Welcome

HEALTH CARE CONSTRUCTION SUMMIT

Tuesday, May 27, 2008

INTRODUCTION

joe la brie

- President of MakeItRight, Inc., Structural Engineering Design Professionals in Arcadia, California.

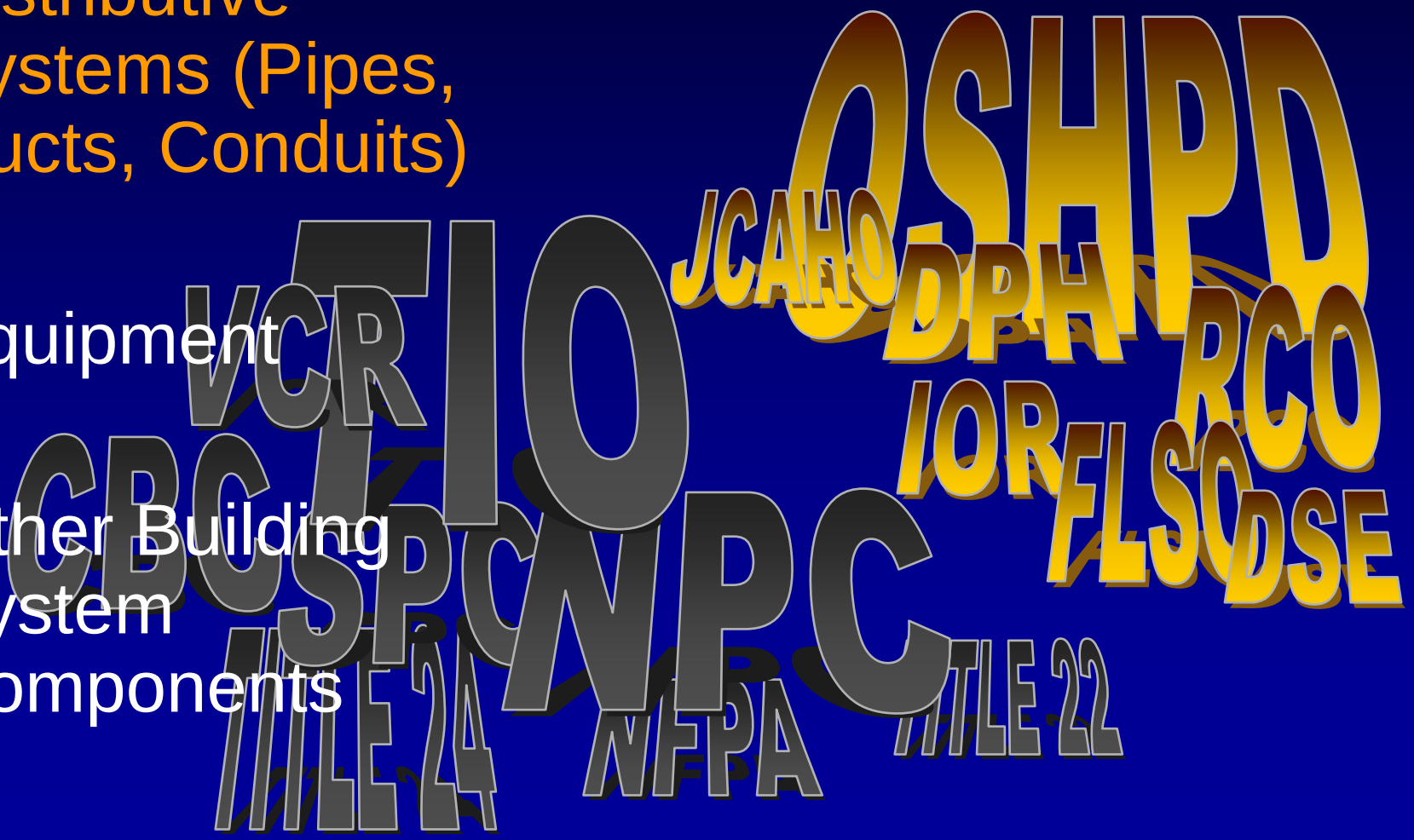
- Specialist in California Hospitals Design
- Vice Chairman of California's Hospital Building Safety Board

- Chairman of Subcommittee on Pre-Approvals for the HBSB ***("GUIDELINES FOR STANDARD PRACTICE")***

- Design professional for many OSHPD Pre-Approved systems

SEISMIC BRACING

- Distributive Systems (Pipes, Ducts, Conduits)
- Equipment
- Other Building System Components

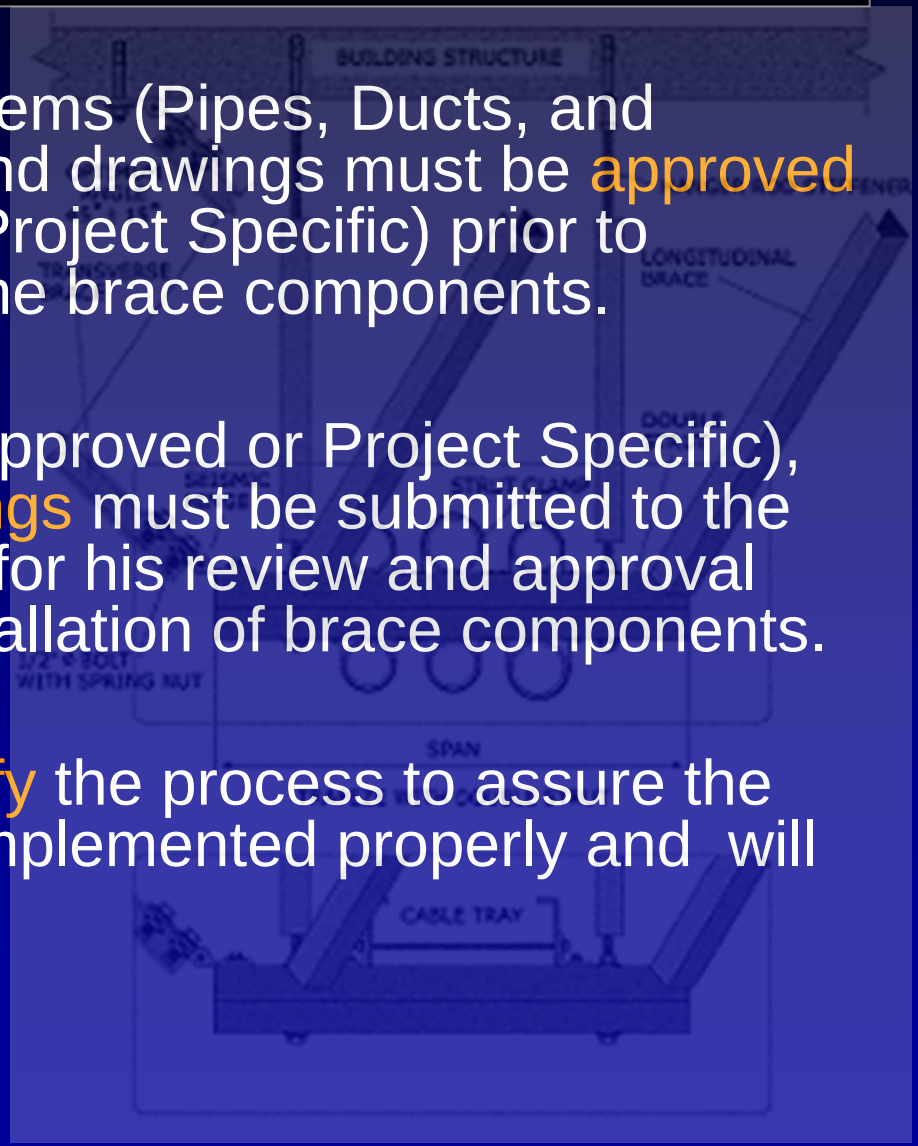


SEISMIC BRACING

- The bracing of distributive systems (Pipes, Ducts, and Conduits) must be designed and drawings must be approved by OSHPD (Pre-Approved or Project Specific) prior to fabrication and installation of the brace components.

- After OSHPD approved (Pre-Approved or Project Specific), Shop drawings / Layout drawings must be submitted to the Structural Engineer of Record for his review and approval prior to the fabrication and installation of brace components.

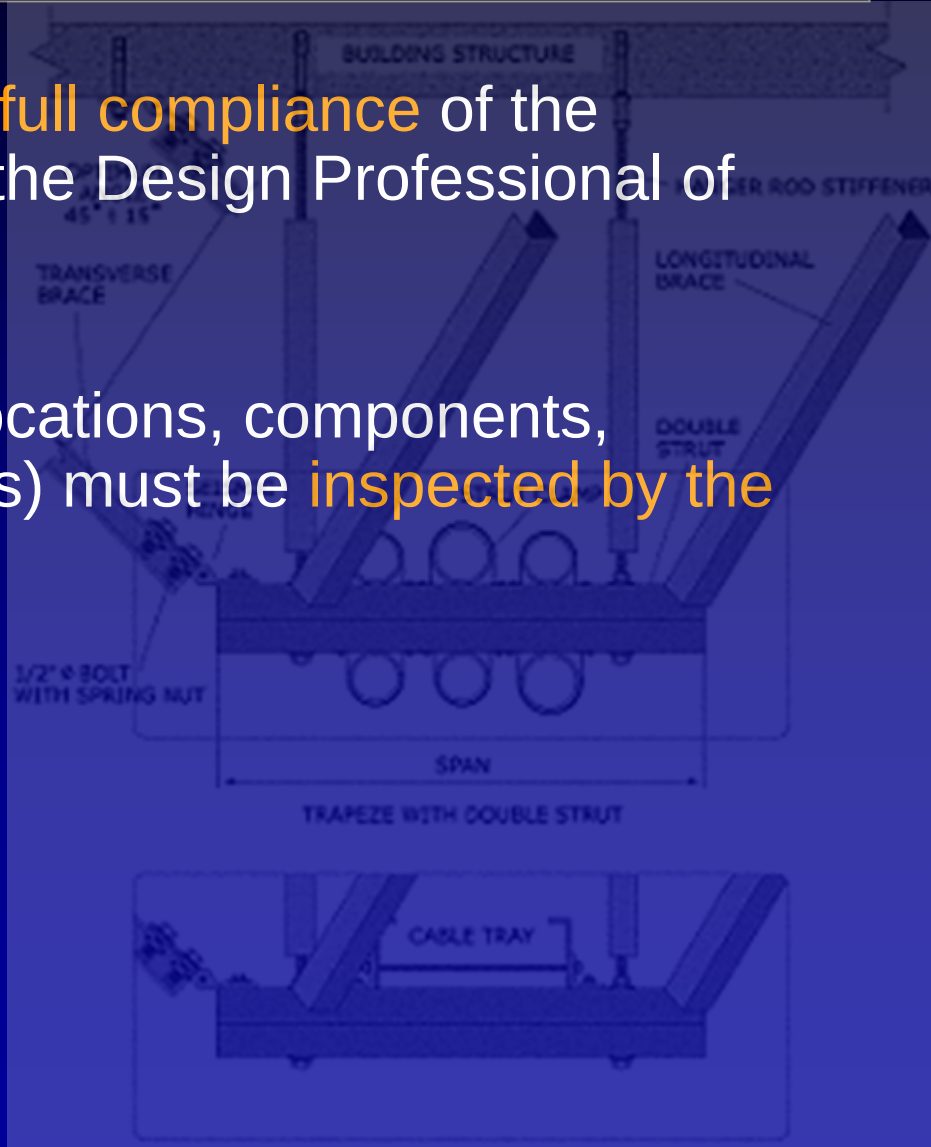
- The OSHPD field staff will verify the process to assure the quality control measures are implemented properly and will spot check conditions.



SEISMIC BRACING

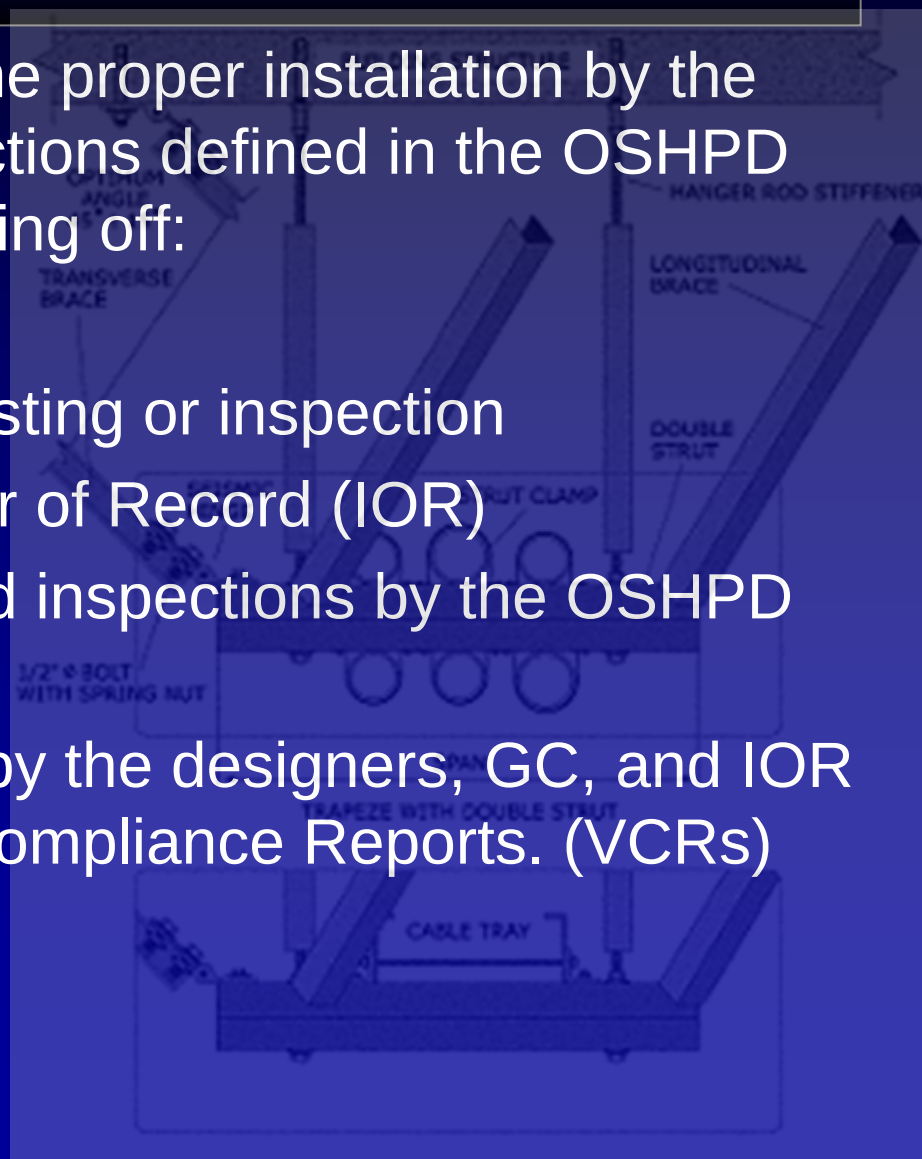
- The contractors must install in full compliance of the approved details and/or notify the Design Professional of Record (POR) of deviations.

- The complete system (brace locations, components, anchorages, and configurations) must be inspected by the Inspector of Record.



SEISMIC BRACING

- The project team will confirm the proper installation by the completion of Tests and Inspections defined in the OSHPD approved TIO Program by signing off:
  - Responsible persons for testing or inspection
  - Verification by the Inspector of Record (IOR)
  - Acceptance of the tests and inspections by the OSHPD field staff
  - Confirmation / Verification by the designers, GC, and IOR by completion of Verified Compliance Reports. (VCRs)



PROCESS CHALLENGES

- Identify and Resolve Conflicting Expectation
- Trade contractors must capture the scope of work and processing requirements within their contracts.
- The project team must not assume, but rather establish if the SEOR will “Handle” the bracing of distributive systems.
- Standard of Care for hospital construction is significantly different than commercial construction
- Requirements for Tests, Inspections, and Observations are not always integrated into the cost and schedule.

PROCESS CHALLENGES

- The success of any project can be directly correlated to those project participants containing the greatest degree of influence and the greatest motivation to cooperate within a team environment.

- All project participants are a product of the prior experiences and their genetic predisposition. “Be open minded”

BRACE IN THE HOLE

- Include seismic bracing as part of design
  - Engineer as much of the seismic bracing as possible with the rest of the building project.
- Use Pre-Approved details where possible.
  - The OSHPD pre-approval program was established to qualify the use of details for seismic bracing to minimize redundant plan review.
- Use tools like BIM to coordinate trades
- Establish a strong project team. Owner, Designers, Builders, Inspectors
- Understand the personality of each project team member

BRACING REALITY

- Requires thorough coordination with all trades
- Composite layout drawings that show distribution of all trades and brace locations.
- OSHPD approved details (Pre-approved and/or Project Specific)

PUT ON A HAPPY BRACE

- Construction must comply with the approved details (Pre-approved and/or Project Specific)
- Anticipate congested / unusual conditions and have solutions
- Consider / Anticipate Test, Inspection and Observation requirements.

THE PAPER BRACE

- Have the paperwork in order
- Pay attention to the Test, Inspection, and Observation (TIO) Program
- Approved layout drawings must include
  - Professional Engineer Stamp
  - General Contractor's Shop Drawing Stamp
  - Design Professional of Record Shop Drawing Stamp

MYBRACE

- From the start, understand agreements for bracing compliance responsibilities.
- Know who has responsibility for providing design calculations and drawings.
- Know who has responsibility for signing and stamping of the seismic brace design.
- Consult the Inspector of Record to understand his requirements for advanced notice of inspection and /or testing request
- Coordinate with other trades to anticipate conflicts.

FIREBRACE

- Fire Sprinklers and the system bracing are often treated as a deferred approval items. Where possible, include these designs with the overall builidng project.

- The Fire Sprinkler drawings must be stamped and signed by a licensed Professional Engineer (Not only a Fire Protection Engineer)

FIREBRACE

- The Professional of Record must stamp and sign the Fire sprinkler drawings
- The Professional of Record must process the deferred approval on behalf of the project team
- Submit Deferred Approvals early.

CONCLUSION

…ACCORDING TO FRESH KNOWLEDGE, FORM NEW JUDGMENTS AND MAKE NEW DECISIONS TO MODIFY PLANS IN ORDER TO MEET CHANGING SITUATIONS.

SUN TSU ESSAYS ON “THE ART OF WAR” WRITTEN IN CHINA 500 B.C

T H A N K S

Q&A

joe la brie