

Tips for a Successful Healthcare Project

HEALTH CARE CONSTRUCTION SUMMIT

Tuesday, May 27, 2008

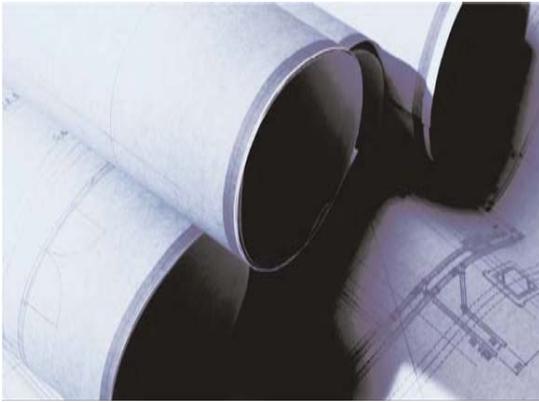
HVAC Systems





Topics for Discussion

- Why is health care construction different?
 - *Health care construction in California vs. other states*
- What is unique to your trade on a hospital project?
- Health care construction: The Ideal State vs. Reality
 - *What is supposed to happen*
 - *What does happen*
 - *Common slip-ups to avoid*
- Resources available to help contractors succeed?
- How to get involved in health care construction jobs



Health Care Construction is Different

“It’s a matter of life or death”

- Patient and staff safety depend on the proper operation of the systems in hospitals
- Life Support
 - *Emergency Power Systems*
 - *Medical Gas Systems*
- Infection Control
 - *Ventilation Systems*
 - *Plumbing Systems*
 - *Architectural Finishes*
- Earthquakes



Health Care Construction is Unique

Higher Standards for Performance

- Commercial buildings may not be repairable or functional following a “Design Event” (fire, earthquake, etc.)
- Hospitals must function following an incident
- Fire philosophy is to “defend in place”
 - *Patients may be too ill to evacuate*
 - *Patients are moved to adjacent “compartments”*
- Earthquake philosophy: Hospitals must be reasonably capable of providing services to the public
 - *Limited damage*
 - *Critical equipment and systems remain operational*



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What is Supposed to Happen

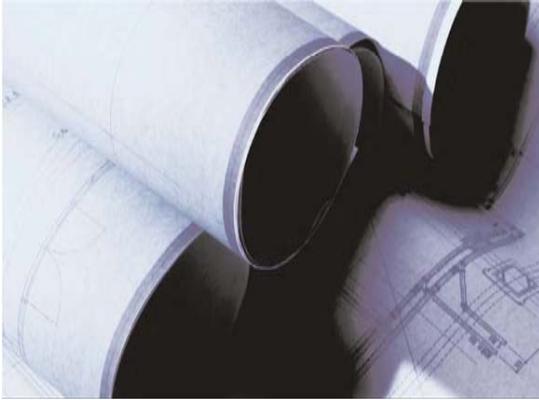
- The Hospital Design Team (Architects, Engineers, etc.)
 - *Identify existing conditions*
 - *Design a code compliant project*
- OSHPD Reviewers
 - *Identify every code deficiency and see they are corrected*
- Contractors
 - *Build according to the approved drawings*
- IORs and OSHPD Field Staff
 - *Inspect for conformance with the approved drawings*



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What Does Happen

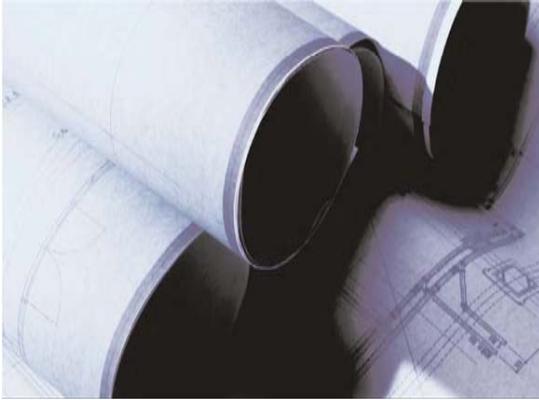
- The Hospital Design Team
 - *Designs a code compliant project based on the information they have and constraints of time and budget*
- OSHPD Reviewers
 - *Identify major code deficiencies, major coordination issues*
- Contractors
 - *Builds according to the approved drawings, accounting for variations in the existing conditions and uncertainty in the code and drawings, corrects “unbuildable” conditions*
- IORs and OSHPD Field Staff
 - *Inspect for conformance with the approved drawings and the code – identifying major and minor code deficiencies*
 - *Attempts to be flexible when code is “unclear” or where the design is “unbuildable”*



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Keys to a Successful Project

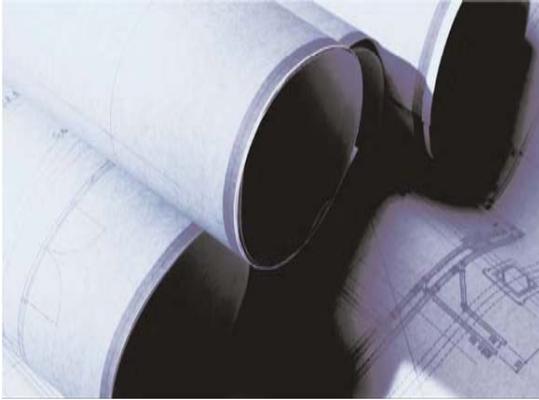
- Familiarity with the building code
- Coordination with other trades
- Craftsmanship!
- Foresight-
 - *Identify potential problems*
 - *Clarify before you build*
- Team effort – not a battle of wills



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When Problems Arise...

- Types of problems you may encounter
 - *Unforeseen Conditions*
 - *Work that does not match the approved drawings*
 - *Code deficiencies that were not caught in plan review*
 - *Code interpretation issues*
- When problems occur resources are available
- On-site resources
 - *IOR's*
 - *OSHPD Field Staff*



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Additional Resources

- How to get involved in health care construction jobs
 - *Contact you Trade Association*
- Industry resources
 - *Training & Certification Classes*
- OSHPD
 - *www.oshpd.ca.gov/fdd/*

- FDD LINKS**
- [FDD Home](#)
 - [Project Tracking](#)
 - [Codes & Regulations](#)
 - [CANS & PINS](#)
 - [Hospital Inspector Certification Program](#)
 - [Applications, Forms & Instructions](#)
 - [Staff Contacts](#)
 - [Calendar of Events](#)
 - [Ombudsman Information](#)
 - [Employment Opportunities](#)
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 - [Site Map](#)
 - [FDD About Us](#)
 - [Links](#)

Facilities Development Division (FDD) - Plan Review & Construction Observation

Plan Review and Construction Compliance Goal:

Plan Review and Construction Compliance will (a) provide quality service to our clients by being efficient, flexible, responsive and accountable, and (b) will review plans, specifications, and observe health care facilities construction to ensure compliance with applicable codes and regulations.

PLAN REVIEW & CONSTRUCTION OBSERVATION

- | | |
|--|--|
| → Plan Review Process | → Construction Observation Process |
| → 60/30/30 Program | → Testing Inspection Observation (TIO) |
| → Over the Counter (OTC) | → Hospital Inspector Certification Program |
| → Standard Comments | → Field Reviews - FREER |
| → Alternate Method of Compliance | → SB 1838 Exemption from Plan Review for Projects of \$50,000.00 or less |
| → Comment and Process Review (CPR) | → AB 2632 Project Review |
| → Required Weight & Size | → SB 224 Project Review |
| → Plan Approval with Comments | → Licensed Clinics |



General Tips

- Ensure you have a building permit before you start
- Have a copy of the OSHPD approved plans and specifications (contract documents) onsite
- Conduct a pre-job conference with the foreman, Inspector of Record (IOR) and OSHPD prior to installation.



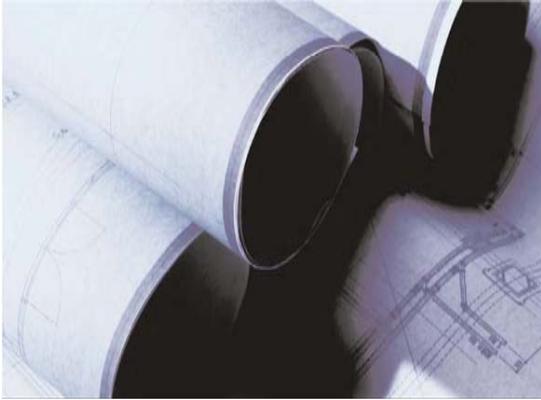
General Tips

- Plan to execute the work shown on the approved contract documents
- Don't perform work that is not shown on the approved contract documents which alters the intent, scope or function of the project until approved by OSHPD
- Avoid redesign and material substitutions after construction starts
- Respond to all OSHPD field staff issues documented in written field reports



General Tips

- Timely submittals of changes, redesign, alternate means or methods and material substitutions
- Install materials in accordance with the contract documents, manufactures installation instructions and/or approved listings
- Make sure your installation instructions and material submittals are available to the inspectors



Coordination of the Work

- Check if the equipment schedules, control and flow diagrams, floor plans, and details show consistent information, and the information is coordinated with the contract specifications
- Check if the mechanical equipment rooms, ceiling and shaft spaces have adequate space for installation and performing maintenance with ease



Coordination of the Work

- Interdiscipline Coordination - HVAC design must be coordinated with all other disciplines such as Architectural, Structural, Electrical, Controls contractor, Plumbing, and Site planning
- Know who is responsible to supply and install non fire rated and fire rated access doors



Other Tips...

- Construct components in accordance with project specifications and or recognized industry standards, ex. SMACNA
- Understand that the building code is minimum regulation. Below minimum regulation cannot be accepted
- Avoid alternate methods of compliance, materials, methods and engineering judgments
- Proper storage of materials on site, staged and warehoused



Other Tips...

- Properly close up open work at end of each days work per specification
- Construction filters and protecting ductwork and equipment during construction
- Follow Testing, Inspection and Observation program
- Execute final HVAC Testing and Balancing and any specified commissioning tests after HVAC and controls systems are complete



Finally...

Executing approved contract documents is easier than trying to correct installed or covered non code compliant work



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Q & A