



CONSTRUCTION



Dover High School and Career Technical Center Project

Dover, New Hampshire | June 23, 2015

SCHEMATIC ESTIMATE PROCESS



Dover High School - Option #1 - Full Renovation - Estimate Comparison			
	PC	PM&C	Cost Variance
High School Total	\$64,417,847	\$65,141,515	\$723,668
A1010 Standard Foundations	\$586,118	\$281,788	-\$304,330
A1020 Special Foundations	\$392,400	\$566,000	\$173,600
A1030 Lowest Floor Construction	\$747,366	\$859,778	-\$87,588
B1010 Floor Construction	\$570,000	\$820,825	\$250,825
B1020 Roof Construction	\$276,199	\$448,000	\$171,801
B2010 Exterior Walls	\$1,156,462	\$918,878	-\$237,584
B2020 Windows	\$2,127,120	\$2,052,062	-\$75,058
B2030 Exterior Doors	\$140,785	\$182,490	\$41,705
B3010/3020 Roof Coverings & Openings	\$361,327	\$481,000	\$119,673
C1010 Partitions	\$1,166,993	\$1,423,750	\$256,757
C1020 Interior Doors	\$697,003	\$794,250	\$97,247
C1030 Specialties / Millwork	\$2,135,630	\$2,163,748	\$28,118
C2010 Stair Construction	\$123,729	\$77,000	-\$46,729
C3010 Wall Finishes	\$874,439	\$1,059,000	\$184,561
C3020 Floor Finishes	\$1,914,998	\$2,080,534	\$165,536
C3030 Ceiling Finishes	\$1,182,465	\$1,330,822	\$148,357

- Kickoff Meeting with HMFH and PM&C
- Questions asked and answered, information shared
- Reconciliation meetings to align estimates
- Prepare Schematic Estimate Book



City of Dover, New Hampshire
Dover High School & Career Technical Center
DOVER SCHOOL DISTRICT
June 23, 2015



Schematic Estimate

SCHEMATIC ESTIMATE BOOK

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OPTIONS CONSTRUCTION COSTS

	Core Project Cost Elements	Selected Project Cost Drivers*	Total Construction Cost
Option 1: Complete Renovation	\$57,185,564	\$7,232,436	\$64,418,000
Option 2: Partial Renovation with Addition	\$61,305,794	\$6,144,206	\$67,450,000
Option 3: All New Construction	\$65,001,626	\$6,591,374	\$71,593,000

*Selected Project Cost Drivers include aggregate piers with associated slab-on-grade, asbestos abatement, turf football field, kitchen equipment, modular classroom rental, baseball field work, stage lighting, linoleum (in lieu of VCT), and courtyard landscaping.



YOUR PROJECT | PROPOSED OPTION 1 – FULL REHAB
268,330 SF
6+ YEARS

Challenges

- 1 full year of new construct for 4 CTE spaces before renovations can begin and then 9 full years and 3 additional summers beyond that of renovation/duration 360-400
- Students would need to be located off-site at McIntosh College for 2 years. This means:
 - Investment in accessibility upgrades (ramp, stairs or elevator, additional toilets, and site grading)
 - Investment in structural upgrades to make roof accessible
 - Investment in some flexible, movable and some technology to reduce space useable for HS students
 - Electric heating of 5000 of building will be costly
 - Investment in approximately 6 additional, modular classrooms
 - Investment in extra teachers, transportation, food service distribution
- Alternative approach would be locating students in approximately 16 modular classrooms on the high school site at a cost of \$700K
 - Challenges with this approach include either elimination of most current parking, or elimination of at least 1 ball field for 3 years. (area required for 16 classrooms needs verification. 2 Cts = 60 x 24')
- Challenges of either approach include:
 - Ongoing disruption to students' schedule and learning (negative impact on tuition student program)
 - Construction workers and student crossing paths.

Full Rehabilitation - Phase 1 - Year 1
Dover HS / CTC
 Dover, NH
 UPDATED 04/07/2015



HNH Architects Inc.



YOUR PROJECT | PROPOSED OPTION 1 – FULL REHAB

Compare and Contrast

Pros	Cons
<ul style="list-style-type: none">• Least cost• Minimal sitework	<ul style="list-style-type: none">• Invasive, most disruptive approach• Subcontractor pricing will be influenced by inefficiencies and by length of project• Prolonged process• No program / educational environment improvements• High risk due to unforeseen conditions• At least 25% of students and staff in temporary classrooms• Escalation Costs• Continuity of team and subcontractors• Useful life of building less than other options

Phasing	7 phases
Schedule	6+ years
Cost	\$64.4 million

YOUR PROJECT | PROPOSED OPTION – 2B

ADDITION AND RENOVATION

303,000 SF

3+ YEARS



SECOND FLOOR



FIRST FLOOR

COLOR LEGEND

- Administration
- Community / Shared
- Classroom
- Special Education
- Science
- CTC Migrated
- CTC Public
- CTC Service
- CTC Stand Alone
- Mechanical
- Storage
- Support
- Toilet Rooms
- Calculation
- Learning Commons

	New	Renovation
Ground Floor	-	12,810 sf
First Floor	- 150,581 sf	45,524 sf
Second Floor	- 78,288 sf	7,690 sf
Animal Science	- 8,500	2000 sf
Total	- 303,293 sf	
Net To Gross	- 1,46'	

Reno Add Option – 2B
Dover HS / CTC
 Dover, NH
 UPDATED 05/06/2015



GROUND FLOOR



HNH Architects Inc.



YOUR PROJECT | PROPOSED OPTION – 2B

Compare and Contrast

Pros	Cons
<ul style="list-style-type: none">• Reduces new construction• Keeps best parts of existing facility• Second-lowest cost• Minimizes disruptions• Maintains near-optimal program• Likely well-received by voters• Ability to work with design team to further decrease costs	<ul style="list-style-type: none">• More precise demolition required• More risk than completely new construction• Fewer program choices in renovated space• Less flexibility in building layout• Difficult courtyard construction
	<p>Phasing 2 phases Schedule 6/16 – 9/19 (39 months) Cost \$67.4 million</p>

YOUR PROJECT | PROPOSED OPTION – 3A
NEW BUILDING AND DEMOLITION
304,514 SF
3+ YEARS



YOUR PROJECT | PROPOSED OPTION – 3A

Compare and Contrast

Pros	Cons						
<ul style="list-style-type: none">• Less disruptive• Flexible program / building shape• All new facilities• Maximize program• Smaller footprint	<ul style="list-style-type: none">• Most expensive option• New gym, auditorium increases square-foot costs• Difficult courtyard construction• Most sitework / site disruption						
<table><tbody><tr><td>Phasing</td><td>2 phases</td></tr><tr><td>Schedule</td><td>6/16 – 9/19 (39 months)</td></tr><tr><td>Cost</td><td>\$71.6 million</td></tr></tbody></table>		Phasing	2 phases	Schedule	6/16 – 9/19 (39 months)	Cost	\$71.6 million
Phasing	2 phases						
Schedule	6/16 – 9/19 (39 months)						
Cost	\$71.6 million						

Dover High School and Career Tech Center

Total Project Cost Review

	Option 1 - All Renovation	Option 2 - Renovation Addition	Option 3 - All New
PC Construction Estimate	64,418,000	67,450,000	71,593,000
Owner's Contingency 1 = 10%, 2 = 6%, 3 = 4%	6,441,800	4,047,000	2,863,720
A. A/E Basic Services Fees 1= 12%, 2= 10%, 3= 9.5%	7,730,160	6,745,000	6,801,335
Net Fees by Phase			
Feasibility Study	485,000	485,000	485,000
Schematic Design -15% of Basic Services	1,159,534	1,011,750	1,020,200
Design Development 20% of Basic Services	1,546,032	1,349,000	1,360,267
Construction Documents 25% of Basic Services	1,932,540	1,686,250	1,700,334
Bidding 5% of Basic Services	386,508	337,250	340,067
Construction Administration 35% of Basic Services	2,705,556	2,360,750	2,380,467
A&E Basic Services Contract incl. Feasibility Study:	8,215,160	7,230,000	7,286,335
B. Additional Services Items			
Visioning Process	29,150	29,150	29,150
Existing Conditions Survey	45,500	15,500	5,500
Site Topographic Survey	49,500	49,500	49,500
Preliminary Geotechnical Investigation	22,250	22,250	22,250
Geotechnical Investigation and Report (estimate)	40,000	40,000	40,000
Hazardous Materials Investigation	7,150	7,150	7,150
Hazardous Material Specifications (estimate)	25,000	25,000	25,000
Acoustical Engineering (estimate)	40,000	40,000	40,000
Solar consulting/Energy Modeling (estimate)	80,000	80,000	80,000
Traffic Study	27,500	27,500	27,500
Independent Structural Peer Review (estimate)	10,000	10,000	10,000
Subtotal	376,050	346,050	336,050
F & E Procurement Consultant (estimate)	100,000	100,000	100,000
Furniture (estimate)	1,000,000	1,000,000	1,000,000
Equipment (estimate)	800,000	800,000	800,000
Library Books and Multi-Media Software (estimate)	100,000	100,000	100,000
Furniture and Equipment Subtotal	2,000,000	2,000,000	2,000,000
Technology Equipment (estimate)	1,800,000	1,800,000	1,800,000
Technology Procurement Consultant (estimate)	100,000	100,000	100,000
Technology Subtotal	1,900,000	1,900,000	1,900,000
F&E and Technology Subtotal	3,900,000	3,900,000	3,900,000
Haz Mat Monitoring (estimate)	100,000	100,000	100,000
Geotechnical Construction Monitoring (estimate)	100,000	100,000	100,000
Construction Testing and Monitoring (estimate)	150,000	150,000	150,000
Total Testing and Monitoring Subtotal	350,000	350,000	350,000
Contingency	100,000	100,000	100,000
B. Additional Services Items	4,726,050	4,696,050	4,686,050
C. Owners Budget for Direct Expenses (all are estimates)			
Hydrant Flow Test	2,000	2,000	2,000
Commissioning	80,000	80,000	80,000
CM Pre-Construction Services (PC Construction)	96,000	96,000	96,000
Clerk of the Works	200,000	200,000	200,000
Printing, Shipping Bid Documents, Etc.	20,000	20,000	20,000
Misc. SBC Expenses	100,000	100,000	100,000
Administrative Costs			
Advertising	10,000	10,000	10,000
Promotional costs (photography, printing, communications consultants, etc.			
Other, Travel, Food, etc.			
Relocation Costs	150,000	150,000	150,000
Legal/Financial Costs	100,000	100,000	100,000
General Counsel			
Bond Counsel			
Financial Advisor Fees			
Rating Attorney			
Printing Bond Documents			
Builder's Risk Insurance			
C. Owners Budget for Direct Expenses	758,000	758,000	758,000
Total Project Budget	84,559,010	84,181,050	87,187,105

TOTAL PROJECT COST

Option 1 - \$84,559,010

Option 2 - \$84,181,050

Option 3 - \$87,187,105

IMPACT OF ESCALATION AND SF INCREASE

Dover High School and CTC	
Original budget for new 1,300 student facility	\$68,000,000
Escalation per year	4%
Number of years	4
Total % of escalation	0.16
Total escalation	\$10,880,000
Total for new 1,300 student school in 2015	\$78,880,000
Student increase from 1,300 to 1,500	200
SF per student	203.33
Total increase in SF	40,667
Cost per SF	\$222
Total additional cost for 200 students	\$9,028,000
Total for new 1,500 student facility in 2015	\$87,908,000



CONSTRUCTION

THANK YOU!

