General
We would like to share campuses’ best practices and receive input for future policy and procedures on the topics listed below. In preparation for the training, please review in advance the PowerPoint and “Criteria for Phased Permits” document and be prepared to contribute to the discussions on these topics as they pertain to your campus. There will be Door Prizes awarded to the attendees that provide the most valuable input!

- Checks and Balances during project permitting and inspection. The role of the Deputy Building Official vs the role of the Construction Administrator; how does your Campus assure there is no conflict of interest?
- Types of, and criteria for, phased building permits. [“Criteria for Phased Permits” document pertains to this topic.]
- Elevator Inspections at the pre-installation meeting and for final inspections.
- Electronic Inspection controls and inspection record drawings.
- Project commissioning. What has worked and what has not...and why.
- Facilities work inspections; the wide variation of, and approaches used to address.
- As-builts: BIM and the future – now and 5 years hence.
- Use of feedback of inspection issues into project planning. How does your campus do it?

Presenters
- Jim Hoffman – Chief of Construction Management, CPDC, CSU Office of the Chancellor
- Tom Kennedy – Chief of Architecture and Engineering, CPDC, CSU Office of the Chancellor
- Ron Abbott – Inspector of Record, CSU Sacramento
- Roman Cooper – Inspector of Record, CSU Northridge
- Mark Zakhour – Manager, Construction Services, CSU Long Beach
- Steve Guarino – Chief, Fire Life Safety Division, Office of State Fire Marshal
- Sandy Margullis – Supervising Deputy, Office of State Fire Marshal
- Ernie Paez – Chief, Fire Life Safety Division, Office of State Fire Marshal
Agenda

Start 8:00 AM

• Introduction
• Delegation Plan
  ✓ Checks and balances - Group Discussion
• Quality Control of the Quality Assurance Process
• Building Permit Process
  ✓ Types and criteria for phased permits – Group Discussion
• Coordination of Plan Reviews
• CSU / SFM Permit Process

Break 10:00 – 10:15 AM

• IOR / AE Cooperation
• CASp Inspections
• Inspection Process
  ✓ Elevator inspections – Group Discussion
  ✓ Electronic inspection record drawings and inspection tracking software - Group Discussion
  ✓ Facilities work inspections, campuses approach - Group Discussion
  ✓ As-builts, BIM and the future - Group Discussion

Lunch 12:00 – 12:45 PM

• Special Inspections
• Sustainability
• Industry Representatives
• Quality Standards

Break 1:30 – 1:40 PM

• Start-up Testing and Closeout
  ✓ Commissioning - Group Discussion
• Feedback of Inspection Issues into Future Project Planning
  ✓ Facilities Inspections - Group Discussion
• Wrap-up and Discussion
  ✓ Best practices
  ✓ Plus / Delta

Adjourn 3:30 PM
Criteria for Phased Construction Permits

Following are descriptions of phased construction building permits, and the criteria for the issuance of these permits. Campuses are limited to permits for these phases in most circumstances. If other types of permits are determined to be important to the project CPDC shall be contacted for agreement on permit criteria for that specialized permit. In all cases, campus shall not begin project construction without a Campus Building Permit, certified by the Campus Building Official that all of the prescribed criteria described in the following have been completed.

Plan-check Process

Project Code Analysis set

1. For all projects not appropriate to be approved by the Campus Deputy SFM, and as an early component of Schematic Design, Campus shall develop a Project Code Analysis document set to establish and confirm design intent. The Project Code Analysis set shall contain:
   a. Project Permit Schedule
   b. Site Plan
   c. Civil plan, including all utilities
   d. Code analysis
   e. Floor plans (isometric or 3D views optional but helpful)
   f. Elevations (renderings optional but helpful)

2. CPDC recommends that Campus secure an independent plan check review and include the resulting comments of that plan check review on the Project Code Analysis set before SFM submittal. After plan check comments are resolved, submit to OSFM for approval.

3. For projects $3MM+, Campus shall submit the Project Code Analysis and schedule an in-person review meeting with OSFM, the Campus design team, and CPDC representatives.

4. Submit the Project Code Analysis to OSFM Sacramento, and incorporate comments into a revised Project Code Analysis package and submit within 7 calendar days of the meeting. The OSFM review will be a back-check confirmation that all comments are incorporated. Once OSFM approves the Project Code Analysis, it shall be included as an OSFM-approved reference in all future project submittals to OSFM.

Design Development and OSFM Interface

1. CPDC encourages Design development “Plan-Flip” Meetings between OSFM and CSU project teams to help facilitate OSFM’s understanding of the construction documents.

2. The purpose of the Plan-Flip meeting is to address review questions, and in doing so, reduce OFSM review durations. Campus should schedule these meetings to take place at all critical project junctures, and most importantly as part of the OSFM acceptance of documents for review and approval prior to issuance of any CSU permit. Campus shall engage and make OSFM a part of required project solutions, and keep OSFM up to speed with a project’s progress and schedule.

3. The Plan-Flip meeting is required if the campus elects to change design parameters affecting the previously OSFM approved Project Code Analysis package.

4. The Plan-Flip meeting is recommended at 50% CD. All proposed engineering judgment requests must be presented to OSFM in this manner.

5. The Plan-Flip meeting is recommended as a part of the 95% CD submittal.

Construction Documents Submittal to OSFM

95% Construction Documents submitted to OSFM must:

1. Include OSFM Triage checklist, filled out, all criteria completed.

2. Campus Deputy Building Official shall provide a letter to OSFM as part of the review package that warrants that the project is code compliant, has been plan checked as detailed in CSU’s Major Project Checklist, and incorporates all criteria agreed upon to date with OSFM.

3. Complete all plan-checks, including independent Fire-Life-Safety review, with all comments incorporated into plans.
Criteria for Phased Construction Permits

Demolition and/or Site Grading and/or Site Utilities Permit
Criteria for CSU Demolition/Site Grading/Site Utilities Permits are as follows:
1. Entire Project GMP in place.
2. Project funding established and available.
3. 100% Construction Document Civil drawings and specifications.
4. 100% Construction Document Demolition drawings and specifications for demolition permits.
5. 100% Design Development Architectural, Structural, MEP, Landscape, and Specialty drawings and specifications.
6. SRB and MRB site reviews and conceptual approvals on all required documents to date.
7. Review by all local jurisdictions of all elements that may affect Civil or Demolition, with comments received. All comments should be incorporated in documents.
8. Obtain OSFM Approval of Project Code Analysis and Demo/Site Grading/Site Utilities package.
9. Obtain Independent Plan Check Firm approval on site construction documents and conceptual approval on remaining 100% DD documents.
10. After initial submittal and OSFM triage approval, the project team including the civil engineer should meet in-person with the OSFM reviewer to obtain an over-the-counter SFM approval, which may be possible for site packages.

Vertical Construction/Footings/Building Permit
The Vertical Construction/Footings/Building packages must be covered under one permit. Campus may not break out footings as a separate permit without CPDC involvement.
Criteria for CSU Vertical Construction Permit are as follows:
1. Project GMP accepted.
2. Project funding established and available.
3. 100% Construction Document and specifications package completed.
4. SRB and MRB review and final approvals on documents.
5. Independent Plan Check Firm approval on all documents, including access and fire protection. All plan check comments incorporated into drawings.
6. Review by all local jurisdictions, comments received. All comments should be incorporated into documents.
7. DSA submittal made. CPDC will accept construction activities in advance of DSA written approval if independent plan check reviews have been completed, comments incorporated and a timely submittal to DSA has been made.
8. Submittal of 100% drawings described above, with all plan check comments incorporated, submitted to and approved by OSFM.
9. Projects three or more stories require CSU Building Official (Chancellor’s Office, Chief of Architecture and Engineering) signature approval on the building permit in addition to Campus Deputy Building Official approval.

OSFM Review status tracking
OSFM is seeking to submit a project plan check status report to the CSU every two weeks. This report will identify: current plan check status of every CSU project being reviewed by OSFM; name and location of OSFM reviewer; and email address of reviewers. CSU will post this information on the CSU CPDC website for Campus reference.
Inspection Management

August 2015
Session Agenda

- Delegation plan
- Quality Control of the Quality Assurance process
- Building Permit Process
- CSU / SFM Cooperation
- Inspection Criteria
- IOR / AE relationship
- CASp inspections
Session Agenda

- Inspection process
- Special Inspections
- Sustainability
- Industry representatives
- Quality Standards
- Start-up Testing & Closeout
- Feedback of Inspection Issues
- Discussion – Best Practices
Inspection Management

Tom Kennedy

DELEGATION PLAN

August 2015
What is a Delegation Plan?

Q: United States: A republic or democracy?
What is a Delegation Plan?

A: ... and to the republic for which it stands, one nation ...
...
We all operate under various statutory authority provisions

*Education Code*

*Health and Safety Code*

*Public Contract Code*

*Motor Vehicle Code*
Authority Chains

Ed Code 66606 establishes CSU, grants it authority in its capital program. Right to contract and construct. Chancellor is granted authority to delegate
EDUCATION CODE - EDC

TITLE 3. POSTSECONDARY EDUCATION [66000 - 101060] (Title 3 enacted by Stats. 1976, Ch. 1010.)

DIVISION 5. GENERAL PROVISIONS [66000 - 70129] (Division 5 enacted by Stats. 1976, Ch. 1010.)

PART 40. DONAHOE HIGHER EDUCATION ACT [66000 - 67400] (Part 40 enacted by Stats. 1976, Ch. 1010.)

CHAPTER 8. California State University [66600 - 66609] (Heading of Chapter 8 amended by Stats. 1983, Ch. 143, Sec. 52.)

The Trustees of the California State University shall succeed to the powers, duties, and functions with respect to the management, administration, and control of the state colleges heretofore vested in the State Board of Education or in the Director of Education, including all powers, duties, obligations, and functions specified in Article 2 (commencing with Section 90010) of Chapter 8 of Part 55, and all obligations assumed by the State Board of Education pursuant to that article prior to July 1, 1961.

On and after July 1, 1961, the Trustees of the California State University shall have full power and responsibility in the construction and development of any state university campus, and any buildings or other facilities or improvements connected with the California State University. The powers shall be exercised by the Trustees of the California State University notwithstanding Chapter 10 (commencing with Section 14950) of Part 5.5 of Division 3 of Title 2 of the Government Code and Chapter 1 (commencing with Section 10100) of Part 2 of Division 2 of the Public Contract Code, except that the powers shall be carried out pursuant to Chapter 2.5 (commencing with Section 10700) of Part 2 of Division 2 of the Public Contract Code known as the California State University Contract Law.

The Trustees of the California State University may accept gifts of land, or gifts of options on land, may accept and expend gifts of money for the purchase of land or options on land, and may enter into negotiations and contracts for the purchase of land for a future state university site in the vicinity of any of the areas specified in the recommendations contained in the Master Plan for Higher Education printed on page 42, paragraph 5, Senate Journal (Regular Session) for February 1, 1960, except that the gifts, expenditures, negotiations, and contracts shall not obligate the expenditure of any state funds for the purchase of the land or for development on the land, unless the Legislature subsequently approves the obligation by appropriating the funds for that specific purpose.

Any acceptance, acceptance and expenditure, or negotiations and contract may be conditioned upon an automatic reversion back to the donor or automatic termination of the negotiations and contract if a new state university is not established at a specific site prior to a specific date designated by the trustees and the donor or the trustees and the person or corporation with whom the trustees are negotiating or contracting.

(Amended by Stats. 1993, Ch. 8, Sec. 1.5. Effective April 15, 1993.)
Delegation Plan

The Campuses *Delegated* Authority

Each campus operates under an *annual* Delegation Agreement

*Conditional* on following statue and CSU policy

*Intentionally contains* Checks and Balances
CPDC A/E Technical Bulletin
14-042

Date: September 30, 2014
From: Thomas Kennedy, Chief of Architecture and Engineering, Building Official
Subject: CSU as Building Official
Distribution: Executive Facilities Officers, Directors of Facilities Operations, Campus Deputy Building Officials and CPDC Managers

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Information</th>
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<tbody>
<tr>
<td>1</td>
<td>Issue: Review of CSU (campus) Building Official role and new plan check process.</td>
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<tr>
<td>3</td>
<td>Where to Find: CPDC AE Project Reviews</td>
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<td>4</td>
<td>Website: <a href="http://www.calstate.edu/CPDC/ae/review/">http://www.calstate.edu/CPDC/ae/review/</a></td>
</tr>
<tr>
<td>5</td>
<td>Applicability: All projects</td>
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<td>6</td>
<td>Notes:</td>
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</table>

CSU is the Building Official for all CSU facilities. This includes all buildings on a campus and in some cases, for CSU operations off-campus as well.

CSU has the authority to act as Building Official. We have a code enforcement obligation. The obligation is a duty writ large. It is for all aspects: including egress, including fire systems and including access.

To manage this authority CSU issues permits for its construction activities. Outside agencies (SFMDSA) support the CSU enforcement effort. SFM DSA approvals confirm and append our underlying CSU code compliance determination.

Our CSU plan check process is based on the premise that we complete our plan check reviews in advance of any outside agency review submittal. A clean submittal minimizes confirming review time and demonstrates to a wide and watchful audience our ability to manage the total process in a knowledgeable, timely, consistent and effective manner. Our individual actions collectively build our systemwide reputation.

CSU staff representation is hugely important at SFM DSA ‘pre-approval’ review meetings. Allowing the A/E contractor teams to act independently to ‘secure approvals’ complicates the campus/agency project relationship. In-person CSU representation with the A/E contractor teams facilitates decision making and reinforces our knowledgeable, timely, consistent and effective message.

CPDC A/E provides code interpretation and building official support.
Applicability: All projects

Notes:

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CPDC A/E provides code interpretation and building official support.
We operate under statute.

The Ed Code establishes the CSU, delegates power to the trustees, power to build, power to contract, etc.

‘IN ACCORDANCE WITH STATE LAW’.

CSU ability to create policy (SUAM) has a specific authority chain that links back to our state and federal constitutions.
Enforcing agency—State or local agency specified by the applicable provisions of law.

Authority cited—Government Code Section 14617

Reference—Government Code Section 14617.

3. Existing state-owned buildings, including those owned by the University of California and by the California State University.

Application—Building seismic retrofit standards including abating falling hazards of structural and nonstructural components and strengthening of building structures. See also Division of the State Architect.

Enforcing agency—State or local agency specified by the applicable provisions of law.

Authority cited—Health and Safety Code Section 16600.

Reference—Health and Safety Code Sections 16600 through 16604.


Application—Minimum seismic strengthening standards for buildings specified in Appendix A of the California Existing Building Code, except for buildings subject to building standards adopted pursuant to Health and Safety Code (commencing) with Section 7910.

Enforcing agency—State or local agency specified by the applicable provisions of law.

Authority cited—Health and Safety Code Section 18934.6.

Reference—Health and Safety Code Sections 18901 through 18945.

1.2.1.1 State building. For purposes of this code, a “state building” is a structure for which a state agency or state entity has authority to construct, alter, enlarge, replace, repair or demolish.

1.2.1.2 Enforcement. [CISJ, UC Judicial Council and CDCR] State agencies or state entities authorized to construct state buildings may appoint a building official who is responsible to the agency for enforcement of the provisions of the California Building Standards Code.

Exception: State buildings regulated by other sections of this code remain the enforcement responsibility of the designated entities.

1.2.1.3 Enforcement. Reserved for DGS.

1.2.2 Alternative materials, design and methods of construction and equipment. The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material, design or method of construction shall be approved where the building official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety.

1.2.2.1 Research report. Supporting data, where necessary to assist in the approval of materials or assemblies not specifically provided for in this code, shall consist of valid research reports from approved sources.

1.2.2.2 Tests. Wherever there is insufficient evidence of compliance with the provisions of this code, or evidence that a material or method does not conform to the requirements of this code, or in order to substantiate claims for alternative materials or methods, the building official shall have the authority to require tests as evidence of compliance to be made at no expense to the jurisdication.

Test methods shall be as specified in this code or by other recognized test standards. In the absence of recognized and accepted test methods, the building official shall approve the testing procedure. Tests shall be performed by an approved agency. Reports of such tests shall be retained by the building official for the period required for retention of public records.

1.2.3 Adopting agency identification. The provisions of this code applicable to buildings identified in this section will be identified in the Matrix Adoption Tables under the acronym BSC.

SECTION 1.3
BOARD OF STATE AND COMMUNITY CORRECTIONS

1.3.1 Specific scope of application of the agency responsible for enforcement, the enforcement agency and the specific authority to adopt and enforce such provisions of this code, unless otherwise stated.

Application—Local detention facilities.

Enforcing agency—Board of State and Community Corrections.

Authority cited—Penal Code Section 6830; Welfare and Institutions Code Sections 707.1, 210 and 885.

Reference—Penal Code Section 6830; Welfare and Institutions Code Sections 707.1, 210 and 885.

1.3.3 Adopting agency identification. The provisions of this code applicable to buildings identified in this section will be identified in the Matrix Adoption Tables under the acronym BSC.

SECTION 1.4
DEPARTMENT OF CONSUMER AFFAIRS

1.4.1 Specific scope of application of the agency responsible for enforcement, the enforcement agency and the specific authority to adopt and enforce such provisions of this code, unless otherwise stated.

1. Board of Barbering and Cosmetology.
1.2.1.1 State building. For purposes of this code, a "state building" is a structure for which a state agency or state entity has authority to construct, alter, enlarge, replace, repair or demolish.

1.2.1.2 Enforcement. [CSU, UC, Judicial Council and CDCR] State agencies or state entities authorized to construct state buildings may appoint a building official who is responsible to the agency for enforcement of the provisions of the California Building Standards Code.

Exception: State buildings regulated by other sections of this code remain the enforcement responsibility of the designated entities.

1.2.1.3 Enforcement. Reserved for DGS.

1.2.2 Alternative materials, design and methods of construction and equipment. The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material, design or method of construction shall be approved where the building official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and
ARTICLE 1. General [13100 - 13135]  (Heading of Article 1 added by Stats. 1945, Ch. 1173. )

(a) Except as limited by Chapter 6 (commencing with Section 140) of Division 1 of the Labor Code and Section 18930 of this code, the State Fire Marshal shall prepare and adopt building standards, not inconsistent with existing laws or ordinances, relating to fire protection in the design and construction of the means of egress and the adequacy of exits from, and the installation and maintenance of fire alarm and fire extinguishment equipment or systems in, any state institution or other state-owned building or in any state-occupied building and submit those building standards to the State Building Standards Commission for approval pursuant to the provisions of Chapter 4 (commencing with Section 18935) of Part 2.5 of Division 13 of this code. The State Fire Marshal shall prepare and adopt regulations other than building standards for the installation and maintenance of equipment and furnishings that present unusual fire hazards in any state institution or other state-owned building or in any state-occupied building. The State Fire Marshal shall adopt those regulations as are reasonably necessary to define what buildings shall be considered as state-occupied buildings.

(b) The fire chief of any city, county, city and county, or fire protection district, or that official’s authorized representative, may enter any state institution or any other state-owned or state-occupied building for the purpose of preparing a fire suppression preplanning program or for the purpose of investigating any fire in a state-occupied building.

(c) Except as otherwise provided in this section, the State Fire Marshal shall enforce the regulations adopted by him or her and building standards relating to fire and panic safety published in the California Building Standards Code in all state-owned buildings, state-occupied buildings, and state institutions throughout the state. Upon written request from the chief fire official of any city, county, city and county, or fire protection district, or a Designated Campus Fire Marshal, pursuant to Section 13146, the State Fire Marshal may authorize that person and his or her authorized representatives, in their geographical area of responsibility, to make fire prevention inspections of state-owned or state-occupied buildings, other than state institutions, for the purpose of enforcing the regulations relating
We enforce statute.

Delegation Plan

Checks & Balances

Independent Advisory

CSU *independent* plan check review firms
Commissioning

Peer Reviews

Seismic Peer Review
Mechanical/Electrical Systems Peer Review

Endorsements

LEED
<table>
<thead>
<tr>
<th>Individual Roles</th>
<th>Checks &amp; Balances</th>
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<tbody>
<tr>
<td>Contract Administrator [contract or CSU]</td>
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<tr>
<td>Project Manager [contract or CSU]</td>
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<tr>
<td>External AHJ’s</td>
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<tr>
<td>Project Architect, Engineer [contract or CSU]</td>
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<tr>
<td>Campus Deputy Building Official [CSU]</td>
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<tr>
<td>IOR’s and Specialty [contract or CSU]</td>
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</tbody>
</table>
Delegation Plan

Checks & Balances

Inspections are not under the control of the Project Manager or Project Administrator.

Inspections are performed under the CDBO as an extension of the **CSU CO BO** and statute authority.
Obligation to Perform Responsibly as a CDBO

Public Expectation

Duty to perform

Professional Standard of Care

License vs. right
Delegation plan
Quality assurance process
Inspection criteria

CSU/SFM interaction
IOR/AOR/Contractor interaction
Delegation Plan

Checks & Balances

Assuring that contract documents are complete and vetted is strong quality control indicator.

It is up to us to have it right before we go.

THINK ABOUT IT.
Delegation Plan

Checks & Balances

How does your Campus assure that there are no conflicts of interest on your projects, and that proper checks and balances are maintained?

- “A Conflict of Interest is a set of conditions in which professional judgment concerning a primary interest tends to be unduly influenced by a secondary interest”
Inspection Management

Ron Abbott
QUALITY CONTROL OF QUALITY ASSURANCE

August 2015
Measuring a Project’s Success

- On time
- Within budget
- Meeting quality requirements
  - Subjective in nature
QA of QC Process

Path to Quality

- Process involving both design and construction
- Stakeholders determine desired end results
- Design team interprets client’s needs
- Constructors follow established requirements
- Inspectors verify requirements are being met.
Quality Assurance versus Quality Control

- Quality Assurance is a system or process designed to assure that the desired level of quality is achieved.
- Quality Control is the procedure for evaluating completed activities.
- Quality Assurance is proactive
- Quality Control is reactive
- Quality Assurance asks how will quality be achieved
- Quality Control asks if quality was achieved
QA or QC – Who is Responsible

- Quality Assurance begins in the pre-design stage
  - Owner is responsible for Quality Assurance
  - Responsible for special inspection and testing
- Quality Control is a function of completed work
  - Constructor is responsible for Quality Control
  - Constructor to review work in advance of Inspector
  - Constructors may rely on special inspections and testing provided by trustees
Project Team’s Role

- The CM, PM, and IOR represent the trustees
- Confirms compliance with contract documents
  - Approved plans and specifications
    - Phased plans and permits
  - Approved Submittals
  - Governing codes
- Verifies quality control is being met
QA of QC Process

Inspector’s Role

- Proactive Approach
- Solicit involvement of constructors in the process
- Seek input from regulatory agencies
  - CSFM
  - Health Department
  - State Elevator Inspector
- Assist with solutions without compromising quality
- Resolve noncomplying issues in timely manner
- No surprises
Increase Opportunity for Success

- Clearly define expectations
- Be proactive
  - Understand the requirements
  - Monitor Schedule
  - Track Budget
Inspection Management

Jim Hoffman

BUILDING PERMITS

August 2015
Introduction

- Phased Permitting Process
- The Importance of The High Road
- Established Permit Procedure
Deal with it!

- Proactive treatment of issues
- CSU as leader
- Vet the Issues
- Coordinate the Solutions
Permit Process

Phased Permits

- SUAM 9203.01—“The designated campus deputy building official shall issue a written construction authorization for each project and maintain a record of all authorizations. The construction authorization shall be issued only after confirmation of all required approvals has been obtained”

- SUAM 9700.04 - “To ensure compliance with these statutes, a written validation...”
CSU / SFM Relationship

- Early Code Compliance Meeting
- Sharing of Schedules
- Plan-Flip Meetings
- Deputy Plan-Checks
- Quality / Complete Documents
- Plan Check Status Report
Demolition / Site Grading / Site Utilities Permit

- Entire Project GMP in place.
- Project funding in place.
- 100% CD Civil drawings and specs.
- 100% CD Demo drawings and specs
- 100% DD Architectural, Structural, MEP, Landscape, Specialty drawings and specs.
Demolition / Site Grading / Site Utilities Permit

- SRB and MRB site reviews and conceptual approvals on all 100% “vertical” DD documents to date.
- Review & approval by all local jurisdictions of all elements that may affect Civil or Demolition.
- SFM review and approval on site construction documents.
- Independent Plan Check approval on site construction documents and conceptual approval on remaining 100% DD documents.
Phased Permit Process

Vertical Construction / Building Permit

- Project GMP in place.
- Project funding in place.
- 100% Construction Document and specifications package completed.
- SRB and MRB review and final approvals on documents.
Phased Permit Process

Vertical Construction / Building Permit

- Independent Plan Check Firm approval on all documents, including access and FLS.
- All plan check comments incorporated into drawings.
- Review by all local jurisdictions, comments received.
- Review by DSA and local CAsp staff with all comments received.
- Submittal of 100% drawings described above, with all plan check comments incorporated submitted to SFM. 45 day review period for OSFM to return comments.
Phased Permits

- CSU “at risk” responsibility to conform to final approved documents.
The Mission of the SFM...

- Is to protect life and property through the development and application of:
  - Fire prevention
  - Fire engineering
  - Fire education
  - Enforcement

Tonya Hoover
California State Fire Marshal
The State Fire Marshal shall enforce the regulations adopted relating to fire and panic safety in all state-owned buildings, state-occupied buildings, and state institutions.
The OSFM is responsible for Fire and Life safety in 25,000 State-owned and State-occupied facilities which include:

- 32 State Prisons
- 40 Conservation Camps
- 12 Community Correctional
- 5 Return to Custody Facilities
- 8 State Mental Hospitals
- 7 Developmental Centers

- 23 CSU Campuses,
- 10 UC Campuses,
- 42 Ca District Fairs
- 41 Bond Funded County Jails
- All State-Owned Buildings (DGS)
FIRE LIFE SAFETY DIVISION

Our Division is geographically divided just above the Fresno county line for inspections. Plan review for the entire state is conducted in the Sacramento office.

Our Division conducted 3,427 inspections during the 2013/14 fiscal year. Included were construction, complaints, special events, and routine fire and life safety inspection of State occupied facilities.

During this same time period, Our Division completed 1,828 plan reviews with an estimated value of $6 billion in construction costs.
Permit Process

SFM Plan Review

- Preliminary Design Concept Meeting
- Flip Through/Page Turn (Informal)
- Triage Process
- Review
- Pre-submittal meeting
- Back Check Process
- Permit/Approved Plans
Recommendations:

- Quality control review
- Coordination of design elements between all disciplines
- Third party plan review
- AMMR
- Early engagement with plan review staff
Permit Process

Phased Permits

- What types of phased permits are important?
- What are reasonable criteria for those permits?
Inspection Management

Tom Kennedy

PLAN REVIEW COORDINATION

August 2015
Coordination of Agency Reviews

Assuring that contract documents are fully plan checked and approved is the most basic of quality control responsibilities.
Coordination of Agency Reviews

First Make sure you did them!
Coordination of Agency Reviews

Make sure complete!

(WHAT?)
Coordination of Agency Reviews

Recognize spheres of influence

- CSU checks for Fire Life Safety too, but we defer to OSFM

- OSFM defers in structural to us. A balance.

- We *both* can (and should) argue to ensure technical accuracy
Inspection Management

Break Time!

August 2015
Inspection Management

Ron Abbott

IOR / AE COOPERATION

August 2015
A/E Relations with IOR

- On-site presence
- Involved in all phases of construction activities
- Knowledge
  - Contract documents
  - Codes
  - Schedule
  - Contract Procedures
  - Construction Methods
Interaction

- Communications between Constructors, PM, CM, A/E
- Relay instructions from RFI’s, ASI’s CRB’s
- Identify critical issues
- Converse with A/E for document understanding
- Coordinate with Regulatory Agencies
Communication is Key

IOR’s on-site involvement can be utilized by the A/E team to provide means of communications, project assessment, and a proactive approach to issues resolution.
Inspection Management

Mark Zakhour
CAsp INSPECTIONS

August 2015
General

- Certified Accessibility Specialist Program - CASp
- Administered by DSA
- Senate Bill 1608
- Jurisdictional Requirements to Comply
- Legal Benefits of CASp Inspections
- Project Benefits of CASp
- Design above minimum requirements to allow for tolerance
- Integration of the CASp into Process
- Why do we need to hire a CASp?
CASp Inspection

**Inspection & Certification Process**

- Implement during design phase
- CASp Plan check prior to DSA plan check
- Inspection at Rough In Phase
- Final Punch List inspection
- Post Punch Verification
- Certification
- CASp certification shall be completed prior to NOC
Inspection Management

Mark Zakhour

INSPECTION PROCESS

August 2015
**Hiring an Inspector**

- Credentials - Which is preferred?
  - OSHPD Class A / Class B / Class C
  - DSA Level 1/2/3/4
  - ICC Certifications

- Experience Expectations

- IOR’s are required to be paid prevailing wage
  - Current wage determination is $65+/hr.
  - Acceptable bid rates $80-$100/hr

- RFP and Solicitation Process
Inspection Management

Jim Hoffman

INSPECTION PROCESS

"You can have everything in life you want, if you will just help other people get what they want.

- Zig Ziglar

American author, salesman, and motivational speaker"

August 2015
Inspection Process

**Inspectors Duties**

- “Personally observe, check and measure... for compliance to the contract documents”
- When is enough enough?
- Maintain a daily diary
- Awareness of Critical path
- Supervise on-site testing
Pre-Installation Meetings

- Pre-meeting review of specs and plans – questions?
- Consultant attendance
- Discussion of Schedule
- Inspection Requests - testing
- Approved submittal review
- Acceptance of substrate
- Mock-ups
- Site Walk
- Future progress meetings
Inspection Requests

- 24 Hour Notice – written requests
- Flexibility – Agility
- Written corrections
- On Site Mark-up
- Electronic Tracking
- Photo-documentation
Non-Compliance Notices

- Inspection Requests
- Is it going to get covered?
- “A reasonable time”
- Hold Money
- Punch list
Safety QA Responsibilities

- Duty to notify of unsafe condition
- Notice of GC General Condition responsibilities
- GC project specific Safety Plan
- Do not dictate Means and Methods
- Safety Meetings
- OCIP Safety “Loss Control Consultant”
- Drug testing
SWPP / QSP Responsibilities

- Split Responsibilities
- PM – paperwork
- IOR – onsite activities
- QSP – Practitioner
- QSD – Developer
- NPDES / California Construction General permit
Inspection Management

SFM - Hoffman

SFM Inspections

August 2015
Coordination with SFM

- Design stage
- Preconstruction meetings
- Construction Binder
- Updated construction schedule
- RFI/ASI
- Inspection Criteria
- Open communication
- Mutual respect
SFM Inspections

- Preschedule inspections
- Construction binder
- Special Inspector Reports
- Working documents
- Deficiencies
- Pre-testing
- Acceptance testing
Inspection Process

Subcontractor will submit inspection request.

General Contractor (GC) will assign a sequential tracking number to the inspection request. Work is then verified.

Upon verification of completed work the GC will forward the inspection to the Inspector of Record (IOR) for inspections request.
Inspection Process

If work is complete.

IOR will contact Deputy State Fire Marshal (DSFM) assigned to project and request inspection. At least 72 hour notice is required.

GC, IOR, and subcontractor if applicable will conduct inspection with DSFM. Verbal acceptance of work or deficiencies identified will occur during the inspection. The DSFM construction report will note these results & will be provided to GC.

If deficiencies included on report.

GC will record the results on the deficiency log and a copy will be forwarded to the requesting subcontractor.
Inspection Process

If work is not complete.

Subcontractor performs remedial work.

Subcontractor will submit inspection request.

Repeat until work is satisfactorily completed.
Elevator Inspections

- Pre-Installation Meetings
- Final Inspections
- SFM input
- What are your Best Practices?
Inspection Documentation

- Electronic Inspection Management & Documentation
- Use of technology to aid project inspection
- Pre-Packaged programs (i.e. prolog, plan grid etc.)
- Custom Programs (i.e. MS Access Database etc.)
- Use of standard tools
  - Xcel
  - PDF
  - Bluebeam
- Pictures and videos
- Record Retention
Inspection Documentation

- Tell us what you are doing on your Campus!

<table>
<thead>
<tr>
<th>Tool</th>
<th>Monthly Cost per User</th>
<th>Storage</th>
<th>Annual Plan Bonus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hammer</td>
<td>$0.00</td>
<td>50 sheets of storage</td>
<td>2 months free</td>
</tr>
<tr>
<td>Nailgun</td>
<td>$19.99</td>
<td>550 sheets of storage</td>
<td>2 months free</td>
</tr>
<tr>
<td>Dozer</td>
<td>$49.99</td>
<td>5000 sheets of storage</td>
<td>2 months free</td>
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<tr>
<td>Crane</td>
<td>$99.99</td>
<td>Unlimited storage</td>
<td>2 months free</td>
</tr>
</tbody>
</table>
Inspection Process

Facilities Internal Inspections

- Are we required to inspect ourselves?
- Developing a system and relationship with Facilities Management and implementing a code compliance program.
- Permitting Process
- SFM Coordination
Facilities Management Inspection of Work

- Using the in house campus experts to help the project
- Integrate Facility Maintenance in the Design and Construction process from the start
- Agree on milestones of inspection
- Submittal and RFI review
- Final punch list and phased punch lists
- Project Turnover/ As Built/ BIM/ O&M’s
Best Practices

As-Builts and the Future for CSU

- Where do you want your Campus to be in 5 years with electronic as-built documentation?
- Should CSU develop specs for deliverables?
JOC and Minor Capital Inspections

- Managing Minor Capital and JOC work
- Should we treat these the same as Major Capital?
- JOC Inspection process
- Code compliance requirements for maintenance work
JOC and Minor Capital Inspections

- How do you handle in house inspections?
Inspection Management

LUNCH!

August 2015
Inspection Management

Roman Cooper

SPECIAL INSPECTIONS

August 2015
Components of Special Inspection

- Statement of Special Inspection
- Special Inspection
- Special Inspector
- Structural Observation
- Materials Verification
- Documentation
Statement of Special Inspections

Requirement for Permit (CBC, Part2, Vol2, 1704.2.3)
- Prepared by the registered design professional in responsible charge (CBC, Part2, Vol2, 1704.3)
- Components of Statement (CBC, Part2, Vol2, 1704.3.1)
- Contractor Responsibility (CBC, Part2, Vol2, 1704.4)
- Structural Observations (CBC, Part2, Vol2, 1704.5)
# Special Inspections

## TEST AND INSPECTION LIST

**REINFORCING STEEL**
- REVIEW MILL CERTIFICATES & TEST REPORTS
- SAMPLE & TEST
- REINFORCING BARS
- WELDED WIRE FABRIC
- PLACEMENT INSPECTION
- WELDING INSPECTION
- TEST REINFORCING FOR WELDABILITY OTHER THAN ASTM A706

### CONCRETE, SHOTCRETE, CMU, GROUT & MORTAR

<table>
<thead>
<tr>
<th>CONCRETE</th>
<th>CMU</th>
<th>GROUT</th>
<th>MORTAR</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>MIX DESIGN REVIEW</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>VERIFICATION OF CORRECT MIX DESIGN USED DURING POUR</td>
</tr>
<tr>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td>PREPARATION OF SAMPLES FOR TESTING PURPOSES</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>X</td>
<td></td>
<td>BATCH PLANT INSPECTIONS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C</td>
<td>X</td>
<td>CAST, PICK-UP, AND COMPRESSION TEST SAMPLES</td>
</tr>
</tbody>
</table>
Special Inspection Defined

**SPECIAL INSPECTION**
Inspection of construction requiring the expertise of an approved special inspector in order to ensure compliance with this code and the approved construction documents.

Continuous special inspection
Special inspection by the special inspector who is present when and where the work to be inspected is being performed.

Periodic special inspection
Special inspection by the special inspector who is intermittently present where the work to be inspected has been or is being performed.
Special Inspector (1704.2)

Where application is made for construction as described in this section, the owner or the registered design professional in responsible charge acting as the owner’s agent shall employ one or more approved agencies to perform inspection during construction on the types of work listed under Section 1705.
Special Inspector

A qualified person employed or retained by an approved agency and approved by the building official as having the competence necessary to inspect a particular type of construction requiring special inspection.
1704.2.1 Special inspector qualifications. The special inspector shall provide written documentation to the building official demonstrating his or her competence and relevant experience or training. Experience or training shall be considered relevant when the documented experience or training is related in complexity to the same type of special inspection activities for projects of similar complexity and material qualities. These qualifications are in addition to qualifications specified in other sections of this code.

The registered design professional in responsible charge and engineers of record involved in the design of the project are permitted to act as the approved agency and their personnel are permitted to act as the special inspector for the work designed by them, provided they qualify as special inspectors.
Special Inspections

Structural Observation

The visual observation of the structural system by a register design professional for general conformance to the approved construction documents. **Structural observation does not include or waive the responsibility for the inspection required by section 110, 1705 or other sections of this code.**
Materials Verification: Testing

Qualifications of Testing Lab
- SUAM 9786.01

Materials Testing
- Data or Documentation provides evidence of conformance to quality standards for materials
  - Mill Certs
  - Utilize the “Referenced Standards” listed in 1705
  - Testing by approved agency

Representative Samples
- Per 1705 and Referenced Standards
Special Inspections

Documentation

Report Requirement (1704.2.4)

- Request for Special Inspection
- Keep records of all inspections
  - Submitted to building official and registered design professional in responsible charge
  - Communicate discrepancies to the contractor immediately
  - Deficiency notices issued for failed inspection, notify the BO and the RDP
- Final Report Issued for all inspections performed
Inspection Management

Tom Kennedy
SUSTAINABLITY

August 2015
**CALGreen Code**
- Validation
- Verification
- Chapter 7
  - Installer
  - Special Inspection Qualifications

**LEED®**
- Rating System
- Points / LEED® Checklist
- Documenting
- Field Verification / Representative Sampling
Validation

- Validation shall be provided verifying material meets requirement (Plans/Specs)
- Commissioning
Verification

- Field Verification (5.504.4.3.2.2.)
- Chain of Custody Certifications (5.504.4.5.3)
- Labeling (5.504.5.3.1)
5.303.3.1 Water closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Tank-Type Toilets.
LEED® Score
○ Points

- Innovation & Design Process: 5/5
- Water Efficiency: 3/5
- Materials & Resources: 6/13
- Sustainable Sites: 9/14
- Indoor Environmental Quality: 11/15
- Energy & Atmosphere: 8/17

Early Goal: 32 Pts.
Earned: 42 Pts.
Possible: 69 Pts.
LEED® Documenting

- LEED® Credits forms
- Reports
- Sampling
Inspection Management

Jim Hoffman

INDUSTRY REPS

August 2015
Industry Reps

Manufacturers’ Product Representatives

- Resource
- Product Expert
- Pre-Installation Conference
- Substrate acceptance
- Warranty
Institutes & Associations

- Resource
- Current & Best Practice
- Certification
- Codes and Standards Expert
- Technical Guidance
Institutes & Associations

- ACI – American Concrete Institute
- AISC – American Institute of Steel Construction
- ASHRAE – American Society of Heating, Refrigeration and Air Conditioning Engineers
- AWS – American Welding Society
- AWC – American Wood Council
- AABC – Associated Air Balance Council
- NECA – National Electrical Contractors Assn
- B, C, D, E, F, G…….
Industry Reps

TECHNICAL SERVICES INFORMATION BUREAU

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Start here to find documents or technical bulletins:

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- Service Request Form
- Plaster Assemblies Manual
- Services
- Calendar
- Industry Links
- Technical Bulletins
- White Papers
- Standards
- Plaster & Energy Codes
- Plaster Textures
- Trade Promotion
- Contact Us
- Green Building Links
- Structural Engineering Firms

TECHNICAL BULLETINS

The Technical Bulletins published by the TSIB are intended to provide guidance and/or establish an accepted industry practice to contracting field personnel. The Technical Bulletins are brief and specific to a single topic or issue; they may be updated as codes or practices change; always check the TSIB website for the most current edition. The following is the numbering system established for the Technical Bulletins: A [cover page, back page and spine] are provided to create your own three-ring binder.

10 CODES [+]
20 STEEL FRAMING [+]
30 GYPSUM WALLBOARD [+]
40 CEILINGS [+]
50 FIRE/SOUND [+]
60 EXTERIOR PLASTER [+]
70 INTERIOR PLASTER [+]
80 MATERIAL HANDLING & SAFETY
90 DESIGN DATA [+]

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Inspection Management

Tom Kennedy

QUALITY STANDARDS

August 2015
ENFORCING BUILDING CODES

'TOOTHLESS' INSPECTIONS

Berkeley balcony collapse spurs criticism of oversight

By Paige St. John

BERKELEY — Fifteen years ago, landlords in this university town were not required to conduct annual safety inspections of its aging rental stock. That changed after a family from Southern California lost their home in a Berkeley balcony collapse, where the self-inspections done by landlords are merely checks. They are demanding close oversight on any further heavy such as Berkeley.
Quality Standards

Structural Systems

- Performance criteria
- Risks
- Coordination with other work
- Contractor concerns that drive errors
- Inspection criteria
- IOR/AOR/EOR relationships
- Testing Protocols PLAN the flight, FLY the plan
Quality Standards

Concrete Slabs
- Relationship to structure
- Coordination with other work
- Fit and Finish (Flatness)
- Inspection Criteria
- IOR/AOR/Contractor
- CASp inspections (Why?)
Concrete Slabs

- Relationship to structure
- Coordination with other work
- Fit and Finish (Flatness)
- OSFM Coordination
- Inspection Criteria
- IOR/AOR/Contractor
- CASp inspections (Why?)
Stucco

- Relationship to structure
- Coordination with other work
- Fit and Finish (out of plane)
- Inspection Criteria
- IOR/AOR/Contractor
- CASp inspections (Why?)
Angular Tolerances

- Relationship to structure
- Coordination with other work
- Fit and Finish
- Inspection Criteria
- IOR/AOR/Contractor
- CASp inspections?
Inspection Management

Break Time

August 2015
Cx has its problems
Closeout

Commissioning

- Cx/AE relationship
- Coordination of Teams
- Advocacy vs. QC
- OSFM Coordination
- Inspection Criteria
Handover and Warranty

- Coordination of Teams
- Quality Control Quality Assurance process
- CSU / SFM Coordination
- Inspection Criteria
- IOR / AE relationship
- CASp inspections
Commissioning

- How do you assure that your commissioning efforts give you the most bang for your buck?

“I agree, it’s a lot of bang for the buck. And thumping, whining, clicking, clacking, clanging, grinding, buzzing and rattling.”
Agency Inspections
- Health Department
- Local Fire Department
- Local Water – Bac-T test
- SFM – TCO?
- CAsp
Project Closeout

Final Testing
- Test and Balance - Timing
- Commissioning
- Rails / Doors
- Training – Sign in sheets
Punch Lists

- When do you start?
- Pre-Final Inspection Lists
- Commissioning items
- MEP Consultants
- Campus Plant / Trades involvement
- CSU / SFM Coordination
- Obligation to provide complete list
- Final Inspection
Punch Lists

- Before occupancy everything punched out:
- If not ready for punchlist: “not ready for punch”
- Ball in GC’s court, document it…
- It is about communication…
- Punch lists that trickle - excuse for contractors delay.
Occupancy Change Order

- SFM TCO or C of O required
- Does not constitute acceptance
- Responsibility for deficient work
- Entire Punch List
- Warranty periods
- Landscape Maintenance
- Release Language
- Timeliness
## Closeout Checklist

- Requirements for Occupancy
- Requirements for N.O.C.
- Requirements for Release of Retention

### Project Closeout Checklist

<table>
<thead>
<tr>
<th>Item</th>
<th>Required for Occupancy</th>
<th>Date Completed</th>
<th>Initials</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Final Inspection Punch List to GC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. State Fire Marshal Inspection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Occupancy Change Order</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. HVAC Balance Report</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Keys/Keying</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Training</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Final Inspection Punch List Completed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Special Inspection Final Report</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Elevator Inspection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Other Regulatory Inspection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Removal of Temporary Facilities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Final Cleaning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Commissioning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Cessation of Onsite Labor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Other O1700 Requirements (Specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Certification of Completion executed by: A/E, PM, IOR, DBO</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Required for Release of Retention

- 17. Spare Parts/Materials
- 18. Warranties
- 19. As Bults
- 20. As-Built Schedule
- 21. Landscape Maintenance Period Ends
- 22. O & M Manuals
- 23. Claims Resolved or Funds Held
- 24. Stop Notices Closed or Funds Held
- 25. Release from Labor Compliance Manager
- 26. Release of Retention by PM/University CA

The undersigned certifies that all of the above-listed items are complete.
Certificate of Completion

- IOR certification of conformance to contract!
- Two steps:
  - Completion
  - Release of Retention
Acceptance Testing

- Varies stages of constructions
- Pre-tested by subcontractor & IOR
- Special Inspectors/Manufacture
OSFM Closeout Inspections

- Sprinkler system
- Above ground fuel storage
- Fire Pump
- Pre engineered suppression systems
- Smoke Control Systems
- Fire Alarm
- Emergency generators
- Elevators
- Egress system
OSFM Certificate of Occupancy

- TCO
- Final Inspection
- C of O
Inspection Management

Roman Cooper

BACK TO THE FUTURE (PROJECTS)

August 2015
Bringing Lessons Learned Forward

Postmortem

- What it is not
- What it is
- How to use it looking forward
- Lessons hard learned
What is not

- A place to assign blame
- Reprimand
- Speak to the contractor
- Being vague
- Focus on only the failures
- Negativity
What it is

- A place to accept responsibility
- An open forum for ideas
- A tool for improving project quality
- A discussion about all possible solutions
- Time to recount the failures AND the successes
- Empowerment for our teams
- Positive dialogue
Responsibility – Take Ownership

- Who – IOR/PM/Construction Manager
- What – the causes of the failure
- Where – discuss the processes of construction occurring
- Why – discuss the mistakes that caused the problem
- When – discuss the time/phase in the project
- How – determine how the problem could have been avoided
- Remember we are responsible for the solution to the problem too
Improving our Project Quality

- We are the last defense in construction defects
- Coordination with Physical Plant Management
- Maintain Campus Standards
- Keep current on codes and building technology
- Personal education
- Collaboration with peers
- Set the example (don’t be the example)
- Most importantly realize how we failed and learn from it
Discuss the Solutions

- Talk through the solution utilized
- Explore other possible solutions
- Be creative
- Recount past experiences and positive solutions
Back to the Future

Recount the Failures AND the Successes

- Honestly discuss the failure
- The failure was ours as a team
- Examine the steps to failure
- Describe the path to the solution
- Talk through what all went right with the project
- Acknowledge each other’s strengths
- Learn from one another

“Don’t let your fear of failing triumph over the joy of participating.”
Empower our teams

- Use this time to share ideas
- Keep an open mind
- Realize you have resources ready to assist
- This should be a team building exercise
- Encourage team members to make decisions in the field
Positive dialogue

- Stay positive and keep the conversation moving
- Encourage feedback
- Never discourage team members or the flow of ideas
- Solicit questions
- Reinforce creative ideas
Back to the Future

How to use the Postmortem looking forward

“THOSE WHO CANNOT REMEMBER THE PAST ARE CONDEMNED TO REPEAT IT”

-George Santayana-
Back to the Future

Obstacles to Avoid

- Poor communication
- Not open to new ideas
- “I’ve done it this way for years”
- Thinking the lessons don’t apply to us
- Getting it done – action is NOT more important than planning
- Forgetting to look back while moving forward
Documentation

- Keep meeting minutes and distribute to the team
- Focus on the solutions
- Keep a list of repeated problems and their solutions
- Communication is key

Coming together is a beginning
Keeping together is progress
Working together is success

- Henry Ford
**Take Time to Reflect**

- Stay calm and think
- Remember your experiences
- Know where you are in the process
- Review pitfalls with colleagues
- Realize your weak points and seek assistance
- Remember the lessons of yesterday and apply the solutions in today’s activities
Learn from Project Failures

- Input – from the team members involved
- Determination – What caused the failure and what could have prevented it?
- Validate – review the cause and the solution with the team
- Communicate – share the knowledge with other teams and departments
Lessons Learned - Improving Future Projects

- Postmortem on successes are important too
- Time spent doing the work better is time well spent
- Share your lessons learned with others
- Communicate across teams and departments
- Look ahead in your projects to proactively avoid issues
- Continually improve processes
Best Practices from the Lessons Learned

- Tract issues to avoid failures
- Coordinate with Physical Plant
- Communicate with end-users
- Keep current on campus standards
- Manage the A/E team
- Review submittals
- Listen to understand
- Be proactive – avoid being reactive
- Construction Manager oversight
“That men do not learn very much from the lessons of history is the most important of all the lessons that history has to teach.”

— Aldous Huxley
Hard Lessons

- Lack of coordination with PPM – removing installed equipment
- Submittal rubber stamp – we are the last to approve
- Materials verification – back check to submittals
- Campus standards – moving target
- Tunnel vision – caught up in the moment and not being proactive
- Information – contractors assume things instead of asking
Hard Lessons (continued)

- Assuming – just because we understand doesn’t mean the contractor does
- Know products – off gassing or other qualities affect building occupants
- Review as-builds – damaging existing utilities during excavations
- Understands contractual obligations – shoring
- Communication – verify you are being heard and understood
Hard Lessons (continued)

- Differed submittals – peer review
- Special Inspectors – rotating personnel can be an issue / verify samples picked up and test results verified
- Utility shutdowns – effects equipment downstream negatively
- Safety – be vigilant and remember the public
- DSFM – walk often, test 200% before final for C of O
- JOC – do PreCon meetings
- Remember the successes and how they were accomplished
Back to YOUR Future

○ How do YOU bring your lessons learned forward?

Lessons Learned
recognize mistakes
observe what works
document them
share them
Inspection Management

Group Discussion

BEST PRACTICES - QUESTIONS

August 2015
Common Lessons Learned

- Checks and Balances?
- Types of phased permits?
- Criteria for phased permits?
- Electronic Inspection controls
- Elevator Inspections?
- Commissioning
- As-builts: BIM and the future
Best Practices

Plus / Delta

- How was this session?
- Did we have enough discussion?
- Future topics?
Thank You!

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