

**PHASING / RENOVATIONS STRATEGIES**

**SECTION FOUR PHASING / RENOVATION STRATEGIES**

There are a number of issues that contribute to the decision whether to build new or renovate the existing high school building. One of the most influential issues is how the project could be phased. Project phasing affects costs, health and safety of students and faculty and the time frame for the project. Conducting a comprehensive renovation of Beverly High School would be a major undertaking. The following are a number of questions and a preliminary discussion of the issues.

- Where can teaching be conducted in a safe and appropriate environment while all portions of the school are renovated?
- What kind of time frame is needed to conduct a comprehensive renovation which may include some new construction?
- What are the cost implications of phased renovations including potential temporary replacement of teaching space?

Often for “renovation and addition” projects, the phasing is accomplished by constructing the new areas first. These new areas are then occupied, making the vacated areas available for renovation, presumably wing by wing. The same process of construction, renovation, occupying and vacating is done until all areas are completed. This process creates “swing space” that allows for leap frogging from construction to occupied space.

At Beverly High School, the need for new construction is limited, thereby requiring an alternative solution for “swing space”. Some options and issues include:

- Finding an alternative school or other building to temporarily house classrooms and other teaching spaces. This type of space should be in close proximity to the high school to allow students to easily access core facilities such as gymnasium, library, cafeteria, art and music etc. We are not aware of a building that could serve as a high school facility in this way.
- Setting up temporary “portable classrooms” on the school site. This could be done by either purchasing or leasing portables. This is the more likely method of providing the needed swing space at Beverly High School.
- Due to the need for comprehensive renovations, each renovation phase needs to be a discrete building area, large enough to warrant a defined construction period. Assuming an entire wing would constitute a phase,

portable classrooms might be needed for as many as 20 classrooms plus toilet rooms and support spaces.

- The use of the portable classroom wing is another discussion for the school department. This could be a literal replacement of the displaced classes or could take a drastically different approach such as housing the entire ninth grade each year until completion.

### Implications of Phased Construction

- A. **Increased Construction Schedule** – Each portion of the school will require work by most all trades, including but not limited to: floor, ceiling and wall finishes, structural, mechanical, plumbing, fire protection and electrical systems. This broad spectrum of work will require an estimated 10 – 12 months for each phase. Based on the discussion of “swing space” the number of phases could vary. For discussion purposes, we will assume a minimum of six (6) distinct construction phases for a construction period of six years. This is compared to an approximate two-year construction period for a new building of the appropriate size.

(Summer months will be scheduled for maximum efficiency but could not accommodate an entire phase.)

- B. **Increased project costs** – There will be increased construction and project costs resulting from phasing over that of a single-phase construction renovation project. These increased costs include such things as:
- The contractor's overhead costs
  - Material and labor cost increases, some of which can only be estimated given the length of the project.
  - Inefficiencies of completing building systems requiring some sub-contractors to mobilize and demobilize a number of times through the life of a project
  - Increased time involvement by the design team staff and others.
  - Swing Space – The cost of purchasing or leasing portable classrooms can be significant, depending on how many are necessary.
  - Moving costs conducted on multiple occasions
- C. **Disruption to the Teaching Process** – The nature of swing space and the sometimes less than ideal specialty space can cause increased time for class changes and confusion at the start of each phase while students get used to the new temporary floor plans. These possible disruptions need to be assessed by the school department.

- D. **Specialized Programs** – Some specialized programs may need to be temporally housed in non-specialized classrooms. It will not be economically viable to provide temporary facilities for programs such as physical education / lockers, music, art, TV studio etc. The school department will need to analyze whether some programs need to be altered or curtailed during the renovation of these specialty areas.
- E. **Health and Safety** – This is a priority for both of the students and faculty when conducting renovations within an occupied school. For discussion purposes, we suggest that entire wings make up each phase. This will allow for a discrete boundary between occupied space and construction areas. Issues to be addressed include noise, dust, disruption of engineering system, maintaining of safe egress paths etc.
- F. **Hazardous Materials** – The phasing schedule will likely be exacerbated by the need to remove hazardous materials, which may include asbestos, lead paint or PCB's. This activity will need to precede the renovation of each area.
- G. **Engineering Systems** – A major renovation will include replacing primary and secondary switch gear, transformers, boilers and other similar head-end gear. The timing of these component replacements will need to be reviewed. Redundant systems may be necessary so that old systems are not overtaxed and the new systems can take over in the event that the old systems do not "survive" a protracted construction schedule.