3.3.3 - FINAL EVALUATION OF ALTERNATIVES

G. COST ESTIMATE / Design Team

PM&C

Belmont High School 12-Feb-18
Design Options - GRADES 7-12
Belmont, MA

PSR Estimate GFA 212,446

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 2.1 NEW ADDITION						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$1,830,752			
	A1020	Special Foundations	$5,409,040			
	A1030	Lowest Floor Construction	$1,962,546	**$9,202,338**	$43.32	13.5%
A20	**BASEMENT CONSTRUCTION**					
	A2010	Basement Excavation	$0			
	A2020	Basement Walls	$0	**$0**	$0.00	0.0%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$5,719,916			
	B1020	Roof Construction	$3,011,712	**$8,731,628**	$41.10	12.8%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$5,304,788			
	B2020	Windows	$3,821,835			
	B2030	Exterior Doors	$73,680	**$9,200,303**	$43.31	13.5%
B30	**ROOFING**					
	B3010	Roof Coverings	$3,439,320			
	B3020	Roof Openings	$252,500	**$3,691,820**	$17.38	5.4%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$5,098,704			
	C1020	Interior Doors	$1,062,230			
	C1030	Specialties/Millwork	$1,779,107	**$7,940,041**	$37.37	11.7%
C20	**STAIRCASES**					
	C2010	Stair Construction	$422,000			
	C2020	Stair Finishes	$37,723	**$459,723**	$2.16	0.7%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$1,274,676			
	C3020	Floor Finishes	$2,336,906			
	C3030	Ceiling Finishes	$2,124,460	**$5,736,042**	$27.00	8.4%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$270,000	**$270,000**	$1.27	0.4%
D20	**PLUMBING**					
	D20	Plumbing	$2,549,352	**$2,549,352**	$12.00	3.7%
D30	**HVAC**					
	D30	HVAC	$9,560,070	**$9,560,070**	$45.00	14.0%
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$998,496	**$998,496**	$4.70	1.5%
D50	**ELECTRICAL**					

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12-Feb-18

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GFA 212,446

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 2.1 NEW ADDITION						
	D5010	Complete System	$7,223,164	**$7,223,164**	$34.00	10.6%
E10	**EQUIPMENT**					
	E10	Equipment	$35,000	**$35,000**	$0.16	0.1%
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$2,347,575			
	E2020	Movable Furnishings	NIC	**$2,347,575**	$11.05	3.4%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$0	**$0**	$0.00	0.0%
F20	**HAZMAT REMOVALS**					
	F2010	Building Elements Demolition	$150,000			
	F2020	Hazardous Components Abatement	$0	**$150,000**	$0.71	0.2%
TOTAL DIRECT COST (Trade Costs)				***$68,095,552***	*$320.53*	*100.0%*

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GFA 212,446

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 2.1 NEW ADDITION						
	GROSS FLOOR AREA CALCULATION						
	Ground Floor			83,216			
	First Floor			64,615			
	Second Floor			64,615			
	TOTAL GROSS FLOOR AREA (GFA)				**212,446**	***sf***	
	A10 FOUNDATIONS						
	A1010 STANDARD FOUNDATIONS						
	Allowance for pile caps, grade beams etc.	**83,216**	sf	22.00	1,830,752		
	SUBTOTAL					1,830,752	
	A1020 SPECIAL FOUNDATIONS						
	Driven piles; including mobilization	**83,216**	sf	65.00	5,409,040		
	SUBTOTAL					5,409,040	
	A1030 LOWEST FLOOR CONSTRUCTION						
	New Structural Slab, 12" thick	*83,216*	*sf*		-		
312000	Ordinary Fill, 6"	**1,541**	cy	16.00	24,656		
312000	Crushed stone, 6"	**1,541**	cy	35.00	53,935		
312000	Rigid insulation; 40 psi	**83,216**	sf	2.15	178,914		
033000	Vapor barrier	**83,216**	sf	0.80	66,573		
312000	Compact existing sub-grade	**83,216**	sf	0.55	45,769		
033000	Formwork	**778**	lf	12.00	9,336		
033000	Rebar, 6#/SF	**499,296**	lbs	1.20	599,155		
033000	Concrete - 12" thick; 4,000 psi	**3,236**	cy	120.00	388,320		
033000	Placing concrete	**3,236**	cy	90.00	291,240		
033000	Finishing and curing concrete	**83,216**	sf	3.00	249,648		
	Miscellaneous						
	Patch slab at foundations in existing building				W/Reno		
	New Elevator pit				W/Reno		
	New loading dock	**1**	ls	40,000.00	40,000		
	Equipment pads	**1**	ls	15,000.00	15,000		
	SUBTOTAL					1,962,546	
	TOTAL - FOUNDATIONS						**$9,202,338**
	A20 BASEMENT CONSTRUCTION						
	A2010 BASEMENT EXCAVATION						
	No Work in this section						
	SUBTOTAL					-	
	A2020 BASEMENT WALLS						
	No Work in this section						
	SUBTOTAL					-	
	TOTAL - BASEMENT CONSTRUCTION						
	B10 SUPERSTRUCTURE						
		14.61	lbs/sf		-		
	B1010 FLOOR CONSTRUCTION	1,552	tns		-		

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 2.1 NEW ADDITION							
	Floor Structure - Steel:						
	Steel beams and columns to new addition; 15#/SF	**969**	tns	3,800.00	3,682,200		
	Premium for HSS	**242**	tns	300.00	72,600		
	Shear studs	**25,846**	ea	2.50	64,615		
	Floor Structure						
	2" 18 Ga. Metal galvanized floor Deck	**129,230**	sf	3.75	484,613		
	WWF reinforcement	**148,615**	sf	0.80	118,892		
	Concrete Fill to metal deck; 6" Light Weight	**3,015**	cy	160.00	482,400		
	Place and finish concrete	**129,230**	sf	2.00	258,460		
	Rebar to decks	**38,769**	lbs	1.20	46,523		
	Misc. angles	**129,230**	sf	0.50	64,615		
	Miscellaneous						
	Fire proofing to columns and beams	**129,230**	sf	2.25	290,768		
	Intumescent paint	**1**	ls	25,000.00	25,000		
	Fire stopping floors	**129,230**	sf	1.00	129,230		
	SUBTOTAL					5,719,916	
B1020	**ROOF CONSTRUCTION**						
	Roof Structure - Steel:						
	Steel beams and columns to new addition; 14#/SF	**583**	tns	3,800.00	2,215,400		
	Premium for HSS	**146**	tns	300.00	43,800		
	Exposed steel	**1**	ls	50,000.00	50,000		
	Roof Structure						
	Acoustic deck allowance	**8,000**	sf	7.00	56,000		
	3" 20 Ga. galvanized Metal Roof Deck	**75,216**	sf	4.00	300,864		
	Miscellaneous						
	Concrete under RTU's	**15,000**	sf	8.00	120,000		
	Fire proofing to columns, beams and deck	**75,216**	sf	3.00	225,648		
	SUBTOTAL					3,011,712	
	TOTAL - SUPERSTRUCTURE						**$8,731,628**
B20	***EXTERIOR CLOSURE***						
B2010	**EXTERIOR WALLS**						
	Exterior Wall Area - Solid Assume 70%	*65,205*	sf				
042000	*MASONRY*						
	Brick veneer, 3 color; 75% of solid area	**48,904**	sf	40.00	1,956,160		
	Staging to exterior wall	**65,205**	sf	4.00	260,820		
055000	*MISC. METALS*						
	Stainless steel sign at main entrance	**1**	ls	15,000.00	15,000		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Air barrier	**65,205**	sf	6.50	423,833		
	Air barrier/flashing at windows	**16,438**	lf	6.25	102,738		
	Miscellaneous sealants to closure	**65,205**	sf	1.00	65,205		
072100	*THERMAL INSULATION*						
	Insulation	**65,205**	sf	2.25	146,711		
076400	*CLADDING*						

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 2.1 NEW ADDITION							
	Metal panel; 25% of solid area	**16,301**	sf	75.00	1,222,575		
092900	*GYPSUM BOARD ASSEMBLIES*						
	6" metal stud backup	**65,205**	sf	11.00	717,255		
	Gypsum Sheathing	**65,205**	sf	2.75	179,314		
	Drywall lining to interior face of stud backup	**65,205**	sf	3.30	215,177		
	SUBTOTAL					5,304,788	
B2020	**WINDOWS**						
	Exterior Wall Area - Glazed Assume 30%	*27,945*	sf				
061000	*ROUGH CARPENTRY*						
	Wood blocking at openings	**16,438**	lf	14.00	230,132		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Backer rod & double sealant	**16,438**	lf	8.50	139,723		
080001	*METAL WINDOWS*						
	Windows, double glazed; 20% of glazed area	**5,589**	sf	90.00	503,010		
	Curtainwall, double glazed; 80% of glazed area	**22,356**	sf	120.00	2,682,720		
	Sunshades; horizontal	**1**	ls	250,000.00	250,000		
089000	*LOUVERS*						
	Louvers	**250**	sf	65.00	16,250		
	SUBTOTAL					3,821,835	
B2030	**EXTERIOR DOORS**						
	Glazed entrance doors including frame and hardware; double door	**8**	pr	8,000.00	64,000		
	HM doors, frames and hardware- Double	**4**	pr	2,000.00	8,000		
	Backer rod & double sealant	**240**	lf	4.00	960		
	Wood blocking at openings	**240**	lf	3.00	720		
	SUBTOTAL					73,680	
	TOTAL - EXTERIOR CLOSURE						**$9,200,303**
B30	***ROOFING***						
B3010	**ROOF COVERINGS**						
	New roofing complete	**83,216**	sf	20.00	1,664,320		
	Roof equipment screen	**1**	ls	250,000.00	250,000		
	Green roof	**15,000**	sf	35.00	525,000		
	Roof soffits	**1**	ls	1,000,000	1,000,000		
	SUBTOTAL					3,439,320	
B3020	**ROOF OPENINGS**						
	Skylights, allow	**1**	ls	250,000.00	250,000		
	Roof hatch	**1**	loc	2,500.00	2,500		
	SUBTOTAL					252,500	
	TOTAL - ROOFING						**$3,691,820**
C10	***INTERIOR CONSTRUCTION***						
C1010	**PARTITIONS**						
	Miscellaneous partitions/glazed partitions/borrowed lights/blocking etc.	**212,446**	gsf	24.00	5,098,704		
	SUBTOTAL					5,098,704	

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OPTION 2.1 NEW ADDITION							
C1020	**INTERIOR DOORS**						
	Interior doors, frames and hardware	**212,446**	gsf	5.00	1,062,230		
	SUBTOTAL					1,062,230	
C1030	**SPECIALTIES / MILLWORK**						
	Toilet Partitions and accessories	**212,446**	gsf	0.80	169,957		
	Backer panels in electrical closets	**1**	ls	1,000.00	1,000		
	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	**212,446**	sf	1.00	212,446		
	Room Signs	**212,446**	gsf	0.40	84,978		
	Fire extinguisher cabinets	**71**	ea	350.00	24,850		
	Lockers	**212,446**	gsf	1.60	339,914		
	Janitors Work Shop Accessories	**1**	ls	1,500.00	1,500		
	Janitors Closet Accessories	**3**	rms	300.00	900		
	Media						
	Reception desks	**4**	loc	25,000	100,000		
	Railings to open to below areas	**1**	ls	100,000	100,000		
	Library shelving at perimeters 7' Tall				F,F & E		
	Library shelving at perimeters 3' Tall				F,F & E		
	Miscellaneous wood trim	**212,446**	gsf	0.50	106,223		
	Display cases	**212,446**	gsf	0.25	53,112		
	Miscellaneous metals throughout building	**212,446**	sf	1.50	318,669		
	Miscellaneous sealants throughout building	**212,446**	sf	1.25	265,558		
	SUBTOTAL					1,779,107	
	TOTAL - INTERIOR CONSTRUCTION						**$7,940,041**
C20	***STAIRCASES***						
C2010	**STAIR CONSTRUCTION**						
	Metal pan stair; egress stair	**6**	flt	25,000.00	150,000		
	Main staircase	**1**	flt	250,000.00	250,000		
	Commons steps	**2**	loc	5,000.00	10,000		
	Concrete fill to stairs	**6**	flt	2,000.00	12,000		
	SUBTOTAL					422,000	
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						**$459,723**
C30	***INTERIOR FINISHES***						
C3010	**WALL FINISHES**						
	Wall finishes	**212,446**	sf	6.00	1,274,676		
	SUBTOTAL					1,274,676	
C3020	**FLOOR FINISHES**						
	Floor finishes	**212,446**	sf	11.00	2,336,906		
	SUBTOTAL					2,336,906	
C3030	**CEILING FINISHES**						
	Ceiling finishes	**212,446**	sf	10.00	2,124,460		

3.3.3 - FINAL EVALUATION OF ALTERNATIVES

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 2.1 NEW ADDITION							
	SUBTOTAL					2,124,460	
	TOTAL - INTERIOR FINISHES						**$5,736,042**
D10	***CONVEYING SYSTEMS***						
D1010	**ELEVATOR**						
	New three stop elevator	**2**	ea	135,000.00	270,000		
	SUBTOTAL					270,000	
	TOTAL - CONVEYING SYSTEMS						**$270,000**
D20	***PLUMBING***						
D20	**PLUMBING, GENERALLY**						
	Plumbing allowance	**212,446**	gsf	12.00	2,549,352		
	SUBTOTAL					2,549,352	
	TOTAL - PLUMBING						**$2,549,352**
D30	***HVAC***						
D30	**HVAC, GENERALLY**						
	HVAC allowance	**212,446**	gsf	45.00	9,560,070		
	SUBTOTAL					9,560,070	
	TOTAL - HVAC						**$9,560,070**
D40	***FIRE PROTECTION***						
D40	**FIRE PROTECTION, GENERALLY**						
	Fire protection system	**212,446**	gsf	4.70	998,496		
	SUBTOTAL					998,496	
	TOTAL - FIRE PROTECTION						**$998,496**
D50	***ELECTRICAL***						
D5010	**ELECTRICAL WORK**						
	Complete electrical systems	**212,446**	gsf	34.00	7,223,164		
	SUBTOTAL					7,223,164	
	TOTAL - ELECTRICAL						**$7,223,164**
E10	***EQUIPMENT***						
E10	**EQUIPMENT, GENERALLY**						
	Food Service equipment				In Renovation		
	Loading dock equipment	**1**	ls	20,000.00	20,000		
	Electrically operated projection screens	**1**	loc	15,000.00	15,000		
	SUBTOTAL					35,000	
	TOTAL - EQUIPMENT						**$35,000**
E20	***FURNISHINGS***						

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 2.1 NEW ADDITION							
E2010	**FIXED FURNISHINGS**						
	Entry mats & frames - recessed with carpet/rubber strips	**500**	sf	55.00	27,500		
	Window blinds	**27,945**	sf	7.00	195,615		
	Counters, base cabinets, tall storage in classrooms and other rooms	**212,446**	gsf	10.00	2,124,460		
	SUBTOTAL					2,347,575	
E2020	**MOVABLE FURNISHINGS**						
	All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
	TOTAL - FURNISHINGS						**$2,347,575**
F10	***SPECIAL CONSTRUCTION***						
F10	**SPECIAL CONSTRUCTION**						
	No items in this section						
	SUBTOTAL						
	TOTAL - SPECIAL CONSTRUCTION						
F20	***SELECTIVE BUILDING DEMOLITION***						
F2010	**BUILDING ELEMENTS DEMOLITION**						
	Demolition to make connection to existing building	**1**	ls	150,000.00	150,000		
	SUBTOTAL					150,000	
F2020	**HAZARDOUS COMPONENTS ABATEMENT**						
	See main summary for HazMat allowance				See Summary		
	SUBTOTAL						
	TOTAL - SELECTIVE BUILDING DEMOLITION						**$150,000**

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
SITEWORK OPTION 2.1							
	G SITEWORK						
G10	**SITE PREPARATION & DEMOLITION**						
	Site construction fence/barricades	**8,200**	lf	12.00	98,400		
	Site construction fence gates/entrance	**2**	ea	15,000.00	30,000		
	Pavement/curbing removal, crush and re-use for sub-base	**200,000**	sf	1.00	200,000		
	Walkways	**1**	ls	30,000.00	30,000		
	Miscellaneous demolition	**1**	ls	150,000.00	150,000		
	Site Earthwork						
	Strip Topsoil and remove; 6" thick	**19,889**	cy	12.00	238,668		
	Fine grading	**1,000,000**	sf	0.20	200,000		
	Cut and Fill; assumed AV 2ft; balanced site	**74,074**	cy	8.00	592,592		
	Silt fence/erosion control, wash bays, stock piles	**8,200**	lf	12.00	98,400		
	Silt fence maintenance and monitoring	**1**	ls	60,000.00	60,000		
	Hazardous Waste Remediation						
	Dispose/treat contaminated soils				NIC		
	SUBTOTAL					1,698,060	
G20	**SITE IMPROVEMENTS**						
	Asphalt Paving; parking lot and roadway	*350,000*					
	gravel base; 12" thick	**12,963**	cy	40.00	518,520		
	asphalt; 4" thick	**38,889**	sy	25.00	972,225		
	VGC	**10,000**	lf	38.00	380,000		
	Road markings/signage	**1**	ls	30,000.00	30,000		
	Pedestrian Paving						
	Concrete paving						
	gravel base; 8" thick	**744**	cy	35.00	26,040		
	4" concrete paving	**30,000**	sf	7.00	210,000		
	Concrete pavers						
	Concrete pavers						
	sand bedding; 1" thick	**148**	cy	40.00	5,920		
	Precast concrete pavers	**50,000**	sf	16.00	800,000		
	gravel base; 8" thick	**1,241**	cy	35.00	43,435		
	concrete base; 4" thick	**50,000**	sf	5.00	250,000		
	Site Improvements						
	Flag pole 50' high	**1**	ea	6,500.00	6,500		
	Concrete retaining walls				Assumed not required		
	6' chain-link fence	**8,200**	lf	50.00	410,000		
	Double gates	**1**	ea	2,500.00	2,500		
	Wood screen privacy fence 8'	**50**	lf	100.00	5,000		
	Double gates	**1**	ea	2,500.00	2,500		
	Benches	**15**	ea	2,800.00	42,000		
	Bike racks	**1**	ls	30,000.00	30,000		
	Ornamental trash/recycling receptacles	**10**	ea	800.00	8,000		
	Monumental signage	**1**	ls	40,000.00	40,000		
	Way finding signage	**1**	ls	60,000.00	60,000		
	Other site improvements; walls, fences etc.	**1**	ls	1,500,000	1,500,000		
	Multi-purpose fields						
	Crushed stone - 12" thick	**16,815**	cy	40.00	672,600		
	Sports seeding	**454,000**	sf	0.50	227,000		
	Line markings - Allowance	**1**	ls	15,000.00	15,000		
	Football goals	**2**	loc	3,000.00	6,000		
	Soccer goals (movable) - Allowance	**3**	loc	10,000.00	30,000		
	20' sports netting	**1**	ls	50,000.00	50,000		
	Baseball/softball backstop	**2**	loc	40,000.00	80,000		
	SUBTOTAL					6,423,240	
	Landscaping						
	Topsoil -modify existing topsoil	**19,889**	cy	26.00	517,114		
	Lawn - loam & seed	**546,000**	sf	0.25	136,500		
	Planting allowance	**1**	ls	500,000.00	500,000		

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Design Options - GRADES 7-12
Belmont, MA

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PSR Estimate

	CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	SITEWORK OPTION 2.1							
63		Irrigation at sports fields	**454,000**	sf	1.00	454,000		
64		Allowance for new well	**1**	ls	150,000.00	150,000		
65		SUBTOTAL					1,757,614	
66								
67	**G30**	**CIVIL MECHANICAL UTILITIES**						
68		Utilities - Enabling						
69		Allowance for temporary utilities etc.	**1**	ls	150,000.00	150,000		
70		Water supply; Pricing includes E&B and bedding						
71		New DI piping; 8"	**200**	lf	100.00	20,000		
72		New DI piping; 8" Fire	**3,500**	lf	100.00	350,000		
73		Connect to existing	**1**	loc	10,000.00	10,000		
74		FD connection	**1**	ea	2,000.00	2,000		
75		Gate valves	**8**	ea	750.00	6,000		
76		Fire hydrant	**12**	ea	5,000.00	60,000		
77		Fire hydrant; relocate existing	**1**	ea	3,500.00	3,500		
78		Sanitary; Pricing includes E&B and bedding						
79		Manholes	**4**	ea	4,000.00	16,000		
80		Grease trap	**1**	ea	15,000.00	15,000		
81		8" PVC	**300**	lf	60.00	18,000		
82		Connect to existing drain	**1**	ea	3,000.00	3,000		
83		Relocate existing sewer system	**1**	ls	250,000.00	250,000		
84		Storm water; Pricing includes E&B and bedding						
85		Allowance to modify existing drainage systems	**350,000**	sf	7.00	2,450,000		
86		Perforated pipe @ recharge systems and crushed stone base under fields	**454,000**	sf	4.00	NR		
87		Gas service						
88		E&B trench for new gas pipe - install by plumbing	**250**	lf	25.00	6,250		
89		SUBTOTAL					3,359,750	
90								
91	**G40**	**ELECTRICAL UTILITIES**						
92								
93		Power						
94		Utility co. backcharges, allow	**1**	ls	30,000.00	30,000		
95		Connections at existing manhole				Utility co.		
96		Manhole	**1**	ls	8,500.00	8,500		
97		Connections in manhole	**1**	ls	3,500.00	3,500		
98		Primary ductbank 2-5" ductbank, empty, allow	**1100**	lf	120.00	132,000		
99		Transformer by utility company				By Utility Co.		
100		Transformer pad	**1**	ea	2,500.00	2,500		
101		Secondary service	**60**	lf	1,100.00	66,000		
102		Communications						
103		Connection at riser pole, allow	**1**	ea	1,500.00	1,500		
104		Telecom ductbank 4-4", allow	**1100**	lf	152.00	167,200		
105		Site Lighting						
106		Varsity baseball sports lighting (allow)	**1**	ls	120,000.00	120,000		
107		Softball sports lighting (allow)	**1**	ls	90,000.00	90,000		
108		Site Parking lighting (allow)	**1**	ls	350,000.00	350,000		
109		SUBTOTAL					971,200	
110								
111		**TOTAL - SITE DEVELOPMENT**						***$14,209,864***

3.3.3 - FINAL EVALUATION OF ALTERNATIVES

G. COST ESTIMATE / Design Team

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Belmont High School
Design Options - GRADES 7-12
Belmont, MA

12-Feb-18

PSR Estimate

GFA 65,050

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 2.3 RENOVATION						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$25,000			
	A1020	Special Foundations	$0			
	A1030	Lowest Floor Construction	$75,000	**$100,000**	$1.54	0.7%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$0			
	B1020	Roof Construction	$50,000	**$50,000**	$0.77	0.4%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$822,040			
	B2020	Windows/Curtainwall	$589,164			
	B2030	Exterior Doors	$58,796	**$1,470,000**	$22.60	10.5%
B30	**ROOFING**					
	B3010	Roof Coverings	$1,821,400			
	B3020	Roof Openings	$10,000	**$1,831,400**	$28.15	13.0%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$585,450			
	C1020	Interior Doors	$195,150			
	C1030	Specialties/Millwork	$393,504	**$1,174,104**	$18.05	8.3%
C20	**STAIRCASES**					
	C2010	Stair Construction	$0			
	C2020	Stair Finishes	$0	**$0**	$0.00	0.0%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$390,300			
	C3020	Floor Finishes	$715,550			
	C3030	Ceiling Finishes	$520,400	**$1,626,250**	$25.00	11.6%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$0	**$0**	$0.00	0.0%
D20	**PLUMBING**					
	D20	Plumbing	$780,600	**$780,600**	$12.00	5.6%
D30	**HVAC**					
	D30	HVAC	$2,927,250	**$2,927,250**	$45.00	20.8%
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$305,735	**$305,735**	$4.70	2.2%
D50	**ELECTRICAL**					
	D5010	Electrical Systems	$2,211,700	**$2,211,700**	$34.00	15.7%
E10	**EQUIPMENT**					
	E10	Equipment	$276,040	**$276,040**	$4.24	2.0%

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Belmont High School
Design Options - GRADES 7-12
Belmont, MA

12-Feb-18

PSR Estimate

GFA 65,050

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 2.3 RENOVATION						
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$65,050			
	E2020	Movable Furnishings	NIC	**$65,050**	$1.00	0.5%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$750,000	**$750,000**	$11.53	5.3%
F20	**SELECTIVE BUILDING DEMOLITION**					
	F2010	Building Elements Demolition	$496,138			
	F2020	Hazardous Components Abatement	$0	**$496,138**	$7.63	3.5%
TOTAL DIRECT COST (Trade Costs)				***$14,064,267***	*$216.21*	*100.0%*

3.3.3 - FINAL EVALUATION OF ALTERNATIVES

G. COST ESTIMATE / Design Team

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Belmont High School 12-Feb-18
Design Options - GRADES 7-12
Belmont, MA

PSR Estimate **GFA** 65,050

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 2.3 RENOVATION						
	GROSS FLOOR AREA CALCULATION						
	First Floor				65,050		
	TOTAL GROSS FLOOR AREA (GFA)				**65,050** ***sf***		
	A10 FOUNDATIONS						
	A1010 STANDARD FOUNDATIONS						
	Repair cracks and resurface exposed concrete foundations	**1**	ls	25,000	25,000		
	SUBTOTAL					25,000	
	A1020 SPECIAL FOUNDATIONS						
	No work in this section						
	SUBTOTAL						
	A1030 LOWEST FLOOR CONSTRUCTION						
	Cutting and patching for MEP	**1**	ls	15,000.00	15,000		
	New slab at bathrooms and shower areas	**3,000**	sf	20.00	60,000		
	SUBTOTAL					75,000	
	TOTAL - FOUNDATIONS						**$100,000**
	B10 SUPERSTRUCTURE						
	B1010 FLOOR CONSTRUCTION						
	SUBTOTAL					-	
	B1020 ROOF CONSTRUCTION						
	Support framing for new MEP systems	**1**	ls	50,000.00	50,000		
	SUBTOTAL					50,000	
	TOTAL - SUPERSTRUCTURE						**$50,000**
	B20 EXTERIOR CLOSURE						
	B2010 EXTERIOR WALLS	*18,676*	*sf*				
	Repair and repoint exterior walls- brick; assume 100%	**18,676**	sf	32.00	597,632		
	Repairs to precast concrete panels, fins and banding	**1**	ls	75,000.00	75,000		
	Clean all exterior walls; includes staging	**18,676**	sf	8.00	149,408		
	SUBTOTAL					822,040	
	B2020 WINDOWS/CURTAINWALL						
	Replace existing translucent panels	**6,798**	sf	80.00	543,840		
	Backer rod & double sealant	**3,777**	lf	9.00	33,993		
	Wood blocking at openings	**3,777**	lf	3.00	11,331		
	SUBTOTAL					589,164	
	B2030 EXTERIOR DOORS						
	Replace exterior single door	**3**	ea	2,100.00	6,300		
	Replace exterior double door	**4**	pr	4,000.00	16,000		
	Replace overhead doors; 8'x8'	**2**	ea	7,040.00	14,080		
	Replace overhead doors; 12'x15'	**1**	ea	19,800.00	19,800		
	Backer rod & double sealant	**218**	lf	9.00	1,962		
	Wood blocking at openings	**218**	lf	3.00	654		

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Belmont High School 12-Feb-18
Design Options - GRADES 7-12
Belmont, MA

PSR Estimate **GFA** 65,050

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 2.3 RENOVATION						
59	SUBTOTAL					58,796	
60							
61	***TOTAL - EXTERIOR CLOSURE***						**$1,470,000**
62							
63							
64	***B30 ROOFING***						
65							
66	**B3010 ROOF COVERINGS**						
67	Replace existing roofing systems	**65,050**	sf	28.00	1,821,400		
68	SUBTOTAL					1,821,400	
69							
70	**B3020 ROOF OPENINGS**						
71	Replace roof ladders/hatches etc.	**1**	ls	10,000.00	10,000		
72	SUBTOTAL					10,000	
73							
74	***TOTAL - ROOFING***						**$1,831,400**
75							
76							
77	***C10 INTERIOR CONSTRUCTION***						
78							
79	**C1010 PARTITIONS**						
80	Allowance to modify existing walls and add new walls	**65,050**	gsf	6.00	390,300		
81	Seismic upgrades	**65,050**	gsf	3.00	195,150		
82	SUBTOTAL					585,450	
83							
84	**C1020 INTERIOR DOORS**						
85	Adjust door openings, install new door frame to meet code requirements (door carried below)	**65,050**	gsf	3.00	195,150		
86	SUBTOTAL					195,150	
87							
88	**C1030 SPECIALTIES / MILLWORK**						
89	Toilet Partitions and accessories	**65,050**	gsf	0.80	52,040		
90	New markerboards/tackboards	**65,050**	gsf	1.00	65,050		
91	Replace athletic lockers - allowance	**1**	ls	25,000.00	25,000		
92	New guardrail at Fieldhouse bleachers	**150**	lf	200.00	30,000		
93	Allowance for miscellaneous specialties; wall protection, fire extinguishers etc	**1**	ls	10,000.00	10,000		
94							
95	*055000 MISCELLANEOUS METALS*						
96	Miscellaneous metals throughout building	**65,050**	sf	1.50	97,575		
97							
98	*061000 ROUGH CARPENTRY*						
99	Rough blocking	**65,050**	sf	0.15	9,758		
100							
101	*070001 WATERPROOFING, DAMPPROOFING AND CAULKING*						
102	Miscellaneous sealants throughout building	**65,050**	sf	1.25	81,313		
103							
104	*101400 SIGNAGE*						
105	Code compliant signage	**65,050**	sf	0.35	22,768		
106	SUBTOTAL					393,504	
107							
108	***TOTAL - INTERIOR CONSTRUCTION***						**$1,174,104**
109							
110							
111	***C20 STAIRCASES***						
112							
113	**C2010 STAIR CONSTRUCTION**						
114	SUBTOTAL					-	
115							
116	**C2020 STAIR FINISHES**						

3.3.3 - FINAL EVALUATION OF ALTERNATIVES

G. COST ESTIMATE / Design Team

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Belmont High School 12-Feb-18
Design Options - GRADES 7-12
Belmont, MA

PSR Estimate **GFA** 65,050

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 2.3 RENOVATION						
117	SUBTOTAL					-	
118							
119	***TOTAL - STAIRCASES***						
120							
121							
122	***C30 INTERIOR FINISHES***						
123							
124	**C3010 WALL FINISHES**						
125	Allowance for wall finishes	**65,050**	gsf	6.00	390,300		
126	SUBTOTAL					390,300	
127							
128	**C3020 FLOOR FINISHES**						
129							
130	Allowance for floor finishes	**65,050**	gsf	11.00	715,550		
131	SUBTOTAL					715,550	
132							
133	**C3030 CEILING FINISHES**						
134	Allowance for ceiling finishes	**65,050**	gsf	8.00	520,400		
135	SUBTOTAL					520,400	
136							
137	***TOTAL - INTERIOR FINISHES***						**$1,626,250**
138							
139							
140	***D10 CONVEYING SYSTEMS***						
141							
142	SUBTOTAL					-	
143							
144	***TOTAL - CONVEYING SYSTEMS***						
145							
146							
147	***D20 PLUMBING***						
148							
149	**D20 PLUMBING, GENERALLY**						
150	Plumbing allowance	**65,050**	gsf	12.00	780,600		
151	SUBTOTAL					780,600	
152							
153	***TOTAL - PLUMBING***						**$780,600**
154							
155							
156	***D30 HVAC***						
157							
158	**D30 HVAC, GENERALLY**						
159	HVAC allowance	**65,050**	gsf	45.00	2,927,250		
160	SUBTOTAL					2,927,250	
161							
162	***TOTAL - HVAC***						**$2,927,250**
163							
164							
165	***D40 FIRE PROTECTION***						
166							
167	**D40 FIRE PROTECTION, GENERALLY**						
168	New fire protection system	**65,050**	sf	4.70	305,735		
169	SUBTOTAL					305,735	
170							
171	***TOTAL - FIRE PROTECTION***						**$305,735**
172							
173							
174	***D50 ELECTRICAL***						
175							
176	**D5010 ELECTRICAL WORK**						
177	Complete electrical systems	**65,050**	gsf	34.00	2,211,700		
178	SUBTOTAL					2,211,700	
179							
180	***TOTAL - ELECTRICAL***						**$2,211,700**

G. COST ESTIMATE / Design Team

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Belmont High School 12-Feb-18
Design Options - GRADES 7-12
Belmont, MA

PSR Estimate **GFA** 65,050

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 2.3 RENOVATION						
	E10 EQUIPMENT						
	E10 EQUIPMENT, GENERALLY						
	Gym wall pads	**1**	ls	20,000.00	20,000		
	Basketball backstops; swing up; electric operated	**6**	loc	10,000.00	60,000		
	Gymnasium dividing net; electrically operated; 60 lf	**1**	ea	30,000.00	30,000		
	Volleyball net and standards	**1**	ls	5,000.00	5,000		
	Score boards in Gym & Fieldhouse	**2**	loc	15,000.00	30,000		
	Telescoping bleachers, electronic retracting (1008 seats)	**1**	ls	131,040.00	131,040		
	SUBTOTAL					276,040	
	TOTAL - EQUIPMENT						**$276,040**
	E20 FURNISHINGS						
	E2010 FIXED FURNISHINGS						
123553	*CASEWORK*						
	Allowance for new casework throughout	**65,050**	gsf	1.00	65,050		
	SUBTOTAL					65,050	
	E2020 MOVABLE FURNISHINGS						
	All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
	TOTAL - FURNISHINGS						**$65,050**
	F10 SPECIAL CONSTRUCTION						
	F10 SPECIAL CONSTRUCTION						
	Pool upgrades	**1**	ls	750,000.00	750,000		
	SUBTOTAL					750,000	
	TOTAL - SPECIAL CONSTRUCTION						**$750,000**
	F20 SELECTIVE BUILDING DEMOLITION						
	F2010 BUILDING ELEMENTS DEMOLITION						
	Remove exterior glazing	**6,798**	sf	6.00	40,788		
	Remove roofing	**65,050**	sf	2.00	130,100		
	Interior demolition	**65,050**	gsf	4.00	260,200		
	Temporary enclosures/protection	**65,050**	sf	1.00	65,050		
	SUBTOTAL					496,138	
	F2020 HAZARDOUS COMPONENTS ABATEMENT						
	See summary						
	SUBTOTAL						
	TOTAL - SELECTIVE BUILDING DEMOLITION						**$496,138**

3.3.3 - FINAL EVALUATION OF ALTERNATIVES

G. COST ESTIMATE / Design Team

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Belmont High School 12-Feb-18
Design Options - GRADES 7-12
Belmont, MA

PSR Estimate GFA 386,750

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 2.3 NEW ADDITION						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$3,222,208			
	A1020	Special Foundations	$9,520,160			
	A1030	Lowest Floor Construction	$3,405,365	**$16,147,733**	$41.75	12.3%
A20	**BASEMENT CONSTRUCTION**					
	A2010	Basement Excavation	$0			
	A2020	Basement Walls	$0	**$0**	$0.00	0.0%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$10,615,447			
	B1020	Roof Construction	$5,395,748	**$16,011,195**	$41.40	12.2%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$9,770,917			
	B2020	Windows	$6,648,823			
	B2030	Exterior Doors	$73,680	**$16,493,420**	$42.65	12.5%
B30	**ROOFING**					
	B3010	Roof Coverings	$5,804,280			
	B3020	Roof Openings	$752,500	**$6,556,780**	$16.95	5.0%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$8,508,500			
	C1020	Interior Doors	$1,933,750			
	C1030	Specialties/Millwork	$3,071,826	**$13,514,076**	$34.94	10.3%
C20	**STAIRCASES**					
	C2010	Stair Construction	$584,000			
	C2020	Stair Finishes	$75,446	**$659,446**	$1.71	0.5%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$2,320,500			
	C3020	Floor Finishes	$4,254,250			
	C3030	Ceiling Finishes	$3,867,500	**$10,442,250**	$27.00	7.9%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$360,000	**$360,000**	$0.93	0.3%
D20	**PLUMBING**					
	D20	Plumbing	$4,641,000	**$4,641,000**	$12.00	3.5%
D30	**HVAC**					
	D30	HVAC	$21,403,750	**$21,403,750**	$55.34	16.3%
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$1,917,725	**$1,917,725**	$4.96	1.5%
D50	**ELECTRICAL**					

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Belmont High School
Design Options - GRADES 7-12
Belmont, MA

12-Feb-18

PSR Estimate

GFA 386,750

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 2.3 NEW ADDITION						
	D5010	Complete System	$17,149,500	**$17,149,500**	$44.34	13.0%
E10	**EQUIPMENT**					
	E10	Equipment	$1,674,200	**$1,674,200**	$4.33	1.3%
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$4,503,273			
	E2020	Movable Furnishings	NIC	**$4,503,273**	$11.64	3.4%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$0	**$0**	$0.00	0.0%
F20	**HAZMAT REMOVALS**					
	F2010	Building Elements Demolition	$100,000			
	F2020	Hazardous Components Abatement	$0	**$100,000**	$0.26	0.1%
TOTAL DIRECT COST (Trade Costs)				***$131,574,348***	*$340.21*	*100.0%*

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3.3.3 - FINAL EVALUATION OF ALTERNATIVES

G. COST ESTIMATE / Design Team

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Belmont High School 12-Feb-18
Design Options - GRADES 7-12
Belmont, MA

PSR Estimate GFA 386,750

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 2.3 NEW ADDITION						
	GROSS FLOOR AREA CALCULATION						
	Ground Floor			146,464			
	First Floor			90,452			
	Second Floor			90,452			
	Third Floor			59,382			
	TOTAL GROSS FLOOR AREA (GFA)				**386,750**	***sf***	
	A10 FOUNDATIONS						
	A1010 STANDARD FOUNDATIONS						
	Allowance for pile caps, grade beams etc.	**146,464**	sf	22.00	3,222,208		
	SUBTOTAL					3,222,208	
	A1020 SPECIAL FOUNDATIONS						
	Driven piles; including mobilization	**146,464**	sf	65.00	9,520,160		
	SUBTOTAL					9,520,160	
	A1030 LOWEST FLOOR CONSTRUCTION						
	New Structural Slab, 12" thick	*146,464*	*sf*		-		
312000	Ordinary Fill, 6"	**2,712**	cy	16.00	43,392		
312000	Crushed stone, 6"	**2,712**	cy	35.00	94,920		
312000	Rigid insulation; 40 psi	**146,464**	sf	2.15	314,898		
033000	Vapor barrier	**146,464**	sf	0.80	117,171		
312000	Compact existing sub-grade	**146,464**	sf	0.55	80,555		
033000	Formwork	**778**	lf	12.00	9,336		
033000	Rebar, 6#/SF	**878,784**	lbs	1.20	1,054,541		
033000	Concrete - 12" thick; 4,000 psi	**5,696**	cy	120.00	683,520		
033000	Placing concrete	**5,696**	cy	90.00	512,640		
033000	Finishing and curing concrete	**146,464**	sf	3.00	439,392		
	Miscellaneous						
	Patch slab at foundations in existing building				W/Reno		
	New Elevator pit				W/Reno		
	New loading dock	**1**	ls	40,000.00	40,000		
	Equipment pads	**1**	ls	15,000.00	15,000		
	SUBTOTAL					3,405,365	
	TOTAL - FOUNDATIONS						**$16,147,733**
	A20 BASEMENT CONSTRUCTION						
	A2010 BASEMENT EXCAVATION						
	No Work in this section						
	SUBTOTAL					-	
	A2020 BASEMENT WALLS						
	No Work in this section						
	SUBTOTAL					-	
	TOTAL - BASEMENT CONSTRUCTION						
	B10 SUPERSTRUCTURE						
		14.92	lbs/sf		-		

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Belmont High School
Design Options - GRADES 7-12
Belmont, MA

12-Feb-18

PSR Estimate

GFA 386,750

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 2.3 NEW ADDITION							
B1010	**FLOOR CONSTRUCTION**	2,886	tns		-		
	Floor Structure - Steel:						
	Steel beams and columns to new addition; 15#/SF	**1,802**	tns	3,800.00	6,847,600		
	Premium for HSS	**451**	tns	300.00	135,300		
	Shear studs	**48,057**	ea	2.50	120,143		
	Floor Structure						
	2" 18 Ga. Metal galvanized floor Deck	**240,286**	sf	3.75	901,073		
	WWF reinforcement	**276,329**	sf	0.80	221,063		
	Concrete Fill to metal deck; 6" Light Weight	**5,607**	cy	160.00	897,120		
	Place and finish concrete	**240,286**	sf	2.00	480,572		
	Rebar to decks	**72,086**	lbs	1.20	86,503		
	Misc. angles	**240,286**	sf	0.50	120,143		
	Miscellaneous						
	Fire proofing to columns and beams	**240,286**	sf	2.25	540,644		
	Intumescent paint	**1**	ls	25,000.00	25,000		
	Fire stopping floors	**240,286**	sf	1.00	240,286		
	SUBTOTAL					10,615,447	
B1020	**ROOF CONSTRUCTION**						
	Roof Structure - Steel:						
	Steel beams and columns to new addition; 14#/SF	**1,084**	tns	3,800.00	4,119,200		
	Premium for HSS	**271**	tns	300.00	81,300		
	Exposed steel	**1**	ls	50,000.00	50,000		
	Roof Structure						
	Acoustic deck allowance	**8,000**	sf	7.00	56,000		
	3" 20 Ga. galvanized Metal Roof Deck	**138,464**	sf	4.00	553,856		
	Miscellaneous						
	Concrete under RTU's	**15,000**	sf	8.00	120,000		
	Fire proofing to columns, beams and deck	**138,464**	sf	3.00	415,392		
	SUBTOTAL					5,395,748	
	TOTAL - SUPERSTRUCTURE						**$16,011,195**
B20	***EXTERIOR CLOSURE***						
B2010	**EXTERIOR WALLS**						
	Exterior Wall Area - Solid Assume 70%	*120,257*	sf				
042000	*MASONRY*						
	Brick veneer, 3 color; 75% of solid area	**90,193**	sf	40.00	3,607,720		
	Staging to exterior wall	**120,257**	sf	4.00	481,028		
055000	*MISC. METALS*						
	Stainless steel sign at main entrance	**1**	ls	15,000.00	15,000		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Air barrier	**120,257**	sf	6.50	781,671		
	Air barrier/flashing at windows	**30,317**	lf	6.25	189,481		
	Miscellaneous sealants to closure	**120,257**	sf	1.00	120,257		
072100	*THERMAL INSULATION*						
	Insulation	**120,257**	sf	2.25	270,578		

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Belmont High School 12-Feb-18
Design Options - GRADES 7-12
Belmont, MA

PSR Estimate GFA 386,750

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 2.3 NEW ADDITION							
076400	*CLADDING*						
	Metal panel; 25% of solid area	**30,064**	sf	75.00	2,254,800		
092900	*GYPSUM BOARD ASSEMBLIES*						
	6" metal stud backup	**120,257**	sf	11.00	1,322,827		
	Gypsum Sheathing	**120,257**	sf	2.75	330,707		
	Drywall lining to interior face of stud backup	**120,257**	sf	3.30	396,848		
	SUBTOTAL					9,770,917	
B2020	**WINDOWS**						
	Exterior Wall Area - Glazed Assume 30%	*51,539*	sf				
061000	*ROUGH CARPENTRY*						
	Wood blocking at openings	**30,317**	lf	14.00	424,438		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Backer rod & double sealant	**30,317**	lf	8.50	257,695		
080001	*METAL WINDOWS*						
	Windows, double glazed; 20% of glazed area	**10,308**	sf	90.00	927,720		
	Curtainwall, double glazed; 80% of glazed area	**41,231**	sf	120.00	4,947,720		
	Sunshades; horizontal	**1**	ls	75,000.00	75,000		
089000	*LOUVERS*						
	Louvers	**250**	sf	65.00	16,250		
	SUBTOTAL					6,648,823	
B2030	**EXTERIOR DOORS**						
	Glazed entrance doors including frame and hardware; double door	**8**	pr	8,000.00	64,000		
	HM doors, frames and hardware- Double	**4**	pr	2,000.00	8,000		
	Backer rod & double sealant	**240**	lf	4.00	960		
	Wood blocking at openings	**240**	lf	3.00	720		
	SUBTOTAL					73,680	
	TOTAL - EXTERIOR CLOSURE						**$16,493,420**
B30	***ROOFING***						
B3010	**ROOF COVERINGS**						
	New roofing complete	**146,464**	sf	20.00	2,929,280		
	Roof equipment screen	**1**	ls	350,000	350,000		
	Green roof	**15,000**	sf	35.00	525,000		
	Roof soffits	**1**	ls	2,000,000	2,000,000		
	SUBTOTAL					5,804,280	
B3020	**ROOF OPENINGS**						
	Skylights, allow	**1**	ls	750,000.00	750,000		
	Roof hatch	**1**	loc	2,500.00	2,500		
	SUBTOTAL					752,500	
	TOTAL - ROOFING						**$6,556,780**
C10	***INTERIOR CONSTRUCTION***						
C1010	**PARTITIONS**						

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PSR Estimate

GFA 386,750

	CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 2.3 NEW ADDITION							
169		Miscellaneous partitions/glazed partitions/borrowed lights/blocking etc.	**386,750**	gsf	22.00	8,508,500		
170		SUBTOTAL					8,508,500	
171								
172	**C1020**	**INTERIOR DOORS**						
173		Interior doors, frames and hardware	**386,750**	gsf	5.00	1,933,750		
174		SUBTOTAL					1,933,750	
175								
176	**C1030**	**SPECIALTIES / MILLWORK**						
177		Toilet Partitions and accessories	**386,750**	gsf	0.80	309,400		
178		Backer panels in electrical closets	**1**	ls	1,000.00	1,000		
179		Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	**386,750**	sf	1.00	386,750		
180		Room Signs	**386,750**	gsf	0.40	154,700		
181		Fire extinguisher cabinets	**129**	ea	350.00	45,150		
182		Lockers	**386,750**	gsf	1.60	618,800		
183		Janitors Work Shop Accessories	**1**	ls	1,500.00	1,500		
184		Janitors Closet Accessories	**3**	rms	300.00	900		
185		*Media*						
186		Reception desks	**4**	loc	25,000	100,000		
187		Railings to open to below areas	**1**	ls	100,000	100,000		
188		Library shelving at perimeters 7' Tall				F,F & E		
189		Library shelving at perimeters 3' Tall				F,F & E		
190		Miscellaneous wood trim	**386,750**	gsf	0.50	193,375		
191		Display cases	**386,750**	gsf	0.25	96,688		
192		Miscellaneous metals throughout building	**386,750**	sf	1.50	580,125		
193		Miscellaneous sealants throughout building	**386,750**	sf	1.25	483,438		
194		SUBTOTAL					3,071,826	
195								
196		***TOTAL - INTERIOR CONSTRUCTION***						**$13,514,076**
197								
198								
199	***C20***	***STAIRCASES***						
200								
201	**C2010**	**STAIR CONSTRUCTION**						
202		Metal pan stair; egress stair	**12**	flt	25,000.00	300,000		
203		Main staircase	**1**	flt	250,000.00	250,000		
204		Commons steps	**2**	loc	5,000.00	10,000		
205		Concrete fill to stairs	**12**	flt	2,000.00	24,000		
206		SUBTOTAL					584,000	
207								
208	**C2020**	**STAIR FINISHES**						
209		High performance coating to stairs including all railings etc.	**12**	flt	3,000.00	36,000		
210		Rubber tile at stairs - landings	**1,200**	sf	10.00	12,000		
211		Rubber tile at stairs - treads & risers	**1,440**	lft	19.06	27,446		
212		SUBTOTAL					75,446	
213								
214		***TOTAL - STAIRCASES***						**$659,446**
215								
216								
217	***C30***	***INTERIOR FINISHES***						
218								
219	**C3010**	**WALL FINISHES**						
220		Wall finishes	**386,750**	sf	6.00	2,320,500		
221		SUBTOTAL					2,320,500	
222								
223	**C3020**	**FLOOR FINISHES**						
224		Floor finishes	**386,750**	sf	11.00	4,254,250		
225		SUBTOTAL					4,254,250	

3.3.3 - FINAL EVALUATION OF ALTERNATIVES

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 2.3 NEW ADDITION							
C3030	**CEILING FINISHES**						
	Ceiling finishes	**386,750**	sf	10.00	3,867,500		
	SUBTOTAL					3,867,500	
	TOTAL - INTERIOR FINISHES						**$10,442,250**
D10	***CONVEYING SYSTEMS***						
D1010	**ELEVATOR**						
	New four stop elevator	**2**	ea	180,000.00	360,000		
	SUBTOTAL					360,000	
	TOTAL - CONVEYING SYSTEMS						**$360,000**
D20	***PLUMBING***						
D20	**PLUMBING, GENERALLY**						
	Plumbing allowance	**386,750**	gsf	12.00	4,641,000		
	SUBTOTAL					4,641,000	
	TOTAL - PLUMBING						**$4,641,000**
D30	***HVAC***						
D30	**HVAC, GENERALLY**						
	HVAC allowance for Geothermal wells; based 400 wells each 400 ft deep	**1**	ls	4,000,000.00	4,000,000		
	HVAC allowance	**386,750**	gsf	45.00	17,403,750		
	SUBTOTAL					21,403,750	
	TOTAL - HVAC						**$21,403,750**
D40	***FIRE PROTECTION***						
D40	**FIRE PROTECTION, GENERALLY**						
	Fire pump	**1**	ls	100,000.00	100,000		
	Fire protection system	**386,750**	gsf	4.70	1,817,725		
	SUBTOTAL					1,917,725	
	TOTAL - FIRE PROTECTION						**$1,917,725**
D50	***ELECTRICAL***						
D5010	**ELECTRICAL WORK**						
	Allowance for PV systems	**1**	ls	4,000,000.00	4,000,000		
	Complete electrical systems	**386,750**	gsf	34.00	13,149,500		
	SUBTOTAL					17,149,500	
	TOTAL - ELECTRICAL						**$17,149,500**
E10	***EQUIPMENT***						
E10	**EQUIPMENT, GENERALLY**						
	Theatrical Equipment Stage curtains, rigging and controls (Auditorium & Lecture Hall)	**1**	ls	350,000.00	350,000		

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	CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
		OPTION 2.3 NEW ADDITION						
287		Theatrical AV allowance (Auditorium & Lecture Hall)	**1**	ls	200,000.00	200,000		
288		Kitchen equipment	**1**	ls	550,000.00	550,000		
289		Fume hoods	**9**	ea	15,000.00	135,000		
290		Kiln	**1**	ea	5,000.00	5,000		
291		Allowance for new manual operable partitions in Cafeteria & Classrooms	**356**	lf	700.00	249,200		
292		Allowance for miscellaneous equipment; projection screens, residential appliances, loading dock equipment, wood workshop etc	**1**	ls	150,000.00	150,000		
293		Loading dock equipment	**1**	ls	20,000.00	20,000		
294		Electrically operated projection screens	**1**	loc	15,000.00	15,000		
295		SUBTOTAL					1,674,200	
296								
297		***TOTAL - EQUIPMENT***						**$1,674,200**
298								
299								
300	***E20***	***FURNISHINGS***						
301								
302	**E2010**	**FIXED FURNISHINGS**						
303		Entry mats & frames - recessed with carpet/rubber strips	**500**	sf	55.00	27,500		
304		Window blinds	**51,539**	sf	7.00	360,773		
305		Auditorium seats	**600**	seat	350.00	210,000		
306		Lecture hall seats	**150**	seat	250.00	37,500		
307		Counters, base cabinets, tall storage in classrooms and other rooms	**386,750**	gsf	10.00	3,867,500		
308		SUBTOTAL					4,503,273	
309								
310	**E2020**	**MOVABLE FURNISHINGS**						
311		All movable furnishings to be provided and installed by owner						
312		SUBTOTAL					NIC	
313								
314		***TOTAL - FURNISHINGS***						**$4,503,273**
315								
316								
317	***F10***	***SPECIAL CONSTRUCTION***						
318								
319	**F10**	**SPECIAL CONSTRUCTION**						
320		No items in this section						
321		SUBTOTAL						
322								
323		***TOTAL - SPECIAL CONSTRUCTION***						
324								
325								
326	***F20***	***SELECTIVE BUILDING DEMOLITION***						
327								
328	**F2010**	**BUILDING ELEMENTS DEMOLITION**						
329		Demolition to make connection to existing building	**1**	ls	100,000.00	100,000		
330		SUBTOTAL					$100,000	
331								
332	**F2020**	**HAZARDOUS COMPONENTS ABATEMENT**						
333		See main summary for HazMat allowance				See Summary		
334		SUBTOTAL						
335								
336		***TOTAL - SELECTIVE BUILDING DEMOLITION***						**$100,000**

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PSR Estimate

SITEWORK OPTION 2.3

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	G SITEWORK						
G10	**SITE PREPARATION & DEMOLITION**						
	Site construction fence/barricades	**8,200**	lf	12.00	98,400		
	Site construction fence gates/entrance	**2**	ea	15,000.00	30,000		
	Pavement/curbing removal, crush and re-use for sub-base	**200,000**	sf	1.00	200,000		
	Walkways	**1**	ls	30,000.00	30,000		
	Miscellaneous demolition	**1**	ls	150,000.00	150,000		
	Site Earthwork						
	Strip Topsoil and remove; 6" thick	**19,889**	cy	12.00	238,668		
	Fine grading	**1,000,000**	sf	0.20	200,000		
	Cut and Fill; assumed AV 2ft; balanced site	**74,074**	cy	8.00	592,592		
	Silt fence/erosion control, wash bays, stock piles	**8,200**	lf	12.00	98,400		
	Silt fence maintenance and monitoring	**1**	ls	60,000.00	60,000		
	Hazardous Waste Remediation						
	Dispose/treat contaminated soils				NIC		
	SUBTOTAL					1,698,060	
G20	**SITE IMPROVEMENTS**						
	Asphalt Paving; parking lot and roadway	*370,000*					
	gravel base; 12" thick	**13,704**	cy	40.00	548,160		
	asphalt; 4" thick	**41,111**	sy	25.00	1,027,775		
	VGC	**7,286**	lf	38.00	276,868		
	Road markings/signage	**1**	ls	30,000.00	30,000		
	Pedestrian Paving						
	Concrete paving						
	gravel base; 8" thick	**744**	cy	35.00	26,040		
	4" concrete paving	**30,000**	sf	7.00	210,000		
	Concrete pavers						
	Concrete pavers						
	sand bedding; 1" thick	**133**	cy	40.00	5,320		
	Precast concrete pavers	**45,000**	sf	16.00	720,000		
	gravel base; 8" thick	**1,117**	cy	35.00	39,095		
	concrete base; 4" thick	**45,000**	sf	5.00	225,000		
	Site Improvements						
	Flag pole 50' high	**1**	ea	6,500.00	6,500		
	Concrete retaining walls				Assumed not required		
	6' chain-link fence	**8,200**	lf	50.00	410,000		
	Double gates	**1**	ea	2,500.00	2,500		
	Wood screen privacy fence 8'	**50**	lf	100.00	5,000		
	Double gates	**1**	ea	2,500.00	2,500		
	Benches	**15**	ea	2,800.00	42,000		
	Bike racks	**1**	ls	30,000.00	30,000		
	Ornamental trash/recycling receptacles	**10**	ea	800.00	8,000		
	Monumental signage	**1**	ls	40,000.00	40,000		
	Way finding signage	**1**	ls	60,000.00	60,000		
	Other site improvements; walls, fences etc.	**1**	ls	1,500,000	1,500,000		
	Multi-purpose fields						
	Crushed stone - 12" thick	**19,074**	cy	40.00	762,960		
	Sports seeding	**515,000**	sf	0.50	257,500		
	Line markings - Allowance	**1**	ls	15,000.00	15,000		
	Football goals	**2**	loc	3,000.00	6,000		
	Soccer goals (movable) - Allowance	**3**	loc	10,000.00	30,000		
	20' sports netting	**1**	ls	50,000.00	50,000		
	Baseball/softball backstop	**3**	loc	40,000.00	120,000		
	SUBTOTAL					6,456,218	
	Landscaping						
	Topsoil -modify existing topsoil	**19,889**	cy	26.00	517,114		
	Lawn - loam & seed	**485,000**	sf	0.25	121,250		
	Planting allowance	**1**	ls	300,000.00	300,000		

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PSR Estimate

	CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	SITEWORK OPTION 2.3							
63		Irrigation at sports fields	**515,000**	sf	1.00	515,000		
64		Allowance for new well	**1**	ls	150,000.00	150,000		
65		SUBTOTAL					1,603,364	
66								
67	**G30**	**CIVIL MECHANICAL UTILITIES**						
68		Utilities - Enabling						
69		Allowance for temporary utilities etc.	**1**	ls	150,000.00	150,000		
70		Water supply; Pricing includes E&B and bedding						
71		New DI piping; 8"	**200**	lf	100.00	20,000		
72		New DI piping; 8" Fire	**4,300**	lf	100.00	430,000		
73		Connect to existing	**1**	loc	10,000.00	10,000		
74		FD connection	**1**	ea	2,000.00	2,000		
75		Gate valves	**8**	ea	750.00	6,000		
76		Fire hydrant	**14**	ea	5,000.00	70,000		
77		Fire hydrant; relocate existing	**1**	ea	3,500.00	3,500		
78		Sanitary; Pricing includes E&B and bedding						
79		Manholes	**4**	ea	4,000.00	16,000		
80		Grease trap	**1**	ea	15,000.00	15,000		
81		8" PVC	**300**	lf	60.00	18,000		
82		Connect to existing drain	**1**	ea	3,000.00	3,000		
83		Relocate existing sewer system	**1**	ls	250,000.00	250,000		
84		Storm water; Pricing includes E&B and bedding						
85		Allowance to modify existing drainage systems	**370,000**	sf	7.00	2,590,000		
86		Perforated pipe @ recharge systems and crushed stone base under fields	**515,000**	sf	4.00	NR		
87		Gas service						
88		E&B trench for new gas pipe - install by plumbing	**250**	lf	25.00	6,250		
89		SUBTOTAL					3,589,750	
90								
91	**G40**	**ELECTRICAL UTILITIES**						
92								
93		Power						
94		Utility co. backcharges, allow	**1**	ls	30,000.00	30,000		
95		Connections at existing manhole				Utility co.		
96		Manhole	**1**	ls	8,500.00	8,500		
97		Connections in manhole	**1**	ls	3,500.00	3,500		
98		Primary ductbank 2-5" ductbank, empty, allow	**1700**	lf	120.00	204,000		
99		Transformer by utility company				By Utility Co.		
100		Transformer pad	**1**	ea	2,500.00	2,500		
101		Secondary service	**60**	lf	1,100.00	66,000		
102		Communications						
103		Connection at riser pole, allow	**1**	ea	1,500.00	1,500		
104		Telecom ductbank 4-4", allow	**1700**	lf	152.00	258,400		
105		Site Lighting						
106		Varsity baseball sports lighting (allow)	**1**	ls	120,000.00	120,000		
107		Softball sports lighting (allow)	**1**	ls	90,000.00	90,000		
108		Site Parking lighting (allow)	**1**	ls	350,000.00	350,000		
109		SUBTOTAL					1,134,400	
110								
111		**TOTAL - SITE DEVELOPMENT**						***$14,481,792***

3.3.3 - FINAL EVALUATION OF ALTERNATIVES

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Belmont High School
Design Options - GRADES 7-12
Belmont, MA

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PSR Estimate

GFA 62,300

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 2.4 RENOVATION						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$35,000			
	A1020	Special Foundations	$0			
	A1030	Lowest Floor Construction	$75,000	**$110,000**	$1.77	0.8%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$0			
	B1020	Roof Construction	$50,000	**$50,000**	$0.80	0.4%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$1,083,000			
	B2020	Windows/Curtainwall	$589,164			
	B2030	Exterior Doors	$58,796	**$1,730,960**	$27.78	12.8%
B30	**ROOFING**					
	B3010	Roof Coverings	$1,447,600			
	B3020	Roof Openings	$10,000	**$1,457,600**	$23.40	10.8%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$560,700			
	C1020	Interior Doors	$186,900			
	C1030	Specialties/Millwork	$379,615	**$1,127,215**	$18.09	8.3%
C20	**STAIRCASES**					
	C2010	Stair Construction	$0			
	C2020	Stair Finishes	$0	**$0**	$0.00	0.0%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$373,800			
	C3020	Floor Finishes	$685,300			
	C3030	Ceiling Finishes	$498,400	**$1,557,500**	$25.00	11.5%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$0	**$0**	$0.00	0.0%
D20	**PLUMBING**					
	D20	Plumbing	$747,600	**$747,600**	$12.00	5.5%
D30	**HVAC**					
	D30	HVAC	$2,803,500	**$2,803,500**	$45.00	20.7%
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$292,810	**$292,810**	$4.70	2.2%
D50	**ELECTRICAL**					
	D5010	Electrical Systems	$2,118,200	**$2,118,200**	$34.00	15.6%
E10	**EQUIPMENT**					
	E10	Equipment	$276,040	**$276,040**	$4.43	2.0%

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CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 2.4 RENOVATION						
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$62,300			
	E2020	Movable Furnishings	NIC	**$62,300**	$1.00	0.5%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$750,000	**$750,000**	$12.04	5.5%
F20	**SELECTIVE BUILDING DEMOLITION**					
	F2010	Building Elements Demolition	$455,688			
	F2020	Hazardous Components Abatement	$0	**$455,688**	$7.31	3.4%
TOTAL DIRECT COST (Trade Costs)				***$13,539,413***	*$217.33*	*100.0%*

3.3.3 - FINAL EVALUATION OF ALTERNATIVES

G. COST ESTIMATE / Design Team

PM&C

Belmont High School 12-Feb-18
Design Options - GRADES 7-12
Belmont, MA

PSR Estimate **GFA** 62,300

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 2.4 RENOVATION						
	GROSS FLOOR AREA CALCULATION						
	First Floor				51,700		
	Second Floor				10,600		
	TOTAL GROSS FLOOR AREA (GFA)				**62,300** ***sf***		
	A10 FOUNDATIONS						
	A1010 STANDARD FOUNDATIONS						
	Repair cracks and resurface exposed concrete foundations	**1**	ls	35,000	35,000		
	SUBTOTAL					35,000	
	A1020 SPECIAL FOUNDATIONS						
	No work in this section						
	SUBTOTAL						
	A1030 LOWEST FLOOR CONSTRUCTION						
	Cutting and patching for MEP	**1**	ls	15,000.00	15,000		
	New slab at bathrooms and shower areas	**3,000**	sf	20.00	60,000		
	SUBTOTAL					75,000	
	TOTAL - FOUNDATIONS						**$110,000**
	B10 SUPERSTRUCTURE						
	B1010 FLOOR CONSTRUCTION						
	SUBTOTAL					-	
	B1020 ROOF CONSTRUCTION						
	Support framing for new MEP systems	**1**	ls	50,000.00	50,000		
	SUBTOTAL					50,000	
	TOTAL - SUPERSTRUCTURE						**$50,000**
	B20 EXTERIOR CLOSURE						
	B2010 EXTERIOR WALLS	*25,200*	*sf*				
	Repair and repoint exterior walls- brick; assume 100%	**25,200**	sf	32.00	806,400		
	Repairs to precast concrete panels, fins and banding	**1**	ls	75,000.00	75,000		
	Clean all exterior walls; includes staging	**25,200**	sf	8.00	201,600		
	SUBTOTAL					1,083,000	
	B2020 WINDOWS/CURTAINWALL						
	Replace existing translucent panels	**6,798**	sf	80.00	543,840		
	Backer rod & double sealant	**3,777**	lf	9.00	33,993		
	Wood blocking at openings	**3,777**	lf	3.00	11,331		
	SUBTOTAL					589,164	
	B2030 EXTERIOR DOORS						
	Replace exterior single door	**3**	ea	2,100.00	6,300		
	Replace exterior double door	**4**	pr	4,000.00	16,000		
	Replace overhead doors; 8'x8'	**2**	ea	7,040.00	14,080		
	Replace overhead doors; 12'x15'	**1**	ea	19,800.00	19,800		
	Backer rod & double sealant	**218**	lf	9.00	1,962		

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Belmont High School 12-Feb-18
Design Options - GRADES 7-12
Belmont, MA

PSR Estimate **GFA** 62,300

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 2.4 RENOVATION						
58	Wood blocking at openings	**218**	lf	3.00	654		
59	SUBTOTAL					58,796	
60							
61	***TOTAL - EXTERIOR CLOSURE***						**$1,730,960**
62							
63							
64	***B30 ROOFING***						
65							
66	**B3010 ROOF COVERINGS**						
67	Replace existing roofing systems	**51,700**	sf	28.00	1,447,600		
68	SUBTOTAL					1,447,600	
69							
70	**B3020 ROOF OPENINGS**						
71	Replace roof ladders/hatches etc.	**1**	ls	10,000.00	10,000		
72	SUBTOTAL					10,000	
73							
74	***TOTAL - ROOFING***						**$1,457,600**
75							
76							
77	***C10 INTERIOR CONSTRUCTION***						
78							
79	**C1010 PARTITIONS**						
80	Allowance to modify existing walls and add new walls	**62,300**	gsf	6.00	373,800		
81	Seismic upgrades	**62,300**	gsf	3.00	186,900		
82	SUBTOTAL					560,700	
83							
84	**C1020 INTERIOR DOORS**						
85	Adjust door openings, install new door frame to meet code requirements (door carried below)	**62,300**	gsf	3.00	186,900		
86	SUBTOTAL					186,900	
87							
88	**C1030 SPECIALTIES / MILLWORK**						
89	Toilet Partitions and accessories	**62,300**	gsf	0.80	49,840		
90	New markerboards/tackboards	**62,300**	gsf	1.00	62,300		
91	Replace athletic lockers - allowance	**1**	ls	25,000.00	25,000		
92	New guardrail at Fieldhouse bleachers	**150**	lf	200.00	30,000		
93	Allowance for miscellaneous specialties; wall protection, fire extinguishers etc	**1**	ls	10,000.00	10,000		
94							
95	*055000 MISCELLANEOUS METALS*						
96	Miscellaneous metals throughout building	**62,300**	sf	1.50	93,450		
97							
98	*061000 ROUGH CARPENTRY*						
99	Rough blocking	**62,300**	sf	0.15	9,345		
100							
101	*070001 WATERPROOFING, DAMPPROOFING AND CAULKING*						
102	Miscellaneous sealants throughout building	**62,300**	sf	1.25	77,875		
103							
104	*101400 SIGNAGE*						
105	Code compliant signage	**62,300**	sf	0.35	21,805		
106	SUBTOTAL					379,615	
107							
108	***TOTAL - INTERIOR CONSTRUCTION***						**$1,127,215**
109							
110							
111	***C20 STAIRCASES***						
112							
113	**C2010 STAIR CONSTRUCTION**						
114	SUBTOTAL					-	
115							

PM&C

Belmont High School 12-Feb-18
Design Options - GRADES 7-12
Belmont, MA

PSR Estimate **GFA** 62,300

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 2.4 RENOVATION						
	C2020 STAIR FINISHES						
	SUBTOTAL					-	
	TOTAL - STAIRCASES						
	C30 INTERIOR FINISHES						
	C3010 WALL FINISHES						
	Allowance for wall finishes	**62,300**	gsf	6.00	373,800		
	SUBTOTAL					373,800	
	C3020 FLOOR FINISHES						
	Allowance for floor finishes	**62,300**	gsf	11.00	685,300		
	SUBTOTAL					685,300	
	C3030 CEILING FINISHES						
	Allowance for ceiling finishes	**62,300**	gsf	8.00	498,400		
	SUBTOTAL					498,400	
	TOTAL - INTERIOR FINISHES						**$1,557,500**
	D10 CONVEYING SYSTEMS						
	SUBTOTAL					-	
	TOTAL - CONVEYING SYSTEMS						
	D20 PLUMBING						
	D20 PLUMBING, GENERALLY						
	Plumbing allowance	**62,300**	gsf	12.00	747,600		
	SUBTOTAL					747,600	
	TOTAL - PLUMBING						**$747,600**
	D30 HVAC						
	D30 HVAC, GENERALLY						
	HVAC allowance	**62,300**	gsf	45.00	2,803,500		
	SUBTOTAL					2,803,500	
	TOTAL - HVAC						**$2,803,500**
	D40 FIRE PROTECTION						
	D40 FIRE PROTECTION, GENERALLY						
	New fire protection system	**62,300**	sf	4.70	292,810		
	SUBTOTAL					292,810	
	TOTAL - FIRE PROTECTION						**$292,810**
	D50 ELECTRICAL						
	D5010 ELECTRICAL WORK						
	Complete electrical systems	**62,300**	gsf	34.00	2,118,200		
	SUBTOTAL					2,118,200	

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Belmont High School 12-Feb-18
Design Options - GRADES 7-12
Belmont, MA

PSR Estimate **GFA** 62,300

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 2.4 RENOVATION						
180	***TOTAL - ELECTRICAL***						**$2,118,200**
181							
182							
183	***E10 EQUIPMENT***						
184							
185	**E10 EQUIPMENT, GENERALLY**						
186	Gym wall pads	**1**	ls	20,000.00	20,000		
187	Basketball backstops; swing up; electric operated	**6**	loc	10,000.00	60,000		
188	Gymnasium dividing net; electrically operated; 60 lf	**1**	ea	30,000.00	30,000		
189	Volleyball net and standards	**1**	ls	5,000.00	5,000		
190	Score boards in Gym & Fieldhouse	**2**	loc	15,000.00	30,000		
191	Telescoping bleachers, electronic retracting (1008 seats)	**1**	ls	131,040.00	131,040		
192	SUBTOTAL					276,040	
193							
194	***TOTAL - EQUIPMENT***						**$276,040**
195							
196							
197	***E20 FURNISHINGS***						
198							
199	**E2010 FIXED FURNISHINGS**						
200							
201	*123553 CASEWORK*						
202	Allowance for new casework throughout	**62,300**	gsf	1.00	62,300		
203	SUBTOTAL					62,300	
204							
205	**E2020 MOVABLE FURNISHINGS**						
206	All movable furnishings to be provided and installed by owner						
207	SUBTOTAL					NIC	
208							
209	***TOTAL - FURNISHINGS***						**$62,300**
210							
211							
212	***F10 SPECIAL CONSTRUCTION***						
213							
214	**F10 SPECIAL CONSTRUCTION**						
215	Pool upgrades	**1**	ls	750,000.00	750,000		
216	SUBTOTAL					750,000	
217							
218	***TOTAL - SPECIAL CONSTRUCTION***						**$750,000**
219							
220							
221	***F20 SELECTIVE BUILDING DEMOLITION***						
222							
223	**F2010 BUILDING ELEMENTS DEMOLITION**						
224	Remove exterior glazing	**6,798**	sf	6.00	40,788		
225	Remove roofing	**51,700**	sf	2.00	103,400		
226	Interior demolition	**62,300**	gsf	4.00	249,200		
227	Temporary enclosures/protection	**62,300**	sf	1.00	62,300		
228	SUBTOTAL					455,688	
229							
230	**F2020 HAZARDOUS COMPONENTS ABATEMENT**						
231	See summary						
232	SUBTOTAL						
233							
234	***TOTAL - SELECTIVE BUILDING DEMOLITION***						**$455,688**
235							

3.3.3 - FINAL EVALUATION OF ALTERNATIVES

G. COST ESTIMATE / Design Team

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Belmont High School 12-Feb-18
Design Options - GRADES 7-12
Belmont, MA

PSR Estimate GFA 389,500

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 2.4 NEW ADDITION						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$2,129,300			
	A1020	Special Foundations	$7,500,375			
	A1030	Lowest Floor Construction	$2,785,595	**$12,415,270**	$31.87	9.5%
A20	**BASEMENT CONSTRUCTION**					
	A2010	Basement Excavation	$0			
	A2020	Basement Walls	$0	**$0**	$0.00	0.0%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$11,936,356			
	B1020	Roof Construction	$5,240,800	**$17,177,156**	$44.10	13.2%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$10,544,059			
	B2020	Windows	$7,343,438			
	B2030	Exterior Doors	$73,680	**$17,961,177**	$46.11	13.8%
B30	**ROOFING**					
	B3010	Roof Coverings	$5,261,000			
	B3020	Roof Openings	$752,500	**$6,013,500**	$15.44	4.6%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$8,569,000			
	C1020	Interior Doors	$1,947,500			
	C1030	Specialties/Millwork	$3,092,250	**$13,608,750**	$34.94	10.4%
C20	**STAIRCASES**					
	C2010	Stair Construction	$584,000			
	C2020	Stair Finishes	$75,446	**$659,446**	$1.69	0.5%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$2,337,000			
	C3020	Floor Finishes	$4,284,500			
	C3030	Ceiling Finishes	$3,895,000	**$10,516,500**	$27.00	8.1%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$360,000	**$360,000**	$0.92	0.3%
D20	**PLUMBING**					
	D20	Plumbing	$4,674,000	**$4,674,000**	$12.00	3.6%
D30	**HVAC**					
	D30	HVAC	$21,527,500	**$21,527,500**	$55.27	16.5%
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$1,930,650	**$1,930,650**	$4.96	1.5%
D50	**ELECTRICAL**					

G. COST ESTIMATE / Design Team

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Belmont High School
Design Options - GRADES 7-12
Belmont, MA

12-Feb-18

PSR Estimate

GFA 389,500

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 2.4 NEW ADDITION						
	D5010	Complete System	$17,243,000	**$17,243,000**	$44.27	13.2%
E10	**EQUIPMENT**					
	E10	Equipment	$1,674,200	**$1,674,200**	$4.30	1.3%
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$4,559,361			
	E2020	Movable Furnishings	NIC	**$4,559,361**	$11.71	3.5%
F10	**SPECIAL CONSTRUCTION**					
	F10	Special Construction	$0	**$0**	$0.00	0.0%
F20	**HAZMAT REMOVALS**					
	F2010	Building Elements Demolition	$25,000			
	F2020	Hazardous Components Abatement	$0	**$25,000**	$0.06	0.0%
TOTAL DIRECT COST (Trade Costs)				***$130,345,510***	*$334.65*	*100.0%*

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Belmont High School 12-Feb-18
Design Options - GRADES 7-12
Belmont, MA

PSR Estimate GFA 389,500

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 2.4 NEW ADDITION							
	GROSS FLOOR AREA CALCULATION						
	Ground Floor			119,300			
	First Floor			95,500			
	Second Floor			91,800			
	Third Floor			82,900			
	TOTAL GROSS FLOOR AREA (GFA)				**389,500** ***sf***		
A10	***FOUNDATIONS***						
A1010	**STANDARD FOUNDATIONS**						
	Grade beams; 5ft x 12"	**371**	cy	700.00	259,700		
	Grade tie beams; 5ft x 12"	**446**	cy	700.00	312,200		
	Pile caps	**1,052**	cy	800.00	841,600		
	Allowance for misc. pile caps, grade beams etc. including E+B	**119,300**	sf	6.00	715,800		
	SUBTOTAL					2,129,300	
A1020	**SPECIAL FOUNDATIONS**						
	Driven piles mobilization and testing	**1**	ls	150,000.00	150,000		
	Steel piles	**86,475**	vlf	85.00	7,350,375		
	SUBTOTAL					7,500,375	
A1030	**LOWEST FLOOR CONSTRUCTION**						
	New Structural Slab, 12" thick	*119,300*	*sf*		-		
	Ordinary Fill, 6"	**2,209**	cy	16.00	35,344		
	Crushed stone, 6"	**2,209**	cy	35.00	77,315		
	Rigid insulation; 40 psi	**119,300**	sf	2.15	256,495		
	Vapor barrier	**119,300**	sf	0.80	95,440		
	Compact existing sub-grade	**119,300**	sf	0.55	65,615		
	Formwork	**778**	lf	12.00	9,336		
	Rebar, 6#/SF	**715,800**	lbs	1.20	858,960		
	Concrete - 12" thick; 4,000 psi	**4,639**	cy	120.00	556,680		
	Placing concrete	**4,639**	cy	90.00	417,510		
	Finishing and curing concrete	**119,300**	sf	3.00	357,900		
	Miscellaneous						
	Patch slab at foundations in existing building				W/Reno		
	New Elevator pit				W/Reno		
	New loading dock	**1**	ls	40,000.00	40,000		
	Equipment pads	**1**	ls	15,000.00	15,000		
	SUBTOTAL					2,785,595	
	TOTAL - FOUNDATIONS						**$12,415,270**
A20	***BASEMENT CONSTRUCTION***						
A2010	**BASEMENT EXCAVATION**						
	No Work in this section						
	SUBTOTAL					-	
A2020	**BASEMENT WALLS**						
	No Work in this section						
	SUBTOTAL					-	

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Belmont High School
Design Options - GRADES 7-12
Belmont, MA

12-Feb-18

PSR Estimate

GFA 389,500

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 2.4 NEW ADDITION							
	TOTAL - BASEMENT CONSTRUCTION						
B10	***SUPERSTRUCTURE***						
		14.70	lbs/sf		-		
B1010	**FLOOR CONSTRUCTION**	2,862	tns		-		
	Floor Structure - Steel:						
	Steel beams and columns to new addition; 15#/SF	**2,027**	tns	3,800.00	7,702,600		
	Premium for HSS	**507**	tns	300.00	152,100		
	Shear studs	**54,040**	ea	2.50	135,100		
	Floor Structure						
	2" 18 Ga. Metal galvanized floor Deck	**270,200**	sf	3.75	1,013,250		
	WWF reinforcement	**310,730**	sf	0.80	248,584		
	Concrete Fill to metal deck; 6" Light Weight	**6,305**	cy	160.00	1,008,800		
	Place and finish concrete	**270,200**	sf	2.00	540,400		
	Rebar to decks	**81,060**	lbs	1.20	97,272		
	Misc. angles	**270,200**	sf	0.50	135,100		
	Miscellaneous						
	Fire proofing to columns and beams	**270,200**	sf	2.25	607,950		
	Intumescent paint	**1**	ls	25,000.00	25,000		
	Fire stopping floors	**270,200**	sf	1.00	270,200		
	SUBTOTAL					11,936,356	
B1020	**ROOF CONSTRUCTION**						
	Roof Structure - Steel:						
	Steel beams and columns to new addition; 14#/SF	**835**	tns	3,800.00	3,173,000		
	Premium for HSS	**209**	tns	300.00	62,700		
	Exposed steel	**1**	ls	50,000.00	50,000		
	Roof Structure						
	Acoustic deck allowance	**8,000**	sf	7.00	56,000		
	3" 20 Ga. galvanized Metal Roof Deck	**111,300**	sf	4.00	445,200		
	Miscellaneous						
	Premium for overhangs	**1**	ls	1,000,000	1,000,000		
	Concrete under RTU's	**15,000**	sf	8.00	120,000		
	Fire proofing to columns, beams and deck	**111,300**	sf	3.00	333,900		
	SUBTOTAL					5,240,800	
	TOTAL - SUPERSTRUCTURE						**$17,177,156**
B20	***EXTERIOR CLOSURE***						
B2010	**EXTERIOR WALLS**						
	Exterior Wall Area - Solid Assume 70%	*129,787*	sf				
042000	*MASONRY*						
	Brick veneer, 3 color; 75% of solid area	**97,340**	sf	40.00	3,893,600		
	Staging to exterior wall	**129,787**	sf	4.00	519,148		
055000	*MISC. METALS*						
	Stainless steel sign at main entrance	**1**	ls	15,000.00	15,000		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						

PM&C

Belmont High School
Design Options - GRADES 7-12
Belmont, MA

12-Feb-18

PSR Estimate

GFA 389,500

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 2.4 NEW ADDITION							
	Air barrier	**129,787**	sf	6.50	843,616		
	Air barrier/flashing at windows	**32,719**	lf	6.25	204,494		
	Miscellaneous sealants to closure	**129,787**	sf	1.00	129,787		
072100	*THERMAL INSULATION*						
	Insulation	**129,787**	sf	2.25	292,021		
076400	*CLADDING*						
	Metal panel; 25% of solid area	**32,447**	sf	75.00	2,433,525		
092900	*GYPSUM BOARD ASSEMBLIES*						
	6" metal stud backup	**129,787**	sf	11.00	1,427,657		
	Gypsum Sheathing	**129,787**	sf	2.75	356,914		
	Drywall lining to interior face of stud backup	**129,787**	sf	3.30	428,297		
	SUBTOTAL					10,544,059	
B2020	**WINDOWS**						
	Exterior Wall Area - Glazed Assume 30%	*55,623*	sf				
061000	*ROUGH CARPENTRY*						
	Wood blocking at openings	**32,719**	lf	14.00	458,066		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Backer rod & double sealant	**32,719**	lf	8.50	278,112		
080001	*METAL WINDOWS*						
	Windows, double glazed; 20% of glazed area	**11,125**	sf	90.00	1,001,250		
	Curtainwall, double glazed; 80% of glazed area	**44,498**	sf	120.00	5,339,760		
	Sunshades; horizontal	**1**	ls	250,000.00	250,000		
089000	*LOUVERS*						
	Louvers	**250**	sf	65.00	16,250		
	SUBTOTAL					7,343,438	
B2030	**EXTERIOR DOORS**						
	Glazed entrance doors including frame and hardware; double door	**8**	pr	8,000.00	64,000		
	HM doors, frames and hardware- Double	**4**	pr	2,000.00	8,000		
	Backer rod & double sealant	**240**	lf	4.00	960		
	Wood blocking at openings	**240**	lf	3.00	720		
	SUBTOTAL					73,680	
	TOTAL - EXTERIOR CLOSURE						**$17,961,177**
B30	***ROOFING***						
B3010	**ROOF COVERINGS**						
	New roofing complete	**119,300**	sf	20.00	2,386,000		
	Roof equipment screen	**1**	ls	350,000.00	350,000		
	Green roof	**15,000**	sf	35.00	525,000		
	Roof soffits/canopies	**1**	ls	2,000,000	2,000,000		
	SUBTOTAL					5,261,000	
B3020	**ROOF OPENINGS**						
	Skylights, allow	**1**	ls	750,000.00	750,000		
	Roof hatch	**1**	loc	2,500.00	2,500		
	SUBTOTAL					752,500	

PM&C

Belmont High School
Design Options - GRADES 7-12
Belmont, MA

12-Feb-18

PSR Estimate

GFA 389,500

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 2.4 NEW ADDITION							
	TOTAL - ROOFING						**$6,013,500**
C10	***INTERIOR CONSTRUCTION***						
C1010	**PARTITIONS**						
	Miscellaneous partitions/glazed partitions/borrowed lights/blocking etc.	**389,500**	gsf	22.00	8,569,000		
	SUBTOTAL					8,569,000	
C1020	**INTERIOR DOORS**						
	Interior doors, frames and hardware	**389,500**	gsf	5.00	1,947,500		
	SUBTOTAL					1,947,500	
C1030	**SPECIALTIES / MILLWORK**						
	Toilet Partitions and accessories	**389,500**	gsf	0.80	311,600		
	Backer panels in electrical closets	**1**	ls	1,000.00	1,000		
	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	**389,500**	sf	1.00	389,500		
	Room Signs	**389,500**	gsf	0.40	155,800		
	Fire extinguisher cabinets	**130**	ea	350.00	45,500		
	Lockers	**389,500**	gsf	1.60	623,200		
	Janitors Work Shop Accessories	**1**	ls	1,500.00	1,500		
	Janitors Closet Accessories	**3**	rms	300.00	900		
	Media						
	Reception desks	**4**	loc	25,000	100,000		
	Railings to open to below areas	**1**	ls	100,000	100,000		
	Library shelving at perimeters 7' Tall				F,F & E		
	Library shelving at perimeters 3' Tall				F,F & E		
	Miscellaneous wood trim	**389,500**	gsf	0.50	194,750		
	Display cases	**389,500**	gsf	0.25	97,375		
	Miscellaneous metals throughout building	**389,500**	sf	1.50	584,250		
	Miscellaneous sealants throughout building	**389,500**	sf	1.25	486,875		
	SUBTOTAL					3,092,250	
	TOTAL - INTERIOR CONSTRUCTION						**$13,608,750**
C20	***STAIRCASES***						
C2010	**STAIR CONSTRUCTION**						
	Metal pan stair; egress stair	**12**	flt	25,000.00	300,000		
	Main staircase	**1**	flt	250,000.00	250,000		
	Commons steps	**2**	loc	5,000.00	10,000		
	Concrete fill to stairs	**12**	flt	2,000.00	24,000		
	SUBTOTAL					584,000	
C2020	**STAIR FINISHES**						
	High performance coating to stairs including all railings etc.	**12**	flt	3,000.00	36,000		
	Rubber tile at stairs - landings	**1,200**	sf	10.00	12,000		
	Rubber tile at stairs - treads & risers	**1,440**	lft	19.06	27,446		
	SUBTOTAL					75,446	
	TOTAL - STAIRCASES						**$659,446**
C30	***INTERIOR FINISHES***						

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PSR Estimate

GFA 389,500

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 2.4 NEW ADDITION							
C3010	**WALL FINISHES**						
	Wall finishes	**389,500**	sf	6.00	2,337,000		
	SUBTOTAL					2,337,000	
C3020	**FLOOR FINISHES**						
	Floor finishes	**389,500**	sf	11.00	4,284,500		
	SUBTOTAL					4,284,500	
C3030	**CEILING FINISHES**						
	Ceiling finishes	**389,500**	sf	10.00	3,895,000		
	SUBTOTAL					3,895,000	
	TOTAL - INTERIOR FINISHES						**$10,516,500**
D10	***CONVEYING SYSTEMS***						
D1010	**ELEVATOR**						
	New four stop elevator	**2**	ea	180,000.00	360,000		
	SUBTOTAL					360,000	
	TOTAL - CONVEYING SYSTEMS						**$360,000**
D20	***PLUMBING***						
D20	**PLUMBING, GENERALLY**						
	Plumbing allowance	**389,500**	gsf	12.00	4,674,000		
	SUBTOTAL					4,674,000	
	TOTAL - PLUMBING						**$4,674,000**
D30	***HVAC***						
D30	**HVAC, GENERALLY**						
	HVAC allowance for Geothermal wells; based 400 wells each 400 ft deep	**1**	ls	4,000,000.00	4,000,000		
	HVAC allowance	**389,500**	gsf	45.00	17,527,500		
	SUBTOTAL					21,527,500	
	TOTAL - HVAC						**$21,527,500**
D40	***FIRE PROTECTION***						
D40	**FIRE PROTECTION, GENERALLY**						
	Fire pump	**1**	ls	100,000.00	100,000		
	Fire protection system	**389,500**	gsf	4.70	1,830,650		
	SUBTOTAL					1,930,650	
	TOTAL - FIRE PROTECTION						**$1,930,650**
D50	***ELECTRICAL***						
D5010	**ELECTRICAL WORK**						
	Allowance for PV systems	**1**	ls	4,000,000.00	4,000,000		
	Complete electrical systems	**389,500**	gsf	34.00	13,243,000		
	SUBTOTAL					17,243,000	
	TOTAL - ELECTRICAL						**$17,243,000**

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 2.4 NEW ADDITION						
	E10 EQUIPMENT						
E10	**EQUIPMENT, GENERALLY**						
	Theatrical Equipment Stage curtains, rigging and controls (Auditorium & Lecture Hall)	**1**	ls	350,000.00	350,000		
	Theatrical AV allowance (Auditorium & Lecture Hall)	**1**	ls	200,000.00	200,000		
	Kitchen equipment	**1**	ls	550,000.00	550,000		
	Fume hoods	**9**	ea	15,000.00	135,000		
	Kiln	**1**	ea	5,000.00	5,000		
	Allowance for new manual operable partitions in Cafeteria & Classrooms	**356**	lf	700.00	249,200		
	Allowance for miscellaneous equipment; projection screens, residential appliances, loading dock equipment, wood workshop etc	**1**	ls	150,000.00	150,000		
	Loading dock equipment	**1**	ls	20,000.00	20,000		
	Electrically operated projection screens	**1**	loc	15,000.00	15,000		
	SUBTOTAL					1,674,200	
	TOTAL - EQUIPMENT						**$1,674,200**
	E20 FURNISHINGS						
E2010	**FIXED FURNISHINGS**						
	Entry mats & frames - recessed with carpet/rubber strips	**500**	sf	55.00	27,500		
	Window blinds	**55,623**	sf	7.00	389,361		
	Auditorium seats	**600**	seat	350.00	210,000		
	Lecture hall seats	**150**	seat	250.00	37,500		
	Counters, base cabinets, tall storage in classrooms and other rooms	**389,500**	gsf	10.00	3,895,000		
	SUBTOTAL					4,559,361	
E2020	**MOVABLE FURNISHINGS**						
	All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
	TOTAL - FURNISHINGS						**$4,559,361**
	F10 SPECIAL CONSTRUCTION						
F10	**SPECIAL CONSTRUCTION**						
	No items in this section						
	SUBTOTAL						
	TOTAL - SPECIAL CONSTRUCTION						
	F20 SELECTIVE BUILDING DEMOLITION						
F2010	**BUILDING ELEMENTS DEMOLITION**						
	Demolition to make connection to existing building	**1**	ls	25,000.00	25,000		
	SUBTOTAL					$25,000	
F2020	**HAZARDOUS COMPONENTS ABATEMENT**						
	See main summary for HazMat allowance				See Summary		
	SUBTOTAL						
	TOTAL - SELECTIVE BUILDING DEMOLITION						**$25,000**

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
SITEWORK OPTION 2.4							
	G SITEWORK						
G10	**SITE PREPARATION & DEMOLITION**						
	Site construction fence/barricades	**8,200**	lf	12.00	98,400		
	Site construction fence gates/entrance	**2**	ea	15,000.00	30,000		
	Pavement/curbing removal, crush and re-use for sub-base	**200,000**	sf	1.00	200,000		
	Walkways	**1**	ls	30,000.00	30,000		
	Miscellaneous demolition	**1**	ls	150,000.00	150,000		
	Site Earthwork						
	Strip Topsoil and remove; 6" thick	**19,889**	cy	12.00	238,668		
	Fine grading	**1,000,000**	sf	0.20	200,000		
	Cut and Fill; assumed AV 2ft; balanced site	**74,074**	cy	8.00	592,592		
	Silt fence/erosion control, wash bays, stock piles	**8,200**	lf	12.00	98,400		
	Silt fence maintenance and monitoring	**1**	ls	60,000.00	60,000		
	Hazardous Waste Remediation						
	Dispose/treat contaminated soils				NIC		
	SUBTOTAL					1,698,060	
G20	**SITE IMPROVEMENTS**						
	Asphalt Paving; parking lot and roadway	*350,000*					
	gravel base; 12" thick	**12,963**	cy	40.00	518,520		
	asphalt; 4" thick	**38,889**	sy	25.00	972,225		
	VGC	**10,500**	lf	38.00	399,000		
	Road markings/signage	**1**	ls	30,000.00	30,000		
	Pedestrian Paving						
	Concrete paving						
	gravel base; 8" thick	**744**	cy	35.00	26,040		
	4" concrete paving	**30,000**	sf	7.00	210,000		
	Concrete pavers						
	Concrete pavers						
	sand bedding; 1" thick	**148**	cy	40.00	5,920		
	Precast concrete pavers	**50,000**	sf	16.00	800,000		
	gravel base; 8" thick	**1,241**	cy	35.00	43,435		
	concrete base; 4" thick	**50,000**	sf	5.00	250,000		
	Site Improvements						
	Flag pole 50' high	**1**	ea	6,500.00	6,500		
	Concrete retaining walls				Assumed not required		
	6' chain-link fence	**8,200**	lf	50.00	410,000		
	Double gates	**1**	ea	2,500.00	2,500		
	Wood screen privacy fence 8'	**50**	lf	100.00	5,000		
	Double gates	**1**	ea	2,500.00	2,500		
	Benches	**15**	ea	2,800.00	42,000		
	Bike racks	**1**	ls	30,000.00	30,000		
	Ornamental trash/recycling receptacles	**10**	ea	800.00	8,000		
	Monumental signage	**1**	ls	40,000.00	40,000		
	Way finding signage	**1**	ls	60,000.00	60,000		
	Other site improvements; walls, fences etc.	**1**	ls	1,500,000	1,500,000		
	Multi-purpose fields						
	Crushed stone - 12" thick	**19,074**	cy	40.00	762,960		
	Sports seeding	**515,000**	sf	0.50	257,500		
	Line markings - Allowance	**1**	ls	15,000.00	15,000		
	Football goals	**2**	loc	3,000.00	6,000		
	Soccer goals (movable) - Allowance	**3**	loc	10,000.00	30,000		
	20' sports netting	**1**	ls	50,000.00	50,000		
	Baseball/softball backstop	**3**	loc	40,000.00	120,000		
	SUBTOTAL					6,603,100	
	Landscaping						
	Topsoil -modify existing topsoil	**19,889**	cy	26.00	517,114		
	Lawn - loam & seed	**485,000**	sf	0.25	121,250		
	Planting allowance	**1**	ls	300,000.00	300,000		

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
SITEWORK OPTION 2.4							
	Courtyard allowance	**2**	loc	100,000.00	200,000		
	Irrigation at sports fields	**515,000**	sf	1.00	515,000		
	Allowance for new well	**1**	ls	150,000.00	150,000		
	SUBTOTAL					1,803,364	
G30	**CIVIL MECHANICAL UTILITIES**						
	Utilities - Enabling						
	Allowance for temporary utilities etc.	**1**	ls	150,000.00	150,000		
	Water supply; Pricing includes E&B and bedding						
	New DI piping; 8"	**200**	lf	100.00	20,000		
	New DI piping; 8" Fire	**4,300**	lf	100.00	430,000		
	Connect to existing	**1**	loc	10,000.00	10,000		
	FD connection	**1**	ea	2,000.00	2,000		
	Gate valves	**8**	ea	750.00	6,000		
	Fire hydrant	**14**	ea	5,000.00	70,000		
	Fire hydrant; relocate existing	**1**	ea	3,500.00	3,500		
	Sanitary; Pricing includes E&B and bedding						
	Manholes	**4**	ea	4,000.00	16,000		
	Grease trap	**1**	ea	15,000.00	15,000		
	8" PVC	**300**	lf	60.00	18,000		
	Connect to existing drain	**1**	ea	3,000.00	3,000		
	Relocate existing sewer system	**1**	ls	250,000.00	250,000		
	Storm water; Pricing includes E&B and bedding						
	Allowance to modify existing drainage systems	**350,000**	sf	7.00	2,450,000		
	Perforated pipe @ recharge systems and crushed stone base under fields	**515,000**	sf	4.00	NR		
	Gas service						
	E&B trench for new gas pipe - install by plumbing	**250**	lf	25.00	6,250		
	SUBTOTAL					3,449,750	
G40	**ELECTRICAL UTILITIES**						
	Power						
	Utility co. backcharges, allow	**1**	ls	30,000.00	30,000		
	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	**1700**	lf	120.00	204,000		
	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	**1700**	lf	152.00	258,400		
	Site Lighting						
	Varsity baseball sports lighting (allow)	**1**	ls	120,000.00	120,000		
	Softball sports lighting (allow)	**1**	ls	90,000.00	90,000		
	Site Parking lighting (allow)	**1**	ls	350,000.00	350,000		
	SUBTOTAL					1,134,400	
	TOTAL - SITE DEVELOPMENT						***$14,688,674***

3.3.3 - FINAL EVALUATION OF ALTERNATIVES

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Belmont High School 12-Feb-18
Design Options - GRADES 7-12
Belmont, MA

PSR Estimate GFA 422,925

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 3.1 NEW SCHOOL						
A10	**FOUNDATIONS**					
	A1010	Standard Foundations	$3,392,158			
	A1020	Special Foundations	$10,022,285			
	A1030	Lowest Floor Construction	$3,581,490	**$16,995,933**	$40.19	12.0%
A20	**BASEMENT CONSTRUCTION**					
	A2010	Basement Excavation	$0			
	A2020	Basement Walls	$0	**$0**	$0.00	0.0%
B10	**SUPERSTRUCTURE**					
	B1010	Upper Floor Construction	$11,871,702			
	B1020	Roof Construction	$5,430,523	**$17,302,225**	$40.91	12.2%
B20	**EXTERIOR CLOSURE**					
	B2010	Exterior Walls	$10,746,517			
	B2020	Windows	$7,479,480			
	B2030	Exterior Doors	$73,680	**$18,299,677**	$43.27	12.9%
B30	**ROOFING**					
	B3010	Roof Coverings	$5,958,780			
	B3020	Roof Openings	$752,500	**$6,711,280**	$15.87	4.7%
C10	**INTERIOR CONSTRUCTION**					
	C1010	Partitions	$9,304,350			
	C1020	Interior Doors	$2,114,625			
	C1030	Specialties/Millwork	$3,340,103	**$14,759,078**	$34.90	10.4%
C20	**STAIRCASES**					
	C2010	Stair Construction	$584,000			
	C2020	Stair Finishes	$75,446	**$659,446**	$1.56	0.5%
C30	**INTERIOR FINISHES**					
	C3010	Wall Finishes	$2,537,550			
	C3020	Floor Finishes	$4,652,175			
	C3030	Ceiling Finishes	$4,229,250	**$11,418,975**	$27.00	8.1%
D10	**CONVEYING SYSTEMS**					
	D1010	Elevator	$360,000	**$360,000**	$0.85	0.3%
D20	**PLUMBING**					
	D20	Plumbing	$5,075,100	**$5,075,100**	$12.00	3.6%
D30	**HVAC**					
	D30	HVAC	$23,031,625	**$23,031,625**	$54.46	16.3%
D40	**FIRE PROTECTION**					
	D40	Fire Protection	$2,087,748	**$2,087,748**	$4.94	1.5%
D50	**ELECTRICAL**					

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GFA 422,925

CONSTRUCTION COST SUMMARY

	BUILDING SYSTEM		*SUB-TOTAL*	*TOTAL*	*$/SF*	*%*
OPTION 3.1 NEW SCHOOL						
	D5010	Complete System	$18,379,450	**$18,379,450**	$43.46	13.0%
E10	**EQUIPMENT**					
	E10	Equipment	$1,674,200	**$1,674,200**	$3.96	1.2%
E20	**FURNISHINGS**					
	E2010	Fixed Furnishings	$4,901,094			
	E2020	Movable Furnishings	NIC	**$4,901,094**	$11.59	3.5%
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)				***$141,655,831***	*$334.94*	*100.0%*

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 3.1 NEW SCHOOL						
	GROSS FLOOR AREA CALCULATION						
	Ground Floor			154,189			
	First Floor			103,065			
	First Floor			103,065			
	Second Floor			62,606			
	TOTAL GROSS FLOOR AREA (GFA)				**422,925**	***sf***	
	A10 FOUNDATIONS						
	A1010 STANDARD FOUNDATIONS						
	Allowance for pile caps, grade beams etc.	**154,189**	sf	22.00	3,392,158		
	SUBTOTAL					3,392,158	
	A1020 SPECIAL FOUNDATIONS						
	Driven piles; including mobilization	**154,189**	sf	65.00	10,022,285		
	SUBTOTAL					10,022,285	
	A1030 LOWEST FLOOR CONSTRUCTION						
	New Structural Slab, 12" thick	*154,189*	*sf*		-		
312000	Ordinary Fill, 6"	**2,855**	cy	16.00	45,680		
312000	Crushed stone, 6"	**2,855**	cy	35.00	99,925		
312000	Rigid insulation; 40 psi	**154,189**	sf	2.15	331,506		
033000	Vapor barrier	**154,189**	sf	0.80	123,351		
312000	Compact existing sub-grade	**154,189**	sf	0.55	84,804		
033000	Formwork	**778**	lf	12.00	9,336		
033000	Rebar, 6#/SF	**925,134**	lbs	1.20	1,110,161		
033000	Concrete - 12" thick; 4,000 psi	**5,996**	cy	120.00	719,520		
033000	Placing concrete	**5,996**	cy	90.00	539,640		
033000	Finishing and curing concrete	**154,189**	sf	3.00	462,567		
	Miscellaneous						
	Patch slab at foundations in existing building				W/Reno		
	New Elevator pit				W/Reno		
	New loading dock	**1**	ls	40,000.00	40,000		
	Equipment pads	**1**	ls	15,000.00	15,000		
	SUBTOTAL					3,581,490	
	TOTAL - FOUNDATIONS						**$16,995,933**
	A20 BASEMENT CONSTRUCTION						
	A2010 BASEMENT EXCAVATION						
	No Work in this section						
	SUBTOTAL					-	
	A2020 BASEMENT WALLS						
	No Work in this section						
	SUBTOTAL					-	
	TOTAL - BASEMENT CONSTRUCTION						
	B10 SUPERSTRUCTURE						
		14.64	lbs/sf		-		

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 3.1 NEW SCHOOL							
B1010	**FLOOR CONSTRUCTION**	3,095	tns		-		
	Floor Structure - Steel:						
	Steel beams and columns to new addition; 15#/SF	**2,016**	tns	3,800.00	7,660,800		
	Premium for HSS	**504**	tns	300.00	151,200		
	Shear studs	**53,747**	ea	2.50	134,368		
	Floor Structure						
	2" 18 Ga. Metal galvanized floor Deck	**268,736**	sf	3.75	1,007,760		
	WWF reinforcement	**309,046**	sf	0.80	247,237		
	Concrete Fill to metal deck; 6" Light Weight	**6,271**	cy	160.00	1,003,360		
	Place and finish concrete	**268,736**	sf	2.00	537,472		
	Rebar to decks	**80,621**	lbs	1.20	96,745		
	Misc. angles	**268,736**	sf	0.50	134,368		
	Miscellaneous						
	Fire proofing to columns and beams	**268,736**	sf	2.25	604,656		
	Intumescent paint	**1**	ls	25,000.00	25,000		
	Fire stopping floors	**268,736**	sf	1.00	268,736		
	SUBTOTAL					11,871,702	
B1020	**ROOF CONSTRUCTION**						
	Roof Structure - Steel:						
	Steel beams and columns to new addition; 14#/SF	**1,079**	tns	3,800.00	4,100,200		
	Premium for HSS	**270**	tns	300.00	81,000		
	Exposed steel	**1**	ls	50,000.00	50,000		
	Roof Structure						
	Acoustic deck allowance	**8,000**	sf	7.00	56,000		
	3" 20 Ga. galvanized Metal Roof Deck	**146,189**	sf	4.00	584,756		
	Miscellaneous						
	Concrete under RTU's	**15,000**	sf	8.00	120,000		
	Fire proofing to columns, beams and deck	**146,189**	sf	3.00	438,567		
	SUBTOTAL					5,430,523	
	TOTAL - SUPERSTRUCTURE						**$17,302,225**
B20	***EXTERIOR CLOSURE***						
B2010	**EXTERIOR WALLS**						
	Exterior Wall Area - Solid Assume 70%	*132,282*	sf				
042000	*MASONRY*						
	Brick veneer, 3 color; 75% of solid area	**99,212**	sf	40.00	3,968,480		
	Staging to exterior wall	**132,282**	sf	4.00	529,128		
055000	*MISC. METALS*						
	Stainless steel sign at main entrance	**1**	ls	15,000.00	15,000		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Air barrier	**132,282**	sf	6.50	859,833		
	Air barrier/flashing at windows	**33,348**	lf	6.25	208,425		
	Miscellaneous sealants to closure	**132,282**	sf	1.00	132,282		
072100	*THERMAL INSULATION*						
	Insulation	**132,282**	sf	2.25	297,635		

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 3.1 NEW SCHOOL						
076400	*CLADDING*						
	Metal panel; 25% of solid area	**33,071**	sf	75.00	2,480,325		
092900	*GYPSUM BOARD ASSEMBLIES*						
	6" metal stud backup	**132,282**	sf	11.00	1,455,102		
	Gypsum Sheathing	**132,282**	sf	2.75	363,776		
	Drywall lining to interior face of stud backup	**132,282**	sf	3.30	436,531		
	SUBTOTAL					10,746,517	
B2020	**WINDOWS**						
	Exterior Wall Area - Glazed Assume 30%	*56,692*	sf				
061000	*ROUGH CARPENTRY*						
	Wood blocking at openings	**33,348**	lf	14.00	466,872		
070001	*WATERPROOFING, DAMPPROOFING AND CAULKING*						
	Backer rod & double sealant	**33,348**	lf	8.50	283,458		
080001	*METAL WINDOWS*						
	Windows, double glazed; 20% of glazed area	**11,338**	sf	90.00	1,020,420		
	Curtainwall, double glazed; 80% of glazed area	**45,354**	sf	120.00	5,442,480		
	Sunshades; horizontal	**1**	ls	250,000.00	250,000		
089000	*LOUVERS*						
	Louvers	**250**	sf	65.00	16,250		
	SUBTOTAL					7,479,480	
B2030	**EXTERIOR DOORS**						
	Glazed entrance doors including frame and hardware; double door	**8**	pr	8,000.00	64,000		
	HM doors, frames and hardware- Double	**4**	pr	2,000.00	8,000		
	Backer rod & double sealant	**240**	lf	4.00	960		
	Wood blocking at openings	**240**	lf	3.00	720		
	SUBTOTAL					73,680	
	TOTAL - EXTERIOR CLOSURE						**$18,299,677**
B30	***ROOFING***						
B3010	**ROOF COVERINGS**						
	New roofing complete	**154,189**	sf	20.00	3,083,780		
	Roof equipment screen	**1**	ls	350,000	350,000		
	Green roof	**15,000**	sf	35.00	525,000		
	Roof soffits	**1**	ls	2,000,000	2,000,000		
	SUBTOTAL					5,958,780	
B3020	**ROOF OPENINGS**						
	Skylights, allow	**1**	ls	750,000.00	750,000		
	Roof hatch	**1**	loc	2,500.00	2,500		
	SUBTOTAL					752,500	
	TOTAL - ROOFING						**$6,711,280**
C10	***INTERIOR CONSTRUCTION***						
C1010	**PARTITIONS**						

PM&C

Belmont High School
Design Options - GRADES 7-12
Belmont, MA

12-Feb-18

PSR Estimate

GFA 422,925

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 3.1 NEW SCHOOL							
	Miscellaneous partitions/glazed partitions/borrowed lights/blocking etc.	**422,925**	gsf	22.00	9,304,350		
	SUBTOTAL					9,304,350	
C1020	**INTERIOR DOORS**						
	Interior doors, frames and hardware	**422,925**	gsf	5.00	2,114,625		
	SUBTOTAL					2,114,625	
C1030	**SPECIALTIES / MILLWORK**						
	Toilet Partitions and accessories	**422,925**	gsf	0.80	338,340		
	Backer panels in electrical closets	**1**	ls	1,000.00	1,000		
	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	**422,925**	sf	1.00	422,925		
	Room Signs	**422,925**	gsf	0.40	169,170		
	Fire extinguisher cabinets	**141**	ea	350.00	49,350		
	Lockers	**422,925**	gsf	1.60	676,680		
	Janitors Work Shop Accessories	**1**	ls	1,500.00	1,500		
	Janitors Closet Accessories	**3**	rms	300.00	900		
	Media						
	Reception desks	**4**	loc	25,000	100,000		
	Railings to open to below areas	**1**	ls	100,000	100,000		
	Library shelving at perimeters 7' Tall				F,F & E		
	Library shelving at perimeters 3' Tall				F,F & E		
	Miscellaneous wood trim	**422,925**	gsf	0.50	211,463		
	Display cases	**422,925**	gsf	0.25	105,731		
	Miscellaneous metals throughout building	**422,925**	sf	1.50	634,388		
	Miscellaneous sealants throughout building	**422,925**	sf	1.25	528,656		
	SUBTOTAL					3,340,103	
	TOTAL - INTERIOR CONSTRUCTION						**$14,759,078**
C20	***STAIRCASES***						
C2010	**STAIR CONSTRUCTION**						
	Metal pan stair; egress stair	**12**	flt	25,000.00	300,000		
	Main staircase	**1**	flt	250,000.00	250,000		
	Commons steps	**2**	loc	5,000.00	10,000		
	Concrete fill to stairs	**12**	flt	2,000.00	24,000		
	SUBTOTAL					584,000	
C2020	**STAIR FINISHES**						
	High performance coating to stairs including all railings etc.	**12**	flt	3,000.00	36,000		
	Rubber tile at stairs - landings	**1,200**	sf	10.00	12,000		
	Rubber tile at stairs - treads & risers	**1,440**	lft	19.06	27,446		
	SUBTOTAL					75,446	
	TOTAL - STAIRCASES						**$659,446**
C30	***INTERIOR FINISHES***						
C3010	**WALL FINISHES**						
	Wall finishes	**422,925**	sf	6.00	2,537,550		
	SUBTOTAL					2,537,550	
C3020	**FLOOR FINISHES**						
	Floor finishes	**422,925**	sf	11.00	4,652,175		
	SUBTOTAL					4,652,175	

3.3.3 - FINAL EVALUATION OF ALTERNATIVES

G. COST ESTIMATE / Design Team

PM&C

Belmont High School
Design Options - GRADES 7-12
Belmont, MA

12-Feb-18

PSR Estimate

GFA 422,925

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 3.1 NEW SCHOOL							
C3030	**CEILING FINISHES**						
	Ceiling finishes	**422,925**	sf	10.00	4,229,250		
	SUBTOTAL					4,229,250	
	TOTAL - INTERIOR FINISHES						**$11,418,975**
D10	***CONVEYING SYSTEMS***						
D1010	**ELEVATOR**						
	New four stop elevator	**2**	ea	180,000.00	360,000		
	SUBTOTAL					360,000	
	TOTAL - CONVEYING SYSTEMS						**$360,000**
D20	***PLUMBING***						
D20	**PLUMBING, GENERALLY**						
	Plumbing allowance	**422,925**	gsf	12.00	5,075,100		
	SUBTOTAL					5,075,100	
	TOTAL - PLUMBING						**$5,075,100**
D30	***HVAC***						
D30	**HVAC, GENERALLY**						
	HVAC allowance for Geothermal wells; based 400 wells each 400 ft deep	**1**	ls	4,000,000.00	4,000,000		
	HVAC allowance	**422,925**	gsf	45.00	19,031,625		
	SUBTOTAL					23,031,625	
	TOTAL - HVAC						**$23,031,625**
D40	***FIRE PROTECTION***						
D40	**FIRE PROTECTION, GENERALLY**						
	Fire pump	**1**	ls	100,000.00	100,000		
	Fire protection system	**422,925**	gsf	4.70	1,987,748		
	SUBTOTAL					2,087,748	
	TOTAL - FIRE PROTECTION						**$2,087,748**
D50	***ELECTRICAL***						
D5010	**ELECTRICAL WORK**						
	Allowance for PV systems	**1**	ls	4,000,000.00	4,000,000		
	Complete electrical systems	**422,925**	gsf	34.00	14,379,450		
	SUBTOTAL					18,379,450	
	TOTAL - ELECTRICAL						**$18,379,450**
E10	***EQUIPMENT***						
E10	**EQUIPMENT, GENERALLY**						
	Theatrical Equipment Stage curtains, rigging and controls (Auditorium & Lecture Hall)	**1**	ls	350,000.00	350,000		

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Belmont High School
Design Options - GRADES 7-12
Belmont, MA

12-Feb-18

PSR Estimate

GFA 422,925

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	OPTION 3.1 NEW SCHOOL						
	Theatrical AV allowance (Auditorium & Lecture Hall)	**1**	ls	200,000.00	200,000		
	Kitchen equipment	**1**	ls	550,000.00	550,000		
	Fume hoods	**9**	ea	15,000.00	135,000		
	Kiln	**1**	ea	5,000.00	5,000		
	Allowance for new manual operable partitions in Cafeteria & Classrooms	**356**	lf	700.00	249,200		
	Allowance for miscellaneous equipment; projection screens, residential appliances, loading dock equipment, wood workshop etc	**1**	ls	150,000.00	150,000		
	Loading dock equipment	**1**	ls	20,000.00	20,000		
	Electrically operated projection screens	**1**	loc	15,000.00	15,000		
	SUBTOTAL					1,674,200	
	TOTAL - EQUIPMENT						**$1,674,200**
E20	***FURNISHINGS***						
E2010	**FIXED FURNISHINGS**						
	Entry mats & frames - recessed with carpet/rubber strips	**500**	sf	55.00	27,500		
	Window blinds	**56,692**	sf	7.00	396,844		
	Auditorium seats	**600**	seat	350.00	210,000		
	Lecture hall seats	**150**	seat	250.00	37,500		
	Counters, base cabinets, tall storage in classrooms and other rooms	**422,925**	gsf	10.00	4,229,250		
	SUBTOTAL					4,901,094	
E2020	**MOVABLE FURNISHINGS**						
	All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
	TOTAL - FURNISHINGS						**$4,901,094**
F10	***SPECIAL CONSTRUCTION***						
F10	**SPECIAL CONSTRUCTION**						
	No items in this section						
	SUBTOTAL						
	TOTAL - SPECIAL CONSTRUCTION						
F20	***SELECTIVE BUILDING DEMOLITION***						
F2010	**BUILDING ELEMENTS DEMOLITION**						
	SUBTOTAL						
F2020	**HAZARDOUS COMPONENTS ABATEMENT**						
	See main summary for HazMat allowance				See Summary		
	SUBTOTAL						
	TOTAL - SELECTIVE BUILDING DEMOLITION						

3.3.3 - FINAL EVALUATION OF ALTERNATIVES

G. COST ESTIMATE / Design Team

PM&C

Belmont High School
Design Options - GRADES 7-12
Belmont, MA

12-Feb-18

PSR Estimate

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
SITEWORK OPTION 3.1							
	G SITEWORK						
G10	**SITE PREPARATION & DEMOLITION**						
	Site construction fence/barricades	**8,200**	lf	12.00	98,400		
	Site construction fence gates/entrance	**2**	ea	15,000.00	30,000		
	Pavement/curbing removal, crush and re-use for sub-base	**200,000**	sf	1.00	200,000		
	Walkways	**1**	ls	30,000.00	30,000		
	Miscellaneous demolition	**1**	ls	150,000.00	150,000		
	Site Earthwork						
	Strip Topsoil and remove; 6" thick	**19,889**	cy	12.00	238,668		
	Fine grading	**1,000,000**	sf	0.20	200,000		
	Cut and Fill; assumed AV 2ft; balanced site	**74,074**	cy	8.00	592,592		
	Silt fence/erosion control, wash bays, stock piles	**8,200**	lf	12.00	98,400		
	Silt fence maintenance and monitoring	**1**	ls	60,000.00	60,000		
	Hazardous Waste Remediation						
	Dispose/treat contaminated soils				NIC		
	SUBTOTAL					1,698,060	
G20	**SITE IMPROVEMENTS**						
	Asphalt Paving; parking lot and roadway	***350,000***					
	gravel base; 12" thick	**12,963**	cy	40.00	518,520		
	asphalt; 4" thick	**38,889**	sy	25.00	972,225		
	VGC	**10,500**	lf	38.00	399,000		
	Road markings/signage	**1**	ls	30,000.00	30,000		
	Pedestrian Paving						
	Concrete paving						
	gravel base; 8" thick	**744**	cy	35.00	26,040		
	4" concrete paving	**30,000**	sf	7.00	210,000		
	Concrete pavers						
	Concrete pavers						
	sand bedding; 1" thick	**133**	cy	40.00	5,320		
	Precast concrete pavers	**45,000**	sf	16.00	720,000		
	gravel base; 8" thick	**1,117**	cy	35.00	39,095		
	concrete base; 4" thick	**45,000**	sf	5.00	225,000		
	Site Improvements						
	Flag pole 50' high	**1**	ea	6,500.00	6,500		
	Concrete retaining walls				Assumed not required		
	6' chain-link fence	**8,200**	lf	50.00	410,000		
	Double gates	**1**	ea	2,500.00	2,500		
	Wood screen privacy fence 8'	**50**	lf	100.00	5,000		
	Double gates	**1**	ea	2,500.00	2,500		
	Benches	**15**	ea	2,800.00	42,000		
	Bike racks	**1**	ls	30,000.00	30,000		
	Ornamental trash/recycling receptacles	**10**	ea	800.00	8,000		
	Monumental signage	**1**	ls	40,000.00	40,000		
	Way finding signage	**1**	ls	60,000.00	60,000		
	Other site improvements; walls, fences etc.	**1**	ls	1,500,000	1,500,000		
	Multi-purpose fields						
	Crushed stone - 12" thick	**19,074**	cy	40.00	762,960		
	Sports seeding	**515,000**	sf	0.50	257,500		
	Line markings - Allowance	**1**	ls	15,000.00	15,000		
	Football goals	**2**	loc	3,000.00	6,000		
	Soccer goals (movable) - Allowance	**2**	loc	10,000.00	20,000		
	20' sports netting	**1**	ls	50,000.00	50,000		
	Baseball/softball backstop	**3**	loc	40,000.00	120,000		
	SUBTOTAL					6,483,160	
	Landscaping						
	Topsoil -modify existing topsoil	**19,889**	cy	26.00	517,114		
	Lawn - loam & seed	**485,000**	sf	0.25	121,250		
	Planting allowance	**1**	ls	400,000.00	400,000		

G. COST ESTIMATE / Design Team

PM&C

Belmont High School
Design Options - GRADES 7-12
Belmont, MA

12-Feb-18

PSR Estimate

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
SITEWORK OPTION 3.1							
	Irrigation at sports fields	**515,000**	sf	1.00	515,000		
	Allowance for new well	**1**	ls	150,000.00	150,000		
	SUBTOTAL					1,703,364	
G30	**CIVIL MECHANICAL UTILITIES**						
	Utilities - Enabling						
	Allowance for temporary utilities etc.	**1**	ls	150,000.00	150,000		
	Water supply; Pricing includes E&B and bedding						
	New DI piping; 8"	**200**	lf	100.00	20,000		
	New DI piping; 8" Fire	**4,300**	lf	100.00	430,000		
	Connect to existing	**1**	loc	10,000.00	10,000		
	FD connection	**1**	ea	2,000.00	2,000		
	Gate valves	**8**	ea	750.00	6,000		
	Fire hydrant	**14**	ea	5,000.00	70,000		
	Fire hydrant; relocate existing	**1**	ea	3,500.00	3,500		
	Sanitary; Pricing includes E&B and bedding						
	Manholes	**4**	ea	4,000.00	16,000		
	Grease trap	**1**	ea	15,000.00	15,000		
	8" PVC	**300**	lf	60.00	18,000		
	Connect to existing drain	**1**	ea	3,000.00	3,000		
	Relocate existing sewer system	**1**	ls	250,000.00	250,000		
	Storm water; Pricing includes E&B and bedding						
	Allowance to modify existing drainage systems	**350,000**	sf	7.00	2,450,000		
	Perforated pipe @ recharge systems and crushed stone base under fields	**515,000**	sf	4.00	NR		
	Gas service						
	E&B trench for new gas pipe - install by plumbing	**250**	lf	25.00	6,250		
	SUBTOTAL					3,449,750	
G40	**ELECTRICAL UTILITIES**						
	Power						
	Utility co. backcharges, allow	**1**	ls	30,000.00	30,000		
	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	**2000**	lf	120.00	240,000		
	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	**2000**	lf	152.00	304,000		
	Site Lighting						
	Varsity baseball sports lighting (allow)	**1**	ls	120,000.00	120,000		
	Softball sports lighting (allow)	**1**	ls	90,000.00	90,000		
	Site Parking lighting (allow)	**1**	ls	350,000.00	350,000		
	SUBTOTAL					1,216,000	
	TOTAL - SITE DEVELOPMENT						***$14,550,334***

3.3.3 - FINAL EVALUATION OF ALTERNATIVES

H. PERMITTING REQUIREMENTS

The following permitting requirements applies to all of the options.

OFFICE OF COMMUNITY DEVELOPMENT
TOWN OF BELMONT
19 Moore Street
Homer Municipal Building
Belmont, Massachusetts 02478-0900

Telephone: (617) 993-2650 Fax: (617) 993-2651

Building Division
(617) 993-2664
Engineering Division
(617) 993-2665
Planning Division
(617) 993-2666

January 18, 2018

Thomas G. Gatzunis P.E., C.B.O.
Daedalus - Senior Project Manager
1 Faneuil Hall Marketplace
South Market Bldg, Suite 4195
Boston, MA 02109-6117

Dear Mr. Gatzunis:

At your request I solicited municipal departments regarding what permits will be necessary for the proposed Town of Belmont High School Building project. Below is a compilation of responses I received.

Health Department

Annual permits to the high school for their cafeteria and pool.
Prior to signing off a demolition permit, will need to see proof of pest control services and an asbestos abatement report.
Dumpster permits as necessary.

Fire Department

1) Hot Work- welding, cutting, soldering etc.
2) Fire Alarm System plan review.
3) Fire Protection Plan review.
4) Temporary Heating (propane) for construction.
5) Combustible Fuel storage if Fuel Oil is means of heating/hot water for building.
6) Installation of heating unit if oil fired system.

Department of Public Works

Street Opening Permit, trenching permits, and Right of Way Occupancy permits.
Water works services and mains, permits for installations and connections.

Office of Community Development

Planning Board site plan approval.
Possible Zoning Board of Appeals approval (depending on final proposal and Dover Amendment impact).

Historic District Commission review – For White Field House depending on its fate.
Conservation Commission – Notice of Intent / Order of Conditions.
Stormwater Management and Erosion Control permits (the bylaw gives the conservation commission jurisdiction over stormwater management for a Notice of Intent filing. The Engineering Division will issue the erosion control permit).
Sewer and Stormwater connection permits.
Building Permits, Sheet Metal, Plumbing and Gas, and Electrical permits.
Sign permits.

Belmont Light Department

No response received. This is a municipal light department whose role is similar to an NStar or other electricity supplier.

Police Department

No response received. Beyond typical police details, I can't think of any permits they would require.

Please let me know if I can be of further assistance.

Sincerely,

Glenn R. Clancy, P. E.
Director

3.3.3 - FINAL EVALUATION OF ALTERNATIVES

H. PERMITTING REQUIREMENTS

PERMITTING MATRIX

Belmont High School, Belmont, MA Updated 02/07/2018

Permit	Phase	Jurisdiction
Health Department		
Demolition Permit	CA	Building Dept.
Dumpster Permit	CA	Building Dept.
Fire Department		
Fire Alarm Review	Start of DD's	BFD
Fire Protection Plan Review	Start of DD's	BFD
Temporary Heating for Construction	Start of DD's	BFD
Combustible Fuel Storage	Start of DD's	BFD
Department of Public Works	Start of DD's	BFD
Department of Public Works		
Street Opening Permit	Start of CA	DPW
Trenching Permits	Start of CA	DPW
Right of Way Occupancy Permits	Start of CA	DPW
Water Work services and Mains	Start of CA	DPW
Installation and Connection Permits	Start of CA	DPW
Office of Community Development		
Design and Site Plan Approval	End of DD beginning of CD	Planning Board
Conservation Commission		
Notice of Intent	End of DD beginning of CD	Town of Belmont Conservation Commission
Order of Conditions	End of CD	Town of Belmont Conservation Commission
Engineering Division		
Erosion Control Permits	Start of CA	Town of Belmont Conservation Commission
Sewer and Storm water Connection Permits	End of DD beginning of CD	Engineering Dept.
Building Permits	Start of CA	Building Dept.
Sheet Metal Permit	Start of CA	Building Dept.
Plumbing and Gas Permit	Start of CA	Building Dept.
Electrical Permits	Start of CA	Building Dept.
Sign Permits	Start of CA	Building Inspector

I. CONSTRUCTION SCHEDULE

Please refer to the phasing plans for each options included earlier in this chapter for the Project Design and Construction Schedule.

J. PRELIMINARY DESIGN PRICING

Grade Configuration 7-12

Option (Description)	Total Gross Square Feet	Square Feet of Renovated Space (cost*/SF)	Square Feet of New Construction (Cost*/SF)	Site, building, Takedown, HazMat, Costs	Estimated Total Construction** (Cost*/SF)	Estimated Total Project Costs
Option 1	257,120 SF	257,120 SF	0 SF	$14,747,909	$89,192,522	$111,490,653
Base Repair		289.53 SF	0.00 SF		$346.89	
Option 2.1	451,800 SF	239,354 SF	212,446 SF	$34,947,073	$241,676,850	$302,096,061
Major Renovation/ Minor Addition		441.20 SF	476.01 SF		$534.92	
Option 2.3	451,800 SF	65,050 SF	386,750 SF	$36,266,346	$245,805,460	$307,256,825
Minor Renovation/ Major Addition		310.93 SF	489.50 SF		$544.06	
Option 2.4 ***	***451,800 SF***	***62,300 SF***	***389,500 SF***	***$36,896,842***	***$245,770,439***	***$307,161,440***
Minor Renovation/ Major Addition		***315.61 SF***	***485.78 SF***		***$543.98***	
Option 3.1	422,925 SF	0 SF	422,925 SF	$35,557,448	$235,060,850	$293,826,063
New Construction		0 SF	471.72 SF		$555.80	

* Marked Up Construction Costs

** Does not include Construction ContingencyMarked Up Construction Costs

***** District's Preferred Solution***

PMC/DPI PSR Options Reconciliation

	PMC	DPI	Delta	% delta
Option 1 Repair Only	$89,192,523	$85,541,000	$3,651,523	4.27%
Option 2.1 Major Reno/Minor Add	$241,676,851	$255,251,000	-$13,574,149	-5.32%
Option 2.3 Minor Reno/Major Add	$245,805,461	$237,959,000	$7,846,461	3.30%
Option 2.4 Minor Reno/Major Add	$245,770,440	$246,429,000	-$658,560	-0.3%
Option 3.1 New Construction	$235,060,852	$228,978,000	$6,082,852	2.66%

Based on PMC PSR Estimate February 9 and 12, 2018

Based on DPI PSR Estimate February 14, 2018

3.3.3 - FINAL EVALUATION OF ALTERNATIVES

K. QUALITATIVE MATRIX

The Belmont High School Committee worked together to determine the important compliance factors for the Belmont High School project and complied these factors into the evaluation matrix. The matrix was provided to all committee members for their review and completion. After the committee members completed the forms they had an open conversation to determine the preferred option. The BHSBC members looked at each issue relative to the building and project site. The matrix, along with the costing information, phasing, impact to students, traffic, educational compliance etcetera, formed the basis for the decision making process. The sum of the matrix evaluations shown below disclosed that Option 2.4 was the preferred option.

PERKINS+WILL

Belmont High School / Evaluation Matrix

OPTIONS	Compliance Factors														
	1. Ed Program Compliance	2. Traffic/ Site Circulation	3. Parking	4. Neighborhood Impact/ Shad	5. Design Flexibility	6. Site Access	7. Phasing Complexity	8. Fields Accommodation	9.Duration Schedule	10.Impact to Students Phasing	11. Sustainability	12. Civic Benefits	13. Permit/ Zoning	14. Rail Impact	Total
A.1.1 Renovation Only	○	○	◒	◒	○	○	○	◒	○	○	○	◒	●	○	20
A.2.1 Major Renovation, Minor Addition	◒	◒	●	◒	◒	◒	○	◒	○	○	◒	◒	◒	○	25
A.2.3 Major Addition, West Addition	●	●	●	◒	●	◒	◒	●	◒	●	●	●	◒	◒	36
A.2.4 Major Addition, South Addition	●	●	●	●	●	◒	●	●	◒	●	●	●	◒	◒	38
A.3.1 New Construction, West of BHS	●	●	●	○	◒	◒	●	●	●	●	●	○	◒	◒	34

● Fullfills expectations/ minimal impact(3)

◒ Neutral(2)

○ Fails expectations/ significant impact(1)

Compliance Factors

1. Ed Program Compliance – how effective/efficient can this design be at meeting the Ed Program
2. Traffic/ Site Circulation – how well can the design accommodate good traffic and circulation solutions on site
3. Parking – does the design provide a good solution for distributed parkin
4. Neighborhood Impact/ Shadows – how does the physical massing affect the neighborhood
5. Design Flexibility – how accommodating is the design in providing flexibility for changes in use over time
6. Site Access – how accommodating can the site design be when addressing neighborhood traffic issues
7. Phasing Complexity – how challenging will phasing be for construction
8. Fields Accommodation – how well does the site design accommodate the needs of the outside athletic programs
9. Duration Schedule – how much impact does phasing have on the construction schedule for this design
10. Impact to Students Phasing – How does the design solution reduce the impact on student/staff due to construction phasing
11. Sustainability – how accommodating will the design be to achieve high energy efficiency and low operating costs relative to baseline occupancy requirements
12. Civic Benefits – how beneficial to civic uses is this design
13. Permit/ Zoning – how will the process of permitting and zoning approvals be affected by the site/ building design
14. Rail Impact – how will the train noise be perceived inside the building

3.3.4 PREFERRED SOLUTION

3.3.4 - PREFERRED SOLUTION

A. EDUCATIONAL PROGRAM

BELMONT HIGH SCHOOL EDUCATIONAL PROGRAM

Summary and description of the existing educational program and/or new educational vision and specifications, process, etc., Teaching Philosophy Statement (including description of the following):

OVERVIEW

The Belmont Public Schools is an historically high performing district that provides students with high quality and rigorous academic experiences partnered with access to high quality out of classroom learning through co-curricular opportunities, performing arts and athletics. The Town of Belmont has a long history of quality educational outcomes for students who go on to great success in higher education, with a graduation rate of 96%, 79% of our seniors go on to 4 year College/University education, and 75% take at least one AP course during their junior or senior year. The school is a Level One School as defined by DESE and attendance rates are 96%. All of the above percentages are well above state averages.

The district is currently comprised of four elementary schools serving grades K-4, one middle school serving grades 5-8, and one high school serving grades 9-12. This configuration has been in place since 1997 when the Chenery Middle School opened.

Over the past five years, the Town has experienced a very significant increase in student population. This increase has been both in number of students and the diversity of families. Belmont's proximity to Cambridge and Boston provides an important access point for families to reach the metropolitan Boston area. This feature of Belmont has attracted families from all over the world. We have experienced a town-wide enrollment increase of 105 students per year on average and the MSBA projections indicate this trend to continue. The make-up of our new students shows an increase in non-English speaking families which has increased an average of 25% each year over the last five years (from 180 to 340). The result is that the Chenery Middle School and Belmont High School are above their design capacity and this trend is expected to continue for the next five years and possibly beyond.

The district continues to push for high rigor in schools by providing a meaningful teaching and learning environment that is accessible to all students, and respecting each child as a "whole person." The social emotional brain research we have studied has proven that when we create a culture where all students and staff feel safe, valued, and respected, then the neural pathways of learning open up for students to access and successfully engage in a rigorous academic experience.

The context of our MSBA Educational Plan is based on our mission to continue to grow this culture in the Belmont Public Schools; however, we are currently constrained by the current space and program limitations that exist across all of K-12 buildings in the district. At every level of the district, the increased enrollment, combined with our priority to build relationships with and engage a growing and complex student body, has resulted in significant challenges.

The following educational program materials are respectfully submitted by a team of Belmont Public Schools educators. The information provided communicates the current educational vision and programming offerings, the constraints that exist in our day to day implementation of this curriculum and pedagogy, as well as the vision for the Belmont Public Schools on behalf of the students, educators and community.

Three project options (grade configurations: 7-12, 8-12, 9-12) were approved by the MSBA for the Town of Belmont to explore. These options were viewed through an educational vision lens reflecting research-based strategies that will engage students and educators in teaching and learning experiences in the present and future. Throughout the process we explored our educational strategic planning with a vision of prioritizing what is best for students and how that work could be operationalized with three different grade configurations.

In January of 2017 the Belmont Public Schools began the process of reflecting, discussing and researching the topic of our current and future educational vision. This work involved three full days of educator planning/visioning meetings and two full days of parent/guardian, student, and educator visioning work. The content of these sessions focused on the educational priorities of the district and our vision of continuing and enhancing the teaching and learning in the Belmont Public Schools. Frank Locker (Education Facilitator) was hired to facilitate these sessions over the course of five months with the community.

In addition to this initial visioning work, the district embarked on the extension of this strategic planning with our Architect, Perkins and Will. In September 2017 we conducted two full days of collaboration with over 70 educators, parents/guardians, and students participating. Utilizing the outcome of our work from the

A. EDUCATIONAL PROGRAM

Frank Locker sessions as a foundation, the goal for these two days was to see our vision for the Belmont Public Schools with the lens of an expanded building in mind. We asked the question: How can we design a new building that can be a teaching tool and facilitating space to meet our educational vision and goals?

Over the last nine months the Belmont Public School has embarked on a significant journey that represents an investment in our children, educators, and our local constituency. The Belmont Public Schools firmly believes that after the seven days of representative visioning work, combined with community engagement meetings, PTO presentations and feedback from all our community stakeholders, we have an educational plan that will serve Belmont students well into the foreseeable future. We are confident that this work will result in a new building that serves as a teaching tool that allows for enhanced teaching and learning and improved outcomes for all students. In January, 2018, the Belmont School Committee unanimously approved the Administration's recommendation of a 7-12 grade configuration for the expanded Belmont High School. The current 5-8 Chenery Middle School will be converted to a 4-6 school (thereby eliminating its overcrowding), and the four elementary school will serve grades K-3, also eliminating overcrowding at the elementary schools.

VISION FOR TEACHING AND LEARNING

Educational Vision - After the work of visioning with district educators, parents / guardians and students, the district Leadership Council, made up of directors, principals and district administration drafted a Vision for Teaching and Learning statement to guide the work moving forward.

Belmont educators envision teaching and learning in the future will maintain our commitment to rigorous academic content through which students develop the skills of communication, collaboration, creativity, and critical thinking in school communities and learning environments that support the social and emotional development of each student, every day. Learning modalities will include opportunities for students to grapple with ideas, individually and in small groups, as they design, create, synthesize, and make meaning of content that is both meaningful and relevant to curious and engaged students. This will include project-based, thematic, interdisciplinary or inquiry-based learning through which students will discover their passions, sense of purpose, and optimism for their future. Learning will take place in an environment where each student is connected to caring adults, sees him/herself in the content, and feels socially, emotionally, and physically safe and valued for the assets and whole self he/she brings to school each day.

The current philosophy of our teaching and learning at all levels is grounded by the need to create relationships with each other (teacher to teacher, student to teacher, teacher to parent) and to support the learning process through the lens of Social Emotional Learning (SEL). Through our district SEL work over the last three years, we have learned that creating and maintaining trusting, safe, and thoughtful relationships improves school culture. We have also learned through research that this culture of all students "being known" opens up the brain for increased learning capacity. If students feel safe, they do not have to worry about those basic SEL needs and can focus sharply on the educational engagement, instructional content and secure the skills of critical thinking, collaborative partnering, and independent learning. In our work with Frank Locker, we learned that these students will have access to employment opportunities in many jobs that have not yet been created. We believe that by creating a culture that builds the skills for resilience (social competence, problem solving, autonomy, and a sense of purpose) while they learn academic skills and content, students will be prepared for their future success as engaged members of an increasingly complex society. We feel this philosophy allows the teachers to scaffold the content and instructional practices in a way that fosters student growth and development with the high level of rigor that is expected.

BELMONT PUBLIC SCHOOLS DISTRICT GRADE CONFIGURATION

The Town of Belmont has four neighborhood district elementary schools, one middle school, and one high school. The current grade configuration of the Belmont Public Schools is comprised of the following:

- 4 K-4 elementary schools serving grades K, 1, 2, 3, and 4 (Collective Enrollment of 1885)
  - One elementary school also serves the Pre-school population
- 1 middle school serving grades 5, 6, 7, and 8 (Enrollment of 1421 – design capacity of 1,200)
- 1 high school serving grades 9, 10, 11, and 12 (Enrollment of 1298)

3.3.4 - PREFERRED SOLUTION

A. EDUCATIONAL PROGRAM

Source: McKibben Associates / MSBA

Grade	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
Elementary	1785	1824	1836	1805	1832	1830	1827	1823	1820
Middle	1359	1388	1419	1490	1491	1528	1539	1513	1546
BHS	1264	1301	1320	1360	1398	1427	1458	1528	1522
Total	4408	4513	4575	4655	4721	4785	4824	4864	4888

There has been unprecedented enrollment growth in the Town that is projected to continue. On October 1, 2011 the district had a K-12 enrollment of 3,900 students. The MSBA and the outside demographic company used by Belmont expect the enrollment to increase to 4,888 students by 2024.

The Town has studied three grades configuration options for Belmont High School. The School Committee recently voted unanimously to build the new Belmont High School to include grades 7-12. Chenery Middle School will become a Grade 4-6 School, and the three elementary schools will become K-3 schools. This will resolve the capacity issues at six schools for the foreseeable future.

CURRENT HIGH SCHOOL GRADE & SCHOOL CONFIGURATION

Belmont High School opened in 1970 and serves Grades 9-12. The current 257,120 GSF facility serves 1,304 students. Currently, our students are scheduled into a rotating block/mod schedule model with a department-based format.

The current facility and school structure does not foster the opportunity for interdisciplinary and collaborative teaching. It lacks adequate space for large groups of students to work collaboratively across classes. When two classes want to meet, they either open the access door between classrooms and go back and forth, or look for available times when other locations in the school are not occupied. Students who wish to collaborate sit on benches located throughout the building and/or sit on the floor in the hallways. The school is also lacking appropriate spaces for the 60 Belmont High School clubs and activities to meet. Often club members meet in classrooms while teachers are providing additional one-to-one help for students, push benches together in the hallways or find a space outside the building.

Spaces for teacher planning, collaboration and work are inadequate. Each of the major departments (English, foreign language, science and social studies) have a small collaboration space for all department members to share. The space limits collaboration and privacy when speaking and working with colleagues, students and parents/guardians. Other departments either have no space or have a combined storage/office location. To compensate for the lack of collaboration space, book storage rooms are being used as collaboration space. The directors of each department have utilized these spaces to provide student tutoring, storage of department materials, faculty mailroom, copier, and kitchenette needs. Privacy and the ability to appropriately service students' needs are compromised when store rooms are used for collaboration.

The goal of the new Belmont High School is to plan a newly reorganized school which fosters connections in academics and arts.

The new school building will provide:

- flexible classroom space,
- project rooms to support project-based learning,
- teacher planning rooms for the faculty and staff to collaborate within and across disciplines,
- privacy rooms to support students in need of additional academic and/or emotional supports
- flexible conference rooms to support student team meetings and individual parents/guardians meetings,
- and innovation labs.

CLASSROOMS

Currently, Belmont High has 53 general classrooms and 10 Science Labs. Average classroom size is 690 sf, which does not meet current minimum size requirements of the MSBA and class sizes average 25-26 students, with many classes exceeding these averages. Science labs average 1,075 sf (well below current standard of 1,440 sf), are outdated and are not up to current safety and space standards. While the building has generally been well maintained, floor and ceiling finishes are dated and nearing the end of their useful life. Lighting fixtures are original, and are now 47 years old. Heating and ventilation to the classrooms is via steam to 47 year old unit ventilators controlled by an outdated pneumatic control system.

A healthy, active classroom is a sharing classroom. Students are social beings and should be allowed to form groups, interact to exchange ideas, communicate in various ways and thrive

A. EDUCATIONAL PROGRAM

in a room that supports innovative and creative thinking. In a new facility, student classrooms will be looked upon as flexible "think tanks" which foster different learning modalities and social/emotional growth of students. Agile classrooms will give teachers the ability to respond to different students' needs. These classrooms should include a version of group gathering areas, multiple seating options and a flex area that can be adapted for unique instructional activities. These innovative and creative classrooms will be driven by students' interests, and the open, flexible spaces would allow students to come together to share, collaborate, innovate, and create.

In addition to collaboration and social/emotional learning, there are aspects of learning that call for quiet, independent study, reflection and processing of information. Breakout rooms, independent study areas and nooks will be incorporated in the new building to foster this style of learning and provide a safe place where students can go when necessary.

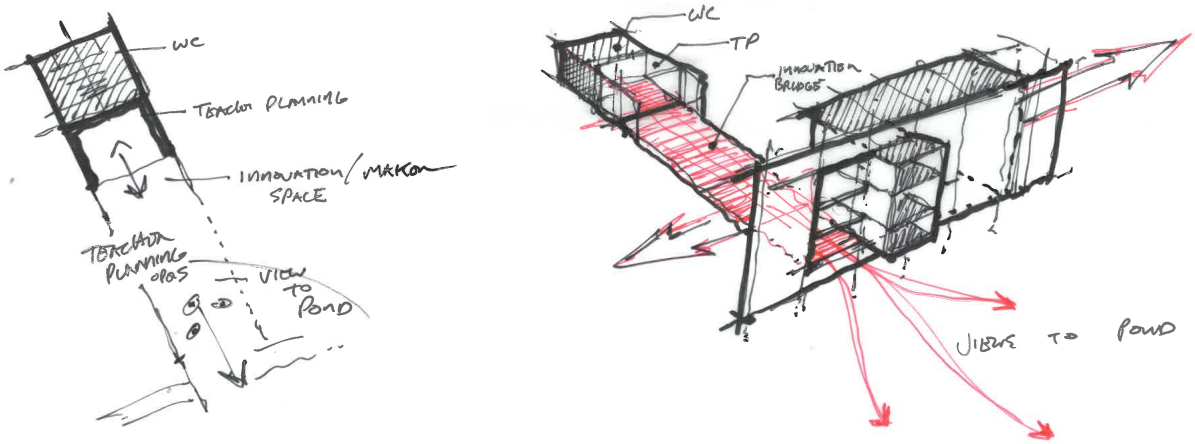
Technology integration will be a key aspect of modernizing the classroom design . A technology-modern classroom will allow teachers to use technology as a tool to stimulate curiosity, inspire innovation, creativity, collaboration, critical thinking and spark students' desire to learn. A modern classroom with technological enhancements will place information at students' fingertips and motivate them to research and make discoveries. In addition, technology supports inclusive classrooms as it allows students to move at their own pace whether they are looking for opportunities of enrichment or need assistance to catch up on curriculum.

With additional and modernized spaces, Belmont High School will have the opportunity to work on engaging all learning modalities in a blended-learning environment where students have opportunities to not only learn in multiple styles but are also guided by teachers in completing self-directed inquiry and investigation through research and hands-on activities.

The new Belmont High will have a total of 85 general classrooms, 36 for grades 7-8 and 49 for grades 9-12. There will be a total of 20 science labs (8 for grades 7-9 and 12 for grades 10-12). Each general classroom should be at least 850 sf, and should provide a flexible learning environment with minimal built in equipment to allow for changes in the future. Science labs shall meet the minimum space standards of the MSBA for the grades served. To serve our expanding ELL program there will be two sub-dividable 1,000 sf classrooms.

For grades 7-8, there will be four clusters at each grade level (total of 8 clusters), serving an average of 96 students. Each cluster will be made up of three general classrooms at 850 sf each, and one 1,200 sf science lab. In addition, there will be one 1,200 sf maker space shared by two clusters. Finally, each grade level will have one 1,200 sf teacher planning area to allow the 16 teachers an opportunity to meet, collaborate and plan their work.

For grades 9-12, the school will be organized by department. There will be four departments, each consisting of nine or ten classrooms. They will also be 850 sf, and should be flexible. Science labs will be 1,440 sf each (per MSBA guidelines) and each pair of labs will share a prep room. Teachers will share classrooms and all classrooms will be flexible for multiple use with a goal of 85% utilization.



Teacher Planning / Innovation Space - Concept Sketch

3.3.4 - PREFERRED SOLUTION

A. EDUCATIONAL PROGRAM

TEACHER PLANNING, ROOM ASSIGNMENT & CLASS SIZE

There are currently no district-wide policies pertaining to Teacher Planning, Room Assignment or Class Size. Teacher planning, however, is provided through the collective bargaining agreement with the Belmont Education Association. Room assignments are made annually by the building principal based on the educational and enrollment needs of the school. Currently, some teachers are provided with individual classrooms; however 29 teachers need to share two or more classrooms. While there is no district policy regarding class size at the high school, practice has been to schedule classes in the range of 22-26 students per class. In the 2017-18 school year, there are ninety-four classes that exceed 26 students (not including performing groups). This represents 25% of the classes at Belmont High School.

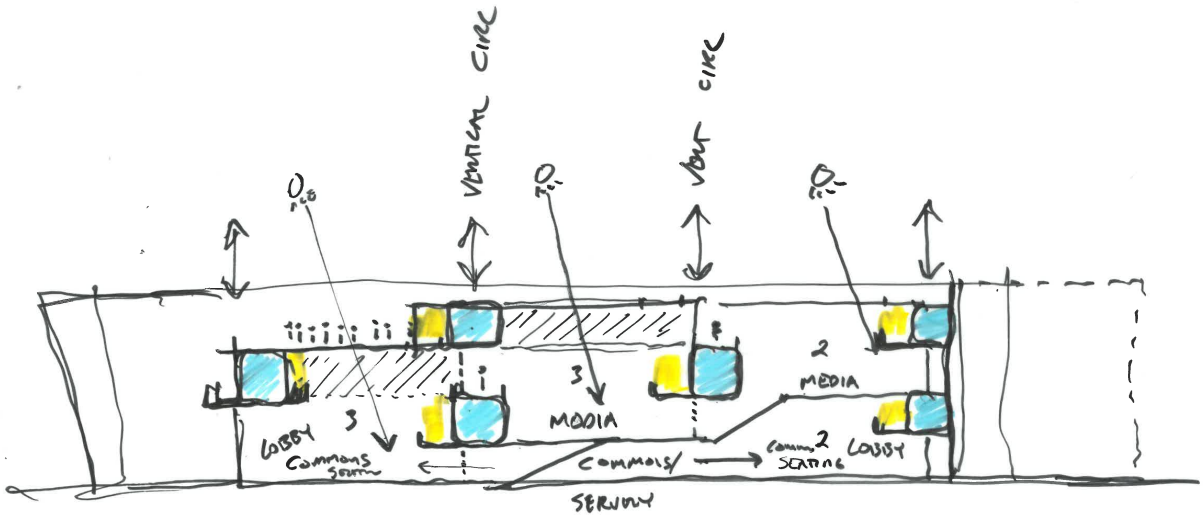
Currently, not all departments are afforded a planning room. Departments who do not have a planning room space do this work in their classrooms and are relocated when a class is scheduled in that location. This results in departments that do have a planning room sharing a space that is small and provides no privacy. If a teacher wishes to have a private conversation with a colleague or a meeting/phone conversation with a parent/guardian, they utilize the director's office when it is not occupied. In the new facility, each department will have a common area to collaborate with colleagues across departments and a private area to speak with parents/guardians in person or by phone. Adjacent to the department areas will be a separate work space for students to collaborate with teachers. This would allow teachers to provide additional support for students in need of extra assistance.

LUNCH PROGRAM

Belmont High School has a full lunch program that serves the high school population during the hours of 10:30AM - 1:00PM. Students are not scheduled for lunch but take advantage of the program during their "free" time in their schedules. Approximately 838 students of the current enrollment participate in the meal program. Belmont High School provides 550-600 lunches per day and 100 breakfast meals per day. Students have multiple options each day for lunch. There are hot lunch lines, a salad bar, a deli area, and pre-packaged foods. Breakfast consists of hot and cold meal options.

Students can access lunch during their unscheduled or split class time. The split class time was created for the 2017-2018 school year because of the overcrowding lunch periods. In order to best service students during peak times, teachers need to interrupt their instruction and allow students to get lunch. Once the lunch time has ended; students then return to class for continuation of the instruction. This modified lunch schedule has resolved some of the overcrowding lunch times at the current level of enrollment. It should be noted that the student population exceeds the seating capacity of the cafeteria space presently and is in need of expansion in order to address the forecasted increase. However it should be noted that the split schedule format is a daily academic interruption and is not ideal for learning.

In the new facility, it is expected that there will be three lunch periods – two for the 7-8 cohort and two for the 9-12 cohort. This means that the cafeteria will require a capacity of approximately 740 students for lunch. The kitchen will have



Building Section - Concept Sketch

4,100 sf including a "scramble" serving area The cafeteria will also be used for study spaces and after school activities. Chair and table storage should be available to allow for multiple uses of the cafeteria space.

SECURITY

Despite the limits of the aging building, the Belmont High School administration has made efforts to establish practices that ensure the highest level of safety and security for students and staff during the school day and for the community use of the facility after school hours. During the school day, all doors, except one main lobby door, are manually locked at 8:15AM. Visitors must sign in at the greeter's desk in the main lobby. Guests must wear a name badge while in the building and must verbally identify themselves and state their business when questioned. In cooperation with the Belmont Police Department, emergency response plans and lockdown procedures have been established and practiced.

In the expanded Belmont High School, security cameras inside and outside the building will be installed. Proper lighting to ensure safety for evening events will be installed in all parking and public areas. A two-way PA system will be included so all students and faculty and staff are informed during the event of an emergency. All doors would have the capability to be electronically locked and unlocked and visitors will be required to gain access to the school by the use of a buzzer and enter through a security vestibule. A new school will have clearly-defined traffic patterns, entry/egress systems, lines of sight, cameras, and other features as recommended by both FEMA and MEMA. Electronic swipe cards will also assist in the volume of requests to enter the building from faculty, staff and students during the school day. Hallway gates will be utilized to help control the student and community use after the school day. District personnel, architectural designers, Belmont Police and emergency experts will work together to ensure that all necessary safety and security features are included in the school renovation/construction

CONFIGURATION # 2 GRADES 7 & 8

Grade 7 and 8, which are currently part of the Winthrop L. Chenery Middle School, have a related set of beliefs:

The mission of Chenery Middle School is to inspire and support the intellectual, social and emotional growth and well-being of all students in the CMS community. With the support of families, we provide opportunities for students to think, create, reason and problem solve so that they can be positive and productive young adults who are of service to others.

CHENERY MIDDLE SCHOOL STUDENT SKILLS (3RS & 3ES)

At Chenery Middle School we share a set of beliefs and values that inform and guide our words and actions. These core values are represented by our school's motto:

Respectful, Responsible, & Ready to Learn: Everybody. Every Day. Everywhere.

By making these values central to our time together, we will be successful in ensuring the academic, social, and emotional growth of all children.

GRADE & SCHOOL CONFIGURATION

Grades 7-8 are housed at Chenery Middle School (along with Grades 5-6). Chenery opened in 1997. The current facility of approximately 182,000 GSF serves 1,436 students, 344 in Grade 7 and 344 in Grade 8. Currently, our 7th-8th grade students are scheduled into a fixed block schedule model within a team-based format. This structure provides teachers with colleagues from different departments to "wrap around" a group of 100-120 students and ensure their needs are being met in each core classroom.

In Grades 7-8 the current facility and school structure fosters the opportunity for interdisciplinary and collaborative teaching. Team classrooms are located alongside each other and each group of students inhabits one section of the hallway, ensuring that each student is known and "owned." Each day teachers on a team have a common meeting block -- a Team Meeting with the Assistant Principal, a Team Guidance Meeting, a Team Special Education Meeting, or a Team Choice Meeting (which can be used to plan lessons or simply to meet to discuss their own agenda). The current facility lacks adequate classroom space to effectively house all students; whereas teams used to be made up of 100 students, they are now more likely to be made up of 120-130 students. Whereas class sized used to be closer to 22, it is not uncommon to have classrooms between 27-29 students. Incoming projections suggest these high class sizes will increase if another Team is not added to both grades. We are fortunate to have two of the large, interdisciplinary meeting rooms that BHS lacks and they are used frequently to combine an entire team and conduct an interdisciplinary lesson.

3.3.4 - PREFERRED SOLUTION

A. EDUCATIONAL PROGRAM

In Grades 7-8 the Custodial and Maintenance staff has been attentive to the building's operational needs. Chenery Middle School is regularly commended for its bright appearance and overall cleanliness, especially considering its excessive use. The building is massively used during after school and weekend hours. It regularly hosts School Committee Meetings, Warrant Committee Meetings, a robust after school program, the Belmont After School Enrichment Collaborative (BASEC), and Saturday Morning Music School, to name just a few. The academic classrooms, programs, and support spaces are well arranged to facilitate efficient functionality of the school -- differing sections of the school can be cordoned off to allow for partial opening of the school during dances, concerts, and/or Chinese School weekend events. There is a relative shortage of storage spaces and office spaces, as many of those original spaces have been turned into alternative learning spaces over the years in response to the growing school population. For example, the science storage room is now a LABBB Collaborative classroom; the former Community Room Annex space and the Small Community Room are now home to the KEY Behavioral Program classrooms; the former Lower School Conference Room is now a Special Education Classroom; the rear of the Staff Development Room now houses a small group math space.

By moving Grades 7-8 to a new Belmont High School site, renewed space and flexibility will be returned to the Chenery Middle School, and will allow for sufficient space for grades 7 and 8 to expand to a 4-team-per-grade format. It will be possible to reorganize the Chenery Middle School into three grades (grades 4, 5, and 6) and "free up" anywhere between 10-19 spaces. These spaces will allow Chenery to expand to a 4-team-per-grade format to provide appropriate team and class sizes in the face of enrollment that increases annually, will allow the return of conference, meeting, and collaborative spaces to their original purposes, and would allow professionals to have their "own" spaces, rather than having to combine several Special Education Teachers into the same classroom or asking specialists to teach in spaces that were never originally designed to be instructional spaces. It will allow Chenery to create flexible classroom spaces, rooms to support project-based learning, and to better use conference rooms to support student team meetings and individual parents/guardians meetings.

CLASSROOMS

In Grades 7-8 there exists the same need as with High School students: Technology-modern spaces that allow for the formation of groups and sharing of ideas, spaces that foster different learning modalities, and spaces that provide for quiet, independent study and reflection.

TEACHER PLANNING, ROOM ASSIGNMENT & CLASS SIZE:

In Grades 7-8 there are currently no specific policies pertaining to Teacher Planning, Room Assignment or Class Size from either the district-wide or School Committee levels. In practice, however, we follow a few practical "rules of thumb": Each teacher is provided a single planning period per day as a result of the collective bargaining agreement with the Belmont Education Association. Their other "free" (that is, non-instructional) block of the day is spent in an assigned meeting with either grade-level, team-related, or department groups. Room assignments are made annually by the building principal based on the educational needs of the school. In 2017-2018, for example, there were 17 classroom changes made to ensure that teacher teams were located in close proximity to each other. Currently, all team classrooms are located proximal to one another to ensure that students' traveling time between classrooms is minimized. Due to a shortage of locker space -- yet another example of how the number of students has outpaced the original design of the building -- we currently have 38 students inhabiting lockers on a floor other than their classrooms. Whereas the school is designed for 25 students per homeroom, we are now placing upwards of 33 students into some rooms. That means that while we used to assign lockers directly outside of homerooms, now students are more likely to be assigned to a locker further down the hallway from their homeroom. Grade 7 is pushing into the Grade 8 hallway more than ever before. Rather than having one Grade 8 homeroom pushed to the second floor for their lockers, we now have two. The more students we add, the further everyone gets pushed down the line. To the extent possible we did our best to place students close to their homerooms. However, some students are not as close as they used to be. We have measured every open wall space and put in a request for more lockers, but for now we have to live with the insufficient number that we have. Currently, Grade 7-8 teachers are provided with individual classrooms. While there is no district policy regarding class size in Grades 7-8, practice has been to schedule classes in the range of 22-28 students per class.

Currently, there are no teams who are afforded their own planning

room. If a teacher wishes to have a private conversation with a colleague or a meeting/phone conversation with a parent/guardian, they utilize a Guidance, Assistant Principal, or the Directors' office when it is not occupied. It is the goal of the district to expand it capacity for hands on learning with additional sections of elective course offerings which would be inclusive of multipurpose "maker spaces." We currently have "study halls" in our middle school and we are looking to expand offerings to more children who currently sit idle. The spaces that currently serve our ELL and special education children should be larger in size and more appropriate for teaching and learning. When you walk the halls at Chenery you see many small groups of children learning and collaborating on the hallway floor. The need for team area small group space is essential to the type of student centered teaching methodology currently employed by our educators.

TECHNOLOGY

The vision for technology in the Belmont Public School is that students and staff will have ubiquitous access to the tools of technology and the skills to use them effectively in support of the district Vision for Teaching and Learning.

At Belmont High School, there are six computer labs, plus additional PCs in the library. Every student and most teachers have an iPad. Each classroom has a teacher computer, SMART Board, and wireless access; plus PC access in department offices, Special Education, and ELL areas.

Over the last five years Belmont High has established itself as a one to one device school that infuses technology into every department's curriculum and instructional methodology. The growing need for student collaboration spaces that have technology that can "show" student work on large screens or monitors is essential. Students currently lack sufficient space to show what they have learning via technology or in hands on learning environments. Creating space for this function is to be able to partner technology with kinesthetic learning opportunities for its students.

These spaces would support our physics, technology, art, health, social studies (and more) curricula by enabling teachers and students to express their learning outcomes in more progressive and authentic ways – not all learning should be assessed by a test or quiz.

At Chenery Middle school there are currently five computer labs, 11 iPad carts, and 11 Chromebook carts. Each classroom has a teacher computer, SMART Board and wireless access. Many classrooms have one to two student computers. Most teachers have an iPad. There are an additional 55 iPads distributed among Special Education and ELL support classrooms.

The Chenery is growing its technology capacity through the use of iPads, Smartboards and Chromebooks. The sharing of technology on carts is less than ideal for educators. Having updated technology features and multipurpose spaces would bring busy middle school students a place to show and demonstrate their learning. The growing technology classes offered at the Chenery are a combination of computer and hands on learning. The current space is limited and constrains the program. The fact that more students could enroll in these types of elective course is restricted by space. Instead students sit in a study hall. Middle school is a place where students need to learn through many modalities; providing technology resourced spaces combined with hands on learning capacity (like maker spaces) is vital.

Both schools have many networked printers, document cameras, AppleTV, complete wireless coverage, websites, e-mail lists, and high-speed internet access.

In the new school, it is anticipated that the technology capabilities will be expanded and modernized. Wireless access points will be located in each classroom and throughout public spaces to permit robust service to all areas of the building. The network will be designed for future expansion and adaptation as technology needs and capabilities expand in the coming years. Charging areas will be made available in areas such as the cafeteria to all students to charge devices safely and securely.

Specific teaching spaces dedicated to technology related education include the following planned spaces: a 1,200 sf Digital Arts laboratory which will provide capability for Animation, Graphics and other courses, a 1,200 sf electronic music classroom, and a 1,200 sf Coding classroom to teach programming and coding which is still increasing in importance. District wide technology support offices and workshops will be located at the High School (as is currently the case), which will facilitate timely, critical network support at the expanded school.

EDUCATIONAL PROGRAMS IN VISUAL ART

CURRENT PROGRAMS

Visual Art in Grades 9-12 is elective. One year of study in Visual & Performing Arts is the current graduation requirement at

3.3.4 - PREFERRED SOLUTION

A. EDUCATIONAL PROGRAM

Belmont High School, and students complete that year of study in either visual art, music or theater. Our current program includes offerings in Photography (traditional film), Ceramics, Sculpture and Drawing/Painting. During the 2017-18 school year there are 20 sections of Visual Art, each meeting four days per week for 50-75 minutes similar to all classes at BHS. We employ four full-time visual art teachers who work in four separate classrooms, each equipped for a specific discipline and medium.

All students in Grades 7-8 participate in visual art courses during the school day. Each class meets twice per six-day cycle for 50 minutes. During the 2017-18 school year there are 32 sections of Grade 7-8 Visual Art (64 instructional blocks). This is the equivalent of 2.2 FTE dedicated to Grade 7-8 Visual Art. At present, these classes are spread among four full-time art teachers who also teach Grade 5-6. There are currently four art rooms in use at Chenery Middle School, 2.2 of which would be required just for Grade 7-8 Visual Art.

As a result of their contact time with highly-qualified, experienced educators, students in Belmont produce artwork that exhibits a high level of technical skill, creativity, and artistic sensitivity. Each year dozens of Belmont students earn honors from the Boston Globe Scholastic Art Festival. Student artwork is displayed regularly throughout both CMS and BHS, though display space in both schools is limited. A number of art exhibits over the course of the year thrust student artwork into the spotlight, and most of these exhibits take place outside of school.

FUTURE PROGRAMS

Belmont Public School is increasing the graduation requirement at BHS from one year of study to two years of study in Visual & Performing Arts. As enrollment in the Belmont Public Schools continues to rise, we expect the need to continue adding sections of Visual Art at the middle and high school levels. Additionally, we are currently implementing programs in digital art, graphic design and computer animation that will require additional teaching spaces and staff. While our current programs, Grades 7-12, are staffed by 6.2 FTE in visual art, it is evident that enrollment growth and program expansion will require 7.0 FTE. Our current programs (7-12) employ six classrooms each day.

In the expanded school, five 1,200 sf art rooms will be provided to allow instruction in the Visual Arts. These will be supported by adequate storage spaces and workrooms. There will be a dark room to support the currently offered photography program. In addition, two kilns will be provided to support the ceramics program. Over the next decade and beyond, we anticipate that these programs will continue to grow - in part due to increasing enrollment in our schools, but also because we plan to enhance and diversify the kinds of educational experiences we offer to students. While some of the new experiences we offer will attract students from our existing programs, our intent is to make Visual and Performing Arts programs more accessible and engaging to students who may not be involved in our current programs. New space will allow us to increase the number of art classes, thereby engaging more students at all levels (as opposed to study halls at Chenery and unscheduled periods at the high school).

EDUCATIONAL PROGRAMS IN MUSIC

CURRENT PROGRAMS

Music at Belmont High School is elective. One year of study in Visual & Performing Arts is the current graduation requirement at Belmont High School, and students may complete that requirement in either visual art, music or theater. Current offerings at BHS include three bands, three choruses and two orchestras in addition to Music Theory, Guitar, and Music Technology. In 2017-18, BHS provides 11 sections of music courses, employing 1.9 FTE in music faculty. This FTE allocation is currently split among four individuals who teach a wide variety of music curriculum ranging from Grades 5-12.

All students in Grades 7-8 participate in music courses during the school day. Course offerings include performing ensembles - band, chorus, and orchestra - as well as general music experiences (Guitar and World Music). Performing ensembles meet four times per six-day cycle, and general music classes meet twice per cycle. Choruses in Grades 7-8 are split by gender four days per cycle, and meet combined twice per cycle. The 2017-18 offerings in music comprise 70 instructional blocks per cycle, employing 2.3 FTE in music faculty. This FTE allocation is currently split among six individuals who teach a wide variety of music curriculum ranging from Grades 5-12.

Enrollment in the performing ensembles (band, chorus, and orchestra) in Belmont is exceptionally high, and our music program has traditionally been considered one of the most successful in the state. Our largest band includes 120 students, the largest chorus 160, and the largest orchestra consists of over eighty students. Additionally, the music teaching spaces in both

existing schools are in constant use after school for a wide variety of activities. For example, the two band rooms in both schools are used at least four days per week after school for Grade 7-12 activities for ensembles ranging in size from 20 to 120 students.

FUTURE PROGRAMS

Belmont Public Schools will be increasing the graduation requirement at BHS from one year of study to two years of study in Visual & Performing Arts in __. Program expansion in our general music curriculum will include a greater emphasis on music technology, music production and audio engineering. This will require our music classrooms to be designed with these uses in mind. With continued enrollment growth, we expect that the number of students who participate in band, chorus and orchestra will also increase. For this reason, we have the need for two band rooms of different capacity (120 students for Grades 9-12, 90 students for Grade 7-8), two chorus rooms of different capacity (150+ students and 60 students) and one orchestra room (up to 80 students). Furthermore, the way that these classes are being taught will require "breakout spaces" for small/medium sized groups of students (5-20 students). Finally, small ensemble practice rooms should be provided, along with adequate dedicated music storage space to allow for flexibility.

Activity Type	Grade Level	Location	Number of Students	Frequency
Marching Band	9-12	Band Room	120	3x/week (Aug.-Nov.)
Jazz Collective	9-12	Band Room	20	3x/week all year
Jazz Band	9-12	Band Room	30	1x/week all year
Jazz Combo	9-12	Music Tech	7	1x/week all year
Madrigal Singers	9-12	Chorus Room	30	1x/week all year
Jazz Choir	9-12	Chorus Room	45	1x/week all year
A Cappella	9-12	Chorus/Tech	60	1x/week all year
Pit Orchestra	9-12	Band Room	30	2x/week (Jan.-March)
Theater	9-12	AUD/Little Theater	150+	4x/week all year
Chamber Orch.	7-8	Orchestra Room	60	1x/week all year
Chamber Singers	7-8	Chorus Room	60	1x/week all year
Honors Band	7-8	Band Room	75	1x/week all year
Jazz Ensemble	7-8	Band Room	35	1x/week all year
Brass Ensemble	7-8	Band Room	25	1x/week all year
Flute Ensemble	7-8	Gen. Music	25	1x/week all year
Double Reed Ens.	7-8	Gen. Music	15	1x/week all year
Jazz Combo	7-8	Gen. Music	12	1x/week all year
Theater	7-8	AUD/Chorus/GM	150	4x week (Jan.-May)

EDUCATIONAL PROGRAMS IN THEATER ARTS

CURRENT PROGRAMS

The Theater Arts program at Belmont High School is a great source of pride for the students, faculty and community at large. In 2017-18, we offer three courses during the school day in addition to a comprehensive after-school theater program (the Performing Arts Company). This program is overseen by one teacher, currently employed as 1.0 FTE.

Though we have offered Theater Arts electives to students in Grades 7-8 in the past, they are not offered during the 2017-18 school year. The Chenery Middle School has added elective courses to reduce the number of students in study halls; but has been unable to provide theater arts programming due to lack of sufficient and appropriate space.

FUTURE PROGRAMS

At the high school level, additional electives in Theater Arts or Television/Film are planned for the 2018/19 school year. The goal of the district is to provide an additional part-time teacher for Grade 7-8 theater, who would also serve as a Technical Director/ Facilities Manager for our new performance spaces. The return of Theater Arts electives in Grade 7-8 is a definite area of need, but we are currently limited by a lack of instructional space at Chenery Middle School. In the expanded school, it is expected that there will be at least 2.0 FTEs in the Theater Arts. In the new school. There will be a full Auditorium with a 2,400 sf stage, which will allow for musical theater productions as well as Band, Orchestra and Chorus performances from the stage. In addition, a flexible 3,000 sf Black Box theater should be provided to allow for open mike, small scale and experimental productions and slam poetry and other events. During the school day, this will be a teaching space for Theater Arts.

EDUCATIONAL PROGRAMS IN DANCE

CURRENT PROGRAMS

We currently do not offer curriculum in Dance during the school day at any grade level due to limited available space, although dance units are a part of the Physical Education curriculum in Grade 7-12. Dance is a major component of the after-school Theater Arts program, and there have been after-school offerings in dance at various times over the past decade.

FUTURE PROGRAMS

Dance is a part of the Massachusetts Frameworks and the National Standards for Arts Education. The Belmont Public Schools is committed to offer dance electives in Grades 7-12 in the expanded school. These will be interdisciplinary courses taught in conjunction with the Physical Education department, and will require a dedicated studio space that is suitable for dance instruction and rehearsal, including a wood floor, mirror walls and a ballet barre. The facility should be adjacent to suitable changing areas to allow for maximum participation time. We expect to have __ FTEs in the new dance program.

3.3.4 - PREFERRED SOLUTION

A. EDUCATIONAL PROGRAM

HIGH SCHOOL PHYSICAL EDUCATION PROGRAM OVERVIEW

SCHOOL POPULATION/TEACHERS/CLASSES

At Belmont High School, we utilize a Wellness approach to deliver the programming and curriculum for both the Physical Education and the comprehensive Health Education programs. The high school currently has 4.2 FTE Physical Education faculty members on staff to educate a school population of approximately 1,300 students. We also have a Director of Physical Education that oversees the entire K-12 Physical Education program, whose office is located at the high school. Within the daily schedule each Physical Education/Wellness instructor teaches no more than six classes a day and no less than five. Courses are offered on a quarter, semester & yearly basis.

CURRENT PROGRAM OVERVIEW

Students at Belmont High must earn 2 credits per year in Physical Education. Ninth graders must take Wellness 1 in order to fulfill their Physical Education requirement for that year. Tenth grade students must take Positive Decision Making & Life Skills for one Physical education credit and then earn one additional Physical Education credit. In grades 11-12 Physical Education credit is earned through taking a Physical Education activity course during the school day. Each quarter, various courses are offered based on student interest that count toward the Physical Education credit. The courses offered are: Outdoor Pursuits, Mindful Movement, Fitness Group Games, Muscular Strength Training & Body Toning, Team Sports & International Games, Recreational Sports & Lifetime Activities, Sports Medicine/ CPR & First Aid, and “The Mindful Marauders - Emerging Leaders.”

PROPOSED PROGRAM

It is expected that the physical education program will continue in the expended building.

LOCKER ROOMS

Our current female student population is 669. Currently there are inadequate lockers for female students. The lockers will also include seasonal team lockers which will be shared over the course of the year. Lockers for the Physical Education program are needed for a minimum 350 students per semester.

Our current male student population is 631. Lockers for the Physical Education program are needed for a minimum 350 students per semester. There is a teacher’s office that contains a bath/ shower room.

Accompanying wet area and privacy changing are to service the Wellness/PE students, LABBB students as well as afterschool athletics. There is a need for boys & girls lockers on same level, which are accessible without having to enter the field house.

These same spaces are extensively utilized after school for our interscholastic program.

Belmont High School offers an extensive interscholastic athletic program throughout the academic year consisting of 31 sports with 69 levels of competition. Our teams are members of the MIAA and compete in the Middlesex League. In recent years our program competed in numerous State Tournaments at both the Sectional and State Championship level. In the fall Belmont High School has been recognized & honored by the MIAA with their Sportsmanship Award.

Interscholastic sports are offered at the freshman, junior varsity, and varsity levels.

Fall sports are field hockey, cross country, soccer, girls’ swimming & diving, volleyball, golf, cheerleading, and football.

Winter sports include basketball, ice hockey, indoor track, boy’s swimming, and wrestling, and alpine skiing.

Spring sports include baseball, softball, outdoor track, tennis, lacrosse, and rugby.

Each year, approximately 75% of Belmont High School students participate in interscholastic athletics.

In the expanded School, it is anticipated that the existing 30,000 SF Field House will be retained and will continue to be used as a multi-purpose teaching and competition space. In addition, a +/- 6,000 sf gym will be provided with two teaching stations to service the 7-8 grade students. Finally, a 3,000 sf alternative PE space will be provided that will serve the currently offered programs in dance, yoga, cheerleading and wrestling.

SPECIAL EDUCATION

SPECIAL EDUCATION GRADES 9-12

The Special Education Program at BHS encompasses a full range of student support services for students on any type of support plan. These include students with IEPs, students on 504s and students on iCAPS (Individual Curriculum Accommodation Plans).

A. EDUCATIONAL PROGRAM

There are presently 143 students served by these programs, with 140-175 students per year typically supported by these resource rooms, teachers, psychologists, and related service providers.

The program is implemented by 6.6 FTE Special Education Teachers, and 1.76 FTE School Psychologists. Additional related services staff (Speech, OT, and PT) not based at BHS support the delivery of services as needed and warranted by a student's support plan.

The program is primarily inclusion oriented, with the majority of students receiving support within the regular education environment. This model is supported by resource room classes regularly scheduled for students as an elective. These resource rooms are where students receive targeted services and interventions as dictated by their support plan. Currently BHS has seven Designated Resource Rooms. Of these rooms, four serve students requiring more general types of academic support, two are tailored to supporting students with Emotional Difficulties and one is tailored to supporting students with Autism Spectrum Disorders (ASD).

Additionally, the BHS special education program includes two self-contained classrooms, five small offices and one small conference room. One of these classrooms is utilized by our NECC Partner Program to serve our low-functioning ASD students. The other self-contained classroom and two of the small office spaces are utilized by the LABBB Collaborative to provide services to students warranting more restrictive placements. The three remaining offices are used by the two school psychologists and related service providers to deliver their services.

SPECIAL EDUCATION GRADES 7 & 8

The Special Education programs and services at the 7th and 8th grades are designed to meet the support needs of students on IEPs, 504s and ICAPS (Individual Curriculum Accommodation Plans). The program is implemented by 4.5 FTE Special Education Resource Room Teachers, a 0.5 FTE Autism Inclusion Specialist, a 0.5 FTE School Psychologist, a 0.5 FTE School Social Worker, and a 0.33 FTE Speech and Language Therapist. Additional related services staff (OT and PT), not based at CMS, support the delivery of services as needed and warranted by a student's support plan.

Programming at CMS is primarily is based on an inclusion model of service delivery. Students receive instruction within general education classes with appropriate aides and supports as determined by a student's IEP, 504s or ICAPs. In addition, most students on IEPs receive services within grade level Resource Rooms. These Resource Rooms incorporate both small group and individualized instruction.

Currently the 7th and 8th grade special education programs include six designated Resource Room classrooms. Of these rooms, four service students requiring more general types of academic support, one is tailored to supporting students with Emotional Difficulties, and one is tailored to supporting students with Autism Spectrum Disorders.

CMS 7th and 8th grade is also home to two substantially separate classrooms, and one therapy/office, operated by our LABBB Collaborative to provide services to students with moderate to severe developmental disabilities. The three remaining offices at Chenery are used by the school psychologist, the therapeutic school social worker, and the speech and language therapist. The other related service providers share space within available classrooms, offices, or workrooms.

There are presently 78 7th and 8th grade students supported and served by these special education programs and staff.

NEED FOR INCREASED SPACE FOR SPECIAL EDUCATION PROGRAMS AT BHS

There are currently 59 students in grade 7-12 whose needs are being met in OOD placements. Increased space at BHS would allow the district to meet the needs of some of these students in-district. By increasing our classroom capacity for both partially and substantially separate programming, the district would be able to develop more in house programs to support our students. Although Out of District (OOD) placements are used by many districts to meet the needs of students whose disabilities present challenges beyond the expertise or program capacities of their home districts, Belmont has not been able to address the needs of some students due to lack of space to build appropriate programs. These include students with Language Based Learning Disabilities as well as lower functioning ASD students. Additionally, the programs that currently exist to support our ASD students, as well as students with Socio-emotional challenges have grown over the years warranting an increased need for space and ancillary supports. While our LABBB collaborative programs help meet many of these needs, and have programs based within our buildings, some of these needs could be more cost effectively met if there was room to expand.

3.3.4 - PREFERRED SOLUTION

A. EDUCATIONAL PROGRAM

In the new school, to support the 7-12 program, a total of ten 850 sf classrooms will be provided for special education instruction, together with six 500 sf Resource Rooms and five small group instruction rooms.

METCO

Belmont has long been a member of the METCO program, which serves non-white children from Boston. It is a voluntary program intended to expand educational opportunities, increase diversity, and reduce racial isolation, by permitting students in certain cities to attend public schools in other communities that have agreed to participate. In the expanded Belmont High School, we would like to provide an office for the METCO director and an 850 sf METCO classroom . The METCO classroom is used for a wide variety of uses during the school day as well as before and after school, including small group instruction, tutoring and meetings with students.

TRANSPORTATION POLICIES AND PROCEDURES

The Belmont Public Schools provide regular day transportation for students in grades Kindergarten through 12. Students in grades K-6 who live at least two miles from their assigned school are provided busing for free, in accordance with MGL Ch 71, § 68. Busing is offered for a fee of $575.00 for students in grades K-6 who live less than two miles from school and for students in grades 7-12, regardless of distance from school. The district offers partial or full fee waivers, based on household size and income. Fee waivers may be requested by parents and are reviewed confidentially. Due to limited resources, bus service is not offered in some areas of town at all grades, primarily where students live close to school.

The district contracts with a transportation vendor to provide buses and drivers. The district has utilized six 77-passenger school buses for several years, but has added an additional bus in Fiscal Year 2017 and another in Fiscal Year 2018 (for a total of eight buses) in response to growing enrollment and student ridership. In Fiscal Year 2018 there are 826 students registered for busing (256 elementary, 451 middle, 119 high).

The routes set for the eight buses include routes to transport some elementary students to district schools outside of their regularly-assigned elementary school. As new students continue to move into the town, they are placed in this manner in order to balance class size by grade across all elementary schools within the district.

The district is in the process of reviewing bus routes to decrease the number of stops and make the routes driven more efficient, where possible, in order to expedite the arrival of buses to school. This process is being developed in response to increasing student enrollment and ridership, increasing vehicle traffic in town during rush hour, and in light of the fact that each of the eight buses performs routes at multiple levels (elementary, middle and high).

When the grade configuration at Belmont High School changes as part of the current potential building project, routes will be reviewed and altered as needed.

3.3.4 - PREFERRED SOLUTION

A. EDUCATIONAL PROGRAM

BELMONT HIGH SCHOOL 15 MODULE SCHEDULE

	Monday	Tuesday	Wednesday	Thursday	Friday
7:35—7:59	A1	A2	A3 7:35-7:59	A4	A5
7:59—8:24	B1	B2	B3 7:59-8:24	B4	B5
8:27—8:52	C1	C2	C3 8:26-8:51	C4	C5
8:55—9:20	D1	D2	D3 8:54-9:19	D4	D5
9:23—9:49	E1	E2	E3 9:22-9:47	E4	E5
9:52—10:17	F1	F2	F3 9:49-10:14	F4	F5
10:20—10:45	G1	G2	G3 10:17-10:42	G4	G5
10:48—11:13	H1	H2	H3 10:45-11:10	H4	H5
11:16—11:41	I1	I2	I3 11:12-11:37	I4	I5
11:44—12:09	J1	J2	J3 11:40-12:05	J4	J5
12:12—12:37	K1	K2	K3 12:08-12:33	K4	K5
12:40—1:05	L1	L2	L3	L4	L5
1:08—1:33	M1	M2	M3	M4	M5
1:36—1:59	N1	N2	Staff Meeting Time	N4	N5
1:59-2:25	O1	O2		O4	O5

A. EDUCATIONAL PROGRAM

CHENERY MIDDLE SCHOOL MONDAY, TUESDAY, THURSDAY, FRIDAY BLOCK SCHEDULE

MONDAY, TUESDAY, THURSDAY, FRIDAY			
Grade 5	**Grade 6**	**Grade 7**	**Grade 8**
Homeroom 7:55-7:58	Homeroom 7:55-7:58	Homeroom 7:55-7:58	Homeroom 7:55-7:58
PASSING TIME	PASSING TIME	PASSING TIME	PASSING TIME
Block A 8:00 - 8:50	Block A 8:00-8:50	Block A 8:00-8:50	Block A 8:00-8:50
PASSING TIME	PASSING TIME	PASSING TIME	PASSING TIME
Block B 8:52 - 9:42	Block B 8:52 - 9:42	Block B 8:52- 9:42	Block B 8:52 - 9:42
Block B/C 9:42 -10:07	PASSING TIME	PASSING TIME	PASSING TIME
Block C 10:07 - 10:57	Block C 9:44-10:34	Block C 9:44-10:34	Block C 9:44-10:34
Walk Class to Cafe 10:57-11:00	Lunch **10:34-10:59**	PASSING TIME	PASSING TIME
Lunch **11:00-11:25**	Block D 10:59-11:49	Block D 10:36-11:26	Block D 10:36-11:26
Walk Class from Cafe 11:25-11:2	PASSING TIME	PASSING TIME	Lunch **11:26-11:51**
Block E 11:28 - 12:18	Block E 11:51-12:41	Block E 11:28-12:18	Block E 11:51-12:41
Block E/F 12:18 - 12:43	PASSING TIME	Lunch **12:18-12:43**	PASSING TIME
Block F 12:43 - 1:33	Block F 12:43-1:33	Block F 12:43-1:33	Block F 12:43-1:33
PASSING TIME	PASSING TIME	PASSING TIME	PASSING TIME
Block G 1:35-2:25	Block G 1:35-2:25	Block G 1:35-2:25	Block G 1:35-2:25

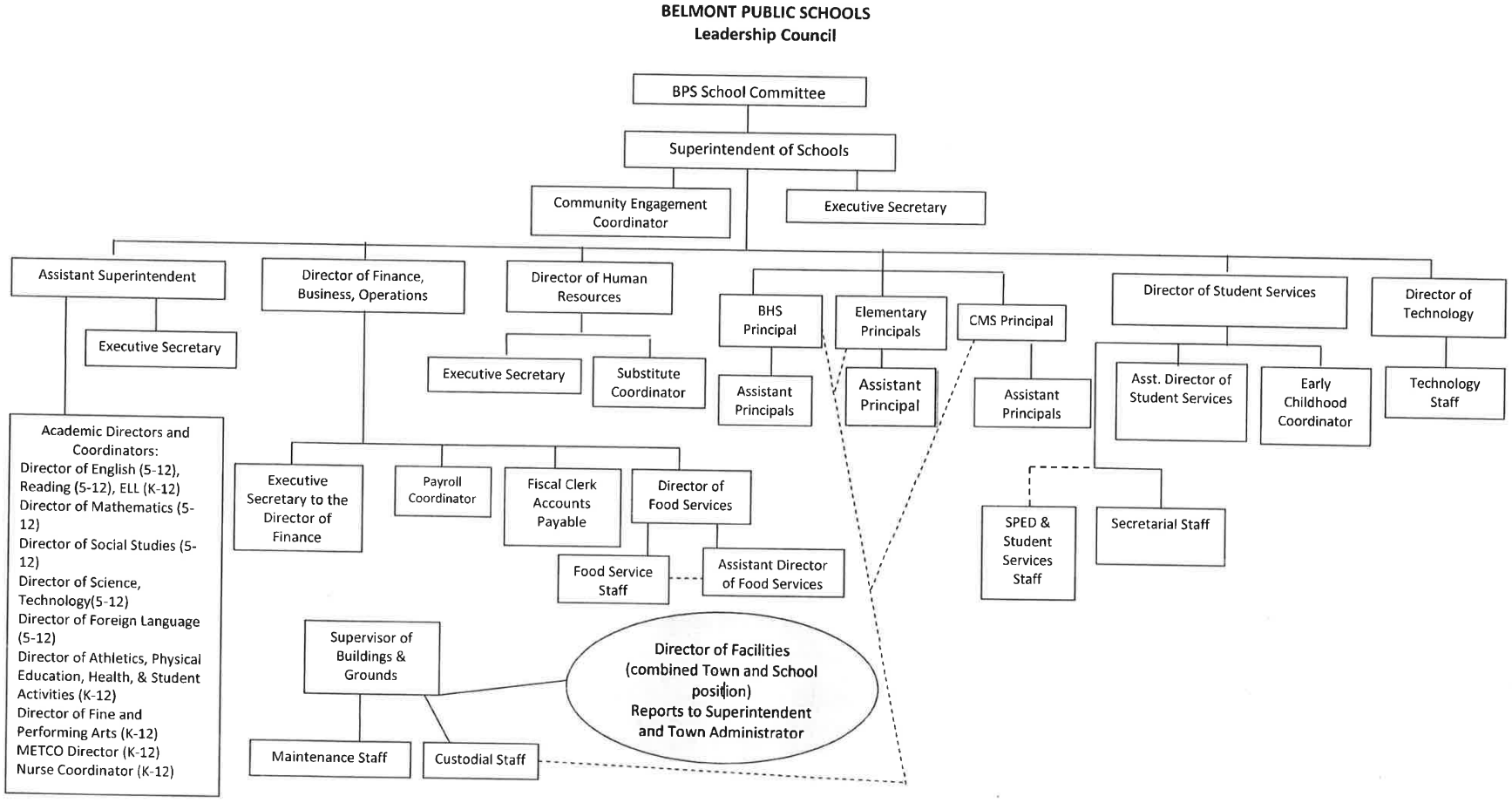
3.3.4 - PREFERRED SOLUTION

A. EDUCATIONAL PROGRAM

CHENERY MIDDLE SCHOOL MONDAY, TUESDAY, THURSDAY, FRIDAY BLOCK SCHEDULE

WEDNESDAY			
Grade 5	**Grade 6**	**Grade 7**	**Grade 8**
Homeroom 7:55-8:12	Homeroom 7:55-8:12	Homeroom 7:55-8:12	Homeroom 7:55-8:12
PASSING TIME	PASSING TIME	PASSING TIME	PASSING TIME
Block A 8:14 - 8:52	Block A 8:14-8:52	Block A 8:14-8:52	Block A 8:14-8:52
PASSING TIME	PASSING TIME	PASSING TIME	PASSING TIME
Block B 8:54-9:32	Block B 8:54-9:32	Block B 8:54-9:32	Block B 8:54-9:32
Block B/C 9:32 - 9:56	PASSING TIME	PASSING TIME	PASSING TIME
Block C 9:56 - 10:34	Block C 9:34-10:12	Block C 9:34-10:12	Block C 9:34-10:12
Walk Class to Cafe 10:34-10:37	Lunch **10:12-10:37**	PASSING TIME	PASSING TIME
Lunch **10:37-11:02**	Block D 10:37-11:15	Block D 10:14-10:52	Block D 10:14-10:52
Walk Class to Cafe 11:02-11:05	PASSING TIME	PASSING TIME	PASSING TIME
Block E 11:05-11:43	Block E 11:17-11:55	Block E 10:54-11:32	Block E 10:53-11:05
Block E/F 11:43 - 11:57	PASSING TIME	Lunch **11:32-11:57**	Lunch **11:05-11:30**
PASSING TIME	PASSING TIME	PASSING TIME	Block E 11:30-11:56
Block F 11:57 - 12:35	Block F 11:57-12:35	Block F 11:57-12:35	PASSING TIME
PASSING TIME	PASSING TIME	PASSING TIME	Block F 11:57-12:35
Block G 12:37-1:15	Block G 12:37-1:15	Block G 12:37-1:15	PASSING TIME
			Block G 12:37-1:15

DISTRICT ORGANIZATIONAL CHART



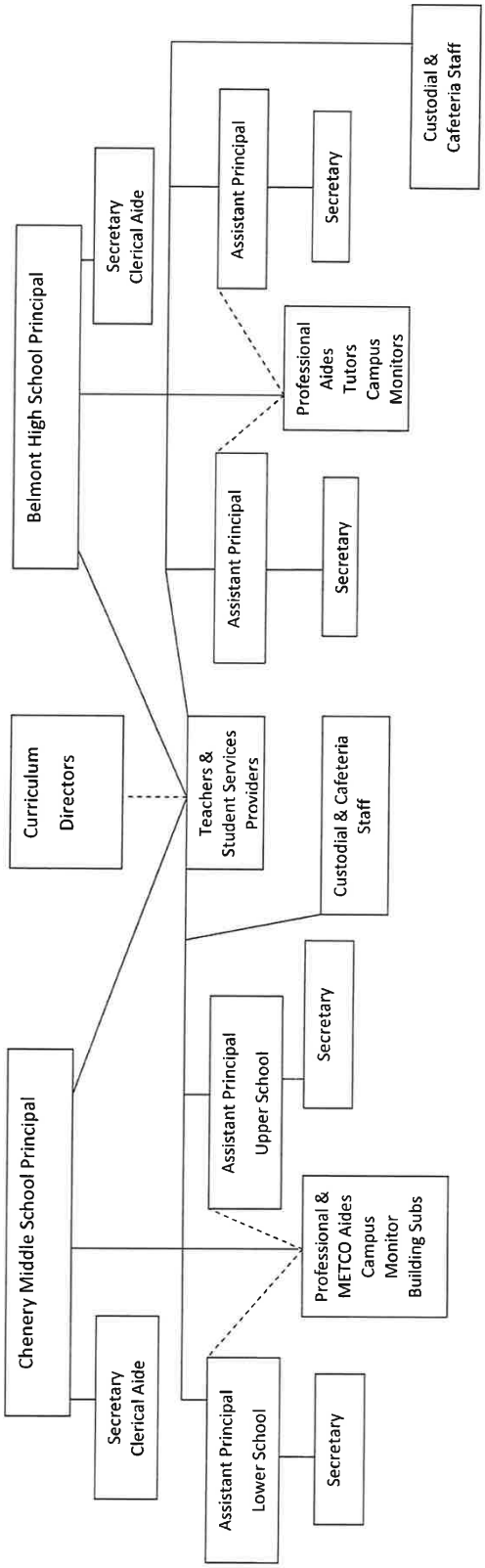
3.3.4 - PREFERRED SOLUTION

A. EDUCATIONAL PROGRAM

BELMONT HIGH & CHENERY MIDDLE SCHOOL ORGANIZATIONAL CHART

SCHOOL BUILDINGS

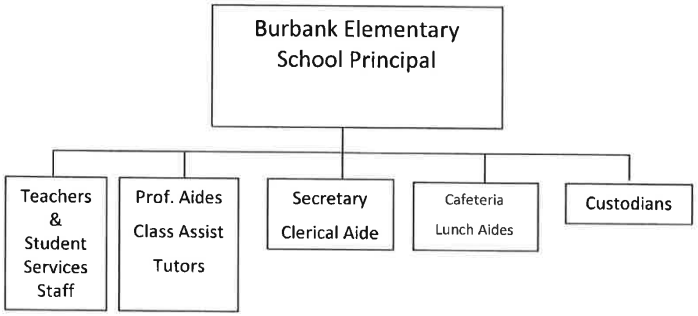
Middle and High School

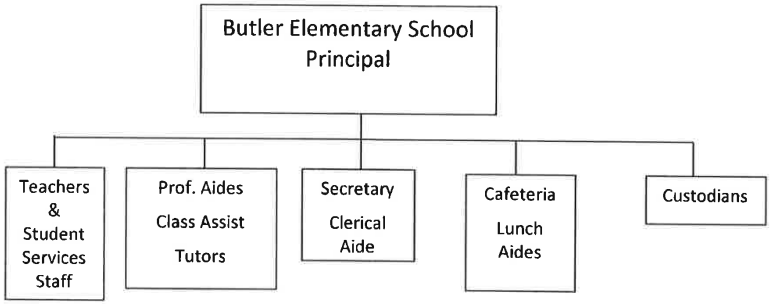


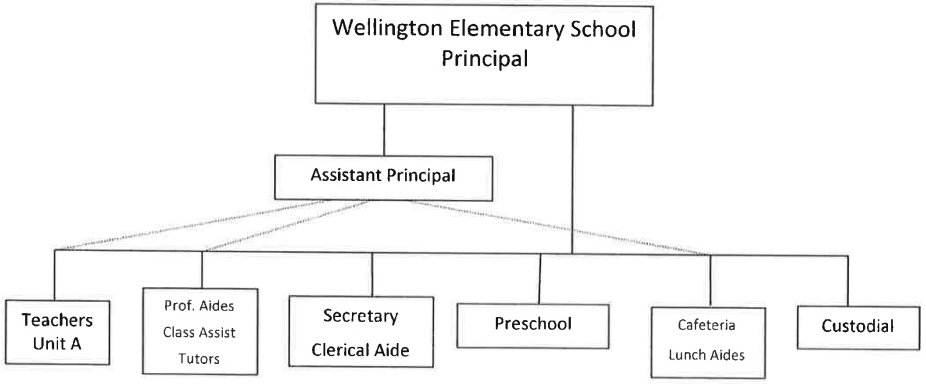
ELEMENTARY SCHOOL ORGANIZATIONAL CHART

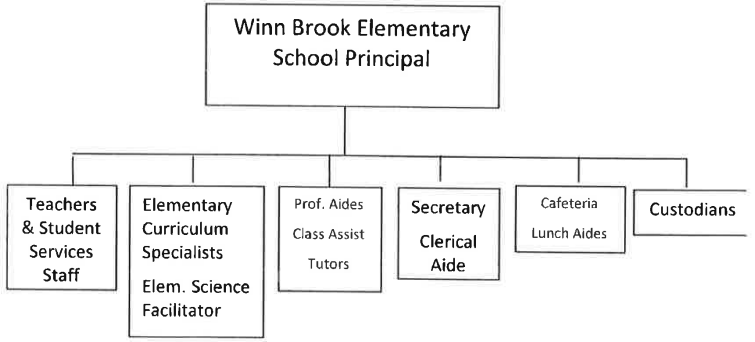
SCHOOL BUILDINGS

Elementary





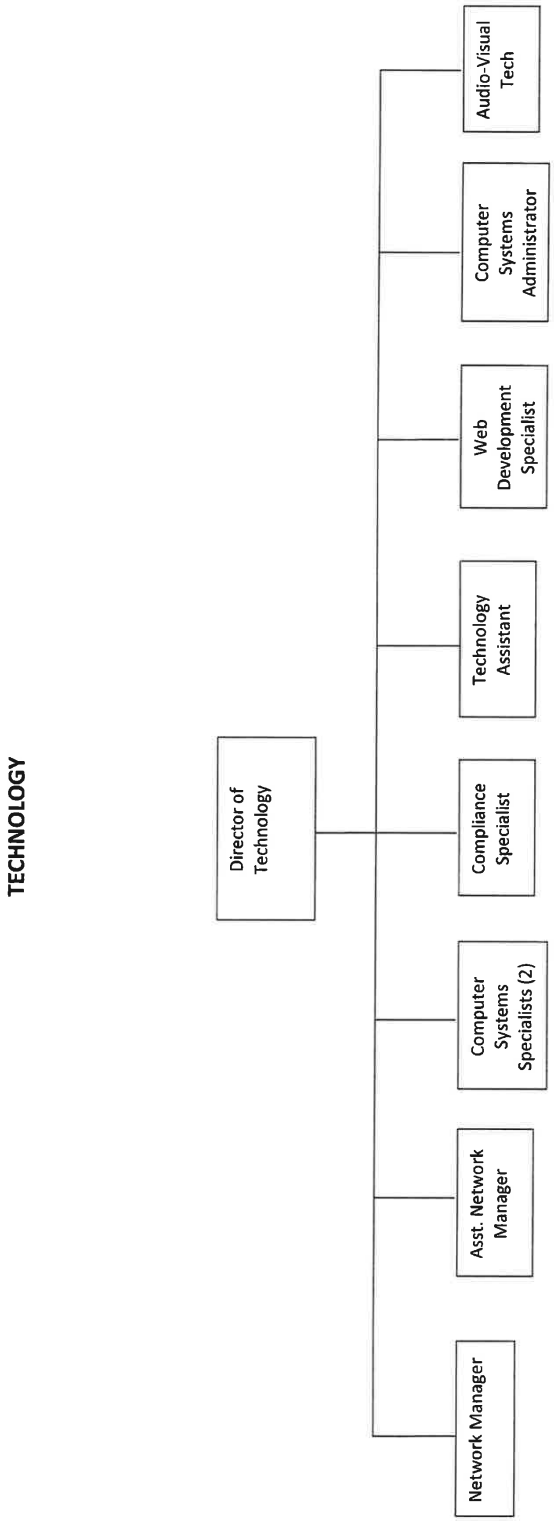




3.3.4 - PREFERRED SOLUTION

A. EDUCATIONAL PROGRAM

TECHNOLOGY ORGANIZATIONAL CHART



BPS STAFFING MODEL UNIT A 2017-18

Belmont High School is organized by department while Chenery Middle School is organized by team. Refer to "BPS Staffing Model Unit A 2017-18" below for staffing listing and model of Belmont High School and Belmont Chenery Middle School.

Packet #3
Document A

BPS Staffing Model Unit A 2017-2018

School	5 Eng/SS	5 Math/Sci	English	Social Studies	Math	Science	Tech Ed	Reading	Special Ed	Music	Art	ELL	Phys Ed/Health	OT	PT
Chenery	Eaton	Bayardi/Morrow	Lanoix	Panzarella	Vital	Gentes	Beebe	Mason	Bresnahan	Dagon(.4)	Byrnes	Yegen	Ciappina	Calden (.16)	Richards (.05)
	Hynes	Knapp	Salvato	Zmijewski	Coleman	Ligon	Dyer	Walls	Milstein	McLellan	Kelley	Brandt	Schmitt	Smith (.16)	
McAllister	Matthews	Dube	Tracey	Janulewicz	Kaushik	MacAulay			Gannon	Phipps	Libertini		Cocchiola		
Lewis	Foundas	Edwards	Niles	Ruane	Mitchell	Green			Watkins	Viscardi	Berson		Gonzales		
Hartunian	Hausman	Heffernan	Osborne	Silver	Waters	Nitchie			O'Regan	Carson					
	Pulizzi	Khan	Thompson	Semuels	Communiello	Reginald			Eichenberg	Landers (.4)			Frender		
	Ferraro	Williams, M	Connors	Tausek	Moyer	Bullard			Cadorette	Reavey(.6)					
			Corrieri	Metter	Golden	Marks			Willis						
			MacKinnon	Blake-Weber	Glick	Marks			LaPolla						
									Ahlborn-Hsu						
					Huestis (.6 coach)										

School	English	Social Studies	Math	Science	Tech Ed	Not Returning	Reading	Special Ed	Music/Theater	Art	ELL	Phys Ed/Health	OT	PT
High School	Carp (.6)	Shea, J (.4)	Lints	Partridge				Macnow	Ketchen	Milowsky	Murphy	O'Connor	Calden (.16)	
	Masterson	Shea, J	Olowinski	Chen				McCarthy	Reavey (.4)	Larkin		Reynolds	Smith (.16)	
Richards	Markley	Zilcoski/DiFonte	Lovett (.8)	Lewis	McLeod			Bruce	Landers (.6)	Roy		Marino		
Hurtubise	Schechinger	Pasternak (.4)	Shah/	Kim (.2)				Bruno		English		Asadoorian, S		
Turner	Yazdhiha	Pritchard	Phillips	Elfreth				Elefteriadis	Flam (.4)			Giusti (.2)		
Brow (.4)	Comment	Dasholf	Carew	Neuburger					Asadoorian, A (.2)					
	Safier/Rothenberg	Streit	Aller	Abbruzzese				Sullivan (.6)						
	Fant	McCabe	Moresco	DeFarias				Kirsten (.4JS+.6)						
	Bloom	Goldfine	Grossi	Williams										
	Reynolds	White	DeLorio	Lefebvre										
	Lockwood-Santiago	Prevost	Harper	John										
	Bosch	Berkman	Snell/Carlivati	Loosman										
		Snow	Pulido	Baker (.2)										
		McDevitt (.2)	Soliozy (.2)											
		Melnikoff (Community Service)												

BPS STAFFING MODEL UNIT A 2017-18

BPS Staffing Model Unit A 2017-2018

School	SLP	Psych	Autism	Guidance	Nurse	Not Returning	Social Wk/Adj	French	Spanish	Latin	Chinese	Library	
Chenery	Magier (.4)	Learner		Hawkins	Hogrefe/Chan		Lazar	Ahern	Sanchez	Manca	Zhang	Duff, K	
	McCann	Frankhouser (.2)		Culver	Rumley (.6)			Pruitt/Tanner (.3)	Pruitt/Tanner (.7)				
				Quinn	Jackman (.2)				Anderson				
				Vestein									
School	**SLP**	**Psych**	**Autism**	**Guidance**	**Nurse**			**French**	**Spanish**	**Latin**	**Chinese**	**Library**	
High School	Mamon (.5)	Glotzbecker		Brown	Jackman (.5)			Kaiser (.6)	Garschina-Bobrow	Brown (.6)	Chung-Swallom (.6)	Landry	
		Wiznitzer (.83)		Ross	MacKinnon			El-Gamel	Fraser/English (.8)	Dunn	Gu (.6)		
				Rowley				Sullivan, L (.6)	Sullivan, L (.4)				
				Taylor					MacIntosh				
				King					Talamas				
				Ruane					Foley (.2)				
									Porter(.6)				

CHENERY MIDDLE SCHOOL STAFFING LISTING BY TEAM AND PROGRAM FUNCTION

Packet #3

Document B

	5TH GRADE	Subject	Room	Phone
Red	Peter Ferraro	Eng/SS	216	6216
	Karen Dube	Math/Sci	217	6217
Orange	Dorothy Pulizzi	Eng/SS	219	6219
	Danielle Bayardi	Math/Sci	218	6218
Yellow	Nicole Hynes	Eng/SS	221	6221
	Mike Williams	Math/Sci	220	6220
Green	Rachel Hausman	Eng/SS	222	6222
	Yasmin Khan	Math/Sci	224	6224
Blue	Nicolette Foundas	Eng/SS	225	6225
	Nicole Heffernan	Math/Sci	223	6223
Indigo	Jennifer Mathews	Eng/SS	227	6227
	Catrina Knapp	Math/Sci	226	6226
Violet	Kerry Eaton	Eng/SS	229	6229
	Quinn Edwards	Math/Sci	231	6231

GUIDANCE			
Carla Hawkins	5th	LSO	5823
Lindsay Culver	6th	USO	5834
Robyn Vetstein	7th	LSO	5833
Joe Quinn	8th	USO	5824

FL/READING/MATH/ELL			
Carmen Anderson	Spanish	M2	1002
Beth Manca	Latin	M1	1001
Bei Zhang	Chinese	M6	1005
Eric Ahern	French Spanish	108	6108
Amy Sanchez	Spanish	M3	1003
Kari Tanner	French Spanish	109	6109
Liz Pruitt	French Spanish	106	6106
Kim Walls	Reading	M5	1005
Lois Mason	Reading	M4	1004
Julia Hueatis	Mathematics Specialist	SDR/376	TBD
Grace Yegen/Donna Stanton (LTS)	ELL	107	6107
Jane Brandt	ELL	101	6101

6th - Earth:	Subject	Room	Phone
Carrie Salvato	ELA	201	6201
Alane Januiewicz	SS	200	6200
Ben Ligon	Science	208	6208
Bhuvana Kaushik	Math	235	6235

6th - Wind:			
Maureen Lanoix	ELA	207	6207
Allison Ruane	SS	205	6205
Elizabeth Gentes	Science	210	6210
Karl Mitchell	Math	203	6203

6th - Fire			
Laura Tracey	ELA	209	6209
Brianne Panzarella	SS	214	6214
Andy MacAulay	Science	215	6215
Crystal Waters	Math	211	6211

ENCORE			
Monica Frender	Health	103	6103
David Beebe	Engineering	119	6119
Leon Dyer	Engineering	117	6117
Karen Duff	Library	IMC	5803
Kathleen Byrnes	Art	110	6110
Sarah Libertini	Art	113	6113
Steve Berson	Art	213	6213
Katie Kelley	Art	313	6313
Dana Cocchiola	PE	Gym	6154
Kristen Ciappina	PE	Gym	6154

NURSING			
Stephanie Chan	Head Nurse	Clinic	5806
Beth Rumley	Nurse	Clinic	5806
Mary Conant-Cantor	Nursing Director	Clinic	5806

LABBB			
Jessica Niland	LABBB	111	6111
Rose Farrell	LABBB	112	6112
Eileen Tomkiewicz Caroline Brown & Maggie Keen	LABBB	212 233	6212 6233

7-1:	Subject	Room	Phone
Adam Niles	English	303	6303
Rebecca Silver	Geography	301	6301
Rebecca Green	Science	308	6308
Emily Communiello	Math	302	6302

7-2:			
Lucy Osborn	English	309	6309
Peter Tausek	Geography	307	6307
Niki Nitchie	Science	310	6310
Becky Moyer	Math	305	6305

7-3:			
Kim Thompson	English	311	6311
Andrew Samuels	Geography	315	6315
Shoba Reginald	Science	314	6314
Jonathan Golden	Math	317	6317

ENCORE			
Ryan Schmitt	PE	Gym	6158
David Gonzales	PE Health	Gym 105	6158 6105
Sean Landers	Music	143	6143
Jackie Viscardi	Music/Chorus	144	6144
Sara Carson	Music/Chorus	141	6141
Sharon Phipps	Band/Music	140	6140
John McLellan	Band/Music	140	6140
Margot Reavey	Orchestra	Aud.	1011
Margaret Dagon	Orchestra	Aud.	1011
TBD	METCO Tutor		6232

Staff Spaces		Staff Spaces	
		LCR	6148
SDR/376	6377	Mac Lab	6115
US Conference Room	6326	Offices	
Staff Lounge	6120	Main	5801
Library	5803	Lower	5820
Lab 202	6202	Upper	5830
LS Copy Room	6232		
Directors' Office	5811	Kitchen	5804

8-1:	Subject	Room	Phone
Caitlin Corneri	English	331	6331
Katherine Meller	History	333	6333
Jon Marks	Science	324	6324
Wendy Coleman	Math	332	6332

8-2:			
Jill MacKinnon	English	327	6327
Suzanne Zmijewski	History	329	6329
Joanne Marks	Science	322	6322
Chandrika Vittal	Math	325	6325

8-3:			
Michelle Connors	English	320	6320
Natalie Blake-Weber	History	323	6323
Vanessa Bullard	Science	316	6316
Timothy Glick	Math	321	6321

SPECIAL EDUCATION	Subject	Room	Phone
Rebecca Gannon	Special Educ. 5	228	6228
Eleanor Ahlborn-Hsu	Special Educ. 5	369A	5810
Elizabeth Willis	Special Educ. 6	204	6204
Theresa Milstein	Special Educ. 6	204	6204
Catherine Bresnahan	Special Educ. 7	306	6306
Jessica Watkins	Special Educ. 7	369	6369
Denise LaPolla	Special Educ. 8	319	6319
Beverly Cadorette	Special Educ. 8	318	6318
Erin O'Regan	KEY/BEH	CRA	5814
Elizabeth Eichenberg	KEY/ASD	SCR	1010
Lianne McCann	Spe/Lang	206	6206
David Learner	Psych	MO	5813
Paula Lazar	Soc Work	MO	5812
Rene Magler Louisa Popkin	Spe/Lang Inclusion	320A	6328

Updated 9.1.2017

3.3.4 - PREFERRED SOLUTION

A. EDUCATIONAL PROGRAM / BHS Faculty Visioning

VISUAL LISTENING : BHS FACULTY

Belmont High School

IMAGE FEEDBACK
VISUAL LISTENING

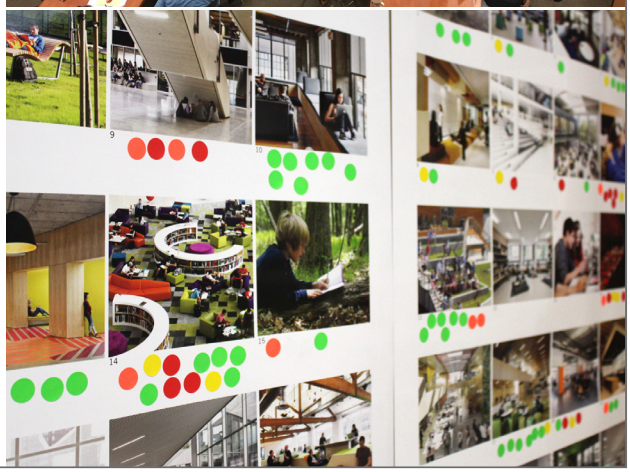
Purpose of 'Visioning Listening'

- To gauge feedback from key stakeholders through a selection of varying graphic images intended to describe certain feelings/spacial constructs that could describe potential educational space for this new project.
- This process is intended to begin to clarify who they are and what they are attracted to.
- Images are grouped into nine key categories : **Arts, Environmental Stewardship, Outdoor Learning, Personal Reflection, Socialization, Emotional Response, Athletic+Wellness, Group Learning, and Space for Making**

Rules of Engagement

- Grab some Dots :

  Green (like) and Red (dislike)
- React and pick your favorite (and least favorite) images from each of the eight categories
- P+W will collect data from stakeholder feedback



A. EDUCATIONAL PROGRAM / BHS Faculty Visioning

VISUAL LISTENING / BOARDS

VISUAL LISTENING
SUMMARY (TOP 5 / BOTTOM 5)

3.3.4 - PREFERRED SOLUTION

A. EDUCATIONAL PROGRAM / CMS Faculty Visioning

VISUAL LISTENING : CMS FACULTY

Belmont High School

IMAGE FEEDBACK
VISUAL LISTENING

Purpose of 'Visioning Listening'

- To gauge feedback from key stakeholders through a selection of varying graphic images intended to describe certain feelings/spacial constructs that could describe potential educational space for this new project.
- This process is intended to begin to clarify who they are and what they are attracted to.
- Images are grouped into nine key categories : **Arts, Environmental Stewardship, Outdoor Learning, Personal Reflection, Socialization, Emotional Response, Athletic+Wellness, Group Learning, and Space for Making**

Rules of Engagement

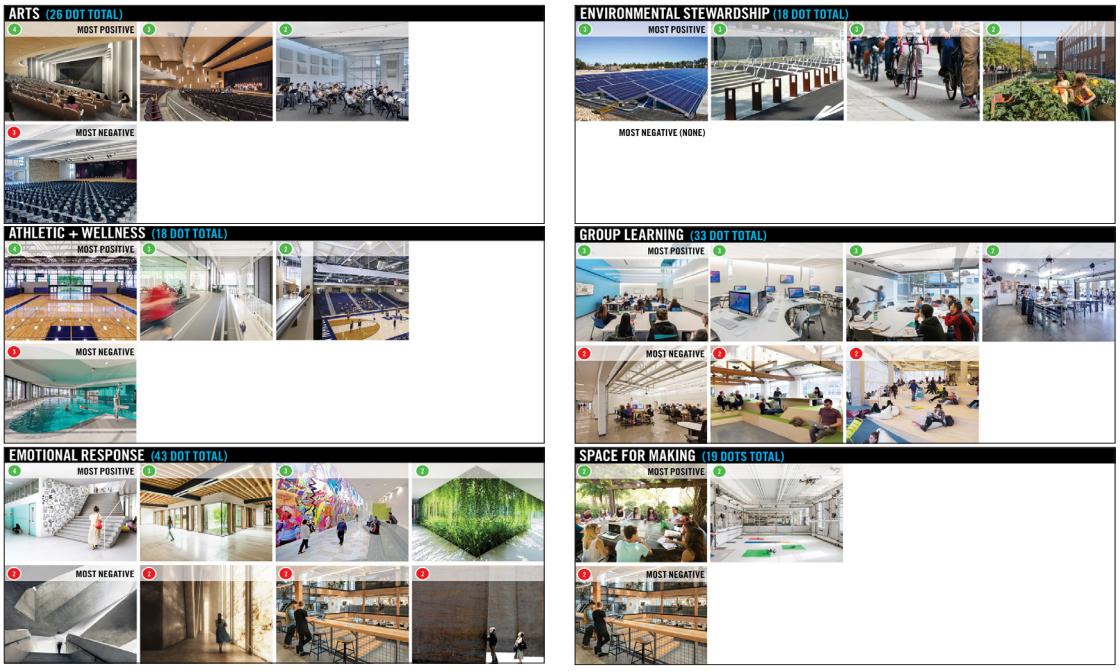
- Grab some Dots :

  Green (like) and Red (dislike)
- React and pick your favorite (and least favorite) images from each of the eight categories
- P+W will collect data from stakeholder feedback

A. EDUCATIONAL PROGRAM / CMS Faculty Visioning

VISUAL LISTENING / BOARDS

VISUAL LISTENING
SUMMARY (TOP / BOTTOM - RATED IMAGES)



3.3.4 - PREFERRED SOLUTION

A. EDUCATIONAL PROGRAM / CMS Faculty Visioning

VISUAL LISTENING
SUMMARY (TOP / BOTTOM - RATED IMAGES)

DISCUSSION NOTES
HOW DO WE IMPROVE UPON THESE SPACES?

1. LEARNING COMMONS

- Books, E-Books
- Use Carts, Mobile (currently)
- Teach small groups/classes 4-5 people (quiet) - Collaborate
- Not too much glass – distracting
- Audio Recording, Writing by Audio/Speaking
- Video Production, Green Screen
- More Small Spaces – Safe place for 7-8 people
- Classrooms, Small Group Spaces, Diversity of Space
- Comfy Furniture, Standing Desks, Variety
- Monitor of Space? Dedicated Staff? Supervised? After Hours? Secure
- Space for Books
- Tech Spaces with Acoustic Separation
- Video Production Room
- More Small Spaces for MS Students
- Air Conditioning

2. CIVIC COMMONS - CAFETERIA

- Too Big, Too Loud (currently)
- No Corridors, Need Acoustic Treatment
- Variety of Space to Serve Food
- Cozy Areas, Monitored/Supervised
- Flex Seating/ Bench, Booth Seating
- Recycling
- Smaller Spaces
- Better Access

3. OUTDOORS

- Garage Doors – Art ok, Not great otherwise – distracting in classroom
- One Outdoor Space Per Team, Access to Outside
- Courtyard – Outdoor, Secure
- Roof Garden – Not ideal, Danger, Need Enough Protection
- Working Space Defined – To Write, Think, etc.
- Better Protection for Roofs
- Greenhouse on Roof

4. CLASSROOMS

- Less Glass in Class for MS Students – Distracting!
- Diversity of Organization of Classroom – Flex of Use, Furniture
- Merge Classrooms Together a Possibility
- Moving Partitions that are Acoustic
- Natural Light, Operable Windows, A/C
- Can't Think When it's Too Hot
- Need Control of Natural Light – Glare (Movies, etc.)
- Safe, Efficient Emergency Exit / Process
- Connecting Doors Between Classes
- Differences in Team Classrooms for Flexibility
- Operable Walls
- Window Treatments for Less Distraction

PERKINS+WILL

December 18, 2017
Re: **Belmont High School Community Visioning – December 14, 2017**

VISUAL LISTENING : MOST LIKED (*At least 3 Green Dots*)

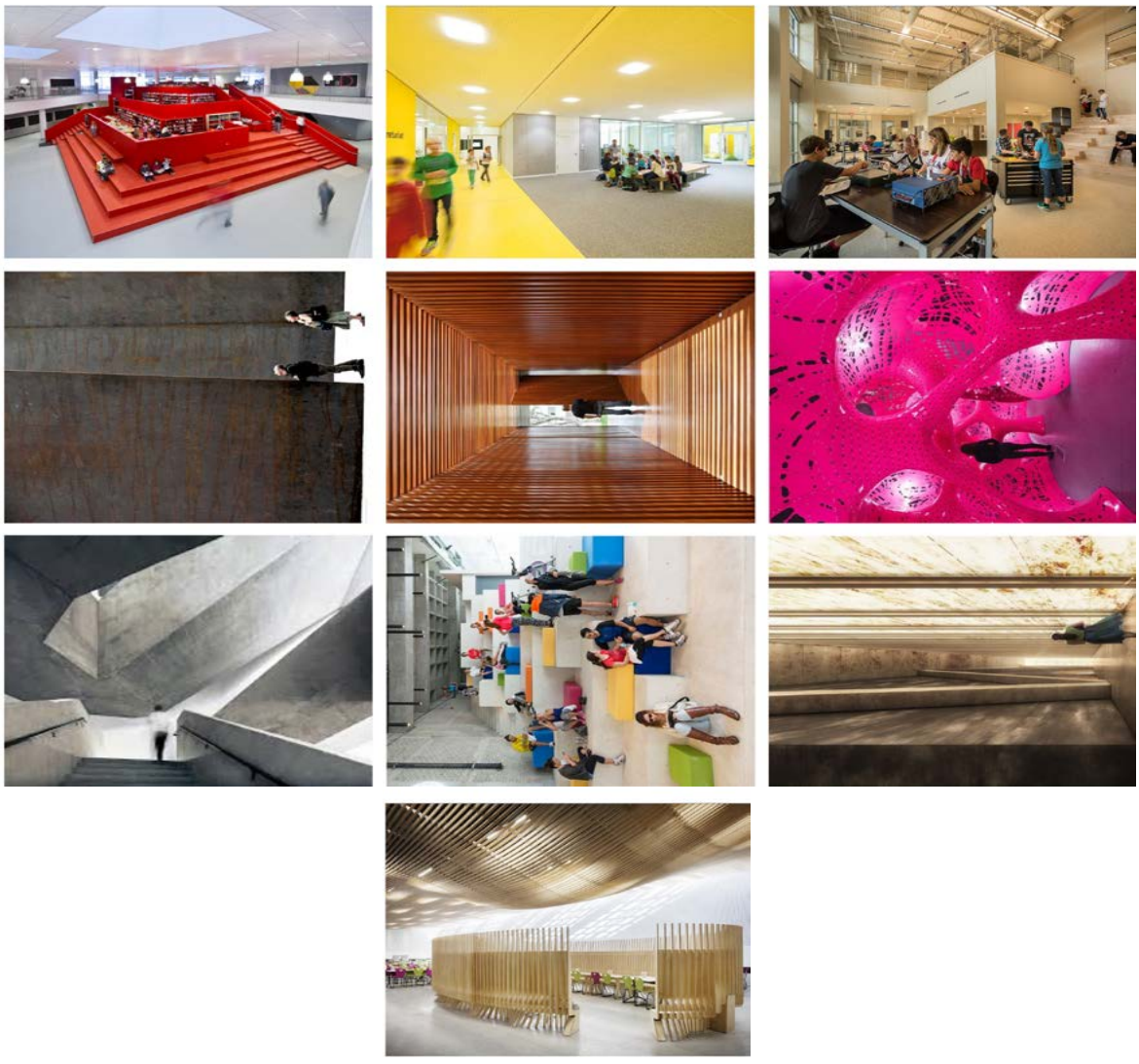
3.3.4 - PREFERRED SOLUTION

A. EDUCATIONAL PROGRAM / Community Engagement Visioning

PERKINS+WILL

December 18, 2017
Re: **Belmont High School Community Visioning – December 14, 2017**

VISUAL LISTENING : MOST NOT PREFFERED (*At least 2 Red Dots*)



BHS FACULTY : ‘MASH-UP’ EXERCISE

Belmont High School

BHS FACULTY WORKSHOP
‘MASH-UP’ EXERCISE

- **Break up into Working Groups**
- **Question**

  “How can traditional and non-traditional place ment of educational spaces support teaching and learning in new ways?”

- **Explore**

  Working groups to prepare adjacency diagrams with educational spaces. Take cut-outs of the major spaces and tape them to a boards to create a compelling adjacency diagram.

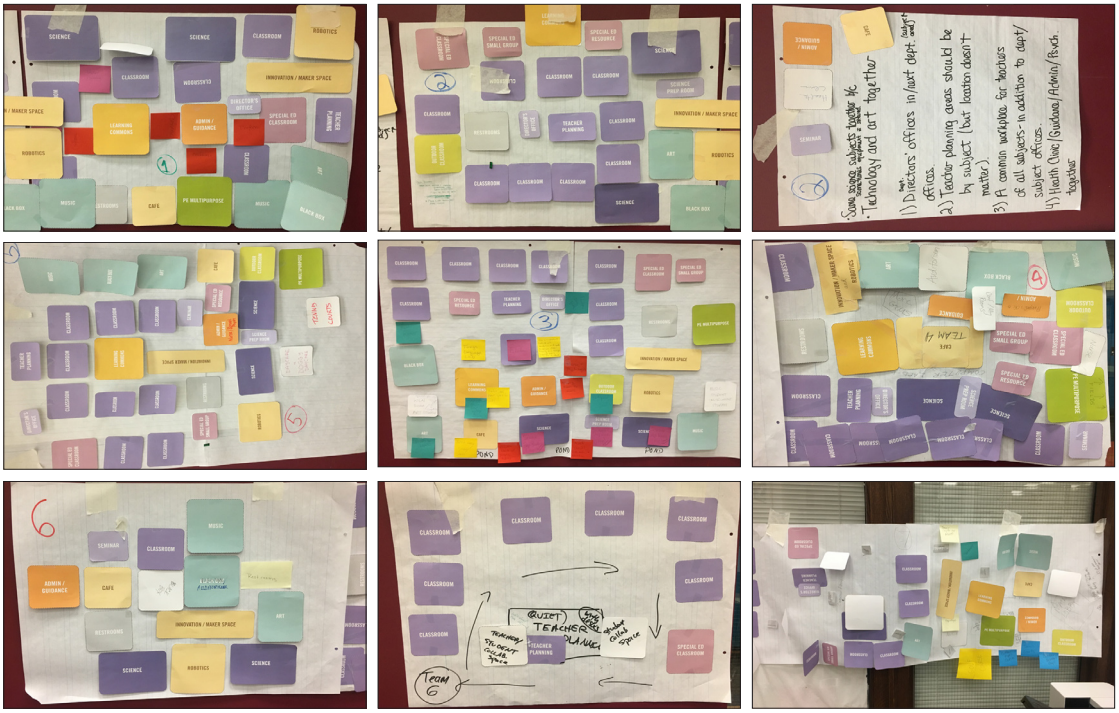
- **Report Back**

  Each team to present their arrangement and ideas that support their argument.

3.3.4 - PREFERRED SOLUTION

A. EDUCATIONAL PROGRAM / BHS Faculty “Mash-Up” Exercise

‘MASH-UP’ EXERCISE / BOARDS



‘MASH-UP’ EXERCISE / BOARDS

A. EDUCATIONAL PROGRAM / BHS Faculty "Mash-Up" Exercise

'MASH-UP' EXERCISE
SUMMARY

Group 01

- Classrooms should be surrounded by teacher planning spaces.
- Administration and Library Common spaces centrally located in school

Group 02

- Department Directors' offices should be in/next to department offices (same subject)
- Teacher planning areas should be by subject (location does not matter)
- A common workplace for teachers of all subjects (in addition to dept. / subject offices)
- Interdisciplinary work / Innovation space should be open to surrounding school.
- Administration spaces should be near health/wellness/ medical/psych. spaces.
- Technology spaces near Art spaces could create interesting projects and ideas.
- Science of same subject should be located together - to share resources / equipment

Group 03

- U-shaped classroom configuration
- Science and Art facing pond/nature
- Cafeteria commons has connection to pond
- Quiet spaces for students to focus
- Kiln needed for Arts programs
- Protected Bike racks
- More space for restrooms and teacher planning

Group 04

- Art spaces near Robotics could create dynamic projects
- Buffer the acoustics of Art spaces with surrounding school
- Have nurse space near the outdoors - access to athletics
- Administration and Guidance do not need to be together - spread out throughout the school

Group 05

- Maintain current departmental system for academic spaces
- Need Tennis Courts, Daycare
- Administration spaces should be near Guidance and Medical spaces.
- PE spaces should be located near outdoors
- Science Labs to be located together

'MASH-UP' EXERCISE
SUMMARY

Group 06

- Integrate Science Labs with the Arts
- Keep current academic Departmental Model
- Teachers need desks/storage in classrooms
- Keep current academic Departmental Model
- Teachers need desks/storage in classrooms

Group 07

- Cafeteria Commons can mix with the Learning Commons
- Have event spaces near parking for high volume outside participation / visiting
- Create 'fun' display spaces
- Need a highly flexible / multi-functional space in core of the school
- Recreational space (golf?) on roof terraces
- What recreational do we not have? Outdoor Basketball

Group 08

- Create an ideal / dynamic theater area (see diagram to right)
- Need more storage / changing rooms for Music spaces
- Create a shared Common space on ground level
- Devote one building level to Science / Labs

Idea theater / arts area layout (provided by group 08)

GRADES 7-12/ 2,215 STUDENTS

Date: 2/16/2018 Preferred Schematic Report

BELMONT HIGH SCHOOL	Existing Conditions			PROPOSED/ GRADES 7-12									MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
				Existing to Remain/Renovated			New			Total						
ROOM TYPE	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	Comments
CORE ACADEMIC SPACES			**62,291**			**0**			**112,750**			**112,750**			**105,110**	
(List classrooms of different sizes separately)																
Classroom - General	690	53	36,571				850	85	72,250	850	85	72,250	850	75	63,750	825 SF min - 950 SF max
Teacher Planning (MS-8@200, HS-6@500)	423	12	5,072										100	75	7,500	
MS Teacher Planning							200	8	1,600	200	8	1,600				
HS Teacher Planning							500	6	3,000	500	6	3,000				
Small Group Seminar (20-30 seats)							500	6	3,000	500	6	3,000	500	5	2,500	
Science Classroom / Lab	1,075	10	10,750				1,440	20	28,800	1,440	20	28,800	1,440	19	27,360	3 x85% ut=20 Seats-1 per /day/student
Prep Room	184	6	1,101				200	10	2,000	200	10	2,000	200	19	3,800	
Central Chemical Storage Rm							100	1	100	100	1	100	200	1	200	
ELL (full size classroom with partition)							1,000	2	2,000	1,000	2	2,000				
Math Department Planning (1 @ 504 SF)	*SF Included in Teacher Planning*															
Math Collaboration (1 @ 362 SF)	*SF Included in Teacher Planning*															
Language Department Planning (1 @ 508 SF)	*SF Included in Teacher Planning*															
Language Collaboration (1 @ 370 SF)	*SF Included in Teacher Planning*															
Language Teacher Workspace (1 @ 130 SF)	*SF Included in Teacher Planning*															
Social Studies Department Planning (1 @ 638 SF)	*SF Included in Teacher Planning*															
Social Studies Collaboration (1 @ 352 SF)	*SF Included in Teacher Planning*															
English Department Planning (1 @ 668 SF)	*SF Included in Teacher Planning*															
English Collaboration (1 @ 359 SF)	*SF Included in Teacher Planning*															
English Department Copy (1 @ 106 SF)	*SF Included in Teacher Planning*															
Science Department Planning (1 @ 700 SF)	*SF Included in Teacher Planning*															
Science Department Collaboration (1 @ 375 SF)	*SF Included in Teacher Planning*															
English Department Director Office	*80*	*1*	*80*													
Social Studies Department Director Office	*90*	*1*	*90*													
Science Department Director Office	*105*	*1*	*105*													
Language Department Director Office	*76*	*1*	*76*													
Math Department Director Office	*87*	*1*	*87*													
Physics Computer Lab	*1,022*	*1*	*1,022*													
Language Computer Lab	*869*	*1*	*869*													
English Writing Lab	*883*	*1*	*883*													
Growing Room	*172*	*1*	*172*													
Science Storage	*223*	*2*	*446*													
Animal Storage	*133*	*1*	*133*													
Science Computer Lab	*709*	*2*	*1,417*													
Math Project Room	*441*	*1*	*441*													
Lecture Hall	*2,100*	*1*	*2,100*													
ELL Classroom	*770*	*1*	*770*													
ELL Storage	*106*	*1*	*106*													
MODULAR HIGH SCHOOL																
*Classroom (6 @ 807 SF)**	*SF Included in Classroom - General*															
MIDDLE SCHOOL																
Classroom		*31*														
ELL Classroom		*2*														
Key 7-8		*2*														
SPECIAL EDUCATION			**6,172**			**0**			**26,510**			**26,510**			**22,150**	
(List classrooms of different sizes separately)																
Self-Contained SPED	794	4	3,176				850	10	8,500	850	10	8,500	950	15	14,250	825-950 SF equal to surrounding classrooms
Self-Contained SPED Toilet							60	4	240	60	4	240	60	15	900	
Resource Room							500	6	3,000	500	6	3,000	500	7	3,500	1/2 size Genl. Clrm.
Small Group Room							500	5	2,500	500	5	2,500	500	7	3,500	1/2 size Genl. Clrm.
Offices							120	3	360	120	3	360				

Version
10.30.2017

GRADES 7-12/ 2,215 STUDENTS

Date: 2/16/2018 Preferred Schematic Report

BELMONT HIGH SCHOOL	Existing Conditions			PROPOSED/ GRADES 7-12									MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
				Existing to Remain/Renovated			New			Total						
ROOM TYPE	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	ROOM NFA[1]	# OF RMS	area totals	Comments
Life skills (kitchen, w/d, toilet, shower?)							1,200	1	1,200	1,200	1	1,200				
Conference Room							200	2	400	200	2	400				
OT/PT							850	1	850	850	1	850				
SPED Secretary	*100*	*1*	*100*				150	1	150	150	1	150				
Campus Program Classroom	*521*	*3*	*1,563*				500	3	1,500	500	3	1,500				
Campus Program Toilet							60	2	120	60	2	120				
Campus Program Office	*67*	*1*	*67*													
Speech Pathologist	*87*	*1*	*87*													
LABBB Collaborative																
Self contained SPED	*814*	*1*	*814*				850	5	4,250	850	5	4,250				
Self-Contained SPED Toilet	*125*	*1*	*125*				60	5	300	60	5	300				
Classroom with Lifeskills	*240*	*1*	*240*				1,400	1	1,400	1,400	1	1,400				
Ofices							120	2	240	120	2	240				
Resource Rooms							500	2	1,000	500	2	1,000				
Medical Area/ Nurse with Waiting Room							250	2	500	250	2	500				
MIDDLE SCHOOL																
Self-Contained SPED		*4*														
ART & MUSIC			**13,576**			**0**			**16,150**			**16,150**			**9,925**	
Art Classroom - 25 seats	1,573	4	6,290				1,200	5	6,000	1,200	5	6,000	1,200	4	4,800	Assumed use - 25% Population - 5 times/week
Art Workroom w/ Storage & kiln	219	1	219				425	2	850	425	2	850	150	4	600	
Band - 50 - 100 seats	1,910	1	1,910				2,000	2	4,000	2,000	2	4,000	1,500	1	1,500	Assumed use - 25% Population - 5 times/week
Chorus - 50 - 100 seats	1,733	1	1,733				2,000	1	2,000	2,000	1	2,000	1,500	1	1,500	
Ensemble							250	3	750	250	3	750	200	1	200	
Music Practice	98	5	492										75	11	825	
Music Storage	220	4	878				500	1	500	500	1	500	500	1	500	
Orchestra							1,500	1	1,500	1,500	1	1,500				
Dark Room	*247*	*1*	*247*				250	1	250	250	1	250				
Electronic Music Classroom (in vocational)	*770*	*1*	*770*						-			-				
Fine Arts Collaboration	*479*	*1*	*479*													
Fine Arts Conference Room	*369*	*1*	*369*													
Performing Arts Office/ planning area/11.4 teachers	*189*	*1*	*189*				*300*	*1*	300	*300*	*1*	300				
MIDDLE SCHOOL																
Art Classroom		*4*														
Band		*1*														
Chorus		*1*														
Orchestra		*1*														
General Music Classroom		*1*														
VOCATIONS & TECHNOLOGY			**0**			**0**			**17,560**			**17,560**			**25,600**	
Tech Clrm. - (E.G. Drafting, Business)													1,200	8	9,600	Assumed use - 50% Population - 5 times/week
Tech Clrm. - Maker/innovaiton- 7							1,200	1	1,200	1,200	1	1,200				
Tech Clrm. - Maker/ Innovation- 7							1,200	1	1,200	1,200	1	1,200				
Tech Clrm. - Maker/Innovaiton-8							1,200	1	1,200	1,200	1	1,200				
Tech Clrm. - Maker/Innovatoin-8							1,200	1	1,200	1,200	1	1,200				
Tech Clrm. - Digital Arts							1,200	1	1,200	1,200	1	1,200				
Tech Clrm. - Electronic Music Classroom							1,200	1	1,200	1,200	1	1,200				
Tech Clrm. - Coding							1,000	1	1,000	1,000	1	1,000				
Tech Shop - (E.G. Consumer, Wood)													2,000	8	16,000	Assumed use - 50% Population - 5 times/week
Tech Shop -Robodics							1,840	1	1,840	1,840	1	1,840				
Tech Shop - Engineering/ Maker							1,840	1	1,840	1,840	1	1,840				

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GRADES 7-12/ 2,215 STUDENTS

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BELMONT HIGH SCHOOL	Existing Conditions			PROPOSED/ GRADES 7-12									MSBA Guidelines (refer to MSBA Educational Program & Space Standard Guidelines)			
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Tech Shop - Video Production							1,840	1	1,840	1,840	1	1,840				
Tech Shop - Maker/Physics							1,000	1	1,000	1,000	1	1,000				
Tech Shop - World Language Lab							1,000	1	1,000	1,000	1	1,000				
Tech Shop - Theater Arts							1,840	1	1,840	1,840	1	1,840				
MIDDLE SCHOOL																
Tech Ed		2														
HEALTH & PHYSICAL EDUCATION			**65,007**			**45,217**			**9,725**			**54,942**			**28,604**	
Gymnasium	30,183	1	30,183	30,183	1	30,183				30,183	1	30,183	12,000	1	12,000	
PE Alternatives	1,632	1	1,632				3,000	1	3,000	3,000	1	3,000	3,000	1	3,000	
Gym Storeroom	465	4	1,860				300	2	600	300	2	600	300	1	300	
Locker Rooms - Boys / Girls w/ Toilets	5,396	2	10,792	8,430	1	8,430	3,975	1	3,975	12,405	1	12,405	12,404	1	12,404	5.6 sf/student total
Phys. Ed. Storage	157	11	1,730	900	1	900	100	1	100	1,000	1	1,000	500	1	500	
Athletic Director's Office	467	1	467				150	1	150	150	1	150	150	1	150	
Health Instructor's Office w/ Shower & Toilet	209	3	628				150	4	600	150	4	600	250	1	250	
										0	0	0				
PE Alternatives (Multi-purpose/ dance, yoga, cheer/ taller	1,632	1	1,632						-	0	0	0				
PE Alternatives (Wresteling 1.5 mats)	1,632	1	1,632						-	0	0	0				
Officials Rooms (8 male/8 female / shower locker, toilet							250	2	500	250	2	500				
Trainers Room							800	1	800	800	1	800				
PE Multipurpose (MS) Reuse Small Gym Existing	*5,704*	*1*	*5,704*							0	0	0				
First Aid Office / Pool	*71*	*1*	*71*													
Small Gym/ Reuse for PE Multipurpose (MS)	*5,704*	*1*	*5,704*	*5,704*	*1*	*5,704*				5,704	1	5,704				
Trainer	*228*	*1*	*228*													
Wellness Classroom	*905*	*2*	*1,809*													
Team Uniforms	*555*	*1*	*555*													
Equipment Storage	*380*	*1*	*380*													
White Field House																
Trainer Room	*100*	*1*														
Locker Room	*2,000*	*1*									0					
Storage	*920*	*1*														
Coach Offices	*100*	*2*														
Toilet rooms (men + Women)	*300*	*1*														
MIDDLE SCHOOL																
Health Classroom		2														
MEDIA CENTER			**6,641**			**0**			**13,744**			**13,744**			**13,744**	
Media Center / Reading Room	6,184	1	6,184				13,744	1	13,744	13,744	1	13,744	13,744	1	13,744	
Computer Lab	457	1	457													
AUDITORIUM / DRAMA			**11,447**			**0**			**14,200**			**14,200**			**10,400**	
Auditorium	7,898	1	7,898				7,500	1	7,500	7,500	1	7,500	7,500	1	7,500	2/3 Enrollment @ 10 SF/Seat - 750 seats MAX
Stage	2,762	1	2,762				2,400	1	2,400	2,400	1	2,400	1,600	1	1,600	
Auditorium Storage							500	1	500	500	1	500	500	1	500	
Make-up / Dressing Rooms	385	1	385				300	2	600	300	2	600	300	2	600	
Controls / Lighting / Projection	27	1	27				200	1	200	200	1	200	200	1	200	
Black Box							3,000	1	3,000	3,000	1	3,000				
Auditorium Workshop	*375*	*1*	*375*													
DINING & FOOD SERVICE			**11,687**			**0**			**16,698**			**16,698**			**16,698**	
Cafeteria / Student Lounge / Break-out	7,193	1	7,193				11,075	1	11,075	11,075	1	11,075	11,075	1	11,075	3 seatings - 15SF per seat
Chair / Table Storage							704	1	704	704	1	704	704	1	704	
Scramble Serving Area	1,259	1	1,259				600	1	600	600	1	600	600	1	600	

GRADES 7-12/ 2,215 STUDENTS

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Kitchen	2,495	1	2,495				3,515	1	3,515	3,515	1	3,515	3,515	1	3,515	1600 SF for first 300 + 1 SF/student Add'l
Staff Lunch Room	740	1	740				804	1	804	804	1	804	804	1	804	20 SF/Occupant
MEDICAL			**738**			**0**			**2,140**			**2,140**			**1,710**	
Medical Suite Toilet	20	2	39				60	4	240	60	4	240	60	1	60	
Nurses' Office / Waiting Room	103	2	205				250	2	500	250	2	500	250	1	250	
Interview Room							100	5	500	100	5	500	100	5	500	
Examination Room / Resting	494	1	494				100	9	900	100	9	900	100	9	900	
ADMINISTRATION & GUIDANCE			**4,106**			**0**			**10,062**			**10,062**			**7,421**	
General Office / Waiting Room / Toilet	20	2	39				450	2	900	450	2	900	1,108	1	1,108	
Teachers' Mail and Time Room	103	2	205				100	2	200	100	2	200	100	1	100	
Duplicating Room							200	2	400	200	2	400	200	1	200	
Records Room	494	1	494				100	1	100	100	1	100	200	1	200	
Principal's Office w/ Conference Area	20	2	39				375	2	750	375	2	750	375	1	375	
Principal's Secretary / Waiting	103	2	205				125	2	250	125	2	250	125	1	125	
Assistant Principal's Office - AP1							200	3	600	200	3	600	150	1	150	
Assistant Principal's Office - AP2	494	1	494				200	2	400	200	2	400	150	4	600	
Conference Room	103	2	205				225	2	450	225	2	450	450	1	450	
Guidance Office							150	10	1,500	150	10	1,500	150	12	1,800	
Guidance Waiting Room	494	1	494				75	2	150	75	2	150	100	1	100	
Guidance Storeroom	20	2	39				100	2	200	100	2	200	100	1	100	
Career Center	103	2	205				704	1	704	704	1	704	704	1	704	
Records Room							100	2	200	100	2	200	302	1	302	
Teachers' Work Room	494	1	494				1,108	1	1,108	1,108	1	1,108	1,108	1	1,108	
AP Secretary/ MS							100	2	200	100	2	200				
AP Waiting Area/ HS							50	3	150	50	3	150				
Conference Room Guidance/ HS							250	1	250	250	1	250				
Guidance/ Copy area/ HS							100	1	100	100	1	100				
Director's offices							200	6	1,200	200	6	1,200				
Accounting							250	1	250	250	1	250				
School Psychologist	*133*	*2*	*265*													
Assistant Principal's Office - AP3	*139*	*1*	*139*													
Visual Performing Arts Director	*135*	*1*	*135*													
Vault	*113*	*1*	*113*													
School Resource Office	*117*	*1*	*117*													
Director Secretary Office	*118*	*1*	*118*													
Storage	*58*	*2*	*116*													
MODULAR HIGH SCHOOL																
Break / Copy Room	*190*	*1*	*190*													
MIDDLE SCHOOL																
Guidance Office		*2*														
CUSTODIAL & MAINTENANCE			**2,774**			**0**			**3,437**			**3,437**			**3,286**	
Custodian's Office	695	1	695				150	1	150	150	1	150	150	1	150	
Custodian's Workshop							250	1	250	250	1	250	250	1	250	
Custodian's Storage	315	1	315				375	1	375	375	1	375	375	1	375	
Recycling Room / Trash							400	1	400	400	1	400	400	1	400	
Receiving and General Supply	138	1	138				704	1	704	704	1	704	704	1	704	
Storeroom							1,208	1	1,208	1,208	1	1,208	1,208	1	1,208	
Network / Telecom Room							200	1	200	200	1	200	200	1	200	
Maintenance Equipment	*266*	*1*	*266*				150	1	150	150	1	150				
Janitor Closet	*41*	*7*	*286*													
Storage	*262*	*3*	*785*													
Custodial Office / Storage	*289*	*1*	*289*													

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OTHER			**15,853**			**9,067**			**3,345**			**12,412**			**0**	
Other (specify)	*413*	*3*	*1,240*				900	1	900	900	1	900				
District Offices																
Technology Offices	*303*	*1*	*303*				150	1	150	150	1	150				
Technology Director Office	*235*	*1*	*235*				400	1	400	400	1	400				
Technology Conf Room	*262*	*2*	*523*				200	1	200	200	1	200				
Technology Server Room	*215*	*1*	*215*													
A/V Coordinator	*375*	*1*	*375*													
Metco Classroom							850	1	850	850	1	850				
Metco Office	*133*	*2*	*265*				150	1	150	150	1	150				
BEA Office	*423*	*1*	*423*				150	1	150	150	1	150				
Lexington Chinese School	*2,015*	*1*	*2,015*						-			-				
Wood Shop / Office / Storage	*152*	*1*	*152*						-			-				
Food Service Director	*113*	*1*	*113*				*150*	*1*	*150*	*150*	*1*	*150*				
Nurse's Office/ Waiting (1 district off/1nurse school off							150	1	150	150	1	150				
Community Service/Volunteer Office									-			-				
Community Service/ Volunteer Meeting space																
Pool/ Pump Room	*7,447*	*1*	*7,447*	7,447	1	7,447				7,447	1	7,447				
Locker Room / Pool	*810*	*2*	*1,620*	810	2	1,620				810	2	1,620				
School Store	*61*	*1*	*61*				*125*	*1*	125	*125*	*1*	125				
Resource Officer	20	2	39				120	1	120	120	1	120	120	1	120	
MODULAR HIGH SCHOOL	*206*	*2*	*412*													
Town Maintenance Office / Storage	*208*	*2*	*415*													
Belmont Office / Storage																

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GRADES 7-12/ 2,215 STUDENTS

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Total Building Net Floor Area (NFA)			200,292						246,321			300,605			244,647	
Proposed Student Capacity / Enrollment															2,215	157
NON-PROGRAMMED SPACES					% of GFA			% of GFA			% of GFA					
Other Occupied Rooms (list separately)											0%					Non-Programmed space areas are
											0%					required to be included in the
											0%					following submittals:
											0%					Schematic Design Submittal
Unoccupied MEP/FP Spaces											0%					Design Development Submittal
Unoccupied Closets, Supply Rooms & Storage Rooms											0%					60% Construction Documents
Toilet Rooms											0%					90% Construction Documents
Circulation (corridors, stairs, ramps & elevators)											0%					Final Construction Documents
Remaining[3]											33%	150,303				
Total Modular High School Gross Floor Area (GFA)			7,848													
Total Building Gross Floor Area (GFA)[2]			266,688									450,908			367,755	
Grossing factor (GFA/NFA)			1.33									1.50			1.50	

[1] **Individual Room Net Floor Area (NFA)** Includes the net square footage measured from the inside face of the perimeter walls and includes all specific spaces assigned to a particular program area including such spaces as non-communal toilets and storage rooms.

[2] **Total Building Gross Floor Area (GFA)** Includes the entire building gross square footage measured from the outside face of exterior walls 450,908

[3] **Remaining** Includes exterior walls, interior partitions, chases, and other areas not listed above. Do not calculate this area, it is assumed to equal the difference between the Total Building Gross Floor Area and area not accounted for above.

Architect Certification

I hereby certify that all of the information provided in this "Proposed Space Summary" is true, complete and accurate and, except as agreed to in writing by the Massachusetts School Building Authority, in accordance with the guidelines, rules, regulations and policies of the Massachusetts School Building Authority to the best of my knowledge and belief. A true statement, made under the penalties of perjury.

Name of Architect Firm: Perkins + Will

Name of Principal Architect: Robert Brown

Signature of Principal Architect:

Date: Feb 16th, 2018

3.3.4 - PREFERRED SOLUTION

C. PREFERRED SOLUTION SPACE SUMMARY / COMMENTS

The OPM, Design Team, the office of the Superintendent, faculty, and administration have been conducting an ongoing review of the educational program and space summary in order to ensure efficiencies in as many areas as possible. The discussions include looking at the utilization of all spaces in the space summary to ensure the need relative to the educational program. The below summarizes the spaces that are slated for reuse in the preferred option with the necessary explanation narrative.

PE MULTIPURPOSE (MIDDLE SCHOOL)

The team during the PSR phase determined that it would be more cost effective to reuse the existing small gym. That change is noted in the current space summary and has reduced the required square footage of the PE MULTIPURPOSE ROOM from 6,300 net square feet to 5,704 net square feet. A total reduction of 600 net square feet.

LOCKER ROOMS (BOYS AND GIRLS WITH TOILETS)

The reuse of the existing small gym has triggered available space in the lower level directly below the existing small gym slated for reuse. This space currently accommodates the Boys Locker room and equipment storage. This existing boys locker room and storage area will be repurposed to accommodate the Locker Rooms for Boys and Girls with Toilets. The existing LOCKER ROOMS that are being repurposed below the small gym are totaled at 8,430 net square feet. This 8,430 of renovated area will be combined with 3,975 net square feet of new Locker room space to meet the program requirements of 12,405 net square feet. This renovated space is noted in the Level 2 estimate which reduces the required net square footage of new space for the Boys and Girls Locker Rooms.

PHYSICAL EDUCATION STORAGE

The Physical Education storage space is located in the northeast corner of the main existing large gym to remain. Due to its location it was determined by the team that this space would be renovated to accommodate the new Physical Education Storage needs. The renovated storage area is totaled at 900 net square feet of existing which will be combined with 100 net square feet of new space to meet the program requirements of 1,000 net square feet of PE storage. This renovated space is noted in the Level 2 estimate which reduces the required net square footage of new space for the Physical Education Storage.

C. PREFERRED SOLUTION SPACE SUMMARY / COMMENTS

3.3.4 - PREFERRED SOLUTION

D. SUSTAINABILITY

Per Project Advisory #41, all MSBA Core Program projects must be registered with USGBC LEED-S Version 4 or MA CHPS. The Belmont School Building Committee has chosen to move forward with LEED-S Version 4 and intends to achieve 2% additional reimbursement by achieving a min. of "certified" within that rating system and by exceeding the level of energy efficiency required in the current Massachusetts (base) energy code by 10%

The Design Team advanced the sustainability goals in the Feasibility Stage in order to allow it equal emphasis with the many other design challenges, and embed the chosen strategies into the overall design to create a more unified whole.

The Design Team needed to first understand was where the Town's priorities lay. To better understand this, a meeting was arranged with members of the Building Committee with sustainable expertise and interest in the sustainability component of the high school design.

In its first presentation to the building committee the Design Team introduced the core concepts of sustainability and showed how they might become integral to student life at the high school, as well as providing long term benefits to the district, defining sustainability as a concept supported by a triad of concerns: the social, the environmental, and the economic.

The idea of sustainability having a social component aligns with the educational programming vision established by the District, whereby creating a shared sense of community and opportunity for curriculum integration parallel the interdisciplinary, shared learning environment the District is creating for the new high school.

The environmental aspects of sustainability are perhaps self evident, addressing CO^2 emissions, natural habitat, responsible resource use, safe materials, and watershed impact.

Economically, sustainability presents a multitude of issues. The up front capital costs of implementing sustainable strategies can add significantly to project budgets while simultaneously providing long term payback in the form of energy and/or water savings. Other issues to be addressed include maintenance costs, space requirements, adaptability, and ease of maintenance.

During the ensuing discussions it came to light that building efficiency was a prime concern for the community, and should be considered among the highest priorities of any sustainable strategy.

The Design Team prioritized energy and water use as those likely to have the most potential payback and relevance to the community, respectively. Material health, ecosystem health, sustainable infrastructure and building resilience were also presented and discussed as project priorities. The strategies for achieving these goals are outlined as follows:

ENERGY

- A LEED V4 ASHRAE 2010 baseline model will be created to set an appropriate benchmark for system evaluation with the understanding that the building form and exact size may evolve through the subsequent design phases.
- A number of alternative building systems will be modeled so that relative energy savings can be compared to system first costs in the upcoming phase of design pricing. Energy use intensities (EUI) and estimated operating costs will be determined for these systems.
- Additional stand-alone energy saving strategies will be evaluated and shortlisted as potentially viable options. Each will be further evaluated against their first cost in the SD phase.

WATER

- A LEED V4 baseline water demand estimate will be created in early schematic design to set an appropriate benchmark for water conservation strategy evaluation with the understanding that the building use and exterior demand may evolve through the subsequent design phases.
- Water conservation strategies were outlined and the percent reduction values were estimated per strategy to set project goals for water use reduction.
- A model will be created in early schematic design to evaluate building water demand vs available rainfall over the course of the year. A cistern size that allows for increased water reduction through a rainfall harvesting system will be evaluated and sized with diminished return considered

The energy modeling will consider four scenarios, divided between high performing, high efficiency systems and more conventional high efficiency systems. a Since the MSBA requires the project to attain LEED-S certification at a minimum, that will be established as the baseline for comparison.

The scenarios are as follows:

D. SUSTAINABILITY

1. LEED BASELINE

- Conventional gas-fired hot water boilers
- Water-cooled chiller with cooling tower
- Variable air volume systems serving the classrooms
- Outside air energy recovery for VAV systems where required by ASHRAE 90.1
- Code whole building lighting watt density or 0.99 w/sf.
- Code wall, roof, and fenestration U-values and SHGC.

3. FAN COIL UNITES (HIGH EFFICIENCY)

- Gas-fired condensing hot water boilers
- High efficiency evaporative-cooled chiller
- Fan coil units in the classrooms
- High efficiency 100% outside air energy recovery ventilation units
- Whole building lighting watt density 0.70 w/sf.
- High efficiency wall, roof, and fenestration U-values and SHGC.

2. GROUND SOURCE HEAT PUMP (HIGH PERFORMANCE)

- Vertical ground loop system
- Central water-to water heat pump chillers
- Displacement induction units in the classrooms
- High efficiency 100% outside air energy recovery ventilation unit
- Whole building lighting watt density 0.20 w/sf.
- High efficiency wall, roof, and fenestration U-values and SHGC.

4. CLASSROOM PARTIAL COOLING

- Gas-fired condensing hot water boilers
- Fan coil units in the classrooms
- High efficiency 100% outside air energy recovery ventilation unit w/DX cooling
- Whole building lighting watt density 0.20 w/sf.
- High efficiency wall, roof, and fenestration U-values and SHGC.

The scenario modeling will result in Building Simulation Reports, which will be used for comparison.

NEXT STEPS

A pricing narrative will be formed for each major conservation strategy and the evaluation matrix illustrated in the presentation will be filled in to help the design team and client make decisions based on the overall sustainable goals. The matrix will be updated as energy models and strategies are refined so that sustainable energy and water strategies are executed efficiently. Non-energy and water related sustainable measures will be a focus of early SD conversations.

01.30.2018 BHS STEERING COMMITTEE

BELMONT HIGH SCHOOL

AGENDA

01 / Civil Engineering
02 / Mechanical
03 / Electrical
04 / Plumbing + FP
05 / IT
06 / NZE PROCESS
07 / CHPS vs. LEED?

01/ CIVIL ENGINEERING

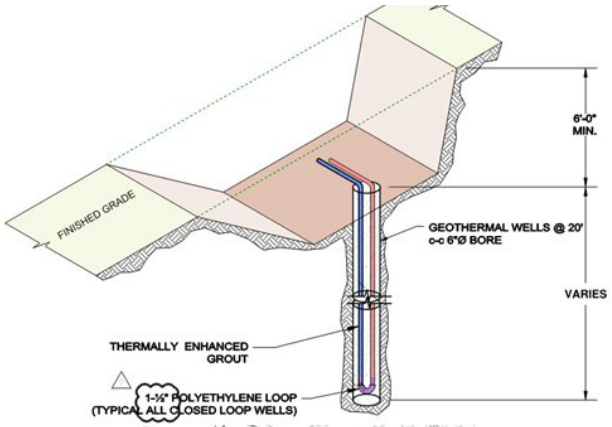
BELMONT HIGH SCHOOL

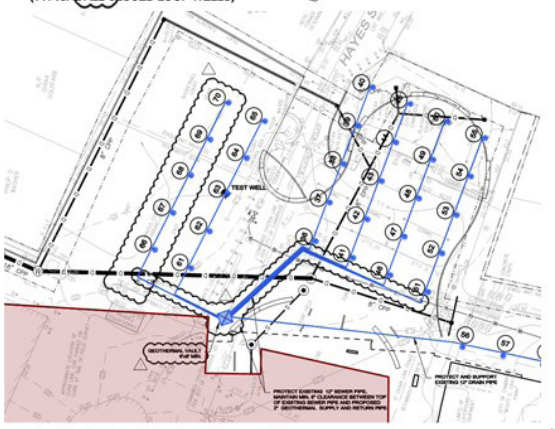
WELL FIELDS CAN BE PLACED UNDER:

- Fields
- Parking
- Roadways
- Landscape areas (No Trees)

WELLHEADS 4'-5' BELOW GRADE

- Coordinate with light pole bases, other utilities, trees
- Spacing and depth determined by geotechnical engineer after test well installed





3.3.4 - PREFERRED SOLUTION

D. SUSTAINABILITY / Building System Meeting

BELMONT HIGH SCHOOL / STORMWATER GOALS

MEET REGULATORY REQUIREMENTS

- Improve quality of stormwater coming off the site
- Decrease any potential for flooding, either on-site or downstream

INTEGRATE STORMWATER INTO LANDSCAPE

- Avoid creating stormwater systems that take away from the areas available for program or that are not also landscape features
- Decentralized systems situated appropriately around site
- Reuse/reclaim stormwater as required for either building or site program
  - i.e. toilet flushing,
  - mechanical make-up water,
  - site irrigation

LOOK TO CREATE A LEARNING ENVIRONMENT/OPPORTUNITY

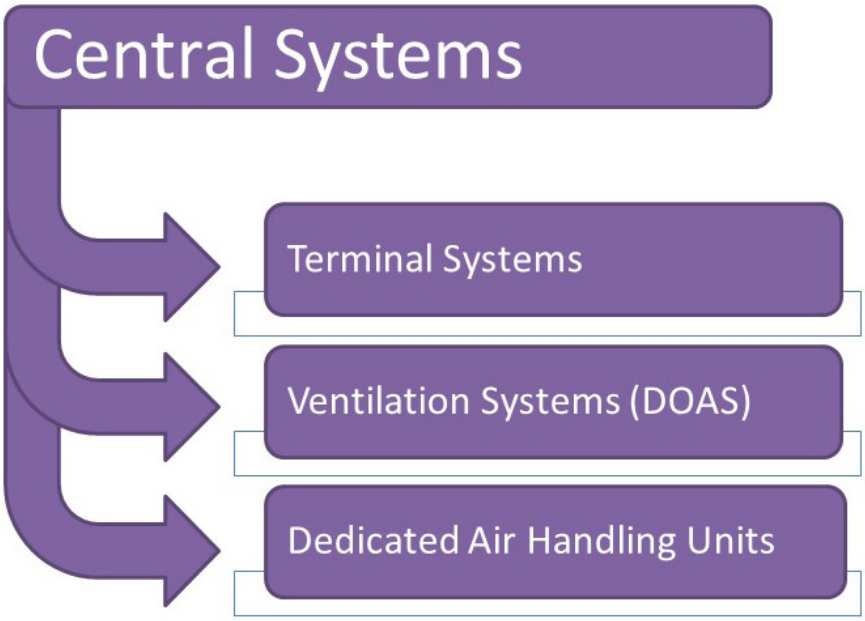
Kroon Hall Water Reuse Feature
Yale University, New Haven, CT

02/ MECHANICAL

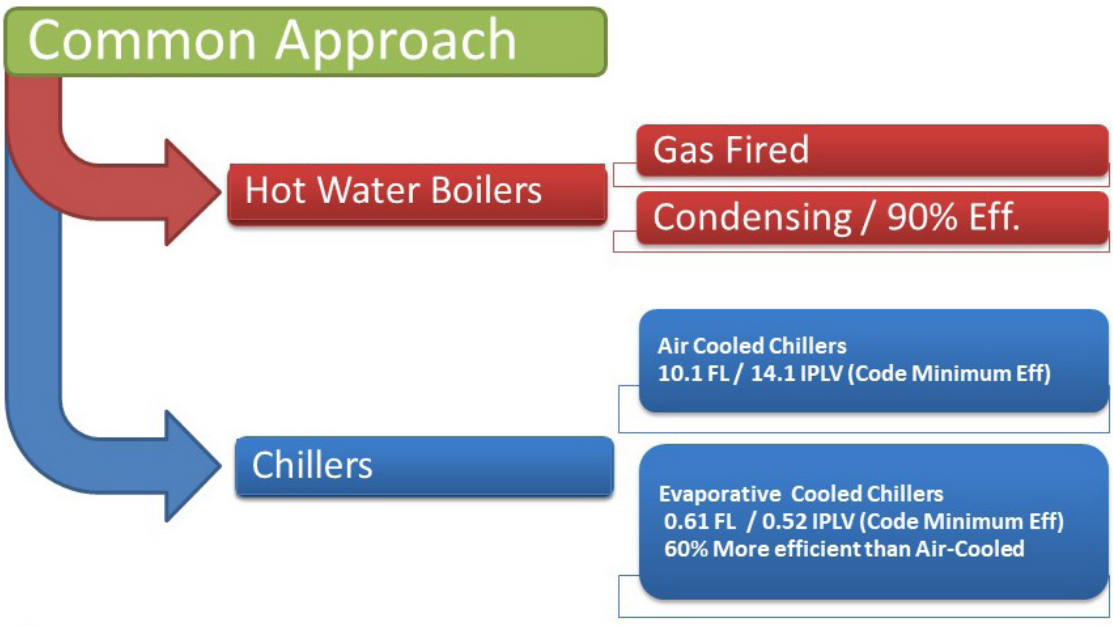
BELMONT HIGH SCHOOL

D. SUSTAINABILITY / Building System Meeting

BELMONT HIGH SCHOOL / HVAC SYSTEMS COMPONENTS



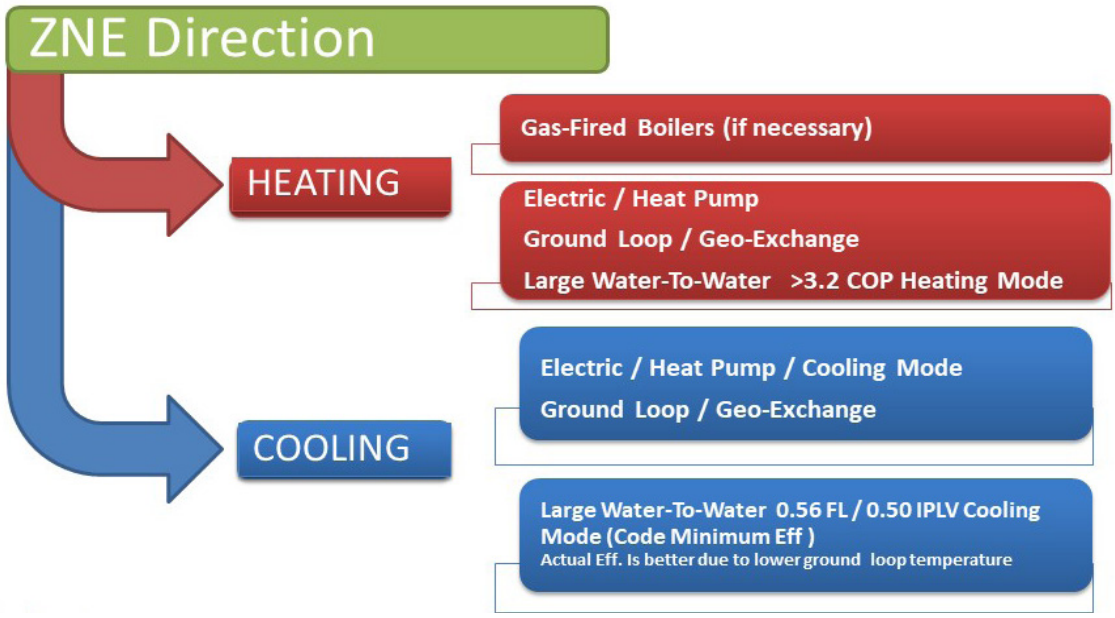
BELMONT HIGH SCHOOL / CENTRAL SYSTEMS



3.3.4 - PREFERRED SOLUTION

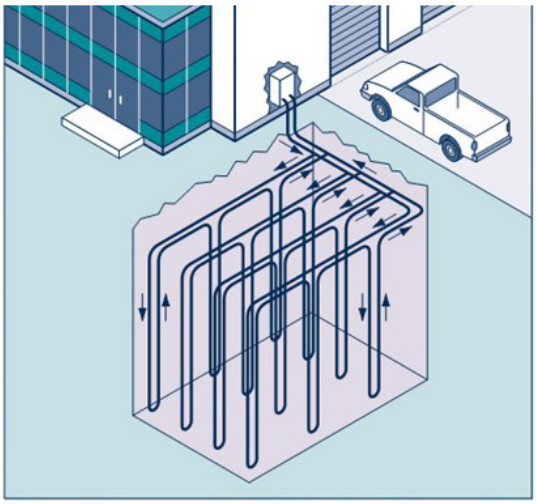
D. SUSTAINABILITY / Building System Meeting

BELMONT HIGH SCHOOL / CENTRAL SYSTEMS



BELMONT HIGH SCHOOL / GEOTHERMAL SYSTEMS

Geothermal heat pumps are among the most energy- and cost-efficient heating and cooling systems available today. They use less electricity and produce fewer emissions than conventional systems, reduce air and water pollution, and provide a comfortable indoor environment for building occupants.



Geothermal heat pumps use the stable temperature of the ground (vertical boreholes typically are 100 to 400 feet deep) as a heat source to warm buildings in winter and as a heat sink to cool them in summer.

D. SUSTAINABILITY / Building System Meeting

BELMONT HIGH SCHOOL / GEOTHERMAL SYSTEMS BENEFITS

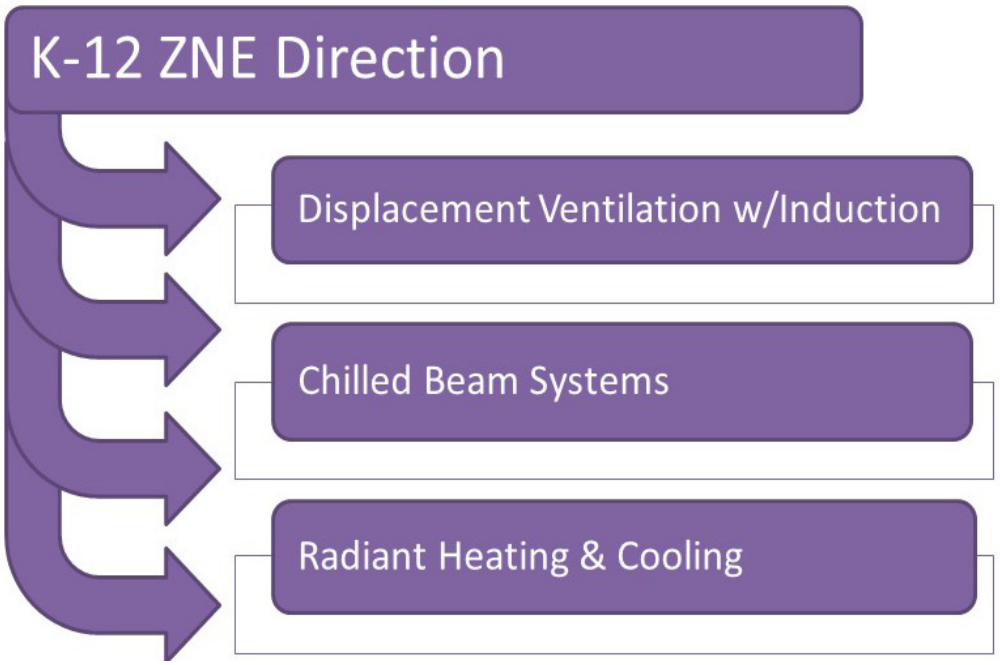
High Efficiency Geothermal heating systems can extract up to six times the heat energy they use in electrical energy. They are at least three and up to six times more efficient..

Renewable Energy – No Pollution Geothermal is a renewable source of energy for heating, cooling, and air conditioning. There is no pollution caused by geothermal systems

Maintenance Geothermal heating and cooling systems have few moving parts, so they are highly reliable. Unlike central air conditioning systems, geothermal cooling systems have no parts outside. There is no wear and tear on an outdoor condenser.

Reliability Geothermal heating systems can last far longer than most heating systems. The polyethylene pipe in most loop fields typically has a 25 or 50 year warranty and estimates are that it can last up to 200 years.

BELMONT HIGH SCHOOL / TERMINAL SYSTEMS

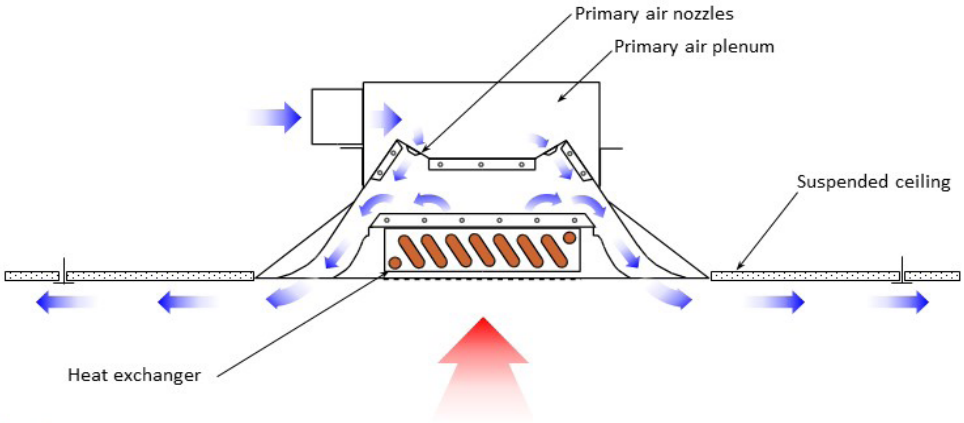


3.3.4 - PREFERRED SOLUTION

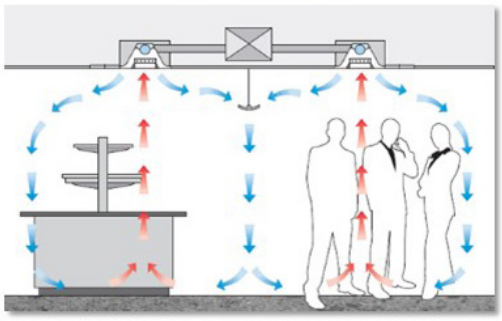
D. SUSTAINABILITY / Building System Meeting

BELMONT HIGH SCHOOL / TERMINAL SYSTEMS - ACTIVE CHILLED BEAM

- What is an Active Chilled Beam and how does it work?



BELMONT HIGH SCHOOL / TERMINAL SYSTEMS - ACTIVE CHILLED BEAM



Benefits For Classrooms

- Acoustics
  - Little or no fan noise
  - Low velocity air
- Maintenance
  - No filter changes in occupied areas
  - Dry coils on Chilled Beams, vacuum off dust

BELMONT HIGH SCHOOL / TERMINAL SYSTEMS - ACTIVE CHILLED BEAM

Why Chilled Beams?

- Reduced Energy Consumption
- Decreased Duct Sizes
- Improved Thermal Comfort
- Air Quality
- Low Noise Levels
- Low Maintenance

BELMONT HIGH SCHOOL / TERMINAL SYSTEMS - DISPLACEMENT W/ INDUCTION

Benefits

Indoor air quality, silent operation, and thermal comfort are all important design considerations for schools.

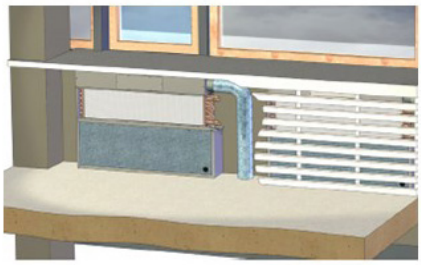
Higher ventilation effectiveness In each unit, outside air is mixed with room air, which is conditioned if required, and directed into the room at floor level and at low velocity. Individual comfort is greatly improved as the upward air flow pattern toward the ceiling exhaust promotes removal of heat-borne contaminants and provides improved IAQ in the occupied zone.

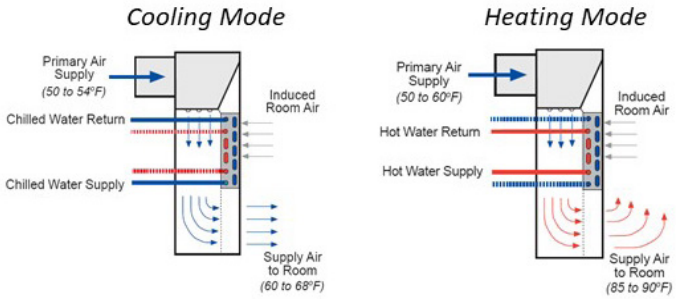
Acoustics DV helps to meet demanding acoustic requirements for classrooms.

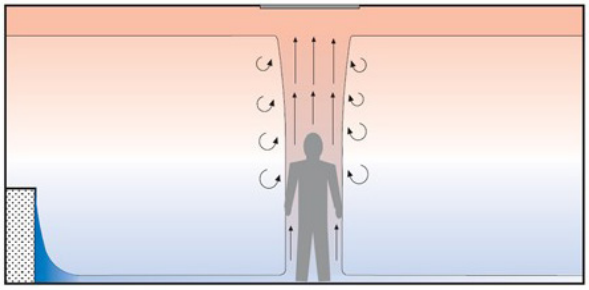
3.3.4 - PREFERRED SOLUTION

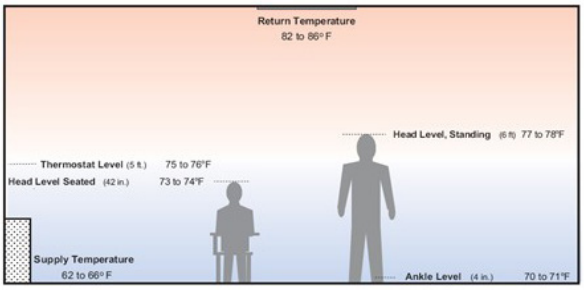
D. SUSTAINABILITY / Building System Meeting

BELMONT HIGH SCHOOL / TERMINAL SYSTEMS - DISPLACEMENT (INDUCTION)





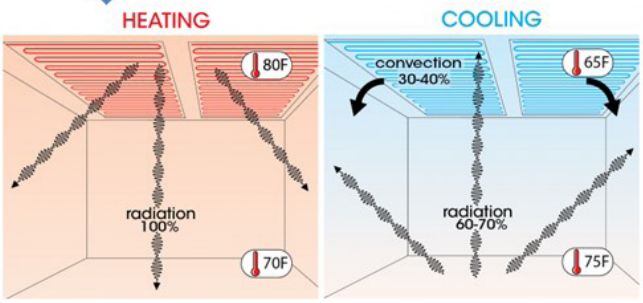


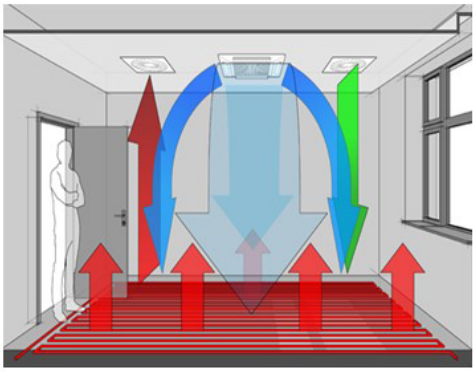


BELMONT HIGH SCHOOL / TERMINAL SYSTEMS - DISPLACEMENT (INDUCTION)

Cool or warm water is piped through panels, ceilings or floors to provide radiant thermal comfort to occupants.

- 100% of ventilation air is provided by a Dedicated Outside Air System (DOAS) which can include energy recovery.
- Pumping water is significantly more efficient than using fans to push air, so fan energy is significantly reduced with this system.
- Compatible with other lower energy cooling systems such as indirect evaporative cooling, ground or water source heat pumps, and high efficiency chillers.



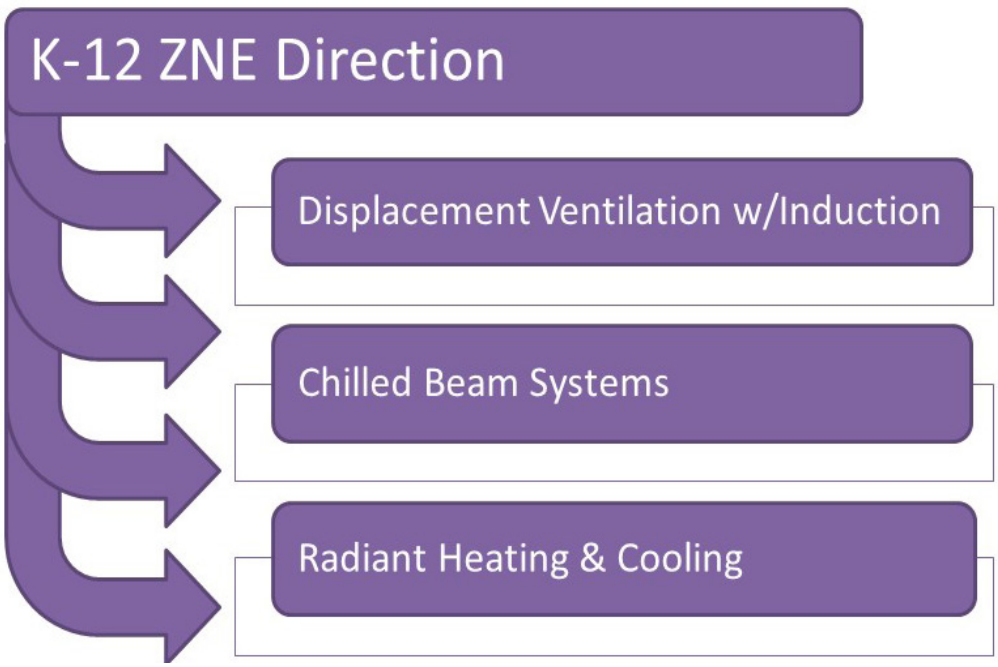


D. SUSTAINABILITY / Building System Meeting

BELMONT HIGH SCHOOL / TERMINAL SYSTEMS - RADIANT HEATING AND COOLING

- Energy efficiency – Significant fan energy savings / Energy savings on the order of 10 – 40% compared to overhead VAV systems
- High Level of thermal comfort / Responsive Control
- Smaller AHU & Ductwork
- Significant reduction of riser space
- Quiet Operation
- Low maintenance

BELMONT HIGH SCHOOL / TERMINAL SYSTEMS



3.3.4 - PREFERRED SOLUTION

D. SUSTAINABILITY / Building System Meeting

BELMONT HIGH SCHOOL / ELECTRICAL SYSTEMS

- New Main Electric Service
- New Emergency Distribution System
- Fire Alarm - Maintain existing where applicable
- Technology per Technology Section
- Integrated Intrusion, Access Control, CCTV, and Alarm System

D. SUSTAINABILITY / Building System Meeting

BELMONT HIGH SCHOOL / ELECTRICAL SYSTEMS - SUSTAINABILITY

- Metering and measurement of air conditioning, fans, lighting, and receptacle power
- Plug and process load reductions through the use of vacancy/occupancy sensor controls
- High efficiency lighting systems include LED luminaries throughout the building
- Advanced lighting controls include a low voltage lighting control system with time schedule control for common areas, vacancy/occupancy sensors, and photocells for daylight harvesting
- Exterior building mounted and pole top luminaries will be LED type with full cut-off distribution.
- Empty conduits and space provisions will be provided for future photovoltaic (PV) installations.
- Empty conduit provisions will be provided for future green vehicles charger stations based on two percent of the available parking.

04/ PLUMBING + FP

BELMONT HIGH SCHOOL

3.3.4 - PREFERRED SOLUTION

D. SUSTAINABILITY / Building System Meeting

BELMONT HIGH SCHOOL / PLUMBING SYSTEMS

WATER CONSERVATION & REDUCING WATER DEMANDS BY:

- Utilize “low-flow” fixtures throughout (new & existing buildings)
- Dual-flush water closets (1.6 gpf - 1.0 gpf)
- Pint-flush urinals / waterless urinals
- Specifying energy efficient kitchen equipment / fixtures
- Utilize “Grey Water System” - Waste water from sinks, showers and kitchen equipment re-used to supply water closets and urinals
- Capture rainwater for re-use in irrigation systems

BELMONT HIGH SCHOOL / FIRE PROTECTION

FIRE PROTECTIONS SYSTEMS

- New service and systems throughout building
- Wet sprinkler system
- Special systems required? IT Rooms, Records Rooms, Unique Storage
- Types of Special Systems
    - Pre-Action
    - Dry
    - Gaseous (Novec 1230, Inergen)

05/ INFORMATION TECHNOLOGY (IT)

BELMONT HIGH SCHOOL

BELMONT HIGH SCHOOL / INFORMATION TECHNOLOGY SYSTEMS

STRUCTURED CABLING

- District Fiber
- New MDF and IDF Buildout
- Latest Standards : Fiber, Category 6A

DATA AND VOICE COMMUNICATIONS

- VoIP System
- Network Hardware
- WLAN
- District Implications

3.3.4 - PREFERRED SOLUTION

D. SUSTAINABILITY / Building System Meeting

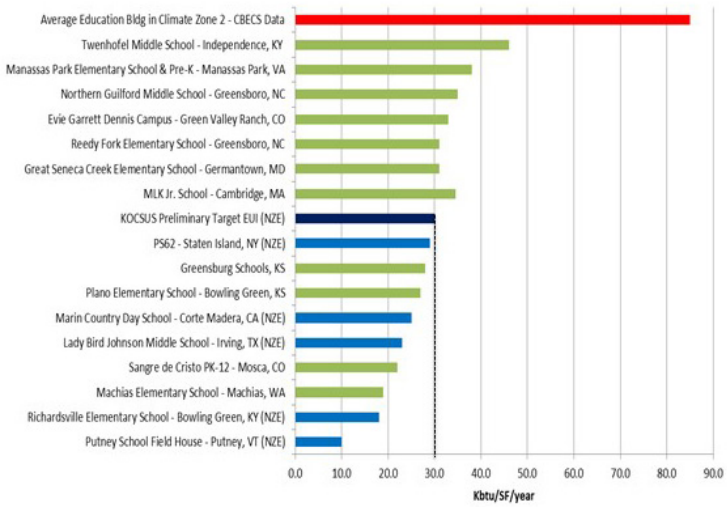
BELMONT HIGH SCHOOL / INFORMATION TECHNOLOGY SYSTEMS

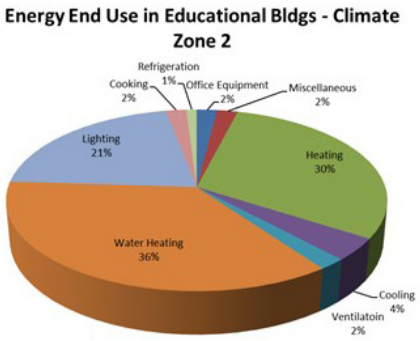
DISTRIBUTED COMMUNICATIONS

- **Building-Wide Intercom System**
- **Classroom Audio Reinforcement**
- **Digital Signage**

D. SUSTAINABILITY / Building System Meeting

BELMONT HIGH SCHOOL / NZE PROCESS : SETTING ENERGY TARGETS

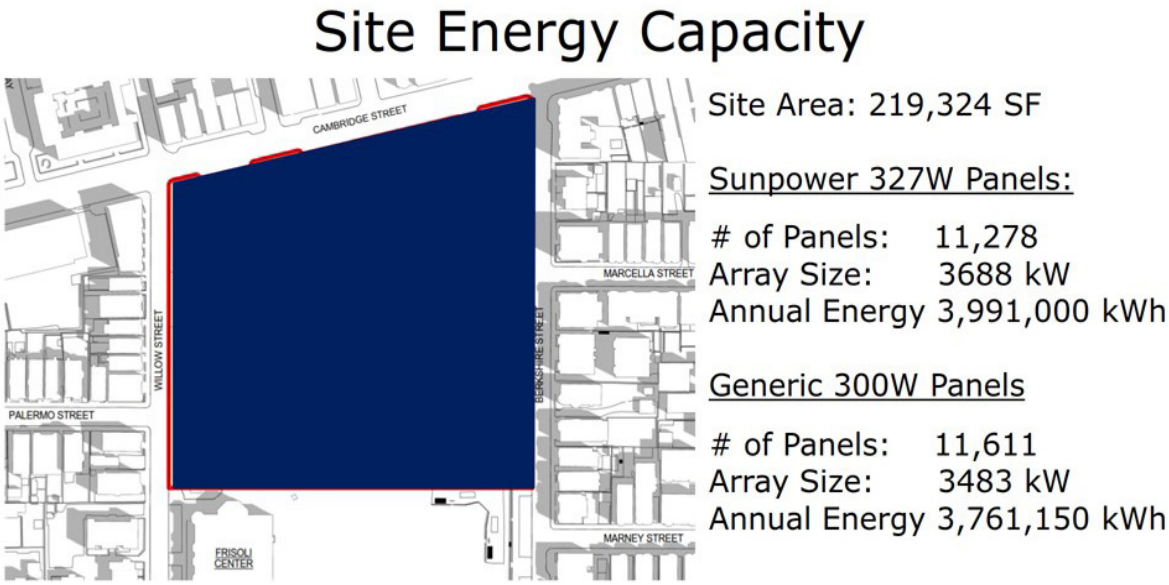




Source: Energy Information Administration

BENCHMARKING EUI AGAINST SIMILAR PROGRAMS

BELMONT HIGH SCHOOL / NZE PROCESS : DETERMINING ENERGY NEEDS



ENERGY BUDGET

3.3.4 - PREFERRED SOLUTION

D. SUSTAINABILITY / Building System Meeting

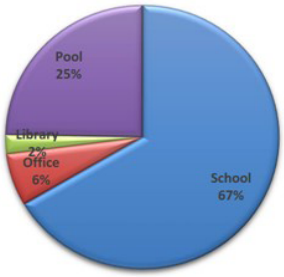
BELMONT HIGH SCHOOL / NZE PROCESS : DETERMINING ENERGY NEEDS

Energy Budget - High

Enclosed Pool: Maximum Energy

Program	Area (SF)	EUI (kbtu/sf/year)	kbtu/year	kWh/year
School	180,000	30	5,400,000	1,582,186
Office	15,000	35	525,000	153,824
Library	7,500	25	187,500	54,937
Pool	5,000			587,532
Sub-Total	207,500		6,112,500	2,378,478 kWh/year
Contingency	20.0%			475,696 kWh/year
Total	**207,500**	**46.9**	**9,741,295**	**2,854,174 kWh/year**

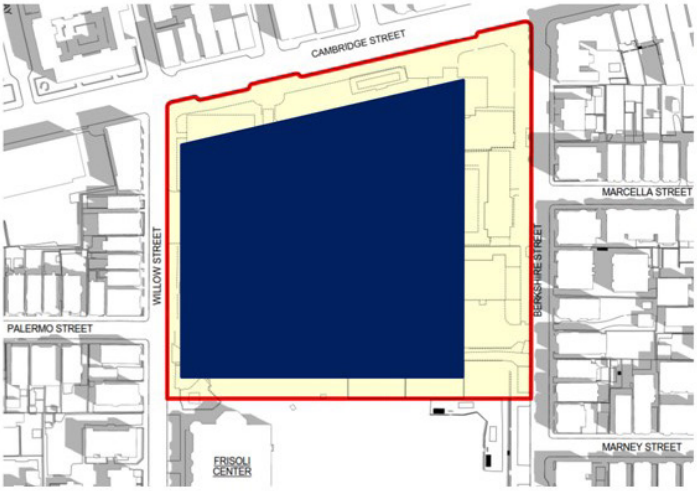
Annual Energy Use Breakdown



ENERGY BUDGET

BELMONT HIGH SCHOOL / NZE PROCESS : DETERMINING ENERGY NEEDS

Required Capacity



Array Area: **156,900 SF**

Sunpower 327W Panels:

# of Panels: 8,069
Array Size: 2639 kW
Annual Energy 2,855,087 kWh

ENERGY BUDGET

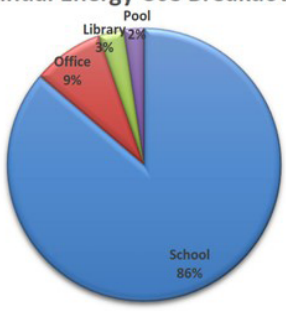
BELMONT HIGH SCHOOL / NZE PROCESS : DETERMINING ENERGY NEEDS

Energy Budget - Low

Open Pool: Minimum Energy (Not Heated)

Program	Area (SF)	EUI (kbtu/sf/year)	kbtu/year	kWh/year
School	180,000	30	5,400,000	1,582,186
Office	15,000	35	525,000	153,824
Library	7,500	25	187,500	54,937
Pool	5,000			43,506
Sub-Total	207,500		6,112,500	1,834,453 kWh/year
Contingency	20.0%			366,891 kWh/year
Total	**207,500**	**36.2**	**7,513,184**	**2,201,343 kWh/year**

Annual Energy Use Breakdown



ENERGY BUDGET

BELMONT HIGH SCHOOL / NZE PROCESS : DETERMINING ENERGY NEEDS

Required Capacity

Array Area: **121,000 SF**

Sunpower 327W Panels:

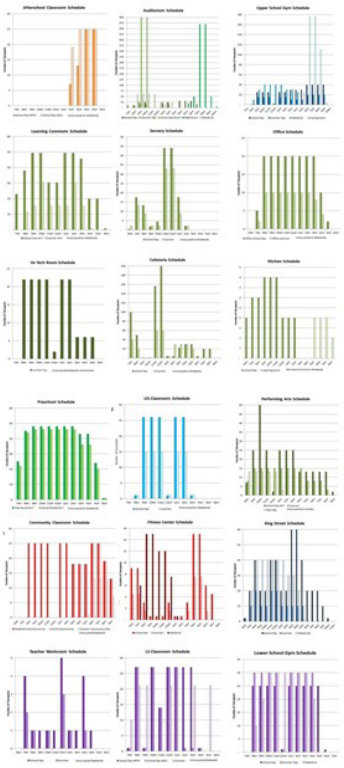
# of Panels: 6,223
Array Size: 2035 kW
Annual Energy 2,201,820 kWh

ENERGY BUDGET

3.3.4 - PREFERRED SOLUTION

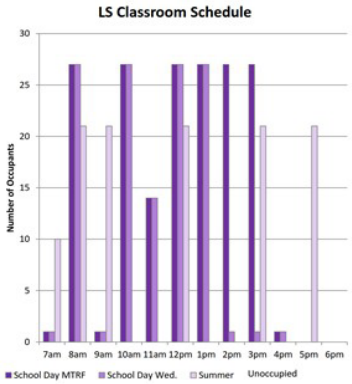
D. SUSTAINABILITY / Building System Meeting

BELMONT HIGH SCHOOL / NZE PROCESS : DETERMINING ENERGY NEEDS



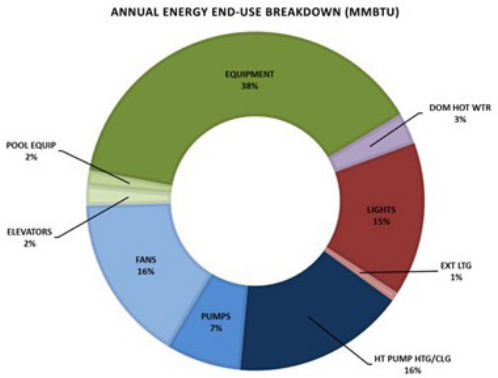
MLK - Lower School Classroom

- General Hours:
  - 7:55am – 3:55pm M,T,R,F
  - 7:55am – 1:55pm Wed.
  - Summer Programs 8am to 5pm but students out of room 50% of time. Only includes 6 classrooms.
- School Year Schedule includes:
  - 30 min lunch (assumed between 11am and 12pm)
  - (1) 45 min out of class period
- No weekend use
- Maximum number of students per room: 25
- Maximum Faculty per room: 2



DETAILED UNDERSTANDING OF PROGRAM & SCHEDULE

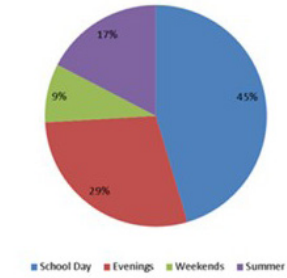
BELMONT HIGH SCHOOL / NZE PROCESS : DETERMINING ENERGY NEEDS



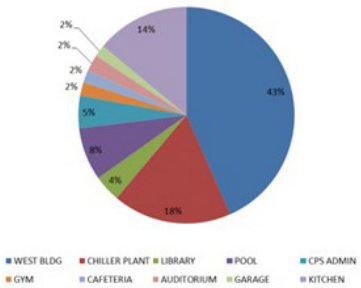
Based on the breakdown of annual energy by end-use, there are four main categories of energy use for the building.

- 42% Equipment, including plug loads, pool pumps and elevators
- 39% HVAC including fans, pumps and heating and cooling energy
- 16% Lighting, including exterior lighting
- 3% Domestic hot water heating.

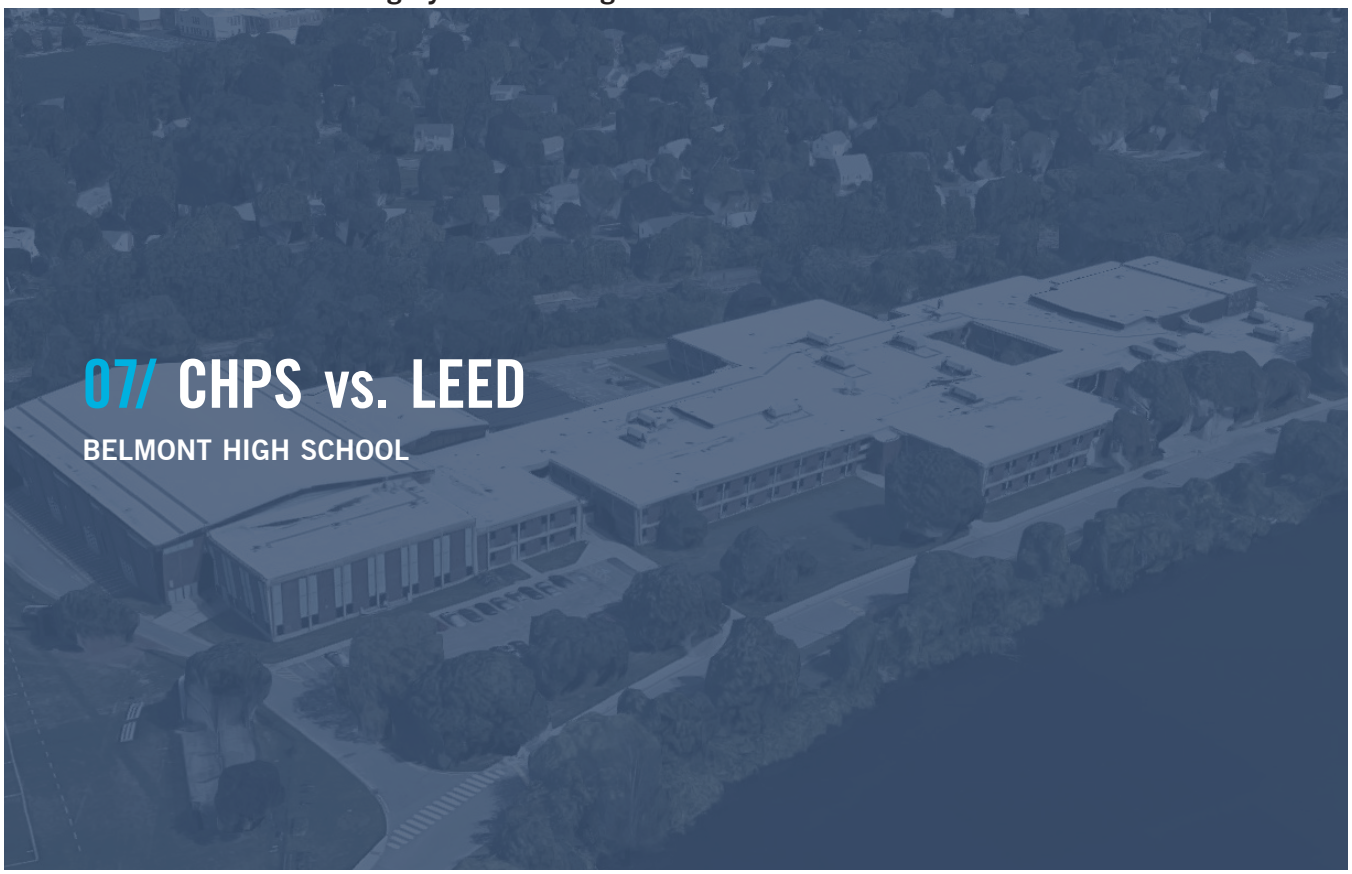
Energy Model Results	MMBTU	kWh	EUI*
Predicted Annual Energy Use:	6,258	1,834,086	26.9



Annual Energy Consumption by Building Type



DETAILED UNDERSTANDING OF PROGRAM & SCHEDULE



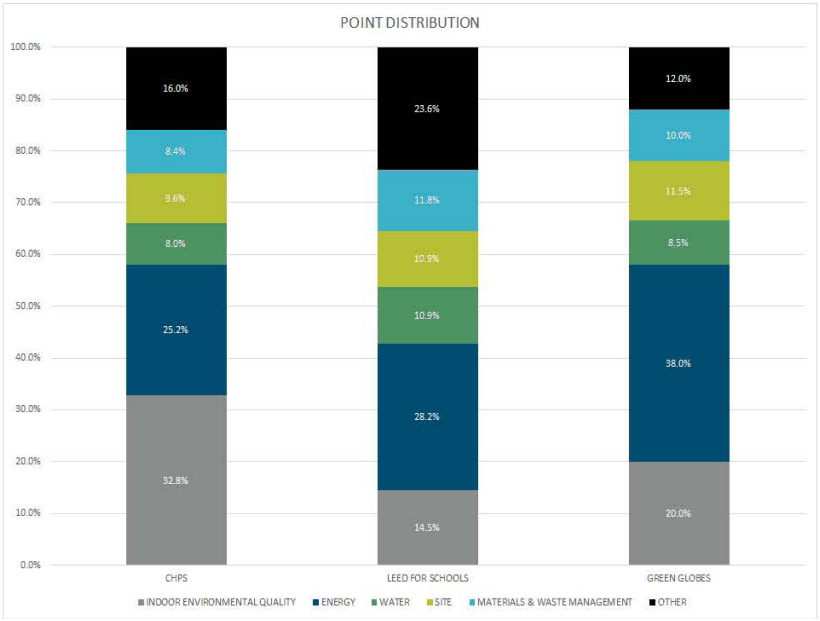
07/ CHPS vs. LEED

BELMONT HIGH SCHOOL

BELMONT HIGH SCHOOL / CHPS vs. LEED

CRITERIA AND ASSOCIATED POINTS

LEED has 9 categories with 110 total points. Green Globes has 7 categories with 1000 total points. CHPS has 7 categories with 250 total points. *The breakdown per program with the associated category weights are shown in the figure below:*



3.3.4 - PREFERRED SOLUTION

D. SUSTAINABILITY / Building System Meeting

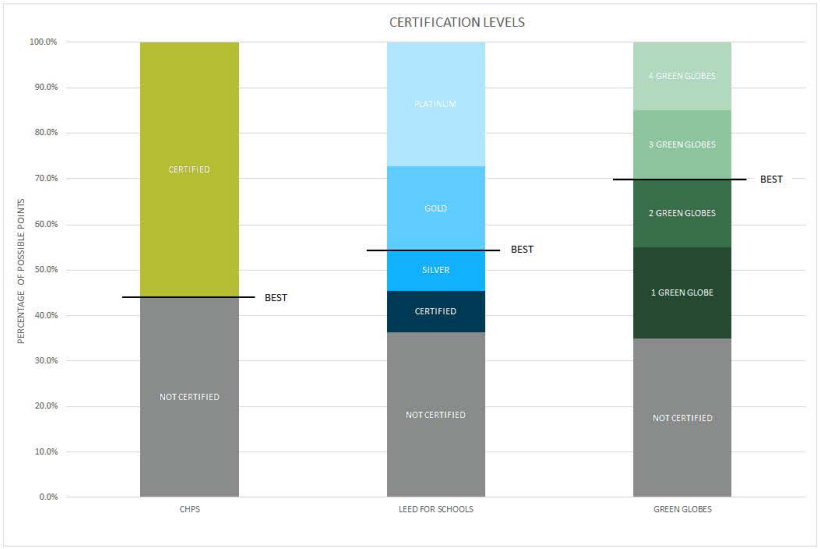
BELMONT HIGH SCHOOL / CHPS vs. LEED

Summary of NE-CHPS, LEED 2009, LEED v4 (new), and ANSI S12.6 (2002 and 2010) – Cavanaugh Tocci Associates, Inc.

Standard	Room Reverberation Limit	Background Sound Limit	Sound Isolation Requirements (Interior Spaces)	Impact isolation Requirements	Additional Requirements (reverberation)	Additional Requirements (site evaluation)	Notes
NE-CHPS 3.0 Prerequisite EQ 14.0	YES ANSI limits based on classroom volume. Calculations required.	YES 35 dBA Core Classrooms. Calculations required.	YES Isolation ratings are generally lower than the ANSI standard.	YES IIC 45 minimum floor to floor, confirmation required.	Core learning spaces greater than 20k cu.ft. to have reverberation of 1.0 second or less.	Site sound measurements required with narrative as to design to meet a 35 dBA (max.) interior sound level.	
NE-CHPS 3.0 Enhanced Performance Credit EQ 14.1	YES ANSI limits based on classroom volume. Calculations required.	YES 35 dBA Core Classrooms Calculations required.	YES Isolation ratings are similar to ANSI requirements	YES IIC 45 minimum floor to floor, confirmation required.	Core learning spaces greater than 20k cu.ft. to have reverberation of 1.0 second or less.	Site sound measurements required with narrative as to design to meet a 35 dBA (max.) interior sound level.	
LEED for Schools 2009 EQ/IEQ3 pre-req	YES ANSI standard, with calculations required (Note 1).	YES 45 dBA Core Classrooms.	NO (not required).	NO (IIC not noted as a requirement).	Core learning spaces greater than 20k cu.ft. reverberation of 1.5 second or less.	NO (not required).	1
LEED for Schools 2009 EQ/IEQ Credit 9	YES ANSI standard, with calculations required (Note 1).	YES 40 dBA Core Classrooms.	YES ANSI (except exterior windows, to meet an STC 35 requirement).	NO (IIC not noted as a requirement).	Core learning spaces greater than 20k cu.ft. reverberation of 1.5 second or less.	NO (not required).	1
New LEED for Schools v4 pre-requisite	YES ANSI standard, with calculations required (Note 1).	YES 40 dBA Core Classrooms.	NO (not required).	NO (IIC not noted as a requirement).	Core learning spaces greater than 20k cu.ft. to conform to NRC/CNRC "Acoustical Design of Rooms for Speech."	Review exterior sound levels at site (based on proximity to major noise sources) – some options would require daytime site sound measurements (Note 3).	1, 2, 3, 4
New LEED for Schools v4 (Credit, 1 point)	YES ANSI standard, with calculations required (Note 1).	YES 35 dBA Core Classrooms.	YES Requiring ANSI 2010 standard for interior isolation.	NO (IIC not noted as a requirement).	Core learning spaces greater than 20k cu.ft. to conform to NRC/CNRC "Acoustical Design of Rooms for Speech."	Review exterior sound levels at site (based on proximity to major noise sources) – some options would require daytime site sound measurements (Note 3).	1, 2, 3, 4
ANSI S12.60-2002 (2002 version used up until now in most standards)	YES Reverberation limits based on classroom volume.	YES 35 dBA Core Classrooms.	YES Varies depending on adjacency.	YES IIC 45 between floors for core classrooms.		YES: Recommended isolation levels for exterior sound control.	
ANSI S12.60-2010 (2010 version referenced in LEED V4	Limits based on classroom volume (no significant revision from the 2002 standard). New provision that classrooms less than 10k cu.ft. shall be readily adaptable to lower reverberation time of 0.3 sec	YES 35 dBA Core Classrooms.	YES Varies depending on adjacency (very slight revisions from the 2002 standard).	YES IIC 45 between floors for core classrooms.		Requires daytime site sound measurements to assess noisiest hour for the average school day, and lists specific requirements for STC/OITC of building envelope	

BELMONT HIGH SCHOOL / CHPS vs. LEED

The amount or percentage of total points awarded to a project determines if that project gets certified, and to what extent. Depending on how many points the school earns in each category, they are able to earn different levels of certification from each program, with the exception of CHPS, which either certifies the building or not. *The table below outlines these different levels of certification, where applicable. In Colorado, the Building Excellence Schools Today (BEST) Program requires the following level of certification: LEED – Gold, Green Globes – 3 globes, and CHPS – Verified Leader. These goals are also noted:*



D. SUSTAINABILITY / Building System Meeting

BELMONT HIGH SCHOOL / CHPS vs. LEED

Post-Design vs. Design Only Points					
	Post-Design Prerequisites	Points Allocated During/After Construction	Points Based on Design Only	Total Points	Percentage of Post-Design Points
LEED	5	13	97	110	12%
Green Globes	0	29	971	1000	3%
CHPS	7	149	101	250	60%
Notes:	*CHPS prerequisites have point values that contribute to the 149 shown above. LEED prerequisites have no point value. Green Globes has no prerequisites.*				
	All Green Globes points are dependent on a site assessment conducted after construction. 29 of the points are for commissioning and training done during/after construction. All other points are based on design, with potential to be denied based on actual construction.				
	LEED has a review stage where certain points are reviewed and awarded after construction.				

3.3.4 - PREFERRED SOLUTION

D. SUSTAINABILITY / LEED Checklist

LEED v4 for BD+C: Schools

Project Checklist

Belmont High School

8-Feb-18

Y	?	N			
1	0	0	Credit 1	Integrative Process	1

7	3	5	**Location and Transportation**		Possible Points: 15
		15	Credit 1	LEED for Neighborhood Development Location	15
1			Credit 2	Sensitive Land Protection	1
		2	Credit 3	High Priority Site	2
2		3	Credit 4	Surrounding Density and Diverse Uses	5
4			Credit 5	Access to Quality Transit	4
	1		Credit 6	Bicycle Facilities	1
	1		Credit 7	Reduced Parking Footprint	1
	1		Credit 8	Green Vehicles	1

3	6	3	**Sustainable Sites**		Possible Points: 12
Y			Prereq 1	Construction Activity Pollution Prevention	Required
Y			Prereq 2	Environmental Site Assessment	Required
1			Credit 1	Site Assessment	1
		2	Credit 2	Site Development--Protect or Restore Habitat	2
1			Credit 3	Open Space	1
	3		Credit 4	Rainwater Management	3
	2		Credit 5	Heat Island Reduction	2
	1		Credit 6	Light Pollution Reduction	1
		1	Credit 7	Site Master Plan	1
1			Credit 8	Joint Use of Facilities	1

5	3	4	**Water Efficiency**		Possible Points: 12
Y			Prereq 1	Outdoor Water Use Reduction	Required
Y			Prereq 2	Indoor Water Use Reduction	Required
Y			Prereq 3	Building-Level Water Metering	Required
1	1		Credit 1	Outdoor Water Use Reduction	2
3		4	Credit 2	Indoor Water Use Reduction	7
1	1		Credit 3	Cooling Tower Water Use	2
	1		Credit 4	Water Metering	1

16	13	2	**Energy and Atmosphere**		Possible Points: 31
Y			Prereq 1	Fundamental Commissioning and Verification	Required
Y			Prereq 2	Minimum Energy Performance	Required
Y			Prereq 3	Building-Level Energy Metering	Required
Y			Prereq 4	Fundamental Refrigerant Management	Required
6			Credit 1	Enhanced Commissioning	6
8	8		Credit 2	Optimize Energy Performance	16
1			Credit 3	Advanced Energy Metering	1
		2	Credit 4	Demand Response	2
	3		Credit 5	Renewable Energy Production	3
	1		Credit 6	Enhanced Refrigerant Management	1
1	1		Credit 7	Green Power and Carbon Offsets	2

D. SUSTAINABILITY / LEED Checklist

LEED v4 for BD+C: Schools

Project Checklist

Belmont High School

8-Feb-18

4	0	9	**Materials and Resources**	Possible Points:	13
Y			Prereq 1	Storage and Collection of Recyclables	Required
Y			Prereq 2	Construction and Demolition Waste Management Planning	Required
		5	Credit 1	Building Life-Cycle Impact Reduction	5
1		1	Credit 2	Building Product Disclosure and Optimization - Environmental Product Declarations	2
		2	Credit 3	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
1		1	Credit 4	Building Product Disclosure and Optimization - Material Ingredients	2
2			Credit 5	Construction and Demolition Waste Management	2

9	6	1	**Indoor Environmental Quality**	Possible Points:	16
Y			Prereq 1	Minimum Indoor Air Quality Performance	Required
Y			Prereq 2	Environmental Tobacco Smoke Control	Required
Y			Prereq 3	Minimum Acoustic Performance	Required
2			Credit 1	Enhanced Indoor Air Quality Strategies	2
2	1		Credit 2	Low-Emitting Materials	3
1			Credit 3	Construction Indoor Air Quality Management Plan	1
2			Credit 4	Indoor Air Quality Assessment	2
0	1		Credit 5	Thermal Comfort	1
2			Credit 6	Interior Lighting	2
	3		Credit 7	Daylight	3
	1		Credit 8	Quality Views	1
		1	Credit 9	Acoustic Performance	1

6	3	0	**Innovation**	Possible Points:	9
1	1		Credit 1	Innovation	1
1	1		Credit 2	Innovation	1
	1		Credit 3	Innovation	1
1			Credit 4	Innovation	1
1			Credit 5	Innovation	1
1			Credit *	Innovation	1
				Innovation	1
				Innovation	1
1			Credit 6	LEED Accredited Professional	1

3	0	2	**Regional Priority**		Possible Points:	5
1			Credit 1	Regional Priority: Specific Credit	Optimized Energy (8 points)	1
		1	Credit 2	Regional Priority: Specific Credit	Building Life-cycle Impact (2 points)	1
		1	Credit 3	Regional Priority: Specific Credit	Site Development-protect and restore (2 points	1
1			Credit 4	Regional Priority: Specific Credit	Access to Quality Transit	1
1			Credit 5	Regional Priority: Specific Credit	Renewable Energy Production	1
			Credit 6	Regional Priority: Specific Credit		

54	34	26	**Total**	Possible Points:	114

Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110

3.3.4 - PREFERRED SOLUTION

D. SUSTAINABILITY / Acknowledgement

PERKINS+WILL

February 8, 2018

Ms. Jess Deleconio
Senior Project Coordinator
Massachusetts School Building Authority
40 Broad Street, Suite 500
Boston, MA 02109

Re: MSBA High Efficiency Green School Program

Dear Ms. Deleconio,

This is an acknowledgement that the Belmont High School District has identified a goal of 2% additional reimbursement from the MSBA High Efficiency Green School Program. As their Designer, I have submitted a completed LEED scorecard showing all prerequisites and 114 attempted points, which will meet that goal.

The scope of work for this project will include the construction elements and performance tasks to achieve that goal, and all subsequent documents, including but not limited to, specifications, drawings, and cost estimates will match the scope of work indicated in the submitted scorecard.

Sincerely,

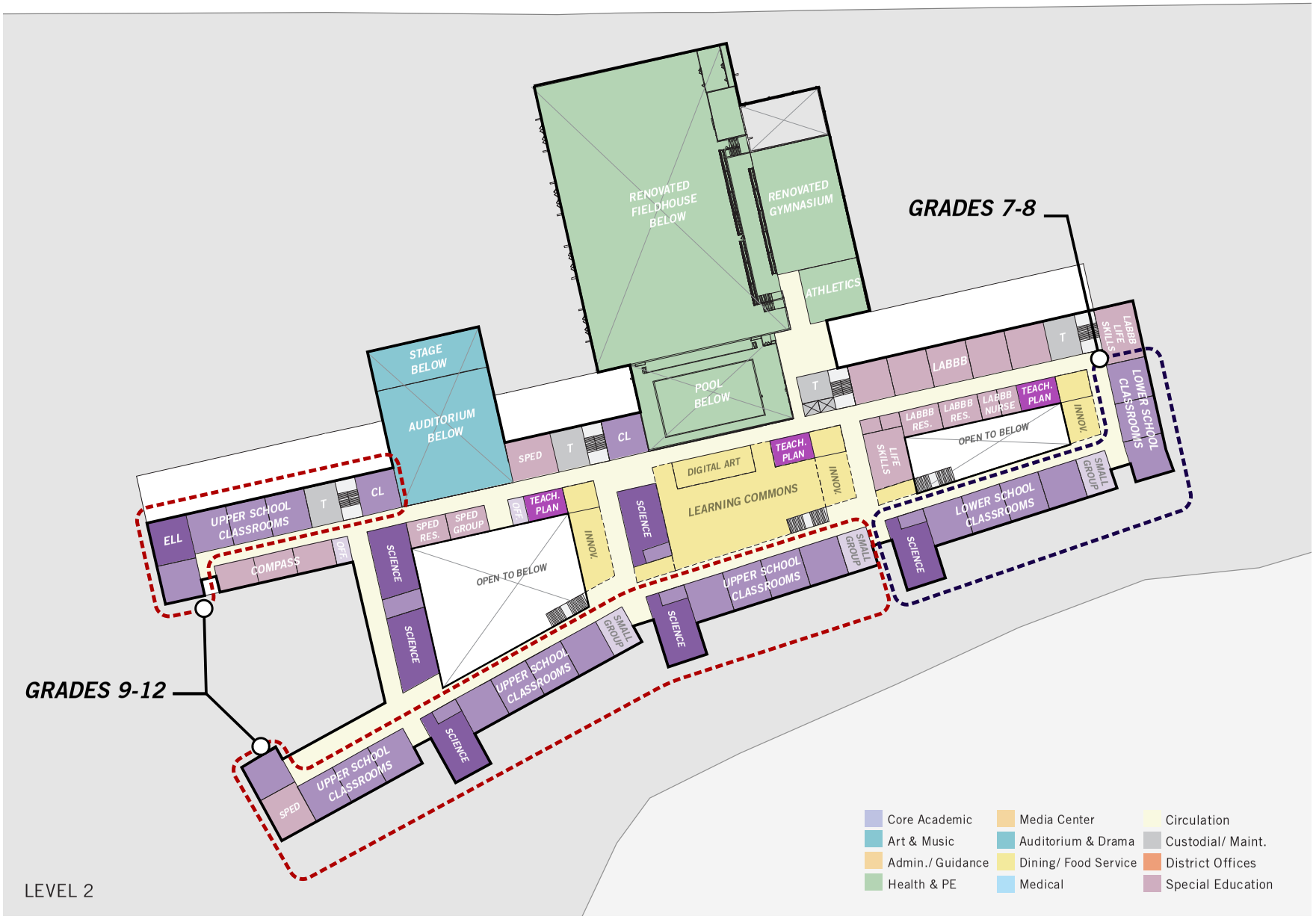
Brooke Trivas

Practice Leader, Principal, Perkins + Will

225 Franklin Street, Suite 1100, Boston, MA 02110 t 617.478.0300 perkinswill.com

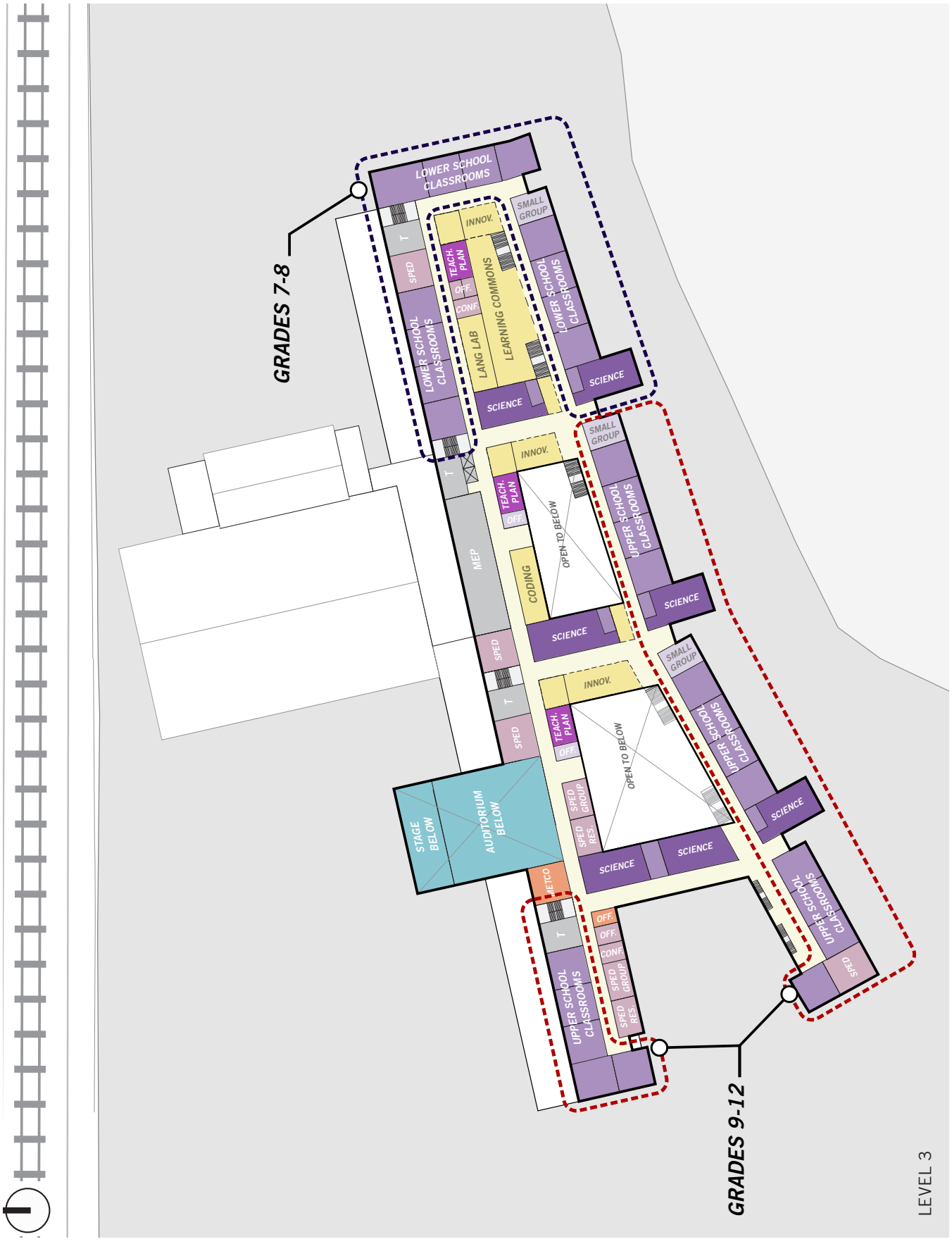
3.3.4 - PREFERRED SOLUTION

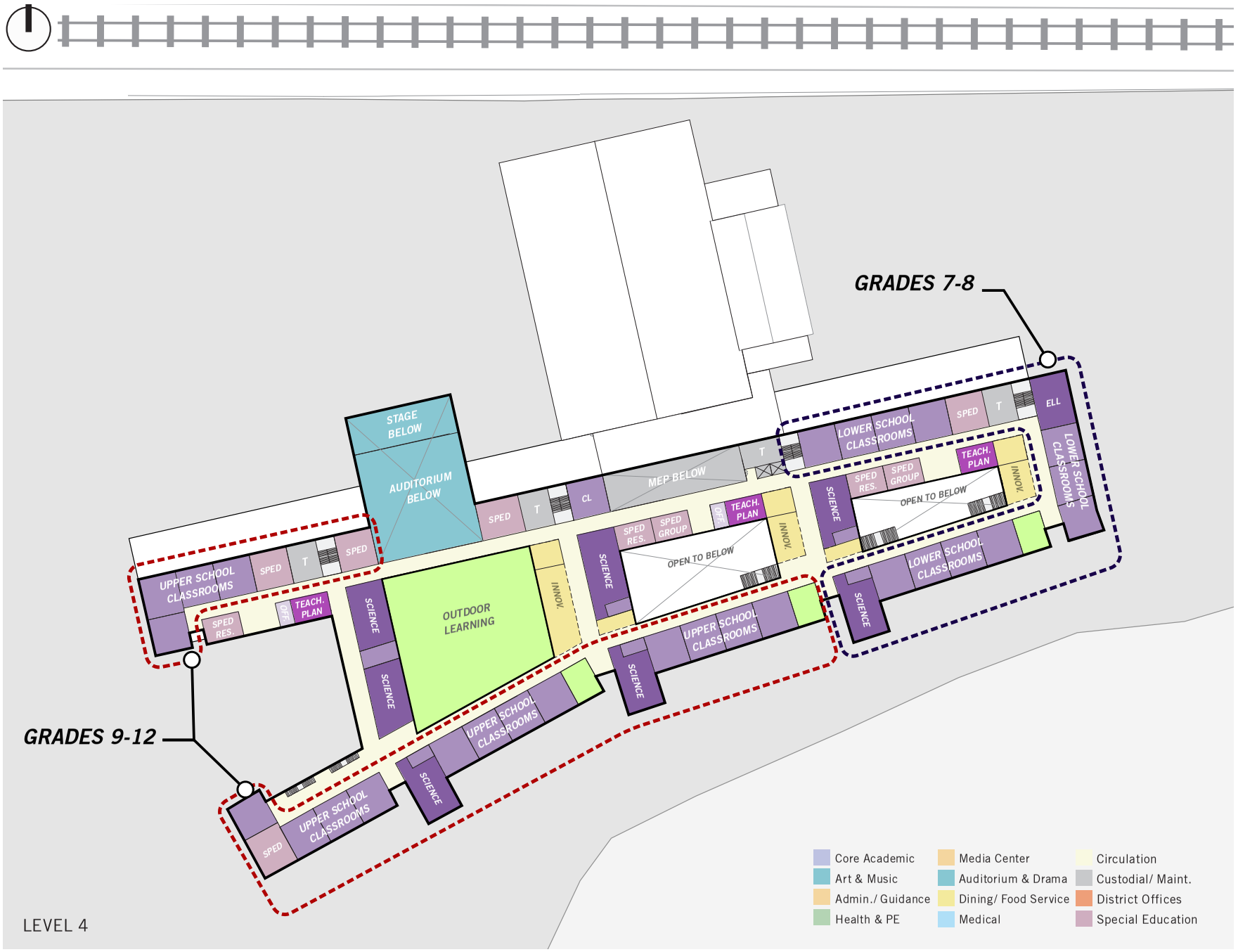
E. BUILDING PLANS / Level 1


RENOVATED FIELDHOUSE BELOW
RENOVATED GYMNASIUM
ATHLETICS
GRADES 7-8
STAGE BELOW
AUDITORIUM BELOW
POOL BELOW
LABBB
LABBB LIFE SKILLS
LOWER SCHOOL CLASSROOMS
LABBB RES.
LABBB NURSE
TEACH. PLAN
INNOV.
OPEN TO BELOW
SPED
T
CL
DIGITAL ART
LEARNING COMMONS
LIFE SKILLS
SMALL GROUP
ELL
UPPER SCHOOL CLASSROOMS
COMPASS
SCIENCE
SPED RES.
SPED GROUP
GRADES 9-12
Core Academic
Art & Music
Admin./ Guidance
Health & PE
Media Center
Auditorium & Drama
Dining/ Food Service
Medical
Circulation
Custodial/ Maint.
District Offices
Special Education
LEVEL 2

3.3.4 - PREFERRED SOLUTION

E. BUILDING PLANS / Level 3

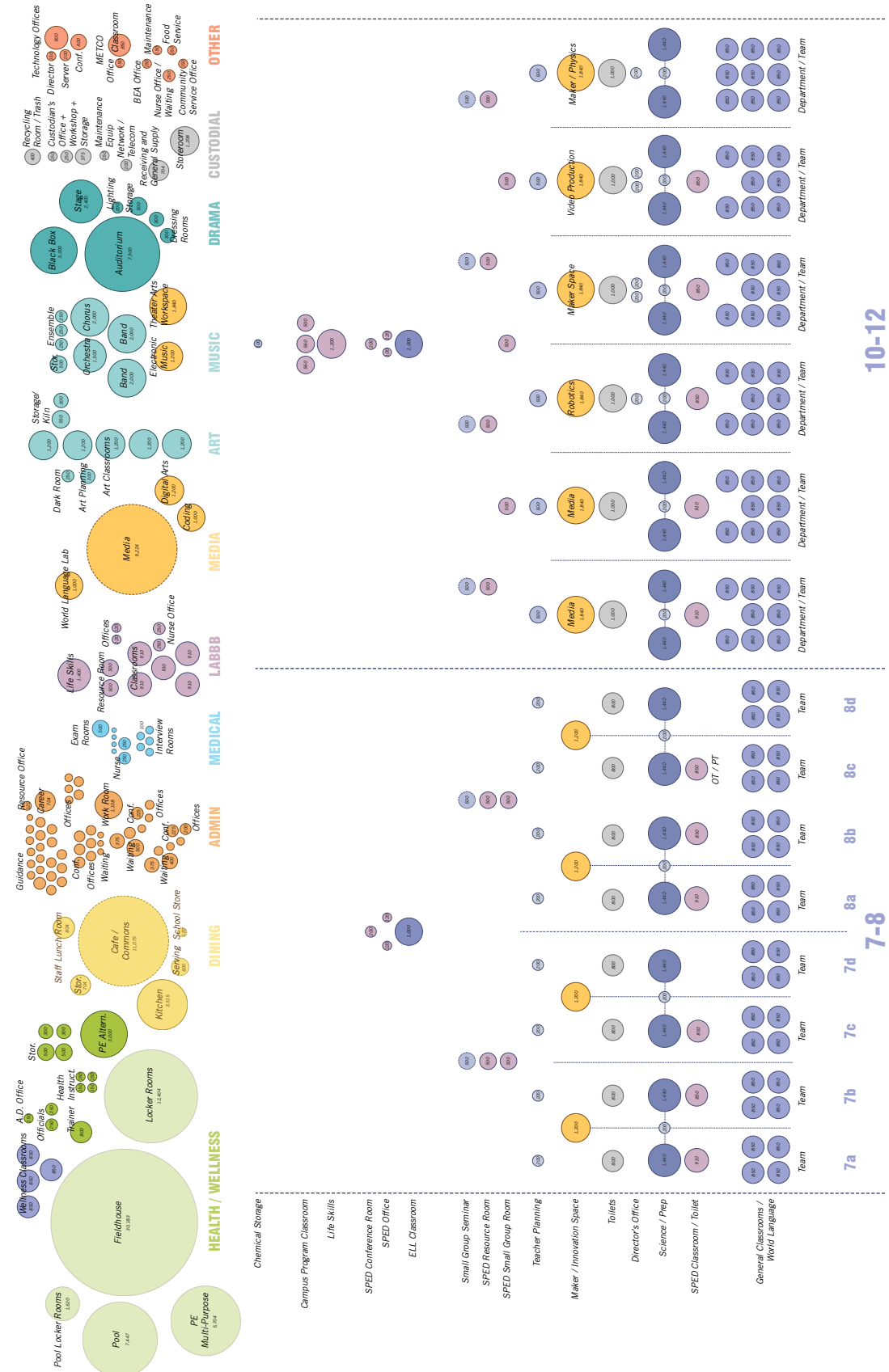



GRADES 7-8
GRADES 9-12
STAGE BELOW
AUDITORIUM BELOW
MEP BELOW
OUTDOOR LEARNING
OPEN TO BELOW
UPPER SCHOOL CLASSROOMS
LOWER SCHOOL CLASSROOMS
SPED
SPED RES.
SPED GROUP
TEACH. PLAN
SCIENCE
INNOV.
ELL
T
CL
OFF.
Core Academic
Art & Music
Admin./ Guidance
Health & PE
Media Center
Auditorium & Drama
Dining/ Food Service
Medical
Circulation
Custodial/ Maint.
District Offices
Special Education
LEVEL 4

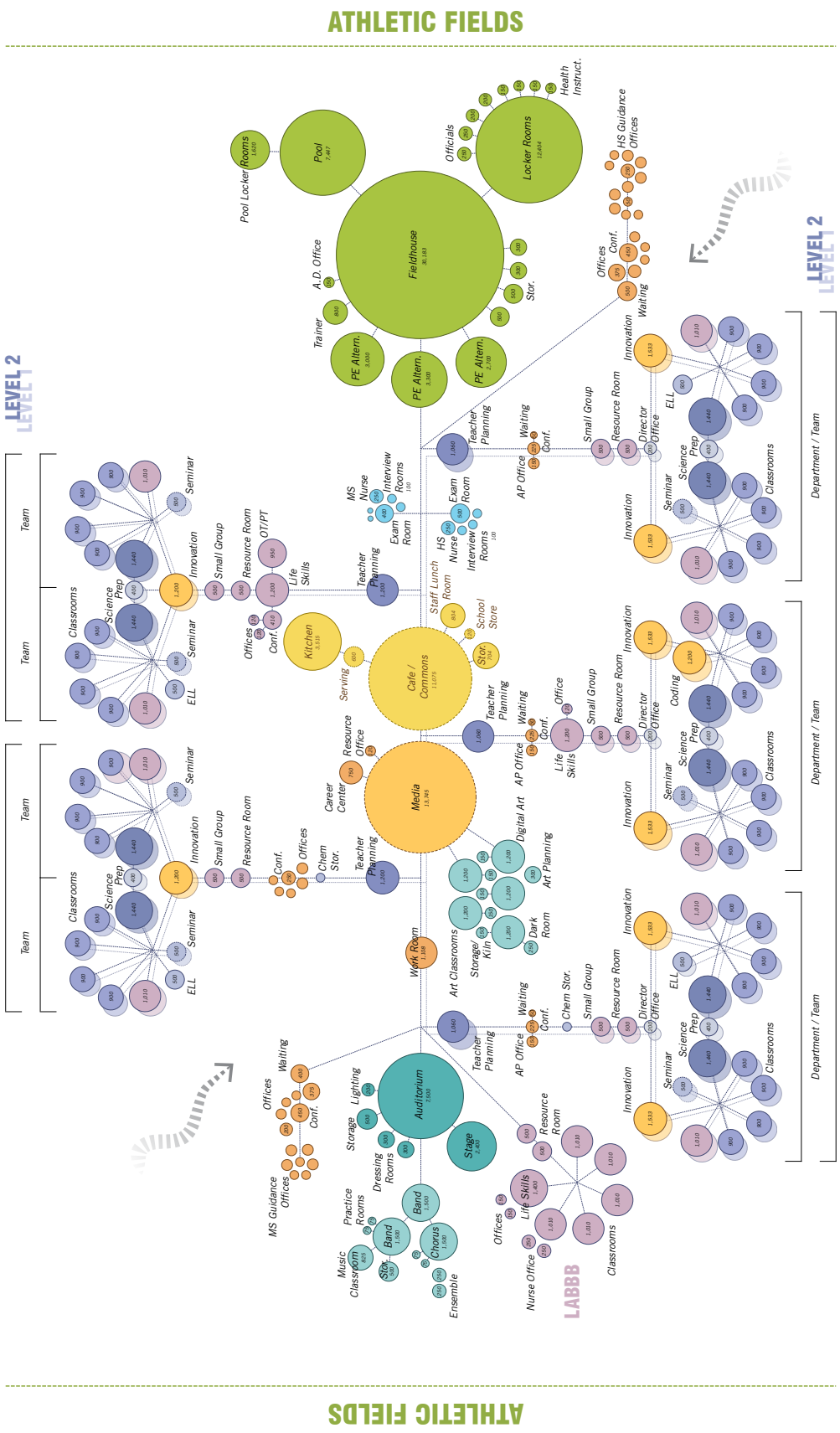
3.3.4 - PREFERRED SOLUTION

E. BUILDING PLANS / Program Tree

PROGRAM TREE



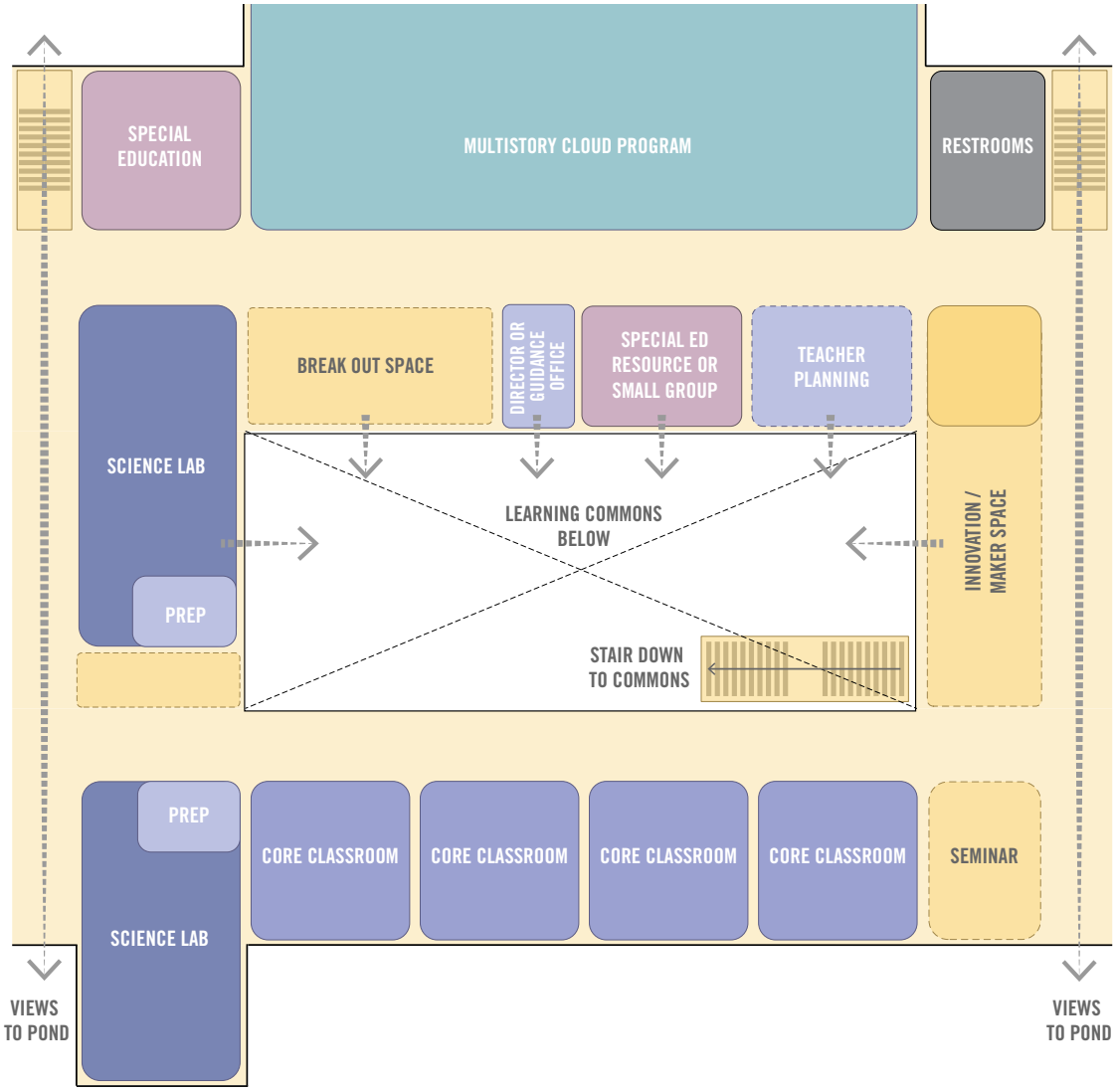
E. BUILDING PLANS / Program Adjacency



PROGRAM ADJACENCY

3.3.4 - PREFERRED SOLUTION

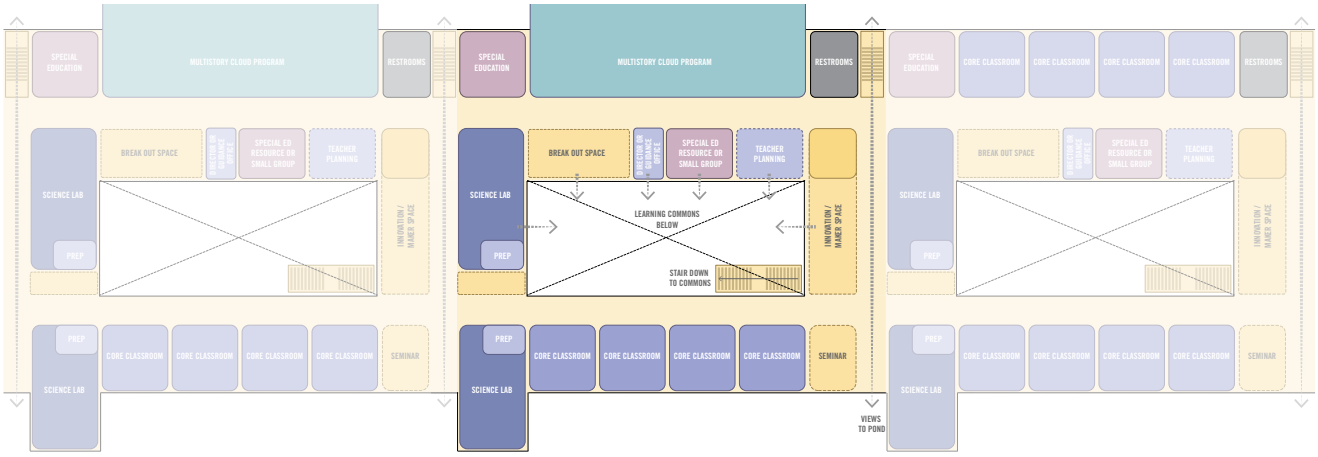
E. BUILDING PLANS / Educational Program Diagrams



ACADEMIC NEIGHBORHOOD

INNOVATION + SCIENCE @ BRIDGES / PERIMETER CLASSROOMS

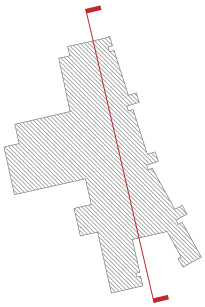
E. BUILDING PLANS / Educational Program Diagrams

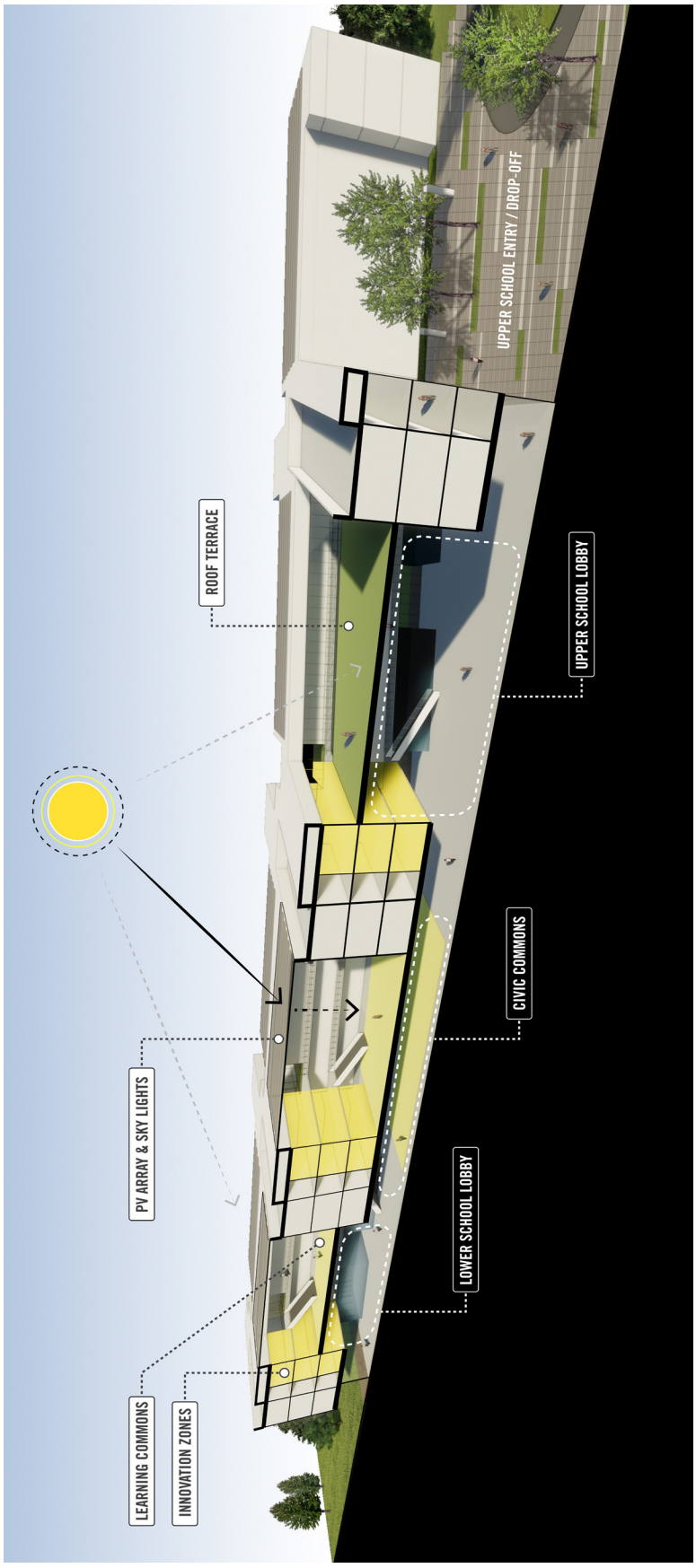


ACADEMIC NEIGHBORHOOD CLUSTERS

3.3.4 - PREFERRED SOLUTION

E. BUILDING PLANS / Section Diagrams





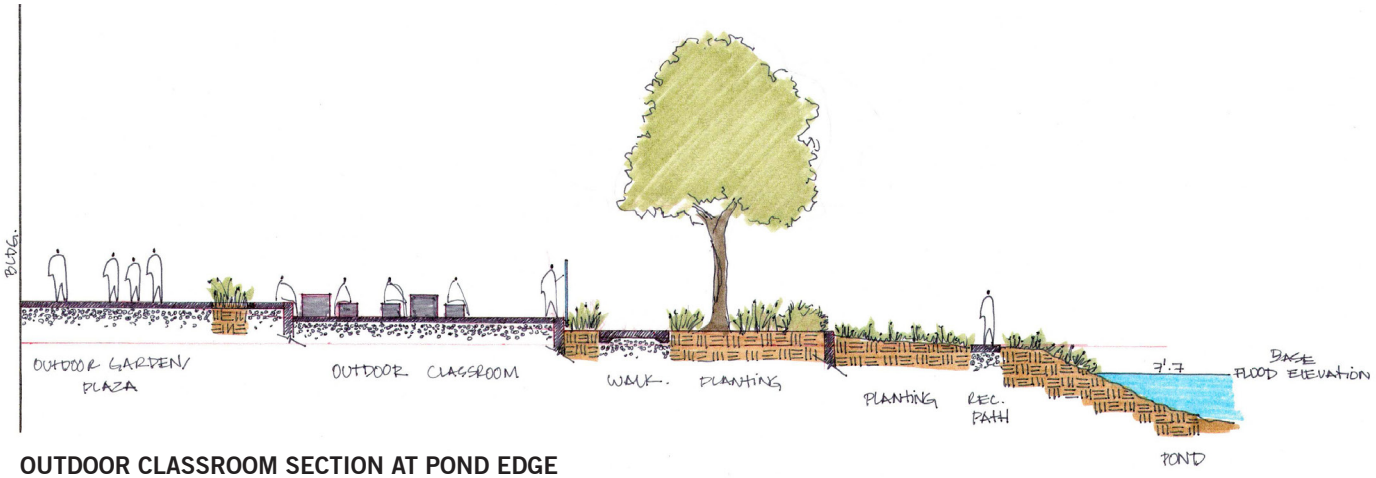
EAST-WEST BUILDING SECTION

E. BUILDING PLANS / Section Diagrams

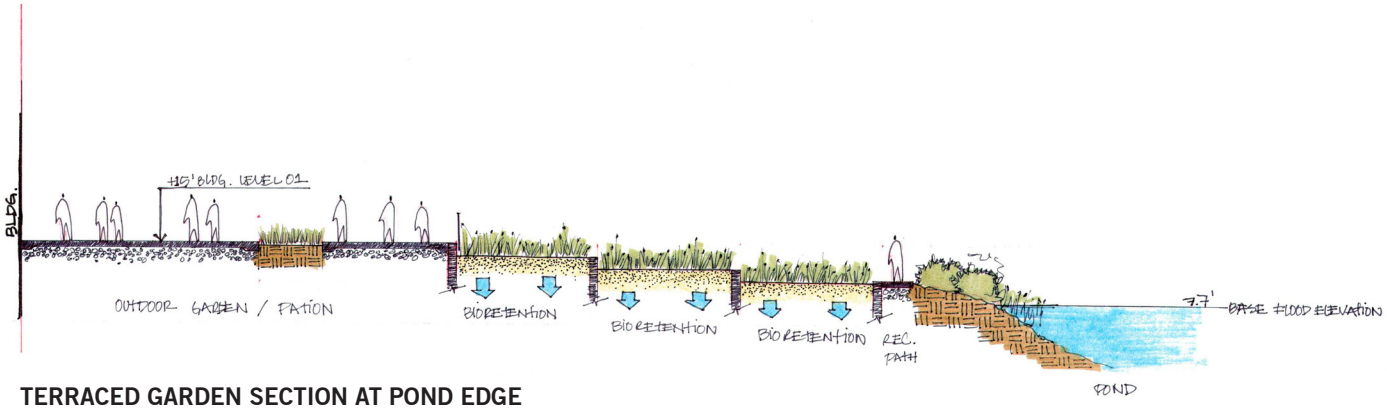
NORTH-SOUTH BUILDING SECTION

3.3.4 - PREFERRED SOLUTION

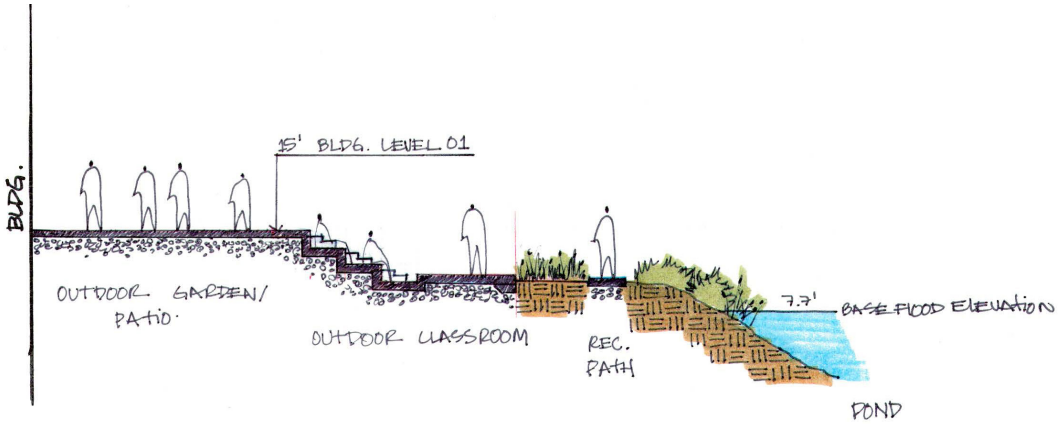
F. SITE PLAN / Site Concept Sections



OUTDOOR CLASSROOM SECTION AT POND EDGE



TERRACED GARDEN SECTION AT POND EDGE



STEPPED SEATING SECTION AT POND EDGE

F. SITE PLAN

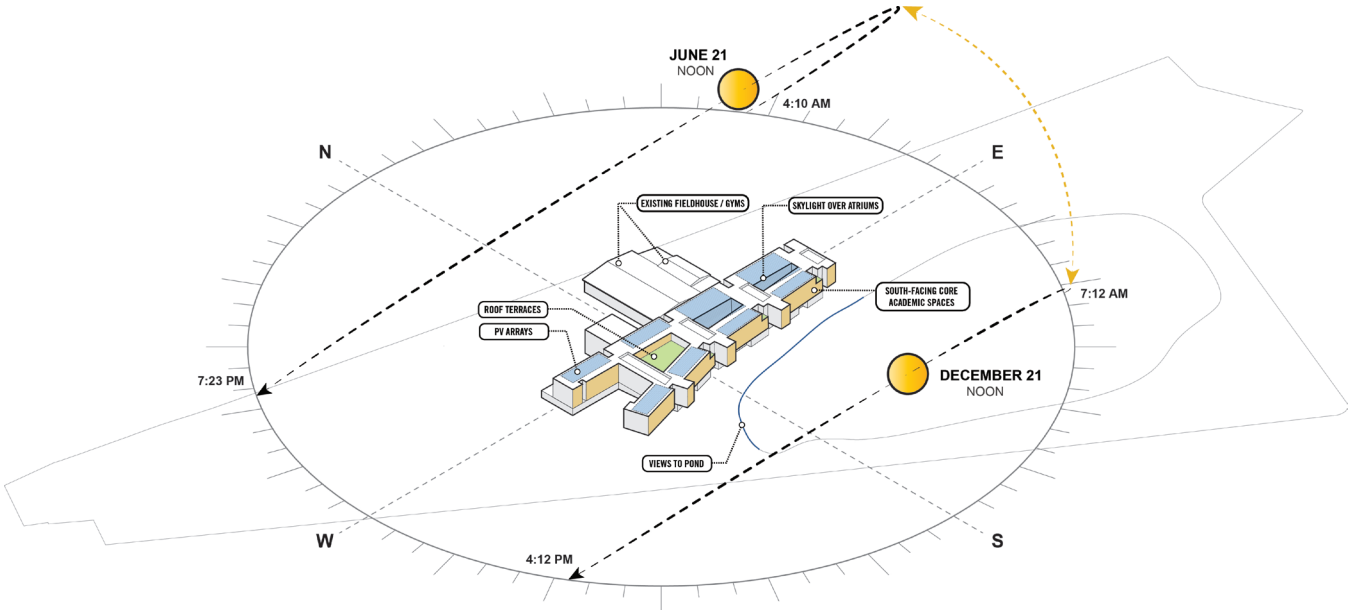
PARKING COUNT	
School West Lot	145
School East Lot	215
Ice Rink Lot	70
TOTAL	430

3.3.4 - PREFERRED SOLUTION

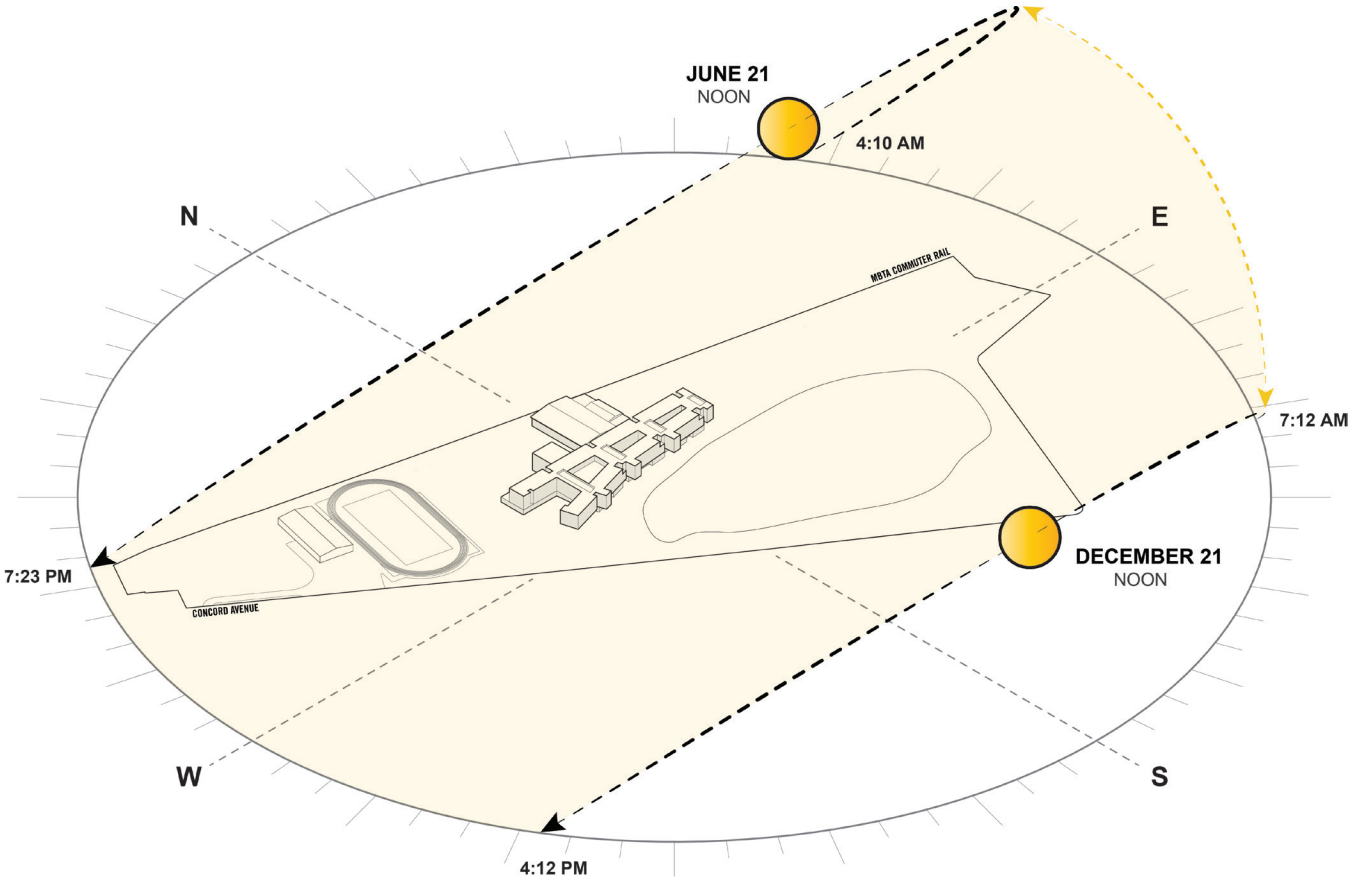
F. SITE PLAN

F. SITE PLAN / Site Diagrams

SUN ORIENTATION / BUILDING



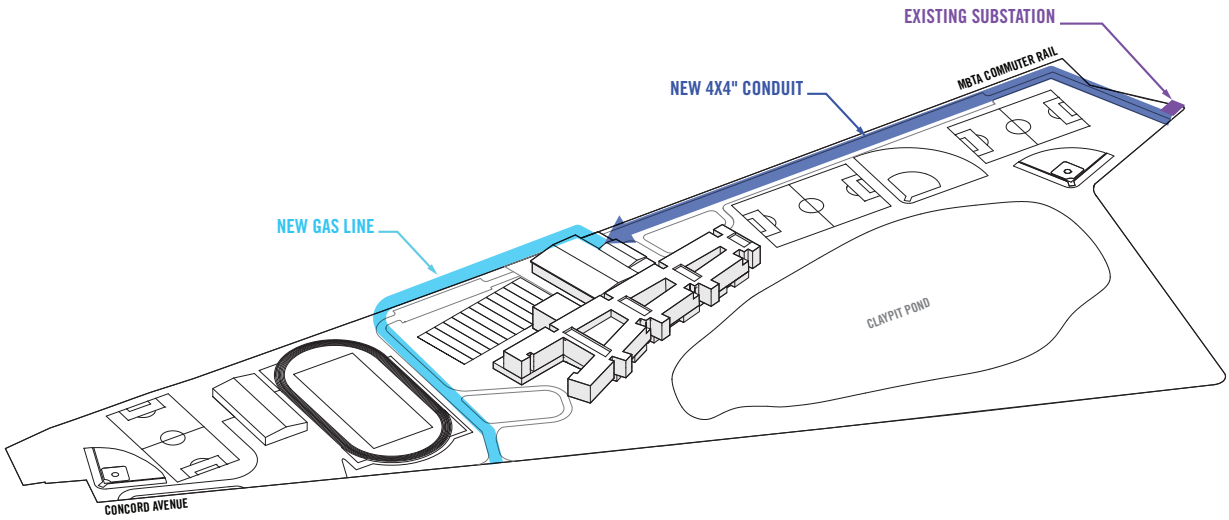
SUN ORIENTATION / SITE



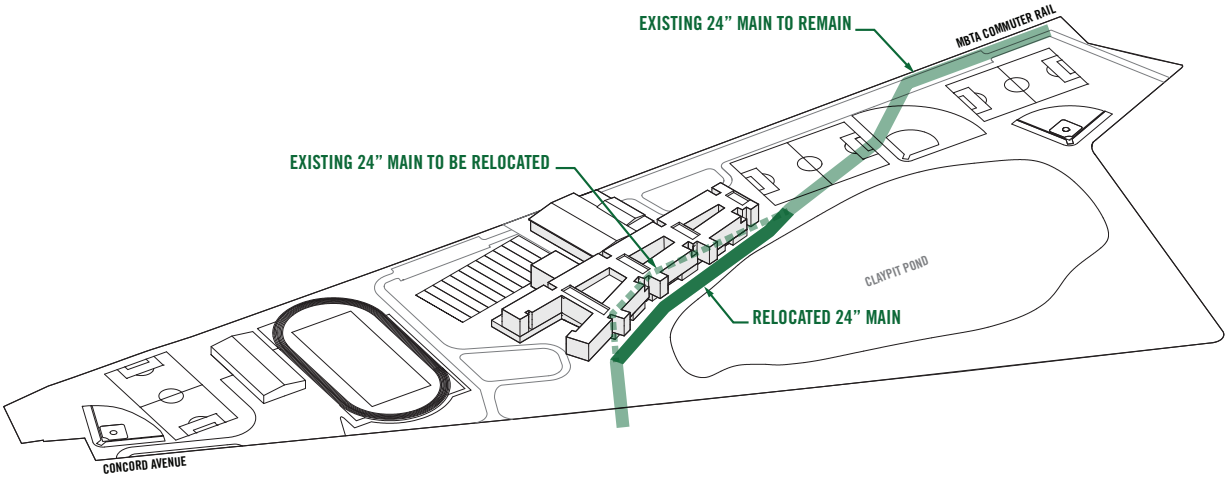
3.3.4 - PREFERRED SOLUTION

F. SITE PLAN / Site Diagrams

UTILITIES / GAS & ELECTRIC

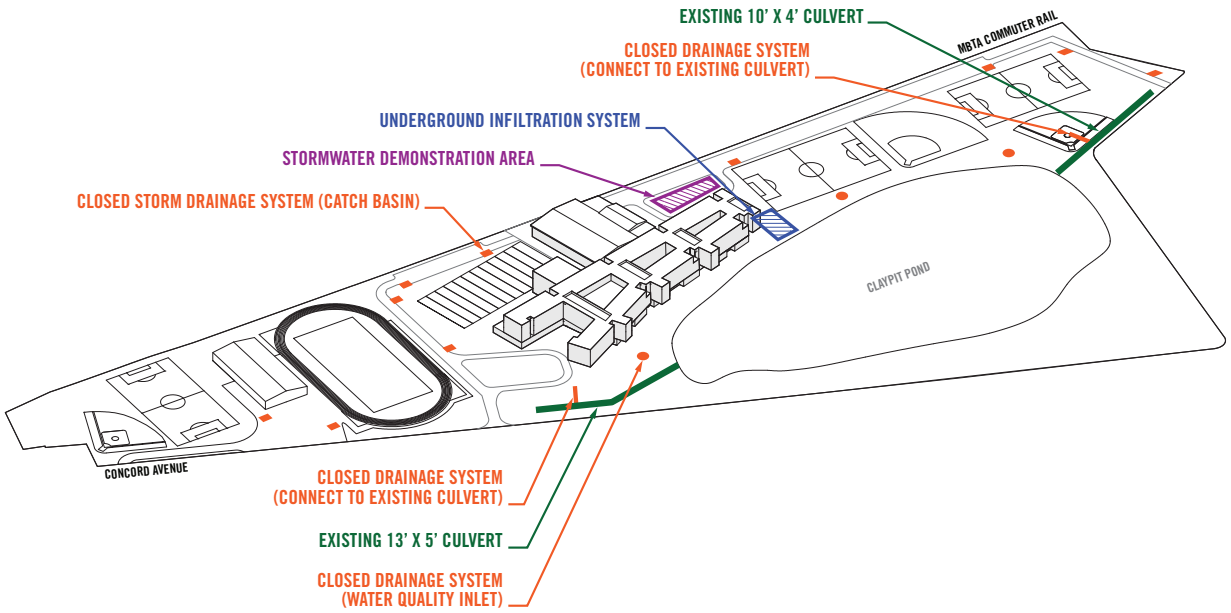


UTILITIES / SEWER

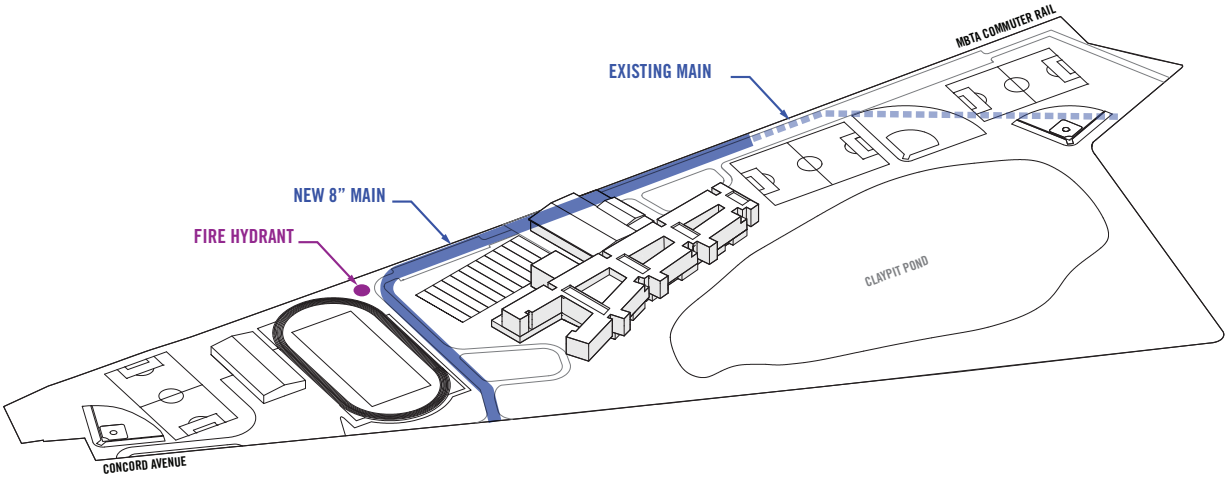


F. SITE PLAN / Site Diagrams

UTILITIES / STORM DRAINAGE



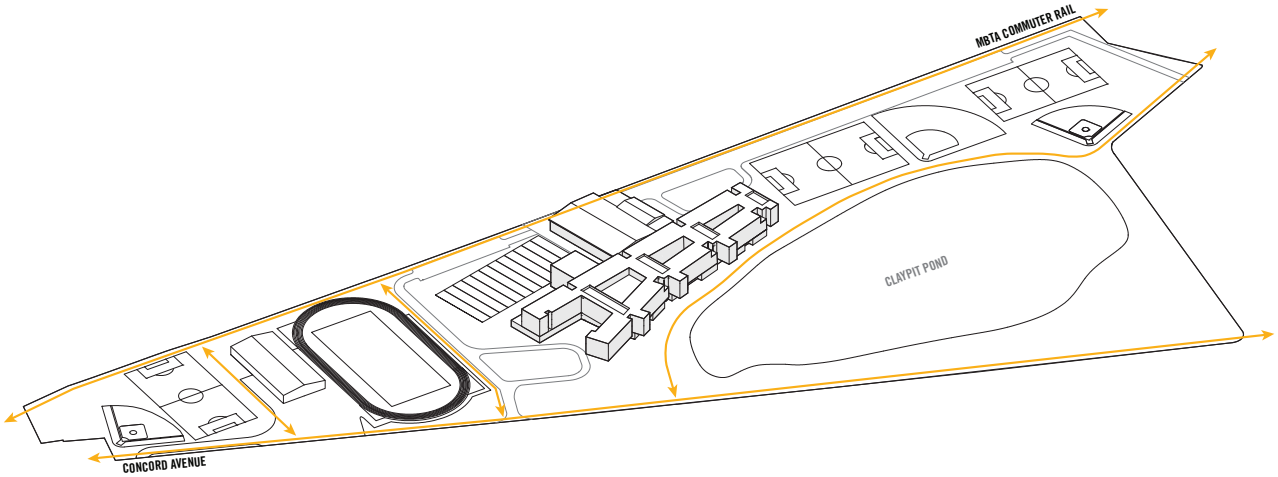
UTILITIES / WATER



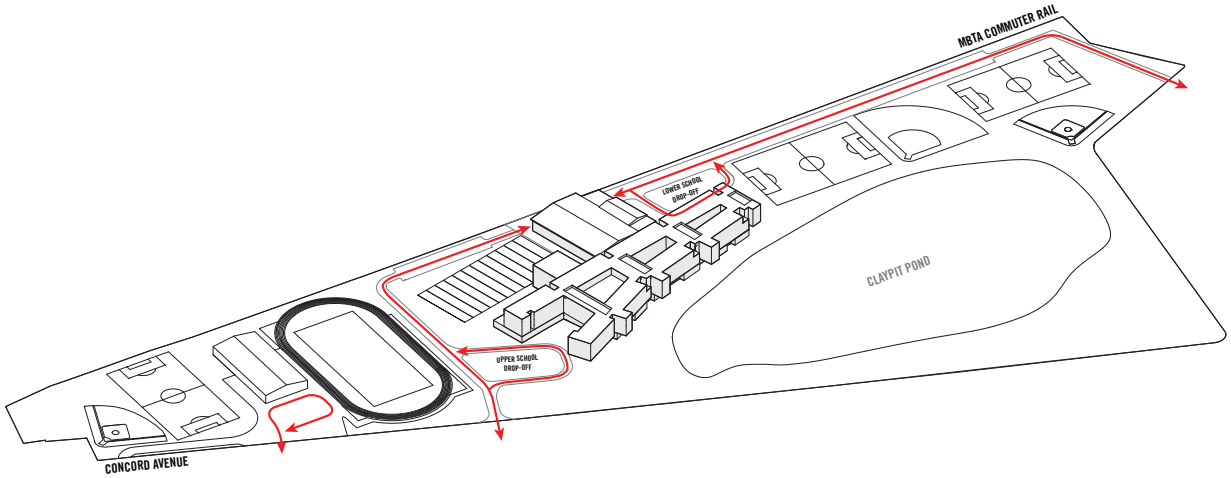
3.3.4 - PREFERRED SOLUTION

F. SITE PLAN / Site Diagrams

BICYCLE CIRCULATION

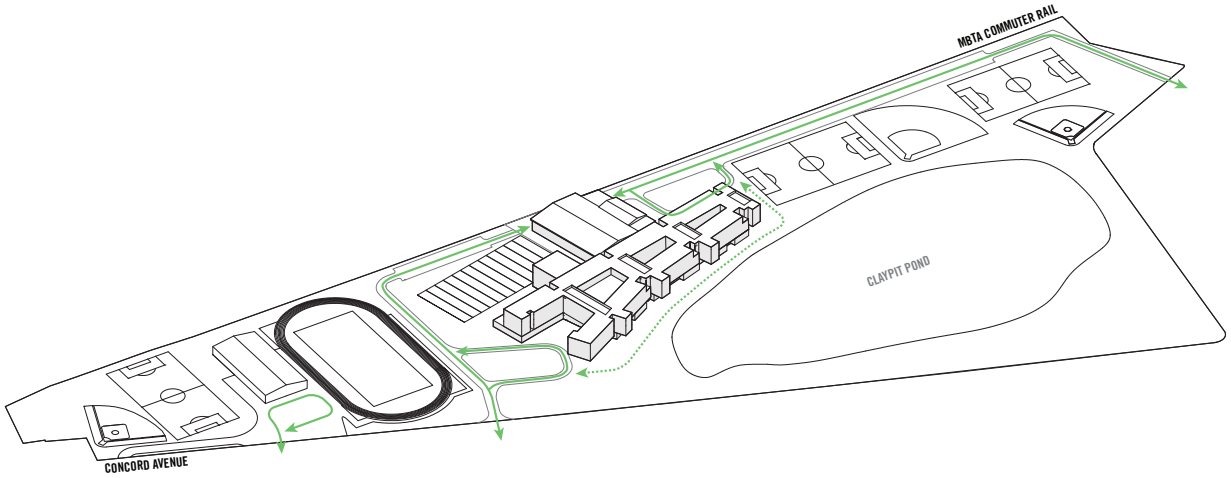


VEHICULAR CIRCULATION

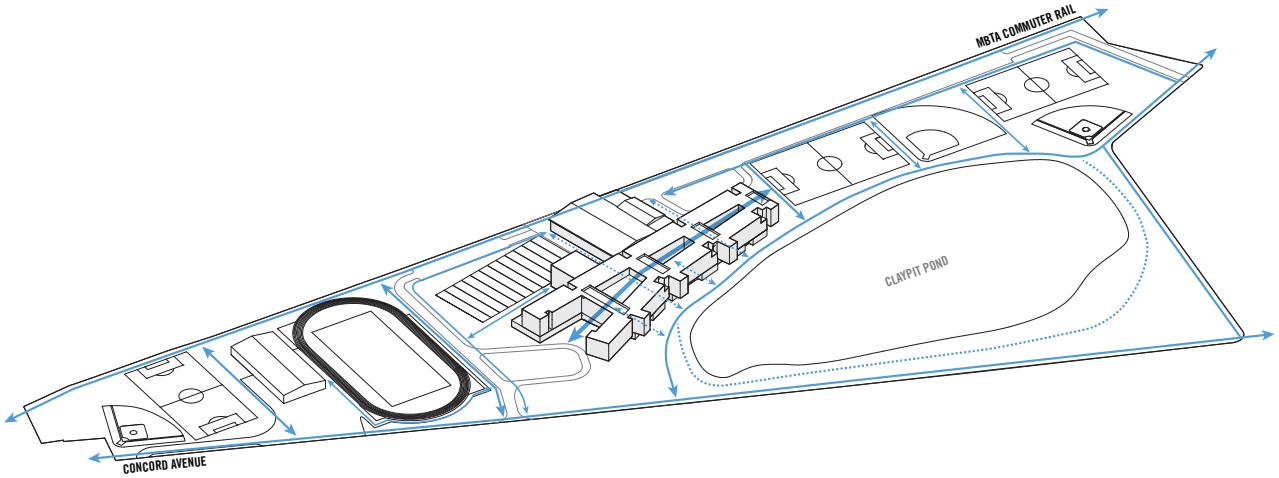


F. SITE PLAN / Site Diagrams

EMERGENCY ACCESS



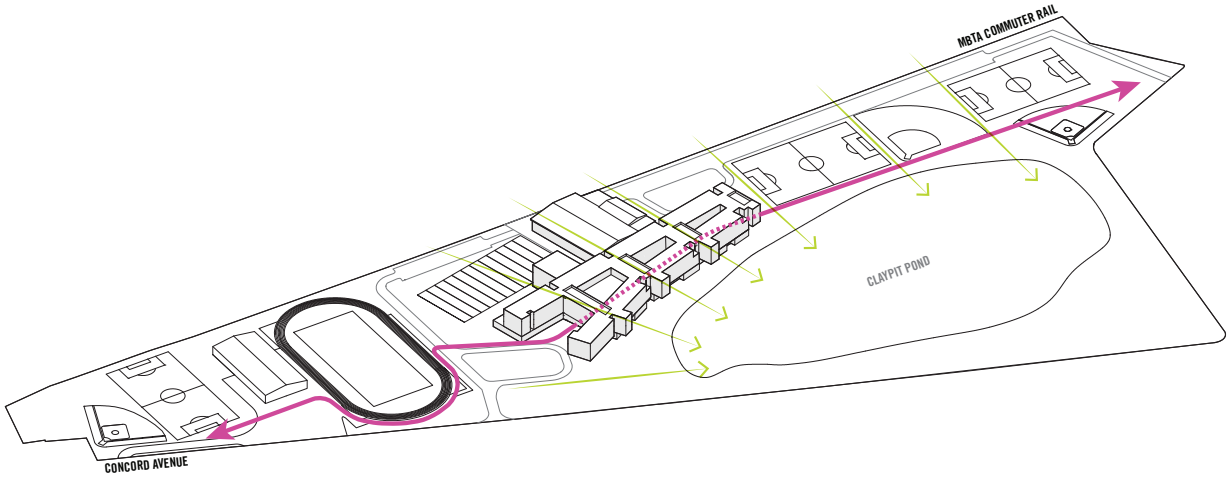
PEDESTRIAN CIRCULATION



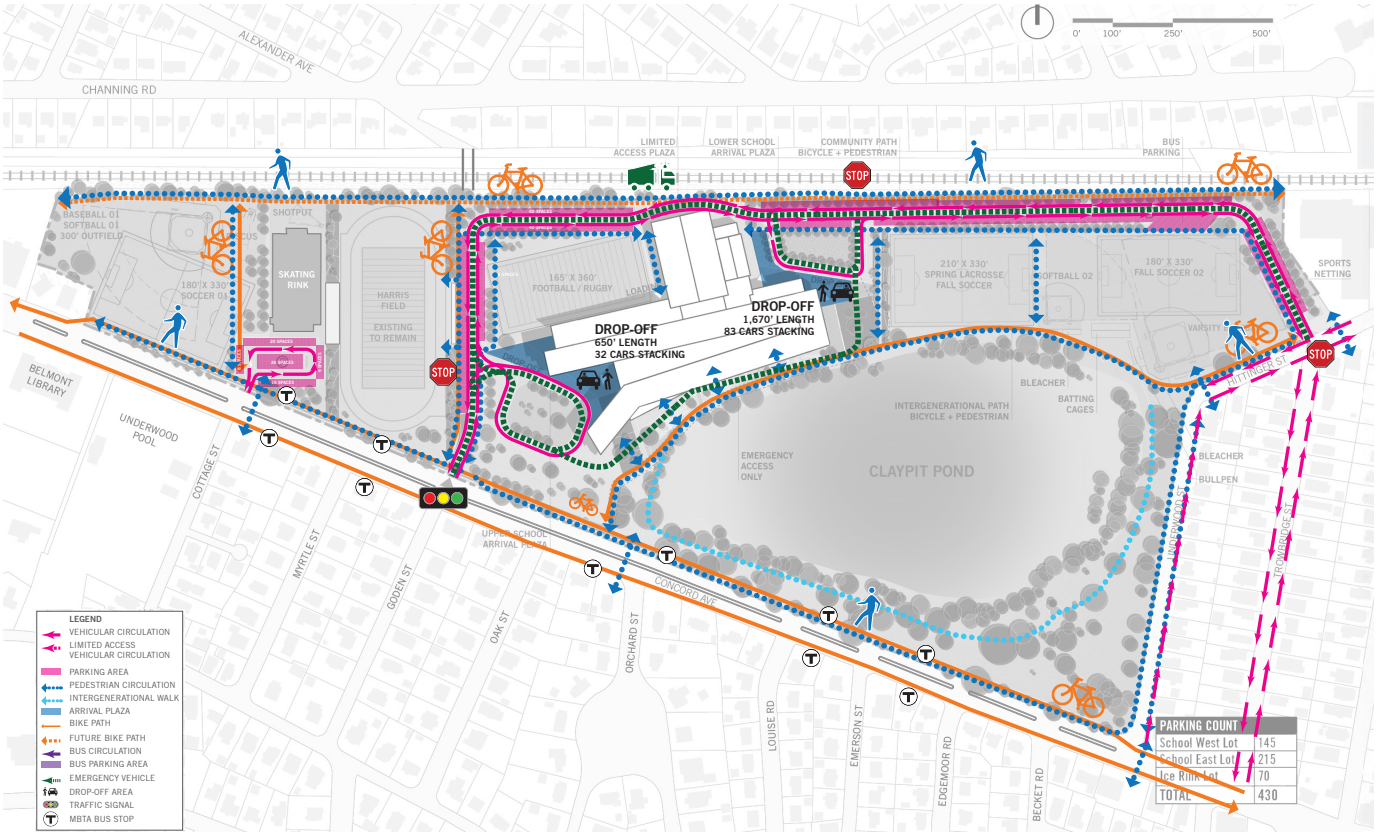
3.3.4 - PREFERRED SOLUTION

F. SITE PLAN / Site Diagrams

SITE PARTI



TRAFFIC SITE PLAN



F. SITE PLAN / Site Diagrams

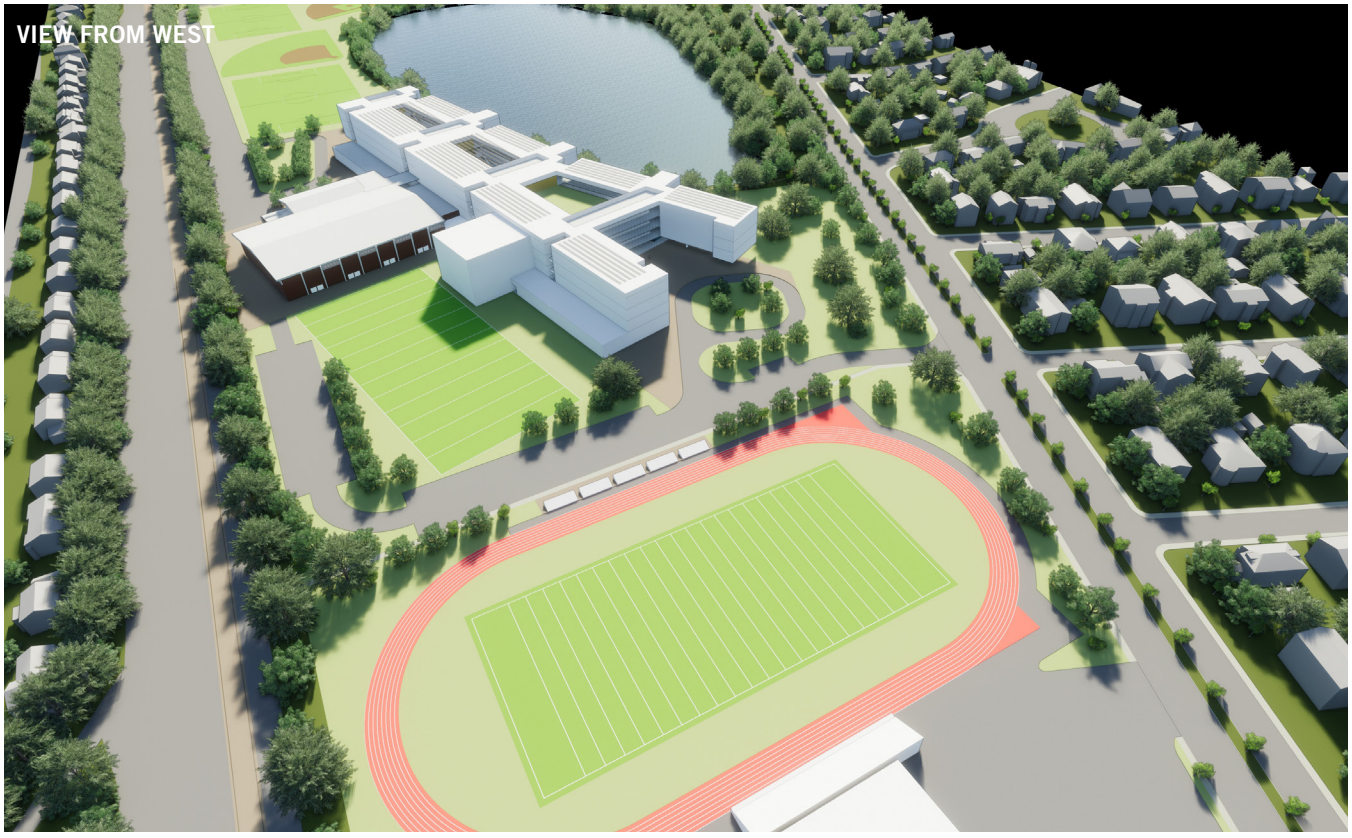
ATHLETIC FIELDS / SPRING

ATHLETIC FIELDS / FALL

3.3.4 - PREFERRED SOLUTION

F. SITE PLAN / Renderings

F. SITE PLAN / Renderings



3.3.4 - PREFERRED SOLUTION

G. BUDGET

PSR 3.3.4 G BUDGET OVERVIEW

Perkins and Will's consultant PM&C prepared a detailed cost estimate for the preferred schematic Option 2.4. Daedalus Projects prepared an independent cost estimate. The spread between these two estimates was less than 1%.

ESTIMATED TOTAL CONSTRUCTION COST

$245.8 M

ESTIMATED TOTAL PROJECT COST

$307.2 M

ESTIMATED FUNDING CAPACITY

The Town of Belmont intends to issue General Obligation Bonds to fund the Town's share of the total project cost for the new school. The Town's debt limit is $325,574,620 based on recently released 2016 EQV amounts. The Town has $79,871,739 in debt outstanding currently, of which $50,803,723 is self-supporting debt funded by user charges not the tax levy. The Town has an additional $4,977,489 in authorized and unissued debt. The Town is operating sufficiently below the debt limit so will be able to adequately cover the anticipated bonding needs resulting from an approved project which will be funded through a voter approved debt exclusion.

LIST OF OTHER MUNICIPAL PROJECTS UNDERWAY

As well as the proposed Belmont High School project the Town's Capital Project List includes the following potential projects: Belmont Public Library, Belmont Police Station, Belmont Department of Public Works and the Hockey Rink. Some of these projects are expected to move in the near future. The Library is in the process of forming a building committee and will have a Schematic Design completed in the summer or fall of 2018. This project will be funded by a combination of private fund raising and a Debt Exclusion (with a target date for construction to begin in 2021 or 2022).

A building committee has been formed to plan for interim renovations to the Police Station and the Department of Public Works. The construction for this should begin in 2019 and will most likely be funded by short term borrowing. A plan for full replacement of both of these facilities is also underway and that construction is planned to happen in about 8 - 10 years (2026 or 2028). The most likely funding source for these two facilities will also be a debt exclusion.

The hockey rink is going to be funded privately and will occur either just before or just after the construction for Belmont High School (both facilities are on the same campus).

DISTRICT'S NOT-TO-EXCEED TOTAL PROJECT BUDGET

It is anticipated that the total project budget for the Preferred Schematic Option 2.4 will be in the range of $300 – 315 M.

The final not to exceed project budget will be established during the Schematic Design Phase prior to the debt exclusion vote.

LOCAL PROCESS FOR FUNDING PROJECT

The borrowing authorization for the new Belmont High School will be through a debt exclusion ballot vote. This debt exclusion ballot is anticipated to occur in November 2018 or April 2019 and requires a simple majority vote for approval.

ESTIMATED IMPACT TO LOCAL PROPERTY TAX

Moody's investment service has assigned an AAA bond rating to the Town of Belmont's outstanding debt.

The Town has provided an analysis of the tax impact to the Residents based on an anticipated Town cost of $231.8 M. The illustration below shows the impact on the real estate property tax based on a 30-year equal principal bond at a rate of 4.0%.

Principal	$231.8M
Rate	4.0%
Term	30 years
Per 100k Assessed Value	$184.00

Cost on $1.0M (average assessed home value) $1,840.00 per year

A more detailed analysis of the tax impact to the Town will be conducted when the Total Project Budget is established.

February 12, 2018

Budget Statement for Preferred Schematic - Expenditures
Belmont High School

As reported on the school district's most recent three end of year information, please updated to the 3 latest fiscal year periods and complete the fields below.

Category	2015-2016 FY2016 Staff (FTE)	2015-2016 FY2016 Budget	2016-2017 FY2017 Staff (FTE)	2016-2017 FY2017 Budget	2017-2018 FY2018 Staff	2017-2018 FY2018 Budget	Change from Previous Year Staff (FTE)	Change from Previous Year Budget	Post-Constuction Budget Staff	Post-Constuction Budget Budget	New Facility vs. Current Staff (FTE)	New Facility vs. Current Budget
Salaries												
Administration												
Admin. Secretary	4.00	176,995	4.00	179,100	4.00	182,738	0.00	3,637	4.00	182,738	0.00	-
Assistant Principal	3.01	338,848	3.01	352,225	3.28	396,254	0.27	44,029	3.28	396,254	0.00	-
Business Office	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Curriculum Director/Coord.	3.68	382,504	3.68	406,462	3.68	423,594	0.00	17,132	3.68	423,594	0.00	-
Custodians/Maintenance Staff	4.75	262,301	4.50	238,244	4.80	254,464	0.30	16,219	8.15	432,014	3.35	177,550
Executive Secretary	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Facilities Manager	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Guidance	8.00	594,770	9.50	731,536	9.50	726,861	0.00	(4,676)	9.50	726,861	0.00	-
Adjustment Counselor	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Guidance Counselors	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Guidance Director	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Legal	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Nurse	2.70	205,482	2.80	228,101	2.80	244,839	0.00	16,738	2.80	244,839	0.00	-
Other	4.88	145,477	4.88	147,965	3.23	110,085	-1.65	(37,880)	3.23	110,085	0.00	-
Principal	0.99	114,299	0.99	118,836	1.12	137,954	0.13	19,117	1.12	137,954	0.00	-
Special Education Admin	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Superintendent/Asst. Superintendent	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Transportation	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Treasurer	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Total Administration	**32.01**	**2,220,673**	**33.36**	**2,402,469**	**32.41**	**2,476,786**	**-0.95**	**74,317**	**35.76**	**2,654,337**	**3.35**	**177,550**
Instruction - Teaching Services												
Arts	6.90	778,380	7.30	822,525	7.05	860,917	-0.25	38,393	7.05	860,917	0.00	-
Business	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Communications	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Coping Instructor	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Culinary Arts	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
ELL	4.60	308,772	4.50	294,900	5.00	363,257	0.50	68,357	5.00	363,257	0.00	-
English Language	17.60	1,431,596	18.25	1,491,139	18.00	1,517,475	-0.25	26,336	18.00	1,517,475	0.00	-
Family Consumer Services	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Foreign Language	14.05	1,151,737	14.25	1,216,651	14.25	1,225,258	0.00	8,607	14.25	1,225,258	0.00	-
Health Services	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
History & Social Science	19.60	1,560,684	19.55	1,610,027	19.80	1,702,309	0.25	92,282	19.80	1,702,309	0.00	-
Instructional Assistant/Paraprofessionals	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Library/Media	2.50	135,261	2.65	146,716	2.49	148,230	-0.16	1,513	2.49	148,230	0.00	-
Mathematics	18.60	1,491,366	19.00	1,470,288	19.00	1,538,553	0.00	68,265	19.00	1,538,553	0.00	-
MCAS	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Music	4.92	420,911	4.92	438,007	4.92	455,855	0.00	17,847	4.92	455,855	0.00	-
Other	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Physical Education	4.73	350,227	5.28	386,111	4.43	358,287	-0.85	(27,824)	4.43	358,287	0.00	-
Reading	1.00	92,401	1.00	93,752	1.00	98,319	0.00	4,567	1.00	98,319	0.00	-
School Adjustment Counselor	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Science	18.15	1,532,348	18.35	1,621,057	18.15	1,602,119	-0.20	(18,939)	18.15	1,602,119	0.00	-
Biology	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Botany	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Chemistry	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Geology	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Physics	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Special Education	32.88	1,808,624	36.72	2,077,557	36.23	2,088,011	-0.48	10,454	36.23	2,088,011	0.00	-
Substitute Teachers	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Technology	1.30	112,237	1.40	85,952	1.80	116,690	0.40	30,737	1.80	116,690	0.00	-
Vocational Tech.	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-	0.00	-
Total Instruction - Teaching Services	**146.82**	**11,174,543**	**153.15**	**11,754,683**	**152.11**	**12,075,276**	**-1.04**	**320,593**	**152.11**	**12,075,276**	**0.00**	**-**
Total Salaries Administration & Instruction	**178.83**	**13,395,216**	**186.51**	**14,157,153**	**184.52**	**14,552,063**	**-1.99**	**394,910**	**187.87**	**14,729,613**	**3.35**	**177,550**
Employee Benefits												
All employee-related fringe (health insurance, retirement etc)	**-**	**1,462,635**		**1,525,700**		**1,679,505**		**153,806**		**1,679,505**		**-**
Materials & Services												
Materials												
Audio-Visual Materials		1,743		1,250		1,000		(250)		1,000		-
Culinary Arts Materials		-		-		-		-		-		-
General Office Supplies		65,894		63,805		63,555		(250)		63,555		-
Information technology		-		-		-		-		-		-
Hardware		-		-		-		-		-		-
Software		-		-		-		-		-		-
Library Materials		-		-		-		-		-		-
Non info-tech equipment		5,000		5,500		5,000		(500)		5,000		-
Testing Materials & Supplies		-		-		-		-		-		-
Textbooks		20,046		33,120		30,950		(2,170)		30,950		-
Vocational Program Materials		-		-		-		-		-		-
Total Materials		**92,683**		**103,675**		**100,505**		**(3,170)**		**100,505**		**-**

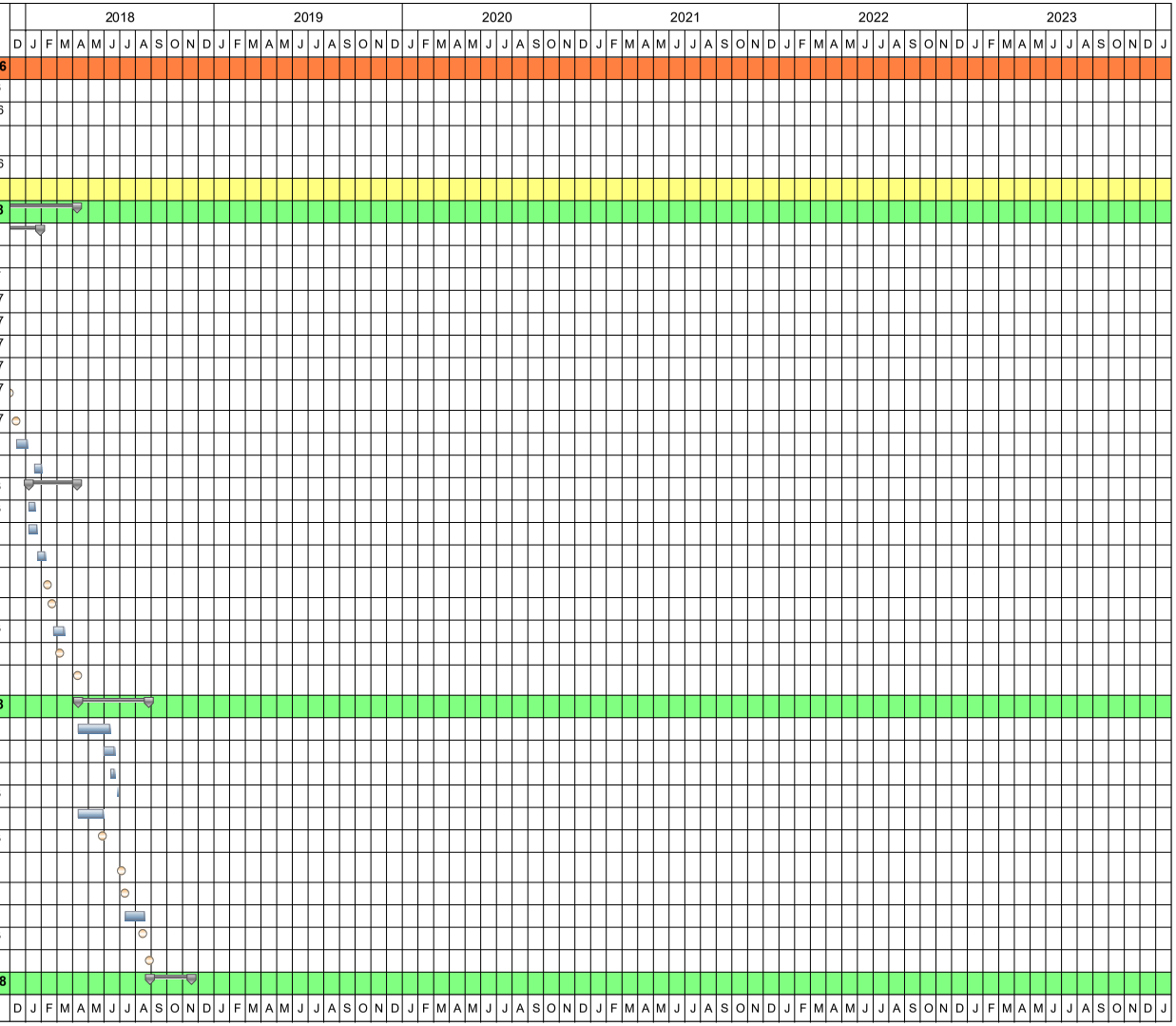
February 12, 2018

Budget Statement for Preferred Schematic - Revenue
Belmont High School

As reported on the school district's most recent three End of Year Pupil and Financial Reports schedule 1, please update to the 3 latest fiscal year periods and report sources of revenue in the fields below.

	FY15 End of Year Financial Report							FY16 End of Year Financial Report							FY17 End of Year Financial Report						
	Regular Day	Special Education	C74 Occupational Day	Adult Education	Other Programs	Un- distributed	Total	Regular Day	Special Education	C74 Occupational Day	Adult Education	Other Programs	Un- distributed	Total	Regular Day	Special Education	C74 Occupational Day	Adult Education	Other Programs	Un-distributed	Total
A. Revenue from Local Sources																					
Assessments received by Regional Schools	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E&D Fund Appropriations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tuition from Individuals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tuition from Other Districts in Comm.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tuition from Districts in Other States	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Previous Year Unexpended Encumbrances (Carry Forward)	-	-	-	-	-	44,995	44,995	-	-	-	-	-	11,545	11,545	-	-	-	-	-	15,873	15,873
Transportation Fees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Earnings on Investments	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rental of School Facilities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Revenue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Medical Care and Assistance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15,034	-	-	-	-	15,034
Non Revenue Receipts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Revenue From Local Sources	**-**	**-**	**-**	**-**	**-**	**44,995**	**44,995**	**-**	**-**	**-**	**-**	**-**	**11,545**	**11,545**	**-**	**15,034**	**-**	**-**	**-**	**15,873**	**30,908**
B. Revenue from State Aid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
School Aid (Chapter 70)	-	-	-	-	-	6,420,104	6,420,104	-	-	-	-	-	6,766,099	6,766,099	-	-	-	-	-	7,111,769	7,111,769
Mass School Building Authority - Construction Aid	-	382,498	-	-	-	-	382,498	-	-	-	-	-	1,036,494	1,036,494	-	-	-	-	-	-	-
Pupil Transportation (Ch. 71, 71A,71B,74)	-	-	-	-	-	22,098	22,098	-	-	-	-	-	14,354	14,354	-	-	-	-	-	6,290	6,290
Charter Tuition Reimbursements & Charter Facilities Aid	-	-	-	-	-	1,786	1,786	-	2,408	-	-	-	1,786	4,194	-	13,032	-	-	-	2,656	15,688
Circuit Breaker	-	-	-	-	-	1,377,754	1,377,754	-	-	-	-	-	1,451,678	1,451,678	-	-	-	-	-	1,687,664	1,687,664
Foundation Reserve	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Revenue From State Aid	**-**	**382,498**	**-**	**-**	**-**	**7,821,742**	**8,204,240**	**-**	**2,408**	**-**	**-**	**-**	**9,270,411**	**9,272,819**	**-**	**13,032**	**-**	**-**	**-**	**8,808,379**	**8,821,411**
C. Revenue from Federal Grants																					
ESE Administered Grants	124,633	965,447	-	-	-	103,550	1,193,630	235,019	985,420	-	-	-	103,142	1,323,581	154,025	996,024	-	-		96,678	1,246,727
Direct Federal Grants	-	26,069	-	-	-	-	26,069	-	26,085	-	-	-	-	26,085	-	26,854		-			26,854
Total Revenue Federal Grants	**124,633**	**991,516**	**-**	**-**	**-**	**103,550**	**1,219,699**	**235,019**	**1,011,505**	**-**	**-**	**-**	**103,142**	**1,349,666**	**154,025**	**1,022,878**	**-**	**-**	**-**	**96,678**	**1,273,581**
D. Revenue from State Grants																					
ESE Administered Grants	-	-	-	-	-	629,711	629,711	-	-	-	-	-	689,701	689,701	-	-	-	-	-	547,355	547,355
Other State Grants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Revenue From State Grants	**-**	**-**	**-**	**-**	**-**	**629,711**	**629,711**	**-**	**-**	**-**	**-**	**-**	**689,701**	**689,701**	**-**	**-**	**-**	**-**	**-**	**547,355**	**547,355**
E. Revenue - Revolving & Special Funds																					
School Lunch Receipts	-	-	-	-		955,027	955,027	-	-	-	-		1,144,664	1,144,664				-		1,197,237	1,197,237
Athletic Receipts	-	-	-	-		471,062	471,062	-	-	-	-		475,063	475,063				-		558,833	558,833
Tuition Receipts - School Choice	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	-		-	-
Tuition Receipts - Other	735,905	-	-	-	143,560	167,342	1,046,807	1,083,113	-	-	-	119,610	162,964	1,365,687	997,118			-	64,100	118,388	1,179,606
Other Local Receipts	-	-	-	-	-	749,526	749,526	-	-	-	-	-	779,575	779,575				-	66,738	871,990	938,728
Private Grants	-	-	-	-	38,313	66,351	104,664	-	-	-	-	32,720	65,132	97,852	-	-	-	-	-	209,282	209,282
Total Revenue Revolving & Special Funds	**735,905**	**-**	**-**	**-**	**181,873**	**2,409,308**	**3,327,086**	**1,083,113**	**-**	**-**	**-**	**152,330**	**2,627,398**	**3,862,841**	**997,118**	**-**	**-**	**-**	**130,838**	**2,955,730**	**4,083,686**
Total Revenue All Sources	**860,538**	**1,374,014**	**-**	**-**	**181,873**	**11,009,306**	**13,425,731**	**1,318,132**	**1,013,913**	**-**	**-**	**152,330**	**12,702,196**	**15,186,572**	**1,151,143**	**1,050,945**	**-**	**-**	**130,838**	**12,424,016**	**14,756,941**

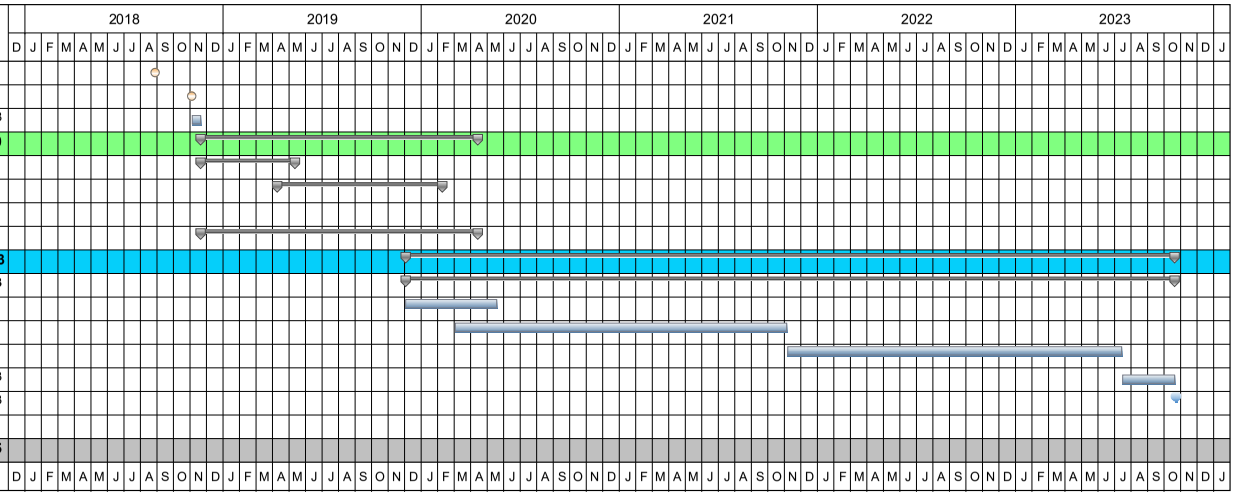
	Activity Name	Duration (Days)	Start Date	Finish Date
1	**Module 1 - Eligibility Period**	**208.00**	**1/28/16**	**11/15/16**
2	Invitation into Eligibility Period	0.00	1/28/16	1/28/16
3	Enrollment Certification	0.00	10/11/16	10/11/16
4	Invitation by MSBA to Participate in Feasibility Study	0.00	11/9/16	11/9/16
5	Execution of FSA	0.00	11/15/16	11/15/16
6	**Module 2 - Forming the Team...**	**149.00**	**1/11/17**	**8/7/17**
19	**Module 3 - Feasibility Study**	**167.00**	**8/21/17**	**4/10/18**
20	**Preliminary Design Program (PDP)**	**119.00**	**8/21/17**	**2/1/18**
21	Kick off meeting with MSBA	0.00	8/21/17	8/21/17
22	Evaluation of Existing Conditions	20.00	8/21/17	9/15/17
23	Educational Visioning and Program	39.00	9/19/17	11/10/17
24	Initial Space Summary	39.00	9/19/17	11/10/17
25	Site Development Requirements	39.00	9/19/17	11/10/17
26	Preliminary Evaluation of Alternatives	13.00	11/13/17	11/29/17
27	Local Actions and Approvals - SBC meeting to approve PDP Submission	0.00	11/30/17	11/30/17
28	Submit PDP to MSBA	0.00	12/13/17	12/13/17
29	MSBA Staff PDP Review	15.00	12/13/17	1/2/18
30	District Response to MSBA PDP Comments	11.00	1/18/18	2/1/18
31	**Preferred Schematic Report (PSR)**	**67.00**	**1/8/18**	**4/10/18**
32	Update Evaluation of Existing Conditions	10.00	1/8/18	1/19/18
33	Final Evaluation of Alternatives	12.00	1/8/18	1/23/18
34	Develop Preferred Solution	10.00	1/24/18	2/6/18
35	Local Actions and Approvals - SBC meeting to approve PSR Submission	0.00	2/13/18	2/13/18
36	Submit PSR to MSBA (MSBA Deadline 02/21/18)	0.00	2/21/18	2/21/18
37	MSBA Staff PSR Review	15.00	2/22/18	3/14/18
38	Facilities Assessment Sub Committee	0.00	3/7/18	3/7/18
39	MSBA Board Meeting - Approval to proceed to Schematic Design	0.00	4/10/18	4/10/18
40	**Module 4 - Schematic Design (SD)**	**101.00**	**4/11/18**	**8/29/18**
41	Develop Schematic Design	45.00	4/11/18	6/12/18
42	Schematic Design Estimate and Reconciliation	15.00	5/31/18	6/20/18
43	Develop Overall Project Budget	5.00	6/14/18	6/20/18
44	OPM SD Submission Notification to MSBA	1.00	6/27/18	6/27/18
45	Develop DESE submittal	36.00	4/11/18	5/30/18
46	Submit DESE report to MSBA	0.00	5/30/18	5/30/18
47	Local Actions and Approvals - SBC meeting to approve SD Submission	0.00	7/4/18	7/4/18
48	Submit SD to MSBA (MSBA Deadline 07/11/18)	0.00	7/11/18	7/11/18
49	MSBA Staff Review	28.00	7/11/18	8/17/18
50	Project Scope & Budget (PS&BA) Conference	0.00	8/16/18	8/16/18
51	MSBA Board Meeting - PSB Approval	0.00	8/29/18	8/29/18
52	**Module 5 - Funding the Project**	**58.00**	**8/29/18**	**11/19/18**



3.3.4 - PREFERRED SOLUTION

I. UPDATED SCHEDULE

	Activity Name	Duration (Days)	Start Date	Finish Date
53	MSBA Board Meeting - PSB Approval	0.00	8/29/18	8/29/18
54	Debt Exclusion Ballot	0.00	11/6/18	11/6/18
55	Execute Project Funding Agreement (PFA)	10.00	11/6/18	11/19/18
56	**Module 6 - Detailed Design**	**368.00**	**11/19/18**	**4/16/20**
57	**Design Development...**	**125.00**	**11/20/18**	**5/13/19**
63	**Construction Documents...**	**220.00**	**4/9/19**	**2/10/20**
79	**Permitting & Registrations...**			
88	**PreQualification & Bidding...**	**368.00**	**11/19/18**	**4/16/20**
115	**Module 7 - Construction**	**1,014.00**	**12/3/19**	**10/23/23**
116	**Construction**	**1,014.00**	**12/3/19**	**10/23/23**
117	Notice to Proceed - Early Works Packages	120.00	12/3/19	5/18/20
118	Phase 1	440.00	3/2/20	11/5/21
119	Phase 2	440.00	11/8/21	7/14/23
120	Demo and Site/Field Completeion	70.00	7/17/23	10/20/23
121	Substantial Completion	0.00	10/23/23	10/23/23
122	**FF&E Bid and Contract...**			
126	**Module 8 - Project Close Out...**	**276.00**	**2/26/24**	**3/17/25**



3.3.5 LOCAL ACTIONS & APPROVALS

3.3.5 - LOCAL ACTIONS & APPROVALS

A. LOCAL ACTIONS AND APPROVALS CERTIFICATION

TOWN OF BELMONT
OFFICE OF THE BOARD OF SELECTMEN
455 CONCORD AVENUE
BELMONT, MASSACHUSETTS 02478

Selectmen@belmont-ma.gov

455 CONCORD AVENUE
BELMONT, MA 02478-2573
PHONE (617) 993-2610
FAX (617) 993-2611

BOARD OF SELECTMEN
JAMES R. WILLIAMS, Chair
MARK A. PAOLILLO, Vice Chair
ADAM DASH, Selectman

TOWN ADMINISTRATOR
PATRICE GARVIN

ASSISTANT TOWN ADMINISTRATOR
PHYLLIS L. MARSHALL

February 13, 2018

Ms. Diane Sullivan
Senior Capital Program Manager
40 Broad Street
Boston, Massachusetts 02109

Dear Ms. Sullivan:

The Town of Belmont School Building Committee ("SBC") has completed its review of the Feasibility Study *Preferred Schematic Report* for the Belmont High School project (the "Project"), and on February 13th, 2018, the SBC voted to approve and authorize the Owner's Project Manager to submit the Feasibility Study related materials to the MSBA for its consideration. A certified copy of the SBC meeting minutes, which includes the specific language of the vote and the number of votes in favor, opposed, and abstained, are attached.

Since the MSBA's Board of Directors invited the District to conduct a Feasibility Study on November 09, 2016, the SBC has held thirty (30) meetings regarding the proposed project, in compliance with the state Open Meeting Law. These meetings include:

1. School Building Committee meeting #10 held at the Homer Municipal Building, Belmont MA at 7:30am on December 08, 2016
2. School Building Committee meeting #11 held at Belmont Town Hall, Belmont MA at 4:30pm on December 22, 2016
3. School Building Committee meeting #12 held at the Homer Municipal Building, Belmont MA at 7:30am on January 05, 2017
4. School Building Committee meeting #13 held at the Homer Municipal Building, Belmont MA at 7:30am on February 02, 2017
5. School Building Committee meeting #14 held at the Homer Municipal Building, Belmont MA at 7:30am on February 17, 2017

A. LOCAL ACTIONS AND APPROVALS CERTIFICATION

6. School Building Committee meeting #15 at the Homer Municipal Building, Belmont MA at 7:30am on March 01, 2017
7. School Building Committee meeting #16 at the Beech Street Center, Belmont MA at 7:00pm on April 06, 2017
8. School Building Committee meeting #17 held at the Homer Municipal Building, Belmont MA at 7:30am on April 13, 2017
9. School Building Committee meeting #18 held at the Homer Municipal Building, Belmont MA at 7:30am on April 20, 2017
10. School Building Committee meeting #19 held at the Beech Street Center, Belmont MA at 6:00pm on May 04, 2017
11. School Building Committee meeting #20 held at the Homer Municipal Building, Belmont MA at 7:30am on June 15, 2017
12. School Building Committee meeting #21 held at the Homer Municipal Building, Belmont MA at 7:30am on July 20, 2017
13. School Building Committee meeting #22 held at the Homer Municipal Building, Belmont MA at 7:30am on August 10, 2017
14. School Building Committee meeting #23 held at the Homer Municipal Building, Belmont MA at 7:30am on August 24, 2017
15. School Building Committee meeting #24 held at the Homer Municipal Building, Belmont MA at 7:30am on September 14, 2017
16. School Building Committee meeting #25 held at the Homer Municipal Building, Belmont MA at 7:30am on October 5, 2017
17. School Building Committee meet #26 (joint meeting with School Committee) held at the Homer Municipal Building, Belmont MA at 7:30am on October 19, 2017
18. School Building Committee meeting #27 (joint meeting with Board of Selectmen and School Committee) held at the Wellington Middle School, Belmont MA at 6:30pm on November 2, 2017
19. School Building Committee meeting #28 (joint meeting with Board of Selectmen and School Committee) held at Belmont High School, Belmont MA at 6:30pm on November 16, 2017
20. School Building Committee meeting #29 (joint meeting with Board of Selectmen and School Committee) held at the Wellington Elementary School, Belmont MA at 6:30pm on November 30, 2017
21. School Building Committee meeting #30 (joint meeting with Board of Selectmen and School Committee) held at the Wellington Elementary School, Belmont MA at 6:30pm on December 07, 2017
22. School Building Committee meeting #31 (joint meeting with Board of Selectmen and School Committee) held at the Chenery Middle School, Belmont MA at 6:30pm on December 12, 2017
23. School Building Committee meeting #32 (joint meeting with Board of Selectmen and School Committee) held at the Belmont High School, Belmont MA at 7:00pm on December 14, 2017

3.3.5 - LOCAL ACTIONS & APPROVALS

A. LOCAL ACTIONS AND APPROVALS CERTIFICATION

24. School Building Committee meeting #33 (joint meeting with Board of Selectmen and School Committee) held at the Belmont High School, Belmont MA at 7:00pm on January 9th, 2018
25. School Building Committee meeting #34 held at the Wellington Elementary School, Belmont MA at 6:30pm on January 11th, 2018
26. School Building Committee meeting #35 (joint meeting with Board of Selectmen and School Committee) held at the Chenery Middle School, Belmont MA at 7:00pm on January 16th, 2018
27. School Building Committee meeting #36 held at the Homer Municipal Building, Belmont MA at 7:30am on January 18th, 2018
28. School Building Committee meeting #37 (joint meeting with Board of Selectmen and School Committee) held at the Wellington Elementary School, Belmont MA at 7:00pm on January 23rd, 2018
29. School Building Committee meeting #38 (joint meeting with Board of Selectmen and School Committee) held at the Wellington Elementary School, Belmont MA at 7:00pm on February 1st, 2018
30. School Building Committee meeting #39 (joint meeting with Board of Selectmen and School Committee) held at the Chenery Middle School, Belmont MA at 7:00pm on February 13th, 2018

In addition to the SBC meetings listed above, the District held four (4) public meetings, which were posted in compliance with the state Open Meeting Law, at which the Project was discussed. These meetings include:

1. New Belmont High School public presentation #2 held Chenery School Belmont MA at 7:00pm on September 19, 2017
2. New Belmont High School public presentation #3 held Beech Street Center, Belmont MA at 1:15pm on October 13, 2017
3. New Belmont High School public presentation #4 held at Belmont High School, Belmont MA at 10am October 28th, 2017
4. New Belmont High School public presentation #5 and interactive design discussion held at Belmont High School, Belmont MA at 7:00pm on December 14th, 2017

The presentation materials for each meeting, meeting minutes, and summary materials related to the Project are available locally for public review at:

1. http://www.belmont.k12.ma.us/bps/Committee
2. http://www.belmont-ma.gov/belmont-high-school-building-committee
3. http://www.belmont-ma.gov/belmont-high-school-building-project

To the best of my knowledge and belief, each of the meetings listed above complied with the requirements of the Open Meeting Law, M.G.L. c. 30A, §§ 18-25 and 940 CMR 29 *et seq*.

If you have any questions or require any additional information, please contact Thomas Gatzunis, Daedalus Projects Inc. tgatzunis@dpi-boston.com or (617) 451 2717.

A. LOCAL ACTIONS AND APPROVALS CERTIFICATION

By signing this Local Action and Approval Certification, I hereby certify that, to the best of my knowledge and belief, the information supplied by the District in this Certification is true, complete, and accurate.	By signing this Local Action and Approval Certification, I hereby certify that, to the best of my knowledge and belief, the information supplied by the District in this Certification is true, complete, and accurate.	By signing this Local Action and Approval Certification, I hereby certify that, to the best of my knowledge and belief, the information supplied by the District in this Certification is true, complete, and accurate.
By:	**By:**	**By:**
Title: Chief Executive Officer	**Title: Superintendent of Schools**	**Title: Chair of the School Committee**
Date:	**Date:**	**Date:**

3.3.5 - LOCAL ACTIONS & APPROVALS

A. LOCAL ACTIONS AND APPROVALS CERTIFICATION

BELMONT PUBLIC SCHOOLS

JOHN P. PHELAN
SUPERINTENDENT OF SCHOOLS
(617) 993-5401

JANICE G. DARIAS
ASSISTANT SUPERINTENDENT
FOR CURRICULUM & INSTRUCTION
(617) 993-5410

644 PLEASANT STREET
BELMONT, MASSACHUSETTS 02478-2589
(617) 993-5400
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ANTHONY R. DICOLOGERO
DIRECTOR OF FINANCE,
BUSINESS & OPERATIONS
(617) 993-5430
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MARY PEDERSON
DIRECTOR OF HUMAN RESOURCES
(617) 993-5425

February 5, 2018

Ms. Diane Sullivan
Senior Capital Program Manager
40 Broad Street
Boston, Massachusetts 02109

Dear Ms. Sullivan:

The Town of Belmont School Committee ("SC") understands a proposed change to existing grade structure is being proposed in the *Preferred Schematic Report* for the Belmont High School project (the "Project"), and on January 23, 2018, the SC voted to approve and authorize the proposed change to the existing grade structure for the following reason*: {the Belmont Public School supports the change from a building with grades 9-12 to a school with grades 7-12; as this structure will support a smooth and successful academic and social emotional transition for our students to our high school setting while taking advantage of the shared learning and programming spaces and experiences we can provide them in our educational vision.}* as described in the Feasibility Study related materials. A certified copy of the SC meeting minutes, which includes the specific language of the vote and the number of votes in favor, opposed, and abstained, are attached.

The SC has held fifteen (15) meetings regarding the proposed change to existing grade structure as related to the proposed Project, in compliance with the state Open Meeting Law. These meetings include:

1. Belmont School Committee meeting held at the School Administration Building, Belmont MA at 6:00pm on July 6th, 2017. Belmont High School Building Committee Update.
2. Belmont School Committee meeting held at the School Administration Building, Belmont MA at 6:30pm on August 30th, 2017. Superintendent of Schools Update on schedule and enrollment.

A. LOCAL ACTIONS AND APPROVALS CERTIFICATION

3. Belmont School Committee meeting held at the Chenery Middle School, Belmont MA at 7:00pm on September 12th, 2017. Belmont High School Building Committee Update.
4. Belmont School Committee meeting held at the Chenery Middle School, Belmont MA at 7:00pm on September 26th, 2017. Belmont High School Building Committee Update.
5. Belmont School Committee meeting held at the Chenery Middle School, Belmont MA at 7:00pm on October 10th, 2017. Superintendent of Schools Update on High School Educational Visioning.
6. Belmont School Committee meeting held at the Shelburne Community Center, Roxbury MA at 6:30pm on October 24th, 2017. Superintendent of Schools report on enrollment.
7. Joint Belmont School Committee, Belmont School Building Committee and Belmont Board of Selectmen meeting held at the Chenery Middle School, Belmont MA at 6:30pm on November 2nd, 2017. Discussion on Project Schedule, Space Summary, Building Options and Project Costs.
8. Belmont School Committee meeting held at the Chenery Middle School, Belmont MA at 7:00pm on November 28th, 2017. Superintendent of Schools Update on High School Grade Configuration
9. Joint Belmont School Committee, Belmont School Building Committee and Belmont Board of Selectmen meeting held at the Wellington Elementary School, Belmont MA at 6:30pm on November 30th, 2017. Review and approval to submit Preliminary Design Proposal to MSBA.
10. Joint Belmont School Committee, Belmont School Building Committee and Belmont Board of Selectmen meeting held at the Wellington Elementary School, Belmont MA at 6:30pm on December 7th, 2017. Discussion on sustainable design features on the proposed New HS.
11. Joint Belmont School Committee, Belmont School Building Committee and Belmont Board of Selectmen meeting held at the Chenery Middle School, Belmont MA at 7:00pm on December 12th, 2017. Grade configuration presentation.
12. Joint Belmont School Committee, Belmont School Building Committee and Belmont Board of Selectmen meeting held at the Belmont High School, Belmont MA at 7:00pm on December 14th, 2017. Community Engagement #5.
13. Joint Belmont School Committee, Belmont School Building Committee and Belmont Board of Selectmen meeting held at the Belmont High School, Belmont MA at 6:30pm on January 9th, 2018. Update on grade configuration.
14. Joint Belmont School Committee, Belmont School Building Committee and Belmont Board of Selectmen meeting held at the Chenery Middle School, Belmont MA at 6:30pm on January 16th, 2018. Review of proposed building options and project costs.
15. Joint Belmont School Committee, Belmont School Building Committee and Belmont Board of Selectmen meeting held at the Wellington Elementary School,

3.3.5 - LOCAL ACTIONS & APPROVALS

A. LOCAL ACTIONS AND APPROVALS CERTIFICATION

Belmont MA at 6:00pm on January 23rd, 2018. School Committee vote on grade configuration.

In addition to the SBC meetings listed above, the District held four (4) public meetings, which were posted in compliance with the state Open Meeting Law, at which the Project was discussed. These meetings include:

1. New Belmont High School public presentation #2 held Chenery School Belmont MA at 7:00pm on September 19, 2017
2. New Belmont High School public presentation #3 held Beech Street Center, Belmont MA at 1:15pm on October 13, 2017
3. New Belmont High School public presentation #4 held at Belmont High School, Belmont MA at 10am October 28, 2017
4. New Belmont High School public presentation #5 and interactive design discussion held at Belmont High School, Belmont MA at 7:00pm on December

The presentation materials for each meeting, meeting minutes, and summary materials related to the Project are available locally for public review at:

1. http://www.belmont.k12.ma.us/bps/Committee
2. http://www.belmont-ma.gov/belmont-high-school-building-committee
3. http://www.belmont-ma.gov/belmont-high-school-building-project

To the best of my knowledge and belief, each of the meetings listed above complied with the requirements of the Open Meeting Law, M.G.L. c. 30A, §§ 18-25 and 940 CMR 29 *et seq.*

If you have any questions or require any additional information, please contact Thomas Gatzunis, Daedalus Projects Inc. tgatzunis@dpi-boston.com or (617) 451 2717.

A. LOCAL ACTIONS AND APPROVALS CERTIFICATION

By signing this Grade Reconfiguration and Districting Approval Certification, I hereby certify that, to the best of my knowledge and belief, the information supplied by the District in this Certification is true, complete, and accurate.

By:

Title: Chief Executive Officer

Date: 2/13/18

By signing this Grade Reconfiguration and Districting Approval Certification, I hereby certify that, to the best of my knowledge and belief, the information supplied by the District in this Certification is true, complete, and accurate.

By:

Title: Superintendent of Schools

Date:

By signing this Grade Reconfiguration and Districting Approval Certification, I hereby certify that, to the best of my knowledge and belief, the information supplied by the District in this Certification is true, complete, and accurate.

By:

Title: Chair of the School Committee

Date: 2/12/18

BELMONT HIGH SCHOOL BUILDING COMMITTEE
COMMUNITY ENGAGEMENT #5
December 14, 2017
BELMONT HIGH SCHOOL
7:00 PM

[Meeting #32]

Committee Members Attending:

Chair Lovallo; Members: Pat Brusch, Diane Miller, Jamie Shea, John Phelan, Adam Dash, Tom Caputo, Chris Messer, Robert McLaughlin, Dan Richards, Phyllis Marshall, and Emma Thurston

Board of Selectmen: Chair Williams and Selectman Dash

From Daedalus: Tom Gatzunis and Shane Nolan

From Perkins+Will: Brooke Trivas, Chris Karlson, Laura Pomarico, Patrick Cunningham

Approximately 60 members from the General Public were in attendance.

The meeting was called to order by Chair Lovallo for the BHS Building Committee and by Chair Williams for the Board of Selectmen at 7:02 p.m.

Approval of Minutes

Ms. Brusch made a motion to approve the minutes of **12/7/2017,** the motion was seconded by Phyllis Marshall. The motion passed unanimously.

A motion to approve the minutes of **12/12/2017** was made by Ms. Shea, the motion was seconded by Ms. Miller. The motion passed unanimously.

Approval of Two Invoices:

1. Ms. Marshall made a motion to recommended approval of an invoice for Perkins + Will in the amount of $90,000; the motion was seconded by Mr. Messer. The motion passed unanimously.

2. Ms. Marshal made a motion to recommend approval of an invoice for Daedalus Projects in the amount of $18,040; the motion was seconded by Mr. Richards. The motion passed unanimously.

Next Meetings

Chair Lovallo advised all present that the next meetings of the BHSBC will be on January 9, 2018 in the High School auditorium. The topic will be district grade configuration. There will be a traffic presentation on January 11, 2018 in the Wellington School cafeteria.

Presentation (copy attached)

I. Brainstorming

FINAL

a. Learning Commons

Chair Lovallo provided opening remarks, reviewed the agenda for the evening, and provided background information. Ms. Trivas prompted audience member to think about the Learning Commons and for them to indicate what should or should be incorporated into them. Audience members provided their comments, which were captured on flip charts for P+W to incorporate into their design.

b. Collaboration

The group was then asked to perform the same exercise for collaboration spaces. Audience members provided their comments, which were captured on flip charts for P+W to incorporate into their design.

c. Café Commons

The group was asked to provide their input for the Café and Commons spaces(s) within the new building. Audience members provided their comments, which were captured on flip charts for P+W to incorporate into their design.

d. Outdoor Learning

The group was asked to finally provide their input for the outdoor learning opportunities. Audience members provided their comments, which were captured on flip charts for P+W to incorporate into their design.

II. Working Groups

a. Adjacency Diagrams

Ms. Trivas informed the audience that the next sessions would require them to prepare adjacency diagrams based on what their thoughts were regarding which major learning centers should be connected and why. At the conclusion of this exercise, each group reported back with their recommendations. The results were retained by P+W for inclusion in their design.

b. Site Plans

In the final exercise of the evening, the group was asked to mark up any of the site plans that they had comments on. Audience members provided their comments, which were captured on flip charts for P+W to incorporate into their design.

III. Visual Listening

P+W had placed image boards in the back of the room. Audience members were asked to place green dots on items that they liked and red dots on items that they did not want to see incorporated into the new school design. This was an ongoing exercise conducted throughout the evening. The final results were captured by P+W for inclusion in the design of the new school.

Adjourn

FINAL

3.3.5 - LOCAL ACTIONS & APPROVALS

B. CERTIFIED MEETING MINUTES

The meeting was adjourned at 9:05 p.m.

Secretary, BHSBC – Chris Messer

1/12/18

FINAL

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B. CERTIFIED MEETING MINUTES

BELMONT HIGH SCHOOL BUILDING COMMITTEE
FINAL MEETING MINUTES
January 9, 2018
Belmont High School Auditorium
7:00 PM

Meeting #33

BHS Building Committee Members Attending:

Chair Lovallo; Members: Adam Dash, Tom Caputo, Bob McLaughlin, John Phelan, Chris Messer, Dan Richards, Pat Brusch, Emma Thurston, Diane Miller, and Jamie Shea

BHSBC Members Absent: Phyllis Marshall, Joe DeStefano, Joel Mooney

Board of Selectmen Attending: Chair Jim Williams and Adam Dash

Board of Selectmen Absent: Mark Paolillo

School Committee Attending: Chair Lisa Fiore, Susan Burgess-Cox, Catherine Bowen, Thomas Caputo, Andrea Prestwich, and Murat Bicer

The meeting was a joint meeting with the School Committee and Board of Selectmen in which the Belmont High School Building Committee was presented an overview of the District Grade Configuration work that the School Department has been undertaking.

1. Call to Order

The Belmont High School Building Committee meeting was called to order at 7:05 p.m. by Chair Lovallo. A count of attendees totaled 73 in addition to the Building Committee, School Committee, and Board of Selectmen.

2. Presentation of Grade Configuration Options by School Department

Superintendent John Phelan presented the School Department work on district configuration studies. Mr. Phelan explained how the High School configuration affects the entire K-12 district and the School Department has been examining what those possible impacts will be.

Mr. Phelan explained the possible District grade configurations that fall into 5 categories:

1. Option 1: K-4, 5-8, 9-12 (existing conditions)
2. Option 2: K-4, 5-7, 8-12 (8, 9-12)
3. Option 3: K-4, 5-7, 8-12 (8-9, 10-12)
4. Option 4: K-3, 4-6, 7-12 (7-8, 9-12)
5. Option 5: K-3, 4-6, 7-12 (7-9, 10-12)

Mr. Phelan briefly reviewed the work that was done with visioning, surveys, meetings, etc. Much of this work was previously presented at the December 9th meeting. Mr. Phelan then sited some of the research that the School Department has read regarding grade configurations and number of moves from K-12. Several articles spoke to the impact to students socially and academically. Mr. Phelan

noted that there was no consistency in the actual grade groupings. Rather, the articles generally stated that as much as a school move has an impact on students, the greater impact is the *environment that is created* for those students. This can have more of an impact on the students than the move itself.

Mr. Phelan noted that the School Department has reviewed the grade configuration options through the lens of educational appropriateness, space needs (both short term and long term), financial costs to Town (both short term and long term), and timeline to meet the District's challenges. Mr. Phelan noted that at this time, the preferred configuration has consistently been 7-12, although no decisions have been made and the School Department continues to discuss all three options.

Mr. Phelan then answered questions from the School Committee and the public regarding this presentation.

3. Presentation of Lower School Space Options by School Department

Mr. Phelan explained that the School Department retained the Design firm of SMMA to perform studies on the remaining District schools (the 4 elementary schools and the middle school) to provide recommendations for properly accommodating the students that do not get located at the new High School. He noted that they have examined the schools, met with principals and staff, and explored options in the district for building adjustments to meet the growing student enrollment.

The assumptions used included:

- 360 students in each grade level
- no modular classrooms
- all schools accommodating art, music, physical education, special education, EL's and LABBB

Each elementary school will contain a maker/innovation space to support the planned learning path at the upper levels. Chenery and Wellington will retain their Community rooms.

Classroom population is to be based on the room sizes and uses MSBA guidelines which limits classroom sizes to 23 students (with appropriate space) except for K which is limited to 18. These numbers are in line with the Belmont class size guidelines.

Considering those factors when one examines the entire district, the schools become "right-sized" which Mr. Phelan explains is the adjustment necessary to meet the target criteria. Existing schools will then see a reduction in student capacity from today's number requiring more classrooms to be added to the District. The net total number of students in K-8 requiring new space accommodating is 704 – with 318 students requiring new space at the Chenery School and 386 at the four elementary schools.

Mr. Phelan then explained that SMMA examined all 5 Options for the HS project (explained previously) and offered solutions for space needs in the remaining 5 buildings. A 6th option was added, which was a new elementary school, however Mr. Phelan noted that there is currently no space available in Belmont to construct a new elementary school. He explained that the 6th option would allow K-5 in the elementary schools, 6-8 in the middle school, and 9-12 in the high school.

Mr. Phelan then summarized each solution by option. Some areas require light renovation, which can include minor changes such as modifying interior classroom setups. Some areas require

comprehensive renovations, which involve moving walls and MEP systems, possible additions to cafeteria and gym, and upgrades for ADA. A summary of the solutions followed:

Option 1:

- renovations in Burbank along with an addition
- renovations in Butler along with an addition
- no work in Wellington, renovation in Winn Brook
- renovations in Chenery along with addition
- **total project cost is $54-$66M**

Option 2/3 (A):

- renovations in Burbank along with an addition
- renovations in Butler along with an addition
- no work in Wellington
- renovation in Winn Brook
- no work in Chenery
- **total project cost is $39.5-$47.5M**

Option 2/3 (B):

- renovations in Burbank
- renovations in Butler
- no work in Wellington
- renovation in Winn Brook along with addition
- no work in Chenery
- **total project cost is $41-$48.5M**

Option 4/5:

- renovations in Burbank
- renovations in Butler
- no work in Wellington
- renovation in Winn Brook
- renovations in Chenery
- **total project cost is $18-$25.5M**

Option 6:

- renovations in Burbank
- renovations in Butler
- no work in Wellington
- renovation in Winn Brook
- renovations in Chenery
- construction of a new school
- **total project cost is $72-$82.5M**

Mr. Phelan noted that there is currently no vehicle for moving any of these projects forward. There is no committee formed, no funding in place for design, and there are other projects currently in the Belmont pipeline. Therefore, the reality is that these solutions outlined above will not come to fruition until well after the HS is complete. He also noted that for Option 4/5, the solution to accommodate the anticipated students in the current buildings, with no requirement for capital projects, seems possible given that the schools will all see a reduction in population and the needed adjustments can be reduced and/or phased in the future.

Mr. Phelan then answered questions from the School Committee and the public regarding this presentation.

4. Discussion of School Impact

Mr. Phelan asked principals of four of the District's six schools to comment on the challenges they see currently in their school, the opportunities that the "right sizing" of their school will bring, and their opinion of the configuration options being proposed. The following principals provided comments:

Dr. Tricia Clifford, Burbank Principal
Janet Carey, Winn Brook Principal
Dan Richards, Belmont High School Principal
Michael McAllister, Chenery Middle School Principal

Mr. Phelan then answered questions from the School Committee and the public regarding this presentation.

5. Related Meeting Documents

1. Presentation Slides on District Configuration prepared by School Department
2. Presentation Slides on Grade Configuration Study prepared by SMMA

4. End Meeting

The meeting ended at 9:00 p.m. by Mr. McLaughlin

Respectfully submitted by:

Lisa Gibalerio

Approved: _____ Chris Messer, Secretary

_____ Date 1/17/18

FINAL Page 4

BELMONT HIGH SCHOOL BUILDING COMMITTEE
FINAL MEETING MINUTES
January 11, 2018
Wellington School Cafeteria
6:30 PM

Meeting #34

Committee Members Attending:

Chair Lovallo; Members: Chris Messer, Adam Dash, John Phelan, Tom Caputo, Pat Brusch, Dan Richards, Bob McLaughlin, Diane Miller, Emma Thurston, Jamie Shea, Joe DeStefano (arrived at 7:20 p.m.)

From Daedalus: Tom Gatzunis, Shane Nolan

From Perkins+Will: Brooke Trivas, Patrick Cunningham, Rick Kuhn

Mr. Jason Schrieber - from Nelson Nygaard

BHSBC Members Absent: Joel Mooney, Phyllis Marshall

School Committee Members Attending: Catherine Bowen, (Tom Caputo), Susan Burgess-Cox

Board of Selectmen Attending: Chair Jim Williams and Adam Dash
[Chair Williams called the BOS to order at 6:50 p.m.]

Approximately 30 members from the General Public were in attendance.

I. Call to Order

The BHSBC meeting was called to order at 6:35 p.m. by Chair Lovallo. He noted that Mr. Gerry Boyle recently retired from his position as Facilities Director and that his retirement leaves a void with the BHSBC Secretary position. He then reviewed the agenda for the evening's meeting. He noted that Ms. Marshall is absent, but that three invoices would be processed tonight.

II. Appointment of Officers

Chair Lovallo reviewed the BHSBC Secretary's responsibilities.

> *Ms. Brusch moved:* To nominate Mr. Chris Messer as Secretary of the BHSBC.
> The motion passed unanimously.

Chair Lovallo reviewed the Vice Chair's responsibilities.

> *Mr. McLaughlin moved:* To nominate Ms. Pat Brusch as Vice Chair of the BHSBC.
> The motion passed unanimously.

III. Minutes of Previous Meetings

Chair Lovallo noted that the Minutes of January 9 will be sent out for BHSBC review soon. However, the following set is ready for approval:

Mr. McLaughlin moved: To approve the Minutes of **12/14/17.**
The motion passed unanimously.

IV. Treasurer's Report

Chair Lovallo informed the Committee that the following Invoices are ready for their approval:

Invoice 1 - $11,030

Ms. Brusch moved: To approve the Invoice of $11,030.00 from Daedalus.
The motion passed unanimously.

Invoice 2 - $90,000

Mr. McLaughlion moved: To approve the Invoice of $90,000 from Perkins + Will.
The motion passed unanimously.

Invoice 3 - $765.00

Mr. McLaughlin moved: To approve the Invoice of $765.00 for Minute's Recording, from Ms. Lisa Gibalerio.
The motion passed unanimously.

V. Public Meeting Schedule Update

Chair Lovallo reviewed several of the upcoming meetings:

Tues., January 16, 7:00 p.m.	Design Solutions with feedback from previous meeting
Thurs., January 18, 7:30 a.m.	Review of Design Solutions, thus far, and Survey Feedback Summary
Tues., January 23, 7:00 p.m.	Grade Configuration and Design Option Decision
Thurs., February 1, 6:30 p.m.	Review of draft Preferred Schematic Report
Tues., February 13, 7:00 p.m.	Approval of Final Preferred Schematic Report

VI. Traffic Update – Report Summary

Chair Lovallo noted that Ms. Trivas has met with several town departments concerning issues relating to traffic.

Mr. Schrieber summarized the Site Access Analysis Traffic Report concerning the current BHS. He noted that many site visits occurred to observe the flow of traffic, the numbers of vehicles, bike activity, walking routes, MBTA activity, U-turns, crosswalk conflicts, etc. Also analyzed were crash data, parking lot numbers, and delays and queues. He noted that peak morning time for traffic is from about 7:20 to 7:40 a.m. He highlighted the areas that queue up intensely. He noted that about 60% of faculty and students are driving (or being dropped off), with the remaining 40% walking, biking, etc.

He reviewed nine potential improvement recommendations that have come out of the last several months of traffic analysis:

1. Adding a Traffic Signal to the Goden/Concord intersection
2. Implementing two full-access site driveways (distributes the traffic more evenly)
3. Providing drop-off loops internal to the site (to prevent queues)
4. Providing walking and transit access
5. Enhanced biking access
6. Adding on-site parking
7. Shorter delay and queues at key intersections, e.g., Concord/Goden, Concord/Underwood, Underwood/Hittenger
8. Neutral impacts to Hittenger & Brighton
9. Enhanced emergency vehicle circulation

These improvements, he said, will increase safety and add benefits for not only the school community, but also the community as a whole.

He then applied the nine improvements to the various design scenarios (specifically the four design options that are currently on the table).

Questions

Chair Lovallo asked about the recommendations concerning Goden Street (light signal). Mr. Schrieber noted that Goden is already heavily traversed with cars (as it provides the Concord Ave cross-over), U-turns, and walkers, etc. so that it made sense to focus on Goden to improve safety. He explained how the traffic volume would be calmed; he noted that there are several ways in which the signal could be designed.

BOS Chair Williams also asked about the Goden recommendation and expressed concern about the cut-through use to get to the Chenery. Mr. Schrieber said that the signal could reduce (control) traffic on Goden. BOS Chair Williams asked several follow-up questions concerning Hittenger St., the MBTA train, the Alexander Street tunnel, etc.

III. Comments and Questions from Belmont Residents

Ms. Anne Marie Mahoney, 24 Goden Street, made several points about traffic on Goden Street. She noted that this neighborhood was constructed before there were even cars. Goden is too narrow for the traffic it receives and over 20 cars are backed up every single day. A light will not fix the traffic on Goden, it will, in fact, increase the traffic on Goden. She suggested opening up the medians to Concord from the other side streets: Orchard, Oak, Myrtle, etc. That, she said, would mitigate the traffic on Goden. Mr. Schrieber responded to some of the concerns raised by Ms. Mahoney.

Selectman Dash, a Goden Street resident, asked a series of questions concerning the Goden Street recommendations. Mr. Schrieber responded to some of the concerns raised by Selectman Dash. The topic of making Goden Street a one-way was raised.

Ms. Chris Kochem, Town Meeting Member Precinct 8, spoke to the evening traffic on Concord/Goden. She asked about the Channing Road access to the new school via Alexander Ave. Chair Lovallo noted that the BHSBC is not analyzing Alexander Ave. as it is not a part of the new

building project.

Ms. Miller asked about adding more bussing options to the new building as a way to mitigate traffic from the north side as well as to mitigate community-wide traffic.

Mr. David Otte, 9 Goden Street, said that all of the high school traffic is being placed on to Goden Street. He asked several questions pertaining to cross traffic and added that adding two grades to the high school will definitely increase traffic in the area. How could it not? he asked.

Ms. Thurston asked about the Hittenger flow of traffic to Brighton, Baker, and Concord. She expressed concern about the intense traffics on these streets during morning and evening times.

Dr. Ana Abrams, 15 Goden Street, spoke to the unsafe walking conditions in the area. She suggested that the streets be restricted more than they presently are. She agreed that the streets cannot take more traffic than they currently are exposed to. She said she would favor a light on Goden, but only if it increased pedestrian safety. Mr. Schrieber stated that perhaps a signal at Goden/Concord would make the intersection more safe for walkers.

Ms. Kate Bowen, SC Member, asked about staggering the start times. She also asked about other safety concerns for pedestrians, e.g., bump-outs, congestion under the bridge, traffic calming initiatives, etc.

Ms. Anne Paulson, School Street, said she hopes town-wide solutions can be brainstormed for Belmont as a whole. Cambridge, she said, has initiated some successful traffic calming mitigations. She said it looks like cars are being *encouraged* to drive to the BHS site, not discouraged from driving. Mr. Schrieber agreed that biking and walking should be encouraged.

Mr. McLaughlin noted that Cottage and Goden are the only ways to get to the Center and to the Hill. He asked why the medians from the other streets, e.g., Oak, Myrtle, etc. can't be opened up to Concord. Mr. Schrieber said that Goden can be managed without opening the other medians.

Mr. Camille Fuleihan, 3 Sandrick Road, spoke to the cut-through traffic from Route 2 that is causing problems. The cut-through traffic is the main problem and only Belmont residents should be allowed to drive through Belmont. Belmont should have busses continually dropping kids off and picking kids up from the high school.

Ms. Jane Otte, Goden Street, asked why the Alexander Street tunnel is not a part of this project? Chair Lovallo provided some background information on this issue.

Mr. Russell Mann agreed that cut-through traffic is a major public health and quality of life problem for Belmont. This issue should be a top priority for Belmont.

Superintendent Phelan noted that there are now eight busses in Belmont. Each bus costs about $60-70K annually. He then explained the laws around bussing as well as bussing fees. The fees are high, he said, and that could be why more people don't have their children take the bus. Ms. Bowen (SC member) directed several bussing questions to Mr. Phelan.

Mr. Fred Paulson, TMM Pct. 1, suggested that the BHSBC will need to answer these questions and concerns before Town Meeting and the town vote on these issues. The Selectmen, the School

Committee, and the Building Committee will need to address these issues. Chair Lovallo noted that these issues have been focused on and will continue to be focused on. He then asked several clarifying questions which Mr. Schrieber addressed.

Ms. Gretchen McClain, School Street, noted that these plans seem to be creating a lot of traffic on School Street/Goden Street. Bussing, she said, is not always an option because the high school students have such varying schedules. She requested that other traffic options are explored.

Mr. Al [?], 311 Brighton Street, reiterated that the issue of cut-through traffic needs to be addressed. Even if there are no cars at the high school, traffic will still be a major issue.

BOS Chair Williams spoke to the overlap concerning traffic issues. Many groups in town are concerned with traffic. He suggested that Mr. Schrieber present his analysis to the Traffic Advisory Committee.

Mr. Caputo asked if the traffic mitigation has a definitive due date or if solutions can be brainstormed as the project evolves. Chair Lovallo noted that the MSBA is expecting to know the definition of the project this summer. Therefore, many of these issues need to be resolved sooner rather than later – although some issues will continue to be worked out.

XII. Next Full Building Committee Meeting

Tuesday, January 16, 2018 at 7:00 p.m.
Chenery Middle School, Community Room

XIII. Related Meeting Documents

1. Belmont High School Site Access Analysis
2. BHSBC Meeting Summary
3. BHSBC Minutes Draft 12/14/17

XIV. End Meeting

The meeting ended at 8:59 p.m. by Mr. McLaughlin

Respectfully submitted by:

Lisa Gibalerio

Approved: _____ Chris Messer, Secretary

_____ Date 2/5/18

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BELMONT HIGH SCHOOL BUILDING COMMITTEE
FINAL MEETING MINUTES
January 16, 2018
Chenery Middle School
7:00 PM

Meeting #35

Committee Members Attending:

Chair Lovallo; Members: Adam Dash, John Phelan, Tom Caputo, Pat Brusch, Phyllis Marshall, Bob McLaughlin, Joe DeStefano, Joel Mooney, Diane Miller, Chris Messer, Emma Thurston, Jamie Shea

Patrice Garvin (Town Administrator)

From Daedalus: Tom Gatzunis, Shane Nolan

From Perkins+Will: Brooke Trivas, Patrick Cunningham, Rick Kuhn

BHSBC Member Absent: Dan Richards

School Committee Members Attending: Catherine Bowen, [Tom Caputo], Andrea Prestwich, Susan Burgess-Cox [The SC called their meeting to order at 7:12 p.m.]

There were roughly 30 citizens in attendance at this meeting.

I. Call to Order

The meeting was called to order at 7:04 p.m. by Chair Lovallo. He briefly reviewed the evening's agenda and then introduced Belmont's new Town Administrator, Ms. Patrice Garvin, to the BHSBC, et al. Mr. Messer updated the BHSBC on the handouts that were prepared for tonight's meeting.

II. Minutes of Previous Meetings

Mr. McLaughlin moved: To approve the Minutes of 1/9/18.
The motion passed unanimously.

III. Comments from Belmont Residents

Ms. Anne Paulson, School Street, asked about pedestrian and biking access. Specifically, she asked when these issues, as they relate to the BHS project, would be addressed again by the Committee? Chair Lovallo provided some information on what would happen next, namely that the Traffic Advisory Committee will meet to discuss the traffic recommendations that were explored at the BHSBC meeting of January 11, 2018.

Ms. Tara Donner, Belmont parent and a teacher outside the Belmont school district, asked if the costs associated with turning the Chenery into an elementary school had been explored. She stated that the younger kids are not being given full consideration. Mr. Phelan provided some information, although he stated that he has not priced out a K-6 option for the Chenery. She stated that research has shown that additional school transitions negatively impact children. She said the information regarding grade

configuration options has not been presented to the public in an unbiased way. She said she hopes the issue is given more attention going forward.

IV. Update on Project Costs (Tom Gatzunis)

Mr. Gatzunis reviewed the three grade configurations (7-12, 8-12, 9-12) as well as the various options for the new project, e.g., major renovation, partial renovation, new construction, etc. He reviewed potential construction costs, noting that the construction rates are increasing about 4% annually. He said the average cost is $550.00 per square foot of building construction, when considering current local MSBA school building costs on average, plus adjustments for specific building and site impacts, and adjustment for inflation. The MSBA will only reimburse up to $326.00 per square foot of eligible building components. The 7-12 option will be the most expensive, as it entails the biggest size building.

He noted that the current MSBA agreement with Belmont is to reimburse for 36.89% of *eligible* costs. There are costs that are ineligible for reimbursement. He reviewed areas that might be deemed ineligible, as well as costs that might be capped. The estimated net cost to Belmont is about 74% of the total project cost, based on the anticipated final reimbursement rate from the MSBA and historical information from the MSBA.

Mr. Gatzunis's handout included the price to taxpayers for each of the various options.

V. Funding the Project (Floyd Carman)

Mr. Carman reviewed the tax impact ranges based on the various construction options. The total cost of the project ranges from a low of $318.9M to a high of $402.1M. Regarding tax impact from the Belmont High School Project only, the average assessed property value in Belmont is $1M, therefore the low impact annual cost will be $1,460.00 to a high cost impact of $1,840.00 – per property owner. This is at an estimated 4% borrowing rate, over 30 years.

Chair Lovallo noted that better cost numbers will not be identified until this summer. Mr. Carman stressed the need for a cash flow report; the cash flow report, he said, will be important when the project is bonded.

Audience Comments

Mr. Charles Smart, 71 Elizabeth Road, asked two clarifying questions about the tax impact. It was determined that, if the home assessments go up, the amount of taxes paid for the Belmont High School Project stays the same. Mr. Carman agreed with that statement.

Ms. Heather Barr (?), asked about the bonding mechanism as well as the costs of upgrading the elementary schools. Will those costs be tied in to the high school? Mr. Carman stated that it depends how those costs are bonded. Chair Lovallo noted that the fiscal impact of the elementary school improvements that Superintendent Phelan presented on January 9, 2018 are not part of the Belmont High School Project and will have to be managed separately from the new BHS project. However, at this time there is no mechanism in place in Belmont to move those elementary school improvements forward.

VI. Costs for K-8 Schools (John Phelan)

Mr. Phelan reviewed costs, spanning several grade configuration options, for "right sizing" the lower grade schools. (The full PowerPoint slide set from January 9, 2018 is on both the BPS and BHSBC website.) Total project costs for the new building, *combined with* the right-sizing costs, is not a realistic summary because a plan to execute the right-sizing of the K-8 schools does not exist. Furthermore, funding has not been identified for any of the lower grade right-sizing projects.

Mr. Phelan added that, even with the 7-12 grade configuration option for the new building, there is still a $18M-$25.5M cost to right-size the elementary buildings (K-3) and to make Chenery a 4-6 school. Chair Lovallo asked: if the 7-12 solution for the HS is chosen, can the District execute the K-8 space needs without the cost of this right-size solution? Mr. Phelan responded that he can open the doors to the K-8 schools and accommodate the anticipated student enrollment in the remaining five school buildings should that 7-12 configuration be chosen, without the right-size solution being executed as described by SMMA.

VII. Preliminary Site Design Updates (Brooke Trivas)

Ms. Trivas began by reviewing the four main options for the new building:

- 2.1 Major Reno/Add
- 2.3 Reno/Major Add
- 2.4 Reno/Major Add
- 3.1 New Construction

She noted where the plans have been updated since the BHSBC meeting held at the end of November, based on comments received from the Committee and public. She briefly reviewed some of the pros/cons of the 4 options. For example, new construction does not take the pool into consideration.

Both Mr. Kuhn and Mr. Cunningham provided additional information on the four options, outlined above. They each discussed pros/cons as well as the impact on phasing during the construction process. Mark-up photos of the potential designs/site plans were reviewed. Bicycle and pedestrian access as well as landscaping possibilities were also reviewed. Gym, Auditorium, and Field House locations vis-a-vis class-room space, green space, and Concord Ave. were also explored for the various options.

Ms. Trivas noted that the options outlined above can be re-worked to keep the positive elements and attempt to eliminate the elements that are not liked. Therefore, it may be that an option that *combines* some of the above is what is ultimately moved forward. However, the basic design integrity would need to be maintained and the final design would need to be rational execution of the positive elements.

The BHSBC asked questions and offered comments on the various design options.

Selectman Dash asked process and timing questions related to the next steps and votes on design/site selection. He also stated his thoughts on the four proposed designs and site locations. Ms. Trivas stated that the traffic issues related to the project will not be decided by choosing a design or site location.

Chair Lovallo stressed that traffic flow, pedestrian, and bike issues will continue to be explored. Mr.

McLaughlin asked about the financial implications of the options, as well as the square footage, and he specifically asked when the information would be forthcoming concerning a particular design option's impact on the building's operational costs. Mr. Cunningham responded that he anticipates that the operational and maintenance costs for all four solutions appear to be cost-neutral.

Chair Lovallo noted that the BHSBC will continue this dialogue on Thursday morning.

XII. Next BHSBC Meetings

Thursday, January 18, 2018 at 7:30 a.m.
Tuesday, January 23, 2018 at 7:00 p.m.

XIII. Other/New Business

Chair Lovallo noted that there is an Evaluation sheet pertaining to the design / site selection options. He requested that Committee members fill out the form and be prepared to discuss it.

XIV. Related Meeting Documents

1. January 9, 2018 Minutes
2. Summary of Potential K-8 Costs for Right Sizing Schools
3. PDP Site Strategies Matrix
4. Concept Cost Summary PDP
5. BHS Proposed Building Configurations
6. BHS Building Project (tax impact)
7. Evaluation Matrix

XV. End Meeting

The meeting ended at 8:55 p.m. by Mr. McLaughlin.

Respectfully submitted by:

Lisa Gibalerio

Approved: _____ Chris Messer, Secretary Date 2/5/18

BELMONT HIGH SCHOOL BUILDING COMMITTEE
FINAL MEETING MINUTES
January 18, 2018
Homer Building Gallery
7:30 AM

Meeting #36

Committee Members Attending:

Chair Lovallo; *Members:* Adam Dash (left at 8:50 a.m.), John Phelan, Tom Caputo, Pat Brusch, Phyllis Marshall, Bob McLaughlin, Joel Mooney (left at 8:20 a.m.), Diane Miller, Chris Messer, Jamie Shea, Emma Thurston (arrived at 8:01 a.m.)

From Daedalus: Tom Gatzunis

From Perkins+Will: Brooke Trivas, Patrick Cunningham, Rick Kuhn

BHSBC Members Absent: Dan Richards, Joe DeStefano

I. Call to Order

The meeting was called to order at 7:34 a.m. by Chair Lovallo.

Invoice 1: Daedalus (Geotechnical Services) $1,504.45

Mr. Mooney moved: To approve the Invoice of $1,504.45.
The motion passed unanimously.

II. Community Input Survey Report (Diane Miller)

Ms. Miller briefly reviewed the survey data from the report's executive summary. She noted that the survey was online for 8 weeks and it received almost 1,800 responses, with almost half of the respondents being students. Students expressed concern about rats in the building and the overall condition of the building, as well as space/lighting issues and the need for more quiet spaces (and a library space). They named performing arts and athletic facilities as priorities and they expressed a desire to be a part of the decision-making process. Other respondent groups (parents, teachers, etc.) named dealing with enrollment as a top priority.

She reviewed data highlights from the survey questions.

Chair Lovallo noted that the data will be put online and will be forwarded to Perkins+Will.

The BHSBC briefly discussed the survey results, specifically other ways to receive community feedback on the building project. Mr. Gatzunis suggested that the major questions/concerns raised in the survey be responded to. Ms. Marshall agreed and added that, along with providing project updates, the group should attempt to be responsive to the survey. Chair Lovallo suggested that a student focus group be formed as a way to continue to get more student feedback. Ms. Brusch added that it is time to engage a broader range of residents more fully – Town Meeting members and parents have been enrolled in the process, she said, but more could be done to involve older residents.

Issues dealing with *how* to involve a broader range of community members were briefly explored.

Chair Lovallo stated that perhaps it is time for the BHSBC Communications Working Group to become an official BHSBC subcommittee, which means posting meetings, holding meetings in public places, taking meeting minutes, filing meeting minutes, etc. The Subcommittee distinction (versus Working Group) was explored.

> *Ms. Brusch moved:* That the BHSBC Chair create a *Communications Subcommittee* of the BHSBC.
> The motion passed with 11 members in favor and one member abstaining.

III. Discussion on Preliminary Site Designs

Mr. Mooney began this portion of the meeting by providing feedback on the preliminary site design options. He requested that street-level sight lines be further developed for C2.3 and C2.4. Mr. McLaughlin suggested that it be confirmed (very soon) that these sites are possible (from a hazardous waste/geotechnical perspective) to put a building. The placement of the rink, in relation to the placement of the fields, was briefly explored. Mr. Cunningham explained the 100-year floodplain guidelines. These guidelines will impact the ground level design, overall elevation levels, drainage, resilience issues, etc. The 500-year floodplain guidelines were briefly discussed as well.

Superintendent Phelan stated that he believes option C2.1 is not workable because of the phasing issues; C3.1 falls off because it does not allow for a pool or a field house. This leaves C2.4 or C2.3 as viable options, with C2.4 as his first choice.

Chair Lovallo discussed the process around choosing the design site option. The vote does not have to be unanimous but should have a majority of BHSBC members in favor of it. He said he hopes that Committee members can support the *process*, even if the design site selection does not go his/her way. The process could be simple elimination. Mr. Caputo asked a question about the Atrium space in the center of the building in C2.4. He noted that these spaces can be loud. Mr. Cunningham responded to the acoustics issue.

The Committee discussed whether or not taking a straw poll today would be helpful. (A straw poll was not taken.)

Mr. McLaughlin expressed his preference for C2.4 but added that the Committee must keep its eye on the cost of this project. The cost and the fiscal impact on residents will have a lot to do with getting this project passed. Mr. Gatzunis clarified the estimated cost scenarios that are available. Each design has different costs associated with it and the calculus is more than just construction price per square foot times the total square footage. Each design option does not cost the same, as they have different elements. And some of these elements have not even been selected yet. As time goes on, the cost estimate will become more precise.

Ms. Thurston added that the grade-configuration determination impacts both the design selection and the cost. If grade 8-12 is selected, money will need to be spent in dealing with enrollment at the lower grades. Mr. Messer added that the building's design should blend in with the town's overall aesthetics. He also raised a concern about space gaps. Chair Lovallo stated that a downside of C2.3 is that it has an imposing L corridor that will be prominent to Concord Ave. Ms. Shea agreed about the L shape

and its imposing view to Concord Ave. and added that, as a BHS teacher, C2.4 is a better educational design.

Ms. Brusch asked to have the differences between C2.3 and C2.4 made more clear. Can the positive elements of both these designs be brought together, she asked, to create a C2.3/4?

Chair Lovallo informed the BHSBC that, after the vote on Tuesday night, he will ask the Committee to vote to establish the formation of another Subcommittee: Building Operations and Systems. He also informed the Committee that the Evaluation sheets (on the four design options) will need to be collected and incorporated into the final report.

IV. Next Building Committee Meeting (Joint Meeting with BOS and SC)

Tuesday, January 23, 2018 at 7:00 p.m.

X. Related Meeting Documents

1. Initial Community Input Survey

XI. Adjournment

The meeting ended at 9:11 a.m. by Mr. McLaughlin.

Respectfully submitted by:

Lisa Gibalerio

Approved: Chris Messer, Secretary Date 2/5/18

BELMONT HIGH SCHOOL BUILDING COMMITTEE
FINAL MEETING MINUTES
January 23, 2018
Wellington School Cafeteria
7:00 PM

Meeting #37

Committee Members Attending:

Chair Lovallo; Members: Adam Dash, John Phelan, Tom Caputo, Pat Brusch, Dan Richards, Phyllis Marshall, Bob McLaughlin, Joe DeStefano, Joel Mooney, Diane Miller, Chris Messer, Emma Thurston, Jamie Shea

Patrice Garvin, Town Administrator

From Daedalus: Tom Gatzunis

From Perkins+Will: Brooke Trivas, Patrick Cunningham, Rick Kuhn

BHSBC Members Absent: [none]

School Committee (SC) Members Attending: Chair Lisa Fiore, Catherine Bowen, (Tom Caputo), Andrea Prestwich, Susan Burgess-Cox, Murat Bicer
[Chair Fiore called the SC to order at 7:06 p.m.]

Board of Selectmen Attending: Chair Jim Williams, Mark Paolillo (arrived 7:29 p.m.) and Adam Dash
[Chair Williams called the BOS to order at 7:06 p.m.]

There were roughly 85 citizens in attendance at this meeting.

I. Call to Order

The meeting was called to order at 7:06 p.m. by Chair Lovallo. Chair Lovallo reviewed the agenda and he stated his hope that the dialogue (and engagement with the community) would continue to be open and respectful.

II. Comments from Belmont Residents

Ms. Hyon-Jee Voigt stated that the decisions made tonight will impact the younger students in Belmont. These decisions could negatively impact the growth of the community as well.

Ms. Gerri Cummings, a lifetime resident of Belmont, stated that she is not interested is supporting a new high school; Belmont students are doing well with the current high school.

Ms. Ellen Schreiber thanked all the committees involved who have worked on this project. This has been a been transparent and informative process.

Mr. Justin [Backley? sp?], stated that the overall new building costs are a concern, and perhaps the

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public should be able to comment *after* the discussion pertaining to costs. The price of the building is a concern for the community, he said, even if it is an investment in the future.

Mr. Jack Weis asked whether the project is at greater risk of failing at the polls if the most expensive grade configuration option is put forth to the voters. Perhaps the grade 9-12 option would stand a better chance of passing, he wondered.

Ms. Fitzie Cowing, BHS graduate and Belmont parent, spoke to her concern about the Brendan Grant Memorial Baseball Field. Brendan's memory needs to be preserved wherever the new baseball field is relocated to. She also requested that consideration be paid to other sentimental aspects of the current building. Chair Lovallo commented that the Building Committee is very sensitive of the Brendan Grant Memorial Field and contacted the Brendan Grant Foundation at the onset of design. The Foundation is aware that the Brendan Grant Memorial Field is moving and continues to provide comments to the Building Committee.

III. Project Costs

Chair Lovallo provided some background information on the cost factors of the project. He spoke to the many factors that impact the cost of the project. There are construction costs as well as project costs. Project costs include construction costs ("hard costs"), but also encompass many other cost components. He then explained how the construction cost estimates are arrived at during this phase of estimation – mainly they are derived from the square footage of the project, which is controlled by the MSBA. He explained several other factors that impact the cost of the project, including the escalation costs.

The building committee, he said, is working very hard to control the costs. A better-defined cost estimation should be known over the next few months. He explained that the MSBA will define its reimbursement of eligible costs, which will help identify Belmont's contribution. The MSBA has a construction cost cap as well as exclusions, i.e., things they will not reimburse for. The current estimated reimbursement rate for Belmont is roughly 36.89 percent, and is based on socioeconomics and demographics.

Ms. Shea summarized that the project cost is driven by construction costs, which are based on square footage. She then asked: to reduce the size of the building, and therefore reduce the costs, would the predicted enrollment need to decrease? Chair Lovallo agreed that the building size (square footage) is based on enrollment.

Member McLaughlin noted that if the grade configuration for the new building is 7-12, Belmont will save money by not needing to build an elementary school. Mr. Phelan agreed and noted that a grade 9-12 school will not handle the enrollment issues at the lower grades; in that scenario, costs incurred to handle lower-grade enrollment would be around $54-56M. Even if the new building is grades 7-12, some right-sizing would be needed at the Chenery and elementary levels, costing about $18M. He noted that it would not be possible to build an elementary school near the high school; in fact, no space has been identified in Belmont where an elementary school could be built.

Mr. McLaughlin then spoke to the tax impact (an average of $1,800 per year for 30 years) and added that the new high school would likely increase home values in Belmont.

Mr. Phelan added that, while there is financial help from the MSBA to fund a new high school, there

are no corresponding vehicles to fund the building of a new elementary school or make additions to the existing schools. The grade 7-12 option may therefore provide the best and most cost-effective option to the community.

Mr. Gatzunis spoke to the MSBA process for supporting another elementary school. It would be a very long way down the road, he said, and could not even begin until the high school process comes to completion.

The BHSBC and SC discussed issues relating to the potential costs of the various design options.

Preliminary Design Program (PDP) Comments from the MSBA

Mr. Gatzunis noted that the MSBA's comments on the recently submitted PDP report were not at all atypical. The MSBA asked for some clarification on certain points. The responses will be submitted in the Preferred Schematic Report (PSR) document.

IV. Subcommittee on Building Systems and Operations

Chair Lovallo explained what this subcommittee might be responsible for and why it is necessary at this stage in the process.

> *Member McLaughlin moved*: To form a Subcommittee on Building Systems and Operations. The motion passed unanimously.

V. Preliminary Site Design Updates

Ms. Trivas explained the MSBA requirements around the various design options. She explained some of the differences among the options. The pool and the field house would not be allowed in the option that is total new construction C3.1. She explained the work that has been ongoing with various consultants, e.g., landscape, traffic, ZNE, etc. The playing fields (except the tennis courts) are accommodated within the new options. It was noted that the designs would continue to evolve and that conversations related to traffic would also continue.

Mr. McLaughlin raised several issues relating to phasing, which drives much of the decision-making process. He advised that it might be cheaper to separately fund a new pool, rather than to finance an expensive building, in order to save the existing pool. He said that he favors options C2.3 and C2.4.

Ms. Trivas briefly reviewed some of the points of the four design options.

Mr. Phelan noted that community feedback has been incorporated into the design options. He agreed that the staging of the work is a very important consideration and has a high education value to it. He said that he also favors C2.3 and C2.4. Both of these options have profound educational benefits for students as well as teachers. Ms. Shea concurred with Mr. McLaughlin and Mr. Phelan's reasons for favoring C2.3 and C2.4. She said C2.4 provides multi-age educational opportunities. Ms. Miller explained why she prefers the C2.4 option, e.g., open spaces, natural light.

Selectman Dash expressed his thoughts on the four options. C2.4 is more circular in design, keeps more greenery intact, and does not hug Concord Ave.

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Chair Lovallo noted that the School Committee would now opine on the grade configuration options: 9-12, 8-12, 7-12.

VI. Selection of Grade Configuration (School Committee)

Superintendent Phelan spoke to many of the challenges facing the school district over the years. He acknowledged the community for its commitment to education. He then reviewed the historical district-wide enrollment growth as well as the enrollment forecasts, which clearly continue to trend upwards. He described the impact on the lower grades (as well as some of the cost implications) of each of the grade configuration options. He outlined several challenges of only building a 9-12/8-12 building. He then outlined his support for and the overall benefits of the 7-12 configuration option.

SC Chair Fiore then asked for a motion in support of the Superintendent's grade configuration recommendation – 7-12.

> SC *Member Caputo moved*: That the SC accept the Superintendent's recommendation for a 7-12 grade configuration option for the BHS project as required by the MSBA.

The SC then discussed the grade 7-12 option and how they came to support this grade configuration.

> The motion passed unanimously.

[The SC adjourned at 9:18 p.m.]

VII. Selection of Preferred Solution (BHSBC)

> *Member McLaughlin moved*: To instruct the design team to pursue the C2.4 proposal.
> The motion passed unanimously.

Chair Lovallo thanked the Superintendent and the SC for all of their efforts.

VIII. Next Full Building Committee Meeting

Thursday, February 1, 2018 at 6:30 p.m.

X. Related Meeting Documents

1. Concept Cost Summary - PDP
2. BHS Design Selection Options

XI. End Meeting

The meeting ended at 9:22 p.m. by Mr. McLaughlin.

Respectfully submitted by:

Lisa Gibalerio

FINAL

B. CERTIFIED MEETING MINUTES

Approved: Chris Messer, Secretary Date 2/5/18

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BELMONT HIGH SCHOOL BUILDING COMMITTEE
DRAFT MEETING MINUTES
February 1, 2018
Wellington School Community Room
6:30 PM

Meeting #38

Committee Members Attending:

Chair Lovallo; Members: Adam Dash, John Phelan, Patrice Garvin, Tom Caputo, Pat Brusch, Phyllis Marshall, Bob McLaughlin, Joe DeStefano, Joel Mooney, Diane Miller, Chris Messer, Emma Thurston, Jamie Shea

From Daedalus: Shane Nolan

From Perkins+Will: Brooke Trivas, Rick Kuhn

BHSBC Members Absent: Dan Richards

School Committee Members Attending: (Tom Caputo), Susan Burgess-Cox

Board of Selectmen Attending: Chair Jim Williams, Adam Dash
[Chair Williams called the BOS to order at 6:36 p.m.]

There were roughly four citizens in attendance at this meeting.

I. Call to Order

The meeting was called to order at 6:36 p.m. by Chair Lovallo. He reviewed the evening's agenda and then turned to the first item.

II. Minutes of Previous Meetings

> *Mr. McLaughlin moved:* To approve the Minutes of 1/11/18, 1/16/18, 1/18/18, 1/23/18. The motion passed unanimously.

III. Comments from Belmont Residents

No comments this evening.

IV. Preliminary Site Design Updates

Ms. Trivas noted that one site plan, one building plan, and one grade configuration will be focused on going forward. She noted that there is a site plan [C2.4] which is continuing to develop and is currently focusing on traffic, bus zones, drop off areas, parking, athletic fields, etc.

Chair Lovallo reviewed some of the parking lot space data. Parking for this project will need to accommodate staff for grades 7-12 and upper class students. Overall, there are 430 (?) spaces being planned for throughout the campus. He added that he and Ms. Brusch will meet soon with the

Planning Board to review the project and to touch base on the schematic design process.

Ms. Shea raised the topic of the Brendan Grant Memorial Field and asked what considerations have been taken to preserve this memorial field. Chair Lovallo explained that the BHSBC has been, from the very beginning of the process, in contact with the Brendan Grant Foundation. He reviewed the elements of the field, e.g., drainage, lighting, field layout, etc. Some of these issues are under the School Committee's purview. The Brendan Grant Foundation would like to collaborate with the BHSBC and the SC throughout the schematic design process. Mr. Phelan reiterated that the communication has been ongoing with Mr. Grant and the Foundation. He said it has been helpful to have Mr. Davis, BHS's Athletic Director, included in the conversations.

Ms. Shea then asked about the placement of tennis courts, which are not currently on the site plan. Mr. Phelan said that there will be a tennis team and that the other tennis courts, across town, would need to be utilized.

Returning to the site plan, Mr. Trivas highlighted the green space that surrounds the building and keeps the parking area on the North side near the tracks. Ms. Miller noted that the parking is centralized on the East side but that the building entrances are on the West side; this will lead to a longer walk for the high school students (which is good for exercise), and brings the upper school students closer to the lower school. It was noted that the School Department may designate the student parking areas.

Issues and questions relating to parking logistics were explored.

Ms. Trivas reviewed the flow of bikes, walkers, and cars. Chair Lovallo noted that the Traffic Advisory Committee (TAC) has retained a traffic engineer to work with the BHSBC on traffic flow. The first meeting will be held next week, after which, other groups will be involved in the process. Selectman Dash noted that the flow of traffic, once it is determined, will impact the parking planning. Ms. Trivas noted that the traffic flow is still under analysis; nothing is final at this point.

Ms. Trivas then reviewed the "academic neighborhood diagram", e.g., where classrooms, innovation spaces, shared spaces, breakout spaces, teacher planning spaces, circulation space, learning commons, etc. might be located. Stairs, bathrooms, elevators are all being placed in the building, as well. Both the student and faculty experiences are being taken into consideration as the planning process continues. Chair Lovallo asked about BHSBC input versus School Department input in making these types of building design decisions. Mr. Phelan noted that the Leadership Council is meeting and exploring with faculty what the impact of this new configuration means. This will require interface with the design team. He explained what this process might look like going forward, over the next few months. Chair Lovallo requested periodic updates on what the Leadership Council is discussing and deciding throughout this process. Mr. Phelan agreed and added that there will need to be a myriad of ways to involve the school staff, the BHSBC, and the community in this ongoing dialogue.

Ms. Trivas explained the process by which the various spaces (classrooms, innovation spaces, shared spaces, breakout space, teacher planning spaces, circulation space, learning commons, etc.) will be designed. She then discussed proposed ceiling heights and the items that will need to be placed on the roof. The square footage of the building is fairly set, she said, so if one area is enlarged, another area will need to be made smaller.

The BHSBC asked various questions and offered insights pertaining to the preliminary design plan.

V. Discussion of Preferred Schematic Report (PSR) Submission

Chair Lovallo noted that the PSR is due on Friday, February 16, 2018 and consists of multiple sections (see handout #4.) The BHSBC will vote on the PSR when it meets next week (2/13/18).

Chair Lovallo then reviewed the five PSR sections:

1. **Introduction**
   (MSBA inquiries/PDP review, project schedule update)

2. **Evaluation of Existing Conditions**
   (traffic report)

3. **Final Evaluation of Alternatives**
   (building options, new cost estimate, structural/mechanical components, Qualitative Matrix)

4. **Preferred Solution**
   (sustainability evaluation - Leeds, educational program, space summary)

5. **Local Actions Approval Certifications**
   (regulatory approvals, meeting minutes)

Chair Lovallo spent a few minutes reviewing the project schedule update, including the MSBA's approval vote date (August 29, 2018) and the Town of Belmont's vote (November 6, 2018).

VI. Next Full Building Committee Meeting

Tuesday, February 13, 2018 at 7:00 at CMS Community Room to approve the PSR

Ms. Brusch noted that the Board of Selectmen will need to vote, over the summer, to place the BHS debt exclusion on the ballot. Chair Lovallo read the Wellington School debt exclusion ballot question and noted that the wording for the BHS ballot question would be similar.

VII. Other/New Business

BSO Update: Chair Lovallo noted that the Building Systems and Operations (BSO) Subcommittee has met to discuss temperature control, air conditioning, lighting, mechanical systems, energy efficiencies (plug load), etc.

PR Update: Ms. Shea noted that the Public Relations subcommittee met recently and heard from a concerned citizen. The BHS video is in process and the BHSBC website is coming along.

VIII. Related Meeting Documents

1. Meeting Minutes: 1/11/18, 1/16/18, 1/18/18, 1/23/18
2. Perkins + Will Site Plan documentation
3. Summary Project Schedule
4. PSR Schedule/Outline

IX. End Meeting

The meeting ended at 8:20 p.m. by Mr. McLaughlin.

Respectfully submitted by:

Lisa Gibalerio

Approved: _____ _____
Chris Messer, Secretary Date

3.3.5 - LOCAL ACTIONS & APPROVALS

C. LIST OF MEETING DATES AND AGENDA

BELMONT HIGH SCHOOL BUILDING COMMITTEE

PSR Public Meeting Summary

- Sustainability Presentation and Discussion
  December 7th 6:30 p.m. – Joint Meeting
  Wellington Elementary School, Cafeteria
  Discussion of sustainability options to consider for new High School

- District Configuration Presentation – (School Committee Meeting)
  December 12th 7:00 p.m. – Joint Meeting
  Chenery Middle School, Community Room
  Presentation of district configuration options being considered as part of the High School project

- Community Engagement #5 – Design Workshop
  December 14th 7:00 p.m. (Tours at 6:00) – Joint Meeting
  Belmont High School, Cafeteria
  Hands-on design workshop approach to exploring building design options for the new High School

- District Configuration Community Discussion – (School Committee Meeting)
  January 9th 7:00 p.m. – Joint Meeting
  Belmont High School, Auditorium
  Open Belmont Community forum on district configuration options

- Traffic Presentation and Discussion
  January 11th 6:30 p.m. – Joint Meeting
  Wellington Elementary School, Cafeteria
  Review and discuss traffic solutions proposed for various High School site design solutions

- Preliminary Design Update from Design Workshop – Joint Meeting
  January 16th 7:00 p.m.
  Chenery Middle School, Community Room
  Review and comment on design solutions incorporating feedback from previous Design Workshop

- Grade Configuration Selection and Preliminary Design Option Selection
  January 23rd 7:00 p.m. – Joint Meeting
  Chenery Middle School, Community Room
  School Committee decision on grade configuration and Building Committee decision on design option

- Preferred Schematic Report Presentation
  February 1st 6:30 p.m. – Joint Meeting
  Wellington Elementary School, Community Room
  Review of draft Preferred Schematic Report to be submitted to MSBA

- Preferred Schematic Report Approval
  February 13th 7:00 p.m. – Joint Meeting
  Chenery Middle School, Community Room
  Final review and approval of Preferred Schematic Report for MSBA Board review