

28 September 2007

Portland City Council
City Hall
389 Congress Street
Portland, Maine 04101

The logo for Barba+Whelock is a blue, textured rectangular shape with the text "BARBA+WHELOCK" in white, uppercase letters centered within it.

Re: Nathan Clifford School Second Opinion

Dear Mayor Mavodones and Councilors:

I have been commissioned by The National Trust for Historic Preservation, Maine Preservation, and Greater Portland Landmarks to prepare a preliminary review of the New Construction vs. Renovation Portland Public Schools Draft Report, dated May 11, 2007, prepared by WBRC Architects and Engineers and offer a second opinion. Specifically I have been asked to address the cost differential between new and renovation scenarios to see whether there are alternatives that will continue to meet programmatic needs but retain the historic Nathan Clifford school for K-5 school use.

After reviewing the Draft Report and delving into some of the detail I am convinced that **the cost differential can be significantly reduced to the degree that retaining the Nathan Clifford School may become a viable option.** To what extent will depend on a more detailed review of the embedded logic through conversations with WBRC, the Portland School Board and/or Committee, and the Department of Education. Some of the differential has to do with State mandates, which are in conflict with best preservation practices for historic buildings.

WBRC has done an admirable job at comparing the five options to produce what appears to be an impartial assessment of the comparative values. However, the nature of comparative cost estimates is that they are broad brush. Creatively approaching the renovation of an historic school requires a different level of scrutiny to allow seemingly minor details to be questioned.

Note: 'Construction Costs' (Report, Cost Comparisons, Sections A) is a net cost. The Total Project Cost (Section E) is arrived at through applying percentage mark-ups of the construction cost to many of the line items in Administrative Costs & Reserve, Section B, and Fees and Services, Section C. These percentage mark-ups have an exponential affect once burdened by the soft costs to arrive at the Total Project Costs (Section E) which in Nathan Clifford's cost estimate is approximately 1.45 times higher. Therefore, identifying construction cost savings can have a great ripple effect.

With more time to delve into the details supporting this report, we would pursue the following questions/assumptions to arrive at a fully fleshed-out opinion.

1. Efficient use of existing space

The Nathan Clifford school concept design encompasses 62,760 sf as compared to a proposed new school of 52,000 sf. This amounts to 10,760 sf, or 20.6% more space in Nathan Clifford than a New K-5. The two proposals may achieve similar programmatic goals, however, the difference in area tips its hat to the problem that we are not dealing with an "apples to apples" comparison. In fact, the Nathan Clifford provides more space and thus, an attending greater cost. The cost differential between the Clifford School proposal of \$20.76 million and the New K-5 proposal of \$17.66 million is \$3.1 million or 17.5 percent more expensive. (see Report, pps. 41 and 44).

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Therefore, reducing the size of the addition at Nathan Clifford without reducing the program is an important factor. One way is to reduce the programmed space for the addition (new construction) by seeking alternatives within the renovated (existing) part of Nathan Clifford. Additions cost more than renovations; by redistributing the programmed spaces and reducing the size of the addition there is a net possible area loss of 4,410 sf at \$165/sf this amounts to a cost savings of \$725,000 plus soft costs (x 45%) bringing the gross savings to as much as **\$1.05 million**. Some of these alternatives might include:

- a. Lower Level. Space that is being renovated could be better utilized as program space rather than mechanical to reduce the amount of needed new construction (and reduce the footprint, reducing the impact on the site). For instance, the seemingly redundant Mechanical Room at the Payson Street end of the school could be made into fully habitable space by creating windows with secure window wells. The central Boiler Room is larger than most school boiler rooms; is this Mechanical Room needed? The cafeteria could readily fit in the windowed and higher ceiling at the Deane Street end.
- b. The historic stairs could be retained and brought to code by adding fire-rated enclosures at each level. The wide corridors should allow sufficient space for egress. Currently the plan calls for removing the stairs, converting them to program space and constructing entirely new egress stairs to all floors, an expensive alteration.
- c. On the upper floors there are two coat closets and a room between them at each end of the school. While charming, these could be combined into additional program space, eliminating the need for the costly destruction and reconstruction of the character defining stairs. Lockers (wood or steel) could be added to the corridors as the corridor width and a new fire suppression system would permit these.
- d. By rearranging some of these program spaces efficiencies may also be obtained in the size of the lobby outside the new gymnasium.

2. Asbestos Summary

“Complete abatement of plaster systems. \$285,000.” (See Report, pps. 29-30.) In historic buildings of all uses it is rarely necessary, nor recommended practice to remove all of the interior plaster. Has the option of encapsulation been explored? Does the asbestos constitute a real threat to health and safety or is it only the areas touched during construction that need abatement.

This cost is a significant budget item. Not only does the report recommend removing all the plaster in the school, but new materials must be installed (lesser quality gypsum wallboard, wood trim) and paint. In addition, by removing the plaster walls it is more likely that concealed (and encapsulated) conditions could be revealed that now require abatement and additional unwarranted cost. The construction cost is likely to be over \$325,000. (Though it is not clear in the report, I believe this cost is buried in the renovation cost category.) When burdened with the soft costs it could result in **savings of \$470,000** or more.

3. **Renovation costs**

Typically renovation costs are about the same as new construction on a project of this scale. Why does the renovation cost come out to \$174/sf while new construction is carried at \$165/sf? What other costs are embedded in the scope of the renovations? A more detailed analysis could reveal unnecessary expenses or alternatives. For instance, are there plans to rehabilitate or replace the windows? The DOE has a policy for replacement, even though it is typically more costly, often unnecessary, and counter to best preservation practices. We have developed cost comparisons that take into account maintenance over time, warranties, and life cycle costs to demonstrate this point. Could this policy be challenged? Cost savings not able to be determined without further information.

4. **Site Development**

(See Report, p. 41, Project Budget, Line 5)

Site Development costs for each of the comparisons carry a number based on 10% of the Construction Cost. For Nathan Clifford this amounts to \$1.09 million, which, for an in-town site that is small and previously developed seems very high. Without knowing what scope is included in this savings are hard to predict. If the site development cost was closer to half this amount. The savings, burdened with soft costs **could be as much as \$725,000.**

5. **Environmental Permitting**

(See Report, p. 41, Project Budget, Line 21)

For an in-town site, the environmental permitting for this project should be minimal. There are no wetlands or environmental issues on a site that has been in school use for 100 years. Perhaps this line item includes planning board review. If so it could probably be reduced to \$10,000 from \$50,000, resulting in a **\$40,000 savings.**

6. **Surveys/Soils/Testing**

(See Report, page 41, line 24)

This item is valued at \$100,000, which seems high for an in-town site that is already developed, and carried at the same rate as for the completely new K-5 school.

7. **Value engineering**

If the architects were given the charge to scrutinize the budget for potential savings to reduce the cost to the same budget as new construction without sacrificing program or quality, it would be likely that they could readily achieve a 5% reduction in construction (net) cost, resulting in a project cost savings of 7.25% or **\$1.03 million savings.** One question that might be worth asking is if the DOE is willing to fund an \$18 million dollar school, what would an \$18 million dollar Nathan Clifford School renovation/addition look like? In other words, if the cost is neutral what are the trade-offs? The answer may be revealed other opportunities for cost reductions.

8. **Temporary Facilities**

Regardless of which option is ultimately selected one facet that should be scrutinized is the cost of Temporary Facilities. In each of the cost estimates 4% of the Construction Cost is carried for this line item. For Nathan Clifford this cost is \$437,650. With diminishing enrollment, it is conceivable that any one of

the schools being vacated could be used for temporary facilities for the project under construction, allowing a potential cost savings.

9. Net differential

We've identified up to \$3.3 million in potential savings that will close the cost difference between the two scenarios. By reviewing more available data and being allowed to ask about specifics of embedded thinking, working with WBRC Architects/Engineers we could confirm these assumptions and prepare a more conclusive report.

One final consideration is the inherent life span of Nathan Clifford as opposed to a New K-5 school. The decision of which site to select should not be based solely on first costs. If after careful scrutiny, reusing Nathan Clifford still ends up costing more, it should be remembered that Nathan Clifford has already stood the test of time in its 100-year service life. With renovations, its life span will be indefinitely expanded, conceivably for another 100 years.

The schools that are under consideration for demolition and replacement - Baxter and West, for instance - were built in the 1950s and 60s; once demolished this amounts to a 50 to 60-year life span. What are the expectations for life span for a new school built for \$165/sf, when the cost of replacing Nathan Clifford in-kind would be 100's of dollars per square foot greater if built today?

Renovating Nathan Clifford would result in the continuation of a neighborhood school that has continuously served its constituency for a century and will continue to serve.

I plan to be present for the Council Meeting on Monday, October 1, and would be happy to answer any questions you may have at the meeting.

Sincerely,



Nancy L. Barba, AIA, LEED AP
Principal Architect

- c: Roberta Lane, National Trust for Historic Preservation
- Hilary Bassett, Greater Portland Landmarks
- Roxanne Eflin, Maine Preservation
- Earle G. Shettleworth, Jr., Maine Historic Preservation Commission

FACILITY ASBESTOS SUMMARY REPORT

Nathan Clifford Elementary School

The following asbestos summary report is a brief description of building materials that have been evaluated for asbestos content. The information provides a general overview of asbestos and non-asbestos building materials used in the construction of the facility.

More detailed information outlining the exact locations, quantities and condition of asbestos materials is summarized in the AHERA Management Plan and facility drawings.

KNOWN ASBESTOS MATERIALS

- | | |
|-----------------------------------|----------------------------------|
| * 9" x 9" floor tiles/adhesives | * Non-fiberglass Pipe / fittings |
| * Hidden pipe cover/fittings | * Old boiler components |
| * Plaster wall systems throughout | * Plaster ceiling systems |
| * Roofing perimeter flashings | |

NON-ASBESTOS MATERIALS

- | | |
|-----------------------------------|--------------------|
| * 2' x 4' ceiling tiles | * Roof deck system |
| * Fiberglass covered pipe systems | |

BUILDING MATERIALS IMPRACTICAL TO TEST

The following materials are typically suspect for asbestos content. Due to the nature of their location, condition, and composition testing is impractical until such time they can be damaged or accessed.

- | | |
|----------------------------------|-------------------------------------|
| * Chalk board systems / adhesive | * Fire doors / insulated wood doors |
| * Internal boiler components | * Underground piping |
| * Roofing under new rubber roof | * Gasketing / vibration boots |

**FACILITY ASBESTOS SUMMARY REPORT
NATHAN CLIFFORD SCHOOL
PAGE TWO**

ASBESTOS ABATEMENT PHASING

- | | |
|-----------------------------|------------------------------|
| * Cafeteria floor tiles | * Basement pipe cover |
| * First floor - floor tiles | * Second floor - floor tiles |
| * Basement - plaster | * First floor - plaster |
| * Second floor plaster | * Misc. pipe cover locations |

ASBESTOS ABATEMENT COSTS

Projected asbestos removal and disposal costs inclusive of design / management fees.

Complete abatement of asbestos flooring materials:	\$ 25,000.00
Complete abatement of asbestos pipe cover:	\$ 15,000.00
Complete abatement of abatement of plaster systems:	\$285,000.00
Hidden material and hazardous materials contingency:	\$30,000.00
Estimated budgetary allowance:	\$355,000.00

OTHER SUSPECT HAZARDOUS MATERIALS

- | | |
|------------------------------|-----------------------|
| * Florescent light ballast's | * Mercury thermostats |
| * Mercury switches | * Lead based paint |



Portland School Department
 Elementary
 Grades K-5
 Enrollment 400
 Area per Student 157

Clifford

WBRC Architects-Engineers, Inc.
 Site Comparison Budget
 April 12, 2007

	Major Capital Improvement Program			Other Funding	
	State/Local	Local Only	Total	Me. High Perf. Schools	
A CONSTRUCTION					
1 New Construction	17,100 sf @ \$ 165 \$/sf	\$2,821,500	\$0 *	\$2,821,500	\$0
2 Renovations	45,660 sf	\$8,119,741	\$0 *	\$8,119,741	\$0
3 Built in Equipment	6%	\$656,474	\$0 *	\$656,474	\$0
4 Technology & Communications Infrastructure	3%	\$326,237	\$0 *	\$326,237	\$0
5 Site Development	10%	\$1,094,124	\$0 *	\$1,094,124	\$0
6 Temp. Classrooms & Phasing	4%	\$437,650	\$0 *	\$437,650	\$0
7 Sewer & Water	Is	\$80,000	\$0 **	\$80,000	\$0
8 Off Site Improvements	Is	\$80,000	\$0 **	\$80,000	\$0
9 Demolition/Hazardous Removal		\$710,000	\$0 **	\$710,000	\$0
Subtotal		\$14,327,726	\$0	\$14,327,726	\$0
B ADMINISTRATIVE COSTS & RESERVE					
10 Land		\$0	\$0 **	\$0	\$0
11 Moveable Equipment	6% or Is	\$748,572	\$0 *	\$748,572	\$0
12 Technology	3%	\$429,832	\$0 *	\$429,832	\$0
13 Advertising/Insurance/legal	Is	\$100,000	\$0	\$100,000	\$0
14 % for Art	Is	\$50,000	\$0	\$50,000	\$0
15 Bid Contingency 5%	5%	\$716,386	\$0 *	\$716,386	\$0
16 Construction Contingency 5%	7.5%	\$1,074,579	\$0 *	\$1,074,579	\$0
17 Design Contingency	10%	\$1,432,773	\$0 **	\$1,432,773	\$0
Subtotal		\$4,552,142	\$0	\$4,552,142	\$0
C FEES AND SERVICES					
18 Architect/Engineer	8.0%	\$225,720	\$0 *	\$225,720	\$0
19 Architect/Engineer Concept (Renovation)	9.5%	\$1,093,091	\$0 *	\$1,093,091	\$0
20 A/E Reimbursable		\$100,000	\$0 **	\$100,000	\$0
21 Environmental Permitting		\$50,000	\$0	\$50,000	\$0
22 Life Cycle Cost Analysis		\$5,000	\$0	\$5,000	\$0
23 Commissioning	1%	\$109,412	\$0 **	\$109,412	\$0
24 Surveys/Soils/Testing		\$100,000	\$0	\$100,000	\$0
25 Owners Representative		\$50,000	\$0 *	\$50,000	\$0
26 Clerk of the Works		\$150,000	\$0 *	\$150,000	\$0
Subtotal		\$1,883,224	\$0	\$1,883,224	\$0
D PROJECT TOTALS		\$20,763,092	\$0	\$20,763,092	\$0
E TOTAL PROJECT COST	(Including All Available Project Funds)			\$20,763,092	

* Due to the fact that "Local Only" money is in the project a portion of this line item will be at local expense.

** Due to the fact that "Local Only" money is in the project a portion of this line item may possibly be at local expense



Portland School Department
Elementary
 Grades K-5
 Enrollment 400
 Area per Student 130

New K-5

WBRC Architects-Engineers, Inc.
 Site Comparison Budget
 March 22, 2007

	Major Capital Improvement Program			Other Funding	
	State/ Local	Local Only	Total	Me.High Perf. Schools	
A NEW CONSTRUCTION					
1 New Construction	52,000 sf \$ 165 \$/sf	\$8,580,000	\$0 *	\$8,580,000	\$0
2 Renovations	sf \$ - na	\$0	\$0 *	\$0	\$0
3 Built in Equipment	6%	\$514,800	\$0 *	\$514,800	\$0
4 Technology & Communications Infrastructure	3%	\$257,400	\$0 *	\$257,400	\$0
5 Site Development	30%	\$2,574,000	\$0 *	\$2,574,000	\$0
6 Sewer & Water	ls	\$50,000	\$0 **	\$50,000	\$0
7 Off Site Improvements	ls	\$100,000	\$0 **	\$100,000	\$0
8 Demolition/Hazardous Removal		\$400,000	\$0 **	\$400,000	\$0
Subtotal		\$12,476,200	\$0	\$12,476,200	\$0
B ADMINISTRATIVE COSTS & RESERVE					
9 Land		\$0	\$0 **	\$0	\$0
10 Moveable Equipment	6%	\$748,572	\$0 *	\$748,572	\$0
11 Technology	3%	\$374,286	\$0 *	\$374,286	\$0
12 Advertising/Insurance/legal	ls	\$100,000	\$0	\$100,000	\$0
13 % for Art	ls	\$50,000	\$0	\$50,000	\$0
14 Bid Contingency 5%	5%	\$623,810	\$0 *	\$623,810	\$0
15 Construction Contingency 5%	5%	\$623,810	\$0 *	\$623,810	\$0
16 Design Contingency	10%	\$1,247,620	\$0 **	\$1,247,620	\$0
Subtotal		\$3,768,098	\$0	\$3,768,098	\$0
C FEES AND SERVICES					
17 Architect/Engineer	7.0%	\$873,334	\$0 *	\$873,334	\$0
18 Architect/Engineer Concept (Renovation)		\$0	\$0 *	\$0	\$0
19 A/E Reimbursable		\$100,000	\$0 **	\$100,000	\$0
20 Environmental Permitting		\$50,000	\$0	\$50,000	\$0
21 Life Cycle Cost Analysis		\$5,000	\$0	\$5,000	\$0
22 Commissioning	1%	\$85,800	\$0 **	\$85,800	\$0
23 Surveys/Soils/Testing		\$100,000	\$0	\$100,000	\$0
24 Owners Representative		\$50,000	\$0 *	\$50,000	\$0
25 Clerk of the Works		\$150,000	\$0 *	\$150,000	\$0
Subtotal		\$1,414,134	\$0	\$1,414,134	\$0
D PROJECT TOTALS		\$17,658,432	\$0	\$17,658,432	\$0
E TOTAL PROJECT COST	(Including All Available Project Funds)			\$17,658,432	