Project Management | SMMA

Project Minutes

Project:	Stoneham High School Feasibility Study	Project No.:	20033
Prepared by:	Joel Seeley	Meeting Date:	12/7/2020
Re:	School Building Committee Meeting	Time:	6:00pm
Location:	Remote Participation	Meeting No:	15
Distribution:	Attendees (MF)		

Attendees:

PRESENT	NAME	AFFILIATION	VOTING MEMBER
Attended Remote	Marie Christie	Co-Chair, School Building Committee	**Voting Member**
Attended Remote	David Bois	Co-Chair, School Building Committee; Community Member with Architecture Experience	**Voting Member**
Attended Remote	Nicole Nial	School Committee Member	**Voting Member**
Attended Remote	Raymie Parker	Chair Select Board	**Voting Member**
		Community Member with Building Commissioner Experience	**Voting Member**
Attended Remote	Douglas Gove	Community Member with Engineering Experience	**Voting Member**
Attended Remote	Stephen O'Neill	Community Member with Engineering Experience	**Voting Member**
Attended Remote	Josephine Thomson	Community Member	**Voting Member**
Attended Remote	Jeanne Craigie	Town Moderator	**Voting Member**
Attended Remote	Lisa Gallagher	Community Member, School Secretary, Past member of Middle School Building Committee	**Voting Member**
Attended Remote	Sharon Iovanni	Community Member	**Voting Member**
Attended Remote	Cory Mashburn	Community Member, Finance and Advisory Board	**Voting Member**
Attended Remote	Paul Ryder	Community Member with Construction Experience	**Voting Member**
Attended Remote	David Pignone	Athletic Director, Member knowledgeable in educational mission and function of facility	**Voting Member**
Attended Remote	Kevin Yianacopolus	Local Official responsible for Building Maintenance	**Voting Member**
Attended Remote	Dennis Sheehan	Town Administrator / MCPPO Certified	Non-Voting Member
Attended Remote	John Macero	Superintendent of Schools, Secretary of School Building Committee	Non-Voting Member
Attended Remote	Bryan Lombardi	Stoneham High School Principal	Non-Voting Member
Attended Remote	Brian McNeil	Facilities Director	Non-Voting Member
Attended Remote	Susan McPhee	Spark Energy Conservation	
Attended Remote	Vamshi Gooje	Thornton Tomasetti	
Attended Remote	Brooke Trivas	Perkins and Will	
Attended Remote	Patrick Cunningham	Perkins and Will	
Attended Remote	Leo Liu	Perkins and Will	
Attended Remote	David Warner	Warner Larson	
Attended Remote	Ed Dolan	BALA Consulting Engineers	
Attended Remote	Joel Seeley	SMMA	

1000 Massachusetts Avenue
Cambridge, MA 02138
617.547.5400

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Item #	Action	Discussion
15.1	Record	Call to Order, 6:00 PM, meeting opened by roll call.
15.2	Record	In accordance with the executive order issued by the Governor on March 10, 2020, this meeting will be held via video conference and a recording of such will be posted on the Town's website.
15.3	Record	A motion was made by S. Iovanni and seconded by N. Nial to approve the 11/30/20 School Building Committee meeting minutes. No discussion, motion passed unanimous by roll call vote.
15.4	Record	J. Seeley reviewed the Budget Status Report, dated 11/30/20, attached.
15.5	J. Seeley	J. Seeley reviewed Warrant No. 6, attached. A motion was made by R. Parker and seconded by J. Craigie to approve Warrant No. 6. No discussion, motion passed unanimous by roll call vote. J. Seeley to forward Warrant No. 6 to D. Bois for signature.
15.6	Committee	J. Seeley distributed and reviewed the Draft Schematic Design Phase Meetings and Agenda Schedule, attached. Committee Discussion: 1. N. Nial indicated Annual Town Meeting is 5/3/21, the SSBC meeting will need to be moved to 5/4/21. The Committee will review for the next Committee meeting.
15.7	J. Macero	J. Macero to review if there is a Pre-K Guideline that the proposed Pre-K program can be compared to. *(from prior meeting)*
15.8	J. Macero	J. Macero to review and provide direction on how close the middle school is to capacity and if it will need the space for the potential District Offices in the future? *(from prior meeting)*
15.9	B. Trivas	B. Trivas to determine the cost impact of relocating the Football/Track complex versus keeping the Football/Track complex in its current location. *(from prior meeting)*
15.10	B. Trivas	B. Trivas to calculate the amount of parking spaces needed to be dedicated for the PreK parents to park and walk their children into the building. *(from prior meeting)*
15.11	D. Warner	D. Warner to review the Zoning Bylaw for the minimum required amount of parking spaces. *(from prior meeting)*
15.12	J. Seeley	J. Seeley to break out the costs in a series of categories: Base High School Project followed by a listing of the Community Related Enhancements such as the synthetic

Item #	Action	Discussion
		playfields, concession/locker room building, traffic signals, PreK Program, District Offices, Larger Auditorium, Larger Gymnasium, District Kitchen. *(from prior meeting)*
15.13	Committee	The Committee to review the draft Options Evaluation Form and email J. Seeley any modifications or additional factors to be used in evaluating each option. *(from prior meeting)*
15.14	PR Subcommittee D. Sheehan	The PR Subcommittee will review Town policies related to creating a Project Facebook page with D. Sheehan. *(from prior meeting)*
15.15	Record	D. Sheehan introduced S. McPhee, E. Dolan and V. Gooje to the Committee. D. Sheehan, P. Cunningham, E. Dolan, S. McPhee, V. Gooje and J. Seeley presented the Zero Net Energy Strategy, attached. Committee Discussion: 1. R. Parker asked if the ZNE Capital Costs are included in the current cost estimates for each Option? *P. Cunningham indicated yes, the ZNE Capital Costs are included in the current cost estimates for each Option*. 2. R. Parker asked what does the MSBA Minimum Project Baseline mean with respect to reimbursement? *J. Seeley indicated the MSBA Minimum Project Baseline is a project that meets the minimum energy performance that the MSBA requires in order to receive reimbursement. It does meet the level required for the additional 2% reimbursement*. 3. J. Craigie asked how much of the parking lots do the PV car canopies cover? *P. Cunningham indicated the canopies cover approximately three-quarters of the parking lots. The column supports are centered between the parking rows and do not reduce the amount of spaces*. 4. J. Craigie asked if the PV canopies can be damaged by vehicles? *S. McPhee indicated the base of the column supports are concrete and are centered between the parking rows to be out of the way of moving vehicles*. 5. J. Craigie asked what is the life expectancy of the PV panels? *S. McPhee indicated the PPA is for 20 years, the panels will last longer, between 30-35 years. After the 20-year PPA agreement expires, the Town will have the opportunity to purchase the panels for a nominal amount*. 6. D. Sheehan indicated the PPA would be brought to Town Meeting for approval.

Item #	Action	Discussion
		7. R. Parker asked if Eversource provides incentive rebates for PV systems? *D. Sheehan indicated the incentive rebates would be thru the MassSave program, which Eversource is a member of, based on the EUI*. 8. S. Iovanni asked if any of the Options have better energy performance than the others? *P. Cunningham indicated all the Options can obtain the additional 2% MSBA reimbursement and all can achieve the 25 EUI, some with more refinement than others*. 9. D. Sheehan indicated the project, once completed, may see elevated use, which may impact the projected Life Cycle Savings.
15.16	P. Cunningham D. Warner	P. Cunningham presented and reviewed Site Plans, Floor Plans, Building Sections and Massing Studies for New Construction Option 4B1 and 4B2, attached. Committee Discussion: 1. P. Cunningham to review shifting the Pre-K entry closer to the parking lot. *(from prior meeting)* *2.* D. Warner to provide construction and maintenance costs comparing synthetic and natural turf fields. *(from prior meeting)* 3. S. Iovanni asked if B. Lombardi could provide feedback on Options 4B1 and 4B2 from an educational perspective? *B. Lombardi indicated preference for Option 4B1, which presents itself as equally representing academics, arts and athletics by having the auditorium in the wing. There is also potential for more dynamic corridors on the upper floors with the embedded gymnasium and clear access to the playing fields from the PE spaces can be provided for in Option 4B1*. 4. S. O'Neill indicated preference for Option 4B1, which provides greater opportunity for scale and massing at the front of the building. 5. D. Bois asked if public access can be controlled to the rest of building in Option 4B1, when the Gymnasium is open to the public off-hours? *P. Cunningham explained how the building can be segregated thru doors and gates to control public access*. 6. D. Bois asked if there are sufficient means of egress from the Gymnasium in Option 4B1? *P. Cunningham indicated he will review but believes the required amount can be accommodated*.

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Item #	Action	Discussion
		7. D. Bois asked if D. Pignone could provide feedback on Options 4B1 and 4B2 from an athletics perspective? *D. Pignone indicated Option 4B1 will work, given the public access control P. Cunningham described and with the locker rooms having direct access to the exterior*. 8. J. Macero indicated Option 4B1 represents the inclusive culture of Stoneham High School with access to academic spaces, arts and auditorium, beautiful playing fields and outdoor green spaces. 9. M. Christie indicated preference for Option 4B1, which provides opportunity for glass and light between the upper floor academic corridors and the Gymnasium. 10. J. Craigie indicated preference for Option 4B1, but is concerned if there will be dark and unlit pathways that the students will have to traverse going to the playing fields from the PE spaces. *P. Cunningham indicated the pathways will be well lit*. 11. D. Pignone asked if the Gymnasium has a suspended jogging/walking track? *B. Trivas indicated yes*. 12. D. Bois indicated preference for Option 4B1, having a plan that supports academics, providing opportunities for parking and playfield layout, and having least amount of construction impact. A motion was made by J. Craigie and seconded by N. Nial to approve Option 4B1 for the 4B series. No discussion, motion passed unanimous by roll call vote.
15.17	Record	J. Seeley reviewed the Detailed Construction Cost Estimate, Project Cost, Construction Cost Comparison, Reimbursement and Cost to Stoneham Summaries for each Option, attached.
15.18	J. Seeley B. Trivas D. Sheehan	J. Seeley reviewed the outline for the presentations for the 12/9/20 Community Forum No. 4 and the 12/15/20 Tri-Board Meeting. J. Seeley and B. Trivas to develop the presentations. Committee Discussion: 1. D. Bois asked if the Zero Net Energy Strategy will be included in the presentations? *P. Cunningham indicated yes, but a more summarized version*. 2. R. Parker asked if a memo can be provided to the Tri-Board members defining the expectation for the meeting. *D. Sheehan and J. Seeley to develop a memo to send to the Tri-Board*.

Item #	Action	Discussion
		3. R. Parker asked if the Tri-Board members can receive a copy of the presentation prior the meeting? *J. Seeley to forward a copy of the presentation prior to the meeting*. 4. J. Thomson asked if the perspective renderings will be included in the presentation? *B. Trivas indicated yes*.
15.19	PR Subcommittee	**Subcommittee Updates** **Public Relations Subcommittee** 1. S. Iovanni reviewed the Community Forum No. 4 Press Release and the draft Community-Wide Survey No. 2, attached. PR Subcommittee will provide the results of the survey at the 12/16/20 Committee meeting. **Green Building Initiatives** 1. J. Seeley reviewed the 11/9/20 and 11/23/20 Green Building Initiatives Committee Meeting Minutes, attached. **CM at Risk Prequalification Committee** 1. J. Seeley reviewed the 12/1/20 Notice to Proceed with the CM at Risk Delivery Method from the Office of the Inspector General, attached, and indicated eleven CM at Risk Qualification packages have been submitted.
15.20	Record	**Committee Questions** - none
15.21	J. Macero B. Lombardi J. Seeley	**Old or New Business** 1. J. Seeley reviewed emails from community members on the Community Garden, attached. 2. J. Craigie asked if photographs can be taken during the Billerica HS and Winthrop HS tours? *J. Macero indicated yes, photographs will be taken and shared with the Committee*. 3. B. Lombardi will forward photographs from the Fall 2019 tour of Billerica HS to J. Seeley to forward to the Committee.
15.22	Record	**Public Comment** - none
15.23	Record	Next **SSBC Meeting: December 16, 2020 at 7:00 pm.**
15.24	Record	A Motion was made by S. Iovanni and seconded by R. Parker to adjourn the meeting. No discussion, motion passed unanimous by roll call vote.

Attachments: Agenda, Budget Status Report, Warrant No. 6, Draft Schematic Design Phase Meetings and Agenda Schedule, Detailed Construction Cost Estimate, Project Cost, Construction Cost Comparison, Reimbursement and Cost to Stoneham Summaries for each Option, Community Forum No. 4 Press Release, Draft Community-Wide Survey No. 2, 11/9/20 and 11/23/20 Green Building Initiatives Committee Meeting Minutes, 12/1/20 Notice to Proceed with the CM at Risk Delivery Method, Emails from community members on the Community Garden, Powerpoint

The information herein reflects the understanding reached. Please contact the author if you have any questions or are not in agreement with these Project Minutes

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Agenda

Project:	Stoneham High School Feasibility Study	Project No.:	20033
Re:	School Building Committee Meeting	Meeting Date:	12/7/2020
Prepared by:	Joel Seeley	Meeting Time:	**6:00 PM**
Location:	Remote Participation		
Distribution:	Attendees (MF)		

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1. Call to Order
2. Approval of Minutes
3. Approval of Invoices and Commitments
4. Schedule and Budget Update
5. ZNE Approach
    - Process
    - Systems
    - Solar Photovoltaic
    - Energy Modeling
    - First Costs and Operating Costs
6. Design Options Update
7. Review Design Options Cost Models
8. Preliminary Options Evaluation
9. Prepare for Community Forum No. 4 and Tri-Board Meeting
10. Subcommittee Updates
11. New or Old Business
12. Committee Questions
13. Public Comments
14. Next Meeting: December 16, 2020
15. Adjourn

Join GoToMeeting:
https://global.gotomeeting.com/join/517001509

Dial-In: +1 (224) 501-3412

Access Code: 517-001-509

1000 Massachusetts Avenue
Cambridge, MA 02138
617.547.5400

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Stoneham High School Feasibility Study
Stoneham, Massachusetts

FEASIBILITY STUDY BUDGET STATUS REPORT

ProPay Code	Description	Total Project Budget	Authorized Changes	Revised Total Budget	Total Committed	% Comtd to Date	Budget Balance	Actual Spent to Date	% Spent to Date	Projected Expenditure/ Commitments	Balance to Spend
	FEASIBILITY STUDY AGREEMENT										
0001-0000	**OPM Feasibility Study/Schematic Design**	$ 187,500.00	$ (57,500.00)	$ 130,000.00	$ 130,000.00	100%	$ -	$ 35,000.00	27%	$ 95,000.00	$ 95,000.00
0002-0000	**A/E Feasibility Study/Schematic Design**	$ 465,000.00	$ (45,000.00)	$ 420,000.00	$ 420,000.00	100%	$ -	$ 100,000.00	24%	$ 320,000.00	$ 320,000.00
0003-0000	**Environmental & Site**	$ 60,000.00	$ 100,000.00	$ 160,000.00	$ 71,733.64	45%	$ 88,266.36	$ 32,450.00	45%	$ 39,283.64	$ 127,550.00
0004-0000	**Other**	$ 37,500.00	$ 2,500.00	$ 40,000.00	$ 8,312.36	21%	$ 31,687.64	$ 614.08	7%	$ 7,698.28	$ 39,385.92
	SUBTOTAL	**$ 750,000.00**		**$ 750,000.00**	**$ 630,046.00**		**$ 119,954.00**	**$ 168,064.08**	**27%**	**$ 461,981.92**	**$ 581,935.92**

** *Committed from Other*	e	Amount	
Stoneham Independent	$	230.81	Advertisement in Stoneham Independent for Designer Procurement
Andrew T. Johnson / SMMA	$	383.27	Designer Proposal Production for Designer Procurement
MassSave ZNE Expert ESA	$	7,500.00	Cost Share for Thornton Tomasetti
Stoneham Independent	$	198.28	Advertisement in Stoneham Independent for CM-R Procurement - RFQ
	$	**8,312.36**	

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Warrant No. 6

Project:	Stoneham High School, Stoneham, Massachusetts	Project No.:	20033
Prepared by:	Joel G. Seeley, AIA	Date:	12/7/2020

School Building Committee for the Stoneham High School hereby authorizes to draw against funds for the obligations incurred for value received in services and for materials shown below:

Vendor	Invoice No.		Invoice Date	Invoice Amount	ProPay Code	Balance After Invoice
SMMA	53997		11/30/2020	$ 7,000.00	0001-0000	$ 88,000.00
Perkins & Will	0179554		12/03/2020	$ 25,000.00	0002-0000	$ 295,000.00
Perkins & Will	0179554	AM1	12/03/2020	$ 16,417.50	0003-0000	$ 2,970.00
Perkins & Will	0179554	AM5	12/03/2020	$ 4,166.14	0003-0000	$ 0.00
Stoneham Independent	Legal Ad 201107		11/11/2020	$ 198.28	0004-0000	$ 39,385.92
			Total	**$ 52,781.92**		

_____	_____
Marie Christie	David Bois
_____	_____
Nicole Nial	Raymie Parker
_____	_____
	Douglas Gove
_____	_____
Stephen O'Neill	Josephine Thomson
_____	_____
Jeanne Craigie	Lisa Gallagher
_____	_____
Sharon Iovanni	Cory Mashburn
_____	_____
Paul Ryder	David Pignone

Approved on _____

1000 Massachusetts Avenue
Cambridge, MA 02138
617.547.5400

www.smma.com

Perkins&Will

Invoice

December 3, 2020
Project No: 153010.000
Invoice No: 0179554

Dennis Sheehan
Town of Stoneham
Town Hall
35 Central St
Stoneham, MA 02180

Stoneham High School - FS-SD

Professional Services: through November 27, 2020

Fee

Billing Phase	Fee	Percent Complete	Earned	Previous Fee Billing	Current Fee Billing
Feasibility Phase	175,000.00	71.4286	125,000.00	100,000.00	25,000.00
Schematic Design	245,000.00	0.00	0.00	0.00	0.00
Amendment #1	0.00	0.00	0.00	0.00	0.00
Survey/Wetlands-Nitsch	27,500.00	100.00	27,500.00	27,500.00	0.00
Phase 1 ESA	2,970.00	0.00	0.00	0.00	0.00
Geotechnical Services-Lahlaf	16,417.50	100.00	16,417.50	0.00	16,417.50
Hazardous Materials-UEC	4,950.00	100.00	4,950.00	4,950.00	0.00
Amendment #2	0.00	0.00	0.00	0.00	0.00
Traffic Analysis-Nelson Nygaard	18,150.00	0.00	0.00	0.00	0.00
Amendment #3	0.00	0.00	0.00	0.00	0.00
Hydrant Flow Testing-AE	1,760.00	0.00	0.00	0.00	0.00
Amendment #4	0.00	0.00	0.00	0.00	0.00
Traffic Analysis-Nelson Nygaard	-18,150.00	0.00	0.00	0.00	0.00
Amendmant #5	0.00	0.00	0.00	0.00	0.00
Traffic Analysis-Nelson Nygaard	4,166.14	100.00	4,166.14	0.00	4,166.14
Amendment #6	0.00	0.00	0.00	0.00	0.00
Tarffic Analysis - Vanasse	13,970.00	0.00	0.00	0.00	0.00
Total Fee	491,733.64		178,033.64	132,450.00	45,583.64

Total Fee **45,583.64**

REMIT PAYMENTS TO Perkins&Will, Inc.
PO Box 71181
Chicago, IL 60694-1181

WIRE/ACH TO BMO Harris Bank
ABA# 071000288, Acct# 3769601
SWIFT HATRUS44

TERMS Net 30 Days

Project	153010.000	Stoneham High School - FS/SD	Invoice	0179554

Total this Invoice **$45,583.64**

Outstanding Invoices

Number	Date	Balance
0178394	10/9/2020	107,450.00
0178789	11/2/2020	25,000.00
Total		**132,450.00**

Total Now Due **$178,033.64**

REMIT PAYMENTS TO Perkins&Will, Inc.
PO Box 71181
Chicago, IL 60694-1181

WIRE/ACH TO BMO Harris Bank
ABA# 071000288, Acct# 3769601
SWIFT HATRUS44

TERMS Net 30 Days

LGCI
Lahlaf Geotechnical Consulting, Inc.

100 Chelmsford Road
Suite 2
Billerica, MA 01862
Phone: (978) 330-5912
Fax: (978) 330-5056
E-mail: LGCI@LGCinc.net

Invoice

Invoice for Period Ending:	8/11/2020
Invoice No.:	2022-01
Date:	8/11/2020

Bill To

Perkins + Will
Ms. Brook Trivas
225 Franklin Street
Suite 1100
Boston, MA 02110

Terms	Client No.	Project Name	Project Number	Location
Net 30	0940	Prop. Stoneham High School	2022	Stoneham, MA

Description	Qty	Rate	Amount
LGCI Proposal No. 20051-Rev.1 Desk Review - August 2020			
LGCI Proposal No. 20051-Rev.1 $14,925.00 Amount Invoiced to date $0.00 Current LGCI Invoice No. 2022-01 $3,000.00 Balance remaining from Budget amount $11,925.00			
Tasks 1 to 3 Review Existing Information and Prepare Letter Report	1	3,000.00	3,000.00
Make check payable to Lahlaf Geotechnical Consulting, Inc.			
Total due this invoice			$3,000.00

Balance Due $3,000.00

LGCI
Lahlaf Geotechnical Consulting, Inc.

Invoice

Invoice for Period Ending:	10/1/2020
Invoice No.:	2022-02
Date:	10/1/2020

100 Chelmsford Road
Suite 2
Billerica, MA 01862
Phone: (978) 330-5912
Fax: (978) 330-5056
E-mail: LGCI@LGCinc.net

Bill To

Perkins + Will
Ms. Brooke Trivas
225 Franklin Street
Suite 1100
Boston, MA 02110

Terms	Client No.	Project Name	Project Number	Location
Due on receipt	0940	Prop. Stoneham High School	2022	Stoneham, MA

Description	Qty	Rate	Amount
LGCI Proposal No. 20051-Rev.1 Preliminary Explorations - September 2020			
LGCI Proposal No. 20051-Rev.1 $14,925.00 Amount Previously Invoiced $3,000.00 Current LGCI Invoice No. 2022-01 $11,925.00 Amount Invoiced to date $14,925.00 Balance remaining from Budget amount $0.00			
Tasks 4a to 8			
Prepare Boring Location Plan for Review	1	160.00	160.00
Mark Boring Locations in the Field	1	650.00	650.00
Utility Clearance	1	175.00	175.00
Coordinate with and Engage Subcontractor to Perform Borings	1	4,770.00	4,770.00
Prevailing Wages for Subcontractor	1	1,700.00	1,700.00
LGCI Engineer to Observe Borings	1	2,200.00	2,200.00
Laboratory Testing	1	370.00	370.00
Boring Logs and Preliminary Report	1	1,900.00	1,900.00
Make check payable to Lahlaf Geotechnical Consulting, Inc.			
Total due this invoice			$11,925.00

Balance Due $11,925.00

NELSON NYGAARD

October 30, 2020
Project No: 920508.001
Invoice No: 78528

Perkins + Will - Boston
Perkins + Will
Attn: Dana Anderson
55 Court Street
Second Floor
Boston, MA 02108

Project 920508.001 STONEHAM High School Feasibility Study

Professional Services from August 29, 2020 to October 2, 2020

Phase 00.00 Environmental Testing: Traffic Consultant Services

Fee

Total Fee	16,500.00			
Percent Complete	22.9545	Total Earned	3,787.50	
		Previous Fee Billing	0.00	
		Current Fee Billing	3,787.50	
		Total Fee		**3,787.50**
			Total this Phase	**$3,787.50**

Billing Limits	**Current**	**Prior**	**Billed To Date**
Total Billings	3,787.50	0.00	3,787.50
Limit			16,500.00
Remaining			12,712.50

Total this Invoice **$3,787.50**

REMITTANCE ADVICE

BY REGULAR MAIL OR COURIER:
Pay to: Nelson Nygaard Consulting Assoc., Inc.
PO BOX 71181
Chicago, IL 60694
Tel: 415-284-1544 **Tax ID:** 58-2592493

ACH WIRE INSTRUCTIONS:
Beneficiary Bank: BMO Harris Bank
Routing Number: 071000288 **Account Number:** 3543154
Beneficiary: Nelson Nygaard Consulting Assoc., Inc.
Beneficiary Info: Invoice & Project No. **Advice e-mail:** cash.receipts@perkinswill.com

SMMA

Mr. Dennis Sheehan
Town Administrator
Town of Stoneham
35 Central St
Stoneham, MA 02180

November 30, 2020
Project No: 20033.00
Invoice No: 0053997

Project 20033.00 Stoneham High School OPM Services

Professional Services from November 1, 2020 to November 27, 2020

Fee

Billing Phase	Fee	Percent Complete	Earned	Previous Fee Billing	Current Fee Billing
Feasibility Study	56,000.00	75.00	42,000.00	35,000.00	7,000.00
Schematic Design	49,000.00	0.00	0.00	0.00	0.00
Total Fee	105,000.00		42,000.00	35,000.00	7,000.00
		Total Fee			**7,000.00**
				Total this Invoice	**$7,000.00**

Outstanding Invoices

Number	Date	Balance
0053146	6/30/2020	7,230.81
0053302	7/28/2020	7,000.00
0053473	9/3/2020	7,383.27
0053638	10/8/2020	7,000.00
0053816	11/2/2020	7,000.00
Total		**35,614.08**

Billings to Date

	Current	Prior	Total
Fee	7,000.00	35,000.00	42,000.00
Expense	0.00	614.08	614.08
Totals	**7,000.00**	**35,614.08**	**42,614.08**

Authorized By: Joel Seeley

Stoneham Independent

Woburn Daily Times, Inc., 1 Arrow Drive, Woburn MA 01801, 781-933-3700

INVOICE

Bill To	Town of Stoneham
Attn:	April Lanni, Procurement Officer
Address 1	35 Central Street
Address 2	
City	Stoneham State MA ZIP 02180

PO#

Legal Ad# **201107**

Billing Key Town of Stoneham RFQ: Construction Management at Risk Services for Stoneham High School project

Run 1 **11/11/2020** **Run 2** **Run 3** **Run 4**

# of Inches **10.3** **# of Runs** **1**

Cost **198.28** **Notary Fee** **Total Cost** **$198.28**

Payment Date **Payment** **Balance Due** **$198.28**

LEGAL NOTICE

TOWN OF STONEHAM

Request for Qualifications for Construction Management at Risk Services for the Stoneham High School project. The Town of Stoneham requests that qualified and experienced firms submit a Statement of Qualifications (SOQ) and required information to the Town of Stoneham no later than 2:00 PM EST, December 2, 2020. The CM at Risk procurement is conducted pursuant to M.G.L. 149A, contained in Chapter 193 of the Acts of 2004. This Request for Qualifications ('RFQ') is the first phase of a two-phase procurement process as set forth in M.G.L. 149A. The Town of Stoneham is prequalifying firms interested in providing public CM at Risk services for the project through the RFQ process. The Town of Stoneham will evaluate submitted SOQs based upon the identified evaluation criteria as set forth in the RFQ and will select those respondents it deems qualified. Only those respondents deemed qualified will be invited to submit a proposal in response to a detailed Request for Proposals ('RFP'), which will be issued in the second phase of the procurement process. The project delivery method for construction will be public CM at Risk with a Guaranteed Maximum Price ('GMP') under M.G.L. 149A. Firms interested in being prequalified must demonstrate that they have had prior experience as a Construction Manager on projects of a similar size, complexity and type as this project as described in the RFQ. At the time a CM firm submits its Qualification Statement, the CM firm must have a DCAMM Certification in the Contractor Category, 'General Building Construction', with a single limit greater than the Estimated Total Construction cost of $140,000,000. It is anticipated that the Construction Manager will be under contract while the schematic design documents are being developed. The Request for Qualifications may be downloaded from http://procurementdocuments.smma.com or copies may be obtained by contacting the Town of Stoneham c/o Symmes Maini & McKee Associates, Inc., Attn: Joel Seeley, 1000 Massachusetts Avenue, Cambridge, Massachusetts 02138, 617-547-5400 or opm@smma.com on or after 2:00 PM EST on November 11, 2020.

201107 11/11/20

STONEHAM HIGH SCHOOL
STONEHAM SCHOOL BUILDING COMMITTEE

MEETINGS SCHEDULE AND AGENDAS
November 16, 2020 ***Updated December 3, 2020***

DATE	AGENDA
Schematic Design Phase (SD)	
January 12, 2021	SCHOOL BUILDING COMMITTEE MEETING (TUESDAY)
	Review Schematic Design Phase Schedule and Deliverables
January 13, 2020 or January 20, 2020	*MSBA FAS MEETING*
January 25, 2021	SCHOOL BUILDING COMMITTEE MEETING
	Review Site and Floor Plans
February 8, 2021	SCHOOL BUILDING COMMITTEE MEETING
	Review Progress Site and Floor Plans
	Prepare for MSBA Board Meeting
February 11, 2021	*MSBA BOARD MEETING*
TBD	COMMUNITY FORUM NO. 5
February 22, 2021	SCHOOL BUILDING COMMITTEE MEETING
	Review MSBA Board Meeting
	CM Recommendation and Introduction
	Review Progress Site and Floor Plans
	Review Preliminary Exterior Imagery
March 8, 2021	SCHOOL BUILDING COMMITTEE MEETING
	Review Sustainable Design Features
	Review Mechanical and Electrical Systems
March 22, 2021	SCHOOL BUILDING COMMITTEE MEETING
	Review Progress Site and Floor Plans
	Review Updated Exterior Elevations
	Review Structural Systems
TBD	COMMUNITY FORUM NO. 6
TBD	TRI-BOARD MEETING NO. 3
April 5, 2021	SCHOOL BUILDING COMMITTEE MEETING
	Review Preliminary Interior Materials
	Review Preliminary Exterior Materials

STONEHAM HIGH SCHOOL
STONEHAM SCHOOL BUILDING COMMITTEE

MEETINGS SCHEDULE AND AGENDAS
November 16, 2020 ***Updated December 3, 2020***

DATE	AGENDA
April 19, 2021	SCHOOL BUILDING COMMITTEE MEETING
	Review Progress Site and Floor Plans
	Review Updated Mechanical and Electrical Systems
	Review Progress Technology Systems
	Review Progress FFE Layout
May 3, 2021	SCHOOL BUILDING COMMITTEE MEETING
	Review Progress Site and Floor Plans
	Review Updated Exterior Elevations and Materials
	Review Updated Interior Materials
May 17, 2021	SCHOOL BUILDING COMMITTEE MEETING
	Review Preliminary Cost Model
	Review Value Engineering Options
TBD	COMMUNITY FORUM NO. 7
June 1, 2021	SCHOOL BUILDING COMMITTEE MEETING (TUESDAY)
	Review Site Plan, Floor Plans and Elevations
	Review Final Mechanical and Electrical Systems
	Review Final Sustainable Design Features
	Review Updated Cost Model
TBD	TRI-BOARD MEETING NO. 3
June 14, 2021	SCHOOL BUILDING COMMITTEE MEETING
	Final Site Plan, Floor Plans and Elevations
	Final Project Cost
	Final Project Schedule
	Vote to submit Schematic Design Cost Estimate to MSBA
June 23, 2021	*SUBMIT SCHEMATIC DESIGN COST ESTIMATE TO MSBA*
June 28, 2021	SCHOOL BUILDING COMMITTEE MEETING
	Vote to submit Schematic Design Package to MSBA
July 7, 2021	*SUBMIT SCHEMATIC DESIGN PACKAGE TO MSBA*
	ADDITIONAL MEETINGS TO BE SCHEDULED

SMMA
Project Management

Perkins&Will

STONEHAM HIGH SCHOOL
Building Committee Meeting

12.07.2020

AGENDA

Zero Net Energy Strategy

Design Option Update

Option 4B – New Construction

- Option 4B1 - Embedded Gymnasium
- Option 4B2 - Embedded Auditorium

Design Options Recap

Option 2A – Renovation Only

Option 3A – Renovation Addition

Option 4A – New Construction

Project Cost Update

Perkins&Will | SMMA
Project Management

→ Aerial View of Stoneham High School

Stoneham High School
Zero Net Energy Strategy

PDP 12/07/2020

Perkins&Will Thornton Tomasetti BALA SMMA Project Management

Agenda

- **Introductions**
- **Zero Net Energy Modeling Process**
- **Recommended Building Systems Comparison**
- **Power Purchase Agreement (PPA) Process and Energy Rate Assumptions**
- **Stoneham Project Energy Modeling**
  Scheme Comparison
  System Comparison
- **First Cost Vs Operating Cost Overview**
- **Committee Discussion and Next Steps**

Perkins&Will Thornton Tomasetti BALA SMMA Project Management

Introductions

Patrick Cunningham AIA LEED, AP, CPHC
Associate Principal
Perkins & Will

Erin Wortman
Director of Planning & Community Development
Town of Stoneham

Edward Dolan PE, LEED AP
Senior Vice President
BALA Consulting Engineers

Vamshi Gooje PE, LEED AP
Associate Principal, Energy Analyst
Thornton Tomasetti

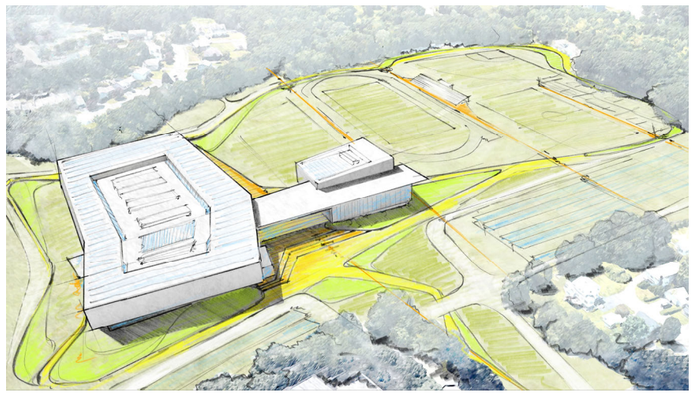
Susan McPhee
Energy Conservation Coordinator
Spark Energy Conservation

Brian McNeil
Director of Facilities
Town of Stoneham

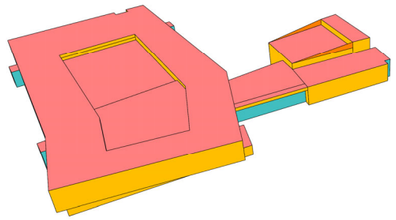
Perkins&Will Thornton Tomasetti BALA SMMA Project Management

Zero Net Energy Modeling Process

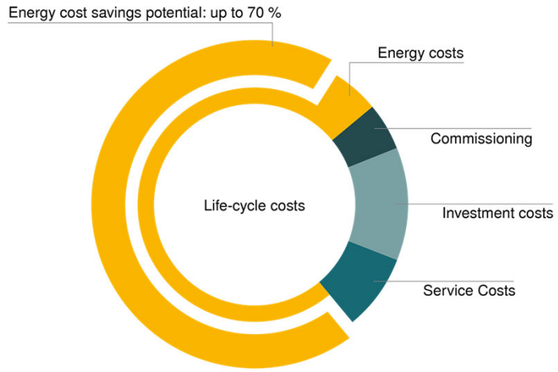
Design Options



Energy models



Life Cycle Cost Models



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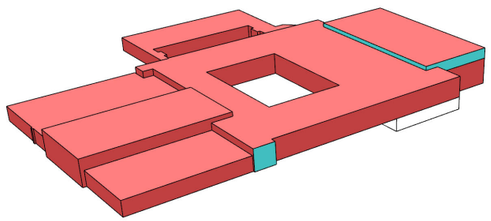
Zero Net Energy Modeling Process

How do we estimate building energy use?

- Building Geometry
- Roof and Wall Performance
- Building Mechanical System
- Energy Mix (all electric vs fossil fuels)
- Historical Climate Data

2A



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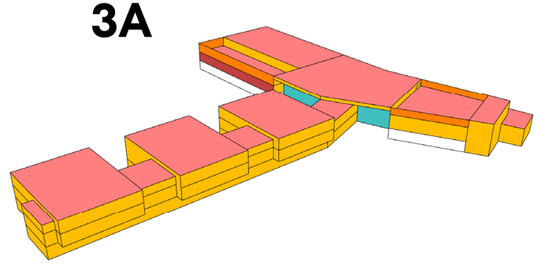

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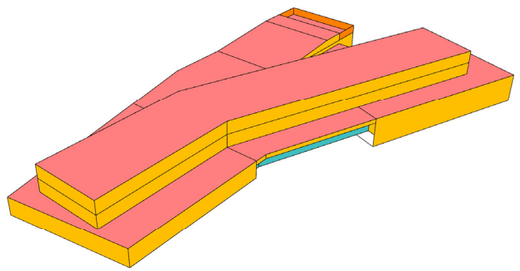

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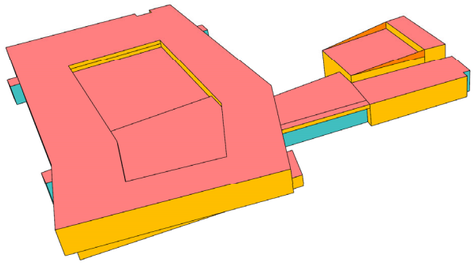

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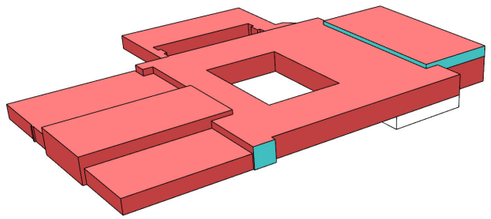
How do we estimate life cycle costs?

- First Costs
- Replacement Costs
- Maintenance Costs
- Energy Costs

2A



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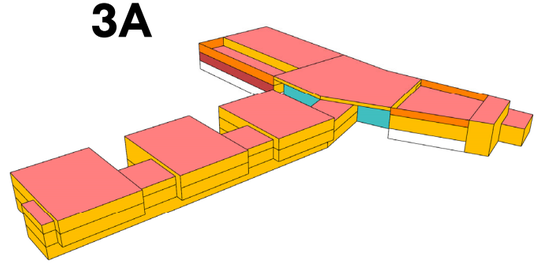

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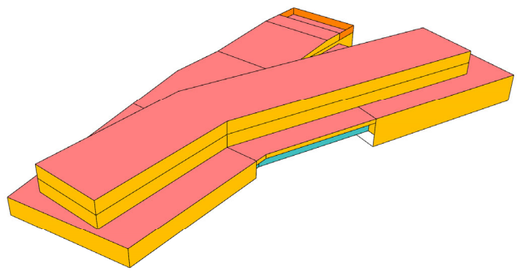

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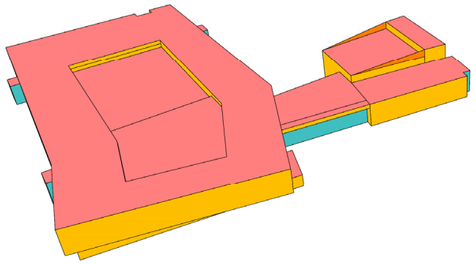

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Life Cycle Cost Model

ZNE Premiums

- Bond Payments
  associated with geothermal minus:
  MassSave grant (EUI 25)

- Bond payments of rooftop solar (if no PPA)

- Bond payments associated with envelope upgrades

Life-Cycle Savings

- Utility Cost (energy, water and sewer) and maintenance associated with geothermal system (net savings vs premiums)

- The utility cost savings and Class I REC revenue generated by the rooftop solar (if no PPA)

- The Alternative Energy Credit (AEC) revenue generated by the geothermal system

Construction | After Construction

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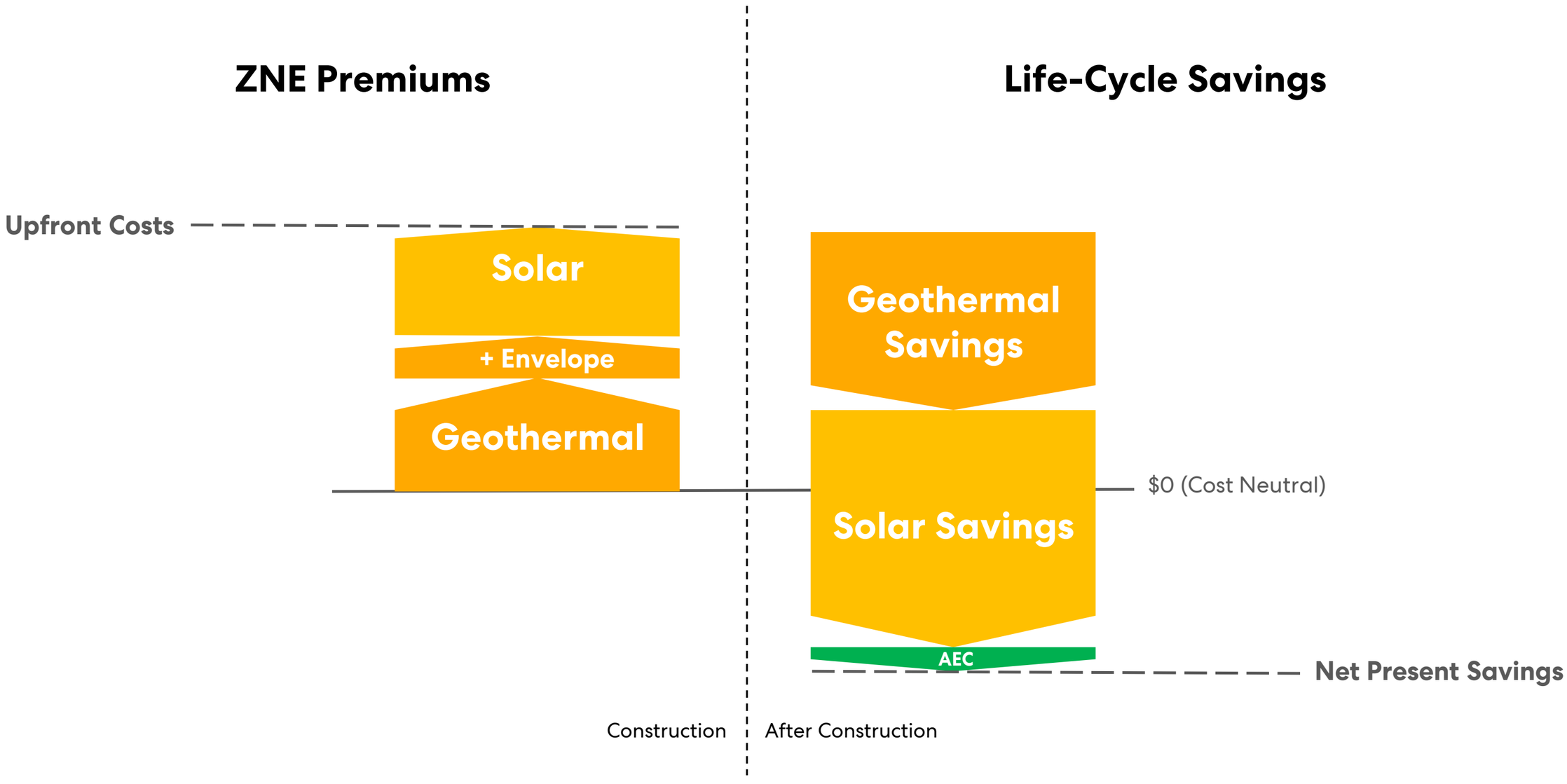
Life Cycle Cost Model



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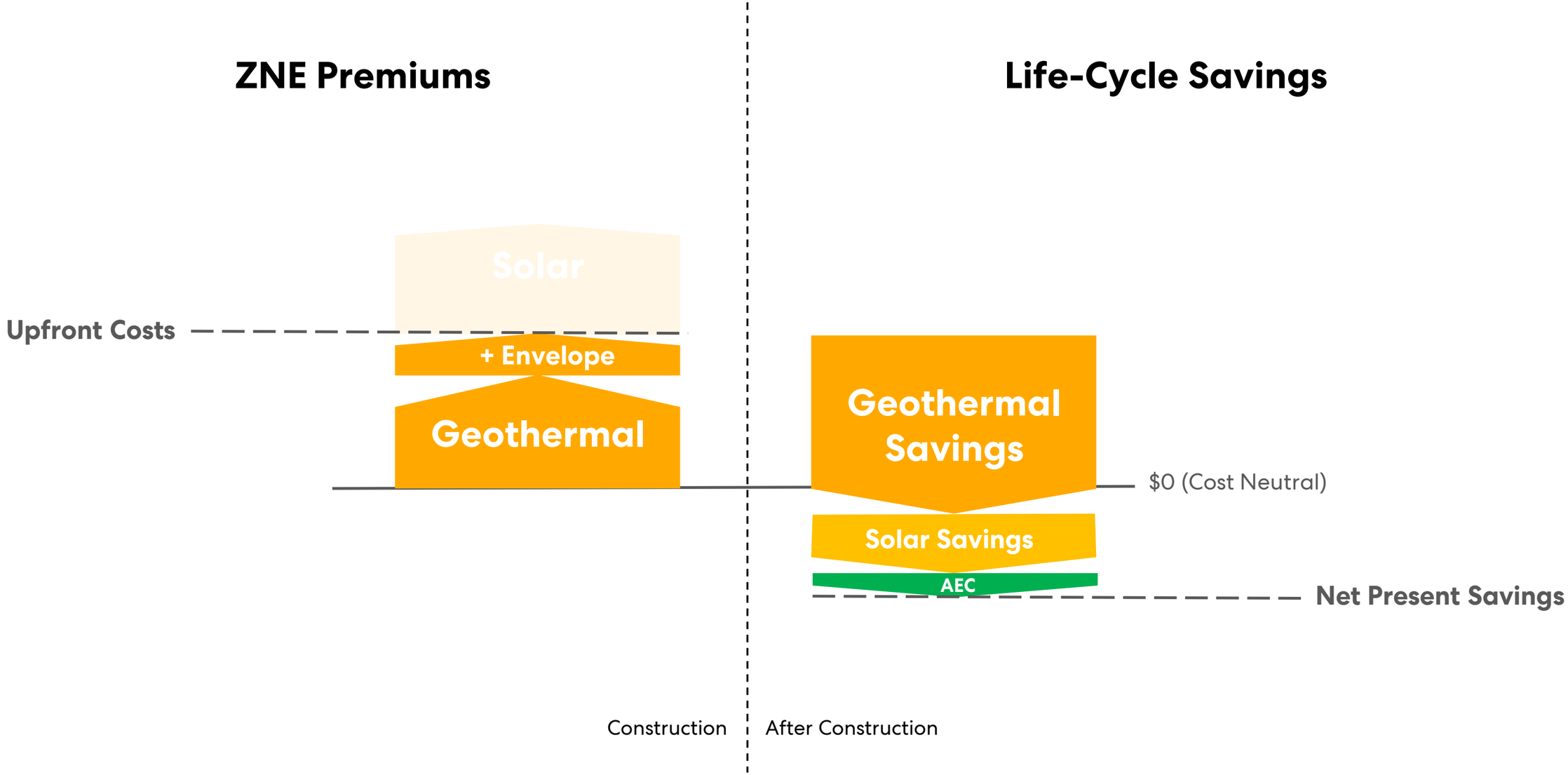
Power Purchase Agreement (PPA)
Life Cycle Cost Model



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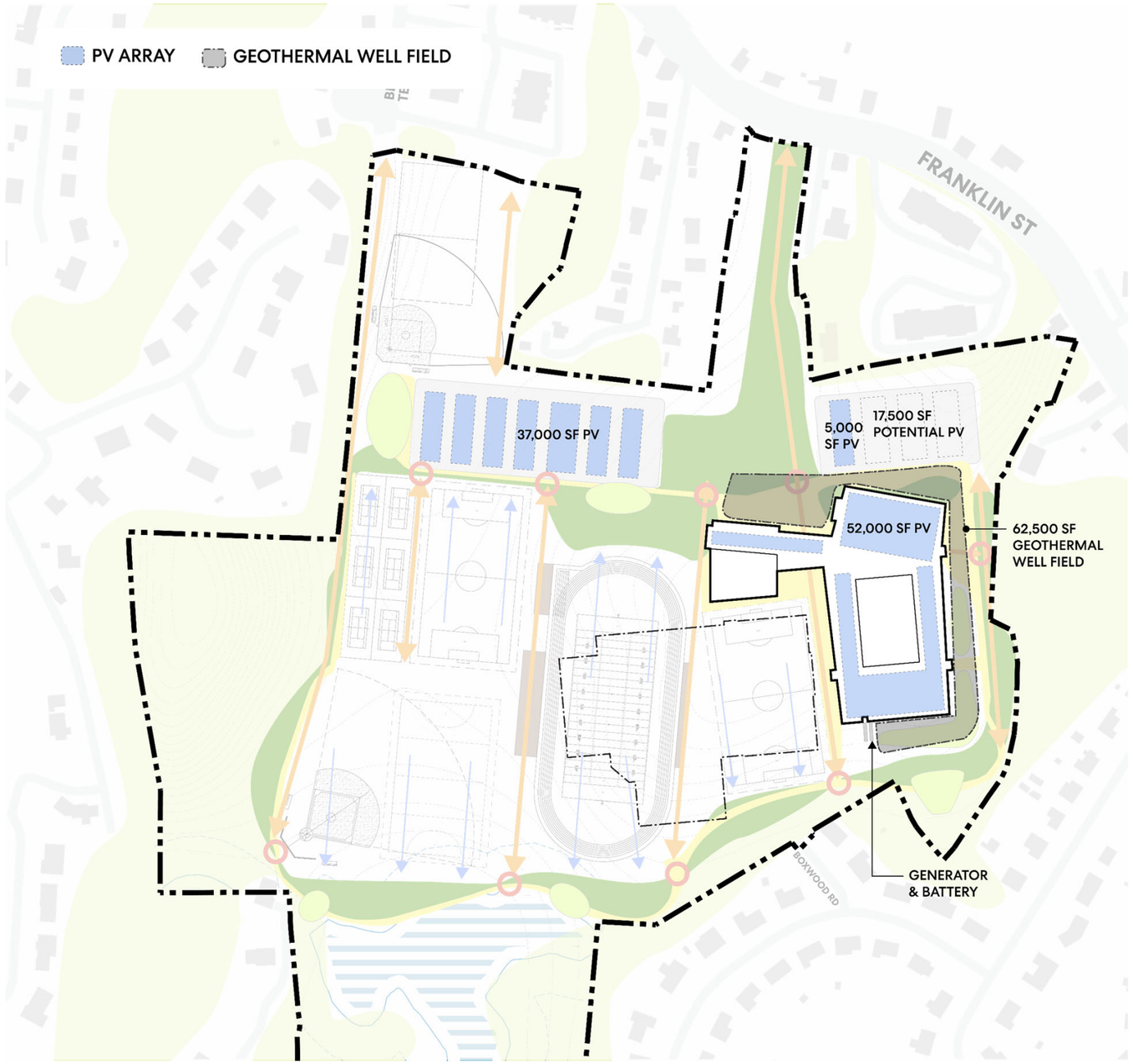
Power Purchase Agreement (PPA) Process

- **What is a PPA?**
  - A PPA is a financial agreement where a vendor arranges the design, permitting (including utility incentives), financing and installation of a solar energy system on an identified property at little to no cost.

  - PILOT (payment in lieu of taxes)
  - Approval Process

- **Why is it the right choice for Stoneham?**
  - A PPA is possible while in MSBA
  - Can be part a reimbursable expense
  - Can reimburse the project at the end of construction or lower the electricity rate
  - A/B projected that they would have spent an additional $120,000 on purchasing electricity without solar
  - Smart Program



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Power Purchase Agreement (PPA) Process

- **Who is Stoneham learning from and what is the process for contract procurement?**
  - Acton-Boxborough Regional School District
  - Town of Arlington
  - Paul Lyons, Solar Consultant (Zapotec Energy)

- **What electricity rate can we comfortably assume for modeling?**
  - We're close to 25 cents all in for electricity consumption (similar to as A/B)
  - A/B used **12** cents in its modeling and that's a fair, conservative savings

- **How does this relate to our EUI goal of 25**
  - A low EUI can put a building with renewables within reach of net zero energy performance.

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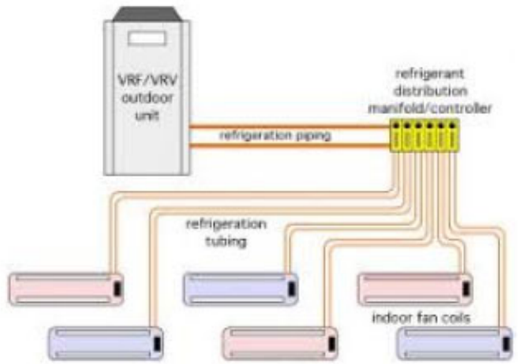
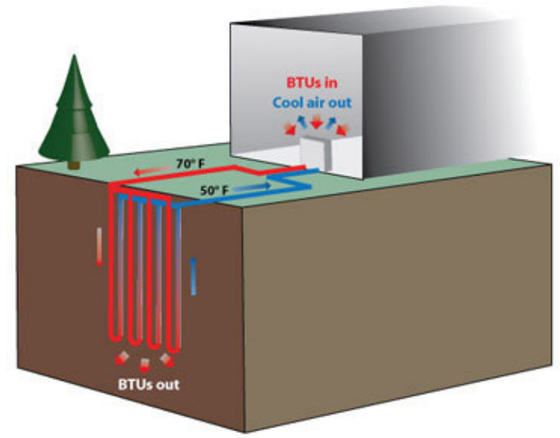
Building Systems Comparison

Central Plant
(MSBA Minimum Requirement)



Variable Refrigerant Flow



Geo Exchange

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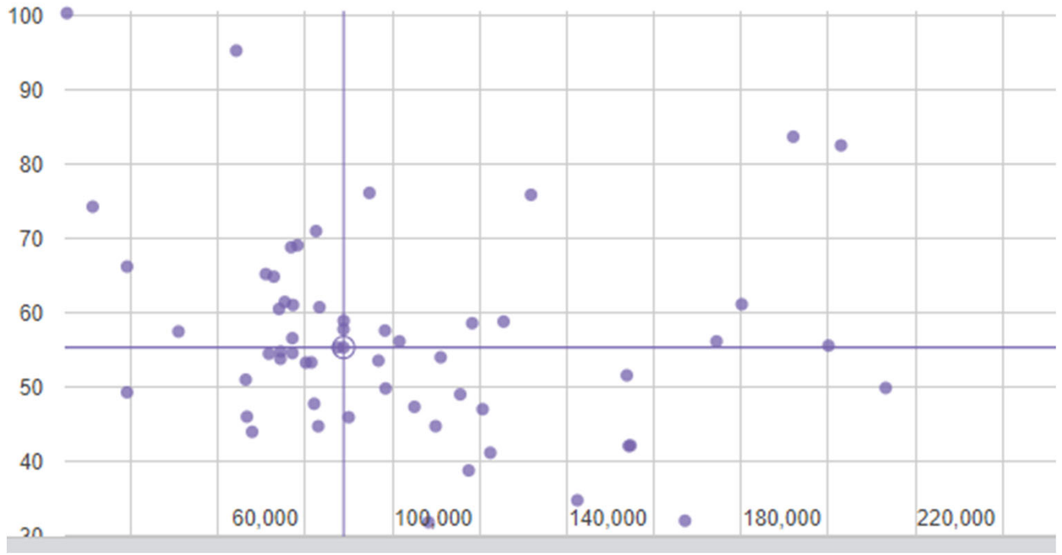
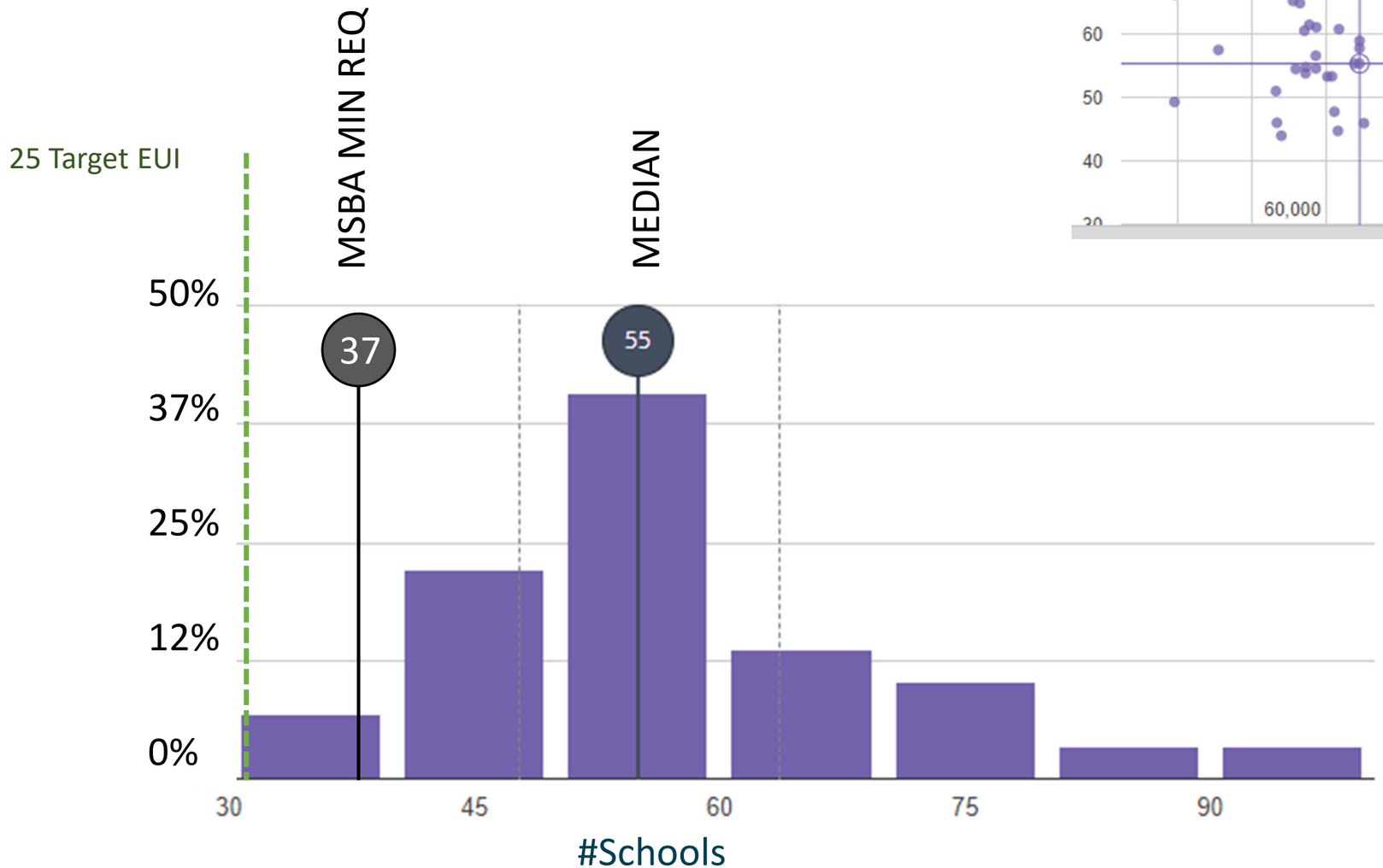
Building Systems Comparison

System Type	MSBA Minimum Requirement	GeoExchange	Variable Refrigerant Flow (VRF)
Description	Baseline system for MSBA compliance. The system performance exceeds the energy code by 10% when combined with the high performance building envelope.	High performance geothermal heating/cooling system, rejects heat and draws heat from the earth as opposed to the atmosphere.	High performance heating/cooling system, rejects heat and draws heat from the atmosphere.
Main Components	• Central chiller and condensing boiler systems. • Chilled Water/Hot Water Air handling Units. • VAV Terminal Units.	• Central geothermal heat recovery chiller/heater systems. • Chilled Water/Hot Water Air handling Units. • Sensible Fan Powered Terminal Units.	• Rooftop air cooled heat recovery VRF condensing units. • VRF Air handling Units. • VRF Fan Coil Terminal Units.
Pros	• Moderate capital cost	• Highest efficiency, lowest operating cost. Best system for meeting target EUI. • Less mechanical equipment on the roof.	• Lowest capital cost. • Energy efficient, lower operating cost.
Cons	• Less energy efficient, higher operating cost. • Mechanical equipment on the roof. • Increased maintenance for cooling tower. • Additional domestic water consumption for cooling tower make up.	• Highest Capital Cost	• Multiple mechanical pieces of equipment on the roof.
EUI	37	25	29

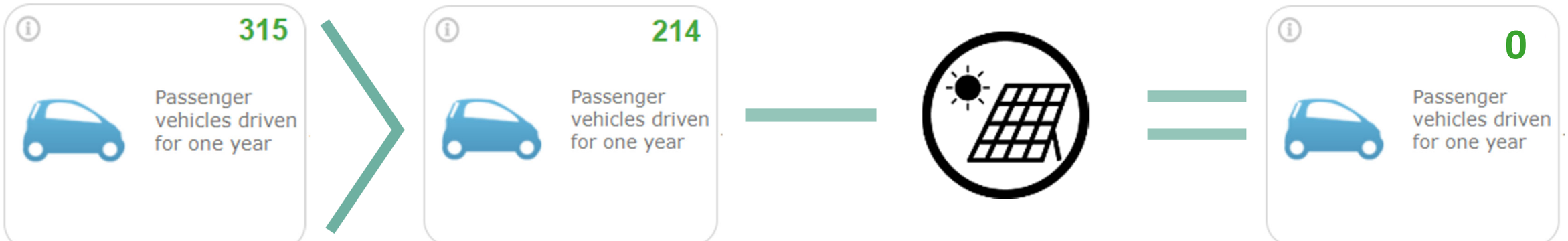
Benchmarking Data



https://bpd.lbl.gov/



Carbon Emissions



MSBA	25 EUI	~25 EUI	O EUI
MIN REQ			

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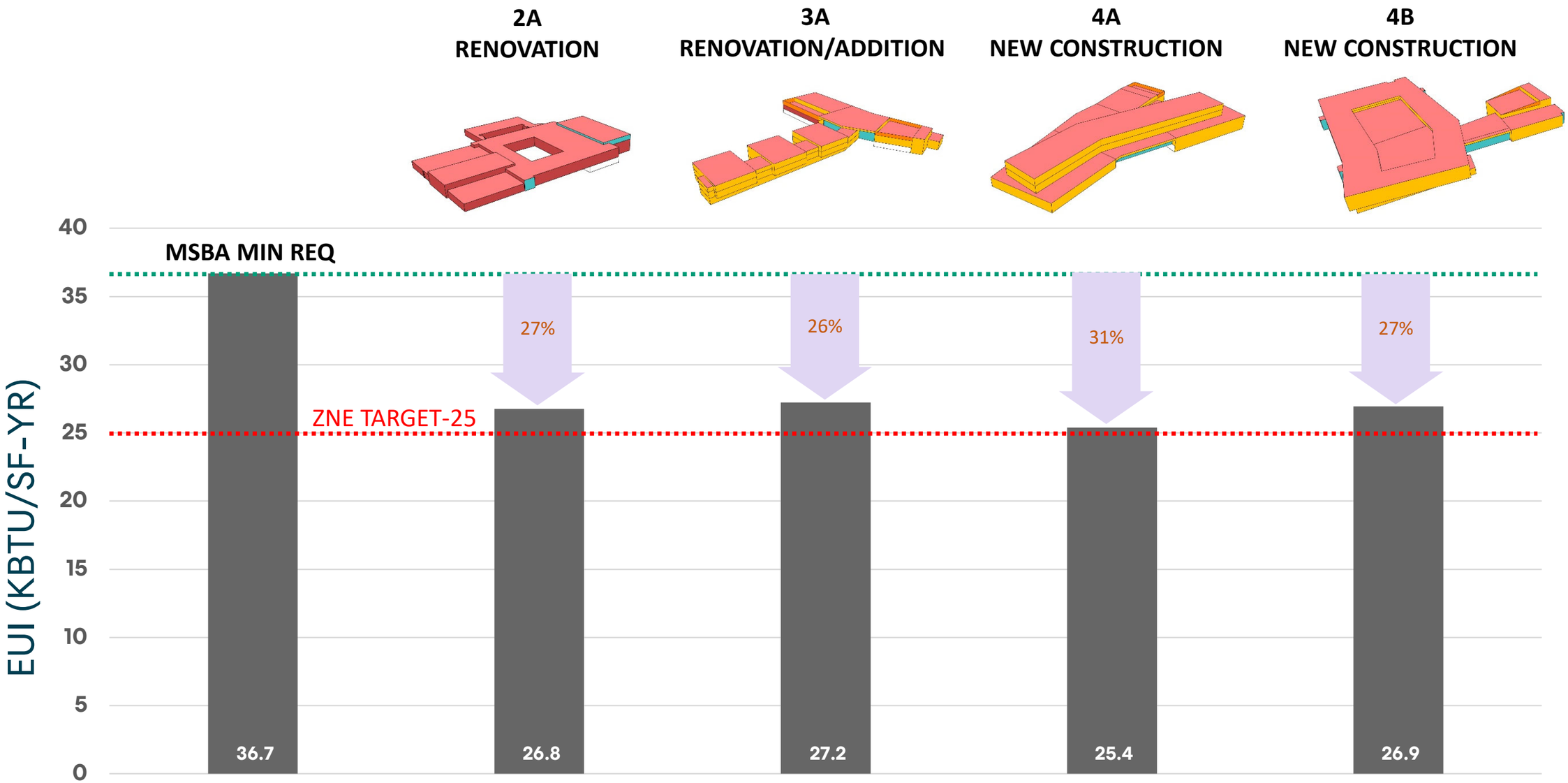
Scheme Comparison



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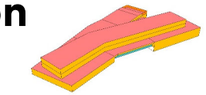
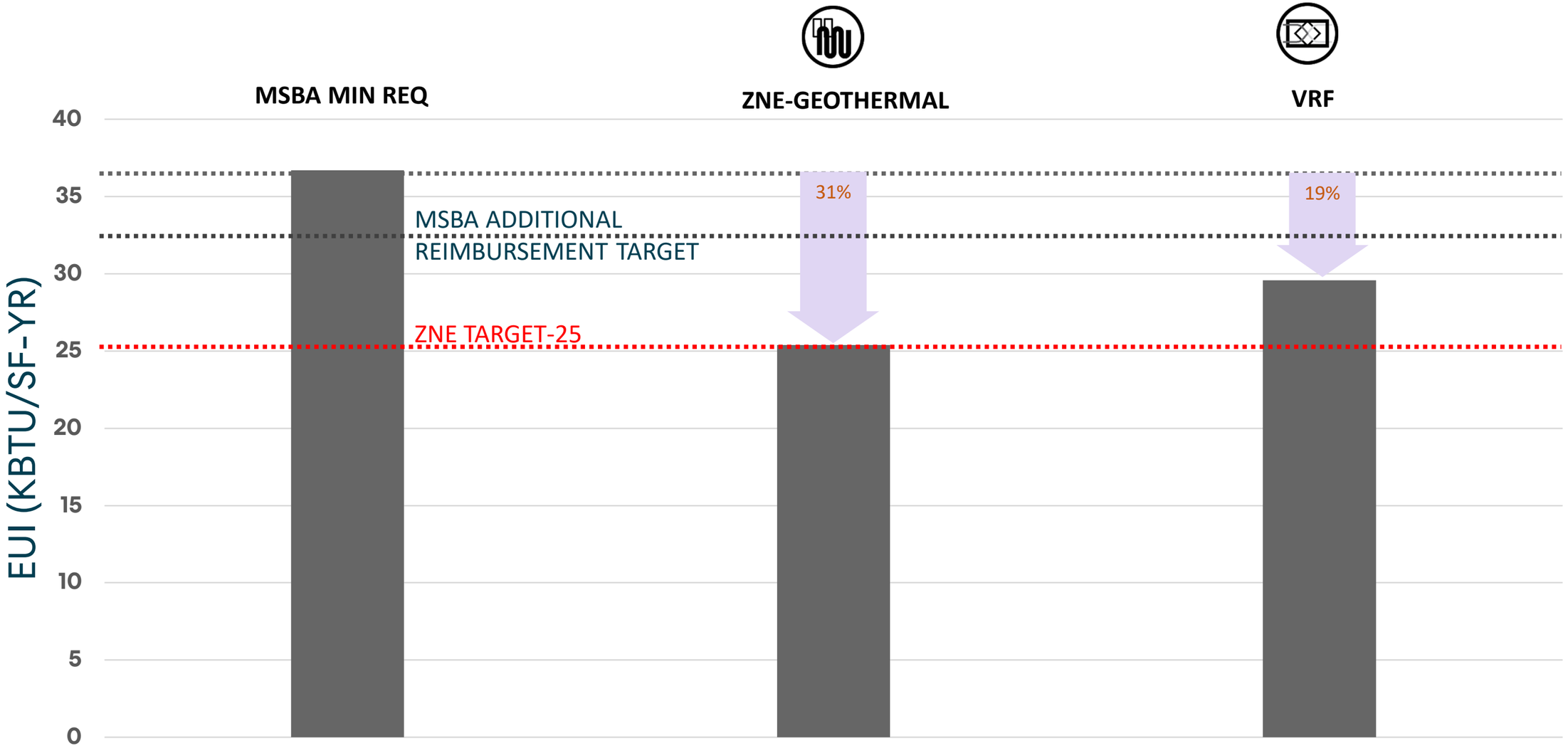
HVAC System Comparison



4A NEW CONSTRUCTION



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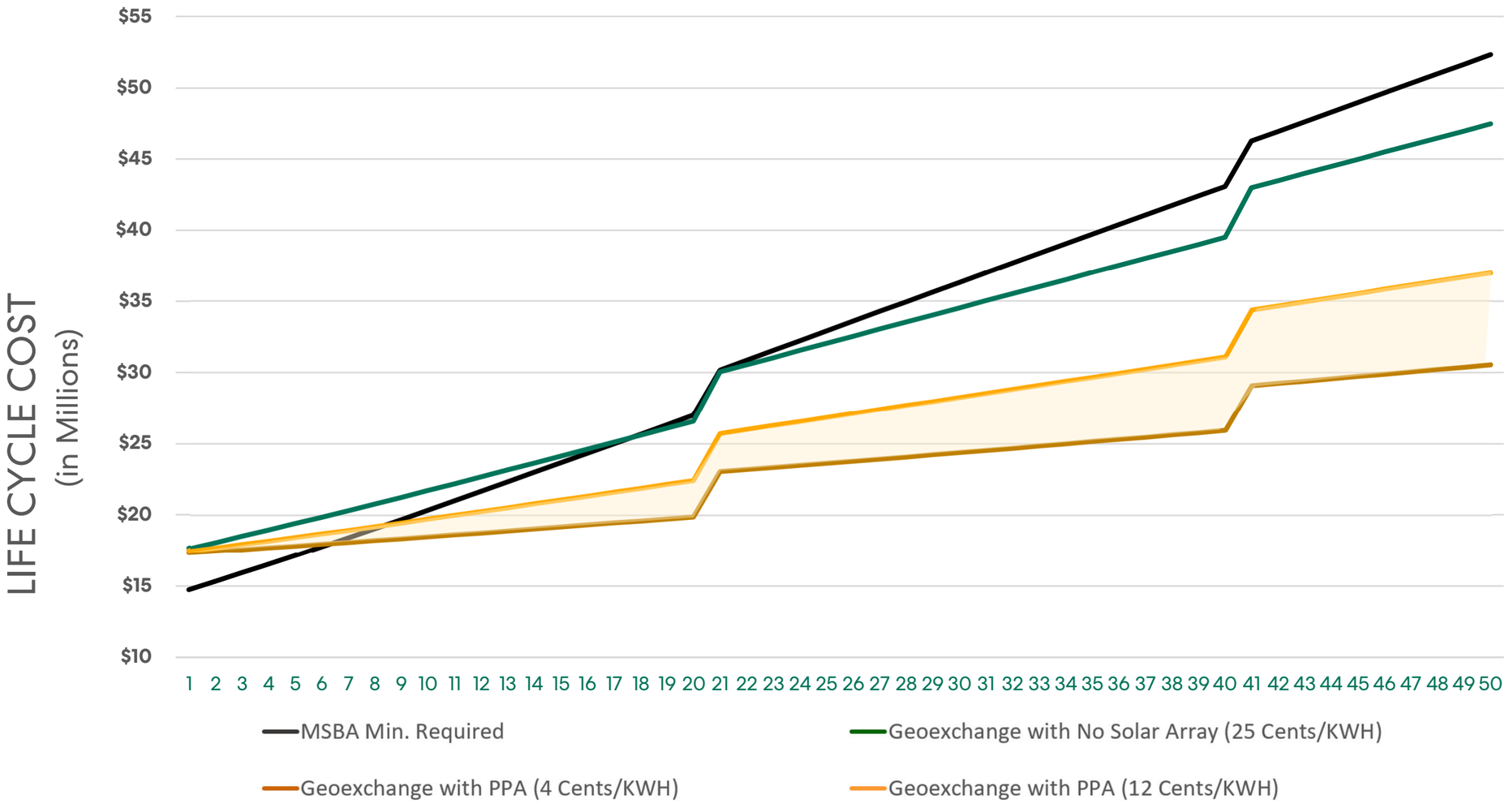
Lifecycle Cost Analysis

CUMULATIVE CASH FLOW: CAPITAL, OPERATIONAL, MAINTENANCE & REPLACEMENT COSTS



ASSUMPTIONS:

- Blended Electric Rate - $.25/kwh (conservative estimate based on existing utility bill from the school)
- FEMP rates for discount and inflation
- Study period 50 years
- Replacement costs estimated at year 20 and 40 of operation
- Includes Mass save incentives and 2% Additional Reimbursement in the initial cost

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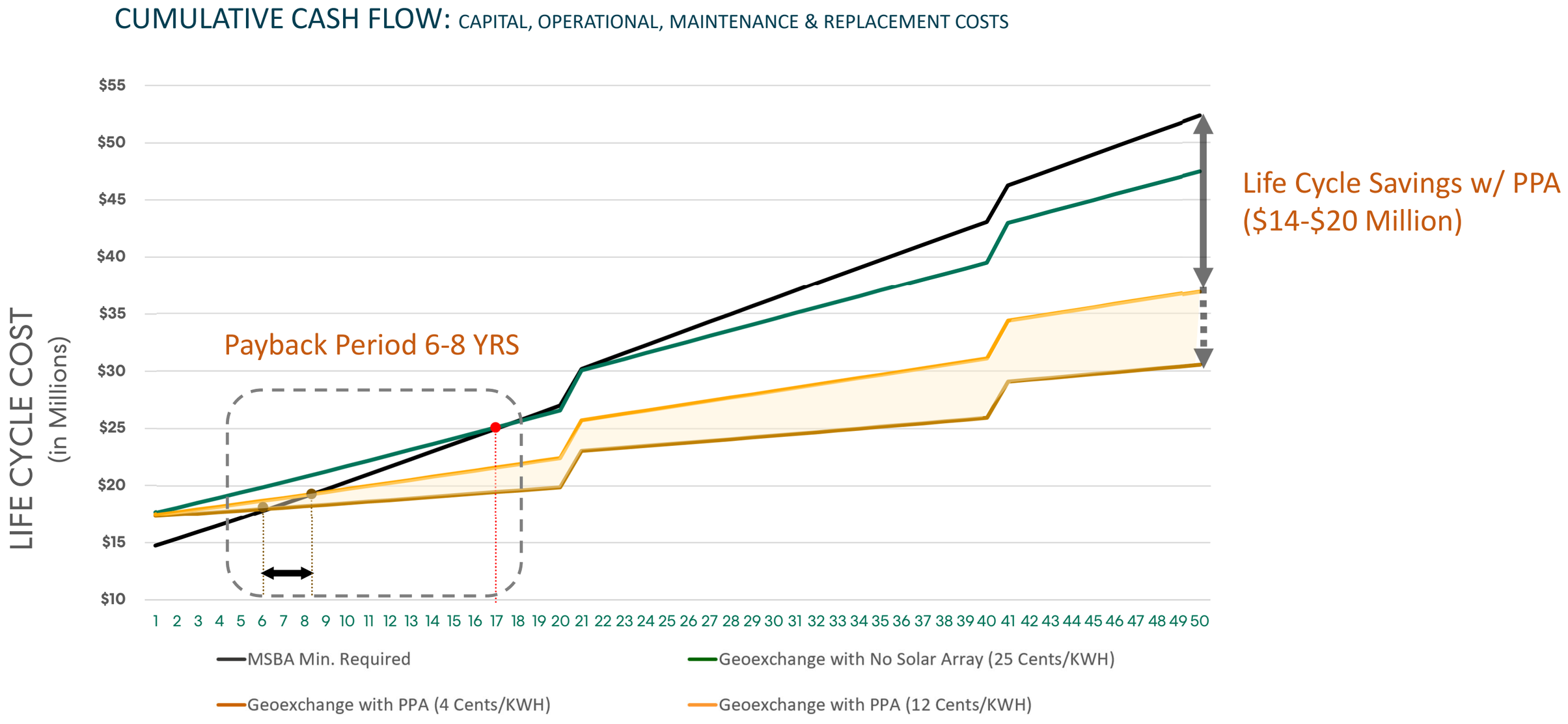
Lifecycle Cost Analysis



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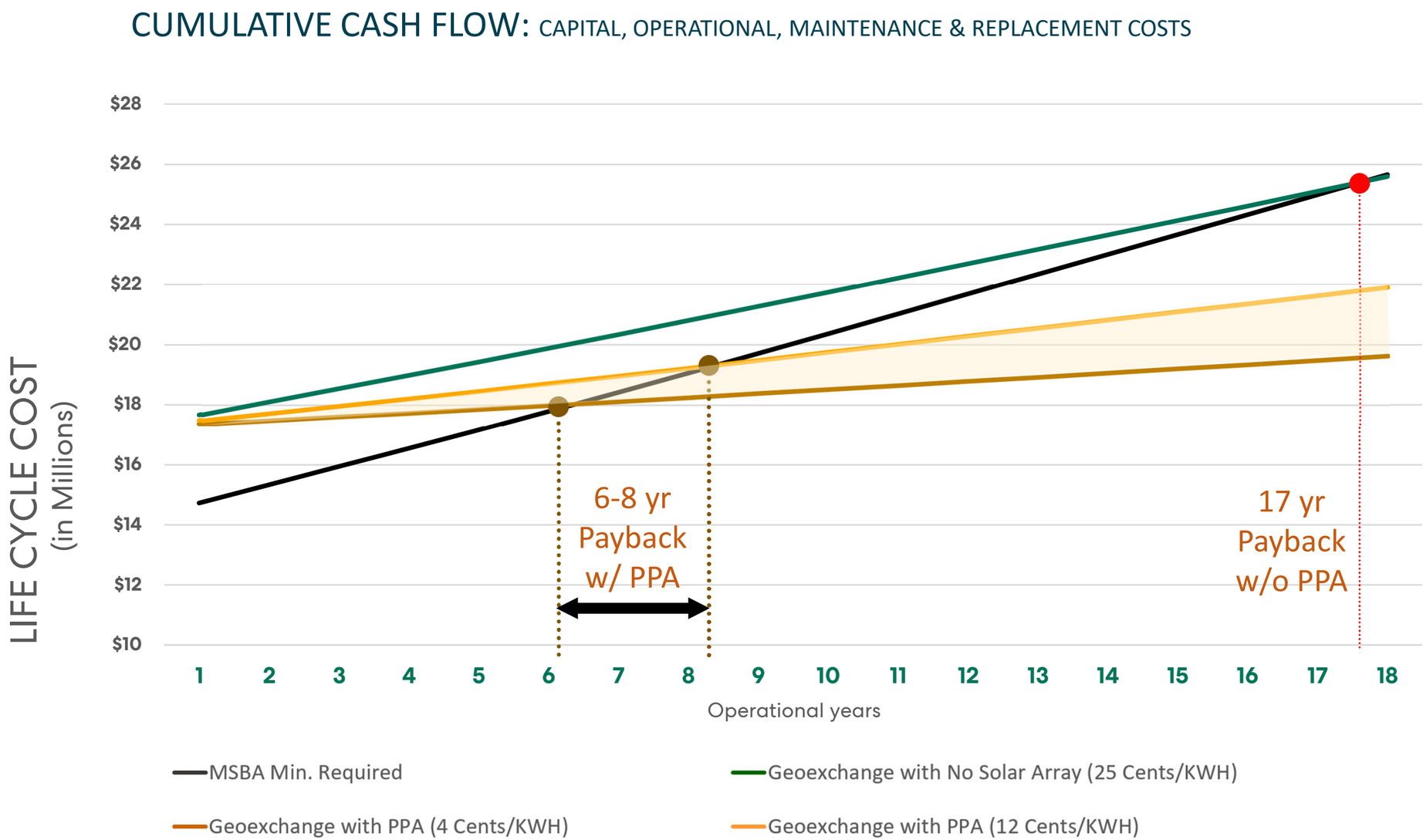
Lifecycle Cost Analysis



Life Cycle Savings w/ PPA ($14-$20 Million)

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Capital Cost and Annual Energy Operating Cost Overview

ZNE PROJECT CAPITAL COSTS	
Building Envelope Cost above Baseline	$1,156,784
Geo Exch. HVAC System Cost above Baseline	$6,561,671
Total	$7,718,455
ANNUAL ENERGY OPERATING COST SAVINGS	
Annual Electrical Cost Savings	$158,645
Annual Water Savings	$25,000
50 Year Cost Savings (includes premiums)	$14,000,000 to $20,000,000

Perkins&Will Thornton Tomasetti BALA SMMA Project Management

Perkins&Will

Design Options Update

Building Committee Meeting

Perkins&Will

Option 4B – New Construction

Building Committee Meeting

Option 4B – Energy and Site Strategy

Option 4B1 – Embedded Gymnasium

PROGRAM

1 - TENNIS (5 Courts)
2 - SOFTBALL
3 - BASEBALL
4 - SOCCER
5 - TRACK
6 - WETLAND
7 - PARKING
8 - PRACTICE FIELD
9 - FOOTBALL
10 - FIELD HOCKEY
11 - PICKLEBALL
13 - ATHLETIC BUILDING
14 - PREK PLAY
15 - SPARTAN PLAZA
16 - HOME BLEACHERS
17 - VISITOR BLEACHERS
18 - LANDSCAPE LOOP
19 - OUTDOOR CLASSROOMS
20 - COMMUNITY GARDEN
21 - AMPHITHEATER

CIRCULATION

- VEHICULAR DRIVE
- LIMITED ACCESS: EMERGENCY, MAINTENANCE, BICYCLES
- SERVICE DRIVE
- BIKE LANE
- ACCESSIBLE PEDESTRIAN PATH
- HIKING TRAIL (NOT ADA ACCESSIBLE)
- NATURE WALK & HYDROLOGY LOOP

KEY ENTRANCES

- HS MAIN ENTRY
- PRE-K/DISTRICT OFFICES
- LOADING

SITE PROGRAM

- EDUCATION/RECREATION
- GRASS FIELD
- SYNTHETIC TURF FIELD

Option 4B1 – Embedded Gymnasium

PROGRAM

1 - TENNIS (5 Courts)
2 - SOFTBALL
3 - BASEBALL
4 - SOCCER
5 - TRACK
6 - WETLAND
7 - PARKING
8 - PRACTICE FIELD W/ RETAINING WALL
9 - FOOTBALL
10 - FIELD HOCKEY
11 - PICKLEBALL
13 - ATHLETIC BUILDING
14 - PREK PLAY
15 - SPARTAN PLAZA
16 - HOME BLEACHERS
17 - VISITOR BLEACHERS
18 - LANDSCAPE LOOP
19 - OUTDOOR CLASSROOMS
20 - COMMUNITY GARDEN
21 - AMPHITHEATER
22 - CIVIC GREEN

CIRCULATION

- VEHICULAR DRIVE
- LIMITED ACCESS: EMERGENCY, MAINTENANCE, BICYCLES
- SERVICE DRIVE
- BIKE LANE
- ACCESSIBLE PEDESTRIAN PATH
- HIKING TRAIL (NOT ADA ACCESSIBLE)
- NATURE WALK & HYDROLOGY LOOP

KEY ENTRANCES

- HS MAIN ENTRY
- PRE-K/DISTRICT OFFICES
- LOADING

SITE PROGRAM

- EDUCATION/RECREATION
- GRASS FIELD
- SYNTHETIC TURF FIELD

Option 4B2 – Embedded Auditorium

PROGRAM

1 - TENNIS (5 Courts)
2 - SOFTBALL
3 - BASEBALL
4 - SOCCER
5 - TRACK
6 - WETLAND
7 - PARKING
8 - PRACTICE FIELD W/ RETAINING WALL
9 - FOOTBALL
10 - FIELD HOCKEY
11 - PICKLEBALL
13 - ATHLETIC BUILDING
14 - PREK PLAY
15 - SPARTAN PLAZA
16 - HOME BLEACHERS
17 - VISITOR BLEACHERS
18 - LANDSCAPE LOOP
19 - OUTDOOR CLASSROOMS
20 - COMMUNITY GARDEN
21 - AMPHITHEATER
22 - CIVIC GREEN

CIRCULATION

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KEY ENTRANCES

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- PRE-K/DISTRICT OFFICES
- LOADING

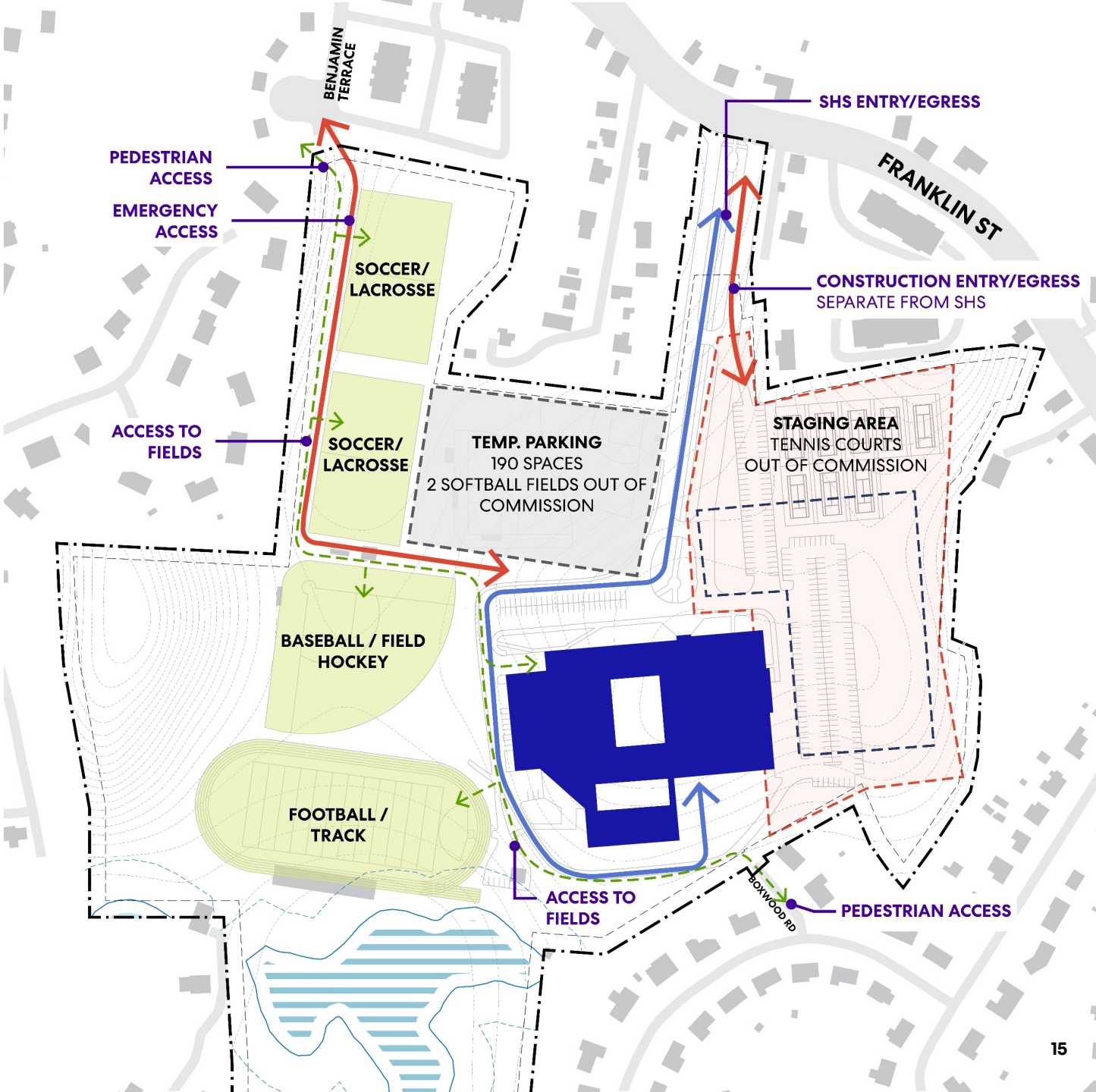
SITE PROGRAM

- EDUCATION/RECREATION
- GRASS FIELD
- SYNTHETIC TURF FIELD

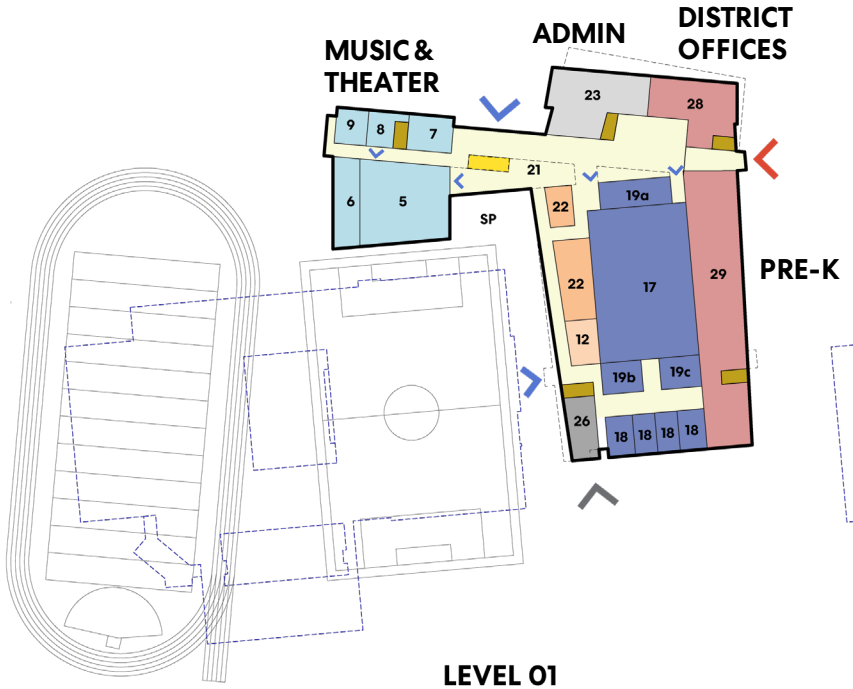
Option 4B – Construction Phasing

Fields out of Commission:

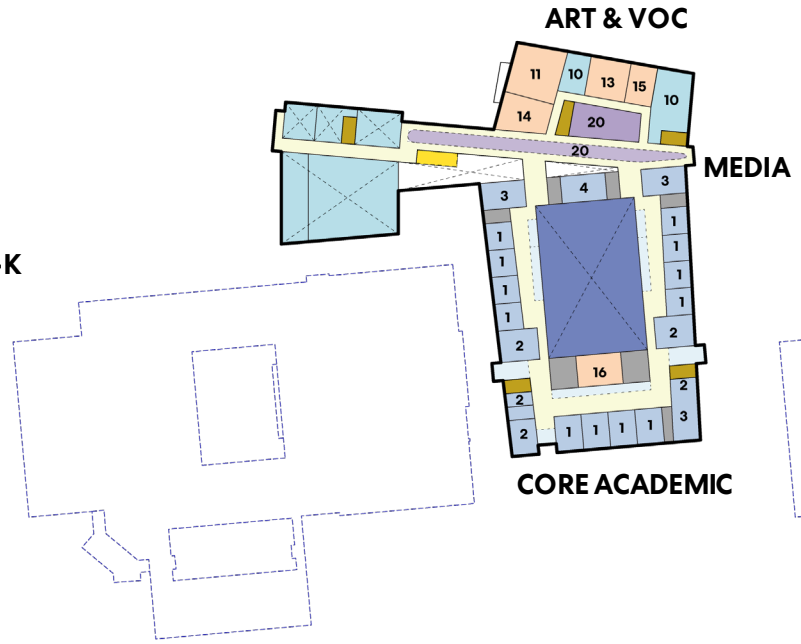
- (8) Tennis Courts
- (2) Softball Fields



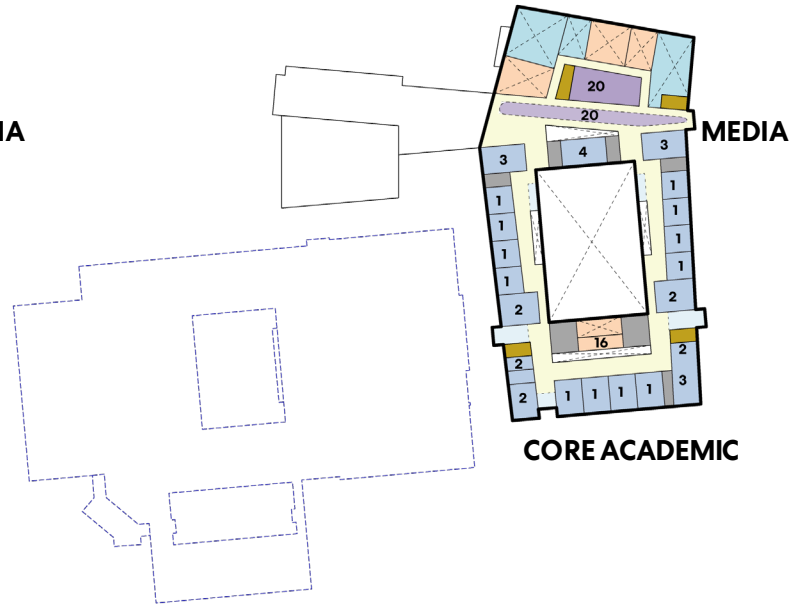
Option 4B1 – Embedded Gymnasium



LEVEL 01



LEVEL 02



LEVEL 03

0 50' 100' 200'

CORE ACADEMIC
1/ CLASSROOM
2/ SPED
3/ SCIENCE
4/ TEACHER PLANNING

BREAK OUT SPACE

ART & MUSIC
5/ AUDITORIUM
6/ STAGE
7/ BAND
8/ PRACTICE
9/ THEATER
10/ ART CLASSROOM

VOC & TECH
11/ PERFORMANCE
12/ CULINARY
13/ VIDEO PRODUCTION
14/ BIOMEDICAL
15/ ENGINEERING
16a/ MAKER SPACE
16b/ SCENE SHOP

HEALTH & PE
17/ GYMNASIUM
18/ LOCKERS

SB/STADIUM
BLEACHERS
AF/ATHLETIC FIELDS

19/ ATHLETICS
a – ALT PE
b – ATHL. OFFICES
c – TRAINER
d – PE STORAGE
e – COACH SHOWERS
f – EQUIPMENT ROOM
g – GYMNASTICS STOR.
h – ATHLETICS STOR.

MEDIA CENTER
20a/ OPEN MEDIA
20b/ CLOSED MEDIA

DINING
21/ CAFETERIA
22/ KITCHEN

SP/ SPARTAN PLAZA

ADMIN
23/ ADMIN

SUPPORT
24/ CUSTODIAL
25/ MECHANICAL
26/ LOADING
27/ RESTROOMS

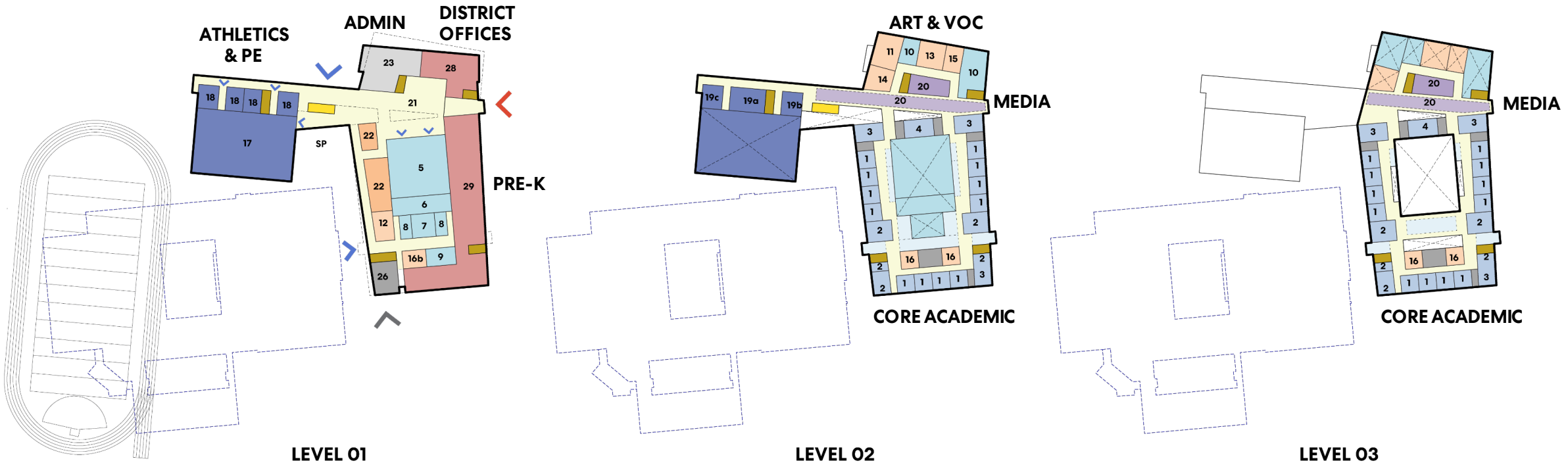
OTHER
28/ DISTRICT OFFICE
29/ PRE-K

CIRCULATION

OPEN STAIR

CLOSED EGRESS STAIR

Option 4B2 – Embedded Auditorium



CORE ACADEMIC
1/ CLASSROOM
2/ SPED
3/ SCIENCE
4/ TEACHER PLANNING

BREAK OUT SPACE

ART & MUSIC
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20a/ OPEN MEDIA
20b/ CLOSED MEDIA

DINING
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26/ LOADING
27/ RESTROOMS

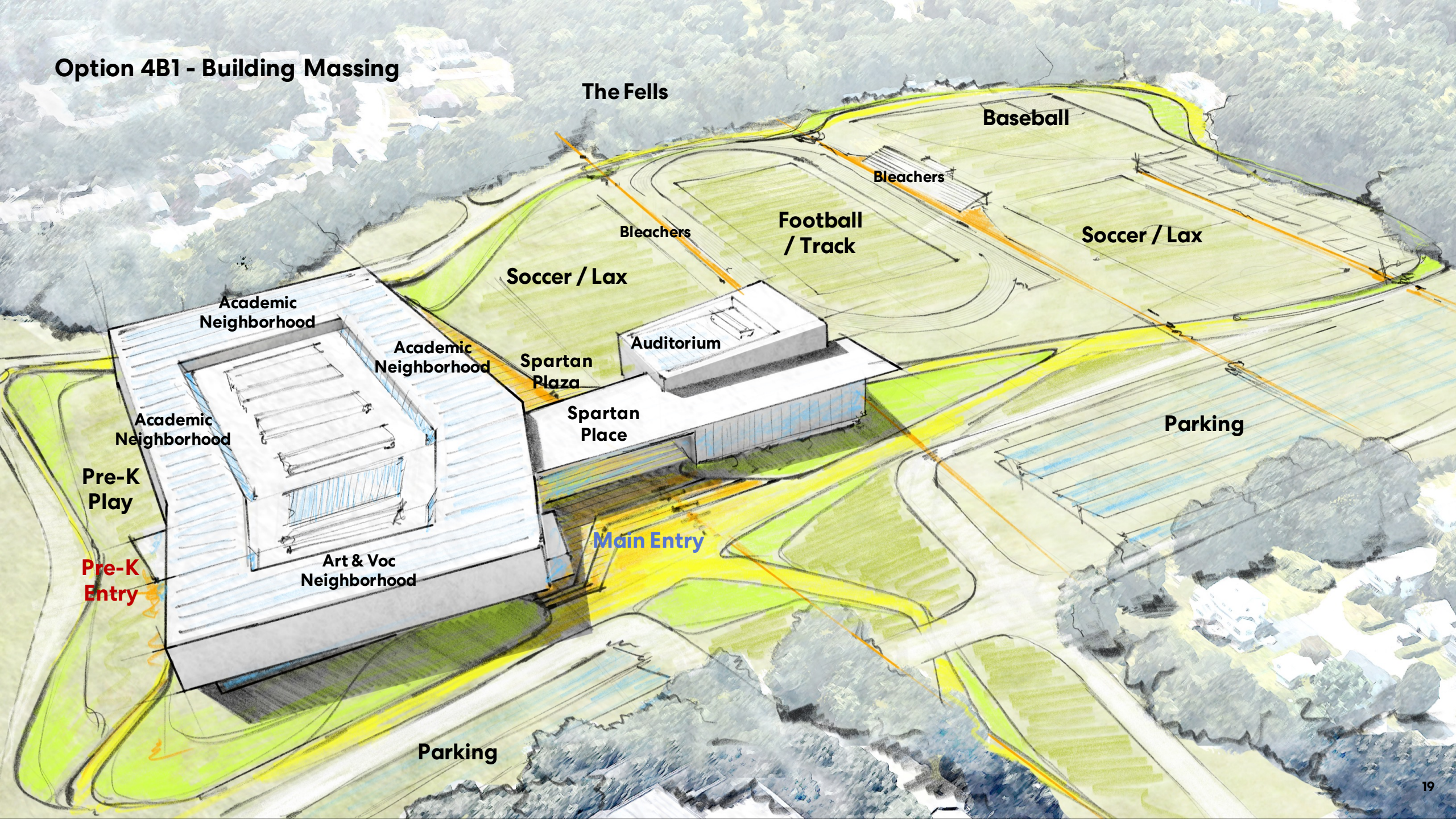
OTHER
28/ DISTRICT OFFICE
29/ PRE-K

CIRCULATION

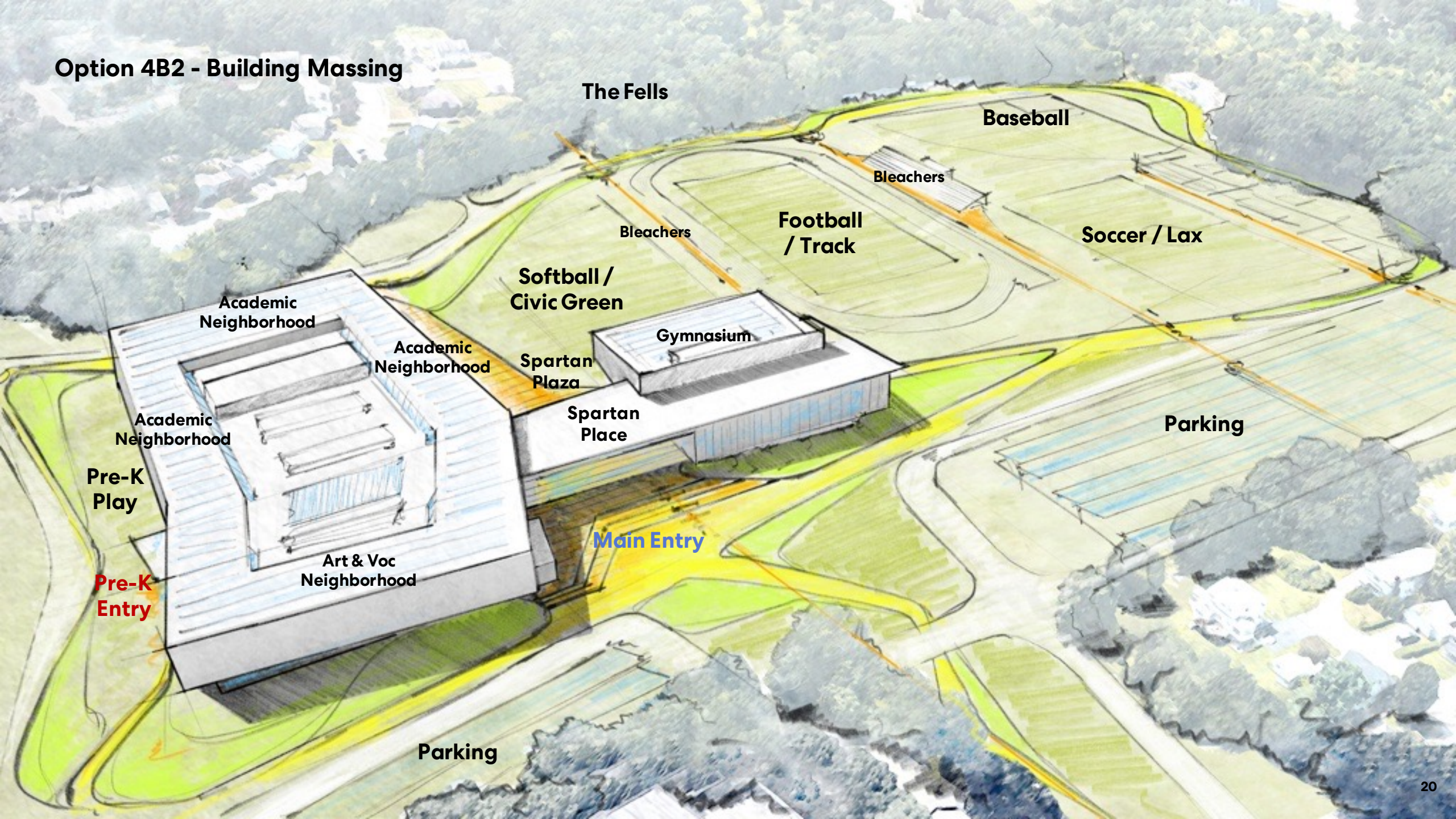
OPEN STAIR

CLOSED EGRESS STAIR

Option 4B1 - Building Massing



Option 4B2 - Building Massing



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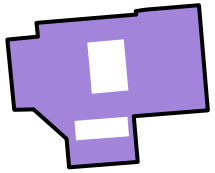
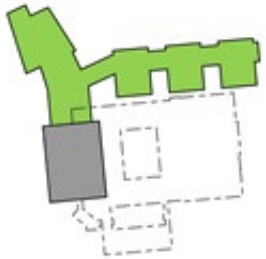
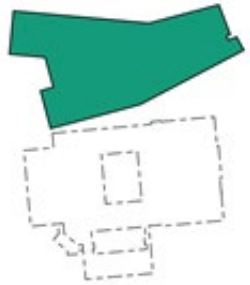
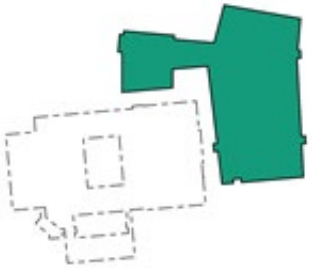
Design Options Recap

Building Committee Meeting

Design Options Summary

CODE UPGRADE	RENOVATION	RENOVATION ADDITION	NEW CONSTRUCTION
Option 1A ☑ • ***NO Educational upgrades*** • ***Code Upgrades*** • ***System Upgrades*** • ***Exterior Envelope Repairs*** • ***Interior Repairs*** • ***No Sitework***	***Option 2A*** ☑ 	***Option 3A*** ☑ 	***Option 4A*** ☑  ***Option 4B*** ☑ 

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Project Management

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Option 2A – Renovation Only

Building Committee Meeting

Option 2A – Site Plan

PROGRAM

1 - TENNIS (5 Courts)
2 - SOFTBALL
3 - BASEBALL
4 - SOCCER
5 - TRACK
6 - WETLAND
7 - PARKING
8 - HALF SIZED FIELD
9 - FOOTBALL
10 - FIELD HOCKEY
11 - PICKLEBALL
12 - BASKETBALL
13 - ATHLETIC BUILDING
14 - PREK PLAY
15 - SPARTAN PLAZA
16 - HOME BLEACHERS
17 - PORTABLE VISITOR BLEACHERS

CIRCULATION

- VEHICULAR DRIVE
- LIMITED ACCESS: EMERGENCY, MAINTENANCE, BICYCLES
- SERVICE DRIVE
- BIKE LANE
- ACCESSIBLE PEDESTRIAN PATH
- HIKING TRAIL (NOT ADA ACCESSIBLE)

KEY ENTRANCES

- HS MAIN ENTRY
- PRE-K MAIN ENTRY
- LOADING

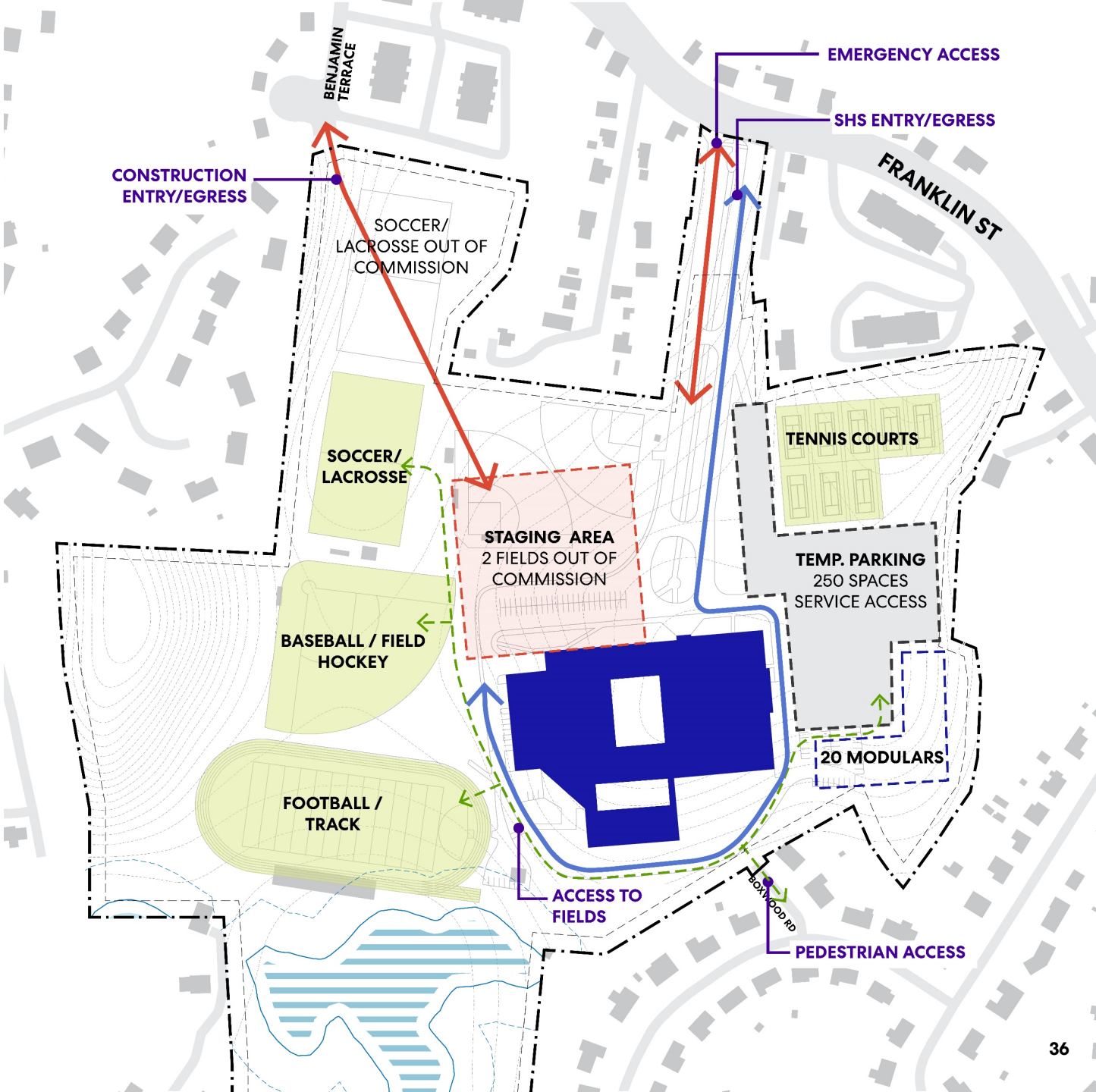
FIELD MATERIAL

- GRASS
- SYNTHETIC TURF

Option 2A – Construction Phasing

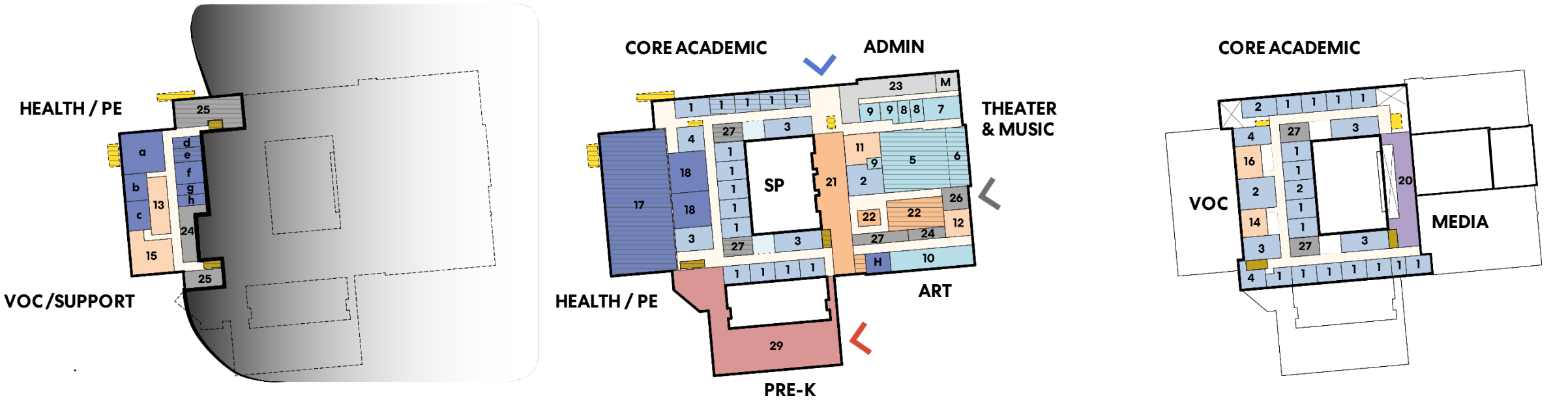
Fields out of Commission:

- (8) Tennis Courts
- (2) Softball Fields



Option 2A - Floor Plans

District Offices do Not Fit



CORE ACADEMIC

1/ CLASSROOM
2/ SPED
3/ SCIENCE
4/ TEACHER PLANNING

BREAK OUT SPACE

ART & MUSIC

5/ AUDITORIUM
6/ STAGE
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16/ MAKER SPACE

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ADMIN

23/ ADMIN

SUPPORT

24/ CUSTODIAL
25/ MECHANICAL
26/ LOADING
27/ RESTROOMS

OTHER

28/ DISTRICT OFFICE
29/ PRE-K

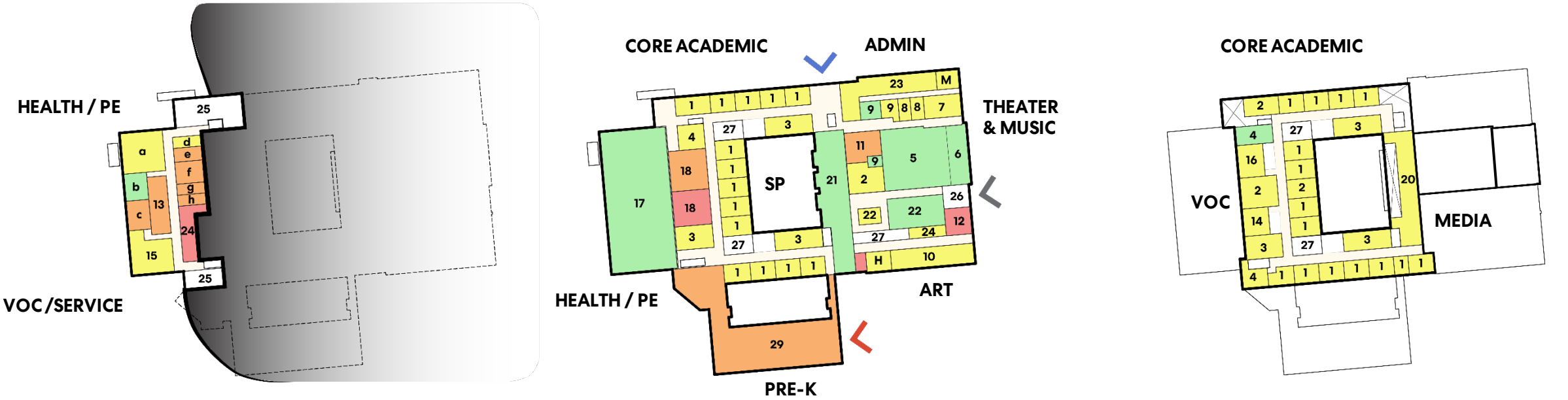
CIRCULATION

OPEN STAIR

CLOSED EGRESS STAIR

Option 2A – MSBA Space Summary Analysis

District Offices do Not Fit



- Greater than MSBA Guideline
- Meets MSBA Guideline
- Less than MSBA Guideline
- Proposed variation from MSBA Guideline

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Option 3A – Renovation Addition

Building Committee Meeting

Option 3A – Site Plan

PROGRAM

1 - TENNIS (5 Courts)
2 - SOFTBALL
3 - BASEBALL
4 - SOCCER
5 - TRACK
6 - WETLAND
7 - PARKING
8 - PRACTICE FIELD
9 - FOOTBALL
10 - FIELD HOCKEY
11 - PICKLEBALL
12 - BASKETBALL
13 - ATHLETIC BUILDING
14 - PREK PLAY
15 - SPARTAN PLAZA
16 - HOME BLEACHERS
17 - PORTABLE VISITOR BLEACHERS
19 - OUTDOOR CLASSROOMS
21 - AMPHITHEATER

CIRCULATION

- VEHICULAR DRIVE
- LIMITED ACCESS: EMERGENCY, MAINTENANCE, BICYCLES
- SERVICE DRIVE
- BIKE LANE
- ACCESSIBLE PEDESTRIAN PATH
- HIKING TRAIL (NOT ADA ACCESSIBLE)

KEY ENTRANCES

- HS MAIN ENTRY
- PRE-K MAIN ENTRY
- LOADING

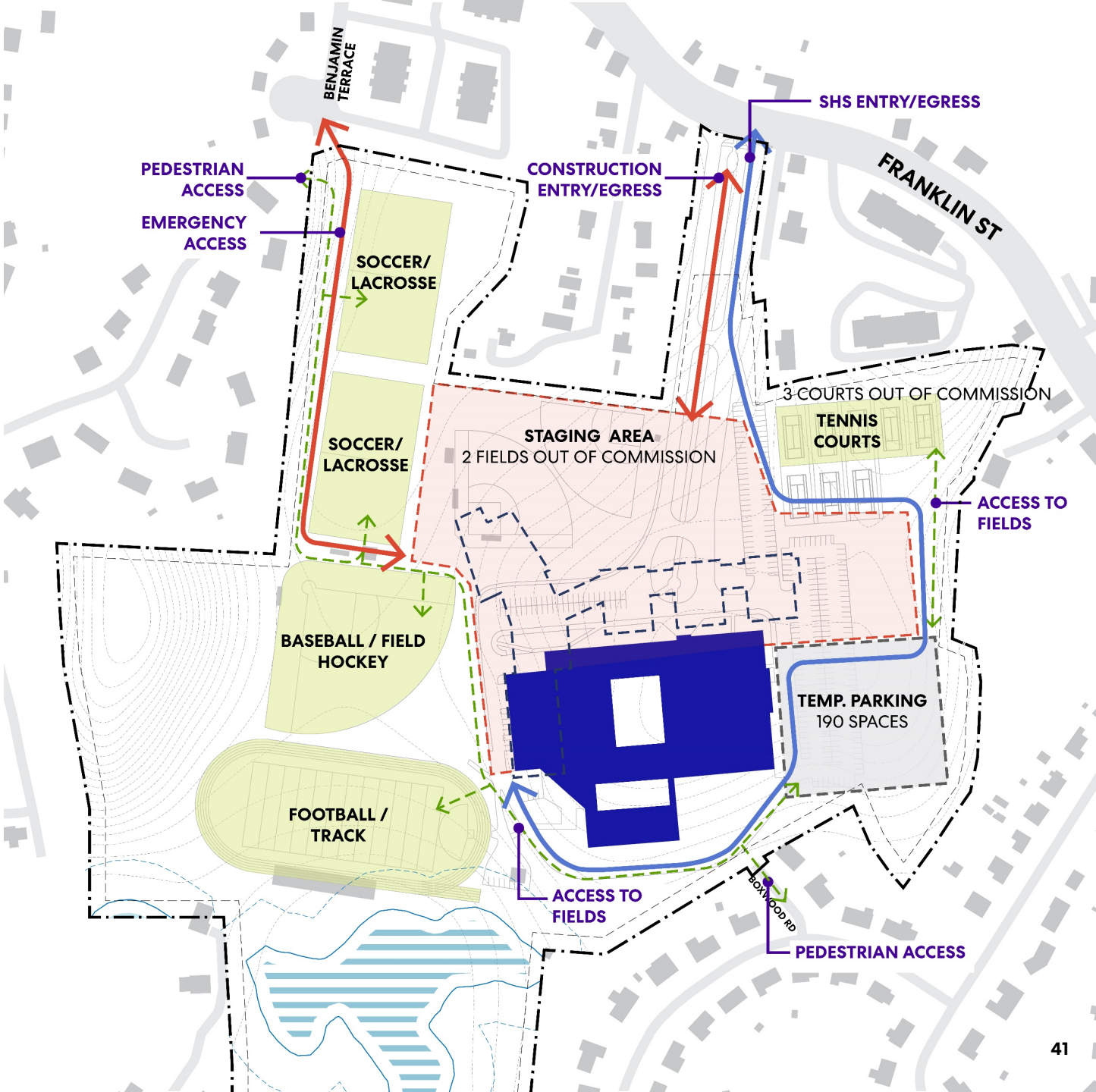
FIELD MATERIAL

- GRASS
- SYNTHETIC TURF

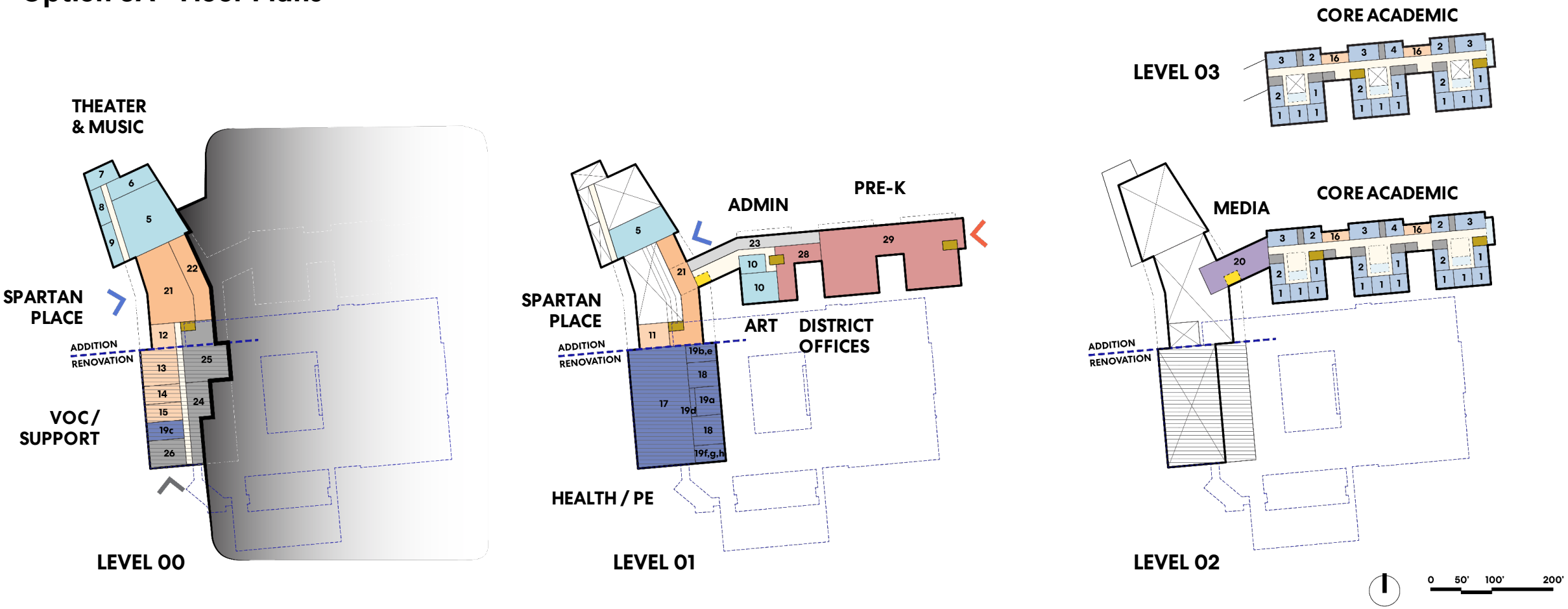
Option 3A – Construction Phasing

Fields out of Commission:

- (3) Tennis Courts
- (2) Softball Fields



Option 3A - Floor Plans



CORE ACADEMIC

1/ CLASSROOM
2/ SPED
3/ SCIENCE
4/ TEACHER PLANNING

BREAK OUT SPACE

ART & MUSIC

5/ AUDITORIUM
6/ STAGE
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VOC & TECH

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15/ ENGINEERING
16/ MAKER SPACE

HEALTH & PE

17/ GYMNASIUM
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SB/STADIUM BLEACHERS
AF/ATHLETIC FIELDS

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SP/ SPARTAN PLAZA

ADMIN

23/ ADMIN

SUPPORT

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25/ MECHANICAL
26/ LOADING
27/ RESTROOMS

OTHER

28/ DISTRICT OFFICE
29/ PRE-K

CIRCULATION

OPEN STAIR

CLOSED EGRESS STAIR

Perkins&Will

Option 4A – New Construction

Building Committee Meeting

Option 4A – Site Plan

PROGRAM

1 - TENNIS (5 Courts)
2 - SOFTBALL
3 - BASEBALL
4 - SOCCER
5 - TRACK
6 - WETLAND
7 - PARKING
8 - HALF SIZED FIELD
9 - FOOTBALL
10 - FIELD HOCKEY
11 - PICKLEBALL
12 - BASKETBALL
13 - ATHLETIC BUILDING
14 - PREK PLAY
15 - SPARTAN PLAZA
16 - HOME BLEACHERS
17 - VISITOR BLEACHERS
18 - LANDSCAPE PATH

CIRCULATION

- VEHICULAR DRIVE
- LIMITED ACCESS: EMERGENCY, MAINTENANCE, BICYCLES
- SERVICE DRIVE
- BIKE LANE
- ACCESSIBLE PEDESTRIAN PATH
- HIKING TRAIL (NOT ADA ACCESSIBLE)
- LANDSCAPE PEDESTRIAN PATH W/ EMERGENCY VEHICLE ACCESS ABILITY

KEY ENTRANCES

- HS MAIN ENTRY
- PRE-K MAIN ENTRY
- LOADING

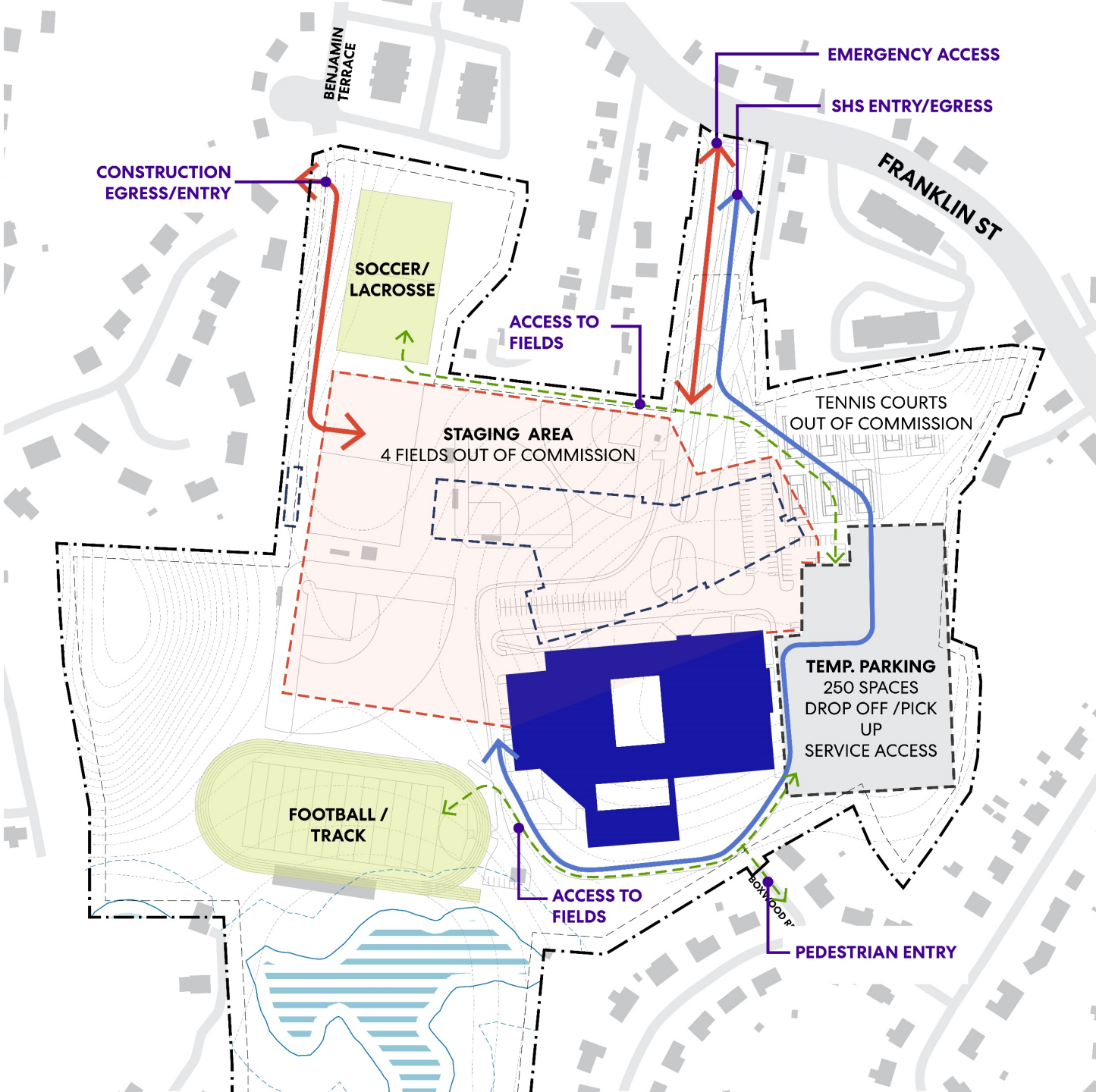
FIELD MATERIAL

- GRASS
- SYNTHETIC TURF

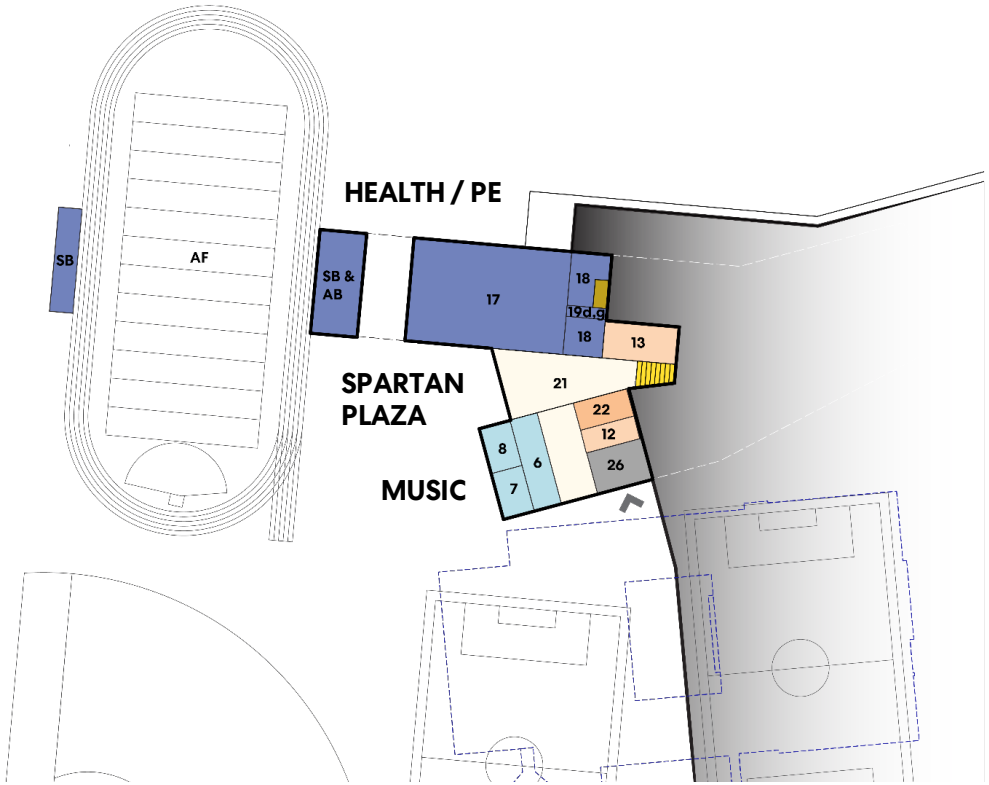
Option 4A – Construction Phasing

Fields out of Commission:

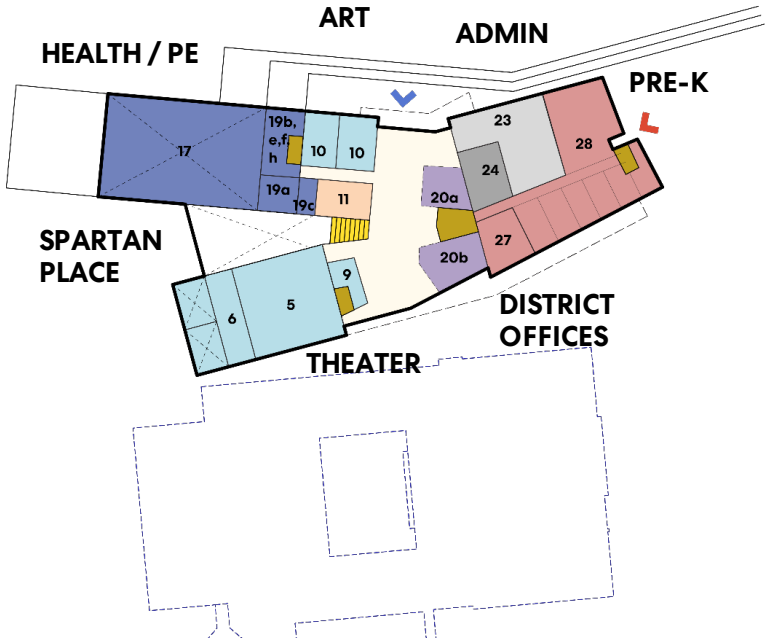
- (8) Tennis Courts
- (2) Softball Fields
- (1) Baseball Field
- (1) Soccer Field



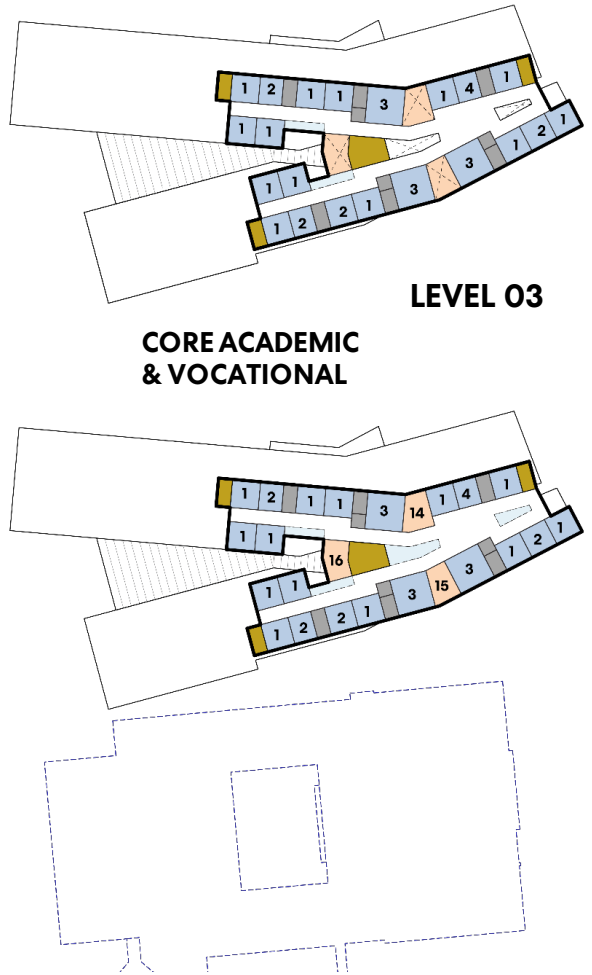
Option 4A – Floor Plans



LEVEL 00



LEVEL 01



LEVEL 02

LEVEL 03

CORE ACADEMIC

1/ CLASSROOM
2/ SPED
3/ SCIENCE
4/ TEACHER PLANNING

BREAK OUT SPACE

ART & MUSIC

5/ AUDITORIUM
6/ STAGE
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VOC & TECH

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16/ MAKER SPACE

HEALTH & PE

17/ GYMNASIUM
18/ PE & LOCKERS

SB/ STADIUM BLEACHERS
AF/ ATHLETIC FIELDS
AB/ ATHLETIC BLDG

19/ ATHLETICS
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MEDIA CENTER

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ADMIN

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27/ RESTROOMS

OTHER

28/ DISTRICT OFFICE
29/ PRE-K

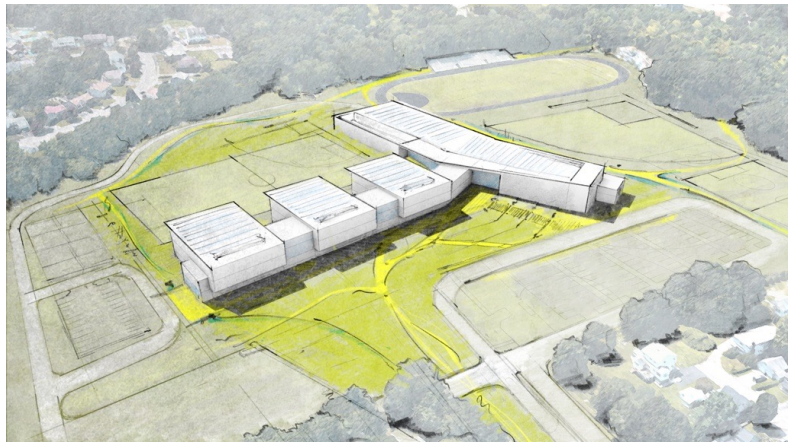
CIRCULATION

OPEN STAIR

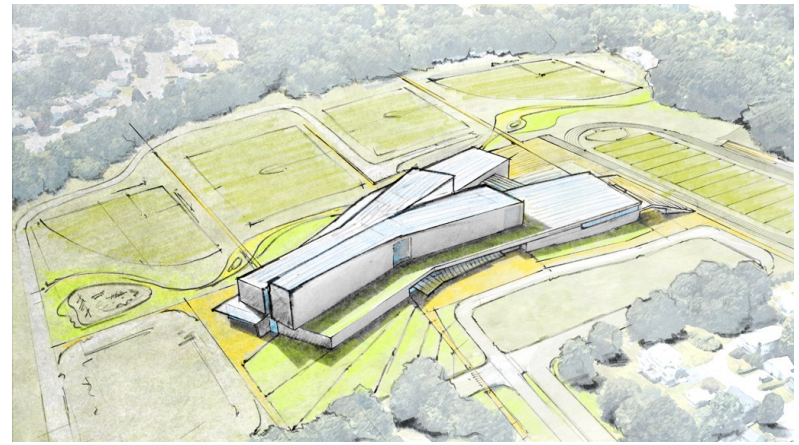
CLOSED EGRESS STAIR

Building Massing Sketches

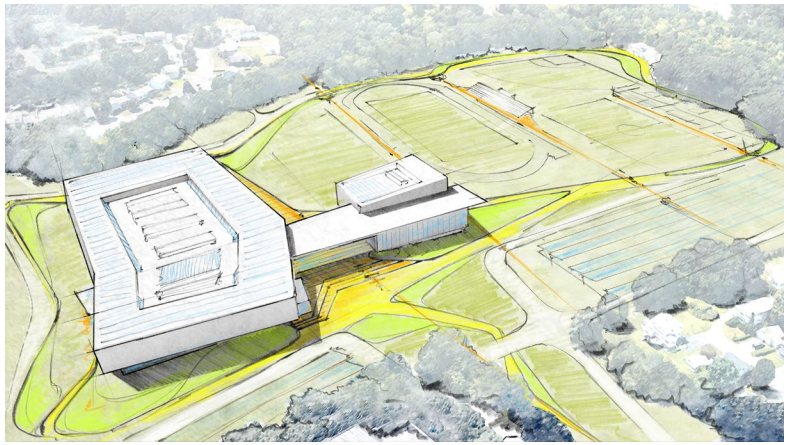
2A – Renovation Only



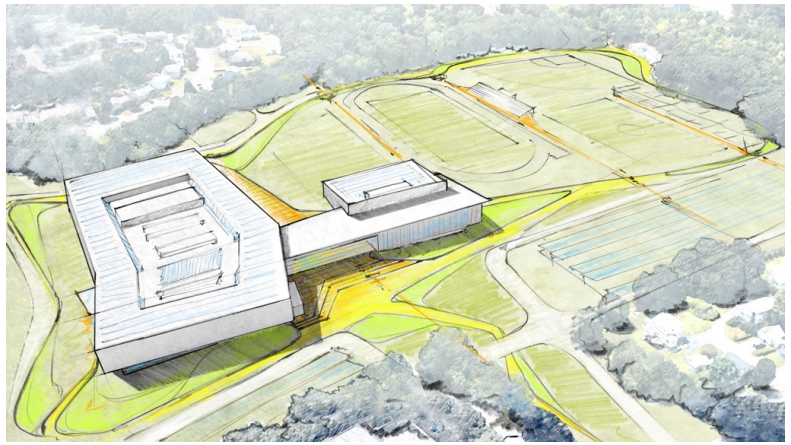
3A – Renovation Addition



4A – New Construction



4B1 – New Construction
Embedded Gymnasium



4B2 – New Construction
Embedded Auditorium

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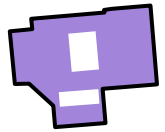
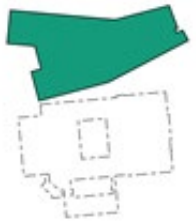
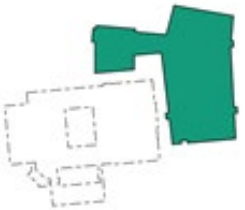
Project Cost Update

Building Committee Meeting

Cost Estimate







	Code Repair Only Option 1	Renovation Only Option 2	Renovation/ Addition Option 3A	New Construction Option 4A	New Construction Option 4B
PDP PHASE					
Approximate Total Project Cost	$115.0M	$173.4M	$175.2M	$174.8M	$172.9M
Approximate Cost to Stoneham	$61.0M	$111.5M	$120.7M	$123.7M	$122.0M
PSR PHASE					
Approximate Total Project Cost	$115.5M	$168.4M	$181.9M	$177.4M	$176.2M
Approximate Cost to Stoneham	$62.9M	$110.1M	$128.7M	$126.4M	$125.3M

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Project Management

Tax Impact Schedule

Stoneham High School Feasibility Study
Average Homeowner Tax Impact
PSR Submission
12/3/20 *(updated 12/7/20)*

PROJECT MANAGEMENT SMMA

DRAFT - FOR DISCUSSION PURPOSES ONLY

PDP Phase	**Code Repair Only Option 1A**	**Renovation Only Option 2A**	**Renovation/ Addition Option 3A**	**New Construction Option 4A**	**New Construction Option 4B**
Stoneham Share	$61,024,855	$111,500,522	$120,278,104	$123,733,473	$121,986,054
Rate	3.00%	3.00%	3.00%	3.00%	3.00%
Term (years)	20	20	20	20	20
Yearly Payment-20 yr Average	$ 4,101,829	$ 7,494,586	$ 8,084,578	$ 8,316,833	$ 8,199,379
Average Home Value	$ 577,700	$ 577,700	$ 577,700	$ 577,700	$ 577,700
Annual Tax Increase Average Home-20 yr Average	**$ 475**	**$ 868**	**$ 937**	**$ 964**	**$ 950**
Annual Tax Increase per $1,000 Valuation	$ 0.82	$ 1.50	$ 1.62	$ 1.67	$ 1.65

PSR Phase	**Code Repair Only Option 1A**	**Renovation Only Option 2A**	**Renovation/ Addition Option 3A**	**New Construction Option 4A**	**New Construction Option 4B**
Stoneham Share	$62,956,915	$110,147,850	$128,690,402	$126,421,381	$125,289,311
Rate	3.00%	3.00%	3.00%	3.00%	3.00%
Term (years)	20	20	20	20	20
Yearly Payment-20 yr Average	**$ 4,231,694**	**$ 7,403,666**	**$ 8,650,016**	**$ 8,497,503**	**$ 8,421,410**
Average Home Value	$ 577,700	$ 577,700	$ 577,700	$ 577,700	$ 577,700
Annual Tax Increase Average Home-20 yr Average	**$ 490**	**$ 858**	**$ 1,002**	**$ 985**	**$ 976**
Annual Tax Increase per $1,000 Valuation	**$ 0.85**	**$ 1.49**	**$ 1.74**	**$ 1.71**	**$ 1.69**

Assumptions: Tax rate based on Fiscal 2023 assessed valuation and AVERAGE house value of $577,700.
Yearly impact will change based upon subsequent year tax rates and valuations.
Code Repair Only Option 1 does not include any site and playing field work or any educational improvement work in the building.
Costs subject to change as Feasibility Study progresses.

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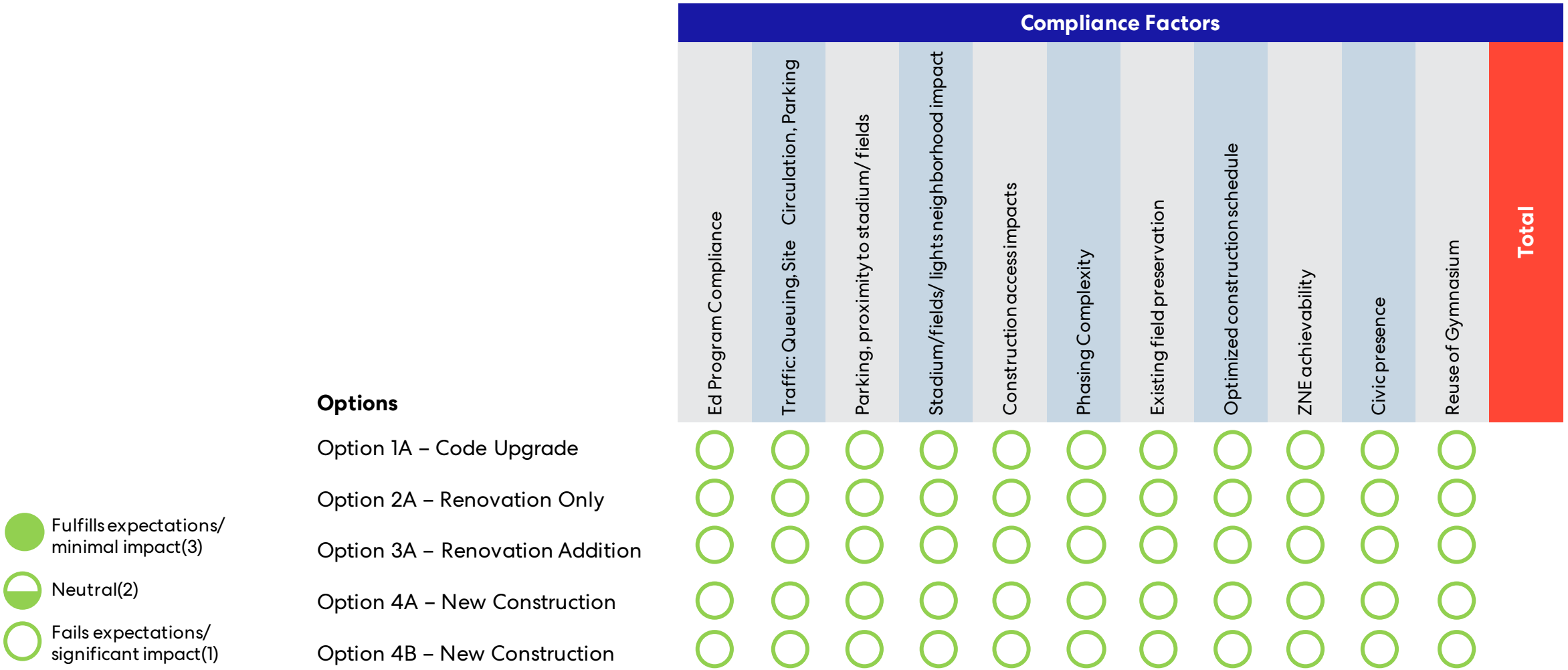
Discussion

Building Committee Meeting

Rating the Options



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Project Management

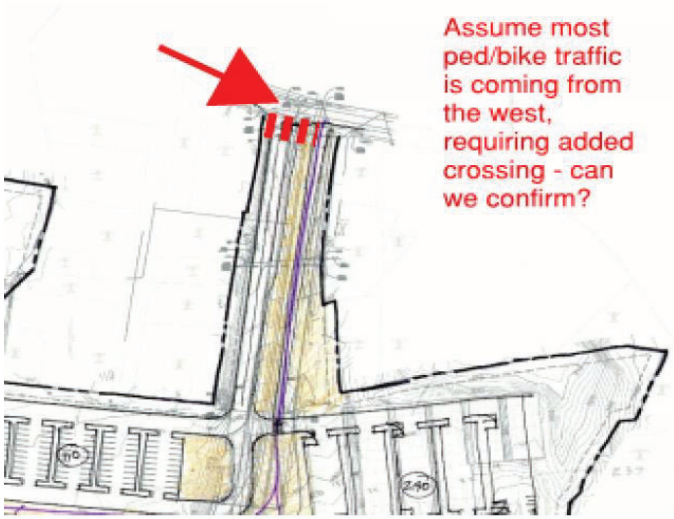
October 27, 2020
Update: November 9, 2020

Stoneham High School Feasibility Study
Design Options Review
Progress PSR Comments and Responses

No.	Date	SSBC Member	Comment	P&W Response
1	10/28/2020	Doug Gove	I thought the presentation the PW team made on the Renovation / Addition option was great. I realize it is early in the process, but has the team looked into the feasibility of maintaining the normal high school functions during construction and have these costs been incorporated into the cost estimate? I remained concerned about egress into and out of the existing building, parking, vehicular and student flow through the site. While I recognize that there will be some disruption to normal routine during construction, it is important that we provide a safe and functional learning environment for the kids attending school during this period. This comment applies to the new high school options as well --- I think we need to factor in student experience during construction when laying out these options.	Doug, these are excellent points that will be fully considered as we progress though the process. Being in the feasibility study we may not have all of the answers. We work collaboratively with the admin, regulatory, OPM and CM to determine the best routes, parking, flow and the details. While things will not function as they do now we will make the best decisions to provide a safe and functional learning experience for the students.
2	10/28/2020	Doug Gove	Building on my first comment, since traffic patterns onsite will be disrupted during construction, will there be enough queue length to avoid gridlock on Franklin Street. Would it be possible to have an early milestone in the project to implement traffic recommendations to ease the gridlock?	There are often early enabling packages for these projects. The phased construction phase may not be as effective as the final phase, however, the team (including the traffic consultant) will implement the best practices to eliminate as much congestion as possible.
3	10/28/2020	Doug Gove	There was a discussion on parking during the meeting and providing at least the same parking spots as the existing school. Has the PW team considered the parking available along both sides of Franklin Place and will this be available post project? Cars take advantage of this parking for big events at the high school.	It was determined that we would match the existing parking count. If that differs in any way we need to know to plan accordingly. If more parking is required than outside programs may be reduced. Traffic consultant will advise on parking along Franklin place.
4	10/28/2020	Doug Gove	There was discussion of having one of the new high school alternatives available for next meeting along with the renovation option. Can we prioritize differently so we have both new high school options and push off development of the renovation option until after our next meeting?	All options will be presented on 11.30.2020.
5	10/28/2020	David Bois	Comments on Option 3A2 Civic Presence / Siting: If having the front door visible from Franklin St is important, this option does not achieve that goal. The front door is well to the west of the entry drive – which is centered on one of the neighborhood pods.	This is something the committee should discuss in the pros and cons discussions and included in the MATRIX.

October 27, 2020
Update: November 9, 2020

Stoneham High School Feasibility Study
Design Options Review
Progress PSR Comments and Responses

No.	Date	SSBC Member	Comment	P&W Response
6	10/28/2020	David Bois	The addition of the bike/ pedestrian path is a good design element – has this been evaluated with traffic to determine best location / operational efficiencies? Bike path is to the east of the vehicular drive – have we determined whether most pedestrians and bikes are coming from the east or are they more likely to arrive from the west (downtown direction) which would require an extra interaction between bikes, peds and cars? 	Traffic Consultant will review this in more detail as the options develop.
7	10/28/2020	David Bois	Pedestrian plaza at the front of the school is nice, but is north facing and separates the entry from the parking / drop-off. Is there program for this or would this space better serve the school and academic programs on the south side of the building? The addition of the field at the south is a good feature, two comments, o has this been included in the current budgets or is this an add to those numbers? o Since this is on the site of the existing school, it would seem as though this could be incorporated into any of the new build options as well	The design team can explore this as the options are developed. All of the site design will be included in the PSR pricing.
8	10/28/2020	David Bois	Front entry court dominated by parking – this may be unavoidable – assume we will landscape this area, include stormwater management (rain gardens, etc.) – has this been included in budget assumptions to date? Assume pervious paving is not anticipated due to maintenance concerns.	All site areas will be managed, designed and integrated into the overall site concept and educational program

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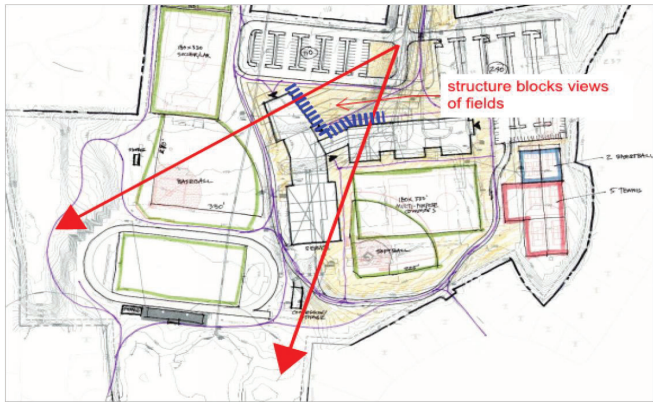
Stoneham High School Feasibility Study
Design Options Review
Progress PSR Comments and Responses

No.	Date	SSBC Member	Comment	P&W Response
9	10/28/2020	David Bois	The T shape building required by the renovation of the existing gym isolates the fields and blocks views of these from the entry and parking. Fields feel isolated and, with limited visibility, may be less inviting to the community. Note, tennis also more separated from public access. 	This is something the committee should discuss in the pros and cons discussions and included in the MATRIX.

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Stoneham High School Feasibility Study
Design Options Review
Progress PSR Comments and Responses

No.	Date	SSBC Member	Comment	P&W Response
10	10/28/2020	David Bois	Building Design The desire to keep the existing gym in this option results in significant "sprawl" to this plan. PW has done a nice job creating a workable option, however, it is my opinion that there are significant flaws in this approach: It appears that travel distances from the most remote classroom neighborhood to Spartan Place exceed 400' and are in excess of 500' to the gym and auditorium.  	Noted.
11	10/28/2020	David Bois	With the long travel distances, do we have a sense of how this impacts the need for additional elevators?	Currently 2 elevators are planned. Most students and staff will utilize the connecting stairs in the facility. Elevators are for HC use and those unable to use the stairs typically. The admin will determine who uses the elevators and in turn may impact how many are in the plan.
12	10/28/2020	David Bois	Spartan Place – is a dramatic feature of the design, however, with the need for the plan to stretch to connect to the gym, it is remote and not at the core of the design – alternate plans (not requiring connection to the existing gym) could locate this space more centrally connected to the neighborhoods.	Noted.
13	10/28/2020	David Bois	The "basement" classrooms locate program that was discussed as core academics to support our students into the future are remote and disconnected.	Noted. That is the con to this plan as we indicated on the presentation. There is 64,000sf of existing space to be renovated. Some program must go in that space.

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Update: November 9, 2020

Stoneham High School Feasibility Study
Design Options Review
Progress PSR Comments and Responses

No.	Date	SSBC Member	Comment	P&W Response
14	10/28/2020	David Bois	Construction / Budget The building is extremely close to the existing school – this is a result of reusing the existing gym – however there are significant concerns over the impacts of building this close to an active school. The project will impact at least two active school years, the quality of the learning environment, along with necessary exits / access and safety need to be considered a design element that guides our selection of the preferred option. In my opinion, this option will likely result in costs for logistics and temporary conditions that do not impact the quality of the new school long term.	As discussed and noted.
15	10/28/2020	David Bois	Renovation of the existing gym will result in a loss of use of that facility for some period of time – 6 months (or basically one school year) was mentioned, the committee has suggested that the least amount of impact on the fields (to allow for the continuation of normal sports seasons) should be a priority during construction – the gym should be considered in the same way.	As discussed and noted.
16	10/28/2020	David Bois	We still need to consider budget management as a core responsibility of this committee. We reviewed some breakouts of the very preliminary budget and ineligible costs – the plan /program shown raises some additional questions: The Pre-K program is a significant portion of the project – as show by the plans – are there other alternatives or is this a community / educational mandate? Core academics over MSBA are listed as nearly $6M – can we get more detail about what is included in this program? The School Store is a $500K+ project element? As discussed, we should review ZNE systems in relationship to life-cycle costs, not just initial costs. Also, in relation to turf vs natural grass fields, can we look at ongoing operation costs: maintenance (mowing, repair etc.) , utility (water) as well as potential revenue opportunities for the turf fields? Traffic signals are listed at nearly $5M – how many signals are included and how is this cost derived? Are there other funding sources for this as this is a community benefit and not related to any significant program change on site.	Committee should discuss program requirements and inclusions. See educational program for space and size details. Other questions are on going relative to life-cycle costs and operation costs of turf. Two traffic signals are being considered, however the traffic consultant in reviewing locations, pricing and need at this time.
17	10/29/2020	Sharon Iovanni	Have we taken into consideration how many spaces will be need for construction site workers? Can we identify a nearby offsite parking area from which construction site workers or students could be ferried to the high school site?	This should be reviewed with the CM. At some point there could be 75-100 workers, however, we will leave this discussion for the CM. Off site parking was raised by the design team, however, we were told that the construction workers needed to be on site. Committee to discuss.

October 27, 2020
Update: November 9, 2020

Stoneham High School Feasibility Study
Design Options Review
Progress PSR Comments and Responses

No.	Date	SSBC Member	Comment	P&W Response
18	11/3/2020	Jeanne Craigie	My major concern with what was presented was access to old building by students when that area appears directly in front of the old one. This is an accident waiting to happen . Now , will it be staged in sections which seems more costly , staged earth work , stage steel all of those are costly when not efficiently done all at once.	Committee to discuss and debate pros and cons. We have built other schools in this configuration successfully.
19	11/3/2020	Jeanne Craigie	Spartan Space is nice but it is not necessary to have that big a foot print when we are losing locker room space and athletic storage. Also the gentlemen who describe this plan kept using field house / gym as same thing?? We have no field house or did I miss it??	The athletic program is planned as indicated on the educational program. Gym is the word to use moving forward. Committee was going to provide a list of names to describe the spaces comfortable by the SHBC.
20	11/3/2020	Jeanne Craigie	The only advantage to this one is a gymnasium larger than MSBA will not reimburse.	Comment noted. Should discuss with SHBC.
21	11/3/2020	Jeanne Craigie	The length of the building is truly a draw back to passing time and ability to travel in an efficient way for staff and students.	Comment noted. Should discuss with SHBC.
22	11/3/2020	Jeanne Craigie	I still don't buy the argument to relocate a baseball field for sun glare and ignore it on a football field ... ask him to go play on it!	Noted.
23	11/8/2020	Josephine Thomson	Does anyone have any idea of the lifespan of a turf field? Best base for the artificial turf field? Maintenance of the turf field? Such as watering - anything else? What is the disposal process when the turf field has to be replaced? Where will it be disposed? Is the artificial turf field hotter than the natural grass fields? Safety concerns? Are there increased risks of injuries to the players? Respiratory concerns? Any information on research into new species of natural grass (greater density)? Feedback from other towns that have turf fields?	These questions are being addressed. These questions come up during the planning of all of our projects.

Stoneham High School Feasibility Study
Average Homeowner Tax Impact
PSR Submission
12/3/20 *(updated 12/7/20)*

PROJECT MANAGEMENT SMMA

DRAFT - FOR DISCUSSION PURPOSES ONLY

PDP Phase	**Code Repair Only Option 1A**	**Renovation Only Option 2A**	**Renovation/ Addition Option 3A**	**New Construction Option 4A**	**New Construction Option 4B**
Stoneham Share	**$61,024,855**	**$111,500,522**	**$120,278,104**	**$123,733,473**	**$121,986,054**
Rate	3.00%	3.00%	3.00%	3.00%	3.00%
Term (years)	20	20	20	20	20
Yearly Payment-20 yr Average	$ 4,101,829	$ 7,494,586	$ 8,084,578	$ 8,316,833	$ 8,199,379
Average Home Value	$ 577,700	$ 577,700	$ 577,700	$ 577,700	$ 577,700
Annual Tax Increase Average Home-20 yr Average	**$ 475**	**$ 868**	**$ 937**	**$ 964**	**$ 950**
Annual Tax Increase per $1,000 Valuation	$ 0.82	$ 1.50	$ 1.62	$ 1.67	$ 1.65

PSR Phase	**Code Repair Only Option 1A**	**Renovation Only Option 2A**	**Renovation/ Addition Option 3A**	**New Construction Option 4A**	**New Construction Option 4B**
Stoneham Share	**$62,956,915**	**$110,147,850**	**$128,690,402**	**$126,421,381**	**$125,289,311**
Rate	3.00%	3.00%	3.00%	3.00%	3.00%
Term (years)	20	20	20	20	20
Yearly Payment-20 yr Average	**$ 4,231,694**	**$ 7,403,666**	**$ 8,650,016**	**$ 8,497,503**	**$ 8,421,410**
Average Home Value	$ 577,700	$ 577,700	$ 577,700	$ 577,700	$ 577,700
Annual Tax Increase Average Home-20 yr Average	**$ 490**	**$ 858**	**$ 1,002**	**$ 985**	**$ 976**
Annual Tax Increase per $1,000 Valuation	**$ 0.85**	**$ 1.49**	**$ 1.74**	**$ 1.71**	**$ 1.69**

Assumptions: Tax rate based on Fiscal 2023 assessed valuation and AVERAGE house value of $577,700.
Yearly impact will change based upon subsequent year tax rates and valuations.
Code Repair Only Option 1 does not include any site and playing field work or any educational improvement work in the building.
Costs subject to change as Feasibility Study progresses.

Stoneham High School Feasibility Study
Preliminary PSR Total Project Cost Estimate Comparison
12/3/2020

PROJECT MANAGEMENT SMMA

DRAFT

PM&C Estimate
Dated 12/3/20

SF	Option	PDP Phase Project Costs				PSR Phase Project Costs			
					Project Cost/SF				Project Cost/SF
208,113	**Code Repairs Only Option 1A**	Construction Cost		$88,047,467			$87,064,326		
		Building Cost		$78,183,395			$77,258,529		
		Site Cost		$3,795,310			$3,750,414		
		Concession/Locker Room Building		$0			$0		
		Demo/HazMat Cost		$6,068,762			$6,055,383		
		Temporary Classroom Modulars		$5,600,000			$5,600,000		
		Fees,Testing, Utilities, and Expenses		$15,156,408			$15,023,684		
		FFE/Technology		$0			$0		
		Contingencies		$6,163,323			$7,835,789		
			total	**$114,967,198**	**$552**	**total**	**$115,523,799**	**$555**	
208,113	**Renovation Only Option 2A**	Construction Cost		$134,079,253			$129,540,192		
		Building Cost		$101,123,150			$97,665,445		
		Site Cost		$24,824,019			$26,005,549		
		Concession/Locker Room Building		$2,250,000			$0		
		Demo/HazMat Cost		$5,882,084			$5,869,198		
		Temporary Classroom Modulars		$5,600,000			$5,600,000		
		Fees,Testing, Utilities, and Expenses		$22,036,949			$21,727,926		
		FFE/Technology		$2,502,000			$2,502,000		
		Contingencies		$9,228,048			$9,067,813		
			total	**$173,446,250**	**$833**	**total**	**$168,437,931**	**$809**	
207,827	**Renovation/Addition Option 3A**	Construction Cost		$140,176,603			$145,405,962		
		Building Cost		$102,795,319			$109,855,783		
		Site Cost		$28,287,704			$25,953,240		
		Concession/Locker Room Building		$2,250,000			$2,880,106		
		Demo/HazMat Cost		$6,843,580			$6,716,833		
		Fees,Testing, Utilities, and Expenses		$22,860,091			$23,869,805		
		FFE/Technology		$2,502,000			$2,502,000		
		Contingencies		$9,654,862			$10,178,417		
			total	**$175,193,556**	**$858**	**total**	**$181,956,184**	**$876**	
207,827	**New Construction Option 4A**	Construction Cost		$139,833,139			$141,652,636		
		Building Cost		$102,795,502			$103,847,292		
		Site Cost		$28,051,645			$28,390,704		
		Concession/Locker Room Building		$2,250,000			$2,838,789		
		Demo/HazMat Cost		$6,735,992			$6,575,851		
		Fees,Testing, Utilities, and Expenses		$22,813,724			$23,363,106		
		FFE/Technology		$2,502,000			$2,502,000		
		Contingencies		$9,630,820			$9,915,684		
			total	**$174,779,683**	**$856**	**total**	**$177,433,426**	**$854**	
207,827	**New Construction Option 4B**	Construction Cost		$138,271,461			$140,636,495		
		Building Cost		$101,572,664			$103,056,537		
		Site Cost		$27,709,717			$28,176,998		
		Concession/Locker Room Building		$2,250,000			$2,835,267		
		Demo/HazMat Cost		$6,739,080			$6,567,693		
		Fees,Testing, Utilities, and Expenses		$22,602,897			$23,225,927		
		FFE/Technology		$2,502,000			$2,502,000		
		Contingencies		$9,521,502			$9,844,555		
			total	**$172,897,860**	**$847**	**total**	**$176,208,977**	**$848**	

Costs subject to change as Feasibility Study progresses

Stoneham High School Feasibility Study
Preliminary PSR Approximate Reimbursement Comparison
12/3/2020

PROJECT MANAGEMENT SMMA

DRAFT

PM&C Estimate
Dated 12/3/20

	Code Repair Only Option 1A	Renovation Only Option 2A	Renovation/ Addition Option 3A	New Construction Option 4A	New Construction Option 4B
Total Project Cost	$115,523,799	$168,437,931	$181,956,184	$177,433,426	$176,208,977
Approximate MSBA Reimbursement	$52,566,884	$58,290,081	$53,265,782	$51,012,045	$50,919,666
Approximate Cost to the Town	**$62,956,915**	**$110,147,850**	**$128,690,402**	**$126,421,381**	**$125,289,311**
Summary of Approximate Ineligible Costs					
Temporary Classroom Modulars	$5,600,000	$5,600,000	$0	$0	$0
Site Costs above 8% Cap	$0	$14,262,288	$20,585,314	$21,030,236	$20,875,561
Concession/Locker Room Building	na	na	$2,050,000	$2,050,000	$2,050,000
Building Costs above $333/SF Cap	$11,295,314	$40,295,849	$47,133,471	$42,948,685	$42,094,670
Building Costs Ineligible SF	$5,150,628	$4,530,798	$10,084,905	$10,084,905	$10,084,905
OPM and Designer Fees on Ineligible SF	$768,691	$1,143,710	$1,362,752	$1,339,392	$1,332,057
Asbestos Flooring Abatement	$412,000	$412,000	$412,000	$412,000	$412,000
FFE/Technology over $2,400/student	na	$834,000	$834,000	$834,000	$834,000
Legal Fees, Moving Expenses, Contingencies	$4,773,216	$4,306,206	$4,782,179	$6,086,106	$6,045,460
	$27,999,849	$71,384,851	$87,244,621	$84,785,324	$83,728,653

Costs subject to change as Feasibility Study progresses
Code Repair Only Option 1 does not include any site and playing field work or any educational improvement work in the building

DRAFT

PM&C Estimate
Dated 12/3/20

	Code Repair Only Option 1A	Renovation Only Option 2A	Renovation/ Addition Option 3A	New Construction Option 4A	New Construction Option 4B
Building Costs					
Foundations	$573,250	$573,250	$4,875,810	$5,631,605	$3,234,067
Superstructure	$1,289,522	$1,905,068	$6,368,864	$8,810,031	$8,661,362
Exterior Closure	$3,250,002	$9,328,752	$12,786,440	$10,834,295	$12,501,463
Roofing	$2,748,488	$2,995,896	$2,048,500	$2,262,244	$2,746,324
Interior Construction	$3,826,957	$8,405,443	$6,342,867	$8,001,167	$8,001,167
Staircases	$222,000	$222,000	$246,436	$274,723	$319,723
Interior Finishes	$7,217,986	$7,217,986	$5,434,118	$7,066,118	$7,066,118
Conveying Systems	$220,000	$220,000	$120,000	$160,000	$120,000
Plumbing	$3,347,726	$3,329,808	$2,557,232	$3,325,232	$3,325,232
HVAC	$11,446,215	$14,567,910	$11,187,890	$14,547,890	$14,547,890
Fire Protection	$1,248,678	$1,248,678	$958,962	$1,246,962	$1,246,962
Electrical	$8,589,892	$8,718,417	$6,998,765	$8,723,426	$8,723,426
Equipment	$1,453,600	$1,453,600	$1,259,100	$1,832,600	$1,710,100
Furnishings	$2,588,914	$2,588,914	$1,814,056	$2,275,882	$2,309,748
Selective Renovations	$0	$0	$14,694,049	$0	$0
Selective Demolition	$1,834,616	$2,250,842	$0	$0	$0
Building Demolition	$0	$0	$1,280,904	$1,248,678	$1,248,678
Hazardous Materials	$4,025,000	$4,025,000	$3,500,000	$3,500,000	$3,500,000
Phasing	$1,495,735	$1,950,797	$500,000	$0	$0
Subtotal	**$55,378,581**	**$71,002,361**	**$82,973,993**	**$79,740,853**	**$79,262,260**
Sitework					
General Sitework	$2,492,892	$8,500,933	$10,936,737	$10,915,787	$10,786,737
Concession/Locker Room	$0	$0	$2,050,000	$2,050,000	$2,050,000
Two Synthetic Soccer Fields	$0	$1,686,000	$1,686,000	$1,686,000	$1,686,000
Synthetic Football Field, Track, Bleachers	$0	$3,207,246	$3,207,246	$3,207,246	$3,207,246
Sports Lighting - three Fields	$0	$1,440,000	$1,440,000	$1,440,000	$1,440,000
Two New Traffic Signals	$0	$3,000,000	$3,000,000	$3,000,000	$3,000,000
Temporary Utilities	$0	$0	$253,000	$253,000	$253,000
Subtotal	**$2,492,892**	**$17,834,179**	**$22,572,983**	**$22,552,033**	**$22,422,983**
Mark-ups					
Escalation	$3,761,646	$5,774,375	$6,582,706	$7,302,062	$7,074,544
Design Contingency	$8,680,721	$13,325,481	$12,665,637	$12,275,146	$12,202,229
General Conditions	$7,680,000	$7,680,000	$5,760,000	$5,280,000	$5,280,000
General Requirements	$3,515,692	$5,396,820	$4,991,813	$4,874,804	$4,838,481
Bonds	$703,138	$1,079,364	$1,247,953	$1,218,701	$1,209,620
Insurance	$984,394	$1,511,110	$1,747,134	$1,706,181	$1,693,468
Permit	$0	$0	$0	$0	$0
Temporary Classrooms	$5,600,000	$5,600,000	$0	$0	$0
CM Fee	$1,757,846	$2,698,410	$3,119,883	$3,046,752	$3,024,050
CM Contingency	$2,109,415	$3,238,092	$3,743,860	$3,656,103	$3,628,860
Subtotal	**$34,792,852**	**$46,303,652**	**$39,858,986**	**$39,359,749**	**$38,951,252**
TOTAL	**$92,664,325**	**$135,140,192**	**$145,405,962**	**$141,652,635**	**$140,636,495**

Costs subject to change as Feasibility Study progresses

PSR Estimate

Stoneham High School
Design Options

Stoneham, MA

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Prepared for:

Perkins & Will

December 3, 2020

PM&C

Stoneham High School
Design Options
Stoneham, MA

03-Dec-20

PSR Estimate

MAIN CONSTRUCTION COST SUMMARY

	Construction Start		Gross Floor Area	$/sf	Estimated Construction Cost
RENOVATION HIGH SCHOOL CODE UPGRADES - OPTION 1A					
	Jan-23				
RENOVATIONS TO EXISTING SCHOOL			208,113	$239.57	$49,857,846
REMOVE HAZARDOUS MATERIALS					$4,025,000
PHASING COSTS					$1,495,735
SYNTHETIC TWO SOCCER/LACROSS FIELDS					NR
SYNTHETIC FOOTBALL FIELD					NR
SPORTS LIGHTING - Three Fields					NR
STADIUM RENOVATION - New Track + Bleachers					ETR
NEW TRAFFIC SIGNAL WORK (Two Locations)					NR
TICKET BOOTH/PRESS BOX/MENS/STORAGE/WOMENS/CONCESSIONS					NR
SITEWORK - ALLOWANCE					$2,492,892
SUB-TOTAL			208,113	$278.08	$57,871,473
ESCALATION TO MID-POINT - (assumed 3% PA)	6.5%				$3,761,646
DESIGN AND PRICING CONTINGENCY	15%				$8,680,721
SUB-TOTAL			208,113	$337.86	$70,313,840
GENERAL CONDITIONS		48	MTHS	$160,000	$7,680,000
GENERAL REQUIREMENTS	5.00%				$3,515,692
BONDS	1.00%				$703,138
INSURANCE	1.40%				$984,394
PERMIT					Waived
TEMPORARY CLASSROOMS		28	ROOMS	$200,000	$5,600,000
CM FEE	2.5%				$1,757,846
CM/GMP CONTINGENCY	3%				$2,109,415
TOTAL OF ALL CONSTRUCTION			208,113	$445.26	**$92,664,325**
PV PANELS				ADD	**TBD**

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Stoneham High School
Design Options
Stoneham, MA

03-Dec-20

PSR Estimate

MAIN CONSTRUCTION COST SUMMARY

	Construction Start		Gross Floor Area	$/sf	Estimated Construction Cost
FULL RENOVATION OPTION 2A					
	Jan-23				
RENOVATIONS TO EXISTING SCHOOL			208,113	$312.46	$65,026,564
REMOVE HAZARDOUS MATERIALS					$4,025,000
PHASING COSTS					$1,950,797
SYNTHETIC TWO SOCCER/LACROSS FIELDS					Included with Site
SYNTHETIC FOOTBALL FIELD					Included with Site
SPORTS LIGHTING - Three Fields					$1,440,000
STADIUM RENOVATION - New Track + Bleachers					Included with Site
NEW TRAFFIC SIGNAL WORK (Two Locations)					$3,000,000
TICKET BOOTH/PRESS BOX/MENS/STORAGE/WOMENS/CONCESSIONS					NR
SITEWORK					$13,394,179
SUB-TOTAL			208,113	$426.87	$88,836,540
ESCALATION TO MID-POINT - (assumed 3% PA)	6.5%				$5,774,375
DESIGN AND PRICING CONTINGENCY	15%				$13,325,481
SUB-TOTAL			208,113	$518.64	$107,936,396
GENERAL CONDITIONS		48	MTHS	$160,000	$7,680,000
GENERAL REQUIREMENTS	5.00%				$5,396,820
BONDS	1.00%				$1,079,364
INSURANCE	1.40%				$1,511,110
PERMIT					Waived
TEMPORARY CLASSROOMS		28	ROOMS	$200,000	$5,600,000
CM FEE	2.5%				$2,698,410
CM/GMP CONTINGENCY	3%				$3,238,092
TOTAL OF ALL CONSTRUCTION			208,113	$649.36	**$135,140,192**

PV PANELS	ADD	**TBD**
HVAC OPTION VRF	DEDUCT	**($4,302,019)**
HVAC OPTION CENTRAL PLANT with VAV	DEDUCT	**($3,154,814)**

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Stoneham High School
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Stoneham, MA

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PSR Estimate

	Construction Start		Gross Floor Area	$/sf	Estimated Construction Cost
RENOVATION + ADDITION OPTION 3A					
	Jan-23				
RENOVATIONS TO EXISTING SCHOOL			48,000	$306.13	$14,694,049
ADDITIONS			159,827	$394.17	$62,999,040
DEMOLISH EXISTING SCHOOL - PARTIAL (phased)			160,113	$8.00	$1,280,904
REMOVE HAZARDOUS MATERIALS					$3,500,000
PHASING COSTS					$500,000
SYNTHETIC THREE SOCCER					Included with Site
SYNTHETIC FOOTBALL FIELD					Included with Site
SPORTS LIGHTING - Three Fields					$1,440,000
STADIUM RENOVATION - New Track + Bleachers					Included with Site
NEW TRAFFIC SIGNAL WORK (Two Locations)					$3,000,000
TEMPORARY UTILITIES					Included with Site
TICKET BOOTH/PRESS BOX/MENS/STORAGE/WOMENS/CONCESSIONS			5,000	$410.00	$2,050,000
SITEWORK					$16,082,983
SUB-TOTAL			207,827	$507.86	$105,546,976
ESCALATION EARLY PACKAGE June 2022 - (assumed 3% PA)	4.8%				$539,744
ESCALATION BUILDING Jan 2023 - (assumed 3% PA)	6.5%				$3,364,034
ESCALATION SITE + RENO July 2024 - (assumed 3% PA)	11.0%				$2,678,928
DESIGN AND PRICING CONTINGENCY	12%				$12,665,637
SUB-TOTAL			207,827	$600.48	$124,795,319
GENERAL CONDITIONS		36	MTHS	$160,000	$5,760,000
GENERAL REQUIREMENTS	4.00%				$4,991,813
BONDS	1.00%				$1,247,953
INSURANCE	1.40%				$1,747,134
PERMIT					Waived
CM FEE	2.5%				$3,119,883
CM/GMP CONTINGENCY	3%				$3,743,860
TOTAL OF ALL CONSTRUCTION			207,827	$699.65	**$145,405,962**
PV PANELS				ADD	**TBD**
HVAC OPTION VRF				DEDUCT	**($4,302,019)**
HVAC OPTION CENTRAL PLANT with VAV				DEDUCT	**($3,154,814)**

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Stoneham High School
Design Options
Stoneham, MA

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PSR Estimate

	Construction Start		Gross Floor Area	$/sf	Estimated Construction Cost
NEW HIGH SCHOOL ONLY OPTION 4A					
	Jan-23				
NEW SCHOOL			207,827	$360.84	$74,992,175
DEMOLISH EXISTING SCHOOL			208,113	$6.00	$1,248,678
REMOVE HAZARDOUS MATERIALS					$3,500,000
PHASING COSTS					NR
SYNTHETIC TWO SOCCER/LACROSS FIELDS					Included with Site
SYNTHETIC STADIUM FIELD					Included with Site
SPORTS LIGHTING - Three Fields					$1,440,000
STADIUM RENOVATION - New Track + Bleachers					Included with Site
NEW TRAFFIC SIGNAL WORK (Two Locations)					$3,000,000
TEMPORARY UTILITIES					Included with Site
TICKET BOOTH/PRESS BOX/MENS/STORAGE/WOMENS/CONCESSIONS			5,000	$410.00	$2,050,000
SITEWORK					$16,062,033
SUB-TOTAL			207,827	$492.20	$102,292,886
ESCALATION EARLY PACKAGE June 2022 - (assumed 3% PA)	4.8%				$693,199
ESCALATION BUILDING Jan 2023 - (assumed 3% PA)	6.5%				$3,935,785
ESCALATION SITE + RENO July 2024 - (assumed 3% PA)	11.0%				$2,673,078
DESIGN AND PRICING CONTINGENCY	12%				$12,275,146
SUB-TOTAL			207,827	$586.40	$121,870,094
GENERAL CONDITIONS		33	MTHS	$160,000	$5,280,000
GENERAL REQUIREMENTS	4.00%				$4,874,804
BONDS	1.00%				$1,218,701
INSURANCE	1.40%				$1,706,181
PERMIT					Waived
CM FEE	2.5%				$3,046,752
CM/GMP CONTINGENCY	3%				$3,656,103
TOTAL OF ALL CONSTRUCTION			207,827	$681.59	**$141,652,635**
PV PANELS				ADD	**TBD**
HVAC OPTION VRF				DEDUCT	**($4,302,019)**
HVAC OPTION CENTRAL PLANT with VAV				DEDUCT	**($3,154,814)**

PMC - Project Management Cost

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Stoneham High School
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PSR Estimate

	Construction Start		Gross Floor Area	$/sf	Estimated Construction Cost
NEW HIGH SCHOOL ONLY OPTION 4B	Jan-23				
NEW SCHOOL			207,827	$358.54	$74,513,582
DEMOLISH EXISTING SCHOOL			208,113	$6.00	$1,248,678
REMOVE HAZARDOUS MATERIALS					$3,500,000
PHASING COSTS					NR
SYNTHETIC TWO SOCCER/LACROSS FIELDS					Included with Site
SYNTHETIC STADIUM FIELD					Included with Site
SPORTS LIGHTING - Three Fields					$1,440,000
STADIUM RENOVATION - New Track + Bleachers					Included with Site
NEW TRAFFIC SIGNAL WORK (Two Locations)					$3,000,000
TICKET BOOTH/PRESS BOX/MENS/STORAGE/WOMENS/CONCESSIONS			5,000	$410.00	$2,050,000
TEMPORARY UTILITIES					Included with Site
SITEWORK					$15,932,983
SUB-TOTAL			207,827	$489.28	$101,685,243
ESCALATION EARLY PACKAGE June 2022 - (assumed 3% PA)	4.8%				$570,981
ESCALATION BUILDING Jan 2023 - (assumed 3% PA)	6.5%				$4,070,180
ESCALATION SITE + RENO July 2024 - (assumed 3% PA)	11.0%				$2,433,383
DESIGN AND PRICING CONTINGENCY	12%				$12,202,229
SUB-TOTAL			207,827	$582.03	$120,962,016
GENERAL CONDITIONS		33	MTHS	$160,000	$5,280,000
GENERAL REQUIREMENTS	4.00%				$4,838,481
BONDS	1.00%				$1,209,620
INSURANCE	1.40%				$1,693,468
PERMIT					Waived
CM FEE	2.5%				$3,024,050
CM/GMP CONTINGENCY	3%				$3,628,860
TOTAL OF ALL CONSTRUCTION			207,827	$676.70	**$140,636,495**

PV PANELS	ADD	**TBD**
HVAC OPTION VRF	DEDUCT	**($4,302,019)**
HVAC OPTION CENTRAL PLANT with VAV	DEDUCT	**($3,154,814)**

Stoneham High School
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PSR Estimate

The costs presented in this report are ONLY for the comparison between the various options. These costs should not be represented as the final construction costs as the information they are based on is extremely preliminary and final construction costs may vary significantly from the PSR costs once the final design has been completed.

This PSR cost estimate was produced from drawings, narratives and other documentation prepared by Perkins & Will dated December 02, 2020. Design and engineering changes occurring subsequent to the issue of these documents have not been incorporated in this estimate.

This estimate includes all direct construction costs, construction manager's overhead, fee and design contingency. Cost escalation assumes start dates indicated.

Bidding conditions are expected to be public bidding under Chapter 149a of the Massachusetts General Laws to pre-qualified construction managers, and pre-qualified sub-contractors, open specifications for materials and manufactures.

The estimate is based on prevailing wage rates for construction in this market and represents a reasonable opinion of cost. It is not a prediction of the successful bid from a contractor as bids will vary due to fluctuating market conditions, errors and omissions, proprietary specifications, lack or surplus of bidders, perception of risk, etc. Consequently the estimate is expected to fall within the range of bids from a number of competitive contractors or subcontractors, however we do not warrant that bids or negotiated prices will not vary from the final construction cost estimate.

ITEMS NOT CONSIDERED IN THIS ESTIMATE

Items not included in this estimate are:

- Land acquisition, feasibility, and financing costs
- All professional fees and insurance
- Site or existing conditions surveys investigations costs, including to determine subsoil conditions
- All Furnishings, Fixtures and Equipment
- Items identified in the design as Not In Contract (NIC)
- Items identified in the design as by others
- Owner supplied and/or installed items as indicated in the estimate
- Utility company back charges, including work required off-site
- Work to City streets and sidewalks, (except as noted in this estimate)
- Construction contingency (GMP Contingency is included)
- Contaminated soils removal

PM&C

Stoneham High School
Design Options
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PSR Estimate

GFA 208,113

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
HIGH SCHOOL CODE UPGRADES OPTION 1						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$95,000			
	A1020	Special Foundations	$0			
	A1030	Lowest Floor Construction	$478,250	**$573,250**	$2.75	1.1%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$470,247			
	B1020	Roof Construction	$819,275	**$1,289,522**	$6.20	2.6%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$899,500			
	B2020	Windows/Curtainwall	$2,139,950			
	B2030	Exterior Doors	$210,552	**$3,250,002**	$15.62	6.5%
B30	**ROOFING**					
	B3010	Roof Coverings	$2,721,488			
	B3020	Roof Openings	$27,000	**$2,748,488**	$13.21	5.5%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$821,100			
	C1020	Interior Doors	$1,248,678			
	C1030	Specialties/Millwork	$1,757,179	**$3,826,957**	$18.39	7.7%
C20	**STAIRCASES**					
	C2010	Stair Construction	$180,000			
	C2020	Stair Finishes	$42,000	**$222,000**	$1.07	0.4%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$2,915,469			
	C3020	Floor Finishes	$2,174,283			
	C3030	Ceiling Finishes	$2,128,234	**$7,217,986**	$34.68	14.5%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$220,000	**$220,000**	$1.06	0.4%
D20	**PLUMBING**					
	D20	Plumbing	$3,347,726	**$3,347,726**	$16.09	6.7%
D30	**HVAC**					
	D30	HVAC	$11,446,215	**$11,446,215**	$55.00	23.0%
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$1,248,678	**$1,248,678**	$6.00	2.5%
D50	**ELECTRICAL**					
	D5010	Electrical Systems	$8,589,892	**$8,589,892**	$41.28	17.2%

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Stoneham High School
Design Options
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PSR Estimate

GFA 208,113

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
HIGH SCHOOL CODE UPGRADES OPTION 1						
E10	**EQUIPMENT**					
	E10	Equipment	$1,453,600	**$1,453,600**	$6.98	2.9%
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$2,588,914			
	E2020	Movable Furnishings	NIC	**$2,588,914**	$12.44	5.2%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$0	**$0**	$0.00	0.0%
F20	**SELECTIVE BUILDING DEMOLITION**					
	F2010	Building Elements Demolition	$1,834,616			
	F2020	Hazardous Components Abatement	$0	**$1,834,616**	$8.82	3.7%
TOTAL DIRECT COST (Trade Costs)				***$49,857,846***	*$239.57*	*100.0%*

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Stoneham High School 03-Dec-20
Design Options
Stoneham, MA

PSR Estimate **GFA** 208,113

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	HIGH SCHOOL CODE UPGRADES OPTION 1						
	GROSS FLOOR AREA CALCULATION						
	LEVEL 2				52,713		
	LEVEL 1				127,252		
	LEVEL 0				28,148		
	TOTAL GROSS FLOOR AREA (GFA)				**208,113** ***sf***		
	A10 FOUNDATIONS						
	A1010 STANDARD FOUNDATIONS						
	Repair cracks and resurface exposed concrete foundations	**1**	ls	25,000	25,000		
	Repair at site retaining wall	**1**	ls	30,000	30,000		
	Allowance for spalled concrete	**500**	sf	80.00	40,000		
	SUBTOTAL					95,000	
	A1020 SPECIAL FOUNDATIONS						
	No work in this section						
	SUBTOTAL						
	A1030 LOWEST FLOOR CONSTRUCTION						
	Cutting and patching for MEP	**1**	ls	25,000.00	25,000		
	New slab at bathroms and kitchen	**7,030**	sf	25.00	175,750		
	Replace loading dock	**1**	ls	30,000.00	30,000		
	Upgrade auditorium slopes for ADA compliance	**7,500**	sf	25.00	187,500		
	Equipment pads	**1**	ls	15,000.00	15,000		
	New elevator pit	**1**	ls	45,000.00	45,000		
	SUBTOTAL					478,250	
	TOTAL - FOUNDATIONS						**$573,250**
	B10 SUPERSTRUCTURE						
	B1010 FLOOR CONSTRUCTION						
	Openings in structure for MEP systems	**208,113**	gsf	0.50	104,057		
	Structural modifications to facilitate science classroom relocations	**1**	ls	100,000.00	100,000		
	Infill existing stair openings	**1,760**	sf	45.00	79,200		
	New stage floor structure	**1,914**	sf	35.00	66,990		
	New code compliant ramp	**2**	loc	35,000.00	70,000		
	Fire stopping floors	**1**	ls	50,000.00	50,000		
	SUBTOTAL					470,247	
	B1020 ROOF CONSTRUCTION						
	Roof Structure - Steel:						
	New reinforcing to low roofs for snow loading; 1 bay only against building	**11,653**	sf	15.00	174,795		
	New structural steel at new stage and fly loft	**37.5**	tns	6,500.00	243,750		
	New deck at rebuilt stage and fly loft	**1,914**	sf	18.00	34,452		
	Allowance to reinforce roof diaphragms	**52,713**	sf	6.00	316,278		
	Support framing for new MEP systems	**1**	ls	50,000.00	50,000		
	SUBTOTAL					819,275	
	TOTAL - SUPERSTRUCTURE						**$1,289,522**

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	HIGH SCHOOL CODE UPGRADES OPTION 1						
	B20 EXTERIOR CLOSURE						
	B2010 EXTERIOR WALLS	*52,450*	*sf*				
	Reclad and Insulate exterior walls to meet code	**52,450**	sf	95.00	NR		
	Anchor the top of perimeter masonry partitions to the underside of the floor or structure above	**949**	loc	500.00	474,500		
	Mechanical screen; includes backup structure	**5,000**	sf	85.00	425,000		
	SUBTOTAL					899,500	
	B2020 WINDOWS/CURTAINWALL						
	Replace existing windows; double glazed	**13,112**	sf	100.00	1,311,200		
	Replace existing curtainwall; double glazed	**6,375**	sf	130.00	828,750		
	SUBTOTAL					2,139,950	
	B2030 EXTERIOR DOORS						
	Replace exterior glazed door, double	**15**	pr	9,000.00	135,000		
	Replace exterior glazed door, single	**2**	ea	4,000.00	8,000		
	Replace exterior single door	**10**	ea	2,100.00	21,000		
	Replace garage doors	**4**	ea	10,000.00	40,000		
	Backer rod & double sealant	**504**	lf	10.00	5,040		
	Wood blocking at openings	**504**	lf	3.00	1,512		
	SUBTOTAL					210,552	
	TOTAL - EXTERIOR CLOSURE						**$3,250,002**
	B30 ROOFING						
	B3010 ROOF COVERINGS						
	Replace existing roofing systems	**123,704**	sf	22.00	2,721,488		
	SUBTOTAL					2,721,488	
	B3020 ROOF OPENINGS						
	New stage smoke hatches	**3**	ea	8,000.00	24,000		
	Replace roof ladders/hatches etc.	**1**	ls	3,000.00	3,000		
	SUBTOTAL					27,000	
	TOTAL - ROOFING						**$2,748,488**
	C10 INTERIOR CONSTRUCTION						
	C1010 PARTITIONS						
	Anchor the top of all masonry partitions to the underside of the floor or structure above	**1,970**	loc	350.00	689,500		
	New walls for new layouts	**208,113**	sf	22.00	NR		
	Replace auditorium operable wall	**68**	lf	1,200.00	81,600		
	Repair/Fill cracks in CMU walls	**1**	ls	50,000.00	50,000		
	SUBTOTAL					821,100	
	C1020 INTERIOR DOORS						
	Replace al interior doors, frames + hardware	**208,113**	sf	6.00	1,248,678		
	SUBTOTAL					1,248,678	
	C1030 SPECIALTIES / MILLWORK						
	Toilet Partitions and accessories	**208,113**	gsf	1.00	208,113		
	New stage proscenium	**1**	ls	100,000	100,000		

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	HIGH SCHOOL CODE UPGRADES OPTION 1						
	New markerboards/tackboards	**208,113**	gsf	1.25	260,141		
	Upgrade athletic locker rooms specifically reconfigure showers to provide accessible shower stalls	**2**	ea	30,000.00	60,000		
	Lockers, full height	**710**	ea	350.00	248,500		
	New catwalk	**1**	ls	100,000.00	100,000		
055000	*MISCELLANEOUS METALS*						
	Miscellaneous metals throughout building	**208,113**	sf	1.25	260,141		
061000	*ROUGH CARPENTRY*						
	Rough blocking	**208,113**	sf	0.50	104,057		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Miscellaneous sealants throughout building	**208,113**	sf	1.50	312,170		
101400	*SIGNAGE*						
	Code compliant signage	**208,113**	sf	0.50	104,057		
	SUBTOTAL					1,757,179	
	TOTAL - INTERIOR CONSTRUCTION						**$3,826,957**
C20	***STAIRCASES***						
C2010	**STAIR CONSTRUCTION**						
	Upgrade existing stairs for code	**2**	flt	10,000.00	20,000		
	New stairs	**4**	flt	40,000.00	160,000		
	SUBTOTAL					180,000	
C2020	**STAIR FINISHES**						
	New stair finishes; rubber treads/risers/landing and painting	**6**	flt	7,000.00	42,000		
	SUBTOTAL					42,000	
	TOTAL - STAIRCASES						**$222,000**
C30	***INTERIOR FINISHES***						
C3010	**WALL FINISHES**						
	Painting	**208,113**	gsf	3.00	624,339		
	Replace wood paneling at auditorium	**1**	ls	150,000.00	150,000		
	Replace acoustic panels at gym	**1**	ls	60,000.00	60,000		
	Other finishes	**208,113**	sf	10.00	2,081,130		
	SUBTOTAL					2,915,469	
C3020	**FLOOR FINISHES**						
	New linoleum flooring throughout including floor prep	**157,294**	sf	8.00	1,258,352		
	New shock-absorbing wood gym floor	**16,000**	sf	20.00	320,000		
	Bathroom renovations	**5,000**	sf	100.00	500,000		
	New flooring at the stage	**1,914**	sf	24.00	45,936		
	New carpet	**1,111**	sy	45.00	49,995		
	SUBTOTAL					2,174,283	
C3030	**CEILING FINISHES**						

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	HIGH SCHOOL CODE UPGRADES OPTION 1						
84	Replace ceiling at auditorium, provide new clouds	**1**	ls	350,000	350,000		
85	Replace existing ACT/Ceilings/Soffits	**157,294**	sf	11.00	1,730,234		
85	Paint gym exposed ceiling	**16,000**	sf	3.00	48,000		
86	SUBTOTAL					2,128,234	
86							
87	***TOTAL - INTERIOR FINISHES***						**$7,217,986**
87							
88							
88	***D10 CONVEYING SYSTEMS***						
89							
89	Remove existing elevator	**1**	ls	40,000.00	40,000		
90	Remove existing elevator and install new elevator	**1**	ls	135,000.00	135,000		
90	New lift	**1**	ls	45,000.00	45,000		
91	SUBTOTAL					220,000	
91							
92	***TOTAL - CONVEYING SYSTEMS***						**$220,000**
92							
93							
93	***D20 PLUMBING***						
94							
94	**D20 PLUMBING, GENERALLY**						
95	Equipment						
95	Gas fired domestic HW heater; 400,000 BTUH	**2**	ea	28,000.00	56,000		
96	HW storage tank	**2**	ea	5,000.00	10,000		
96	Plumbing equipment	**208,113**	sf	4.00	832,452		
97	Plumbing Fixtures & Specialties						
97	Miscellaneous plumbing fixtures	**208,113**	sf	1.00	208,113		
98	Domestic Water Type L Copper Pipe						
98	Domestic water pipe with fittings & hangers	**208,113**	sf	2.50	520,283		
99	Domestic water pipe insulation	**208,113**	sf	1.50	312,170		
99	Sanitary Waste And Vent Pipe w/ Hangers						
100	Sanitary waste pipe with fittings & hangers	**208,113**	sf	2.50	520,283		
100	Kitchen waste pipe with fittings & hangers	**208,113**	sf	0.30	62,434		
101	Acid Waste And Vent Pipe w/ Hangers						
101	Acid waste & vent pipe with fittings & hangers	**208,113**	sf	0.75	156,085		
102	Storm Drainage, Hubless Cast Iron Pipe						
102	Storm water pipe with fittings & hangers	**208,113**	sf	1.50	312,170		
103	Pipe insulation on horizontal runs	**208,113**	sf	0.20	41,623		
103	Gas And Fuel Distribution Pipe						
104	Gas pipe with fittings & hangers	**208,113**	sf	1.00	208,113		
104	Miscellaneous						
105	Coordination & BIM	**1**	ls	50,000.00	50,000		
105	Coring, sleeves & firestopping	**1**	ls	7,000.00	7,000		
106	Commissioning support	**1**	ls	20,000.00	20,000		
106	Testing and sterilization	**1**	ls	6,000.00	6,000		
107	Fees & permits	**1**	ls	25,000.00	25,000		
107	SUBTOTAL					3,347,726	
108							
108	***TOTAL - PLUMBING***						**$3,347,726**
109							
109							
110	***D30 HVAC***						
110							
111	**D30 HVAC, GENERALLY**						
111	HVAC Equipment						
112	New HVAC system; VRF	**208,113**	gsf	55.00	11,446,215		

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	HIGH SCHOOL CODE UPGRADES OPTION 1						
112	SUBTOTAL					11,446,215	
113							
113	***TOTAL - HVAC***						**$11,446,215**
114							
114							
115	***D40 FIRE PROTECTION***						
115							
116	**D40 FIRE PROTECTION, GENERALLY**						
116	New sprinkler system	**208,113**	gsf	6.00	1,248,678		
117	SUBTOTAL					1,248,678	
117							
118	***TOTAL - FIRE PROTECTION***						**$1,248,678**
118							
119							
119	***D50 ELECTRICAL***						
120							
120	**D5010 SERVICE & DISTRIBUTION**						
121	**Gear & Distribution**						
121	Normal power distribution switchgear & feeders	**208,113**	sf	5.00	1,040,565		
122	Emergency power						
122	Emergency power distribution switchgear & feeders	**208,113**	sf	3.00	624,339		
123	Equipment Wiring						
123	Equipment wiring	**208,113**	sf	2.50	520,283		
124	SUBTOTAL					2,185,187	
124							
125	**D5020 LIGHTING & POWER**						
125	Lighting & Branch Power				-		
126	Lighting fixtures with installation labor	**208,113**	sf	6.00	1,248,678		
126	Lighting control system						
127	Lighting controls including interface with DDC	**208,113**	sf	1.75	364,198		
127	Branch devices						
128	Branch devices	**208,113**	sf	0.50	104,057		
128	Lighting and branch circuitry						
129	Lighting & branch circuitry	**208,113**	sf	5.00	1,040,565		
129 260000	SUBTOTAL					2,757,498	
130							
130	**D5030 COMMUNICATION & SECURITY SYSTEMS**						
131	Fire Alarm						
131	Fire alarm system	**208,113**	sf	3.50	728,396		
132	Bi-Directional System						
132	BDA system	**208,113**	sf	0.50	104,057		
133	Security System						
133	Security System	**208,113**	sf	2.50	520,283		
134	Telephone/Data/CATV						
134	Network switches, PBX, IP, VP, CCTV (By owner)				By Owner		
135	Telecommunications rough in	**208,113**	sf	1.50	312,170		
135	Telecommunications devices and cabling	**208,113**	sf	2.00	416,226		
136	Public Address/Clock System						
136	PA/Master Clock system	**208,113**	sf	1.25	260,141		
137	Audio Visual (rough-in and power only)						
137	AV equipment				By Owner		
138	Rough-In conduit and backboxes only	**208,113**	sf	1.00	208,113		
138	Auditorium						
139	Rigging system equipment & installation				See equipment		
139	Power to rigging equipment	**1**	ls	12,000.00	12,000		
140	Stage dimming system with performance fixture package, allow	**1**	ls	275,000.00	275,000		
140	Installation, rough-in & 120V power to dimming equipment	**1**	ls	70,000.00	70,000		

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	HIGH SCHOOL CODE UPGRADES OPTION 1						
141	Performance audio visual equipment, installation & LV cabling, allow	**1**	ls	150,000.00	150,000		
141	Performance audio visual rough-in and power	**1**	ls	60,000.00	60,000		
142	Gymnasium						
142	Sound system	**1**	ls	50,000.00	50,000		
143	Scoreboard/ shot clocks with feed and connection	**1**	ea	15,000.00	15,000		
143	Misc. gym equipment feed and connections	**1**	ls	15,000.00	15,000		
144	SUBTOTAL					3,196,386	
144							
145	**D5040 OTHER ELECTRICAL SYSTEMS**						
145	Miscellaneous						
146	Demolition & make safe	**1**	ls	30,000.00	30,000		
146	Temp power and lights	**208,113**	sf	1.00	208,113		
147	Seismic restraints	**1**	ls	15,000.00	15,000		
147	Lightning Protection System, UL Master label	**208,113**	sf	0.45	93,651		
148	Fees & Permits	**208,113**	sf	0.50	104,057		
148	SUBTOTAL					450,821	
149							
149	***TOTAL - ELECTRICAL***						**$8,589,892**
150							
150							
151	***E10 EQUIPMENT***						
151							
152	**E10 EQUIPMENT, GENERALLY**						
152	Gym wall pads	**1**	ls	20,000.00	20,000		
153	Basketball backstops; swing up; electric operated	**12**	loc	10,500.00	126,000		
153	Gymnasium dividing net; electrically operated	**3**	ea	30,000.00	90,000		
154	Volleyball net and standards	**1**	ls	5,000.00	5,000		
154	Telescoping bleachers	**900**	seats	240.00	216,000		
155	Theatrical Equipment Stage curtains, rigging and controls	**1**	ls	350,000.00	350,000		
155	Theatrical AV allowance	**1**	ls	200,000.00	200,000		
156	Kitchen equipment	**2,030**	sf	220.00	446,600		
156	SUBTOTAL					1,453,600	
157							
157	***TOTAL - EQUIPMENT***						**$1,453,600**
158							
158							
159	***E20 FURNISHINGS***						
159							
160	**E2010 FIXED FURNISHINGS**						
160	Window shades	**13,112**	sf	7.00	91,784		
161	Entrance mats	**1**	ls	20,000.00	20,000		
161	Replace auditorium seats	**1,100**	seat	360.00	396,000		
162							
162	*123553 CASEWORK*						
163	Sinks, counters and casework allowance	**208,113**	sf	10.00	2,081,130		
163	SUBTOTAL					2,588,914	
164							
164	**E2020 MOVABLE FURNISHINGS**						
165	All movable furnishings to be provided and installed by owner						
165	SUBTOTAL					NIC	
166							
166	***TOTAL - FURNISHINGS***						**$2,588,914**

PM&C

Stoneham High School 03-Dec-20
Design Options
Stoneham, MA

PSR Estimate **GFA** 208,113

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	HIGH SCHOOL CODE UPGRADES OPTION 1						
	F10 SPECIAL CONSTRUCTION						
	F10 SPECIAL CONSTRUCTION						
	SUBTOTAL					-	
	TOTAL - SPECIAL CONSTRUCTION						
	F20 SELECTIVE BUILDING DEMOLITION						
	F2010 BUILDING ELEMENTS DEMOLITION						
	Remove exterior glazing	**13,112**	sf	7.00	91,784		
	Remove exterior brick façade	**52,450**	sf	10.00	524,500		
	Remove roofing	**123,704**	sf	2.00	In HazMat		
	Demolish existing stage	**1,914**	sf	15.00	28,710		
	Shoring	**1**	ls	25,000.00	25,000		
	Remove existing stairs	**4**	flts	5,000.00	20,000		
	Interior demolition	**208,113**	gsf	4.00	832,452		
	Temporary enclosures/protection	**208,113**	sf	1.50	312,170		
	SUBTOTAL					1,834,616	
	F2020 HAZARDOUS COMPONENTS ABATEMENT						
	See summary						
	SUBTOTAL						
	TOTAL - SELECTIVE BUILDING DEMOLITION						**$1,834,616**

PM&C

Stoneham High School
Design Options
Stoneham, MA

03-Dec-20

PSR Estimate

GFA 208,113

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
FULL RENOVATION - OPTION 2A						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$95,000			
	A1020	Special Foundations	$0			
	A1030	Lowest Floor Construction	$478,250	**$573,250**	$2.75	0.9%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$1,220,247			
	B1020	Roof Construction	$684,821	**$1,905,068**	$9.15	2.9%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$6,459,200			
	B2020	Windows/Curtainwall	$2,659,000			
	B2030	Exterior Doors	$210,552	**$9,328,752**	$44.83	14.3%
B30	**ROOFING**					
	B3010	Roof Coverings	$2,968,896			
	B3020	Roof Openings	$27,000	**$2,995,896**	$14.40	4.6%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$5,399,586			
	C1020	Interior Doors	$1,248,678			
	C1030	Specialties/Millwork	$1,757,179	**$8,405,443**	$40.39	12.9%
C20	**STAIRCASES**					
	C2010	Stair Construction	$180,000			
	C2020	Stair Finishes	$42,000	**$222,000**	$1.07	0.3%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$2,915,469			
	C3020	Floor Finishes	$2,174,283			
	C3030	Ceiling Finishes	$2,128,234	**$7,217,986**	$34.68	11.1%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$220,000	**$220,000**	$1.06	0.3%
D20	**PLUMBING**					
	D20	Plumbing	$3,329,808	**$3,329,808**	$16.00	5.1%
D30	**HVAC**					
	D30	HVAC	$14,567,910	**$14,567,910**	$70.00	22.4%
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$1,248,678	**$1,248,678**	$6.00	1.9%
D50	**ELECTRICAL**					
	D5010	Electrical Systems	$8,718,417	**$8,718,417**	$41.89	13.4%

PM&C

Stoneham High School
Design Options
Stoneham, MA

03-Dec-20

PSR Estimate

GFA 208,113

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
FULL RENOVATION - OPTION 2A						
E10	**EQUIPMENT**					
	E10	Equipment	$1,453,600	**$1,453,600**	$6.98	2.2%
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$2,588,914			
	E2020	Movable Furnishings	NIC	**$2,588,914**	$12.44	4.0%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$0	**$0**	$0.00	0.0%
F20	**SELECTIVE BUILDING DEMOLITION**					
	F2010	Building Elements Demolition	$2,250,842			
	F2020	Hazardous Components Abatement	$0	**$2,250,842**	$10.82	3.5%
TOTAL DIRECT COST (Trade Costs)				***$65,026,564***	*$312.46*	*100.0%*

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	FULL RENOVATION - OPTION 2A						
	GROSS FLOOR AREA CALCULATION						
	LEVEL 00				30,304		
	LEVEL 01				123,704		
	LEVEL 02				54,105		
	TOTAL GROSS FLOOR AREA (GFA)				**208,113** ***sf***		
	A10 FOUNDATIONS						
	A1010 STANDARD FOUNDATIONS						
	Repair cracks and resurface exposed concrete foundations	**1**	ls	25,000	25,000		
	Repair at site retaining wall	**1**	ls	30,000	30,000		
	Allowance for spalled concrete	**500**	sf	80.00	40,000		
	SUBTOTAL					95,000	
	A1020 SPECIAL FOUNDATIONS						
	No work in this section						
	SUBTOTAL						
	A1030 LOWEST FLOOR CONSTRUCTION						
	Cutting and patching for MEP	**1**	ls	25,000.00	25,000		
	New slab at bathrooms and kitchen	**7,030**	sf	25.00	175,750		
	Replace loading dock	**1**	ls	30,000.00	30,000		
	Upgrade auditorium slopes for ADA compliance	**7,500**	sf	25.00	187,500		
	Equipment pads	**1**	ls	15,000.00	15,000		
	New elevator pit	**1**	ls	45,000.00	45,000		
	SUBTOTAL					478,250	
	TOTAL - FOUNDATIONS						**$573,250**
	B10 SUPERSTRUCTURE						
	B1010 FLOOR CONSTRUCTION						
	Openings in structure for MEP systems	**208,113**	gsf	0.50	104,057		
	Structural modifications to facilitate science classroom relocations	**1**	ls	100,000.00	100,000		
	Infill existing stair openings	**1,760**	sf	45.00	79,200		
	New stage floor structure	**1,914**	sf	35.00	66,990		
	New code compliant ramp	**2**	loc	35,000.00	70,000		
	New suspended track	**1**	ls	750,000.00	750,000		
	Fire stopping floors	**1**	ls	50,000.00	50,000		
	SUBTOTAL					1,220,247	
	B1020 ROOF CONSTRUCTION						
	Roof Structure - Steel:						
	New reinforcing to low roofs for snow loading; 1 bay only against building	**11,653**	sf	15.00	174,795		
	New structural steel at new stage and fly loft	**37.5**	tns	6,500.00	243,750		
	New deck at rebuilt stage and fly loft	**1,914**	sf	18.00	34,452		
	Allowance to reinforce roof diaphragms	**30,304**	sf	6.00	181,824		
	Support framing for new MEP systems	**1**	ls	50,000.00	50,000		
	SUBTOTAL					684,821	
	TOTAL - SUPERSTRUCTURE						**$1,905,068**

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	FULL RENOVATION - OPTION 2A						
	B20 EXTERIOR CLOSURE						
	B2010 EXTERIOR WALLS	*52,450*	*sf*				
	Reclad and Insulate exterior walls to meet code; EXT3	**52,450**	sf	106.00	5,559,700		
	Anchor the top of perimeter masonry partitions to the underside of the floor or structure above	**949**	loc	500.00	474,500		
	Mechanical screen; includes backup structure	**5,000**	sf	85.00	425,000		
	SUBTOTAL					6,459,200	
	B2020 WINDOWS/CURTAINWALL						
	Replace existing windows; triple glazed; W1	**13,112**	sf	125.00	1,639,000		
	Replace existing curtainwall; triple glazed; W2	**6,375**	sf	160.00	1,020,000		
	SUBTOTAL					2,659,000	
	B2030 EXTERIOR DOORS						
	Replace exterior glazed door, double	**15**	pr	9,000.00	135,000		
	Replace exterior glazed door, single	**2**	ea	4,000.00	8,000		
	Replace exterior single door	**10**	ea	2,100.00	21,000		
	Replace garage doors	**4**	ea	10,000.00	40,000		
	Backer rod & double sealant	**504**	lf	10.00	5,040		
	Wood blocking at openings	**504**	lf	3.00	1,512		
	SUBTOTAL					210,552	
	TOTAL - EXTERIOR CLOSURE						**$9,328,752**
	B30 ROOFING						
	B3010 ROOF COVERINGS						
	Replace existing roofing systems with new TPO roof and 8" XPS insulation; R1	**123,704**	sf	24.00	2,968,896		
	SUBTOTAL					2,968,896	
	B3020 ROOF OPENINGS						
	New stage smoke hatches	**3**	ea	8,000.00	24,000		
	Replace roof ladders/hatches etc.	**1**	ls	3,000.00	3,000		
	SUBTOTAL					27,000	
	TOTAL - ROOFING						**$2,995,896**
	C10 INTERIOR CONSTRUCTION						
	C1010 PARTITIONS						
	Anchor the top of all masonry partitions to the underside of the floor or structure above	**1,970**	loc	350.00	689,500		
	New walls for new layouts	**208,113**	sf	22.00	4,578,486		
	Replace auditorium operable wall	**68**	lf	1,200.00	81,600		
	Repair/Fill cracks in CMU walls	**1**	ls	50,000.00	50,000		
	SUBTOTAL					5,399,586	
	C1020 INTERIOR DOORS						
	Replace al interior doors, frames + hardware	**208,113**	sf	6.00	1,248,678		
	SUBTOTAL					1,248,678	
	C1030 SPECIALTIES / MILLWORK						
	Toilet Partitions and accessories	**208,113**	gsf	1.00	208,113		

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	FULL RENOVATION - OPTION 2A						
	New stage proscenium	**1**	ls	100,000	100,000		
	New markerboards/tackboards	**208,113**	gsf	1.25	260,141		
	Upgrade athletic locker rooms specifically reconfigure showers to provide accessible shower stalls	**2**	ea	30,000.00	60,000		
	Lockers, full height	**710**	ea	350.00	248,500		
	New catwalk	**1**	ls	100,000.00	100,000		
055000	*MISCELLANEOUS METALS*						
	Miscellaneous metals throughout building	**208,113**	sf	1.25	260,141		
061000	*ROUGH CARPENTRY*						
	Rough blocking	**208,113**	sf	0.50	104,057		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Miscellaneous sealants throughout building	**208,113**	sf	1.50	312,170		
101400	*SIGNAGE*						
	Code compliant signage	**208,113**	sf	0.50	104,057		
	SUBTOTAL					1,757,179	
	TOTAL - INTERIOR CONSTRUCTION						**$8,405,443**
C20	***STAIRCASES***						
C2010	**STAIR CONSTRUCTION**						
	Upgrade existing stairs for code	**2**	flt	10,000.00	20,000		
	New stairs	**4**	flt	40,000.00	160,000		
	SUBTOTAL					180,000	
C2020	**STAIR FINISHES**						
	New stair finishes; rubber treads/risers/landing and painting	**6**	flt	7,000.00	42,000		
	SUBTOTAL					42,000	
	TOTAL - STAIRCASES						**$222,000**
C30	***INTERIOR FINISHES***						
C3010	**WALL FINISHES**						
	Painting	**208,113**	gsf	3.00	624,339		
	Replace wood paneling at auditorium	**1**	ls	150,000.00	150,000		
	Replace acoustic panels at gym	**1**	ls	60,000.00	60,000		
	Other finishes	**208,113**	sf	10.00	2,081,130		
	SUBTOTAL					2,915,469	
C3020	**FLOOR FINISHES**						
	New linoleum flooring throughout including floor prep	**157,294**	sf	8.00	1,258,352		
	New shock-absorbing wood gym floor	**16,000**	sf	20.00	320,000		
	Bathroom renovations	**5,000**	sf	100.00	500,000		
	New flooring at the stage	**1,914**	sf	24.00	45,936		
	New carpet	**1,111**	sy	45.00	49,995		
	SUBTOTAL					2,174,283	

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	FULL RENOVATION - OPTION 2A						
	C3030 CEILING FINISHES						
	Replace ceiling at auditorium, provide new clouds	**1**	ls	350,000	350,000		
	Replace existing ACT/Ceilings/Soffits	**157,294**	sf	11.00	1,730,234		
	Paint gym exposed ceiling	**16,000**	sf	3.00	48,000		
	SUBTOTAL					2,128,234	
	TOTAL - INTERIOR FINISHES						**$7,217,986**
	D10 CONVEYING SYSTEMS						
	Remove existing elevator	**1**	ls	40,000.00	40,000		
	Remove existing elevator and install new elevator	**1**	ls	135,000.00	135,000		
	New lift	**1**	ls	45,000.00	45,000		
	SUBTOTAL					220,000	
	TOTAL - CONVEYING SYSTEMS						**$220,000**
	D20 PLUMBING						
	D20 PLUMBING, GENERALLY						
	Complete system	**208,113**	sf	16.00	3,329,808		
	SUBTOTAL					3,329,808	
	TOTAL - PLUMBING						**$3,329,808**
	D30 HVAC						
	D30 HVAC, GENERALLY						
	Geothermal Heating/Cooling System						
	(2) 225 ton heat recovery chiller-heaters with (200) 6" boreholes, active chilled beams, heat recovery units, and rooftop ahu's	**208,113**	sf	70.00	14,567,910		
	SUBTOTAL					14,567,910	
	TOTAL - HVAC						**$14,567,910**
	D40 FIRE PROTECTION						
	D40 FIRE PROTECTION, GENERALLY						
	New sprinkler system	208,113	gsf	6.00	1,248,678		
	SUBTOTAL					1,248,678	
	TOTAL - FIRE PROTECTION						**$1,248,678**
	D50 ELECTRICAL						
	D5010 SERVICE & DISTRIBUTION						
	Gear & Distribution						
	5000A 480/277V switchboard	**1**	ls	140,000.00	140,000		
	Normal power distribution with associated panelboards, transformers and feeders	**208,113**	sf	4.00	832,452		
	Emergency power						
	Emergency generator and ATS"s with associated panelboards, transformers and feeders	**208,113**	sf	2.50	520,283		
	PV						

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	FULL RENOVATION - OPTION 2A						
225	PV provisions only, with empty conduit and pull boxes, per	**1**	ls	5,000.00	5,000		
226	Equipment Wiring						
227	Elevator and cab power feed and connection	**1**	ea	5,000.00	5,000		
228	Mechanical equipment wiring to HVAC heating and cooling	**208,113**	sf	2.50	520,283		
229	Misc. equipment wiring	**208,113**	sf	0.50	104,057		
230	Kitchen equipment wiring	**1**	ls	25,000.00	25,000		
231	Gym equipment feed and connections	**1**	ls	15,000.00	15,000		
232	SUBTOTAL					2,167,075	
233							
234							
235	**D5020 LIGHTING & POWER**						
236	Lighting & Branch Power				-		
237	Lighting fixtures with installation labor	**208,113**	sf	6.00	1,248,678		
238	Exterior building lighting	**1**	ls	15,000.00	15,000		
239	Lighting control system (Daylight Harvesting)						
240	Lighting controls with control panels, sensors and switches	**208,113**	sf	1.25	260,141		
241	Branch devices						
242	Duplex and GFI receptacles	**208,113**	sf	0.50	104,057		
243	Lighting and branch circuitry						
244	EMT and MC cable	**208,113**	sf	4.50	936,509		
245	SUBTOTAL					2,564,385	
246							
247							
248	**D5030 COMMUNICATION & SECURITY SYSTEMS**						
249	Fire Alarm						
250	Control panel	**1**	ea	15,000.00	15,000		
251	Annunciator	**1**	ea	1,500.00	1,500		
252	Beacon	**1**	ea	2,250.00	2,250		
253	Knox box	**1**	ea	350.00	350		
254	Radio master box	**1**	ea	9,500.00	9,500		
255	Devices and cabling	**208,113**	sf	2.00	416,226		
256	Mass. Notification	**208,113**	sf	1.00	208,113		
257	Testing programming	**1**	ls	5,000.00	5,000		
258	Bi-Directional System						
259	BDA system	**1**	ls	100,000.00	100,000		
260	Telephone/Data/CATV						
261	Network switches, PBX, IP, VP, CATV (By owner)				By Owner		
262	Telecommunications rough in	**208,113**	sf	1.00	208,113		
263	Telecommunications devices and cabling	**208,113**	sf	2.00	416,226		
264	Grounding	**1**	ls	1,500.00	1,500		
265	Public Address/Clock System						
266	PA/Master Clock system	**208,113**	sf	1.00	208,113		
267	Classroom Speech Amplification	**208,113**	sf	0.50	104,057		
268	Audio Visual (rough-in and power only)						
269	AV equipment				By Owner		
270	Rough-In conduit and backboxes only	**208,113**	sf	0.50	104,057		
271	Auditorium						
272	Rigging system equipment & installation				See equipment		
273	Power to rigging equipment	**1**	ls	12,000.00	12,000		
274	Stage dimming system with performance fixture package, allow	**1**	ls	275,000.00	275,000		
275	Installation, rough-in & 120V power to dimming equipment	**1**	ls	70,000.00	70,000		
276	Performance audio visual equipment, installation & LV cabling,	**1**	ls	150,000.00	150,000		
277	Performance audio visual rough-in and power	**1**	ls	60,000.00	60,000		
278	Cafeteria						
279	Sound system	**1**	ls	15,000.00	15,000		
280	Media Center						
281	Sound system	**1**	ls	15,000.00	15,000		
282	Gymnasium						

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	FULL RENOVATION - OPTION 2A						
	Sound system	**1**	ls	30,000.00	30,000		
	Scoreboard/ shot clocks with feed and connection	**1**	ea	15,000.00	15,000		
	Security System						
	Head end	**1**	ls	50,000.00	50,000		
	Card access system	**208,113**	sf	1.00	208,113		
	Intrusion system	**208,113**	sf	1.00	208,113		
	CCTV surveillance system	**208,113**	sf	2.00	416,226		
	SUBTOTAL					3,324,457	
D5040	**OTHER ELECTRICAL SYSTEMS**						
	Miscellaneous						
	Lightning Protection System, UL Master label	**1**	ls	95,000.00	95,000		
	Temp power and lights	**1**	ls	150,000.00	150,000		
	Hoisting and rigging	**1**	ls	10,000.00	10,000		
	Seismic restraints	**1**	ls	7,500.00	7,500		
	Coordination, BIM & shop drawings	**1**	ls	240,000.00	240,000		
	Fees & Permits	**1**	ls	160,000.00	160,000		
	SUBTOTAL					662,500	
	TOTAL - ELECTRICAL						**$8,718,417**
E10	***EQUIPMENT***						
E10	**EQUIPMENT, GENERALLY**						
	Gym wall pads	**1**	ls	20,000.00	20,000		
	Basketball backstops; swing up; electric operated	**12**	loc	10,500.00	126,000		
	Gymnasium dividing net; electrically operated	**3**	ea	30,000.00	90,000		
	Volleyball net and standards	**1**	ls	5,000.00	5,000		
	Telescoping bleachers	**900**	seats	240.00	216,000		
	Theatrical Equipment Stage curtains, rigging and controls	**1**	ls	350,000.00	350,000		
	Theatrical AV allowance	**1**	ls	200,000.00	200,000		
	Kitchen equipment	**2,030**	sf	220.00	446,600		
	SUBTOTAL					1,453,600	
	TOTAL - EQUIPMENT						**$1,453,600**
E20	***FURNISHINGS***						
E2010	**FIXED FURNISHINGS**						
	Window shades	**13,112**	sf	7.00	91,784		
	Entrance mats	**1**	ls	20,000.00	20,000		
	Replace auditorium seats	**1,100**	seat	360.00	396,000		
123553	*CASEWORK*						
	Sinks, counters and casework allowance	**208,113**	sf	10.00	2,081,130		
	SUBTOTAL					2,588,914	
E2020	**MOVABLE FURNISHINGS**						
	All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
	TOTAL - FURNISHINGS						**$2,588,914**

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	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	FULL RENOVATION - OPTION 2A						
	F10 SPECIAL CONSTRUCTION						
	F10 SPECIAL CONSTRUCTION						
	SUBTOTAL					-	
	TOTAL - SPECIAL CONSTRUCTION						
	F20 SELECTIVE BUILDING DEMOLITION						
	F2010 BUILDING ELEMENTS DEMOLITION						
	Remove exterior glazing	**13,112**	sf	7.00	91,784		
	Remove exterior brick façade	**52,450**	sf	10.00	524,500		
	Remove roofing	**123,704**	sf	2.00	In HazMat		
	Demolish existing stage	**1,914**	sf	15.00	28,710		
	Shoring	**1**	ls	25,000.00	25,000		
	Remove existing stairs	**4**	flts	5,000.00	20,000		
	Interior demolition	**208,113**	gsf	6.00	1,248,678		
	Temporary enclosures/protection	**208,113**	sf	1.50	312,170		
	SUBTOTAL					2,250,842	
	F2020 HAZARDOUS COMPONENTS ABATEMENT						
	See summary						
	SUBTOTAL						
	TOTAL - SELECTIVE BUILDING DEMOLITION						**$2,250,842**

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
SITEWORK RENOVATE HIGH SCHOOL OPTION 2A							
	G SITEWORK	*1,900,000*	*sf*		-		
G10	**SITE PREPARATION & DEMOLITION**						
	Site construction fence/barricades	**7,900**	lf	18.00	142,200		
	Site construction fence gates	**1**	ea	10,000.00	10,000		
	Stabilized construction entrance	**1**	ls	15,000.00	15,000		
	Pavement/curbing removal, crush and re-use for sub-base	**250,800**	sf	1.00	250,800		
	Walkways	**1**	ls	20,000.00	20,000		
	Miscellaneous demolition	**1**	ls	100,000.00	100,000		
	SUBTOTAL					538,000	
	Temporary parking	250	spc				
	gravel base; 12" thick	**4,074**	cy	40.00	162,960		
	Binder course	**12,222**	sy	20.00	244,440		
	Construction fence	**1,900**	lf	18.00	34,200		
	Line markings/painting/signs	**250**	spc	100.00	25,000		
	Demolish temp parking	**110,000**	sf	1.00	110,000		
	Blasting for temporary parking	**1**	ls	150,000.00	150,000		
	SUBTOTAL					726,600	
	Site Earthwork						
	Strip Topsoil and remove; 6" thick	3,148	cy	16.00	50,368		
	Fine grading	200,000	sf	0.20	40,000		
	Silt fence/erosion control, wash bays, stock piles	**7,900**	lf	12.00	94,800		
	Silt fence maintenance and monitoring	**1**	ls	40,000.00	40,000		
	Hazardous Waste Remediation						
	Remove existing underground fuel storage tanks; 500 Gal	**1**	ls	50,000.00	50,000		
	Dispose/treat contaminated soils	**1**	ls	20,000.00	20,000		
	SUBTOTAL					295,168	
G20	**SITE IMPROVEMENTS**						
	Asphalt Paving; parking lot and roadway; mill and pave only	*250,800*	sf				
	gravel base; 12" thick	**9,289**	cy	35.00	ETR		
	asphalt; mill and pave	**27,867**	sy	20.00	557,340		
	VGC	**7,231**	lf	34.00	ETR		
	Single solid lines, 4" thick	**1**	ls	10,000.00	10,000		
	Crosswalk Hatching	**4**	loc	900.00	3,600		
	Other road markings	**1**	ls	7,500.00	7,500		
	HC curb cuts	**8**	loc	350.00	2,800		
	Signage	**1**	ls	20,000.00	20,000		
	Pedestrian Paving						
	Concrete paving						
	gravel base; 8" thick	**372**	cy	35.00	13,020		
	4" concrete paving	**15,000**	sf	10.00	150,000		
	SUBTOTAL					764,260	
	Site Athletics						
	STADIUM - Running Track/Turf Football Field/Bleachers						
	Synthetic turf anchor curb integral with trench drain	**1,310**	lf	80.00	104,800		
	Resilient surface at track	**75,525**	sf	8.00	604,200		
	Gravel base - assumed 12" thick	**3,707**	cy	45.00	166,815		
	Geotextile reinforced impermeable liner 20 mill	**100,100**	sf	1.00	100,100		
	Synthetic turf field - Hybrid infill synthetic field with premolded resilient drainage pad	**100,100**	sf	12.00	1,201,200		
	Football goals	**2**	ea	3,500.00	7,000		
	Scoreboard	**1**	ea	60,000.00	60,000		
	Line markings - allowance	**2**	ls	2,000.00	4,000		
	1250 seat bleacher	**1**	loc	450,000.00	450,000		
	Rip-Rap under bleachers	**1**	ls	25,000.00	25,000		
	Field logo's	**1**	loc	6,000.00	6,000		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
SITEWORK RENOVATE HIGH SCHOOL OPTION 2A							
	Discus pad & enclosure	**1**	ea	15,000.00	15,000		
	Shot put pad & enclosure	**1**	ea	15,000.00	15,000		
	Long jump/triple jump	**2**	ea	10,000.00	20,000		
	Pole vault and accessories	**1**	ea	10,000.00	10,000		
	High jump pads	**1**	ea	6,000.00	6,000		
	Javelin with track surfacing runway	**1**	ea	10,000.00	10,000		
	Hurdles and starting blocks	**1**	ls	8,000.00	8,000		
	Track crossing pad	**1**	ls	10,000.00	10,000		
	Trash/recycling receptacles	**12**	ea	800.00	9,600		
	Team benches- 7'-5" long	**12**	ea	1,500.00	18,000		
	Portable ball control netting, 120' long	**4**	ea	2,500.00	10,000		
	Pit covers	**2**	ea	3,500.00	7,000		
	Subsurface infiltration/drainage/field drains etc.	**175,625**	sf	1.25	219,531		
	Stadium sound system (AV)	**1**	ls	120,000.00	120,000		
	SUBTOTAL					3,207,246	
	Baseball/Field Hockey	**1**	ea	360,000.00	360,000		
	Half size field	**1**	ls	150,000.00	150,000		
	Synthetic grass soccer fields; Two Fields	**140,500**	sf	12.00	1,686,000		
	Softball field	**2**	ea	250,000.00	500,000		
	Tennis courts - Six Courts (including pickle courts); 1 basketball court	*50,600*	*sf*				
	gravel base; 8" thick	**1,256**	cy	40.00	50,240		
	Asphalt paving	**5,622**	sy	30.00	168,660		
	Color coating	**50,600**	sf	2.00	101,200		
	Fence with wind break	**1,177**	lf	80.00	94,160		
	Tennis court nets	**5**	set	1,500.00	7,500		
	Basketball hoops	**1**	set	5,000.00	5,000		
	SUBTOTAL					3,122,760	
	Site Improvements						
	Flag pole 50' high	**1**	ea	6,500.00	6,500		
	Concrete retaining walls				Assumed not required		
	Repair to stairs	**1**	ls	50,000.00	50,000		
	Pre-K playground and equipment	**1**	ls	150,000.00	150,000		
	Other site improvements; walls, fences etc.	**1**	ls	250,000.00	250,000		
	SUBTOTAL					456,500	
	Landscaping						
	Topsoil - Import new topsoil; minimum 6"	**3,148**	cy	65.00	204,620		
	Lawn - loam & seed	**170,000**	sf	0.25	42,500		
	Allowance for courtyard upgrades	**2**	loc	75,000.00	150,000		
	Planting allowance	**1**	ls	200,000.00	200,000		
	SUBTOTAL					597,120	
G30	**CIVIL MECHANICAL UTILITIES**						
	Utilities - Enabling						
	Allowance for temporary utilities etc.	**1**	ls	50,000.00	50,000		
	Water supply; Pricing includes E&B and bedding						
	New DI piping; 8"	**557**	lf	100.00	ETR		
	New DI piping; 8" Fire loop	**2,500**	lf	120.00	300,000		
	Connect to existing	**1**	loc	100,000.00	100,000		
	FD connection	**1**	ea	2,000.00	2,000		
	Gate valves	**8**	ea	750.00	6,000		
	Fire hydrant	**3**	ea	5,000.00	15,000		
	SUBTOTAL					473,000	

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
SITEWORK RENOVATE HIGH SCHOOL OPTION 2A							
	Sanitary; Pricing includes E&B and bedding						
	Manholes	**2**	ea	4,500.00	9,000		
	Grease trap	**1**	ea	15,000.00	15,000		
	8" PVC	**1,000**	lf	70.00	70,000		
	Connect to existing drain	**1**	ea	3,000.00	3,000		
	SUBTOTAL					97,000	
	Storm water; Pricing includes E&B and bedding						
	Allowance for new drainage systems; piping only	**250,800**	sf	3.00	752,400		
	Infiltration systems; cultec chambers	**137,500**	cf	8.00	1,100,000		
	Rock excavation	**1**	ls	250,000.00	250,000		
	Catch basins	**12**	ea	3,800.00	45,600		
	Manholes	**10**	ea	4,500.00	45,000		
	WQ structures	**3**	ea	16,000.00	48,000		
	Area drains	**4**	ea	1,500.00	6,000		
	Gas service						
	E&B trench for new gas pipe - install by plumbing	**557**	lf	25.00	13,925		
	SUBTOTAL					2,260,925	
G40	**ELECTRICAL UTILITIES**						
	Power						
	Utility co. backcharges, allow	**1**	ls	30,000.00	Utility co.		
	Connections at existing manhole				Utility co.		
	Manhole	**1**	ls	8,500.00	8,500		
	Connections in manhole	**1**	ls	3,500.00	3,500		
	Primary ductbank 2-5" ductbank, empty, allow	**1000**	lf	120.00	120,000		
	Transformer by utility company				By Utility Co.		
	Transformer pad	**1**	ea	2,500.00	2,500		
	Secondary service	**60**	lf	1,100.00	66,000		
	Communications						
	Connection at riser pole, allow	**1**	ea	1,500.00	1,500		
	Telecom ductbank 4-4", allow	**1000**	lf	152.00	152,000		
	Site Lighting						
	Site Parking lighting (allow)	**250,800**	sf	2.00	501,600		
	SUBTOTAL					855,600	
	TOTAL - SITE DEVELOPMENT						***$13,394,179***

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Stoneham High School
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PSR Estimate

GFA 48,000

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
HIGH SCHOOL RENOVATION - OPTION 3A						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$42,500			
	A1020	Special Foundations	$0			
	A1030	Lowest Floor Construction	$63,750	**$106,250**	$2.21	0.7%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$1,067,000			
	B1020	Roof Construction	$144,000	**$1,211,000**	$25.23	8.2%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$1,717,220			
	B2020	Windows/Curtainwall	$456,875			
	B2030	Exterior Doors	$49,284	**$2,223,379**	$46.32	15.1%
B30	**ROOFING**					
	B3010	Roof Coverings	$636,000			
	B3020	Roof Openings	$5,000	**$641,000**	$13.35	4.4%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$720,000			
	C1020	Interior Doors	$288,000			
	C1030	Specialties/Millwork	$348,000	**$1,356,000**	$28.25	9.2%
C20	**STAIRCASES**					
	C2010	Stair Construction	$10,000			
	C2020	Stair Finishes	$7,000	**$17,000**	$0.35	0.1%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$684,000			
	C3020	Floor Finishes	$607,400			
	C3030	Ceiling Finishes	$251,350	**$1,542,750**	$32.14	10.5%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$40,000	**$40,000**	$0.83	0.3%
D20	**PLUMBING**					
	D20	Plumbing	$768,000	**$768,000**	$16.00	5.2%
D30	**HVAC**					
	D30	HVAC	$3,360,000	**$3,360,000**	$70.00	22.9%
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$288,000	**$288,000**	$6.00	2.0%
D50	**ELECTRICAL**					
	D5010	Electrical Systems	$1,691,500	**$1,691,500**	$35.24	11.5%
E10	**EQUIPMENT**					
	E10	Equipment	$451,000	**$451,000**	$9.40	3.1%

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Stoneham High School
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PSR Estimate

GFA 48,000

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
HIGH SCHOOL RENOVATION - OPTION 3A						
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$510,585			
	E2020	Movable Furnishings	NIC	**$510,585**	$10.64	3.5%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$0	**$0**	$0.00	0.0%
F20	**SELECTIVE BUILDING DEMOLITION**					
	F2010	Building Elements Demolition	$487,585			
	F2020	Hazardous Components Abatement	$0	**$487,585**	$10.16	3.3%
TOTAL DIRECT COST (Trade Costs)				***$14,694,049***	*$306.13*	*100.0%*

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PSR Estimate **GFA** 48,000

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	HIGH SCHOOL RENOVATION - OPTION 3A						
	GROSS FLOOR AREA CALCULATION						
	Level 00				21,500		
	Level 01				26,500		
	TOTAL GROSS FLOOR AREA (GFA)				**48,000** ***sf***		
	A10 FOUNDATIONS						
	A1010 STANDARD FOUNDATIONS						
	Repair cracks and resurface exposed concrete foundations	**1**	ls	10,000	10,000		
	Allowance for spalled concrete	**500**	sf	65.00	32,500		
	SUBTOTAL					42,500	
	A1020 SPECIAL FOUNDATIONS						
	No work in this section						
	SUBTOTAL						
	A1030 LOWEST FLOOR CONSTRUCTION						
	Cutting and patching for MEP	**1**	ls	10,000.00	10,000		
	New slab at bathrooms	**550**	sf	25.00	13,750		
	Replace loading dock	**1**	ls	30,000.00	30,000		
	Equipment pads	**1**	ls	10,000.00	10,000		
	SUBTOTAL					63,750	
	TOTAL - FOUNDATIONS						**$106,250**
	B10 SUPERSTRUCTURE						
	B1010 FLOOR CONSTRUCTION						
	Openings in structure for MEP systems	**48,000**	gsf	0.50	24,000		
	Sesimic and lateral bracing allowance	**48,000**	gsf	6.00	288,000		
	New suspended track	**1**	ls	750,000.00	750,000		
	Fire stopping floors	**1**	ls	5,000.00	5,000		
	SUBTOTAL					1,067,000	
	B1020 ROOF CONSTRUCTION						
	Roof Structure - Steel:						
	Allowance to reinforce roof diaphragms	**21,500**	sf	6.00	129,000		
	Support framing for new MEP systems	**1**	ls	15,000.00	15,000		
	SUBTOTAL					144,000	
	TOTAL - SUPERSTRUCTURE						**$1,211,000**
	B20 EXTERIOR CLOSURE						
	B2010 EXTERIOR WALLS	*14,620*	*sf*				
	Reclad and Insulate exterior walls to meet code; EXT3	**14,620**	sf	106.00	1,549,720		
	Anchor the top of perimeter masonry partitions to the underside of the floor or structure above	**335**	loc	500.00	167,500		
	SUBTOTAL					1,717,220	
	B2020 WINDOWS/CURTAINWALL						
	Replace existing windows; triple glazed; W1	**3,655**	sf	125.00	456,875		
	SUBTOTAL					456,875	
	B2030 EXTERIOR DOORS						
	Replace exterior single door	**4**	ea	2,100.00	8,400		
	Replace garage doors	**4**	ea	10,000.00	40,000		

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	HIGH SCHOOL RENOVATION - OPTION 3A						
	Backer rod & double sealant	**68**	lf	10.00	680		
	Wood blocking at openings	**68**	lf	3.00	204		
	SUBTOTAL					49,284	
	TOTAL - EXTERIOR CLOSURE						**$2,223,379**
	B30 ROOFING						
	B3010 ROOF COVERINGS						
	Replace existing roofing systems with new TPO roof and 8" XPS insulation; R1	**26,500**	sf	24.00	636,000		
	SUBTOTAL					636,000	
	B3020 ROOF OPENINGS						
	Replace roof ladders/hatches etc.	**1**	ls	5,000.00	5,000		
	SUBTOTAL					5,000	
	TOTAL - ROOFING						**$641,000**
	C10 INTERIOR CONSTRUCTION						
	C1010 PARTITIONS						
	Partition allowance	**48,000**	sf	15.00	720,000		
	SUBTOTAL					720,000	
	C1020 INTERIOR DOORS						
	Replace al interior doors, frames + hardware	**48,000**	sf	6.00	288,000		
	SUBTOTAL					288,000	
	C1030 SPECIALTIES / MILLWORK						
	Toilet Partitions and accessories	**48,000**	gsf	1.00	48,000		
	New markerboards/tackboards	**48,000**	gsf	1.25	60,000		
	Upgrade athletic locker rooms specifically reconfigure showers to provide accessible shower stalls	**2**	ea	30,000.00	60,000		
055000	*MISCELLANEOUS METALS*						
	Miscellaneous metals throughout building	**48,000**	sf	1.25	60,000		
061000	*ROUGH CARPENTRY*						
	Rough blocking	**48,000**	sf	0.50	24,000		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Miscellaneous sealants throughout building	**48,000**	sf	1.50	72,000		
101400	*SIGNAGE*						
	Code compliant signage	**48,000**	sf	0.50	24,000		
	SUBTOTAL					348,000	
	TOTAL - INTERIOR CONSTRUCTION						**$1,356,000**
	C20 STAIRCASES						
	C2010 STAIR CONSTRUCTION						
	Upgrade existing stairs for code	**1**	flt	10,000.00	10,000		
	SUBTOTAL					10,000	
	C2020 STAIR FINISHES						
	New stair finishes; rubber treads/risers/landing and painting	**1**	flt	7,000.00	7,000		

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	HIGH SCHOOL RENOVATION - OPTION 3A						
	SUBTOTAL					7,000	
	TOTAL - STAIRCASES						**$17,000**
	C30 INTERIOR FINISHES						
	C3010 WALL FINISHES						
	Painting	**48,000**	gsf	3.00	144,000		
	Replace acoustic panels at gym	**1**	ls	60,000.00	60,000		
	Other finishes	**48,000**	sf	10.00	480,000		
	SUBTOTAL					684,000	
	C3020 FLOOR FINISHES						
	New linoleum flooring throughout including floor prep	**29,050**	sf	8.00	232,400		
	New shock-absorbing wood gym floor	**16,000**	sf	20.00	320,000		
	Bathroom renovations	**550**	sf	100.00	55,000		
	SUBTOTAL					607,400	
	C3030 CEILING FINISHES						
	Replace existing ACT	**29,050**	sf	7.00	203,350		
	Paint gym exposed ceiling	**16,000**	sf	3.00	48,000		
	SUBTOTAL					251,350	
	TOTAL - INTERIOR FINISHES						**$1,542,750**
	D10 CONVEYING SYSTEMS						
	Remove existing elevator	**1**	ls	40,000.00	40,000		
	SUBTOTAL					40,000	
	TOTAL - CONVEYING SYSTEMS						**$40,000**
	D20 PLUMBING						
	D20 PLUMBING, GENERALLY						
	Plumbing allowance	**48,000**	gsf	16.00	768,000		
	SUBTOTAL					768,000	
	TOTAL - PLUMBING						**$768,000**
	D30 HVAC						
	D30 HVAC, GENERALLY						
	Geothermal Heating/Cooling System						
	(2) 225 ton heat recovery chiller-heaters with (200) 6" boreholes, active chilled beams, heat recovery units, and rooftop ahu's	**48,000**	sf	70.00	3,360,000		
	SUBTOTAL					3,360,000	
	TOTAL - HVAC						**$3,360,000**
	D40 FIRE PROTECTION						
	D40 FIRE PROTECTION, GENERALLY						
	New sprinkler system	**48,000**	gsf	6.00	288,000		
	SUBTOTAL					288,000	
	TOTAL - FIRE PROTECTION						**$288,000**

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	HIGH SCHOOL RENOVATION - OPTION 3A						
	D50 ELECTRICAL						
	D5010 SERVICE & DISTRIBUTION						
	Gear & Distribution						
	5000A 480/277V switchboard	**1**	ls	140,000.00	w/addition		
	Normal power distribution with associated panelboards, transformers and feeders	**48,000**	sf	4.00	192,000		
	Emergency power						
	Emergency generator and ATS"s with associated panelboards, transformers and feeders	**48,000**	sf	2.50	120,000		
	Equipment Wiring						
	Elevator and cab power feed and connection	**1**	ea	5,000.00	5,000		
	Mechanical equipment wiring to HVAC heating and cooling equipment	**48,000**	sf	2.50	120,000		
	Misc. equipment wiring	**48,000**	sf	0.50	24,000		
	Gym equipment feed and connections	**1**	ls	15,000.00	15,000		
	SUBTOTAL					476,000	
	D5020 LIGHTING & POWER						
	Lighting & Branch Power				-		
	Lighting fixtures with installation labor	**48,000**	sf	6.00	288,000		
	Lighting control system (Daylight Harvesting)						
	Lighting controls with control panels, sensors and switches	**48,000**	sf	1.25	60,000		
	Branch devices						
	Duplex and GFI receptacles	**48,000**	sf	0.50	24,000		
	Lighting and branch circuitry						
	EMT and MC cable	**48,000**	sf	4.50	216,000		
260000	SUBTOTAL					588,000	
	D5030 COMMUNICATION & SECURITY SYSTEMS						
	Fire Alarm						
	Control panel	**1**	ea	15,000.00	w/addition		
	Annunciator	**1**	ea	1,500.00	w/addition		
	Beacon	**1**	ea	2,250.00	w/addition		
	Knox box	**1**	ea	350.00	w/addition		
	Radio master box	**1**	ea	9,500.00	w/addition		
	Devices and cabling	**48,000**	sf	2.00	96,000		
	Mass. Notification	**48,000**	sf	1.00	48,000		
	Testing programming	**1**	ls	5,000.00	5,000		
	Bi-Directional System						
	BDA system	**1**	ls	100,000.00	w/addition		
	Telephone/Data/CATV						
	Network switches, PBX, IP, VP, CATV (By owner)				By Owner		
	Telecommunications rough in	**48,000**	sf	1.00	48,000		
	Telecommunications devices and cabling	**48,000**	sf	2.00	96,000		
	Grounding	**1**	ls	1,500.00	1,500		
	Public Address/Clock System						
	PA/Master Clock system	**48,000**	sf	1.00	48,000		
	Classroom Speech Amplification	**48,000**	sf	0.50	24,000		
	Audio Visual (rough-in and power only)						
	AV equipment				By Owner		
	Rough-In conduit and backboxes only	**48,000**	sf	0.50	24,000		
	Gymnasium						
	Sound system	**1**	ls	30,000.00	30,000		
	Scoreboard/ shot clocks with feed and connection	**1**	ea	15,000.00	15,000		
	Security System						
	Head end	**1**	ls	50,000.00	w/addition		
	Card access system	**48,000**	sf	1.00	48,000		
	Intrusion system	**48,000**	sf	1.00	48,000		
	CCTV surveillance system	**48,000**	sf	2.00	96,000		

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	HIGH SCHOOL RENOVATION - OPTION 3A						
	SUBTOTAL					627,500	
D5040	**OTHER ELECTRICAL SYSTEMS**						
	Miscellaneous						
	Lightning Protection System, UL Master label	**1**	ls	95,000.00	w/addition		
	Temp power and lights	**1**	ls	150,000.00	w/addition		
	Hoisting and rigging	**1**	ls	10,000.00	w/addition		
	Seismic restraints	**1**	ls	7,500.00	w/addition		
	Coordination, BIM & shop drawings	**1**	ls	240,000.00	w/addition		
	Fees & Permits	**1**	ls	160,000.00	w/addition		
	SUBTOTAL					-	
	TOTAL - ELECTRICAL						**$1,691,500**
E10	***EQUIPMENT***						
E10	**EQUIPMENT, GENERALLY**						
	Gym wall pads	**1**	ls	20,000.00	20,000		
	Basketball backstops; swing up; electric operated	**12**	loc	10,000.00	120,000		
	Gymnasium dividing net; electrically operated	**3**	ea	30,000.00	90,000		
	Volleyball net and standards	**1**	ls	5,000.00	5,000		
	Telescoping bleachers	**900**	seats	240.00	216,000		
	SUBTOTAL					451,000	
	TOTAL - EQUIPMENT						**$451,000**
E20	***FURNISHINGS***						
E2010	**FIXED FURNISHINGS**						
	Window shades	**3,655**	sf	7.00	25,585		
	Entrance mats	**1**	ls	5,000.00	5,000		
123553	*CASEWORK*						
	Sinks, counters and casework allowance	**48,000**	sf	10.00	480,000		
	SUBTOTAL					510,585	
E2020	**MOVABLE FURNISHINGS**						
	All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
	TOTAL - FURNISHINGS						**$510,585**
F10	***SPECIAL CONSTRUCTION***						
F10	**SPECIAL CONSTRUCTION**						
	SUBTOTAL					-	
	TOTAL - SPECIAL CONSTRUCTION						
F20	***SELECTIVE BUILDING DEMOLITION***						
F2010	**BUILDING ELEMENTS DEMOLITION**						
	Remove exterior glazing	**3,655**	sf	7.00	25,585		
	Remove roofing	**26,500**	sf	2.00	In HazMat		
	Interior demolition	**48,000**	gsf	6.00	288,000		
	Temporary exterior	**750**	sf	40.00	30,000		

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Stoneham High School 03-Dec-20
Design Options
Stoneham, MA

PSR Estimate **GFA** 48,000

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	HIGH SCHOOL RENOVATION - OPTION 3A						
303	Temporary enclosures/protection	**48,000**	sf	3.00	144,000		
304	SUBTOTAL					487,585	
305							
306	**F2020 HAZARDOUS COMPONENTS ABATEMENT**						
307	See summary						
308	SUBTOTAL						
309							
310	***TOTAL - SELECTIVE BUILDING DEMOLITION***						**$487,585**
311							

PM&C

Stoneham High School
Design Options
Stoneham, MA

03-Dec-20

PSR Estimate

GFA 159,827

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 3A NEW ADDITION						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$592,000			
	A1020	Special Foundations	$2,960,000			
	A1030	Lowest Floor Construction	$1,087,935	**$4,639,935**	$29.03	7.4%
A20	**BASEMENT CONSTRUCTION**					
	A2010	Basement Excavation	$0			
	A2020	Basement Walls	$235,875	**$235,875**	$1.48	0.4%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$3,659,564			
	B1020	Roof Construction	$2,709,300	**$6,368,864**	$39.85	10.1%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$8,327,636			
	B2020	Windows	$4,357,164			
	B2030	Exterior Doors	$101,640	**$12,786,440**	$80.00	20.3%
B30	**ROOFING**					
	B3010	Roof Coverings	$2,016,000			
	B3020	Roof Openings	$32,500	**$2,048,500**	$12.82	3.3%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$3,835,848			
	C1020	Interior Doors	$958,962			
	C1030	Specialties/Millwork	$1,548,057	**$6,342,867**	$39.69	10.1%
C20	**STAIRCASES**					
	C2010	Stair Construction	$215,000			
	C2020	Stair Finishes	$31,436	**$246,436**	$1.54	0.4%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$2,237,578			
	C3020	Floor Finishes	$1,438,443			
	C3030	Ceiling Finishes	$1,758,097	**$5,434,118**	$34.00	8.6%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$120,000	**$120,000**	$0.75	0.2%
D20	**PLUMBING**					
	D20	Plumbing	$2,557,232	**$2,557,232**	$16.00	4.1%
D30	**HVAC**					
	D30	HVAC	$11,187,890	**$11,187,890**	$70.00	17.8%

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Stoneham High School
Design Options
Stoneham, MA

03-Dec-20

PSR Estimate

GFA 159,827

CONSTRUCTION COST SUMMARY

OPTION 3A NEW ADDITION

		BUILDING SYSTEM	*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$958,962	**$958,962**	$6.00	1.5%
D50	**ELECTRICAL**					
	D5010	Complete System	$6,998,765	**$6,998,765**	$43.79	11.1%
E10	**EQUIPMENT**					
	E10	Equipment	$1,259,100	**$1,259,100**	$7.88	2.0%
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$1,814,056			
	E2020	Movable Furnishings	NIC	**$1,814,056**	$11.35	2.9%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$0	**$0**	$0.00	0.0%
F20	**HAZMAT REMOVALS**					
	F2010	Building Elements Demolition	$0			
	F2020	Hazardous Components Abatement	$0	**$0**	$0.00	0.0%
TOTAL DIRECT COST (Trade Costs)				***$62,999,040***	*$394.17*	*100.0%*

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Stoneham High School
Design Options
Stoneham, MA

03-Dec-20

PSR Estimate

GFA 159,827

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 3A NEW ADDITION							
	GROSS FLOOR AREA CALCULATION						
	Level 00			33,708			
	Level 01			51,555			
	Level 02			40,658			
	Level 03			33,906			
	TOTAL GROSS FLOOR AREA (GFA)				**159,827** ***sf***		
A10	***FOUNDATIONS***	*SOG*		74,000			
A1010	**STANDARD FOUNDATIONS**						
	Allowance for standard foundations; 50% of building footprint	**37,000**	sf	16.00	592,000		
	SUBTOTAL					592,000	
A1020	**SPECIAL FOUNDATIONS**						
	Allowance for shallow pier foundations; 50% of building footprint	**37,000**	sf	80.00	2,960,000		
	SUBTOTAL					2,960,000	
A1030	**LOWEST FLOOR CONSTRUCTION**						
	New Slab on grade, 5" thick						
	Gravel fill, 12"	**2,741**	cy	40.00	109,640		
	Rigid insulation	**74,000**	sf	2.25	166,500		
	Vapor barrier	**74,000**	sf	1.00	74,000		
	Compact existing sub-grade	**74,000**	sf	0.50	37,000		
	Mesh reinforcing 15% lap	**85,100**	sf	1.15	97,865		
	Concrete - 5" thick; 4,000 psi	**1,209**	cy	125.00	151,125		
	Placing concrete	**1,209**	cy	45.00	54,405		
	Finishing and curing concrete	**74,000**	sf	2.50	185,000		
	Control joints - saw cut	**74,000**	sf	0.10	7,400		
	Miscellaneous						
	Premium for rock excavation to 50% of foundations	**1**	ls	100,000.00	100,000		
	Premium for sloped floor at auditorium	**1**	ls	50,000.00	50,000		
	New Elevator pit	**1**	ea	40,000.00	40,000		
	Equipment pads	**1**	ls	15,000.00	15,000		
	SUBTOTAL					1,087,935	
	TOTAL - FOUNDATIONS						**$4,639,935**
A20	***BASEMENT CONSTRUCTION***						
A2010	**BASEMENT EXCAVATION**						
	SUBTOTAL					-	
A2020	**BASEMENT WALLS**						
	Allowance for retaining walls	**185**	lf	1,275.00	235,875		
	SUBTOTAL					235,875	
	TOTAL - BASEMENT CONSTRUCTION						**$235,875**
B10	***SUPERSTRUCTURE***						
		14.50	lbs/sf		-		
B1010	**FLOOR CONSTRUCTION**	1,159	tns		-		
	Floor Structure - Steel:						
	Steel beams and columns to new addition; 14.5#/SF	**622**	tns	3,800.00	2,363,600		
	Premium for HSS	**156**	tns	300.00	46,800		
	Shear studs	**17,165**	ea	2.50	42,913		
	Floor Structure						
	2" 18 Ga. Metal galvanized floor Deck	**85,827**	sf	4.00	343,308		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 3A NEW ADDITION							
	WWF reinforcement	**98,701**	sf	0.80	78,961		
	Concrete Fill to metal deck; 6" Normal Weight	**2,003**	cy	135.00	270,405		
	Place and finish concrete	**85,827**	sf	2.50	214,568		
	Rebar to decks	**25,748**	lbs	1.20	30,898		
	Misc. angles	**85,827**	sf	0.50	Incl		
	Miscellaneous						
	Fire proofing to columns and beams	**85,827**	sf	2.25	193,111		
	Intumescent paint	**1**	ls	50,000.00	50,000		
	Fire stopping floors	**1**	ls	25,000.00	25,000		
	SUBTOTAL					3,659,564	
B1020	**ROOF CONSTRUCTION**						
	Roof Structure - Steel:						
	Steel beams and columns to new addition; 14.5#/SF	**537**	tns	3,800.00	2,040,600		
	Premium for HSS	**134**	tns	300.00	40,200		
	Exposed steel	**1**	ls	50,000.00	50,000		
	Roof Structure						
	Acoustic deck allowance	**5,000**	sf	9.00	45,000		
	3" 20 Ga. galvanized Metal Roof Deck	**69,000**	sf	3.50	241,500		
	Miscellaneous						
	Concrete under RTU's	**8,500**	sf	10.00	85,000		
	Fire proofing to columns, beams and deck	**69,000**	sf	3.00	207,000		
	SUBTOTAL					2,709,300	
	TOTAL - SUPERSTRUCTURE						**$6,368,864**
B20	***EXTERIOR CLOSURE***						
B2010	**EXTERIOR WALLS**						
	Exterior Wall Area; EXT 1	*65,785*	sf				
055000	*MISC. METALS*						
	Stainless steel sign at main entrance	**1**	ls	10,000.00	10,000		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Air barrier; fluid applied	**65,785**	sf	6.00	394,710		
	Air barrier/flashing at windows	**15,822**	lf	6.25	98,888		
	Miscellaneous sealants to closure	**65,785**	sf	1.00	65,785		
072100	*THERMAL INSULATION*						
	Insulation; 6" XPS	**65,785**	sf	5.50	361,818		
	Insulation; 4" spray	**65,785**	sf	4.25	279,586		
076400	*CLADDING*						
	Metal panel; rainscreen system	**65,785**	sf	70.00	4,604,950		
	Mechanical screen; includes backup structure	**5,693**	sf	85.00	483,905		
	Soffits; including all backup; S1	**8,233**	sf	100.50	827,417		
092900	*GYPSUM BOARD ASSEMBLIES*						
	6" metal stud backup	**65,785**	sf	12.00	789,420		
	Gypsum Sheathing	**65,785**	sf	2.75	180,909		
	Drywall lining to interior face of stud backup	**65,785**	sf	3.50	230,248		
	SUBTOTAL					8,327,636	
B2020	**WINDOWS**						
	Exterior Wall Area	*26,898*	sf				
061000	*ROUGH CARPENTRY*						

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 3A NEW ADDITION							
	Wood blocking at openings	**15,822**	lf	12.00	189,864		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Backer rod & double sealant	**15,822**	lf	10.00	158,220		
080001	*METAL WINDOWS*						
	Windows, triple glazed; fiberglass; W1	**16,446**	sf	125.00	2,055,750		
	Curtainwall, triple glazed; BOD Kawneer 1600 sys 2 1" IGU; W2	**10,452**	sf	165.00	1,724,580		
	Sunshades; 3" aluminum trellis	**1,500**	lf	140.00	210,000		
089000	*LOUVERS*						
	Louvers	**250**	sf	75.00	18,750		
	SUBTOTAL					4,357,164	
B2030	**EXTERIOR DOORS**						
	Glazed entrance doors including frame and hardware; double door	**10**	pr	9,000.00	90,000		
	HM doors, frames and hardware- Double	**4**	pr	2,000.00	8,000		
	Backer rod & double sealant	**280**	lf	10.00	2,800		
	Wood blocking at openings	**280**	lf	3.00	840		
	SUBTOTAL					101,640	
	TOTAL - EXTERIOR CLOSURE						**$12,786,440**
B30	***ROOFING***						
B3010	**ROOF COVERINGS**						
	New roofing complete; TPO 8" Insulation; R1	**74,000**	sf	24.00	1,776,000		
	Allowance for green roof; includes planted areas, paving, fencing etc.	**4,000**	sf	60.00	240,000		
	SUBTOTAL					2,016,000	
B3020	**ROOF OPENINGS**						
	Skylights, allow	**1**	ls	30,000.00	30,000		
	Roof hatch	**1**	loc	2,500.00	2,500		
	SUBTOTAL					32,500	
	TOTAL - ROOFING						**$2,048,500**
C10	***INTERIOR CONSTRUCTION***						
C1010	**PARTITIONS**						
	Miscellaneous partitions/glazed partitions/borrowed lights/blocking etc.	**159,827**	gsf	24.00	3,835,848		
	SUBTOTAL					3,835,848	
C1020	**INTERIOR DOORS**						
	Interior doors, frames and hardware	**159,827**	gsf	6.00	958,962		
	SUBTOTAL					958,962	
C1030	**SPECIALTIES / MILLWORK**						
	Toilet Partitions and accessories	**159,827**	gsf	1.00	159,827		
	Backer panels in electrical closets	**1**	ls	1,000.00	1,000		
	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	**159,827**	sf	1.25	199,784		
	Room Signs	**159,827**	gsf	0.50	79,914		
	Fire extinguisher cabinets	**53**	ea	350.00	18,550		
	Lockers, full height	**710**	ea	350.00	248,500		
	New catwalk	**1**	ls	100,000.00	100,000		
	Janitors Work Shop Accessories	**1**	ls	1,500.00	1,500		
	Janitors Closet Accessories	**3**	rms	300.00	900		
	Media						
	Reception desks	**2**	loc	25,000	50,000		
	Railings to open to below areas	**362**	lf	300.00	108,600		
	Library shelving at perimeters 7' Tall				F,F & E		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 3A NEW ADDITION							
	Library shelving at perimeters 3' Tall				F,F & E		
	Stage proscenium	**1**	ls	100,000	100,000		
	Display cases	**159,827**	gsf	0.25	39,957		
	Miscellaneous metals throughout building	**159,827**	sf	1.25	199,784		
	Miscellaneous sealants throughout building	**159,827**	sf	1.50	239,741		
	SUBTOTAL					1,548,057	
	TOTAL - INTERIOR CONSTRUCTION						**$6,342,867**
C20	***STAIRCASES***						
C2010	**STAIR CONSTRUCTION**						
	Metal pan stair; egress stair	**3**	flt	35,000.00	105,000		
	Main staircase	**2**	flt	50,000.00	100,000		
	Concrete fill to stairs	**5**	flt	2,000.00	10,000		
	SUBTOTAL					215,000	
C2020	**STAIR FINISHES**						
	High performance coating to stairs including all railings etc.	**5**	flt	3,000.00	15,000		
	Rubber tile at stairs - landings	**500**	sf	10.00	5,000		
	Rubber tile at stairs - treads & risers	**600**	lft	19.06	11,436		
	SUBTOTAL					31,436	
	TOTAL - STAIRCASES						**$246,436**
C30	***INTERIOR FINISHES***						
C3010	**WALL FINISHES**						
	Wall finishes	**159,827**	sf	14.00	2,237,578		
	SUBTOTAL					2,237,578	
C3020	**FLOOR FINISHES**						
	Floor finishes	**159,827**	sf	9.00	1,438,443		
	SUBTOTAL					1,438,443	
C3030	**CEILING FINISHES**						
	Ceiling finishes	**159,827**	sf	11.00	1,758,097		
	SUBTOTAL					1,758,097	
	TOTAL - INTERIOR FINISHES						**$5,434,118**
D10	***CONVEYING SYSTEMS***						
D1010	**ELEVATOR**						
	New elevator; 3 stop; oversize; 5,000 lbs	**1**	ea	120,000.00	120,000		
	SUBTOTAL					120,000	
	TOTAL - CONVEYING SYSTEMS						**$120,000**
D20	***PLUMBING***						
D20	**PLUMBING, GENERALLY**						
	Plumbing; complete system	**159,827**	sf	16.00	2,557,232		
	SUBTOTAL					2,557,232	
	TOTAL - PLUMBING						**$2,557,232**
D30	***HVAC***						
D30	**HVAC, GENERALLY**						
	Geothermal Heating/Cooling System						
	(2) 225 ton heat recovery chiller-heaters with (200) 6" boreholes, active chilled beams, heat recovery units, and rooftop ahu's	**159,827**	sf	70.00	11,187,890		
	SUBTOTAL					11,187,890	

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 3A NEW ADDITION							
	TOTAL - HVAC						**$11,187,890**
D40	***FIRE PROTECTION***						
D40	**FIRE PROTECTION, GENERALLY**						
	Fire protection system	**159,827**	gsf	6.00	958,962		
	SUBTOTAL					958,962	
	TOTAL - FIRE PROTECTION						**$958,962**
D50	***ELECTRICAL***						
D5010	**SERVICE & DISTRIBUTION**						
	Gear & Distribution						
	5000A 480/277V switchboard	**1**	ls	140,000.00	140,000		
	Normal power distribution with associated panelboards, transformers and feeders	**159,827**	sf	4.00	639,308		
	Emergency power						
	Emergency generator and ATS"s with associated panelboards, transformers and feeders	**159,827**	sf	2.50	399,568		
	Equipment Wiring						
	Elevator and cab power feed and connection	**1**	ea	5,000.00	5,000		
	Mechanical equipment wiring to HVAC heating and cooling equipment	**159,827**	sf	2.50	399,568		
	Misc. equipment wiring	**159,827**	sf	0.50	79,914		
	Gym equipment feed and connections	**1**	ls	15,000.00	15,000		
	SUBTOTAL					1,678,358	
D5020	**LIGHTING & POWER**						
	Lighting & Branch Power				-		
	Lighting fixtures with installation labor	**159,827**	sf	6.00	958,962		
	Lighting control system (Daylight Harvesting)						
	Lighting controls with control panels, sensors and switches	**159,827**	sf	1.25	199,784		
	Branch devices						
	Duplex and GFI receptacles	**159,827**	sf	0.50	79,914		
	Lighting and branch circuitry						
	EMT and MC cable	**159,827**	sf	4.50	719,222		
	SUBTOTAL					1,957,882	
D5030	**COMMUNICATION & SECURITY SYSTEMS**						
	Fire Alarm						
	Control panel	**1**	ea	15,000.00	15,000		
	Annunciator	**1**	ea	1,500.00	1,500		
	Beacon	**1**	ea	2,250.00	2,250		
	Knox box	**1**	ea	350.00	350		
	Radio master box	**1**	ea	9,500.00	9,500		
	Devices and cabling	**159,827**	sf	2.00	319,654		
	Mass. Notification	**159,827**	sf	1.00	159,827		
	Testing programming	**1**	ls	5,000.00	5,000		
	Bi-Directional System						
	BDA system	**1**	ls	100,000.00	100,000		
	Telephone/Data/CATV						
	Network switches, PBX, IP, VP, CATV (By owner)				By Owner		
	Telecommunications rough in	**159,827**	sf	1.00	159,827		
	Telecommunications devices and cabling	**159,827**	sf	2.00	319,654		
	Grounding	**1**	ls	1,500.00	1,500		
	Public Address/Clock System						
	PA/Master Clock system	**159,827**	sf	1.00	159,827		
	Classroom Speech Amplification	**159,827**	sf	0.50	79,914		
	Audio Visual (rough-in and power only)						
	AV equipment				By Owner		
	Rough-In conduit and backboxes only	**159,827**	sf	0.50	79,914		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 3A NEW ADDITION							
	Auditorium						
	Rigging system equipment & installation				See equipment		
	Power to rigging equipment	**1**	ls	12,000.00	12,000		
	Stage dimming system with performance fixture package, allow	**1**	ls	275,000.00	275,000		
	Installation, rough-in & 120V power to dimming equipment	**1**	ls	70,000.00	70,000		
	Performance audio visual equipment, installation & LV cabling, allow	**1**	ls	150,000.00	150,000		
	Performance audio visual rough-in and power	**1**	ls	60,000.00	60,000		
	Cafeteria						
	Sound system	**1**	ls	15,000.00	15,000		
	Media Center						
	Sound system	**1**	ls	15,000.00	15,000		
	Security System						
	Head end	**1**	ls	50,000.00	50,000		
	Card access system	**159,827**	sf	1.00	159,827		
	Intrusion system	**159,827**	sf	1.00	159,827		
	CCTV surveillance system	**159,827**	sf	2.00	319,654		
	SUBTOTAL					2,700,025	
D5040	**OTHER ELECTRICAL SYSTEMS**						
	Miscellaneous						
	Lightning Protection System, UL Master label	**1**	ls	95,000.00	95,000		
	Temp power and lights	**1**	ls	150,000.00	150,000		
	Hoisting and rigging	**1**	ls	10,000.00	10,000		
	Seismic restraints	**1**	ls	7,500.00	7,500		
	Coordination, BIM & shop drawings	**1**	ls	240,000.00	240,000		
	Fees & Permits	**1**	ls	160,000.00	160,000		
	SUBTOTAL					662,500	
	TOTAL - ELECTRICAL						**$6,998,765**
E10	***EQUIPMENT***						
E10	**EQUIPMENT, GENERALLY**						
	Theatrical Equipment Stage curtains, rigging and controls	**1**	ls	350,000.00	350,000		
	Theatrical AV allowance	**1**	ls	200,000.00	200,000		
	Kitchen equipment	**2,030**	sf	220.00	446,600		
	Auditorium seats	**750**	seat	350.00	262,500		
	SUBTOTAL					1,259,100	
	TOTAL - EQUIPMENT						**$1,259,100**
E20	***FURNISHINGS***						
E2010	**FIXED FURNISHINGS**						
	Entry mats & frames - recessed with carpet/rubber strips	**500**	sf	55.00	27,500		
	Window blinds	**26,898**	sf	7.00	188,286		
123553	*CASEWORK*						
	Sinks, counters and casework; allowance	**159,827**	sf	10.00	1,598,270		
	SUBTOTAL					1,814,056	
E2020	**MOVABLE FURNISHINGS**						
	All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
	TOTAL - FURNISHINGS						**$1,814,056**
F10	***SPECIAL CONSTRUCTION***						
F10	**SPECIAL CONSTRUCTION**						
	No items in this section						

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 3A NEW ADDITION						
384	SUBTOTAL						
385							
386	***TOTAL - SPECIAL CONSTRUCTION***						
387							
388							
389	***F20 SELECTIVE BUILDING DEMOLITION***						
390							
391	**F2010 BUILDING ELEMENTS DEMOLITION**						
392	No items in this section						
393	SUBTOTAL						
394							
395	**F2020 HAZARDOUS COMPONENTS ABATEMENT**						
396	See main summary for HazMat allowance				See Summary		
397	SUBTOTAL						
398							
399	***TOTAL - SELECTIVE BUILDING DEMOLITION***						

PSR Estimate

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	SITEWORK OPTION 3A						
	G SITEWORK	*1,900,000*	*sf*		-		
	G10 SITE PREPARATION & DEMOLITION						
	Site construction fence/barricades	**7,900**	lf	18.00	142,200		
	Site construction fence gates	**1**	ea	10,000.00	10,000		
	Stabilized construction entrance	**1**	ls	15,000.00	15,000		
	Pavement/curbing removal, crush and re-use for sub-base	**250,800**	sf	1.00	250,800		
	Demolish tennis courts	**56,200**	sf	1.50	84,300		
	Demolish track/football field	**175,625**	sf	1.00	175,625		
	Walkways	**1**	ls	20,000.00	20,000		
	Miscellaneous demolition	**1**	ls	100,000.00	100,000		
	SUBTOTAL					797,925	
	Temporary parking	**190**	spc				
	gravel base; 12" thick	**2,981**	cy	40.00	119,240		
	Binder course	**8,944**	sy	20.00	178,880		
	Construction fence	**1,135**	lf	18.00	20,430		
	Line markings/painting/signs	**190**	spc	100.00	19,000		
	Demolish temp parking	**110,000**	sf	1.00	110,000		
	Blasting for temporary parking	**1**	ls	150,000.00	150,000		
	SUBTOTAL					597,550	
	Site Earthwork						
	Strip Topsoil and remove; 6" thick	**3,148**	cy	16.00	50,368		
	Fine grading	**659,695**	sf	0.20	131,939		
	Cut and Fill; assumed AV 1ft; balanced site	**24,433**	cy	10.00	244,330		
	Silt fence/erosion control, wash bays, stock piles	**7,900**	lf	12.00	94,800		
	Silt fence maintenance and monitoring	**1**	ls	40,000.00	40,000		
	Hazardous Waste Remediation						
	Remove existing underground fuel storage tanks; 500 Gal	**1**	ls	50,000.00	50,000		
	Dispose/treat contaminated soils	**1**	ls	20,000.00	20,000		
	SUBTOTAL					631,437	
	G20 SITE IMPROVEMENTS						
	Asphalt Paving; parking lot and roadway	*250,800*					
	gravel base; 12" thick	**9,289**	cy	40.00	371,560		
	asphalt; 4" thick	**27,867**	sy	25.00	696,675		
	VGC	**10,032**	lf	40.00	401,280		
	Single solid lines, 4" thick	**1**	ls	10,000.00	10,000		
	Crosswalk Hatching	**4**	loc	900.00	3,600		
	Other road markings	**1**	ls	7,500.00	7,500		
	HC curb cuts	**8**	loc	350.00	2,800		
	Signage	**1**	ls	20,000.00	20,000		
	Pedestrian Paving						
	Concrete paving						
	gravel base; 8" thick	**372**	cy	35.00	13,020		
	4" concrete paving	**15,000**	sf	9.00	135,000		
	Drop Off Plaza	*16,720*	*sf*				
	Precast pavers; 50%	**8,360**	sf	40.00	334,400		
	Poured in place rubber safety surface; 25%	**4,180**	sf	26.00	108,680		
	Planted areas; 25%	**4,180**	sf	10.00	41,800		
	Ground Level Garden; Pre-K Playground	*10,450*	sf		-		
	Rubber surface over concrete	**7,838**	sf	18.00	141,084		
	Raised planters; green space	**2,613**	sf	10.00	26,130		
	Shade structure	**1**	loc	30,000.00	30,000		
	Music elements	**1**	loc	35,000.00	35,000		
	Play equipment	**1**	loc	50,000.00	50,000		
	SUBTOTAL					2,428,529	

Site Athletics

STADIUM - Running Track/Turf Football Field/Bleachers

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
SITEWORK OPTION 3A							
	Synthetic turf anchor curb integral with trench drain	**1,310**	lf	80.00	104,800		
	Resilient surface at track	**75,525**	sf	8.00	604,200		
	Gravel base - assumed 12" thick	**3,707**	cy	45.00	166,815		
	Geotextile reinforced impermeable liner 20 mill	**100,100**	sf	1.00	100,100		
	Synthetic turf field - Hybrid infill synthetic field with premolded resilient drainage pad	**100,100**	sf	12.00	1,201,200		
	Football goals	**2**	ea	3,500.00	7,000		
	Scoreboard	**1**	ea	60,000.00	60,000		
	Line markings - allowance	**2**	ls	2,000.00	4,000		
	1250 seat bleacher	**1**	loc	450,000.00	450,000		
	Rip-Rap under bleachers	**1**	ls	25,000.00	25,000		
	Field logo's	**1**	loc	6,000.00	6,000		
	Discus pad & enclosure	**1**	ea	15,000.00	15,000		
	Shot put pad & enclosure	**1**	ea	15,000.00	15,000		
	Long jump/triple jump	**2**	ea	10,000.00	20,000		
	Pole vault and accessories	**1**	ea	10,000.00	10,000		
	High jump pads	**1**	ea	6,000.00	6,000		
	Javelin with track surfacing runway	**1**	ea	10,000.00	10,000		
	Hurdles and starting blocks	**1**	ls	8,000.00	8,000		
	Track crossing pad	**1**	ls	10,000.00	10,000		
	Trash/recycling receptacles	**12**	ea	800.00	9,600		
	Team benches- 7'-5" long	**12**	ea	1,500.00	18,000		
	Portable ball control netting, 120' long	**4**	ea	2,500.00	10,000		
	Pit covers	**2**	ea	3,500.00	7,000		
	Subsurface infiltration/drainage/field drains etc.	**175,625**	sf	1.25	219,531		
	Stadium sound system (AV)	**1**	ls	120,000.00	120,000		
	SUBTOTAL					3,207,246	
	Baseball/Field Hockey	**1**	ea	360,000.00	360,000		
	Synthetic grass soccer fields; Two Fields	**140,500**	sf	12.00	1,686,000		
	Full size field; grass	**1**	ea	300,000.00	300,000		
	Softball field	**1**	ea	250,000.00	250,000		
	Tennis courts - Six Courts (including pickle courts); 1 basketball court	*50,600*	*sf*				
	gravel base; 8" thick	**1,256**	cy	40.00	50,240		
	Asphalt paving	**5,622**	sy	30.00	168,660		
	Color coating	**50,600**	sf	2.00	101,200		
	Fence with wind break	**1,177**	lf	80.00	94,160		
	Tennis court nets	**5**	set	1,500.00	7,500		
	Basketball hoops	**1**	set	5,000.00	5,000		
	SUBTOTAL					3,022,760	
	Site Improvements						
	Flag pole 50' high	**1**	ea	6,500.00	6,500		
	Concrete retaining walls	**1**	ls	500,000.00	500,000		
	Other site improvements; walls, fences etc.	**1**	ls	200,000.00	200,000		
	Outdoor dining	**1**	ls	50,000.00	50,000		
	SUBTOTAL					756,500	
	Landscaping						
	Topsoil - reuse existing	**3,148**	cy	25.00	78,700		
	Topsoil - Import new topsoil; minimum 6"	**581**	cy	65.00	37,765		
	Seeding	**964,805**	sf	0.15	144,721		
	Green space	**31,350**	sf	10.00	313,500		
	SUBTOTAL					574,686	
G30	**CIVIL MECHANICAL UTILITIES**						
	Water supply; Pricing includes E&B and bedding						
	Temporary water line	**650**	lf	120.00	78,000		
	New DI piping; 8"	**450**	lf	100.00	45,000		
	New DI piping; 8" Fire loop	**2,800**	lf	100.00	280,000		

PSR Estimate

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
SITEWORK OPTION 3A							
	Connect to existing	**1**	loc	5,000.00	5,000		
	FD connection	**1**	ea	2,000.00	2,000		
	Gate valves	**8**	ea	750.00	6,000		
	Fire hydrant	**3**	ea	5,000.00	15,000		
	SUBTOTAL					431,000	
	Sanitary; Pricing includes E&B and bedding						
	Temporary sewer line	**1**	ls	50,000.00	50,000		
	Manholes	**4**	ea	4,000.00	16,000		
	Grease trap	**1**	ea	15,000.00	15,000		
	8" PVC	**1,000**	lf	60.00	60,000		
	Connect to existing drain	**1**	ea	3,000.00	3,000		
	SUBTOTAL					144,000	
	Storm water; Pricing includes E&B and bedding						
	Temporary storm (relocate existing 15" line + new manholes)	**1**	ls	125,000.00	125,000		
	Allowance for new drainage systems; piping only	**250,800**	sf	3.00	752,400		
	Infiltration systems; cultec chambers	**137,500**	cf	8.00	1,100,000		
	Rock excavation	**1**	ls	250,000.00	250,000		
	Catch basins	**12**	ea	3,800.00	45,600		
	Manholes	**10**	ea	4,500.00	45,000		
	WQ structures	**3**	ea	16,000.00	48,000		
	Area drains	**4**	ea	1,500.00	6,000		
	Work to culvert	**1**	ls	250,000.00	250,000		
	Gas service						
	E&B trench for new gas pipe - install by plumbing	**450**	lf	25.00	11,250		
	SUBTOTAL					2,633,250	
G40	**ELECTRICAL UTILITIES**						
	Power						
	Utility co. backcharges, allow	**1**	ls	30,000.00	Utility co.		
	Connections at existing manhole				Utility co.		
	Manhole	**1**	ls	8,500.00	8,500		
	Connections in manhole	**1**	ls	3,500.00	3,500		
	Primary ductbank 2-5" ductbank, empty, allow	**1000**	lf	120.00	120,000		
	Transformer by utility company				By Utility Co.		
	Transformer pad; temporary for relocated transformer	**1**	ea	5,000.00	5,000		
	Secondary service	**60**	lf	1,100.00	66,000		
	Communications						
	Connection at riser pole, allow	**1**	ea	1,500.00	1,500		
	Telecom ductbank 4-4", allow	**1000**	lf	152.00	152,000		
	Site Lighting						
	Site Parking lighting (allow)	**250,800**	sf	2.00	501,600		
	SUBTOTAL					858,100	
	TOTAL - SITE DEVELOPMENT						***$16,082,983***

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Stoneham High School
Design Options
Stoneham, MA

03-Dec-20

PSR Estimate

GFA 207,827

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 4A NEW BUILDING						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$663,248			
	A1020	Special Foundations	$3,316,240			
	A1030	Lowest Floor Construction	$1,244,117	**$5,223,605**	$25.13	7.0%
A20	**BASEMENT CONSTRUCTION**					
	A2010	Basement Excavation	$0			
	A2020	Basement Walls	$408,000	**$408,000**	$1.96	0.5%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$5,794,842			
	B1020	Roof Construction	$3,015,189	**$8,810,031**	$42.39	11.7%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$7,093,817			
	B2020	Windows	$3,638,838			
	B2030	Exterior Doors	$101,640	**$10,834,295**	$52.13	14.4%
B30	**ROOFING**					
	B3010	Roof Coverings	$2,229,744			
	B3020	Roof Openings	$32,500	**$2,262,244**	$10.89	3.0%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$4,987,848			
	C1020	Interior Doors	$1,246,962			
	C1030	Specialties/Millwork	$1,766,357	**$8,001,167**	$38.50	10.7%
C20	**STAIRCASES**					
	C2010	Stair Construction	$237,000			
	C2020	Stair Finishes	$37,723	**$274,723**	$1.32	0.4%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$2,909,578			
	C3020	Floor Finishes	$1,870,443			
	C3030	Ceiling Finishes	$2,286,097	**$7,066,118**	$34.00	9.4%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$160,000	**$160,000**	$0.77	0.2%
D20	**PLUMBING**					
	D20	Plumbing	$3,325,232	**$3,325,232**	$16.00	4.4%
D30	**HVAC**					
	D30	HVAC	$14,547,890	**$14,547,890**	$70.00	19.4%

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Stoneham High School
Design Options
Stoneham, MA

03-Dec-20

PSR Estimate

GFA 207,827

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 4A NEW BUILDING						
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$1,246,962	**$1,246,962**	$6.00	1.7%
D50	**ELECTRICAL**					
	D5010	Complete System	$8,723,426	**$8,723,426**	$41.97	11.6%
E10	**EQUIPMENT**					
	E10	Equipment	$1,832,600	**$1,832,600**	$8.82	2.4%
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$2,275,882			
	E2020	Movable Furnishings	NIC	**$2,275,882**	$10.95	3.0%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$0	**$0**	$0.00	0.0%
F20	**HAZMAT REMOVALS**					
	F2010	Building Elements Demolition	$0			
	F2020	Hazardous Components Abatement	$0	**$0**	$0.00	0.0%
TOTAL DIRECT COST (Trade Costs)				***$74,992,175***	*$360.84*	*100.0%*

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Stoneham High School
Design Options
Stoneham, MA

03-Dec-20

PSR Estimate

GFA 207,827

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 4A NEW BUILDING							
	GROSS FLOOR AREA CALCULATION						
	Level 00			54,707			
	Level 01			82,906			
	Level 02			36,207			
	Level 03			34,007			
	TOTAL GROSS FLOOR AREA (GFA)				**207,827** ***sf***		
A10	***FOUNDATIONS***						
A1010	**STANDARD FOUNDATIONS**						
	Allowance for standard foundations; 50% of building footprint	**41,453**	sf	16.00	663,248		
	SUBTOTAL					663,248	
A1020	**SPECIAL FOUNDATIONS**						
	Allowance for shallow pier foundations; 50% of building footprint	**41,453**	sf	80.00	3,316,240		
	SUBTOTAL					$3,316,240	
A1030	**LOWEST FLOOR CONSTRUCTION**						
	New Slab on grade, 5" thick						
	Gravel fill, 12"	**3,071**	cy	40.00	122,840		
	Rigid insulation	**82,906**	sf	2.25	186,539		
	Vapor barrier	**82,906**	sf	1.00	82,906		
	Compact existing sub-grade	**82,906**	sf	0.50	41,453		
	Mesh reinforcing 15% lap	**95,342**	sf	1.15	109,643		
	Concrete - 5" thick; 4,000 psi	**1,354**	cy	125.00	169,250		
	Placing concrete	**1,354**	cy	45.00	60,930		
	Finishing and curing concrete	**82,906**	sf	2.50	207,265		
	Control joints - saw cut	**82,906**	sf	0.10	8,291		
	Miscellaneous						
	Premium for rock excavation to 50% of foundations	**1**	ls	150,000.00	150,000		
	Premium for sloped floor at auditorium	**1**	ls	50,000.00	50,000		
	New Elevator pit	**1**	ea	40,000.00	40,000		
	Equipment pads	**1**	ls	15,000.00	15,000		
	SUBTOTAL					1,244,117	
	TOTAL - FOUNDATIONS						**$5,223,605**
A20	***BASEMENT CONSTRUCTION***						
A2010	**BASEMENT EXCAVATION**						
	SUBTOTAL					-	
A2020	**BASEMENT WALLS**						
	Allowance for retaining walls	**320**	lf	1,275.00	408,000		
	SUBTOTAL					408,000	
	TOTAL - BASEMENT CONSTRUCTION						**$408,000**
B10	***SUPERSTRUCTURE***						
		14.50	lbs/sf		-		
B1010	**FLOOR CONSTRUCTION**	1,507	tns		-		
	Floor Structure - Steel:						
	Steel beams and columns to new addition; 14.5#/SF	**906**	tns	3,800.00	3,442,800		
	Premium for HSS	**227**	tns	300.00	68,100		
	Shear studs	**24,984**	ea	2.50	62,460		
	Floor Structure						
	2" 18 Ga. Metal galvanized floor Deck	**124,921**	sf	4.00	499,684		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 4A NEW BUILDING							
	WWF reinforcement	**143,659**	sf	0.80	114,927		
	Concrete Fill to metal deck; 6" Normal Weight	**2,915**	cy	135.00	393,525		
	Place and finish concrete	**124,921**	sf	2.50	312,303		
	Rebar to decks	**37,476**	lbs	1.20	44,971		
	Misc. angles	**124,921**	sf	0.50	Incl		
	Miscellaneous						
	Allowance for running track	**1**	ls	500,000.00	500,000		
	Fire proofing to columns and beams	**124,921**	sf	2.25	281,072		
	Intumescent paint	**1**	ls	50,000.00	50,000		
	Fire stopping floors	**1**	ls	25,000.00	25,000		
	SUBTOTAL					5,794,842	
B1020	**ROOF CONSTRUCTION**						
	Roof Structure - Steel:						
	Steel beams and columns to new addition; 14.5#/SF	**601**	tns	3,800.00	2,283,800		
	Premium for HSS	**150**	tns	300.00	45,000		
	Exposed steel	**1**	ls	50,000.00	50,000		
	Roof Structure						
	Acoustic deck allowance	**5,000**	sf	9.00	45,000		
	3" 20 Ga. galvanized Metal Roof Deck	**77,906**	sf	3.50	272,671		
	Miscellaneous						
	Concrete under RTU's	**8,500**	sf	10.00	85,000		
	Fire proofing to columns, beams and deck	**77,906**	sf	3.00	233,718		
	SUBTOTAL					3,015,189	
	TOTAL - SUPERSTRUCTURE						**$8,810,031**
B20	***EXTERIOR CLOSURE***						
B2010	**EXTERIOR WALLS**						
	Exterior Wall Area; EXT 1	*61,602*	sf				
055000	*MISC. METALS*						
	Stainless steel sign at main entrance	**1**	ls	10,000.00	10,000		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Air barrier	**61,602**	sf	7.00	431,214		
	Air barrier/flashing at windows	**13,309**	lf	6.25	83,181		
	Miscellaneous sealants to closure	**61,602**	sf	1.00	61,602		
072100	*THERMAL INSULATION*						
	Insulation; 6" XPS	**61,602**	sf	5.50	338,811		
	Insulation; 4" spray	**61,602**	sf	4.25	261,809		
076400	*CLADDING*						
	Metal panel; rainscreen system	**61,602**	sf	70.00	4,312,140		
	Mechanical screen; includes backup structure	**1,700**	sf	85.00	144,500		
	Soffits; including all backup; S1	**3,215**	sf	101.50	326,323		
092900	*GYPSUM BOARD ASSEMBLIES*						
	6" metal stud backup	**61,602**	sf	12.00	739,224		
	Gypsum Sheathing	**61,602**	sf	2.75	169,406		
	Drywall lining to interior face of stud backup	**61,602**	sf	3.50	215,607		
	SUBTOTAL					7,093,817	
B2020	**WINDOWS**						
	Exterior Wall Area	*22,626*	sf				

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 4A NEW BUILDING							
061000	*ROUGH CARPENTRY*						
	Wood blocking at openings	**13,309**	lf	12.00	159,708		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Backer rod & double sealant	**13,309**	lf	10.00	133,090		
080001	*METAL WINDOWS*						
	Windows, triple glazed; fiberglass; W1	**15,400**	sf	125.00	1,925,000		
	Curtainwall, triple glazed; BOD Kawneer 1600 sys 2 1" IGU; W2	**7,226**	sf	165.00	1,192,290		
	Sunshades; 3" aluminum trellis	**1,500**	lf	140.00	210,000		
089000	*LOUVERS*						
	Louvers	**250**	sf	75.00	18,750		
	SUBTOTAL					3,638,838	
B2030	**EXTERIOR DOORS**						
	Glazed entrance doors including frame and hardware; double door	**10**	pr	9,000.00	90,000		
	HM doors, frames and hardware- Double	**4**	pr	2,000.00	8,000		
	Backer rod & double sealant	**280**	lf	10.00	2,800		
	Wood blocking at openings	**280**	lf	3.00	840		
	SUBTOTAL					101,640	
	TOTAL - EXTERIOR CLOSURE						**$10,834,295**
B30	***ROOFING***						
B3010	**ROOF COVERINGS**						
	New roofing complete; TPO 8" Insulation; R1	**82,906**	sf	24.00	1,989,744		
	Roof garden/outdoor sensory garden; 50% decking/50% planters; includes furnishings and planting	**4,000**	sf	60.00	240,000		
	SUBTOTAL					2,229,744	
B3020	**ROOF OPENINGS**						
	Skylights, allow	**1**	ls	30,000.00	30,000		
	Roof hatch	**1**	loc	2,500.00	2,500		
	SUBTOTAL					32,500	
	TOTAL - ROOFING						**$2,262,244**
C10	***INTERIOR CONSTRUCTION***						
C1010	**PARTITIONS**						
	Miscellaneous partitions/glazed partitions/borrowed lights/blocking etc.	**207,827**	gsf	24.00	4,987,848		
	SUBTOTAL					4,987,848	
C1020	**INTERIOR DOORS**						
	Interior doors, frames and hardware	**207,827**	gsf	6.00	1,246,962		
	SUBTOTAL					1,246,962	
C1030	**SPECIALTIES / MILLWORK**						
	Toilet Partitions and accessories	**207,827**	gsf	1.00	207,827		
	Backer panels in electrical closets	**1**	ls	1,000.00	1,000		
	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	**207,827**	sf	1.25	259,784		
	Room Signs	**207,827**	gsf	0.50	103,914		
	Fire extinguisher cabinets	**69**	ea	350.00	24,150		
	Lockers, full height	**710**	ea	350.00	248,500		
	New catwalk	**1**	ls	100,000.00	100,000		
	Janitors Work Shop Accessories	**1**	ls	1,500.00	1,500		
	Janitors Closet Accessories	**3**	rms	300.00	900		
	Media						
	Reception desks	**2**	loc	25,000	50,000		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 4A NEW BUILDING							
	Railings to open to below areas	**151**	lf	300	45,300		
	Library shelving at perimeters 7' Tall				F,F & E		
	Library shelving at perimeters 3' Tall				F,F & E		
	Stage proscenium	**1**	ls	100,000	100,000		
	Display cases	**207,827**	sf	0.25	51,957		
	Miscellaneous metals throughout building	**207,827**	sf	1.25	259,784		
	Miscellaneous sealants throughout building	**207,827**	sf	1.50	311,741		
	SUBTOTAL					1,766,357	
	TOTAL - INTERIOR CONSTRUCTION						**$8,001,167**
C20	***STAIRCASES***						
C2010	**STAIR CONSTRUCTION**						
	Metal pan stair; egress stair	**5**	flt	35,000.00	175,000		
	Main staircase	**1**	flt	50,000.00	50,000		
	Concrete fill to stairs	**6**	flt	2,000.00	12,000		
	SUBTOTAL					237,000	
C2020	**STAIR FINISHES**						
	High performance coating to stairs including all railings etc.	**6**	flt	3,000.00	18,000		
	Rubber tile at stairs - landings	**600**	sf	10.00	6,000		
	Rubber tile at stairs - treads & risers	**720**	lft	19.06	13,723		
	SUBTOTAL					37,723	
	TOTAL - STAIRCASES						**$274,723**
C30	***INTERIOR FINISHES***						
C3010	**WALL FINISHES**						
	Wall finishes	**207,827**	sf	14.00	2,909,578		
	SUBTOTAL					2,909,578	
C3020	**FLOOR FINISHES**						
	Floor finishes	**207,827**	sf	9.00	1,870,443		
	SUBTOTAL					1,870,443	
C3030	**CEILING FINISHES**						
	Ceiling finishes	**207,827**	sf	11.00	2,286,097		
	SUBTOTAL					2,286,097	
	TOTAL - INTERIOR FINISHES						**$7,066,118**
D10	***CONVEYING SYSTEMS***						
D1010	**ELEVATOR**						
	New elevator; 4 stop; oversize; 5,000 lbs	**1**	ea	160,000.00	160,000		
	SUBTOTAL					160,000	
	TOTAL - CONVEYING SYSTEMS						**$160,000**
D20	***PLUMBING***						
D20	**PLUMBING, GENERALLY**						
	Plumbing; complete system	**207,827**	sf	16.00	3,325,232		
	SUBTOTAL					3,325,232	
	TOTAL - PLUMBING						**$3,325,232**
D30	***HVAC***						
D30	**HVAC, GENERALLY**						
	Geothermal Heating/Cooling System						
	(2) 225 ton heat recovery chiller-heaters with (200) 6" boreholes, active chilled beams, heat recovery units, and rooftop ahu's	**207,827**	sf	70.00	14,547,890		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 4A NEW BUILDING							
	SUBTOTAL					14,547,890	
	TOTAL - HVAC						**$14,547,890**
	D40 FIRE PROTECTION						
D40	**FIRE PROTECTION, GENERALLY**						
	Fire protection system	**207,827**	gsf	6.00	1,246,962		
	SUBTOTAL					1,246,962	
	TOTAL - FIRE PROTECTION						**$1,246,962**
	D50 ELECTRICAL						
D5010	**SERVICE & DISTRIBUTION**						
	Gear & Distribution						
	5000A 480/277V switchboard	**1**	ls	140,000.00	140,000		
	Normal power distribution with associated panelboards, transformers and feeders	**207,827**	sf	4.00	831,308		
	Emergency power						
	Emergency generator and ATS"s with associated panelboards, transformers and feeders	**207,827**	sf	2.50	519,568		
	PV						
	PV provisions only, with empty conduit and pull boxes, per narrative	**1**	ls	5,000.00	5,000		
	Equipment Wiring						
	Elevator and cab power feed and connection	**1**	ea	5,000.00	5,000		
	Mechanical equipment wiring to HVAC heating and cooling equipment	**207,827**	sf	2.50	519,568		
	Misc. equipment wiring	**209,000**	sf	0.50	104,500		
	Kitchen equipment wiring	**1**	ls	25,000.00	25,000		
	Gym equipment feed and connections	**1**	ls	15,000.00	15,000		
	SUBTOTAL					2,164,944	
D5020	**LIGHTING & POWER**						
	Lighting & Branch Power				-		
	Lighting fixtures with installation labor	**207,827**	sf	6.00	1,246,962		
	Exterior building lighting	**1**	ls	15,000.00	15,000		
	Lighting control system (Daylight Harvesting)						
	Lighting controls with control panels, sensors and switches	**207,827**	sf	1.25	259,784		
	Branch devices						
	Duplex and GFI receptacles	**207,827**	sf	0.50	103,914		
	Lighting and branch circuitry						
	EMT and MC cable	**207,827**	sf	4.50	935,222		
	SUBTOTAL					2,560,882	
D5030	**COMMUNICATION & SECURITY SYSTEMS**						
	Fire Alarm						
	Control panel	**1**	ea	15,000.00	15,000		
	Annunciator	**1**	ea	1,500.00	1,500		
	Beacon	**1**	ea	2,250.00	2,250		
	Knox box	**1**	ea	350.00	350		
	Radio master box	**1**	ea	9,500.00	9,500		
	Devices and cabling	**209,000**	sf	2.00	418,000		
	Mass. Notification	**209,000**	sf	1.00	209,000		
	Testing programming	**1**	ls	5,000.00	5,000		
	Bi-Directional System						
	BDA system	**1**	ls	100,000.00	100,000		
	Telephone/Data/CATV						
	Network switches, PBX, IP, VP, CATV (By owner)				By Owner		
	Telecommunications rough in	**209,000**	sf	1.00	209,000		
	Telecommunications devices and cabling	**209,000**	sf	2.00	418,000		
	Grounding	**1**	ls	1,500.00	1,500		
	Public Address/Clock System						

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 4A NEW BUILDING							
	PA/Master Clock system	**209,000**	sf	1.00	209,000		
	Classroom Speech Amplification	**209,000**	sf	0.50	104,500		
	Audio Visual (rough-in and power only)						
	AV equipment				By Owner		
	Rough-In conduit and backboxes only	**209,000**	sf	0.50	104,500		
	Auditorium						
	Rigging system equipment & installation				See equipment		
	Power to rigging equipment	**1**	ls	12,000.00	12,000		
	Stage dimming system with performance fixture package, allow	**1**	ls	275,000.00	275,000		
	Installation, rough-in & 120V power to dimming equipment	**1**	ls	70,000.00	70,000		
	Performance audio visual equipment, installation & LV cabling, allow	**1**	ls	150,000.00	150,000		
	Performance audio visual rough-in and power	**1**	ls	60,000.00	60,000		
	Cafeteria						
	Sound system	**1**	ls	15,000.00	15,000		
	Media Center						
	Sound system	**1**	ls	15,000.00	15,000		
	Gymnasium						
	Sound system	**1**	ls	30,000.00	30,000		
	Scoreboard/ shot clocks with feed and connection	**1**	ea	15,000.00	15,000		
	Security System						
	Head end	**1**	ls	50,000.00	50,000		
	Card access system	**209,000**	sf	1.00	209,000		
	Intrusion system	**209,000**	sf	1.00	209,000		
	CCTV surveillance system	**209,000**	sf	2.00	418,000		
	SUBTOTAL					3,335,100	
D5040	**OTHER ELECTRICAL SYSTEMS**						
	Miscellaneous						
	Lightning Protection System, UL Master label	**1**	ls	95,000.00	95,000		
	Temp power and lights	**1**	ls	150,000.00	150,000		
	Hoisting and rigging	**1**	ls	10,000.00	10,000		
	Seismic restraints	**1**	ls	7,500.00	7,500		
	Coordination, BIM & shop drawings	**1**	ls	240,000.00	240,000		
	Fees & Permits	**1**	ls	160,000.00	160,000		
	SUBTOTAL					662,500	
	TOTAL - ELECTRICAL						**$8,723,426**
E10	***EQUIPMENT***						
E10	**EQUIPMENT, GENERALLY**						
	Gym wall pads	**1**	ls	20,000.00	20,000		
	Basketball backstops; swing up; electric operated	**12**	loc	10,000.00	120,000		
	Gymnasium dividing net; electrically operated	**3**	ea	30,000.00	90,000		
	Volleyball net and standards	**1**	ls	5,000.00	5,000		
	Telescoping bleachers	**900**	seats	240.00	216,000		
	Theatrical Equipment Stage curtains, rigging and controls	**1**	ls	350,000.00	350,000		
	Theatrical AV allowance	**1**	ls	200,000.00	200,000		
	Kitchen equipment	**2,030**	sf	220.00	446,600		
	Auditorium seats	**1,100**	seat	350.00	385,000		
	SUBTOTAL					1,832,600	
	TOTAL - EQUIPMENT						**$1,832,600**
E20	***FURNISHINGS***						
E2010	**FIXED FURNISHINGS**						
	Entry mats & frames - recessed with carpet/rubber strips	**500**	sf	55.00	27,500		
	Window blinds	**22,626**	sf	7.00	158,382		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 4A NEW BUILDING						
123553	*CASEWORK*						
	Sinks, counters and casework; allowance	**209,000**	sf	10.00	2,090,000		
	SUBTOTAL					2,275,882	
E2020	**MOVABLE FURNISHINGS**						
	All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
	TOTAL - FURNISHINGS						**$2,275,882**
F10	***SPECIAL CONSTRUCTION***						
F10	**SPECIAL CONSTRUCTION**						
	No items in this section						
	SUBTOTAL						
	TOTAL - SPECIAL CONSTRUCTION						
F20	***SELECTIVE BUILDING DEMOLITION***						
F2010	**BUILDING ELEMENTS DEMOLITION**						
	No items in this section						
	SUBTOTAL						
F2020	**HAZARDOUS COMPONENTS ABATEMENT**						
	See main summary for HazMat allowance				See Summary		
	SUBTOTAL						
	TOTAL - SELECTIVE BUILDING DEMOLITION						

PSR Estimate

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	SITEWORK OPTION 4A						
	G SITEWORK	*1,900,000*	*sf*		-		
G10	**SITE PREPARATION & DEMOLITION**						
	Site construction fence/barricades	**7,900**	lf	18.00	142,200		
	Site construction fence gates	**1**	ea	10,000.00	10,000		
	Stabilized construction entrance	**1**	ls	15,000.00	15,000		
	Pavement/curbing removal, crush and re-use for sub-base	**250,800**	sf	1.00	250,800		
	Demolish tennis courts	**56,200**	sf	1.50	84,300		
	Demolish track/football field	**175,625**	sf	1.00	175,625		
	Walkways	**1**	ls	20,000.00	20,000		
	Miscellaneous demolition	**1**	ls	100,000.00	100,000		
	SUBTOTAL					797,925	
	Temporary parking	250	spc				
	gravel base; 12" thick	**4,074**	cy	40.00	162,960		
	Binder course	**12,222**	sy	20.00	244,440		
	Construction fence	**1,900**	lf	18.00	34,200		
	Line markings/painting/signs	**250**	spc	100.00	25,000		
	Demolish temp parking	**110,000**	sf	1.00	110,000		
	Blasting for temporary parking	**1**	ls	150,000.00	150,000		
	SUBTOTAL					726,600	
	Site Earthwork						
	Strip Topsoil and remove; 6" thick	**3,148**	cy	16.00	50,368		
	Fine grading	**659,695**	sf	0.20	131,939		
	Cut and Fill; assumed AV 1ft; balanced site	**24,433**	cy	10.00	244,330		
	Silt fence/erosion control, wash bays, stock piles	**7,900**	lf	12.00	94,800		
	Silt fence maintenance and monitoring	**1**	ls	40,000.00	40,000		
	Hazardous Waste Remediation						
	Remove existing underground fuel storage tanks; 500 Gal	**1**	ls	50,000.00	50,000		
	Dispose/treat contaminated soils	**1**	ls	20,000.00	20,000		
	SUBTOTAL					631,437	
G20	**SITE IMPROVEMENTS**						
	Asphalt Paving; parking lot and roadway	*250,800*					
	gravel base; 12" thick	**9,289**	cy	40.00	371,560		
	asphalt; 4" thick	**27,867**	sy	25.00	696,675		
	VGC	**10,032**	lf	40.00	401,280		
	Single solid lines, 4" thick	**1**	ls	10,000.00	10,000		
	Crosswalk Hatching	**4**	loc	900.00	3,600		
	Other road markings	**1**	ls	7,500.00	7,500		
	HC curb cuts	**8**	loc	350.00	2,800		
	Signage	**1**	ls	20,000.00	20,000		
	Pedestrian Paving						
	Concrete paving						
	gravel base; 8" thick	**372**	cy	35.00	13,020		
	4" concrete paving	**15,000**	sf	9.00	135,000		
	Drop Off Plaza	*16,720*	*sf*				
	Precast pavers; 50%	**8,360**	sf	40.00	334,400		
	Poured in place rubber safety surface; 25%	**4,180**	sf	26.00	108,680		
	Planted areas; 25%	**4,180**	sf	10.00	41,800		
	Ground Level Garden; Pre-K Playground	*10,450*	sf		-		
	Rubber surface over concrete	**7,838**	sf	18.00	141,084		
	Raised planters; green space	**2,613**	sf	10.00	26,130		
	Shade structure	**1**	loc	30,000.00	30,000		
	Music elements	**1**	loc	35,000.00	35,000		
	Play equipment	**1**	loc	50,000.00	50,000		
	SUBTOTAL					2,428,529	
	Site Athletics						
	STADIUM - Running Track/Turf Football Field/Bleachers						

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
SITEWORK OPTION 4A							
	Synthetic turf anchor curb integral with trench drain	**1,310**	lf	80.00	104,800		
	Resilient surface at track	**75,525**	sf	8.00	604,200		
	Gravel base - assumed 12" thick	**3,707**	cy	45.00	166,815		
	Geotextile reinforced impermeable liner 20 mill	**100,100**	sf	1.00	100,100		
	Synthetic turf field - Hybrid infill synthetic field with premolded resilient drainage pad	**100,100**	sf	12.00	1,201,200		
	Football goals	**2**	ea	3,500.00	7,000		
	Scoreboard	**1**	ea	60,000.00	60,000		
	Line markings - allowance	**2**	ls	2,000.00	4,000		
	1250 seat bleacher	**1**	loc	450,000.00	450,000		
	Rip-Rap under bleachers	**1**	ls	25,000.00	25,000		
	Field logo's	**1**	loc	6,000.00	6,000		
	Discus pad & enclosure	**1**	ea	15,000.00	15,000		
	Shot put pad & enclosure	**1**	ea	15,000.00	15,000		
	Long jump/triple jump	**2**	ea	10,000.00	20,000		
	Pole vault and accessories	**1**	ea	10,000.00	10,000		
	High jump pads	**1**	ea	6,000.00	6,000		
	Javelin with track surfacing runway	**1**	ea	10,000.00	10,000		
	Hurdles and starting blocks	**1**	ls	8,000.00	8,000		
	Track crossing pad	**1**	ls	10,000.00	10,000		
	Trash/recycling receptacles	**12**	ea	800.00	9,600		
	Team benches- 7'-5" long	**12**	ea	1,500.00	18,000		
	Portable ball control netting, 120' long	**4**	ea	2,500.00	10,000		
	Pit covers	**2**	ea	3,500.00	7,000		
	Subsurface infiltration/drainage/field drains etc.	**175,625**	sf	1.25	219,531		
	Stadium sound system (AV)	**1**	ls	120,000.00	120,000		
	SUBTOTAL					3,207,246	
	Baseball/Field Hockey	**1**	ea	360,000.00	360,000		
	Synthetic grass soccer fields; Two Fields	**140,500**	sf	12.00	1,686,000		
	Half size field; grass	**1**	ea	150,000.00	150,000		
	Softball field	**1**	ea	250,000.00	250,000		
	Tennis courts - Six Courts (including pickle courts); 1 basketball court	*50,600*	*sf*				
	gravel base; 8" thick	**1,256**	cy	40.00	50,240		
	Asphalt paving	**5,622**	sy	30.00	168,660		
	Color coating	**50,600**	sf	2.00	101,200		
	Fence with wind break	**1,177**	lf	80.00	94,160		
	Tennis court nets	**5**	set	1,500.00	7,500		
	Basketball hoops	**1**	set	5,000.00	5,000		
	SUBTOTAL					2,872,760	
	Site Improvements						
	Flag pole 50' high	**1**	ea	6,500.00	6,500		
	Concrete retaining walls	**1**	ls	500,000.00	500,000		
	Other site improvements; walls, fences etc.	**1**	ls	200,000.00	200,000		
	Outdoor dining	**1**	ls	50,000.00	50,000		
	SUBTOTAL					756,500	
	Landscaping						
	Topsoil - reuse existing	**3,148**	cy	25.00	78,700		
	Topsoil - Import new topsoil; minimum 6"	**581**	cy	65.00	37,765		
	Seeding	**964,805**	sf	0.15	144,721		
	Green space	**31,350**	sf	10.00	313,500		
	SUBTOTAL					574,686	
G30	**CIVIL MECHANICAL UTILITIES**						
	Water supply; Pricing includes E&B and bedding						
	Temporary water line	**650**	lf	120.00	78,000		
	New DI piping; 8"	**450**	lf	100.00	45,000		
	New DI piping; 8" Fire loop	**2,800**	lf	100.00	280,000		

PSR Estimate

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
SITEWORK OPTION 4A							
	Connect to existing	**1**	loc	5,000.00	5,000		
	FD connection	**1**	ea	2,000.00	2,000		
	Gate valves	**8**	ea	750.00	6,000		
	Fire hydrant	**3**	ea	5,000.00	15,000		
	SUBTOTAL					431,000	
	Sanitary; Pricing includes E&B and bedding						
	Temporary sewer line	**1**	ls	50,000.00	50,000		
	Manholes	**4**	ea	4,000.00	16,000		
	Grease trap	**1**	ea	15,000.00	15,000		
	8" PVC	**1,000**	lf	60.00	60,000		
	Connect to existing drain	**1**	ea	3,000.00	3,000		
	SUBTOTAL					144,000	
	Storm water; Pricing includes E&B and bedding						
	Temporary storm (relocate existing 15" line + new manholes)	**1**	ls	125,000.00	125,000		
	Allowance for new drainage systems; piping only	**250,800**	sf	3.00	752,400		
	Infiltration systems; cultec chambers	**137,500**	cf	8.00	1,100,000		
	Rock excavation	**1**	ls	250,000.00	250,000		
	Catch basins	**12**	ea	3,800.00	45,600		
	Manholes	**10**	ea	4,500.00	45,000		
	WQ structures	**3**	ea	16,000.00	48,000		
	Area drains	**4**	ea	1,500.00	6,000		
	Work to culvert	**1**	ls	250,000.00	250,000		
	Gas service						
	E&B trench for new gas pipe - install by plumbing	**450**	lf	25.00	11,250		
	SUBTOTAL					2,633,250	
G40	**ELECTRICAL UTILITIES**						
	Power						
	Utility co. backcharges, allow	**1**	ls	30,000.00	Utility co.		
	Connections at existing manhole				Utility co.		
	Manhole	**1**	ls	8,500.00	8,500		
	Connections in manhole	**1**	ls	3,500.00	3,500		
	Primary ductbank 2-5" ductbank, empty, allow	**1000**	lf	120.00	120,000		
	Transformer by utility company				By Utility Co.		
	Transformer pad; temporary for relocated transformer	**1**	ea	5,000.00	5,000		
	Secondary service	**60**	lf	1,100.00	66,000		
	Communications						
	Connection at riser pole, allow	**1**	ea	1,500.00	1,500		
	Telecom ductbank 4-4", allow	**1000**	lf	152.00	152,000		
	Site Lighting						
	Site Parking lighting (allow)	**250,800**	sf	2.00	501,600		
	SUBTOTAL					858,100	
	TOTAL - SITE DEVELOPMENT						***$16,062,033***

PM&C

Stoneham High School
Design Options
Stoneham, MA

03-Dec-20

PSR Estimate

GFA 207,827

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 4B NEW BUILDING						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$1,649,216			
	A1020	Special Foundations	$0			
	A1030	Lowest Floor Construction	$1,584,851	**$3,234,067**	$15.56	4.3%
A20	**BASEMENT CONSTRUCTION**					
	A2010	Basement Excavation	$0			
	A2020	Basement Walls	$0	**$0**	$0.00	0.0%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$4,949,168			
	B1020	Roof Construction	$3,712,194	**$8,661,362**	$41.68	11.6%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$7,952,263			
	B2020	Windows	$4,447,560			
	B2030	Exterior Doors	$101,640	**$12,501,463**	$60.15	16.8%
B30	**ROOFING**					
	B3010	Roof Coverings	$2,713,824			
	B3020	Roof Openings	$32,500	**$2,746,324**	$13.21	3.7%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$4,987,848			
	C1020	Interior Doors	$1,246,962			
	C1030	Specialties/Millwork	$1,766,357	**$8,001,167**	$38.50	10.7%
C20	**STAIRCASES**					
	C2010	Stair Construction	$282,000			
	C2020	Stair Finishes	$37,723	**$319,723**	$1.54	0.4%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$2,909,578			
	C3020	Floor Finishes	$1,870,443			
	C3030	Ceiling Finishes	$2,286,097	**$7,066,118**	$34.00	9.5%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$120,000	**$120,000**	$0.58	0.2%
D20	**PLUMBING**					
	D20	Plumbing	$3,325,232	**$3,325,232**	$16.00	4.5%
D30	**HVAC**					
	D30	HVAC	$14,547,890	**$14,547,890**	$70.00	19.5%

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Stoneham High School
Design Options
Stoneham, MA

03-Dec-20

PSR Estimate

GFA 207,827

CONSTRUCTION COST SUMMARY

OPTION 4B NEW BUILDING

		BUILDING SYSTEM	*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$1,246,962	**$1,246,962**	$6.00	1.7%
D50	**ELECTRICAL**					
	D5010	Complete System	$8,723,426	**$8,723,426**	$41.97	11.7%
E10	**EQUIPMENT**					
	E10	Equipment	$1,710,100	**$1,710,100**	$8.23	2.3%
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$2,309,748			
	E2020	Movable Furnishings	NIC	**$2,309,748**	$11.11	3.1%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$0	**$0**	$0.00	0.0%
F20	**HAZMAT REMOVALS**					
	F2010	Building Elements Demolition	$0			
	F2020	Hazardous Components Abatement	$0	**$0**	$0.00	0.0%
TOTAL DIRECT COST (Trade Costs)				***$74,513,582***	*$358.54*	*100.0%*

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Stoneham High School
Design Options
Stoneham, MA

03-Dec-20

PSR Estimate

GFA 207,827

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 4B NEW BUILDING							
	GROSS FLOOR AREA CALCULATION						
	Level 01			103,076			
	Level 02			62,426			
	Level 03			42,325			
	TOTAL GROSS FLOOR AREA (GFA)				**207,827** ***sf***		
A10	***FOUNDATIONS***						
A1010	**STANDARD FOUNDATIONS**						
	Allowance for standard foundations	**103,076**	sf	16.00	1,649,216		
	SUBTOTAL					1,649,216	
A1020	**SPECIAL FOUNDATIONS**						
	No work assumed						
	SUBTOTAL						
A1030	**LOWEST FLOOR CONSTRUCTION**						
	New Slab on grade, 5" thick						
	Gravel fill, 12"	**3,818**	cy	40.00	152,720		
	Rigid insulation	**103,076**	sf	2.25	231,921		
	Vapor barrier	**103,076**	sf	1.00	103,076		
	Compact existing sub-grade	**103,076**	sf	0.50	51,538		
	Mesh reinforcing 15% lap	**118,537**	sf	1.15	136,318		
	Concrete - 5" thick; 4,000 psi	**1,684**	cy	125.00	210,500		
	Placing concrete	**1,684**	cy	45.00	75,780		
	Finishing and curing concrete	**103,076**	sf	2.50	257,690		
	Control joints - saw cut	**103,076**	sf	0.10	10,308		
	Miscellaneous						
	Premium for rock excavation to 100% of foundations	**1**	ls	250,000.00	250,000		
	Premium for sloped floor at auditorium	**1**	ls	50,000.00	50,000		
	New Elevator pit	**1**	ea	40,000.00	40,000		
	Equipment pads	**1**	ls	15,000.00	15,000		
	SUBTOTAL					1,584,851	
	TOTAL - FOUNDATIONS						**$3,234,067**
A20	***BASEMENT CONSTRUCTION***						
A2010	**BASEMENT EXCAVATION**						
	SUBTOTAL					-	
A2020	**BASEMENT WALLS**						
	SUBTOTAL					-	
	TOTAL - BASEMENT CONSTRUCTION						
B10	***SUPERSTRUCTURE***						
		14.49	lbs/sf		-		
B1010	**FLOOR CONSTRUCTION**	1,506	tns		-		
	Floor Structure - Steel:						
	Steel beams and columns to new addition; 14.5#/SF	**759**	tns	3,800.00	2,884,200		
	Premium for HSS	**190**	tns	300.00	57,000		
	Shear studs	**20,950**	ea	2.50	52,375		
	Floor Structure						
	2" 18 Ga. Metal galvanized floor Deck	**104,751**	sf	4.00	419,004		
	WWF reinforcement	**120,464**	sf	0.80	96,371		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 4B NEW BUILDING							
	Concrete Fill to metal deck; 6" Normal Weight	**2,444**	cy	135.00	329,940		
	Place and finish concrete	**104,751**	sf	2.50	261,878		
	Rebar to decks	**31,425**	lbs	1.20	37,710		
	Misc. angles	**104,751**	sf	0.50	Incl		
	Miscellaneous						
	Allowance for running track	**1**	ls	500,000.00	500,000		
	Fire proofing to columns and beams	**104,751**	sf	2.25	235,690		
	Intumescent paint	**1**	ls	50,000.00	50,000		
	Fire stopping floors	**1**	ls	25,000.00	25,000		
	SUBTOTAL					4,949,168	
B1020	**ROOF CONSTRUCTION**						
	Roof Structure - Steel:						
	Steel beams and columns to new addition; 14.5#/SF	**747**	tns	3,800.00	2,838,600		
	Premium for HSS	**187**	tns	300.00	56,100		
	Exposed steel	**1**	ls	50,000.00	50,000		
	Roof Structure						
	Acoustic deck allowance	**5,000**	sf	9.00	45,000		
	3" 20 Ga. galvanized Metal Roof Deck	**98,076**	sf	3.50	343,266		
	Miscellaneous						
	Concrete under RTU's	**8,500**	sf	10.00	85,000		
	Fire proofing to columns, beams and deck	**98,076**	sf	3.00	294,228		
	SUBTOTAL					3,712,194	
	TOTAL - SUPERSTRUCTURE						**$8,661,362**
B20	***EXTERIOR CLOSURE***						
B2010	**EXTERIOR WALLS**						
	Exterior Wall Area; EXT 1	*66,817*	sf				
055000	*MISC. METALS*						
	Stainless steel sign at main entrance	**1**	ls	10,000.00	10,000		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Air barrier	**66,817**	sf	7.00	467,719		
	Air barrier/flashing at windows	**16,155**	lf	6.25	100,969		
	Miscellaneous sealants to closure	**66,817**	sf	1.00	66,817		
072100	*THERMAL INSULATION*						
	Insulation; 6" XPS	**66,817**	sf	5.50	367,494		
	Insulation; 4" spray	**66,817**	sf	4.25	283,972		
076400	*CLADDING*						
	Metal panel; rainscreen system	**66,817**	sf	70.00	4,677,190		
	Mechanical screen; includes backup structure	**1,004**	sf	85.00	85,340		
	Soffits; including all backup; S1	**6,634**	sf	101.50	673,351		
092900	*GYPSUM BOARD ASSEMBLIES*						
	6" metal stud backup	**66,817**	sf	12.00	801,804		
	Gypsum Sheathing	**66,817**	sf	2.75	183,747		
	Drywall lining to interior face of stud backup	**66,817**	sf	3.50	233,860		
	SUBTOTAL					7,952,263	
B2020	**WINDOWS**						
	Exterior Wall Area	*27,464*	sf				
061000	*ROUGH CARPENTRY*						

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 4B NEW BUILDING							
	Wood blocking at openings	**16,155**	lf	12.00	193,860		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Backer rod & double sealant	**16,155**	lf	10.00	161,550		
080001	*METAL WINDOWS*						
	Windows, triple glazed; fiberglass; W1	**16,704**	sf	125.00	2,088,000		
	Curtainwall, triple glazed; BOD Kawneer 1600 sys 2 1" IGU; W2	**10,760**	sf	165.00	1,775,400		
	Sunshades; 3" aluminum trellis	**1,500**	lf	140.00	210,000		
089000	*LOUVERS*						
	Louvers	**250**	sf	75.00	18,750		
	SUBTOTAL					4,447,560	
B2030	**EXTERIOR DOORS**						
	Glazed entrance doors including frame and hardware; double door	**10**	pr	9,000.00	90,000		
	HM doors, frames and hardware- Double	**4**	pr	2,000.00	8,000		
	Backer rod & double sealant	**280**	lf	10.00	2,800		
	Wood blocking at openings	**280**	lf	3.00	840		
	SUBTOTAL					101,640	
	TOTAL - EXTERIOR CLOSURE						**$12,501,463**
B30	***ROOFING***						
B3010	**ROOF COVERINGS**						
	New roofing complete; TPO 8" Insulation; R1	**103,076**	sf	24.00	2,473,824		
	Roof garden/outdoor sensory garden; 50% decking/50% planters; includes furnishings and planting	**4,000**	sf	60.00	240,000		
	SUBTOTAL					2,713,824	
B3020	**ROOF OPENINGS**						
	Skylights, allow	1	ls	30,000.00	30,000		
	Roof hatch	1	loc	2,500.00	2,500		
	SUBTOTAL					32,500	
	TOTAL - ROOFING						**$2,746,324**
C10	***INTERIOR CONSTRUCTION***						
C1010	**PARTITIONS**						
	Miscellaneous partitions/glazed partitions/borrowed lights/blocking etc.	**207,827**	gsf	24.00	4,987,848		
	SUBTOTAL					4,987,848	
C1020	**INTERIOR DOORS**						
	Interior doors, frames and hardware	**207,827**	gsf	6.00	1,246,962		
	SUBTOTAL					1,246,962	
C1030	**SPECIALTIES / MILLWORK**						
	Toilet Partitions and accessories	**207,827**	gsf	1.00	207,827		
	Backer panels in electrical closets	**1**	ls	1,000.00	1,000		
	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	**207,827**	sf	1.25	259,784		
	Room Signs	**207,827**	gsf	0.50	103,914		
	Fire extinguisher cabinets	**69**	ea	350.00	24,150		
	Lockers, full height	**710**	ea	350.00	248,500		
	New catwalk	**1**	ls	100,000.00	100,000		
	Janitors Work Shop Accessories	**1**	ls	1,500.00	1,500		
	Janitors Closet Accessories	**3**	rms	300.00	900		
	Media						
	Reception desks	**2**	loc	25,000	50,000		
	Railings to open to below areas	**151**	lf	300	45,300		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 4B NEW BUILDING							
	Library shelving at perimeters 7' Tall				F,F & E		
	Library shelving at perimeters 3' Tall				F,F & E		
	Stage proscenium	**1**	ls	100,000	100,000		
	Display cases	**207,827**	sf	0.25	51,957		
	Miscellaneous metals throughout building	**207,827**	sf	1.25	259,784		
	Miscellaneous sealants throughout building	**207,827**	sf	1.50	311,741		
	SUBTOTAL					1,766,357	
	TOTAL - INTERIOR CONSTRUCTION						**$8,001,167**
C20	***STAIRCASES***						
C2010	**STAIR CONSTRUCTION**						
	Metal pan stair; egress stair	**2**	flt	35,000.00	70,000		
	Main staircase	**4**	flt	50,000.00	200,000		
	Concrete fill to stairs	**6**	flt	2,000.00	12,000		
	SUBTOTAL					282,000	
C2020	**STAIR FINISHES**						
	High performance coating to stairs including all railings etc.	**6**	flt	3,000.00	18,000		
	Rubber tile at stairs - landings	**600**	sf	10.00	6,000		
	Rubber tile at stairs - treads & risers	**720**	lft	19.06	13,723		
	SUBTOTAL					37,723	
	TOTAL - STAIRCASES						**$319,723**
C30	***INTERIOR FINISHES***						
C3010	**WALL FINISHES**						
	Wall finishes	**207,827**	sf	14.00	2,909,578		
	SUBTOTAL					2,909,578	
C3020	**FLOOR FINISHES**						
	Floor finishes	**207,827**	sf	9.00	1,870,443		
	SUBTOTAL					1,870,443	
C3030	**CEILING FINISHES**						
	Ceiling finishes	**207,827**	sf	11.00	2,286,097		
	SUBTOTAL					2,286,097	
	TOTAL - INTERIOR FINISHES						**$7,066,118**
D10	***CONVEYING SYSTEMS***						
D1010	**ELEVATOR**						
	New elevator; 3 stop; oversize; 5,000 lbs	**1**	ea	120,000.00	120,000		
	SUBTOTAL					120,000	
	TOTAL - CONVEYING SYSTEMS						**$120,000**
D20	***PLUMBING***						
D20	**PLUMBING, GENERALLY**						
	Plumbing; complete system	**207,827**	sf	16.00	3,325,232		
	SUBTOTAL					3,325,232	
	TOTAL - PLUMBING						**$3,325,232**
D30	***HVAC***						
D30	**HVAC, GENERALLY**						
	Geothermal Heating/Cooling System						
	(2) 225 ton heat recovery chiller-heaters with (200) 6" boreholes, active chilled beams, heat recovery units, and rooftop ahu's	**207,827**	sf	70.00	14,547,890		
	SUBTOTAL					14,547,890	

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 4B NEW BUILDING							
	TOTAL - HVAC						**$14,547,890**
D40	***FIRE PROTECTION***						
D40	**FIRE PROTECTION, GENERALLY**						
	Fire protection system	**207,827**	gsf	6.00	1,246,962		
	SUBTOTAL					1,246,962	
	TOTAL - FIRE PROTECTION						**$1,246,962**
D50	***ELECTRICAL***						
D5010	**SERVICE & DISTRIBUTION**						
	Gear & Distribution						
	5000A 480/277V switchboard	**1**	ls	140,000.00	140,000		
	Normal power distribution with associated panelboards, transformers and feeders	**207,827**	sf	4.00	831,308		
	Emergency power						
	Emergency generator and ATS"s with associated panelboards, transformers and feeders	**207,827**	sf	2.50	519,568		
	PV						
	PV provisions only, with empty conduit and pull boxes, per narrative	**1**	ls	5,000.00	5,000		
	Equipment Wiring						
	Elevator and cab power feed and connection	**1**	ea	5,000.00	5,000		
	Mechanical equipment wiring to HVAC heating and cooling equipment	**207,827**	sf	2.50	519,568		
	Misc. equipment wiring	**209,000**	sf	0.50	104,500		
	Kitchen equipment wiring	**1**	ls	25,000.00	25,000		
	Gym equipment feed and connections	**1**	ls	15,000.00	15,000		
	SUBTOTAL					2,164,944	
D5020	**LIGHTING & POWER**						
	Lighting & Branch Power				-		
	Lighting fixtures with installation labor	**207,827**	sf	6.00	1,246,962		
	Exterior building lighting	**1**	ls	15,000.00	15,000		
	Lighting control system (Daylight Harvesting)						
	Lighting controls with control panels, sensors and switches	**207,827**	sf	1.25	259,784		
	Branch devices						
	Duplex and GFI receptacles	**207,827**	sf	0.50	103,914		
	Lighting and branch circuitry						
	EMT and MC cable	**207,827**	sf	4.50	935,222		
	SUBTOTAL					2,560,882	
D5030	**COMMUNICATION & SECURITY SYSTEMS**						
	Fire Alarm						
	Control panel	**1**	ea	15,000.00	15,000		
	Annunciator	**1**	ea	1,500.00	1,500		
	Beacon	**1**	ea	2,250.00	2,250		
	Knox box	**1**	ea	350.00	350		
	Radio master box	**1**	ea	9,500.00	9,500		
	Devices and cabling	**209,000**	sf	2.00	418,000		
	Mass. Notification	**209,000**	sf	1.00	209,000		
	Testing programming	**1**	ls	5,000.00	5,000		
	Bi-Directional System						
	BDA system	**1**	ls	100,000.00	100,000		
	Telephone/Data/CATV						
	Network switches, PBX, IP, VP, CATV (By owner)				By Owner		
	Telecommunications rough in	**209,000**	sf	1.00	209,000		
	Telecommunications devices and cabling	**209,000**	sf	2.00	418,000		
	Grounding	**1**	ls	1,500.00	1,500		
	Public Address/Clock System						
	PA/Master Clock system	**209,000**	sf	1.00	209,000		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 4B NEW BUILDING						
	Classroom Speech Amplification	**209,000**	sf	0.50	104,500		
	Audio Visual (rough-in and power only)						
	AV equipment				By Owner		
	Rough-In conduit and backboxes only	**209,000**	sf	0.50	104,500		
	Auditorium						
	Rigging system equipment & installation				See equipment		
	Power to rigging equipment	**1**	ls	12,000.00	12,000		
	Stage dimming system with performance fixture package, allow	**1**	ls	275,000.00	275,000		
	Installation, rough-in & 120V power to dimming equipment	**1**	ls	70,000.00	70,000		
	Performance audio visual equipment, installation & LV cabling, allow	**1**	ls	150,000.00	150,000		
	Performance audio visual rough-in and power	**1**	ls	60,000.00	60,000		
	Cafeteria						
	Sound system	**1**	ls	15,000.00	15,000		
	Media Center						
	Sound system	**1**	ls	15,000.00	15,000		
	Gymnasium						
	Sound system	**1**	ls	30,000.00	30,000		
	Scoreboard/ shot clocks with feed and connection	**1**	ea	15,000.00	15,000		
	Security System						
	Head end	**1**	ls	50,000.00	50,000		
	Card access system	**209,000**	sf	1.00	209,000		
	Intrusion system	**209,000**	sf	1.00	209,000		
	CCTV surveillance system	**209,000**	sf	2.00	418,000		
	SUBTOTAL					3,335,100	
D5040	**OTHER ELECTRICAL SYSTEMS**						
	Miscellaneous						
	Lightning Protection System, UL Master label	**1**	ls	95,000.00	95,000		
	Temp power and lights	**1**	ls	150,000.00	150,000		
	Hoisting and rigging	**1**	ls	10,000.00	10,000		
	Seismic restraints	**1**	ls	7,500.00	7,500		
	Coordination, BIM & shop drawings	**1**	ls	240,000.00	240,000		
	Fees & Permits	**1**	ls	160,000.00	160,000		
	SUBTOTAL					662,500	
	TOTAL - ELECTRICAL						**$8,723,426**
E10	***EQUIPMENT***						
E10	**EQUIPMENT, GENERALLY**						
	Gym wall pads	**1**	ls	20,000.00	20,000		
	Basketball backstops; swing up; electric operated	**12**	loc	10,000.00	120,000		
	Gymnasium dividing net; electrically operated	**3**	ea	30,000.00	90,000		
	Volleyball net and standards	**1**	ls	5,000.00	5,000		
	Telescoping bleachers	**900**	seats	240.00	216,000		
	Theatrical Equipment Stage curtains, rigging and controls	**1**	ls	350,000.00	350,000		
	Theatrical AV allowance	**1**	ls	200,000.00	200,000		
	Kitchen equipment	**2,030**	sf	220.00	446,600		
	Auditorium seats	**750**	seat	350.00	262,500		
	SUBTOTAL					1,710,100	
	TOTAL - EQUIPMENT						**$1,710,100**
E20	***FURNISHINGS***						
E2010	**FIXED FURNISHINGS**						
	Entry mats & frames - recessed with carpet/rubber strips	**500**	sf	55.00	27,500		
	Window blinds	**27,464**	sf	7.00	192,248		
123553	*CASEWORK*						

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 4B NEW BUILDING						
	Sinks, counters and casework; allowance	**209,000**	sf	10.00	2,090,000		
	SUBTOTAL					2,309,748	
E2020	**MOVABLE FURNISHINGS**						
	All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
	TOTAL - FURNISHINGS						**$2,309,748**
F10	***SPECIAL CONSTRUCTION***						
F10	**SPECIAL CONSTRUCTION**						
	No items in this section						
	SUBTOTAL						
	TOTAL - SPECIAL CONSTRUCTION						
F20	***SELECTIVE BUILDING DEMOLITION***						
F2010	**BUILDING ELEMENTS DEMOLITION**						
	No items in this section						
	SUBTOTAL						
F2020	**HAZARDOUS COMPONENTS ABATEMENT**						
	See main summary for HazMat allowance				See Summary		
	SUBTOTAL						
	TOTAL - SELECTIVE BUILDING DEMOLITION						

PSR Estimate

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	SITEWORK OPTION 4B						
	G SITEWORK	*1,900,000*	*sf*		-		
G10	**SITE PREPARATION & DEMOLITION**						
	Site construction fence/barricades	**7,900**	lf	18.00	142,200		
	Site construction fence gates	**1**	ea	10,000.00	10,000		
	Stabilized construction entrance	**1**	ls	15,000.00	15,000		
	Pavement/curbing removal, crush and re-use for sub-base	**250,800**	sf	1.00	250,800		
	Demolish tennis courts	**56,200**	sf	1.50	84,300		
	Demolish track/football field	**175,625**	sf	1.00	175,625		
	Walkways	**1**	ls	20,000.00	20,000		
	Miscellaneous demolition	**1**	ls	100,000.00	100,000		
	SUBTOTAL					797,925	
	Temporary parking	190	spc				
	gravel base; 12" thick	**2,981**	cy	40.00	119,240		
	Binder course	**8,944**	sy	20.00	178,880		
	Construction fence	**1,135**	lf	18.00	20,430		
	Line markings/painting/signs	**190**	spc	100.00	19,000		
	Demolish temp parking	**110,000**	sf	1.00	110,000		
	Blasting for temporary parking	**1**	ls	150,000.00	150,000		
	SUBTOTAL					597,550	
	Site Earthwork						
	Strip Topsoil and remove; 6" thick	**3,148**	cy	16.00	50,368		
	Fine grading	**659,695**	sf	0.20	131,939		
	Cut and Fill; assumed AV 1ft; balanced site	**24,433**	cy	10.00	244,330		
	Silt fence/erosion control, wash bays, stock piles	**7,900**	lf	12.00	94,800		
	Silt fence maintenance and monitoring	**1**	ls	40,000.00	40,000		
	Hazardous Waste Remediation						
	Remove existing underground fuel storage tanks; 500 Gal	**1**	ls	50,000.00	50,000		
	Dispose/treat contaminated soils	**1**	ls	20,000.00	20,000		
	SUBTOTAL					631,437	
G20	**SITE IMPROVEMENTS**						
	Asphalt Paving; parking lot and roadway	*250,800*					
	gravel base; 12" thick	**9,289**	cy	40.00	371,560		
	asphalt; 4" thick	**27,867**	sy	25.00	696,675		
	VGC	**10,032**	lf	40.00	401,280		
	Single solid lines, 4" thick	**1**	ls	10,000.00	10,000		
	Crosswalk Hatching	**4**	loc	900.00	3,600		
	Other road markings	**1**	ls	7,500.00	7,500		
	HC curb cuts	**8**	loc	350.00	2,800		
	Signage	**1**	ls	20,000.00	20,000		
	Pedestrian Paving						
	Concrete paving						
	gravel base; 8" thick	**372**	cy	35.00	13,020		
	4" concrete paving	**15,000**	sf	9.00	135,000		
	Drop Off Plaza	*16,720*	*sf*				
	Precast pavers; 50%	**8,360**	sf	40.00	334,400		
	Poured in place rubber safety surface; 25%	**4,180**	sf	26.00	108,680		
	Planted areas; 25%	**4,180**	sf	10.00	41,800		
	Ground Level Garden; Pre-K Playground	*10,450*	sf		-		
	Rubber surface over concrete	**7,838**	sf	18.00	141,084		
	Raised planters; green space	**2,613**	sf	10.00	26,130		
	Shade structure	**1**	loc	30,000.00	30,000		
	Music elements	**1**	loc	35,000.00	35,000		
	Play equipment	**1**	loc	50,000.00	50,000		
	SUBTOTAL					2,428,529	
	Site Athletics						
	STADIUM - Running Track/Turf Football Field/Bleachers						

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	SITEWORK OPTION 4B						
	Synthetic turf anchor curb integral with trench drain	**1,310**	lf	80.00	104,800		
	Resilient surface at track	**75,525**	sf	8.00	604,200		
	Gravel base - assumed 12" thick	**3,707**	cy	45.00	166,815		
	Geotextile reinforced impermeable liner 20 mill	**100,100**	sf	1.00	100,100		
	Synthetic turf field - Hybrid infill synthetic field with premolded resilient drainage pad	**100,100**	sf	12.00	1,201,200		
	Football goals	**2**	ea	3,500.00	7,000		
	Scoreboard	**1**	ea	60,000.00	60,000		
	Line markings - allowance	**2**	ls	2,000.00	4,000		
	1250 seat bleacher	**1**	loc	450,000.00	450,000		
	Rip-Rap under bleachers	**1**	ls	25,000.00	25,000		
	Field logo's	**1**	loc	6,000.00	6,000		
	Discus pad & enclosure	**1**	ea	15,000.00	15,000		
	Shot put pad & enclosure	**1**	ea	15,000.00	15,000		
	Long jump/triple jump	**2**	ea	10,000.00	20,000		
	Pole vault and accessories	**1**	ea	10,000.00	10,000		
	High jump pads	**1**	ea	6,000.00	6,000		
	Javelin with track surfacing runway	**1**	ea	10,000.00	10,000		
	Hurdles and starting blocks	**1**	ls	8,000.00	8,000		
	Track crossing pad	**1**	ls	10,000.00	10,000		
	Trash/recycling receptacles	**12**	ea	800.00	9,600		
	Team benches- 7'-5" long	**12**	ea	1,500.00	18,000		
	Portable ball control netting, 120' long	**4**	ea	2,500.00	10,000		
	Pit covers	**2**	ea	3,500.00	7,000		
	Subsurface infiltration/drainage/field drains etc.	**175,625**	sf	1.25	219,531		
	Stadium sound system (AV)	**1**	ls	120,000.00	120,000		
	SUBTOTAL					3,207,246	
	Baseball/Field Hockey	**1**	ea	360,000.00	360,000		
	Half size field	**1**	ea	150,000.00	150,000		
	Synthetic grass soccer fields; Two Fields	**140,500**	sf	12.00	1,686,000		
	Softball field	**1**	ea	250,000.00	250,000		
	Tennis courts - Six Courts (including pickle courts); 1 basketball court	*50,600*	*sf*				
	gravel base; 8" thick	**1,256**	cy	40.00	50,240		
	Asphalt paving	**5,622**	sy	30.00	168,660		
	Color coating	**50,600**	sf	2.00	101,200		
	Fence with wind break	**1,177**	lf	80.00	94,160		
	Tennis court nets	**5**	set	1,500.00	7,500		
	Basketball hoops	**1**	set	5,000.00	5,000		
	SUBTOTAL					2,872,760	
	Site Improvements						
	Flag pole 50' high	**1**	ea	6,500.00	6,500		
	Concrete retaining walls	**1**	ls	500,000.00	500,000		
	Other site improvements; walls, fences etc.	**1**	ls	200,000.00	200,000		
	Outdoor dining	**1**	ls	50,000.00	50,000		
	SUBTOTAL					756,500	
	Landscaping						
	Topsoil - reuse existing	**3,148**	cy	25.00	78,700		
	Topsoil - Import new topsoil; minimum 6"	**581**	cy	65.00	37,765		
	Seeding	**964,805**	sf	0.15	144,721		
	Green space	**31,350**	sf	10.00	313,500		
	SUBTOTAL					574,686	
G30	**CIVIL MECHANICAL UTILITIES**						
	Water supply; Pricing includes E&B and bedding						
	Temporary water line	**650**	lf	120.00	78,000		
	New DI piping; 8"	**450**	lf	100.00	45,000		
	New DI piping; 8" Fire loop	**2,800**	lf	100.00	280,000		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
SITEWORK OPTION 4B							
	Connect to existing	**1**	loc	5,000.00	5,000		
	FD connection	**1**	ea	2,000.00	2,000		
	Gate valves	**8**	ea	750.00	6,000		
	Fire hydrant	**3**	ea	5,000.00	15,000		
	SUBTOTAL					431,000	
	Sanitary; Pricing includes E&B and bedding						
	Temporary sewer line	**1**	ls	50,000.00	50,000		
	Manholes	**4**	ea	4,000.00	16,000		
	Grease trap	**1**	ea	15,000.00	15,000		
	8" PVC	**1,000**	lf	60.00	60,000		
	Connect to existing drain	**1**	ea	3,000.00	3,000		
	SUBTOTAL					144,000	
	Storm water; Pricing includes E&B and bedding						
	Temporary storm (relocate existing 15" line + new manholes)	**1**	ls	125,000.00	125,000		
	Allowance for new drainage systems; piping only	**250,800**	sf	3.00	752,400		
	Infiltration systems; cultec chambers	**137,500**	cf	8.00	1,100,000		
	Rock excavation	**1**	ls	250,000.00	250,000		
	Catch basins	**12**	ea	3,800.00	45,600		
	Manholes	**10**	ea	4,500.00	45,000		
	WQ structures	**3**	ea	16,000.00	48,000		
	Area drains	**4**	ea	1,500.00	6,000		
	Work to culvert	**1**	ls	250,000.00	250,000		
	Gas service						
	E&B trench for new gas pipe - install by plumbing	**450**	lf	25.00	11,250		
	SUBTOTAL					2,633,250	
G40	**ELECTRICAL UTILITIES**						
	Power						
	Utility co. backcharges, allow	**1**	ls	30,000.00	Utility co.		
	Connections at existing manhole				Utility co.		
	Manhole	**1**	ls	8,500.00	8,500		
	Connections in manhole	**1**	ls	3,500.00	3,500		
	Primary ductbank 2-5" ductbank, empty, allow	**1000**	lf	120.00	120,000		
	Transformer by utility company				By Utility Co.		
	Transformer pad; temporary for relocated transformer	**1**	ea	5,000.00	5,000		
	Secondary service	**60**	lf	1,100.00	66,000		
	Communications						
	Connection at riser pole, allow	**1**	ea	1,500.00	1,500		
	Telecom ductbank 4-4", allow	**1000**	lf	152.00	152,000		
	Site Lighting						
	Site Parking lighting (allow)	**250,800**	sf	2.00	501,600		
	SUBTOTAL					858,100	
	TOTAL - SITE DEVELOPMENT						***$15,932,983***

PM&C

Stoneham High School
Design Options
Stoneham, MA

03-Dec-20

PSR Estimate

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
SPORTS LIGHTING							
G40	**ELECTRICAL UTILITIES**						
	Sports Field Lighting and Sound System						
	Football field lighting, bases and circuitry	**1**	ls	540,000.00	540,000		
	Soccer Field Lighting	**2**	loc	400,000.00	800,000		
	Remote lighting control system	**1**	ls	100,000.00	100,000		
	TOTAL - SPORTS LIGHTING						***1,440,000***

FOR IMMEDIATE RELEASE

Contact: Sharon Iovanni
siovanni01@gmail.com
781-248-9754

WHAT COULD STONEHAM HIGH SCHOOL LOOK LIKE IN 2024?

Attend the SHS Feasibility Study Community Forum #4 December 9th and Help the SSBC Decide!

Stoneham, MA – The Stoneham School Building Committee (SSBC) will host the fourth in a series of Community Forums led by Perkins&Will to update the community on the Stoneham High School project and learn what options are most likely to be considered in the next phase submission.

The Forum is planned for Wednesday, December 9, 2020 at 6:30 p.m. and will include exciting details of the five options currently being considered by the SSBC and the potential costs for each option.

This will be the only Forum before the Committee makes its decision on which option is best for the future high school complex to recommend to the MSBA in its December 21, 2020 Preferred Schematic Report.

“We were delighted with the information we received in the first survey, with over 200 replies and lots of good suggestions and considerations,” says SSBC Co-Chair Marie Christie. “But we know that there are many more residents who have a stake in Stoneham’s future, and it is important to us that all residents have the chance to share their opinions and ideas.”

Forum participants will be encouraged to share what they like about the options, what they wish was included, what they see as the advantages or disadvantages in the options presented and which options they believe best meets Stoneham’s educational and community needs today and for the future.

The Forum will be held virtually using the GoToMeeting app and can be accessed on a laptop, mobile device or by phone.

Join the Forum online by using this link -

https://global.gotomeeting.com/join/284992117 or call in to 1-872-240-3311 and using Access Code: 284-992-117

The Forum can viewed on Stoneham TV OnDemand at https://www.stonehamtv.org/ondemand

For more detailed information about the SSBC including meeting minutes, presentations and upcoming meetings, visit http://stoneham-ma.gov/hsbc

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Stoneham High School Feasibility Study
Stoneham School Building Committee
Community Survey No. 2

As the Stoneham School Building Committee (SSBC) prepares its recommendation for a Preferred Schematic Design to the Massachusetts School Building Authority (MSBA), it is important that we hear from you.

Please complete the following short survey; the results will help guide the decision-making process as the SSBC continues its important work.

* Required

Email address *

Your email

Stoneham High School Feasibility Study
Stoneham School Building Committee
Community Survey No. 2

* Required

The SSBC has narrowed the options to five final designs.

As the Stoneham School Building Committee (SSBC) prepares for its vote to select the Preferred Design Option on December 16, 2020, for submission to the Massachusetts School Building Authority (MSBA), it is important that we hear from you.

Please rank the design options from your highest priority (5) to your lowest priority (1).

The 5 design options are as follows and described below:

* Option 1A - Code Repairs Only;
* Option 2A - Renovation Only;
* Option 3A - Renovation and Addition;
* Option 4A - New Construction; and
* Option 4B - New Construction

For additional information on the options, please visit our website: http://www.stoneham-ma.gov/hsbc

Option 1A - Code Repairs Only

- **Upgrades the existing building to current building codes only**
- **Includes District Office**
- **No renovations for educational improvement**
- **No Zero Net Energy Design**
- **No upgrades to playfields, roadways or parking**
- **No traffic improvements on Franklin Street**
- **48 months estimated project duration (phased student occupancy)**
- **Temporary classroom trailer cost**
- **Initial estimated cost to the taxpayers of Stoneham of $61.0M**

Option 2A - Renovation Only

- Upgrades the existing building to current building codes
- Does not include District Offices
- Renovates existing building for educational improvements
- Includes relocated PreK program
- Includes Zero Net Energy Design
- Upgrades playfields, roadways and parking
- Improves traffic on Franklin Street
- 48 months estimated project duration (phased student occupancy)
- Temporary classroom trailer cost
- Initial estimated cost to the taxpayers of Stoneham of $111.5M

Option 3A - Renovation and Addition

- Renovates gymnasium and lower level spaces
- Includes District Offices
- Demolishes remaining portion of existing building
- New addition housing all other school functions including auditorium, cafeteria, classrooms, and administrative offices
- Includes relocated PreK program
- Includes Zero Net Energy Design
- Upgrades playfields, roadways and parking
- Improves traffic on Franklin Street
- 40 months estimated project duration
- Initial estimated cost to the taxpayers of Stoneham of $120.3M

Option 4A - New Construction

- New building located to the north of the existing building
- Includes District Offices
- Includes relocated PreK program
- Includes Zero Net Energy Design
- Upgrades playfields, roadways and parking
- Improves traffic on Franklin Street
- 33 months estimated project duration
- Initial estimated cost to the taxpayers of Stoneham of $123.7M
- Includes District Offices

Option 4B - New Construction

- New building located to the north and east of the existing building
- Includes relocated PreK program
- Includes Zero Net Energy Design
- Upgrades playfields, roadways and parking
- Improves traffic on Franklin Street
- 33 months estimated project duration
- Initial estimated cost to the taxpayers of Stoneham of $122.0M
- Includes District Offices

1. Which of the design alternatives shown above provides the Stoneham Community the best long-term plan for educating its high school students? *

Please rank the following options with 5 being the best long-term solution and 1 being the least.

	5	4	3	2	1
Option 1A - Code Repairs Only	○	○	○	○	○
Option 2A – Renovation Only	○	○	○	○	○
Option 3A - Renovation Addition	○	○	○	○	○
Option 4A - New Construction	○	○	○	○	○
Option 4B - New Construction	○	○	○	○	○

2. Please provide any additional feedback you have on any of these specific options

Your answer

3. Please select all stakeholder groups that apply to you. *

- [ ] Student/Former Student
- [ ] Parent
- [ ] Stoneham Resident
- [ ] Stoneham Registered Voter
- [ ] Stoneham Homeowner
- [ ] Stoneham Business Owner
- [ ] Stoneham Elected Official
- [ ] Stoneham Public Schools Employee
- [ ] Other: _____

4. Please check all the following ways in which you have learned about the status of the project. *

- [ ] Attended a Community Forum or School Building Committee Meeting
- [ ] Watched a Community Forum or School Building Committee Meeting on StonehamTV
- [ ] Visited and reviewed infromation on the School Building Committee's website
- [ ] Read article(s) in local newspaper
- [ ] Viewed information shared on Facebook or other social media channels
- [ ] Discussed information with others in town
- [ ] Have seen notices around town regarding forums
- [ ] Have not seen/heard much about the project
- [ ] Other: _____

The Commonwealth of Massachusetts
Office of the Inspector General

GLENN A. CUNHA
INSPECTOR GENERAL

JOHN W. McCORMACK
STATE OFFICE BUILDING
ONE ASHBURTON PLACE
ROOM 1311
BOSTON, MA 02108
TEL: (617) 727-9140
FAX: (617) 723-2334

December 1, 2020

Dennis Sheehan, Town Administrator
Town of Stoneham
Stoneham Town Hall
35 Central Street
Stoneham, MA 02180

Re: Application to Use the Construction Management At-Risk Alternative Delivery Method for the Stoneham High School Project

Dear Mr. Sheehan:

On October 20, 2020, pursuant to M.G.L. c. 149A and 945 CMR 2.00, the town of Stoneham ("Stoneham") submitted an application to use the construction management at-risk ("CM at-risk") alternative delivery method for the Stoneham High School project.

Based on all the information provided, Stoneham has met the statutory requirements for using the CM at-risk delivery method. Accordingly, the Office of the Inspector General ("Office") is issuing this notice to proceed to use the CM at-risk delivery method as specified in M.G.L. c. 149A, §§ 1-13, and to use the plan and procedures submitted.

This approval is conditioned on Stoneham using a CM at-risk firm that the Division of Capital Asset Management and Maintenance ("DCAMM") has certified, as well as DCAMM-certified trade contractors. Therefore, Stoneham must require each CM at-risk firm to supply both a certificate of eligibility and an update statement during both the prequalification phase and the technical proposal phase of the selection process. In addition, Stoneham must require each trade contractor to supply a certificate of eligibility and an update statement during the prequalification phase and again at the bidding phase of the selection process. Stoneham must reject as invalid all contractors' statements of qualifications, proposals and bids that do not provide such certificates of eligibility or update statements.

If, during the course of the project, Stoneham changes its owner's project manager or designer, please submit information about the new project manager or designer to the Office. Also, if Stoneham decides not to proceed with the CM at-risk delivery method, please notify the Office.

Please feel free to contact me or Kerri-Anne Hollingshead, Policy Analyst, if you have any questions or concerns.

Sincerely,

Glenn A. Cunha
Inspector General

cc: Joel G. Seeley, Symmes, Maini & McKee Associates, Inc.
Sarah Traniello, Symmes, Maini & McKee Associates, Inc.

Project Management | SMMA

Project Minutes

Project:	Stoneham High School Feasibility Study	Project No.:	20033
Prepared by:	Joel Seeley	Meeting Date:	11/23/2020
Re:	Green Building Initiatives Meeting	Time:	10:00am
Location:	Remote Locations	Meeting No:	6
Distribution:	Attendees (MF)		

Attendees:

PRESENT	NAME	AFFILIATION
	Marie Christie	Co-Chair, School Building Committee
	David Bois	Co-Chair, School Building Committee
✓	Raymie Parker	Chair, Select Board
✓	Dennis Sheehan	Town Administrator
✓	John Macero	Superintendent of Schools
✓	Brian McNeil	Facilities Director
✓	Erin Wortman	Director, Planning and Community Development
✓	Susan McPhee	Energy Conservation Coordinator
✓	David Mauer	School Committee
	Kimberly Cullinane	Eversource - Electricity
	Mark Rooney	Eversource - Electricity
	Denise Rouleau	National Grid - Gas
✓	Vamshi Gooje	Thornton Tomasetti
	Xiaoshu Du	Thornton Tomasetti
	Brooke Trivas	Perkins and Will
✓	Patrick Cunningham	Perkins and Will
	Kevin Caddle	BALA
✓	Edward Dolan	BALA
✓	Joel Seeley	SMMA

Item #	Action	Discussion
6.1	E. Wortman S. McPhee D. Sheehan V. Gooje	**Photovoltaic (PV) System** 1. E. Wortman reviewed notes from the conversation with JD Head, Director of School Operations at Acton-Boxborough and Paul Lyons of Zapotec, attached. E. Wortman will share the PV RFP once received form JD. 2. E. Wortman and S. McPhee will take the lead in retaining the PV Vender, either thru RFP (preferred) or PowerOptions.

1000 Massachusetts Avenue
Cambridge, MA 02138
617.547.5400

www.smma.com

Item #	Action	Discussion
		3. D. Sheehan will confirm with Town Counsel on the whether the School Committee or Select Board will sign the Letter of Support with the PV Vender for the SMART Program. 4. E. Dolan requested a copy of the Basis of Design relative to degree day decisions used on the A-B school. *V. Gooje will provide*. 5. P. Cunningham will review the orientation of parking lots to the maximize solar canopy's orientation. Approximately 90,000 SF of PV Array will be needed, assumed to be divided 50/50 between building roof and car canopies. 6. E. Wortman will ask JD the following question: a. How did A-B estimate the Alternative Energy Credits for the Geothermal System? 7. S. McPhee indicated Arlington is planning their new High School for ZNE and their PV is approximately 1 MW at 11-12 cents/kWh.
6.2	P. Cunningham E. Wortman V. Gooje	**12/7/20 SSBC Presentation** 1. P. Cunningham will forward Option 4B, including rhino model, to V. Gooje on Tuesday. 2. E. Wortman will forward V. Gooje past electric and gas bills to confirm current rates. 3. V. Gooje will provide energy model and cost assessments for Options 2A, 3A and 4A and a qualitative assessment on Option 4B. 4. P. Cunningham will develop the agenda for the ZNE presentation to the SSBC. V. Gooje, E. Wortman, B. McNeil, P. Cunningham, E. Dolan and J. Seeley to present. 5. P. Cunningham will provide V. Gooje the construction cost information for each design option. J. Seeley indicated that the presentation materials will need to be provided on Friday 12/4/20 to be included in the SSBC Friday packet.
6.3	V.Gooje	**Energy and Cost Modeling Baseline** 1. V. Gooje reviewed the energy modeling baseline memo, attached. 2. V. Gooje to provide feedback to P. Cunningham on the exterior wall assemblies.

Item #	Action	Discussion
		3. S. McPhee asked if V. Gooje can provide the approximate heating, cooling and overall electric load? *V. Gooje will provide by Wednesday*.
6.4	P. Cunningham	**Geo-Thermal System** 1. P. Cunningham reviewing scope of services to be performed during the Schematic Design Phase versus in the Design Development Phase to develop a fee proposal within the available budget.
6.5	D. Sheehan	**Domestic Water Main Heat Exchanger System** 1. D. Sheehan will confirm with the Water Department if there are any restrictions or regulations on altering the water temperature. 2. V. Gooje suggested Domestic Water Main Heat Exchanger System may be used in conjunction with the geo-thermal system, a hybrid approach, to reduce the amount of required geo-thermal wells.
6.6	B. McNeil	P. Cunningham provided Facility Department contact information from all-electric schools to B. McNeil. B. McNeil to contact them for feedback.
6.7	P. Cunningham	P. Cunningham indicated there will potentially be gas use in the kitchen and science rooms and he will provide direction as the project design progresses. *(from prior meeting)*
6.8	J. Seeley	J. Seeley to develop a ZNE decision timeline for the SSBC to use in deciding the final extent of ZNE in the Schematic Design Phase. *(from prior meeting)*
6.9	P. Cunningham	P. Cunningham is developing a draft LEED Scorecard for review at the next meeting. *(from prior meeting)*

The information herein reflects the understanding reached. Please contact the author if you have any questions or are not in agreement with these Project Minutes

1000 Massachusetts Avenue
Cambridge, MA 02138
617.547.5400

www.smma.com

To: Erin Wortman
From: Susan McPhee
Date: November 22, 2020
Re: Notes from Conversations re Stoneham High Project

1. *JD Head, Director School Operations, Acton-Boxboro 11/16*

- **Process** observations, notes for the committee
  - Process happens fast
    - Decisions are made on a timetable
    - Process will feel very fast to committee members, particularly if you miss a meeting or two
  - Feasibility study drives the whole design process
  - Visioning process is key interaction for stakeholders
    - OPM and architect will run visioning
    - For Acton it was 80 people over three days
    - Get as many people as possible to participate in the visioning
      - Use social media
      - Engage the "nay sayers" or people who might be negative
      - Involve key people like Fin Com members, students, seniors
- **Solar PPA**
  - Without solar in the project, JD calculated he would spend an additional **$120,000 annually** on purchasing electricity
    - Can we use $120,000 as a place holder calculation?
  - Remind project team and town that electricity use will increase in the new school building. Adjust expectations.
  - ***JD ran RFP for solar Power Purchase Agreement (PPA) at this stage in the project***
    - Need preliminary roof drawings at 25% design, plus canopy size
    - Used assumption of 100% electric, no fossil fuel use.
    - Strongly advised monetizing batteries on site, rather than using them for emergency use.
      - Get a good generator instead
      - Check if SHS is town designated emergency shelter
  - ***Used solar consultant to construct and run RFP***
  - Drummed up a lot of interest
  - Three bids in the end
  - Bids included cost of installation (conduit and set up)
    - Conduit and set up will be part of the project
    - MSBA allows "solar ready" as a reimbursable expense
    - Construction Manager will track all solar related install expenses
    - True up accounts with Solar provider at project end
      - Reimburse the project at end of construction
      - OR lower the PPA electricity rate appropriately
- **HVAC and Net Zero**
  - Geo-Thermal solution

        - Got the most push back because it is expensive
        - Monitor engineers – designing for the coldest day of the coldest winter lead to inefficient system, very expensive.
            - Acton: called for 120 wells, needed 85
            - Installed back up electric system. Inefficient and cheap to install, expensive to run, but likely only needed rarely.
            - Created their own hybrid system.
- **Key to successful building over time**
    - Preventative maintenance is key
    - Staff that can support the sophisticated equipment
        - Town should plan in budget for a Building Manager for new SHS
        - "You wouldn't buy a Maserati and through the keys to a high school grad to do the maintenance."

2. *Paul Lyons, Solar Consultant, Zapotec Energy 11/12/20*

Currently working on two elementary schools in Watertown, going for net zero with combination rooftop and canopy solar arrays. Worked on Cambridge MLK Elementary School, achieved net zero. Worked on King Open in East Cambridge, net zero with 1.5 MW rooftop array. Recommended by Melrose Energy Manager.

- SHS has a promising site for solar
- Once decisions are made, new vs renovation, location on site, do a solar study
    i. Employ "Over-all electricity use projection" from architect's energy model
        1. Use first draft energy model
        2. Get square footage and use kWh/sq. ft/ year to Est how many kWh annually
    ii. Does scope include solar analysis?
    iii. Is there a section in the feasibility study for onsite solar projection?
    iv. As part of SD include feasibility for interconnection
    v. If using PPA, then describe solar in the construction drawings
        1. Include the switch gear
        2. Include Conduit runs in and out of building
        3. Saves 20% of the install cost by including it in the building design (Acton got this refunded to the project or lower rate)
- **Canopy Parking – Solar Ready design ******crucial*
    i. Lay out parking so canopies are easy (inexpensive) to build
        1. Run east west with a long axis
        2. Array south facing
        3. Cars face north/south
- **Battery Storage – questions to consider**
    i. Where will it be on the site?
    ii. Will it be a separate service?
        1. closer to utility tie in
        2. study economic advantages for the town

Thornton Tomasetti

Memorandum

TO	Joel Seeley	FROM	Vamshi Gooje
CC	Stoneham Team	DATE	November 10, 2020
RE	MSBA Requirements	PROJECT NO	MA SCHOOLS

Compliance with the MSBA Sustainable Building Design Policy will be based on the energy code in effect when the Schematic Design Submittal is received by the MSBA. For all projects submitting SD package after Nov. 7, 2020, the requirements for different tiers are summarized below:

1. **MSBA Minimum requirements**
   - Achieve a minimum of LEED Certified or NE-CHPS Verified.

AND

   - Exceed the level of energy efficiency required in the current Massachusetts base energy code (IECC 2018 or ASHARE 90.1-2016, including any MA amendments) by 10%. The new code is schedule to go in effect on November 7, 2020. For projects pursuing LEED certification, the compliance can also be demonstrated by achieving 12 points in the LEED v4 Optimize Energy Performance credit. This is considered equivalent to 10% better than IECC 2018 or ASHRAE 90.1-2016. For projects,

2. **MSBA Additional Reimbursement**
   - For 2% additional reimbursement, in addition to the requirements described above, projects must exceed the level of energy efficiency required in the current Massachusetts base energy code (IECC 2018 or ASHARE 90.1-2016, including any MA amendment) by 20%. The compliance can be demonstrated by achieving 14 points in LEEDv4 Optimize Energy Performance. This is considered equivalent to 20% better than IECC 2018 or ASHRAE 90.1-2016. For projects,

Notes:

1. *Compliance with the local energy code is determined at the submission of the permit set. This may vary from the MSBA baseline for grant money (which is determined at the submission of SD).*

2. *MSBA uses the submitted LEED-S / NE-CHPS scorecard as a basis for establishing conformance with their requirements. Designers should confirm that any submitted LEED-S / NE-CHPS scorecards are based on the correct energy code, noting which version of LEED-S / NE-CHPS is used, with descriptions of any beta credits or alternate compliance paths used.*

Project Management | SMMA

Project Minutes

Project:	Stoneham High School Feasibility Study	Project No.:	20033
Prepared by:	Joel Seeley	Meeting Date:	11/9/2020
Re:	Green Building Initiatives Meeting	Time:	10:00am
Location:	Remote Locations	Meeting No:	5
Distribution:	Attendees (MF)		

Attendees:

PRESENT	NAME	AFFILIATION
✓	Marie Christie	Co-Chair, School Building Committee
	David Bois	Co-Chair, School Building Committee
✓	Raymie Parker	Chair, Select Board
✓	Dennis Sheehan	Town Administrator
	John Macero	Superintendent of Schools
✓	Brian McNeil	Facilities Director
✓	Erin Wortman	Director, Planning and Community Development
✓	Susan McPhee	Energy Conservation Coordinator
✓	Kimberly Cullinane	Eversource - Electricity
	Mark Rooney	Eversource - Electricity
	Denise Rouleau	National Grid - Gas
✓	Vamshi Gooje	Thornton Tomasetti
✓	Xiaoshu Du	Thornton Tomasetti
✓	Brooke Trivas	Perkins and Will
✓	Patrick Cunningham	Perkins and Will
	Kevin Caddle	BALA
	Edward Dolan	BALA
✓	Joel Seeley	SMMA

Item #	Action	Discussion
5.1	E. Wortman S. McPhee P. Cunningham V. Gooje	**Photovoltaic (PV) System** 1. E. Wortman contacted JD Head at Acton-Boxborough for more information on their PV RFP and will review further with him next week. Questions to ask are: a. What methodology did A-B use in estimating the payback for the PV? b. How did A-B estimate the Alternative Energy Credits for the Geothermal System?

1000 Massachusetts Avenue
Cambridge, MA 02138
617.547.5400

www.smma.com

Item #	Action	Discussion
		2. S. McPhee will ask PowerOptions what a preliminary PV cent/kWh should be used for preliminary planning. 3. S. McPhee asked if there is a preliminary size of the PV Array and what percentage would be roof mounted versus carport canopy mounted? *P. Cunningham and V. Gooje will review and provide preliminary findings*. 4. D. Sheehan asked if the PowerOptions rate is locked in? *E. Wortman indicated yes, annually, but can be multi-year.*
5.2	V.Gooje	**Energy and Cost Modeling Baseline** 1. V. Gooje reviewed the energy modeling baseline to be used, based on MSBA baseline requirements per ASHRAE 90.1. The baseline will be an all-electric building. V. Gooje will issue a clarifying memo for review. 2. K. Cullinane recommends reviewing the Lexington presentation for their approach to cost balancing, ie energy cost savings compared to capital cost investment. 3. J. Seeley provided V. Gooje with the PDP Phase construction and total project costs related to ZNE. 4. E. Wortman provided the current electric rate, which is 10.793 cents/kWh. 5. V. Gooje to confirm if the $6 million in energy cost savings over 20 years shown in the Acton-Boxborough presentation was based on a gas or all-electric baseline building.
5.3	P. Cunningham	**Geo-Thermal System** 1. P. Cunningham to provide a fee proposal for performing a geothermal test well in the Schematic Design Phase.
5.4	D. Sheehan	**Domestic Water Main Heat Exchanger System** 1. V. Gooje indicated based on a preliminary calculation, a Domestic Water Main Heat Exchanger System may be a viable alternative to the Geo-Thermal System, however the Town will need to confirm if there are any restrictions or regulations on altering the water temperature. *D. Sheehan will confirm with the Water Department*. 2. D. Sheehan asked if this type of system has been used before? *S. McPhee indicated Woburn is currently studying for a school project*.
5.5	P. Cunningham V. Gooje	**12/7/20 SSBC Presentation**

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Item #	Action	Discussion
		1. P. Cunningham will forward Option 2 and Option 4A, including rhino model, to V. Gooje later this week and strive to send Option 4B earlier than the 11/23/20 SSBC meeting date. 2. V. Gooje has commenced working on the preliminary energy models, operational cost models and LCCA. 3. P. Cunningham to provide V. Gooje the construction cost information for each design option prior to the 12/7/20 SSBC meeting. 4. J. Seeley indicated that the presentation materials will need to be provided on Friday 12/4/20 to be included in the SSBC Friday packet.
5.6	P. Cunningham	P. Cunningham indicated there will potentially be gas use in the kitchen and science rooms and he will provide direction as the project design progresses. *(from prior meeting)*
5.7	J. Seeley	J. Seeley to develop a ZNE decision timeline for the SSBC to use in deciding the final extent of ZNE in the Schematic Design Phase. *(from prior meeting)*
5.8	P. Cunningham	P. Cunningham will provide Facility Department contact information from all-electric schools to B. McNeil.
5.9	P. Cunningham	P. Cunningham is developing a draft LEED Scorecard for review at the next meeting.

The information herein reflects the understanding reached. Please contact the author if you have any questions or are not in agreement with these Project Minutes

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www.smma.com

Subject: Fw: community garden project

From: Sharon Iovanni <sharon.iovanni@rcn.com>
Sent: Tuesday, December 1, 2020 7:44 PM
To: Seeley, Joel <jseeley@smma.com>; Marie Christie <mariechristie@comcast.net>; David Bois <bois@arrowstreet.com>
Subject: FW: community garden project

This is the other one I mentioned earlier,

From: Louise Ann Zuk [mailto:Lzuk626@msn.com]
Sent: Tuesday, December 1, 2020 6:42 AM
To: mmw; Siovanni01@gmail.com
Subject: Re: community garden project

I have a few thoughts on the community garden. It is a wonderful idea to have people tend to the garden and grow fresh vegetables. In the beginning lots of people want to be involved. What happens when people become less interested during the growing season? Will there be water available for the garden use? Will the students prepare the soil or those that are going to plant? I hope this moves forward to help people enjoy gardening if they don't have space of their own. Also it is a great way to meet new people.

If there is anything I can do to help please call me at 617-872-5101
Best of luck,
Louise Zuk

On Dec 1, 2020, at 2:16 AM, mmw <mmw@copper.net> wrote:

Apologies this is so long; would appreciate your thoughts ranging from..." what....are you out of your mind to great idea here are my thoughts"

I just posted on Stoneham Gardening page.

Community Garden Project
Stoneham is considering a new High School or the renovation of the existing ca. 1968 one. As part of the process the committee is seeking input from citizens. I suggested space be allocated for a community garden both for students and the public at large. Great way to feed the hungry, educate the students, engage retirees, get families " back to the earth", etc.

In response, Sharon Iovanni on behalf of the committee is asking:
"Some folks on the committee questioned who would be responsible for the garden, who would use the garden, could it be used as a teaching tool given that most of the growing season was during "summer vacation", how would it be managed….

If you have any reach outs to the Garden Club or other gardners whom you know would be interested in this

concept, can you provide me with some suggested responses to this question….or better yet, get them to participate in the next Community Forum #4 on December 9. "

Subject: Fw: Community Garden Project

From: Sharon Iovanni <sharon.iovanni@rcn.com>
Sent: Tuesday, December 1, 2020 7:43 PM
To: Seeley, Joel <jseeley@smma.com>; Marie Christie <mariechristie@comcast.net>; David Bois <bois@arrowstreet.com>
Subject: FW: Community Garden Project

Hi Joel,
I'm not sure how I should handle these –

I received this email today after I reached out to Marcia Wengen re the Community Garden. Feel free to share in the next package if you think it is appropriate. Or, Marie or David, other suggestions for what we might do with these. I have another one that I will be forwarding after this.

Thanks
Shar

From: Kathleen Celata [mailto:Kathysjewel6@outlook.com]
Sent: Tuesday, December 1, 2020 5:47 PM
To: siovanni01@gmail.com
Subject: Community Garden Project

Hello Sharon Iovanni

I read your post on Facebook I think it would be a great idea to have a Community Garden up at the High School. I think if the High School has a plot in the community garden then students are responsible for the care of their plot. These plots tend to go pretty fast and some have waiting lists. I think that our community could benefit by one. The plots could have a nominal fee to use for a year and for those who cant afford the nominal fee could volunteer some free time to helping the garden out where it is needed. I would suggest reaching out to the Congregational Church to see if they would be interested in a plot where they could grow veggies and herbs for the Food Pantry and the Boys and Girls Club might also be interested in teaching the children about growing their own food. The local garden groups might also be interested and with tons of experience might be willing to show others their first hand knowledge of growing veggies and fruit.

Just a few ideas, I am interested in helping if it comes down to being something that might work.

Kathleen Celata

Subject: Fw: Another comm garden email

From: Sharon Iovanni <sharon.iovanni@rcn.com>
Sent: Tuesday, December 1, 2020 7:46 PM
To: Seeley, Joel <jseeley@smma.com>; Marie Christie <mariechristie@comcast.net>; David Bois <bois@arrowstreet.com>
Subject: Another comm garden email

From: mmw [mailto:mmw@copper.net]
Sent: Tuesday, December 1, 2020 2:42 AM
To: Sharon Iovanni
Subject: How to Build a Community Garden in 10 Steps - BeautifulRVA

https://beautifulrva.org/10-steps-community-garden/

Thanks for the heads up. I posted this community garden project on/to:

Stoneham Gardening FB page
2 members of Stoneham Garden Club
1 member of Senior Center gardening group
1 Stoneham Farmers Market wizard

There is a wealth of imformation about community garden projects on the web. The attachment is a quick read with any number of really good ideas, that you may want to share with your members.

More to follow.

Marcia

Sent from my T-Mobile 4G LTE Device

How to Build a Community Garden in 10 Steps

10 STEPS FOR MAKING YOUR OWN URBAN GARDEN IN RICHMOND

"None of this is new, people have been planting community gardens for years," said Chavis, community engagement coordinator for Lewis Ginter Botanical Garden. "But now it's being framed differently: for public health and environmental benefits."

Families are prone to eat what they grow, and fresh vegetables support good health. Exercise and time spent outdoors are vital for wellbeing, too. When youngsters join in, gardening teaches stewardship while supporting SOLs related to science, technology and math. An urban garden nurtures renewal through natural beauty. It also supports environmental sustainability as it improves air quality, ambient noise, stormwater mitigation and heat reduction through shade.

"Greenspaces also help with social cohesiveness," Chavis said. "They integrate people into a social fabric that creates unity and community pride."

Chavis outlined ten steps for developing a garden in an urban setting. Most pertain to establishing planting beds on school grounds and in rural communities, too. Now is a good time to start, wherever the parcel of land, since approvals and planning take time.

1. Find a location. Scout for vacant or underused land and obtain approval from the owner. A sunny location with access to water is best. For urban gardening, the City of Richmond offers an excellent resource: Richmond Grows Gardens. The webpage includes an online map showing city-owned property already approved for gardening, plus guidelines and applications. Remember: it's not the size of the garden that counts. It's the quality of harvested crops and related benefits.

2. Take a soil test. Crops are only as good as the soil. A soil test helps determine what nutrients are missing and what amendments should be made. For urban properties, probably most important is determining if any toxins or contaminants have leached into the soil. "Many homes built in the 1920s and '30s, torn down and hauled away, left heavy metals and carcinogens in the soil, such as lead, mercury or asbestos," Chavis warned. Soil testing is available through Virginia Cooperative Extension and the City of Richmond. A nominal fee may apply. If the onsite soil is deemed contaminated or unusable, resort to raised beds and a supplemental soil mixture.

3. Work on neighborhood buy-in. "It's very important to include more people in the garden than just yourself," Chavis said. "Have conversations with folks closest to the site and get their involvement." He recommended asking about the history of the site, what neighbors want to see growing and how they want to be involved. "Get to know the community voices," he said.

https://beautifulrva.org/10-steps-community-garden/

4. Secure donations or sponsors. Soil, seeds, plants and possibly lumber (for raised beds) will be needed, so recruit support. Obtain enough funds in case permits and tools are needed, too. "Finding supporters isn't as hard nowadays," Chavis said. The public and local businesses have become more aware of the benefits of shared community gardens, including urban renewal and community pride.

5. **Plan.** "Planning is the biggest part of the work," Chavis noted. He recommended drawing a schematic of what the garden will include, from plants and trees to compost bins and benches. The Beautiful RVA website offers helpful design templates, budget guidelines, plant recommendations and planting tips. As for tools, the Richmond Community ToolBank loans gardening equipment at a nominal fee to nonprofit and community organizations. Also, consider what you hope participants will learn. Educators interested in school gardens and nature-related activities can attend Natural Connections and professional development workshops hosted by Lewis Ginter Botanical Garden. The garden staff models interdisciplinary strategies for blending science, social studies, language arts and math standards for authentic learning experiences. Advance registration is required.

6. Plan a volunteer workday: Excitement grows as a date is set for the garden build. Chavis recommends recruiting volunteers through social media, flyers and word-of-mouth. For potential volunteer support, check out HandsOn Greater Richmond. Community organizations can recruit volunteers and access volunteer-management resources for training and tracking. "A Ginter Urban Gardener also may help with planning and coordinating volunteers on the workday," Chavis said. Ginter Urban Gardeners offer knowledge of horticulture, enhanced through a 12-week course on project management, volunteer coordination and sustainable agriculture. To request a Ginter Urban Gardener volunteer, check out the community gardens video and then email beautifulrva@gmail.com with details. All requests will be considered, but assistance cannot be guaranteed.

7. Host the first workday: The garden build will be as successful as the preparation. Chavis recommends having all equipment and plants onsite before volunteers arrive. For the workers, make sure you have plenty of water and perhaps donated snacks and sandwiches. "Music is another great way to keep folks motivated," he said.

8. Determine the garden model: "Once the garden is planted, the fun starts," Chavis said. He suggests specifically defining the garden's purpose and beneficiaries, based on community interest. "Decide if it will be a garden in which neighbors rent plots, work for produce or donate food being grown to a food bank," he said. "Or, maybe it will be a garden that focuses on education," as in a school, nonprofit or neighborhood setting.

9. Set up events and a point of contact: The garden will need continual maintenance, so plan frequent workdays. Draw volunteers and build community through a mix of impromptu and planned events, possibly featuring live music, special guests, onsite games or picnics. Also determine a designated garden steward to handle questions, decisions and ongoing communications.

10. Maximize benefits: "A community garden produces more than just healthy, fresh vegetables," Chavis summarized. "The greenspace brings people together for social activities, exercise, beauty and stress reduction." Consider the possibilities, see what works and celebrate accomplishments. Over time, the ripple effects may be immeasurable.

This article first published in the Richmond Times-Dispatch in February 2018.

Volunteers through HandsOn Greater Richmond and Beautiful RVA spent Martin Luther King Jr. Day 2018, building raised gardens for the Garber Street CSA (Community-Supported Agriculture), which provides produce for elderly and homebound residents in the underserved community.

https://beautifulrva.org/10-steps-community-garden/