	Ability to map the bubble diagram to the building Media Commons as the Hub of the School Student Travel Time (Horizontal and Vertical Across Building)						
	Indoor/Outdoor Connections	5	1	4	4	3	5
	Secondary Public Entrances at Harvard and School Streets Pre-K Adjacency to Main Entrance and drop off loop Outdoor Early Elementary Playspace Adjacent to Classrooms						
	Outdoor Classroooms and Gardens	5	3	2	4	5	4
	Outdoor space extended from Makerspace Amphitheater						
	Flexibility and Community Use	5	1	1	2	5	5
	Future Flexibility and Growth Ability to Separate off-hours Access to Multi-purpose Room and Gym						
	Pedagogy/Program Subtotal	30	40	50	80	140	130
Town/Neighborhood Impacts	**Costs and Risks**	15	2	2	2	5	4
	Total Project Costs (with historic building renovation for school use only) Total Project Costs (including historic bulding renovation) Constructibility and Risk						
	Other Town-wide Considerations	5	1	1	1	1	1
	Repurpose historic building for other use.						
	Urban Design and Planning	5	1	1	4	5	4
	Pedestrian Permeability Through Site Green Space Continuity Through Site Gathering Space at School Street Shading at Main Entry Universal Design Outdoor thermal comfort						
	Parking and Service Access	5	5	5	2	5	5
	Garage Parking Spaces Relative to Existing Service Access						
	Site Safety	5	2	2	5	5	4
	Traffic and School St. Crossing Safety Off Hours Site Security						
	Town/Neighborhood Impacts Subtotal	35	75	75	90	155	130

Pierce School - Preferred Schematic Report - Options Matrix

October 14, 2021

			Best	Better	Good	Fair	Poor
			5	4	3	2	1

Notes:
1. Each subset of criteria is given a score from 1-5 based on the compliance of items in the subset.
2. Each subset of criteria is prioritized as a portion of 100% and that percentage is the multiplier on that subset.
3. Subtotals are provided for each overall category.
4. Category subtotals are added into a Total Score for each option.

			DESIGN OPTIONS				
		Type	REPAIR	ADD/RENO		NEW	
		Option	R	1	2b	3b	3b-H
		Description	Repair/ Code Only	Add/Reno Keep A & B	Add/Reno Keep A	New w/o historic	New w/ historic
Category	Criteria	Criteria Multiplier					
Architectural Impacts	**Building Interior**	10	2	1	1	4	4
	Organizational Clarity and Wayfinding Space Efficiency Universal Accessibility (All options are MAAB/ADA compliant) 4 story experience						
	Building Exterior	5	3	3	3	4	4
	Massing Along School and Harvard Streets Improved Architectural and Street Level Experience						
	Health and Wellness	5	1	1	2	4	4
	Indoor air quality, ventilation and filtration Healthy building materials and acoustics Maximizes Daylighting and Views						
	Sustainability - Carbon	5	5	5	3	4	3
	Life Cycle Embodied Carbon						
	Sustainability - Energy	10	1	2	3	5	5
	Building envelope Passive strategies - orientation and massing Ground source heat pumps/geoexchange Photovoltaic Energy Generation						
	Architectural Impact Subtotal	35	75	75	80	150	145
	Total Score	100	190	200	250	445	405