

# Marblehead Village School Facility Project Q&A

May, 2008

Information compiled by the Village Building Oversight Committee and its architectural consultants, Symmes Maini & McKee Associates

For more detailed answers and additional questions, please visit [www.marblehead.com/schools](http://www.marblehead.com/schools) and click on “Village School Project” under “Latest News.”

## 1. Cost, funding and timing

### Is the State providing reimbursement for Village?

Yes. The Mass. School Building Authority (MSBA) has moved the Village School to its “Repair” project category. The project is eligible for a minimum of 40% reimbursement.

### How were the costs identified?

The Village Building Oversight Committee continues to work with Symmes Maini & McKee Associates (SMMA), the architectural firm used for previous Master Plans. SMMA’s staff includes architects, engineers, cost estimators and scheduling experts. Two independent project management firms (KVA and URS) have also confirmed the approach and cost. SMMA was also the firm used for the MHS and MVMS construction projects.

### What would it cost to do a gut/complete renovation or build a new Village School?

A gut/renovation of Village School today would cost \$45M; a new Village School would cost \$50M.

### Why does the project cost include “contingency” money?

The industry standard for the renovation of an existing building includes between 10% and 15% for contingency due to the likelihood of encountering unknown conditions during the construction. This project includes a 10% construction contingency.

## 2. Project schedule

### What’s the schedule? Can we just do the work over the summer?

The estimate for construction is between nine and twelve months, to be done in two phases: first the single-story building, then the three-story wing.

- During the first phase (winter 2009), the 6<sup>th</sup> grade will move to MVMS and occupy a first floor wing and two portable double classrooms. The 4<sup>th</sup> and 5<sup>th</sup> grades will occupy Village’s three-story building, which will be walled off from the construction area of the single-story building. There will be access to the gym/music/art wing and the playing fields and playground via exterior doors.
- Over the summer of 2009, the entire building will be under construction. In the fall of 2009, the single-story building (including the cafeterias) will be re-occupied.
- If the work on the 2<sup>nd</sup> and 3<sup>rd</sup> floors of the three-story building is not complete by September 2009, those two floors will remain walled off so that work can be finished and the 6<sup>th</sup> grade will remain at MVMS. The entire building will be opened by December 2009.

### What if we do nothing now and the system fails?

If the heating system fails, the school will have to be vacated. The impact would be severe to the instructional program and costly to the school system to relocate 700+ students and 75+ staff. It will take a minimum of one month to implement a combination of double sessions at the Middle School or High School and portable classrooms at either location. This will result in the extension of the school year to meet the state’s Time on Learning requirements.

- Double sessions, portable classrooms (more costly on an emergency basis), and summer sessions would not only impact students; families would have to cope with the resulting staggered day and extended year.
- An emergency project would still require a special Town Meeting and a Special Election. A minimum of four months would transpire before the design schematics or Requests for Proposals process could be started.
- Construction costs would escalate by millions of dollars due to the emergency conditions of the project.

### **Is this a good time to be doing a construction job?**

Yes. The components of the Village project make it an attractive public sector job for trades (roof, electrical, plumbing, HVAC etc.) to bid on. This job does not require heavy equipment or steel. Many companies are looking for jobs that will keep their crews working.

## **3. Heating system**

### **Why do we need new boilers? Can't we repair or replace the existing ones?**

The two steam boilers are well past their 30-year useful life and have been repeatedly patched. The lead boiler is 40 years old; the standby boiler is 51 years old. It is less costly to replace the existing boilers than to continue to repair them. It's not just the boilers that are failing; it's the heating system as a whole. The boilers are part of a deteriorating system that includes distribution piping, terminal units, controls and water supply, pumps, electric power, and chemical treatment.

- If the complete system isn't upgraded at the same time, commissioning and balancing will be hindered. A warranty will be difficult if not impossible to obtain for a boiler alone. Repairing this type of steam boiler requires that damaged sections be taken out of service (filled with cement and capped), which reduces the capacity of the boiler and increases the likelihood of further failures.
- A new boiler plant is cheaper to operate, provides efficient temperature control, and offers the opportunity to shift to natural gas, reducing the liability associated with the existing oil storage system. The new system will allow for a "zoned" approach to temperature control using less energy and saving money.

### **Why do we have to replace all the heat piping? Can't we use the existing pipes?**

The entire heating system is in poor condition. Approaching the repairs and replacements selectively will result in the piece-meal replacement of the entire system over the next several years, and that cost will far exceed the cost of performing the recommended scope as part of a single comprehensive project.

### **Why are we changing to a hot water heating system?**

A hot water system is more efficient, and much less costly to operate. A steam system must be operated at a high temperature regardless of how much heat is required; a hot water system provides the flexibility of operating the system at a lower temperature when the weather is warmer. Hot water systems are easier to control for occupant comfort. Maintenance costs for hot water systems are much lower than for steam systems.

### **Why are we running pipes overhead? Can't we use the crawl spaces again?**

In order to meet the fire code, overhead piping must be installed for the fire sprinkler system. This necessitates the installation of "suspended" ceilings. Running the new heat pipes overhead at the same time is cost effective. Pipes overhead are easier and cheaper to maintain, will last longer, and are more energy efficient.

### **Can't we just seal off the crawl space? Why do we have to abate it?**

It is difficult and costly to completely and effectively seal the crawl space, and the risk will remain that the occupied space is open to the crawl space environment that currently contains friable asbestos materials.

- There are other systems in the crawl space (building sewer and drains) that will require maintenance, and since the existing insulation is friable, it is not safe to access those systems without taking the appropriate safety precautions.
- The insulation is substantially deteriorated due to the high moisture content in the crawl space. The piping insulation has fallen to the dirt floor, so there are sections of piping without insulation, and in general, most all of the insulation has been rendered ineffective.

### **Why can't we run all the piping exposed below the existing ceilings?**

Exposed piping will likely be subject to some damage. Exposed valves can be damaged and/or tampered with. A clutter of piping reduces the ability to optimize lighting efficiency.

**What is a unit ventilator? And why do we need to replace the terminal units (unit vents)?**

Unit ventilators provide fresh air to the classrooms with intake vents and a fan. The vents are controlled by dampers and the air is blown over the water-filled coils to add heat when the system calls for it.

- Replacement is most cost effective; repairing or refurbishing the unit vents costs as much as new ones and will not increase life expectancy beyond a few years.
- Maintaining an adequate level of ventilation and temperature control is part of code to meet air exchange requirements.

**4. Codes, ceilings and lights**

**What compels (triggers) us to make accessibility upgrades? Can we get waivers?**

Once the value of any public project exceeds 30% of the school building's Fair Cash Value (FCV), compliance with all the building code requirements of 521 CMR (Massachusetts Architectural Access Board Regulations) is required. In this case, any work over \$2.5M necessitates that the entire building be brought up to code. Once the schematic drawings are complete, waivers will be applied for, but are not guaranteed.

**What compels (triggers) us to make fire/life safety upgrades? Can we get a variance?**

Mass. Code CMR 34 requires installation of a fire suppression system if work done is "major in scope." Variances for life safety issues are difficult to obtain, for obvious reasons.

**Do we need to replace the existing lighting? Can we reuse the present lights?**

The existing lighting is poor quality and not energy efficient. While ceiling work is underway it is more cost efficient to install new fixtures. In addition, the new fixtures provide higher energy efficiency/cost savings and meet the criteria for the Mass. High Performance Green Schools guidelines.

**5. Energy efficiency: the building goes "Green"**

**Does this project meet the Massachusetts "High Performance Green Schools" guidelines?**

The "Green Schools" guidelines were independently developed and then adopted by the Mass. School Building Authority to ensure that MSBA school projects are "green." The Village project will adhere to the "Green School" guidelines and "...utilize high efficiency, 'right sized' heating, ventilating, and air conditioning equipment and lighting systems...the building shell integrates the most effective combination of insulation, glazing, and thermal mass to ensure energy efficiency, and plumbing fixtures are specified to reduce water consumption...together, these measures significantly reduce the operational costs of running the school building."

**How will the improvements to the roof, windows, and MEP (mechanical, electrical, plumbing) systems affect energy use at Village?**

A new hot water heating system, double pane windows (replacing the existing single-glazed, metal-framed windows) and R-30 value roof are each inherently more efficient than the present system components, resulting in a combined 18% reduction in energy consumption.

**Can we install solar panels or wind turbines when we do this project?**

The Village School does not qualify for grants through the Massachusetts Technology Collaborative (MTC) because Marblehead is served by its own municipal electric company that is not a part of MTC, however, the school district is exploring all opportunities for alternative energy grants.

- Marblehead will receive \$100,000 from the State for alternative energy development. It is possible that Village will be chosen as a location to implement a program for use of a portion of this money.
- Grants will be pursued in order to receive assistance with installing solar thermal panels that would support domestic hot water production, as well as installing a demonstration-type windmill that would serve as a learning tool for students, however it would not displace a significant portion of the school's electric demand.