



**CODE ADVISORY COMMITTEE**  
**Notice of**  
**Regular Meeting of the**  
**Structural Subcommittee**

---

**DATE:** January 14, 2014 (Tuesday)  
**TIME:** 9:00 AM to 11:00 AM **PLEASE NOTE**  
**LOCATION:** 1660 Mission St., Room **6034** **CHANGE IN LOCATION!!!**

This Subcommittee generally meets regularly on the second Tuesday of each month at 1660 Mission St., Room 2031. (DBI Office).

---

Note: Public comment is welcome and will be heard during each agenda item.  
Reference documents relating to agenda are available for review at Technical Services Division.  
For information or if you wish to be placed on a mailing list for agendas, please email to Yan Yan Chew as follows: [Yanyan.chew@sfgov.org](mailto:Yanyan.chew@sfgov.org)

**AGENDA**

- 1.0 Call to Order and Roll Call  
Members: Stephen Harris, S.E.; Chair; ReneqVignos, S.E.; Marc Cunningham; Tony Lau; Ned Fennie, A.I.A.
- 2.0 Approval of the minutes of the Structural Subcommittee special meeting of November 11, 2013.
- 3.0 Discussion and possible action on Issues re Section 3402B Exception 1
- 4.0 Discussion and possible action on draft AB on Guidelines for the Structural Review of Special Moment Frame Beam Lateral Bracing used in Light Frame Wood Construction for Seismic Applications.
- 5.0 Discussion and possible action regarding Private School Earthquake Safety.
- 6.0 Discussion and possible action on SFBC Section 3404.7.2.
- 7.0 Discussion and possible action on AB-102 Substantial Change expanding applicability to R2 occupancy.
- 8.0 Subcommittee Members and Staff identification of new agenda items, as well as current agenda items to be continued to another subcommittee regular meeting or special meeting. Subcommittee discussion and possible action regarding administrative issues related to building codes.
- 9.0 Public Comment: Public comment will be heard on items not on this agenda but within the jurisdiction of the Code Advisory Committee. Comment time is limited to 3 minutes per person or at the call of the Chair.
- 10.0 Adjournment

Note to Committee Members: Please review the appropriate material and be prepared to discuss at the meeting. **If you are unable to attend, please call Chairperson Stephen Harris, S.E. at (415) 495-3700.** The meeting will begin promptly. See attached materials for information about meeting accessibility.

## **KNOW YOUR RIGHTS UNDER THE SUNSHINE ORDINANCE** (Chapter 67 of the San Francisco Administrative Code)

**Government's duty is to serve the public, reaching its decisions in full view of the public. Commissions, boards, councils and other agencies of the City and County exist to conduct the people's business. This ordinance assures that deliberations are conducted before the people and that City operations are open to the people's review.**

**The ringing of and use of cell phones, pagers and similar sound-producing electronic devices are prohibited at this meeting. Please be advised that the chair may order the removal from the meeting room of any person(s) responsible for the ringing or use of a cell phone, pager, or other similar soundproducing electronic devices.**

**FOR MORE INFORMATION ON YOUR RIGHTS UNDER THE SUNSHINE ORDINANCE, TO OBTAIN A COPY OF THE SUNSHINE ORDINANCE, OR TO REPORT A VIOLATION OF THE ORDINANCE, CONTACT CHRIS RUSTOM BY MAIL TO ADMINISTRATOR, SUNSHINE TASK FORCE CITY HALL, ROOM 244, 1 DR. CARLTON B. GOODLETT PLACE, SAN FRANCISCO, CA 94102-4689. OFFICE (415) 554-7724, FAX (415) 554-7854, E-MAIL: [sotf@sfgov.org](mailto:sotf@sfgov.org)**

**Citizens interested in obtaining a free copy of the Sunshine Ordinance can request a copy from Mr. Rustom or by printing Chapter 67 of the San Francisco Administrative Code on the Internet, <http://www.sfgov.org/sunshine/> and at the San Francisco Public Library.**

### **POLICY STATEMENT OF PUBLIC HEARING OR MEETING**

Pursuant to Section 67.7-1(c) of the San Francisco Administrative Code, members of the public who are unable to attend the public meeting or hearing may submit written comments regarding a calendared item to Technical Services Division, at 1660 Mission Street, San Francisco, CA 94103 or at the place of the scheduled meeting. These written comments shall be made a part of the official public record.

### **SAN FRANCISCO LOBBYIST ORDINANCE**

Individuals and entities that influence or attempt to influence local legislative or administrative action may be required by the San Francisco Lobbyist Ordinance (SF Administrative Code Sec. 16.520-16.534) to register and report lobbying activity. For more information about the Lobbyist Ordinance, please contact the Ethics Commission at 1390 Market Street #701, SF, CA 94102 or (415) 554-9510 voice, or (415) 703-0121 fax, or visit their website at <http://www.sfgov.ethics/>.

### **ACCESSIBLE MEETING INFORMATION POLICY**

In order to assist the City's efforts to accommodate persons with severe allergies, environmental illness, multiple chemical sensitivity or related disabilities, attendees at public meetings are reminded that other attendees may be sensitive to various chemical based products. Please help the City to accommodate these individuals.

The meeting will be held at the Department of Building Inspection, 1660 Mission Street. The closest accessible BART stations are the Civic Center Station at 8th (at the United Nations Plaza) and Market Street and 16th at Mission Street.

Accessible MUNI/Metro lines servicing this location are the, 42 - Downtown, 14 & 14 Limited - Mission, and F - Market bus lines. For information about MUNI accessible services call (415) 923-6142.

The meeting room is wheelchair accessible. Accessible curb side parking spaces have been designated on Mission and Otis Streets. There is accessible parking available within the Department of Building Inspection parking lot. The entrance to this lot is on Otis Street.

Accessible seating for persons with disabilities (including those using wheelchairs) will be available. Assistive Listening devices will be available at the meeting. A sign language interpreter will be available upon request. Agendas and Minutes of the meeting are available in large print/tape form and/or readers upon request. Please contact Technical Services Division at (415) 558-6205, providing 72 hours notice will help to ensure availability.

To request a sign language interpreter, reader, materials in alternative formats, or other accommodations for a disability, please contact Technical Services Division at (415) 558-6205. Providing 72 hours notice will help to ensure availability.

Materials are available in alternate formats on request.



## CODE ADVISORY COMMITTEE

### Regular Meeting of the Structural Subcommittee

---

**DATE:** November 12, 2013 (Tuesday)  
**TIME:** 9:00 AM to 11:00 AM  
**LOCATION:** 1660 Mission St., Room 6034

This Subcommittee meets regularly on the second Tuesday of each month at 1660 Mission St., Room 2031. (DBI Office). If you wish to be placed on a mailing list for agendas, please call (415) 558-6205.

---

Note: Public comment is welcome and will be heard during each agenda item. Reference documents relating to agenda are available for review at Technical Services Division. For information or if you wish to be placed on a mailing list for agendas, please email to Yan Yan Chew as follows: [Yanyan.chew@sfgov.org](mailto:Yanyan.chew@sfgov.org)

### Draft MINUTES

#### Present

Stephen Harris, S.E.  
ReneqVignos, S.E.  
Marc Cunningham

#### Absent

Tony Lau  
Ned Fennie, A.I.A.

#### **Other Present**

David Bonowitz, S.E.  
Pat Buscovich, S.E.  
Homer Yim, Simpson Strong-Tie  
Louay Shamroukh, Simpson Strong-Tie  
David Leung, DBI

- 1.0 Call to Order and Roll Call.**  
**Members: Stephen Harris, S.E.; Chair; Rene' Vignos, S.E.; Marc Cunningham; Tony Lau; Ned Fennie, A.I.A.**

Meeting was called to order at 9:00 a.m. Quorum established with 3 members present.

- 2.0 Approval of the minutes of the Structural Subcommittee special meeting of September 10, 2013.**

A motion to approve the minutes. Seconded and approved.

## Structural Subcommittee

### **3.0 Discussion and possible action on following Administrative Bulletins: AB-107: Application of Engineering Criteria in SFBC 3406B**

A motion to forward AB-107 to full CAC. Seconded and approved.

### **4.0 Discussion and possible action on updating Administrative Bulletins: AB-023, AB-036, AB-046, AB-058, AB-078, AB-082, AB-083, AB-084, AB-094. AB-98, AB-99, & AB-100 to 2013 San Francisco Building Code.**

Comments on AB-084: Add AC 155 to references and include crushing of wood top plates in computed rod elongation in Requirement 3.

Comments on AB-094: Add Excerpts from Ordinance 54-10 as attachment.

A motion to forward AB-023, AB-036, AB-046, AB-058, AB-078, AB-082, AB-083, AB-084, AB-094. AB-98, AB-99, & AB-100 to full CAC. Seconded and approved.

### **5.0 Discussion and possible action on draft AB on Guidelines for the Structural Review of Special Moment Frame Beam Lateral Bracing used in Light Frame Wood Construction for Seismic Applications.**

No discussion. This draft AB will be discussed in SEAONC.

### **6.0 Discussion and possible action regarding Private School Earthquake Safety.**

No discussion.

### **7.0 Discussion and possible action on SFBC Section 3404.7.2.**

No discussion.

### **8.0 Discussion and possible action on AB-102 Substantial Change expanding applicability to R2 occupancy.**

This will be further researched by Pat Buscovich and discussed with possible input from SEAONC.

9.0 Items 5 thru 8 will be included to the agenda in next meeting.

### **10.0 Public Comment:**

No public comment.

### **12.0 Adjournment.**

## **Structural Subcommittee**

The meeting was adjourned at 10:30 a.m.

## MEMORANDUM

**TO:** Steve Harris, Chair, Structural Subcommittee, SF BIC Code Advisory Committee  
**CC:** Patrick Otellini, ESIP; Robert Chun, DBI  
**FROM:** David Bonowitz  
**DATE:** November 12, 2013  
**SUBJECT:** Interpretation of SFBC Section 3402B, Exception 1

---

As we discussed at the CAC Structural Subcommittee this morning, we can expect some questions about how Section 3402B Exception 1 will be implemented. The questions involve the application of Section 1604.11, which Exception 1 uses to check eligibility. Incidentally, since Section 1604.11 is also cited by AB-094, resolution of the issues discussed here could have a useful impact on voluntary seismic work as well.

### BACKGROUND

SFBC Section 3402B Exception 1 reads as follows:

A building that has been seismically strengthened to meet or exceed the standards of Section 1604.11 of this Code or its predecessor provisions within 15 years prior to the operative date of this Chapter is exempt from this Chapter upon the submittal of documentation showing that such work was properly permitted, completed, and maintained as required by this Code, and that the Department has approved such documentation.

The exception exempts eligible buildings based on recent permit and construction records, following the 15-year rule from Ordinance 54-10 (which created AB-094). The intent is clearly to relieve owners of the expense of hiring an engineer to produce new calculations or over-stamp old ones.

To qualify for the exemption, Exception 1 applies SFBC Section 1604.11, the city's traditional standard for triggered retrofit. This differs from the new standards now being applied to other buildings covered by Chapter 34B. While the older standard acknowledges the criteria used for past retrofits, it is not always clear how those criteria apply to existing buildings. Specifically, Section 1604.11 references CBC Section 1613, the earthquake design provisions for new buildings, which in turn references ASCE 7. If enforced to the letter, 1604.11 could involve wind design, nonstructural bracing, and retrofit of upper stories, which are beyond the intent of Chapter 34B, as well as other provisions recognized by SEAONC as inappropriate for existing buildings.

### RECOMMENDATION

DBI might already have a set of interpretations that it applies when Section 1604.11 is triggered. Even if such guidelines exist, however, it is unclear how they might apply to past voluntary work or to Exception 1. Therefore, I recommend that DBI should develop a new Administrative Bulletin (or material to supplement AB-107) to clarify how Section 1604.11 will be enforced.

The purpose of the new AB would be to address ambiguities in the current code language so as to ensure consistent enforcement in line with the intent of Section 3402B Exception 1.

### ISSUES

Following is my personal commentary on Section 1604.11 as it might apply to Chapter 34B, along with some options for resolving each issue. Again, the purpose is not to produce new regulations but to select the option that best represents the intent of the legislation. To that end, my general recommendation is: *A building should be exempt under Section 3402B Exception 1 if its target stories were structurally retrofitted within the past 15 years using criteria that matched conventional practices and code-based procedures in place at the time.*

## MEMORANDUM

(Exception 1 refers to Section 1604.11 “or its predecessor provisions,” meaning the old section 104(f). Thus, a full review of the exception might need to review SFBC code language back to 1998. Here, for simplicity, I consider only the current version.)

### **1604.11 Minimum lateral force for existing buildings.**

**1604.11.1 General.** This section is applicable to existing buildings when invoked by Section 3401.10. This section may be used as a standard for voluntary upgrades.

*Section 3401.10 simply points back to Section 1604.11 when seismic upgrade is triggered by a horizontal addition, an alteration, or a change of occupancy. Previous retrofits that might be eligible for Section 3402B Exception 1 might have been triggered but are more likely to have been voluntary. Despite the second sentence allowing the use of Section 1604.11, it is more likely that a voluntary retrofit would not have cited Section 1604.11 specifically in its permit application, because in most cases there would have been no incentive to do so. Implementation of Section 1604.11 for purposes of Exception 1 should bear this in mind; a previous retrofit might have complied with Section 1604.11, but the documentation probably did not call out that compliance explicitly. Therefore, to require clear documentation of intentional compliance might impose a burden not intended by Exception 1. Options:*

- *Allow record documents to qualify for exemption under Section 3402B Exception 1 only when they explicitly cite Section 1604.11 as design criteria.*
- *Allow record documents to qualify for exemption under Section 3402B Exception 1 when, in the judgment of the code official, they indicate, explicitly or not, compliance with the basic intent of Section 1604.11.*

An existing building or structure which has been brought into compliance with the lateral force resistance requirements of the San Francisco Building Code in effect on or after May 21, 1973, shall be deemed to comply with this section except when a vertical extension or other alterations are to be made which would increase the mass or reduce the seismic resistance capacity of the building or structure.

*The “1973” allowance means that a retrofit completed in, say, 1999, need only to have applied the 1973 UBC in order to be exempt from Chapter 34B. In addition to allowing obsolete criteria (that miss, for example, important changes to wood-frame sheathing and steel moment frame provisions made after Northridge), the 1973 allowance sets up a conflict with Chapter 34B. Chapter 34B requires retrofit of pre-1978 buildings, but this allowance would treat certain pre-1978 designs as acceptable. Options:*

- *Allow the 1973 allowance as written, and ignore the apparent conflict.*
- *Disallow the 1973 allowance when Section 1604.11 is used to comply with Section 3402B Exception 1.*
- *Change Section 1604.11 to set a later “deemed to comply” date (related to the 1997 UBC, perhaps) when this section is used to comply with Section 3402B Exception 1.*
- *Change Section 1604.11 to set a later “deemed to comply” date whenever this section is used.*

**1604.11.2 Wind forces.** Buildings and structures shall be capable of resisting wind forces as prescribed in Section 1609.

*Completion of a wind analysis or retrofit is outside the intended scope of Chapter 34B. Options:*

- *Waive Section 1604.11.2 when Section 1604.11 is used to comply with Section 3402B Exception 1.*
- *Require a demonstration of compliance with Section 1604.11.2 as written.*
- *Require a demonstration of compliance with Section 1604.11.2, but only in the retrofitted story, consistent with the intent stated in Section 3401B.*



## MEMORANDUM

**1604.11.3 Seismic forces.** Buildings and structures shall comply with the applicable provisions of Sections [sic] 1613, except that, when compliance with this section is required by Section 3401.10, then structures and elements may be designed for seismic forces of not less than 75 percent of those given in Section 1613, and the building separation limitations of Section 1613.8 do not apply.

*Use of contemporary code.* As written, references to Section 1613 suggest the latest edition of the SFBC. This is appropriate when Section 1604.11 is invoked on a current project. But Section 3402B Exception 1 probably should not be interpreted to mean that a past retrofit must now be checked against current code provisions. Rather, the reference to “predecessor provisions” and the clause “was properly permitted” in Exception 1 indicate that the retrofit need only satisfy the versions of Section 1604.11 and Section 1613 that were in place at the time. Options:

- Assess the previous retrofit relative to current provisions in Section 1613.
- Assess the previous retrofit relative to the provisions in place at the time of the retrofit design that correspond to those now in Section 1613, even if the scope of the older provisions was different.

*Scope of seismic retrofit design.* Section 1613 contains some of the provisions needed for earthquake design of new buildings; it references the standard known as ASCE 7, which contains provisions for selecting and checking the overall seismic force-resisting system. Thus, while Section 1613 is titled “Earthquake Loads,” the phrase “shall comply with the applicable provisions of Section 1613” should probably be understood to mean more than just the loads. Still, it seems unreasonable to think that Section 1604.11 (let alone Section 3402B Exception 1) intended an existing building to be checked or retrofitted top to bottom using every provision that applies to the design of new buildings. For one thing, Section 1613 and ASCE 7 require bracing and anchorage of nonstructural components; probably that is never required when 1604.11 is triggered by other SFBC provisions. For another, Section 1613 and ASCE 7 require consideration of the entire structure; applied to past voluntary retrofits of so-called “soft story” buildings, this would effectively negate any benefit of Section 3402B Exception 1. It is possible that DBI has already developed guidelines for applying Section 1613 to existing buildings. If so, those guidelines could represent at least a first draft of the recommended AB. In addition, since IEBC Chapter A4 is essentially a code-based procedure tailored to “soft story” buildings, its basic scope could be used to check the completeness of a previous retrofit.

Options: Exempt previous retrofits under Section 3402B Exception 1 when the submitted documentation demonstrates compliance with:

- Every provision in Section 1613 and its reference standards.
- Only those provisions of Section 1613 and its reference standards that DBI normally requires when Section 1604.11 is invoked for triggered retrofits. (Current DBI standard procedures should be documented in an AB if not already documented.)
- Only those provisions of Section 1613 and its reference standards that a) DBI normally requires when Section 1604.11 is invoked for triggered retrofits, and b) are commensurate with the intent of Section 3401B. In particular, compliance with Section 1613 should only be required for the seismic force-resisting system in the building’s target stories, together with load path components between the diaphragm immediately above and the foundation.

Unless DBI procedures are already known and consistently enforced, development of an AB should perhaps involve a review of Section 1613 and ASCE 7 Chapters 11 and 12 to itemize those provisions that should and should not apply to Exception 1.

*Use of reduced seismic loads.* As written, the “75 percent” factor on seismic forces applies only when Section 1604.11 is referenced by Section 3401.10. Thus, the force reduction would not apply when this section is used to comply with Section 3402B Exception 1. This seems counter to the intent of Chapter 34B, especially considering that the criteria being applied to mandated retrofits (in Section 3406B.2) generally use “reduced” seismic loads. On the other hand, the

## MEMORANDUM

*reduction is generally applied to current design loads; it should not be applied to design loads from previous “deemed to comply” codes that are already lower than current values. Whether to allow the factor for Exception 1 should probably depend on whether DBI has generally encouraged its use when Section 1604.11 has been used for voluntary retrofits. If most voluntary retrofits in the last 15 years have been using the reduction factor, application of Exception 1 should accommodate that practice. Options:*

- *Enforce the provision as written: Do not allow the 75 percent factor when Section 1604.11 is used to comply with Section 3402B Exception 1.*
- *Allow the 75 percent factor when Section 1604.11 is used to comply with Section 3402B Exception 1, if the retrofit design in question relied on it.*
- *Allow the 75 percent factor when Section 1604.11 is used to comply with Section 3402B Exception 1, but only when it is applied to current design loads.*

*Waiver of Section 1613.8. As written, the waiver of Section 1613.8 applies only when Section 1604.11 is referenced by Section 3401.10. Thus, it would not apply when this section is used to comply with Section 3402B Exception 1. However, it seems unlikely that any voluntary retrofit would have considered the building separation limits for new construction, so enforcing them now would effectively negate any benefit of Section 3402B Exception 1. Options:*

- *Enforce the provision as written: Do not waive Section 1613.8 when Section 1604.11 is used to comply with Section 3402B Exception 1.*
- *Allow the waiver of Section 1613.8 when Section 1604.11 is used to comply with Section 3402B Exception 1.*

When upper floors are exempted from compliance by Section 3401.10, the lateral forces generated by their masses shall be included in the analysis and design of the lateral force resisting systems for the strengthened floor. Such forces may be applied to the floor level immediately above the topmost strengthened floor and distributed in that floor in a manner consistent with the construction and layout of the exempted floor.

*As noted above, Section 3401.10 is merely a pointer from various upgrade triggers in Chapter 34 (not Chapter 34B) back to Section 1604.11. Therefore, this paragraph does not apply directly when Section 1604.11 is used to comply with Section 3402B Exception 1. Nevertheless, the notion that a “first story only” retrofit is sometimes acceptable under Section 1604.11 is consistent with the intent of Chapter 34B and the requirements of its compliance alternatives.*

In lieu of meeting the specific requirements of this section, an alternative lateral analysis procedure incorporating inelastic behavior may be submitted and approved in accordance with rules and regulations adopted by the Building Official pursuant to Section 104A.2.1.

*This paragraph is moot with respect to Section 3402B Exception 1, which intends to exempt certain buildings based on prior documentation and permit records without thorough vetting of calculations.*

**1604.11.4 Design values for existing materials.** The incorporation of existing materials, construction and detailing into the designed lateral force system shall be permitted when approved by the Building Official. Minimum quality levels and maximum load and stress values shall comply with Table 16C-D of this code, Tables 8-8-A and 8-8-B of the State Historical Building Code, or with other rules, regulations and standards adopted by the Building Official pursuant to Section 104A.2.1.

*This paragraph is moot with respect to Section 3402B Exception 1, which intends to exempt certain buildings based on prior documentation and permit records without thorough vetting of calculations.*