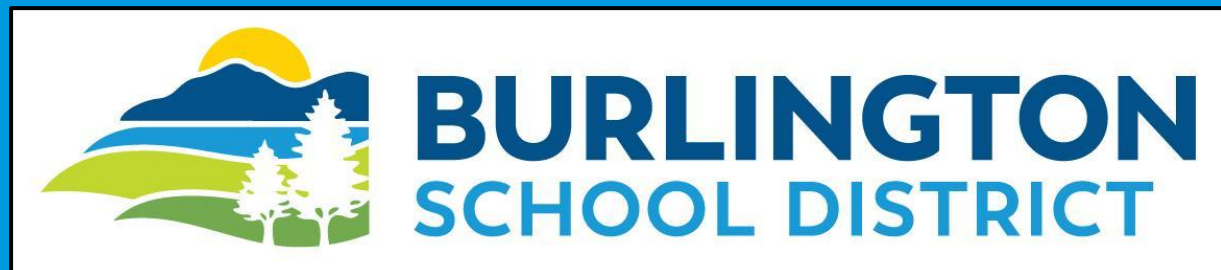


# BHS Renovation - Design Development

June 18, 2020



# BCOC Agenda

**Thursday, June 18, 2020 5:30 – 7:00 PM**

Zoom: <https://us02web.zoom.us/j/85950774703>

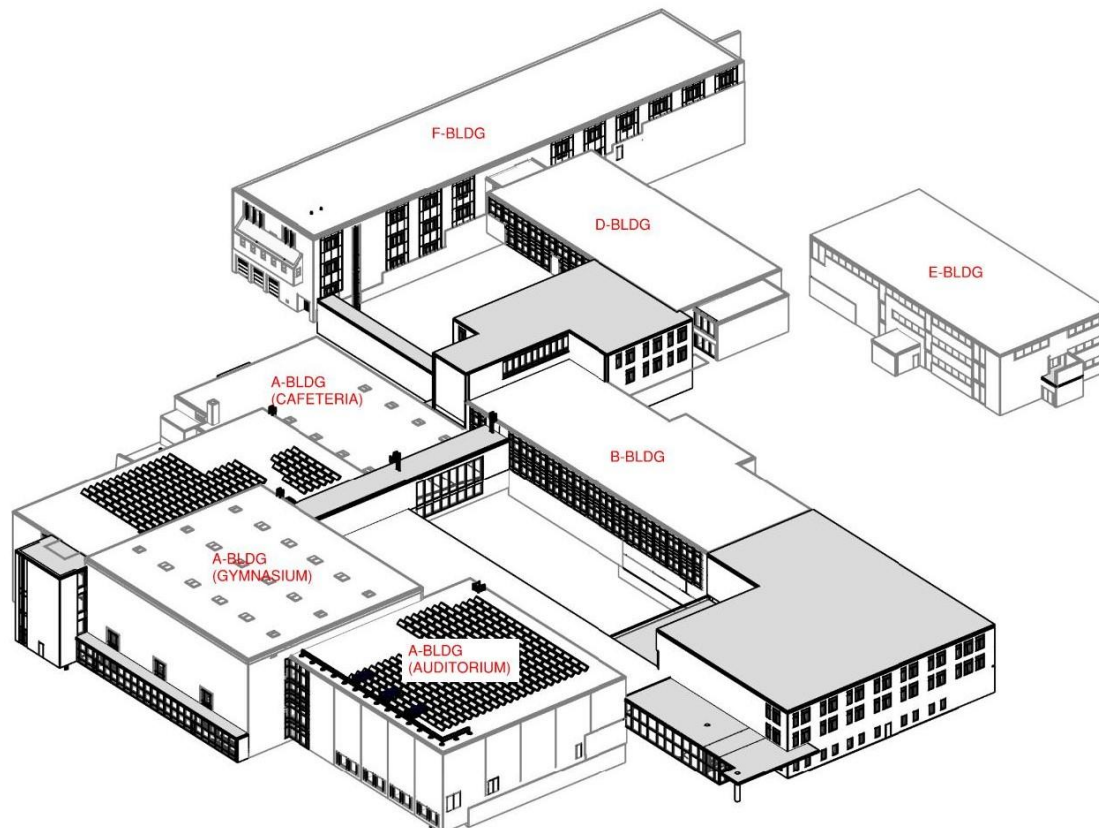
	<u>Duration</u>	<u>Elapsed Time</u>
· Introduction - Tom Peterson, Owner's Project Manager	5	5
· HVAC Options review	20	25
○ BCOC Member Q&A	20	45
· Asbestos & PCB update	5	50
○ BCOC Member Q&A	5	55
· Lot Coverage Update / Strategy	10	65
○ BCOC Member Q&A	10	75
· Public comments and questions	15	90

(Note: In the interest of time, individuals will be limited to 2 minutes to deliver their comments and/or questions.)

**Total Allotted Time: 90 Minutes (5:30 – 7:00)**

**Next BCOC Meeting: Thursday, July 16, 2020 via Zoom**

# Schematic Design



# Energy Model

BHS Energy Model Results																		
Electricity	0.14 kwh																	
Natural Gas	0.95 ccf																	
Wood Chips	\$60 ton		85 Therm/Ton															
	Fossil Fuel Baseline			Rooftop Unit BED Baseline			WSHP BED Baseline			Rooftop Unit Proposed			WSHP Proposed			WSHP (High Efficiency)		
	Electricity (kwh)	Natural Gas	Wood Chips	Electricity (kwh)	Natural Gas	Wood Chips	Electricity (kwh)	Natural Gas	Wood Chips	Electricity (kwh)	Natural Gas	Wood Chips	Electricity (kwh)	Natural Gas	Wood Chips	Electricity (kwh)	Natural Gas	Wood Chips
Heating		179,951			129,518	0	331,792	65,221				48,964	169,148	165	31,835	98,737	205	34,791
Cooling	331,445			411,759			140,120			125,054	3,207		90,709			72,292		
Interior Lighting	722,120			722,120			722,120			472,347			472,347			472,347		
Interior Equipment	312,575	208		312,575	208		312,575	208		312,575	208		312,575	208		312,575	208	
Fans	535,831			240,560			233,978			124,682			94,019			50,326		
Pumps	236,391			8,940			35,626			4,676			19,925			3,686		
Heat Rejection	2,210						326						398			401		
Water Systems		7,033			7,033			7,033			5,923			5,923			5,923	
<b>TOTAL</b>	<b>2,140,572</b>	<b>187,192</b>	<b>0</b>	<b>1,695,954</b>	<b>136,759</b>	<b>0</b>	<b>1,776,537</b>	<b>72,462</b>	<b>0</b>	<b>1,039,334</b>	<b>9,338</b>	<b>48,964</b>	<b>1,159,121</b>	<b>6,296</b>	<b>31,835</b>	<b>1,010,364</b>	<b>6,336</b>	<b>34,791</b>
	\$299,680.08	\$184,412.20	\$0.00	\$237,433.56	\$134,728.13	\$0.00	\$248,715.18	\$71,385.94	\$0.00	\$145,506.76	\$8,871.10	\$34,562.82	\$162,276.94	\$5,981.20	\$22,471.76	\$141,450.96	\$6,019.20	\$24,558.35
<b>Total</b>	<b>\$484,092.28</b>			<b>\$372,161.69</b>			<b>\$320,101.12</b>			<b>\$188,940.68</b>			<b>\$190,729.90</b>			<b>\$172,028.51</b>		
<b>Total HVAC System Cost Estimate</b>										<b>\$12,871,591.00</b>			<b>\$13,371,591.00</b>			<b>\$14,471,591.00</b>		
Comparative Carbon Emissions (Metric Tons per Year)				<b>738</b>			<b>372</b>						<b>18</b>			<b>2</b>		
Rooftop Unit System Total	\$188,940.68																	
WSHP Total	\$190,729.90																	
Difference	-\$1,789.22																	

Note the RTU option may require additional roof structural improvements that have yet to be identified.

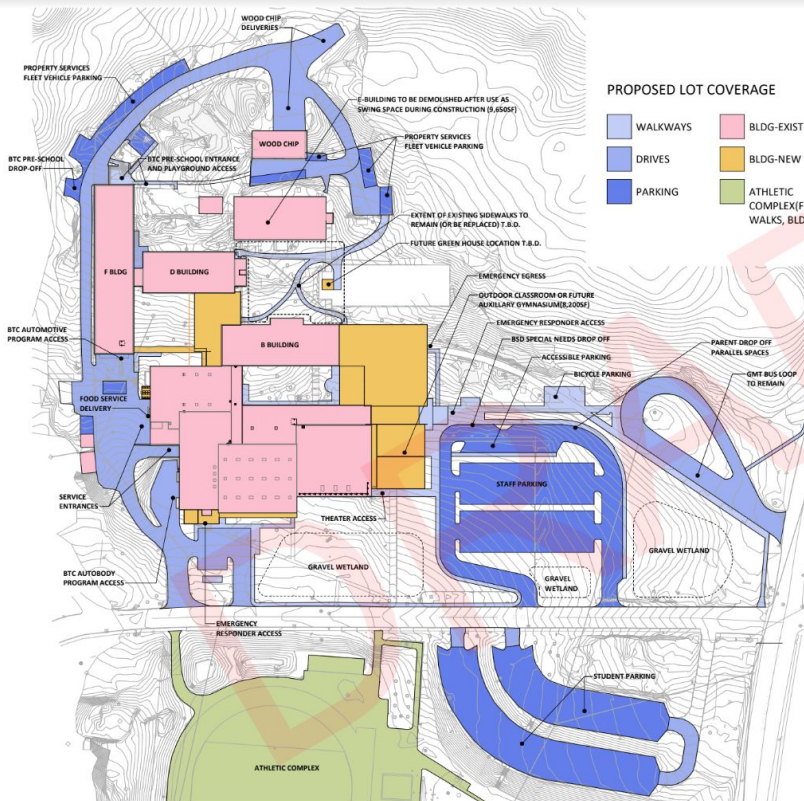
# PCB & Asbestos Update

- Fuss & O'Neill (third party consultant) has reviewed ATC's testing and reports
- F&O have recommended additional sampling and testing based on F&O's experience with the Region One EPA Coordinator
- Results of this additional testing will drive remediation plan and building design
- Additional sampling and testing has begun this week
- Results expected in about three weeks

# Lot Coverage Update and Strategy

- Current zoning for BHS parcel is *recreational*
- Our current lot coverage exceeds lot coverage limits for the recreational zone
- The the new plan calls for slightly increased lot coverage over the current coverage
- Vermont law limits municipal review of school projects, including limits on lot coverage review
- Zoning staff have “*strongly encouraged*” BSD to begin the process of re-zoning their properties
- BSD does not want re-zoning to delay the BHS project in any way
- Marty Spaulding submitted a memo in 2019 making the case for BHS lot coverage
- City attorney weighed in and agreed with Marty’s approach and arguments

# Lot Coverage Calculations to Date



## PROPOSED LOT COVERAGE AREA

DESCRIPTION	PROPOSED LOT COVERAGE
WALKWAYS	36,555 SF
DRIVES	87,887 SF
PARKING	105,932 SF
EXISTING BUILDINGS AND STRUCTURES TO REMAIN	111,179 SF
BUILDINGS NEW	36,397 SF
ATHLETIC FIELDS, ASPHALT WALKS, BUILDINGS	211,367 SF
	589,316 SF

TOTAL SITE AREA = 2,116,012 SF

PROPOSED LOT COVERAGE = 588,317 SF  
 LOT COVERAGE AREA(EXISTING) = (567,812 SF)

% OF PROPOSED LOT COVERAGE = 27.85%  
 % OF LOT COVERAGE(EXISTING) = (26.83%)

### PROPOSED LOT COVERAGE SUMMARY(w/o E-Bldg)

	Existing Area	Proposed Area	Existing Lot Coverage %	Proposed Lot Coverage %	% Change
Total Site	2,116,012 SF	2,116,012 SF			
Athletic Complex	211,365 SF	211,367 SF	9.99%	9.99%	0.00%
Bldg footprint	128,348 SF	137,961 SF	6.07%	6.52%	0.45%
Paving					
Walkways	31,753 SF	36,555 SF	1.50%	1.73%	0.23%
Drives	88,837 SF	87,887 SF	4.20%	4.15%	-0.04%
Parking	107,509 SF	105,932 SF	5.08%	5.01%	-0.07%
	567,812 SF	579,702 SF	26.83%	27.40%	0.56%
Parking Spaces (448 required by Zoning)	343	318*			

\*REDUCTION OF +/- 70 SPACES FROM PROPOSED SD PLAN

### PROPOSED LOT COVERAGE SUMMARY(with E-Bldg)

	Existing Area	Proposed Area	Existing Lot Coverage %	Proposed Lot Coverage %	% Change
Total Site	2,116,012 SF	2,116,012 SF			
Athletic Complex	211,365 SF	211,367 SF	9.99%	9.99%	0.00%
Bldg footprint	128,348 SF	147,576 SF	6.07%	6.97%	0.91%
Paving					
Walkways	31,753 SF	36,555 SF	1.50%	1.73%	0.23%
Drives	88,837 SF	87,887 SF	4.20%	4.15%	-0.04%
Parking	107,509 SF	105,932 SF	5.08%	5.01%	-0.07%
	567,812 SF	589,317 SF	26.83%	27.85%	1.02%
Parking Spaces (448 required by Zoning)	343	318*			

\*REDUCTION OF +/- 70 SPACES FROM PROPOSED SD PLAN

LOT COVERAGE PLAN  
 2020-06-17 scale: 1" = 60'-0"  
 BURLINGTON HIGH SCHOOL RE-ENVISIONING

# Design Development Progress

- Design team has resumed meetings with BHS departments to review plans and solicit input
- Revised plans are reflecting feedback from faculty and staff
- Locations and layouts of departments are being finalized
- Project team has been meeting with City of Burlington departments as a preview to formal review by Technical Review Committee (TRC)
- We are trying to get on the July 9 TRC agenda





PETERSON  
CONSULTING, INC.



**BLACK RIVER DESIGN ARCHITECTS**