

**OSHPD** Office of Statewide Health Planning and Development



**Hospital Building Safety Board**  
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**HOSPITAL BUILDING SAFETY BOARD  
Technology Committee**

**Wednesday, May 11, 2016  
10:00 a.m. - 2:00 p.m.**

**Office of Statewide Health Planning and Development  
400 R Street, Suite 452  
Sacramento, CA 95811**

and

**Metropolitan Water District Headquarters  
700 N. Alameda Street, Suite 2-546  
Los Angeles, CA 90012**

**Board Members**

Michael O'Connor, Chair  
Deepak Dandekar  
Enid Eck  
Michael Foulkes  
Lou Gilpin  
Mike Hooper  
Eric Johnson  
Bruce Macpherson  
Poki Namkung  
Joe La Brie, Consulting Member  
Scott Karpinen, Board Chair

**OSHPD Staff**

Glenn Gall  
Roy Lobo  
Dave Ring  
Diana Scaturro  
Richard Tannahill  
Chris Tokas

**HBSB Staff**

Kathi Zamora  
Krista Harrington  
Evet Torres

**1. Welcome and Introductions**

- 2 Mr. Michael O'Connor, Committee Chair, called the meeting to order. Board
- 3 members, OSHPD staff, and other attendees introduced themselves.

1 **2. Review the November 10, 2015 workshop report/minutes**

2 Mr. O'Connor commented on the high quality of the workshop speakers and the volume  
3 of the material they covered. The May workshop, Clinical Systems Technologies,  
4 featured three presentations which Mr. O'Connor summarized.

- 5 • Building automation systems: an assessment of what technology means to  
6 building automation; potential vulnerabilities; system interconnectivity.
- 7 • Integration of information technology and its profuse growth; security risks;  
8 statistics for new servers; Electronic Health Records (EHRs).
- 9 • Microgrid technology and demand response: the importance of energy; its  
10 fluidity in terms of storage and brokering; its impact to hospitals; consumption  
11 rates.

12 Mr. O'Connor summarized the November workshop, Building Design Systems and  
13 Review Technologies. He summarized the topics covered.

- 14 • Building information modeling and augmented reality technology, an extremely  
15 rapidly developing area
- 16 • Modeling software for integrating different product types into a holistic model
- 17 • Laser scanning
- 18 • Artificial intelligence development
- 19 • OSHPD Electronic Plan Review
- 20 • Electronic Over-the Counter Review
- 21 • The expedited building permit process targeted toward Skilled Nursing Facilities
- 22 • Access to electronic information
- 23 • Google Earth
- 24 • Building construction technologies – future tools involving modeling and  
25 augmented reality

26 **MOTION:** (M/S/C) [Johnson/Namkung]

27 The committee unanimously voted to adopt the November 10, 2015 workshop  
28 minutes.

1 **3. High-Level Summary of the three Technology Committee Workshops held in**  
2 **2015: Building Management Systems, Clinical Systems, and Building Design**  
3 **Technology**

4 a. Discuss and identify new information presented, regarding future technologies in the  
5 hospital construction industry

6 b. Identify possible impacts to Facilities Development Division (FDD) plan  
7 review/construction processes

8 c. Identify lessons learned

9 Mr. O'Connor said that this was an opportunity for the group to process the volume of  
10 material presented at the workshops. He thanked the presenters, who had come from  
11 an array of workplaces, for their great presentations.

12 Mr. O'Connor said that today's focus would be the directions the committee should take  
13 from here.

- 14 • At the March meeting, the committee had been given a presentation on  
15 Emerging Technologies in Healthcare.
- 16 • The first workshop had been on Building Management Systems, given by Kaiser.  
17 It reminded the attendees of how many technologies are being integrated into  
18 health care. The presentations were:
  - 19 ○ Building Automation Systems
  - 20 ○ Integration of Information Technology and Building Systems
  - 21 ○ Microgrid Technology and Demand Response
- 22 • The second workshop was Clinical Systems Technologies. The presentations  
23 were:
  - 24 ○ Hybrid ORs/Interoperative MRI Technologies. (Mr. O'Connor noted that a  
25 goal for this committee is discerning any codes in place that may inhibit  
26 implementation of technologies that may be beneficial.)
  - 27 ○ Next Generation of Medical Equipment Planning
  - 28 ○ Wireless Technologies/Electronic Health Records
- 29 • The third workshop was Building Design/Review Systems Technologies. The  
30 presentations were:

- 1           ○ Building Information Modeling Design, 3D Modeling and Augmented
- 2           Reality Technologies
- 3           ○ The Future of Plan Review – OSHPD Automation/Electronic Review
- 4           ○ Wireless Technologies/Electronic Health Records
- 5       • Mr. O'Connor mentioned cybersecurity risks and ransomware – in the news
- 6       because of the recent incidents at hospitals.

7   **4. Update on OSHPD's integrated Electronic Services Portal (eSP) = Electronic**  
8   **Plan Check (ePC) Programs – Diana Scaturro, Supervisor, FDD Rapid Review Unit**

9   Ms. Scaturro said that OSHPD intends to break the pattern of many decades and move  
10 toward the paperless environment.

11 She described the volume of storage taken for archived paper drawings. In the future  
12 OSHPD will be able to digitally attach the projects to the drawings and to the project  
13 number.

14 She described the current paper process where the disciplines need to do consecutive  
15 reviews. If OSHPD were to map out the hours spent against the fees they take in, they  
16 would need to collect \$467,000 to break even on a review. Electronic review has  
17 lowered the break-even point to \$270,000; it is faster and more efficient.

18 Rapid Review first went to PDF in July 2010. FDD will go entirely to the new ePC  
19 electronic integrated model on June 27. All disciplines will be able to work on a plan at  
20 the same time.

21 OSHPD is making this move to comply with the law: by statute, it is obligated to employ  
22 current technologies.

23 OSHPD has brought in a consulting team for office change management – OSHPD is  
24 actually creating a new culture. The consulting team, Highlands Consulting Group, is  
25 making use of different tools: Project Management Institute, the Prosci Change  
26 Management performance system, and business transition knowledge.

27 Ms. Scaturro noted that FDD is focusing on the internal staff and operations – owners  
28 and design professionals are all behind the move to go electronic.

29 FDD has assembled five subcommittees that meet on a weekly basis.

1 FDD is working hard to inform everyone of the June date via LinkedIn, Facebook,  
2 Twitter, emails, and so on. Instructions are on the website.

3 For those who have seen the information, Ms. Scaturro suggested that they double-  
4 check it before starting to submit larger projects. The newsletters will likely have  
5 changes that impact the success of FDD being able to upload the files.

6 Ms. Scaturro explained the changes to be required for submittals. They concerned:

- 7 • PDF format
- 8 • File size
- 9 • Flattened drawing layers
- 10 • PDF bookmarks
- 11 • Small plan review projects
- 12 • Projects with more than 50 sheets
- 13 • Plan file naming conventions
- 14 • Plan orientation
- 15 • OSHPD approval stamp space
- 16 • Underscoring
- 17 • The Remarks Package Deliverable in spreadsheet form
- 18 • Corrected plans (the entire package must be resubmitted)
- 19 • Letters issued by OSHPD: Remarks, Plan Approval, and Triage Return
- 20 • Resubmitting plan files
- 21 • Sheet order

22 Ms. Scaturro gave an update on the e-Checklist. First Mr. Chris Tokas, OSHPD, talked  
23 about AutoCodes: at this point it concentrates on items in Chapters 11 and 12. Much  
24 of the work needs to be finalized – it is a slow process.

25 Ms. Scaturro said that in the effort to reduce backchecks, FDD will be publishing  
26 e-Checklists consisting of items to be tested against drawings via hyperlinks.

27 Ms. Scaturro described the e-IOR Academy, which consists of training sessions in a  
28 series of vignettes.

29 The e-TIO is in draft form and is being reviewed. You check the items that apply, then it  
30 will create a TIO.

1 • Discussion and public input

2 Mr. Eric Johnson, Committee Member, asked about the e-TIO estimated availability  
3 date; Mr. Tokas replied that it would be ready on June 27.

4 Mr. Deepak Dandekar, Committee Member, asked about preparation for design  
5 professionals and owners. Ms. Scaturro replied that one of the subcommittees is  
6 preparing the office staff and preparing communication methods with the design  
7 professionals and owners (emails, LinkedIn, Facebook, CHA, webinars). Mr. Tokas  
8 stated that the notification has already begun. Ms. Scaturro added that Rapid Review is  
9 already on the new system and is only receiving electronic documents.

10 She emphasized that the drawing that OSHPD uploads remains there for viewing.  
11 Anyone who has a login and is associated with that project will be able to see the  
12 information at any time.

13 Mr. Bruce Macpherson, Committee Member, asked about consistency of plan reviewers  
14 assigned to projects. Ms. Scaturro replied that FDD is working on consistency of review  
15 in several ways.

- 16 ○ Staff is being encouraged to use the standard comments and adjust them to  
17 be project-specific.
- 18 ○ The e-Checklist will bring consistency.
- 19 ○ On backchecks, if something was missed that was critical to the quality of the  
20 project, OSHPD will still make the comment. However, the nuisance-type  
21 comments are unacceptable.

22 Mr. Tokas added that backchecks cost OSHPD, as well as the design professionals and  
23 owners, time and money. The policy is to reduce the number of backchecks. After the  
24 second backcheck OSHPD must meet with the design team; after the third, OSHPD  
25 must meet with the owner and the design team. OSHPD does not like to change  
26 reviewers during backchecks. Mr. Tokas issued a general plea to the design  
27 community: you will receive feedback from OSHPD that you do not like. Work together  
28 with OSHPD – we are one team with you. We seek to deliver a project as quickly as  
29 possible, and these automated processes will streamline the process and reduce the  
30 backchecks.

1 Mr. Joe La Brie, Consulting Member, commented that in his experience, when plan  
2 reviewers had been switched during the course of a project, it had actually helped the  
3 project.

4 In contrast, Mr. Macpherson commented that he had encountered the most problems  
5 when he got a new plan reviewer towards the end of a backcheck who needed to be  
6 brought up to speed.

7 Mr. Tokas stated that a fundamental question that is constantly posed to staff and  
8 supervisors is whether OSHPD provides value to the project. To address the question,  
9 OSHPD has increased its quality control efforts. Any comments made by plan  
10 reviewers should provide value. Electronic Plan Review will benefit this effort because  
11 no comments will be lost in a set of paper that someone has to search through – they  
12 will go into the database and anyone can see them. Supervisors will be able to comb  
13 through them to find appropriate versus non-appropriate comments – quality control will  
14 skyrocket. OSHPD is also going to increase training materials to curtail the issue that  
15 Mr. Macpherson raised.

16 Ms. Scaturro added that the design community is always encouraged to use Comment  
17 and Process Review (CPR).

18 Mr. Dandekar asked if owners and design professionals will be able to view comments  
19 as they are being generated. Mr. Tokas replied that when comments are live it doesn't  
20 work well. It works better to receive comments from all the disciplines at once. Ms.  
21 Scaturro offered the example that during a review, what looks like a mistake on the  
22 architectural set makes sense on the mechanical set – so a comment initially made on  
23 the architectural set does not apply. She said that progress sets of comments can be  
24 done in extenuating circumstances.

25 Mr. Johnson pointed out that reviews are multi-discipline, and everyone has to react to  
26 changes made in one discipline.

27 Mr. Hussain Bhatia, OSHPD, pointed out that when OSHPD staff has questions they  
28 should call the designer. Some comments can be resolved this way, limiting  
29 backchecks.

1 Ms. Scaturro discussed Amended Construction Documents (ACDs). When you submit  
2 one, along with the ACD drawings you need to include, as a separate package, a PDF  
3 attachment of the scanned approved set of drawings.

4 Mr. Tokas described a program capability for comparing the old set to the new set,  
5 showing every line that has changed. This includes non-material changes.

6 Mr. O'Connor acknowledged with the interactive nature of the disciplines, early  
7 comments may not be the whole picture but they help the design team get a chance to  
8 start an earlier response to shorten the interval.

9 Mr. Bhatia stated that ACDs can be submitted electronically. The exact process of how  
10 the field staff will review those ACDs electronically is still under review.

11 Mr. Dandekar explained that the reason the design team may “dump” a set of drawings  
12 on OSHPD very quickly is that they figure eight months will be needed for backchecks.  
13 They want to get the project into the queue. By streamlining the process, OSHPD is  
14 actually encouraging people to submit complete sets of drawings with issues resolved.

15 Ms. Scaturro explained that “slipsheeting” or substituting a set of drawings from one  
16 discipline can no longer be done with this software.

17 Mr. Johnson asked if we will see the software move into Building Information Modeling  
18 (BIM) with us, where we are looking at models instead of PDFs. Ms. Scaturro  
19 responded that this software does not provide 3D. The goal is to have 3D on  
20 companion software later, while OSHPD will still record comments on the 2D. Mr.  
21 Bhatia added that this version gets us going, but we will continually improve it in terms  
22 of more complete integration with Accela. We hope to resolve the issues with layers,  
23 bookmarks, and naming schemes.

24 Mr. Tokas pointed out that OSHPD still must be able to accommodate all means of  
25 submittal including paper.

26 Mr. La Brie supported the dialogue begun by Mr. Macpherson: a possible vulnerability  
27 is that we become so focused on process that we lose sight of meaningful, quality  
28 content.

29 Mr. Tokas pointed out OSHPD is sending out tremendous amounts of information, and  
30 the listserv has new categories in regulations that people may want to look at.

1 **6. Discuss the Committee's Focus and Priorities for 2016**

2 Mr. O'Connor suggested that the committee devise a list of things that would be  
3 worthwhile to pursue in more detail.

4 Mr. Scott Karpinen, Board Chair, mentioned the issue of health records and space for  
5 the IT departments, particularly with some of the smaller hospitals in mind. Mr. Glen  
6 Gall, OSHPD, noted that we have nothing in code relative to the design professional  
7 committing physical space to the IT backbone. We see IT equipment being installed in  
8 utility rooms, which is wholly inappropriate. This does need to be addressed in code.  
9 Mr. Gall suggested having this committee develop a recommendation for where we  
10 should be going in the code.

11 Mr. Tokas agreed, suggesting a white paper on national standards or a set of  
12 recommendations from this committee which is well-represented by an array of  
13 disciplines.

14 Mr. Johnson felt that this is an opportune time to deal with space and conditions for a  
15 proper design job for Mechanical, Electrical, and Plumbing (MEP) and low-voltage.

16 A participant in L.A. described an experience that illustrated the need for the architect to  
17 address with the owner, right up front, the issues regarding the physical real estate.

18 Mr. O'Connor described projects in which campuses are integrating EHRs in existing  
19 buildings – it is very difficult to find the necessary space. He agreed that it would be a  
20 tremendous step forward to define this, possibly tying to some of the national standards  
21 to make it clearer and more effective in California.

22 Mr. Tokas described what a white paper would entail: the committee's findings, the  
23 research, the national or worldwide state of the issue, how it fits in the current structure  
24 of delivering health care, how it fits in tomorrow's environment, the needs, and the  
25 recommendations to OSHPD. OSHPD could then start with a Policy Intent Notice (PIN)  
26 or the development of building standards, enabling the hospital to go in the direction of  
27 the future.

28 Mr. O'Connor agreed that the value of HBSB is its cross-disciplinary nature.

29 Mr. Tokas pointed out that the HBSB will see the end product of OSHPD's response to  
30 their recommendations.

1 Mr. Johnson noted that in the industry there is misconception about where the cloud is;  
2 who is responsible for these EHRs – Licensing, OSHPD, the owner? There is a definite  
3 need in the industry to discern where data centers should be built; should they be within  
4 the hospital?

5 Ms. Scaturro mentioned that Licensing has some standards that need to be considered.  
6 Mr. Tokas felt that the first level of discussion should be how the continuous operation  
7 issue is addressed; regarding storage, what needs to be live in the building and what  
8 needs to be redundant elsewhere.

9 Mr. O'Connor raised another issue: with hybrid ORs and the integration of imaging,  
10 there is an associated issue of the amount of electronic cabinets and surgical  
11 integration. Should the rack be in the OR or in a separate room?

12 Ms. Enid Eck, Committee Member, raised the topic of imaging modalities. The more we  
13 expand from traditional environments and create opportunities to do invasive  
14 procedures in other physical areas, we need to devise a principle-based approach that  
15 all of the same infection prevention requirements that apply in the traditional  
16 environments now apply in the additional areas – traffic, access, surfaces.

17 Mr. Dandekar stated that as we look at this, we should also bring in the appropriate  
18 professionals. In a major surgical environment there are all kinds of features.

19 Mr. Tokas stressed that the charge of this committee was to see what we have today  
20 that is not accommodated by current building standards and code requirements. The  
21 committee needs to create a platform so that we can utilize our everyday design  
22 delivery methods to accommodate these issues.

23 Ms. Eck wondered if there is currently anything in the code as far as infection prevention  
24 that can be totally eliminated.

25 Mr. Dandekar mentioned products that technology is changing such as electronic  
26 faucets. He also mentioned that there is some controversy about microbial finishes.  
27 Some of these products may have code implications. Mr. O'Connor said that the  
28 committee could look at whether there are product inhibitors in the code for products  
29 that we would like to see move ahead; also, products the committee deems to have  
30 great merit should be strongly supported in code.

1 Mr. Johnson mentioned an inhibiting topic: the significant mismatch between seismic  
2 requirements and IT. The committee needs to address it; Mr. Tokas stated that OSHPD  
3 will be happy to address it as well. There is still resistance. Finding a way a facility can  
4 meet a continuous operation performance level is a problem.

5 Mr. La Brie asked, considering technology's leverage in the operation of a hospital, how  
6 do you reconcile continuous operation without properly going through due diligence to  
7 make sure all the critical equipment is going to be operational after an earthquake?

8 Mr. Johnson commented on the two very different life cycles. How can we get industry  
9 to demonstrate that they meet our intent?

10 Mr. Tokas noted that the racks themselves do not change – it is the integrated circuits  
11 and components that change. The committee discussed the equipment.

12 Ms. Eck said that generally there is an increasing variety of mobile equipment being  
13 brought in and out of patient rooms and ORs, that have no storage. The equipment sits  
14 in the hallway and becomes a fire/life safety issue. The issue is storage in general for  
15 the variety of equipment being used.

## 16 **7. Comments from the Public/Board Members on issues not on this agenda**

17 Ms. Zamora thanked Dr. Poki Namkung for her membership on the Board and for all her  
18 support. Dr. Namkung has been a Public Member since 2007. She was the Health  
19 Officer/Chief Medical Officer with the Santa Cruz County Health Services Agency for  
20 many years. She has received numerous awards and held many memberships on  
21 panels, advisory boards, and task forces, and authored publications and made  
22 presentations.

23 The committee expressed their deep appreciation.

24 Dr. Namkung responded that during these nine years serving on the HBSB she has  
25 come to appreciate the importance of its work for the people of California.

## 26 **8. Adjournment**

27 Mr. O'Connor adjourned the meeting at approximately 12:25 p.m.

28