



## Office of Facilities Planning Newsletter #104 – July 2010

### Housekeeping reminders

Submissions – we continue to receive incomplete submissions. The most notable omissions are resolutions and popular vote tallies regarding the financing of projects. Please make sure to include these resolutions with your submissions. For bond-funded projects, we need a copy of the bond resolution and a clerk certified copy of the vote tally. For cash-funded projects, we need a copy of the budget referendum with project appropriate narrative highlighted and a copy of the vote tally. Only in instances of emergency projects is a copy of the board resolution and board vote tally sufficient documentation. Please contact your project manager with any questions about these requirements.

### Backlog

While the Backlog is better this year than in years past, there is still a significant delay for the mechanical review. We are currently reviewing projects submitted the last week of February which is a 16 week delay. The Architects are in great shape with a week or two backlog. The current mechanical delay can be traced to a significant increase in the number of Energy Performance Projects. We are not expediting any projects that are not truly health and safety or emergencies. Unfortunately, again this year, there will be a number of districts who do not receive permits in time to perform any construction this summer. We are sorry for the situation this creates in your district, but in order to treat all districts's fairly, we must adhere to a first in- first out policy for reviews. The architects are reviewing those simple mechanical projects that are simple and straightforward.

### Face-to-face reviews

Information regarding face to face review requests has been updated on our web site. The face-to-face reviews will only apply to projects that are new buildings, building additions, or Alterations - Level 3.

Submit requests for face to face reviews to Jeannine Murphy at [jmurphy6@mail.nysed.gov](mailto:jmurphy6@mail.nysed.gov)

Please visit our web site for additional information

<http://www.emsc.nysed.gov/facplan/FacetoFace.html>

### The Building Condition Survey and Structural Stability

As many of you have heard, there have been two significant structural collapses in schools earlier this spring. First, the Mt Vernon school district experienced a structural masonry collapse at the high school on an afternoon after classes were completed for the day. Fortunately no one was

injured. Second, a ceiling collapsed in a library of the Milton elementary school in the Marlboro school district. A custodian was in the room at the time but was not seriously injured.

At Mt. Vernon, a two story masonry wall behind the stage of the auditorium collapsed without warning and landed on a one story roof over a corridor and technology classrooms. The lower roof was severely penetrated by the failure, and masonry units landed in classroom space.

An investigation by several SED staff, district consultants, and independent structural engineers revealed serious deficiencies in the original construction of the wall dating back to the early 1960's. The wall did not contain any vertical rebar, any solid filled cores or pilasters, nor did it contain any horizontal bond beams. There were some superficial expansion joints in the masonry that were not installed properly and did not function as expansion joints. There were insufficient ties from the masonry to the structural steel, and due to decorative pre-cast concrete vertical corners, the end wall was insufficiently tied to the steel and masonry of the auditorium side walls. The masonry was not even sufficiently tied to the structural steel at the top of the wall. In effect it was akin to a freestanding wall 30 ft high by 100 ft long.

We also took the opportunity to review the 2 story auditorium side walls, and a simple visual inspection reveals problems that must be addressed. For example, there are bolts from the block masonry to the structural steel. Unfortunately the bolt holes appear to be approximately 3/4 in, the bolts are approximately 3/8 in, the nuts and washers are loose, and worse, they are small enough to fit through the 3/4 hole in the steel! Clearly these conditions will not provide any resistance to movement, and currently provide no function at all.

At the Milton elementary school, the ceiling was installed within the last 10 years, and it appears that the new ceiling, lights, and other fixtures were attached to the existing original plaster ceiling and not to the structure above. The additional weight of the new equipment appears to have been excessive for the original ceiling supports which gave way, causing the entire new and existing ceiling to come down.

We must learn several very important and critical lessons from these issues. First, just because the construction has been in place for a significant period of time, does not mean that it was built correctly, or according to the approved plans. At Mt. Vernon, the loose bolts in the auditorium side walls (and whatever deficiencies may have existed in the collapsed wall), could have been discovered and corrected at any time in the last 50 years. A good periodic visual inspection (the BCS and AVI) may show movement, deterioration, cracks, or many other conditions that were not previously evident. Use these tools to your best advantage to avoid potentially catastrophic situations. All systems should be completely inspected during the BCS, and followed up annually during the AVI. REMEMBER: you only submit summary information in each category to SED on the BCS. For example, on the BCS you might state that exterior walls are in satisfactory condition. That is an overall assessment for all exterior walls in the facility. The level of detail behind that assessment that is retained by the district and its consultants should be far more detailed. While the overall condition may be satisfactory, the south facing pool masonry wall may show signs of a failed vapor barrier, and the northeast classroom wing might require repointing. That is the information useful to plan capital improvements on a priority basis in your 5 yr capital facilities plan.

Second, these situations demonstrate that it is critically important for district staff be familiar and knowledgeable regarding the work currently going on across the state in construction projects. We do not expect district staff to be construction experts, but you should participate in all construction meetings to become familiar with any issues, ask questions of your consultants, review inspection reports, tour construction sites (with safety gear like hardhats and safety glasses) and point out things you see or do not understand. Many issues are caught by the untrained eye simply because something does not look right. Do not settle for shoddy work, or work done in an “un-workmanlike” manner. With the top dollar that we collectively pay for school improvements, all work should be completed in a competent professional manner. The first step in making our investments last for their useful life is ensuring they are built in accordance with the approved plans, details, specifications, manufacturer’s literature, and generally accepted construction practices. Also ensure your professional consultants are visiting your sites often, as they are responsible for making the code required inspections, turning documentation of those inspections over to you, and signing the Certification of Substantial Completion at the completion of the work. That form cannot be knowledgeably signed without regular visits to the job site.

### **Compliance and permits: need to submit required survey documents**

The Office of Facilities Planning will be implementing new policy effective July 1, 2010 in an attempt to encourage better compliance with various requests for information, and compliance with commissioner’s regulations.

For example, documentation was requested from several hundred districts earlier this year regarding folding partition maintenance requirements in compliance with Commissioner’s regulation. After several notices and some telephone follow-up, there are still significant numbers of district’s that have not responded to the request.

Additionally, a number of districts have not submitted the 2009 AVI as required by the statutory deadline of January 15<sup>th</sup>, 2010.

The department cannot ignore non-compliance with Commissioner’s regulation. Effective July 1, 2010, we will begin denying building permits and building aid for all projects in districts where there are outstanding compliance issues. Any districts that are included in the above examples should resolve any issues prior to that time. This policy will remain in effect for future requirements such as the 2010 Building Condition Survey.

### **Steel Shipping Containers Used for Storage Buildings**

There has been much discussion recently regarding wind loading on shipping containers used for storage on school grounds, especially in the high wind areas of Long Island. We have researched the issue and have come to the following conclusions.

According to the International Building Code Commentary, the intent of the wind load provisions of the code are to protect the occupants of buildings and to prevent damage to adjacent buildings because of the detachment of major building components, structural collapse or flying debris.

In that these structures are not occupied buildings, there is very limited concern with protecting occupants. The steel containers themselves are designed to resist the “conditions aboard ship” which

were derived from a 1964 study of maximum acceleration values under the worst sea and wind conditions, in addition to being capable of stacking 8 fully loaded containers. This would negate the concern of damage to adjacent buildings because of detachment of major building components. The dead load of an empty 20 ft. container is approximately 5,000 lbs. and a 40 ft. container is approximately 8,000 pounds. The Code's Basic Wind Speed Chart is for a 3 second gust, which could, in rare cases tip a container over or cause it to slide slightly, but it is unlikely that these units could become flying debris.

Therefore as the Authority Having Jurisdiction and in accordance with section 107 of the Building Code of New York State, the department has concluded that steel shipping containers placed on school grounds do not require additional wind resisting structural features. They must comply with our requirements for ventilation and exiting hardware.

### **Temporary Greenhouse**

In the past year there have been many requests for information/clarification on the installation of "greenhouses" on school sites.

We have researched the subject and offer the following guidance.

A permanent greenhouse structure is regulated by the Building Code of New York State (code) and the SED Manual of Planning Standards and must comply fully with their requirements.

A "temporary greenhouse" is defined in the NYS Uniform Fire Prevention and Building Code Act as specialized agricultural equipment having a framework covered with demountable polyurethane materials or materials of polyurethane nature and lacking a permanent and continuous foundation, which is specifically designed, constructed and used for the culture and propagation of horticultural commodities. A "temporary greenhouse" may include supporting poles embedded in non-continuous concrete. In no instance will a temporary greenhouse be used for the retail sale of any farm or non-farm products.

The NYS Department of State Codes Division issued a technical bulletin regarding "temporary Greenhouses" as follows; the Code does not regulate the construction of a temporary greenhouse. A temporary greenhouse does not have to be located on a farm, nor in an agricultural district. A temporary greenhouse may be for personal use or for commercial use; however, it cannot be open to the general public for the sale of products. The definition, nor anything else in the law, requires the temporary greenhouse to be dismantled periodically.

In light of the above determination by the Department of State and as a result of SED internal discussions we have determined that:

A temporary greenhouse that meets the construction requirements above shall be limited to 350 sf. with no heat or electric devices allowed. It shall have at least one door with appropriate exiting hardware which can be operated from within the space. The structure shall not be located closer than 15ft. from any other building. These structures are to be used for agricultural purposes only, not for storage.

A building permit will not be required, nor shall a building number or an annual inspection be required. We will consider these structures similar to the way we treat dugouts.

It is imperative that the districts ensure that the temporary greenhouses are constructed and operated safely.

## **The “C”s of SED Project Submissions: COMPLETE, COORDINATED, CODE COMPLIANT**

**COMPLETE:** The project design documents, plans and specifications, must include all design information and details required to determine code compliance. Missing fire dampers, smoke dampers, electric circuits, emergency lighting, exit signs, fire alarm devices, specification sections, etc are not acceptable. Sizes and ratings of materials and equipment, such as wire/conduit/fuses/circuit breakers/pipes/ducts/strobe candela/etc, must be indicated. Required systems and all of the associated devices, such as electrically operated partition safety systems, must be included and designed completely. All schedules such as door hardware, electrical and mechanical equipment schedules must be complete. Identification (name and number) and square feet of rooms/spaces must be identified. Investigative work needed to provide complete designs, such as soil borings and fire hydrant flow/pressure tests, must be performed and incorporated into the design prior to submission to SED. In addition, all other project related documentation (SHPO letters, asbestos letters, SED forms, change orders, etc) required by SED must be complete and include supporting documentation as required.

**COORDINATED:** The project design documents, plans and specifications, must be fully coordinated among all trades. Fire rated construction, shown on architectural drawings, must be coordinated with mechanical drawings such that required fire dampers are shown. Smoke barrier construction, shown on architectural drawings, must be coordinated with mechanical and electrical drawings such that required smoke dampers are shown. Secondary (emergency) roof drains must be coordinated between the architectural, civil, and plumbing drawings. Site features, shown on civil drawings, which require power, such as pumps and signs, must be coordinated with electrical drawings such that required electrical circuits are shown. Electrical requirements for equipment provided by the mechanical contractor must be coordinated with the electrical drawings. Required submissions to utility companies (electric/gas/telephone/cable/etc) and state or local authorities (water/sewer/DOH/DEC/etc) must be performed prior to submission to SED.

**CODE COMPLIANT:** The project design documents, plans and specifications, must conform to all applicable provisions of the New York State Uniform Fire Prevention and Building Code, the New York State Energy Conservation Construction Code, and the building standards of the New York State Education Department. Design documents must clearly indicate code compliant building areas, fire areas, smoke zones, fire rated construction, means of egress, areas of refuge, fire hydrants, fire apparatus access roads, accessibility, fire alarm, fire sprinklers, standpipes, fire pumps, emergency lighting, exit signs, generators, kitchens, pools, elevators, etc. Site/civil, structural, architectural, mechanical, electrical (power, lighting, systems), plumbing, fire protection; etc design documents must comply with all applicable requirements.

Project submissions to SED must be complete, coordinated, and code compliant. All too often, project submissions to SED do not follow these simple guidelines.

SED architects, engineers, project managers, and support staff as well as every other school district in the state are all impacted by submissions that are not complete, coordinated, and code compliant. It takes extra time to review the original submission of these projects and the addenda required to obtain SED approval. This extra time impacts the efficiency of the SED Office of Facilities Planning and impacts the timely approval of projects submitted by other school districts.

It is the responsibility of the New York State Licensed Architect or Professional Engineer of Record to ensure that project submissions to SED are complete, coordinated, and code compliant. Appropriate QA/QC (Quality Assurance and Quality Control) must be performed by the A/E of Record prior to the submission to SED. The A/Es who provide their stamp and signature on the project documents are responsible for the content of the submissions.

Submissions to SED that are complete coordinated, and code compliant will assist SED in the effort to provide timely approval of projects for all school districts. Please apply these simple guidelines to all SED project submissions.

### **AHERA Air Sampling Requirements in Dirt Crawlspace**

Many school districts are involved in projects this summer which will require asbestos abatement in dirt-floored crawlspaces. Aggressive sampling as per the code rule presents a problem in these situations. The dirt floor creates airborne dust which can over-load sample cassettes and thus render them un-readable and unacceptable under Industrial Code Rule 56 and AHERA requirements. This result's in re-cleaning and re-sampling of the area, and in some cases may result in multiple failures/re-cleanings/re-samplings, each adding time and cost to the process of clearing a regulated work area.

Unfortunately, AHERA does not provide flexible language concerning this issue. The EPA's Office of Pollution Prevention and Toxins (OPPT) recognized this problem many years ago and, in 1994, had attempted to propose new language amending AHERA that would have addressed this area of concern. However, the amendments were never pushed forward.

Mr. Chris Alonge of the NYS Department of Labor has been in discussions with the EPA and they have acknowledged that the current regulatory language is inadequate in some cases. The EPA's OPPT suggests that common sense be used in such situations and if it is necessary to provide guidance to address those deviant scenarios, one should refer to the language used to address alternative approaches as presented in the drafted 1994 AHERA amendments. Although they are not legally binding, are not captured in their regulations, and are not enforceable, the discussions presented provide a reasonable approach for dealing with these situations. See attached.

NYS DOL has accepted, by variance, a clearance air sampling strategy that does not involve the use of "normal", aggressive air sampling techniques. Clearance air samples are collected during final cleaning activities. This method appears acceptable to both NYS DOL and EPA.

The accredited project designer shall develop and include in the project design the modification to be followed, including the particular element to be modified, and a justification for deviating from the aggressive air monitoring method, addressing the elements of subparagraphs § 763.90(i)(6)(ii)(A) and (B) and submit the request for a variance to the NYS DOL.

### **AHERA-modified air sampling from 1994 amendments**

Preamble: Finally, EPA is proposing to add a section to provide for modifications to aggressive air clearance monitoring methods. There are a number of areas, including crawl spaces, attics, or tunnels, which may be the site of response actions which, for one reason or another, do not readily lend themselves to the prescribed aggressive monitoring techniques. For example, these areas may not have sufficient space in which to set up stationary fans, or they may have dirt floors which could clog the filters. These types of areas may qualify for a modification to the aggressive air monitoring methods if they are located in a non-student, limited-access area, the project designer develops a modified plan which provides for maximum air mixing and includes a justification for the modifications, and the individual points of access to the area are posted with warning signs. No modifications can be made solely for economic reasons. Modifications will not be permitted in areas above suspended ceilings, areas which act as air plenums, or areas which house return air or supplied air ducts. Modifications may not be used in order to avoid the requirement that the abatement work site be thoroughly cleaned upon completion of a response action.

### **Proposed regulation text:**

(6) Modifications to aggressive air monitoring methods will be permitted in circumstances meeting the following conditions, except that such modifications will not be permitted solely for economic considerations, or solely to lessen the contractor's responsibility to thoroughly clean the abatement work site, or in spaces above suspended ceilings or in areas that act as an air plenum or house a return or supplied air duct.

(i) All modifications shall include a means for mixing the air within the abatement work site to the maximum extent possible.

(ii) The following circumstances may qualify for modification to aggressive air monitoring methods if the abatement work site is and will continue to be a non-student, limited access area, and:

(A) The abatement work site is located within a tunnel or crawl space with a dirt floor, or in an attic covered with blown-in or sprayed-on insulation which is documented in the management plan as non-asbestos; or

(B) Based on configuration, size, or other physical characteristics of the abatement work site, it would not be possible to accomplish one or more elements of the aggressive air monitoring method.

(iii) Abatement work sites located in areas described at § 763.90(6)(ii)(A) are exempt from the requirements of removing containment barriers or applying lockdown encapsulants prior to conducting final air clearance monitoring, if it is necessary to prevent the overloading of sampling cassettes.

(iv) The accredited project designer shall develop and include in the project design the modification to be followed, including the particular element to be modified, and a justification for deviating from the aggressive air monitoring method, addressing the elements of subparagraphs § 763.90(i)(6)(ii)(A) and (B).

(v) Following completion of the modified air monitoring method, the abatement work site is subject to visual inspection requirements at § 763.90(g)(5) and all air monitoring requirements at § 763.90(i) except for those that are specifically modified in accordance with this subsection.

Please send any general comments, requests, or questions to FacPlan at [emscfp@mail.nysed.gov](mailto:emscfp@mail.nysed.gov) or 518-474-3906.

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