



## Concrete Building Safety Program

Stakeholder Working Group Meeting #3 Summary Memo

January 12, 2023

### Working Group Attendees (20)

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#### City & County of San Francisco Staff (6/9)

##### Invited

Judson True, *Director of Housing Delivery, Office of Mayor Breed*  
Lisa Gluckstein, *Housing & Land Use Policy Advisor, Office of Mayor Breed*  
Raquel Bito, *President, Building Inspection Commission*  
Neville Pereira, *Deputy Director of Permit Services, Department of Building Inspection*  
Raymond Lui, *Structural Engineering Section Manager, San Francisco Public Works*  
Dan Sider, *Senior Advisor for Special Projects, San Francisco Planning Department*  
Liz Watty, *Director of Current Planning, San Francisco Planning Department*  
Susan Ma, *Joint Development, Project Manager, Office of Econ. & Workforce Dev.*  
Holly Babe Faust, *Construction Rep., Mayor's Office of Housing & Comm. Dev.*

##### Attended

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X  
X  
-  
X  
-  
X  
X  
X

#### Technical Experts (6/6)

##### Invited

Duke Crestfield, *Principal, Triangle Engineering*  
Ned Fennie, *Architect, DBI Code Advisory Committee*  
David Friedman, *Board Member, SPUR*  
Sarah Atkinson, *Earthquake Resilience Policy Manager, SPUR*  
Robert Kraus, *Structural Engineer, Structural Engineers Assoc. of Northern California*  
Jenna Wong, *Assistant Professor of Civil Engineering, San Francisco State University*

##### Attended

X  
X  
X  
X  
X  
X

#### Residential Building Owners (3/6)

##### Invited

Chris Cummings, *Dir. of Housing Development, Tenderloin Neighborhood Dev. Corp.*  
Heather Lea Heppner, *Housing Preservation Mgr., Chinatown Comm. Dev. Center*  
Janan New, *Executive Director, San Francisco Apartment Association*  
Charley Goss, *Govt & Community Affairs Mgr., San Francisco Apartment Association*  
George Orbelian, *Building Owner, 640 Mason Street*  
Freedra Rawson, *Associate Director of Resident Services, Mercy Housing California*

##### Attended

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X  
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X  
X  
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#### Commercial Building Owners (1/2)

##### Invited

Alex Bastian, *Director, Hotel Council of San Francisco*  
Lisa Yergovich, *Principal, Architectural Resources Group (on behalf of BOMA SF)*

##### Attended

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X

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## Stakeholder Working Group Meeting #1 Agenda

### Tenant Representatives (2/4)

#### Invited

John Elberling, Executive Director, Yerba Buena Neighborhood Consortium  
Raquel Redondiez, Director, SoMa Pilipinas  
Fred Sherburn-Zimmer, Executive Director, Housing Rights Committee of SF  
Alicia Sandoval, Tenant Counselor, Housing Rights Committee of SF

#### Attended

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X  
X

### Business Representatives (0/3)

#### Invited

Rodney Fong, President & CEO, San Francisco Chamber of Commerce  
Emily Abraham, Dir. of Legislative & Community Affairs, SF Chamber of Commerce  
Johnny Jaramillo, Executive Director, PlaceMade

#### Attended

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### Labor Representatives (0/1)

#### Invited

Rudy Gonzalez, Secretary-Treasurer, SF Building & Construction Trades Council

#### Attended

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### Builders & Developers (2/3)

#### Invited

Matt Field, President, TMG Partners  
Gregory Johnson, Associate Director, CBRE  
Brian Main, Vice President, Construction Manager, Plant Construction

#### Attended

X  
-  
X

## Project Team Attendees (10)

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### Office of Resilience & Capital Planning (4), Project Lead

Sophie Hayward, Director of Legislation & Public Affairs, City Administrator's Office  
Brian Strong, Chief Resilience Officer  
Melissa Higbee, Resilience Program Manager  
Laurel Mathews, Senior Earthquake Resilience Analyst

### Applied Technology Council (3), Technical Lead

Ayse Hortacsu, ATC Project Technical Team Manager  
Joe Maffei, ATC Project Technical Team Director  
Karl Telleen, ATC Project Technical Team Member  
Daniel Zepeda, ATC Project Technical Team Member  
Stephen Harris, ATC Project Technical Team Member

### CivicMakers (2), Engagement Lead

Mike King, Project Manager  
Terri Feeley, LBE Subcontractor & Facilitator

### Other City Staff (1)

Christine Gasparac, Assistant Director, Department of Building Inspection

# Concrete Building Safety Program

## Stakeholder Working Group Meeting #1 Agenda

### Meeting Purpose

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1. Working group members understand major non-ductile concrete (NDC) safety issues.
2. Working group members understand which concrete buildings the City proposes to be in the program, which it proposes to be out, and have an opportunity to provide feedback.
3. Working group members understand how the City is approaching concrete retrofit levels and have an opportunity to provide feedback.

### Meeting Background Materials

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1. [Stakeholder Engagement Summary Report](#) (July 2022)
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### Meeting Summary

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#### **Welcome, Previous Meeting Recap & Agenda Overview**

Project team and working group attendees convened virtually via Zoom. Terri Feeley, Lead Facilitator, welcomed participants and encouraged them to introduce themselves via chat. Laurel Mathews, Senior Earthquake Resilience Analyst, presented a quick overview of the day's agenda, discussion topics, and meeting objectives. Joe Maffei, Project Technical Director, presented a quick overview of the tilt-up building content from the previous working group meeting in November 2022. Laurel Mathews reminded participants about they should expect regarding future conversations about a tilt-up building program ordinance.

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#### **Non-Ductile Concrete (NDC) Buildings 101**

Joe Maffei presented an overview of non-ductile concrete buildings. The presentation included information on potential retrofit levels and standards, program scope, and the potential criteria for buildings to be included in the program, as well as videos and photographs of damage to non-ductile concrete buildings and test structures. Working group members were invited to ask clarifying questions following the presentation.

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#### **Working Group Questions & Comments**

Note: the language below in italics reflects the spirit of the dialogue but is not always a direct quote.

**C1.** *As I was watching the presentation, I was wondering about which of the videos and photographs we can use to simplify the explanation for these concrete retrofits without dumbing it down too much. The life safety factor is important to communicate. We should refer to the two buildings in Christchurch. We need to communicate to the public that we are not making this up. This is a very risky category of building. We need to convey that without getting too geeky in the explanation.*

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**C2.** *Do not forget about the previously compiled resources that were developed for the Soft Story Program. It would be helpful to have a compiled set of information for this program, too. We should develop a standardized dataset that allows everyone to see the whole city as a dashboard. The dataset would include soil conditions, building occupancy, etc.*

**Q1.** *How many of these buildings have residential tenants?*

**A1.** *Thirty percent (30%) of the entries in our database are residential.*

**Q2.** *What is the difference between column retrofits from the inside versus the outside?*

**A2.** *There are engineering details that are different, but for owners, the big difference is cost. Column retrofits on the inside of a building may be more costly due to finishes. In general, it is a lot harder and more expensive to retrofit versus building the right way from the beginning.*

**Q3.** *How much time do people have to drop, cover and hold, given the earthquake early warning system?*

**A3.** *It depends where the earthquake is located, but people should always drop, cover and hold when things are shaking.*

**Q4.** *In the past, has the City of San Francisco offered low interest loans to low income homeowners and landlords to complete retrofits?*

**A4.** *[Response added after the meeting] In 1992, voters in San Francisco passed a general obligation bond for \$350 million for loans to building owners to complete retrofits of unreinforced masonry buildings. \$150 million of this was designated to retrofit buildings containing affordable housing (building owners would pay 1/3 the interest rate paid by the city for the bond). \$200 million was designated for other types of buildings (building owners would pay 1% above the interest rate paid by the city for the bond). Only \$90 million was ultimately used for earthquake retrofit loans, because private loans became available at lower interest rates than what the city was offering. In 2016, the remaining unused \$260 million in this bond program was repurposed for acquisition and rehabilitation of affordable housing. Note: San Francisco's General Obligation Bond program is today (as of 2023) highly constrained with multiple programs and priorities competing for limited funding. Bonds that fund privately-owned projects don't receive the same tax benefit as bonds that fund public/municipal projects.*

*Later, during the soft story program (beginning approximately 2013) the City offered PACE financing for soft story retrofits. This financing option was not widely used but was a good option for some building owners.*

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### **Southern California Ordinances**

Daniel Zepeda, Project Technical Team Member, presented an overview of current Southern California concrete building retrofit program ordinances in four cities. The presentation included information on retrofit levels and standards, program scope, the criteria for buildings to be included in the program, and program progress to-date. Daniel also shared the City of West Hollywood's policy decision to exempt

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condominiums from its ordinance, which was of particular interest to some working group members. Working group members were invited to ask questions following the presentation.

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#### Working Group Questions & Comments

Note: the language below in italics reflects the spirit of the dialogue but is not always a direct quote.

**C1.** *I do not see it as viable policy for any City to put the risk on building tenants. The City of West Hollywood's condominium exemption essentially says, "if you want to stay in a risky building, that is your own choice." I do not agree with that. It puts other residents at risk.*

**A1.** *Agreed. It could be a subletter, or someone doing work on the condo who gets injured. However, the West Hollywood City Council approved the exemption request from condominium owners. Those debates happened. But it is not a structural engineering debate. It is a policy debate.*

**C2.** *In my opinion, it should always be an engineering decision. If our terms are onerous for condominium owners, I would prefer that the City stay owner-agnostic and engineering-centric. We need to be ready for resistance.*

**Q1.** *Was West Hollywood concerned about liability issues related to their decision to exempt condominiums from the program?*

**A2.** *Cities only have liability related to their enforcement of the California building code. The City of West Hollywood did not see their decision to exempt condominiums as a liability because the retrofit ordinance was already going above and beyond the existing California building code. The building code has certain triggers that owners need to follow, so these types of ordinances, by their very nature, must be more stringent than the existing code. How much more stringent is the question posed to this group and to the City.*

**C3.** *You mentioned that with concrete buildings tenants may need to vacate during the retrofit. We heard from tenants what they had to go through during the retrofit of soft story buildings. Landlords regularly lied to tenants and told them they had to leave. They did not let tenants come back for months or even a year and forced them to find other units. If there is not proper notification to tenants, this will happen again. Adding a notification from the City at the beginning of the process that tells tenants their rights and where to go for help would make the process smoother. The Housing Rights Committee of San Francisco is willing to talk about longer time periods (i.e., more than 19 days of tenant displacement).*

**A3.** *[answer given by another working group member in the chat] Landlords are required to give notice to tenants when work is done in their units and are only allowed to displace tenants for 19 days. Plant Construction has done many projects in occupied buildings. It is a challenge to get the work done in a short timeframe.*

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#### **Concrete Buildings in the San Francisco Program**

Joe Maffei presented the City's draft proposal for which buildings would be included and exempt from the concrete retrofit program. Terri Feeley, Lead Facilitator, led working group members into a discussion

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of their questions, reactions and feedback to the City's draft proposal. The discussion was followed by a Zoom poll question designed to take a pulse of how working group members generally felt about the proposal at this stage.

### Working Group Questions & Comments

Note: the language below in italics reflects the spirit of the dialogue but is not always a direct quote.

**Q1.** *Seismic retrofits in residential units may result in taking some floor space out of them (e.g., placement of bigger columns). Is there any thought on how this can be addressed? Also, while the retrofit cost is about \$100 per square foot, this likely does not include the replacement cost of finishes. Both will have impacts on the property value. It gets pretty complicated pretty fast. What is the effective cost? What is the mechanism to deal with that? Some of these older buildings you could do something on the outside. Outside is better. We may need to think about funding mechanisms since the cost could be significant.*

**R1.** *That is a challenging question for building owners. It is a very onerous process and tenants are vacated to do that work. Residential is more disruptive. Some of the taller buildings are non-residential so that may be a blessing. The ordinance will not say how to do the retrofit.*

**Q2.** *Will these retrofits trigger other code required upgrades? If it triggers upgrades, it would be really tough. A lot of these buildings will trip a zillion upgrades if we are not thoughtful about that. We need to figure out how to work with building officials. We could trigger things inadvertently. It is a significant and unique circumstance that we will need to address.*

**R2.** *There is precedent for exemptions to code triggers in these types of ordinances. For example, the ordinances in Southern California specifically state that the ordinance is purely seismic. There are no triggers for mechanical or architectural requirements unless the building official finds something dangerous. But keep in mind that the City does not have the authority to exclude ADA upgrades. ADA is a special federal mandate, but beyond that, the idea is that no additional code requirements would be triggered. Owners can do other improvements to get additional value out of the project. Some owners may look at seismic upgrades as an opportunity to upscale. We need to be careful about how we communicate this to the public.*

**Q3.** *What are we thinking about how to handle adjacent buildings? Los Angeles says that buildings need separation (per the building code), or an analysis that includes the effects of the adjacent buildings. But I do not know of any published technique for such analysis.*

**A3.** *Yes, San Francisco is a dense city. Buildings go to the property line. Adjacent buildings is a huge topic. City ordinances say you need to meet certain performance objectives. One of those is pounding. The difficulty may be that an in-ordinance building is hitting an out-of-ordinance building. That building does not have a mandate to share building drawings or anything. How do you address buildings that lie on an existing fault? DBI can put together an administrative bulletin to provide more detailed guidance beyond what is in the ordinance. In Los Angeles, they decided not to worry about pounding. They look at it as a separate building and to handle accordingly. The City of West Hollywood said they want to address it, and gave guidance for how to do so. They gave authority and flexibility to building officials to clarify and be more lenient with requirements.*

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**Q4.** *Blind spots in the proposal can only be identified by going backwards. What is the goal of the program? Is it to save lives? To protect the economic viability of the city? Right now this criteria (i.e., year of construction) is a blunt instrument. What we really want to do is go for the biggest bang for the buck. We should figure the objectives out first.*

**A4.** *The purpose is to protect the safety of people in San Francisco. It would be great to protect economic assets, etc. But we get more bang for the buck for those other objectives through new construction. Early adopters are people who are ready to rebuild or remodel their building anyway. The idea is to give owners time to consider their options.*

**C1.** *If safety is the primary purpose, then the existing building analysis should be calculated on the numbers of occupants per building to see where most people would be injured by building type/size/date.*

**A5.** *I think that is good as a principle. However, when you dig deeper, you learn interesting things. If more people, the building is bigger. If you have X dollars and you can spend it on three buildings, rather than on one larger building, the cost-benefit calculus is not as clear as you might think. There is not a real distinction between the construction eras that should be seen as most vulnerable. We should judge this program by the amount of safety we provide.*

**Q5.** *How does the state of concrete change with age?*

**A6.** *[this answer was provided in the chat by another working group member] One hundred year old reinforced buildings will generally experience chemical change (e.g., carbonation). In these cases, the concrete no longer protects the rebar, so spalling becomes a huge problem.*

**Q6.** *Will the City include retaining walls in the ordinance?*

**A7.** *The City has not put anything about retaining walls into the draft ordinance. We have not seen it included on other ordinances either. I think we would consider the need to retrofit retaining walls on a case-by-case basis.*

**Q7.** *How do we go about introducing and testing new materials in this program so we can find solutions that are cheaper, stronger, etc.? How do we submit new materials or approaches for consideration by the group?*

**A8.** *Please send your ideas for new materials and retrofit solutions to the working group for consideration.*

**Q8.** *Has there been any outreach to other cities to see if they would support new state regulations? That may be a better place to legislate retrofits.*

**A9.** *There are professional groups that are involved in advocacy. The initiatives range from inventory development to retrofit funding.*

**Q9.** *Will [non-ductile concrete] flexible diaphragm buildings be exempt or not? They are exempt in Los Angeles.*

**A10.** *[Response added after the meeting] This has not been decided yet.*

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### Concrete Retrofit Scope

Joe Maffei presented the City's draft proposal for the level and scope of concrete retrofits to be required by the program. Terri Feeley led working group members into a discussion of their questions, reactions and feedback to the City's draft proposal. The discussion was followed by a Zoom poll question designed to gauge how working group members generally felt about the proposal.

### **Working Group Questions & Comments**

Note: the language below in italics reflects the spirit of the dialogue but is not always a direct quote.

**C1.** *I like having the option of different retrofit levels and providing incentives for going higher than the base level. Sometimes going above and beyond requires only a very basic upgrade. If you can put in more incentives for owners to get to higher levels of safety, I would encourage that.*

**C2.** *I am still thinking a lot about residential. It makes me harken back to COVID policy and public safety. We need to be really thoughtful about the number of people protected. I could see an approach that causes the building stock to lose a massive amount of value. We need to be mindful of the law of unintended consequences. For instance, if the units have to reduce in size (which seems highly likely), it may render a number of units close to worthless. It could also bankrupt HOA's where occupants cannot afford the necessary assessments. You probably have a lot of older people in these buildings who cannot afford these assessments (or the loss of value).*

**A1.** *We may give more time to residential buildings so owners can consider their options. What we have seen so far in Southern California are early adopters who want to gut and remodel. The ones that are more complicated are those that will suffer through the retrofit of an occupied building. They will need to move tenants around and retrofit unit by unit. It can take 20 years to do this type of work. In Southern California, we have not lived through that yet. However, we have been doing something like this for hospitals for 20+ years. If it can be done in a hospital, it can be done anywhere.*

**C3.** *Plant Construction has done voluntary retrofits, but only on steel. It is much more surgical. Concrete is much more difficult to do. You are talking about putting up a shear wall through the building. Anything more than FRP wrap is very hard to do. Brings up questions of cost and feasibility. We have only done concrete retrofits for state-funded projects (University of California system) or courthouses (Federal), unless a building is being completely updated.*

**C4.** *There are new materials and approaches which may reduce or eliminate potential friction with cost, time, displacement or other challenging issues.*

**C5.** *I did a case study that looked at pre-WWII flexible wood floor buildings with tenants. We may be able to correct only the ground floor deficiencies.*

**Q1.** *Do we have any retrofit cost data on 2+ story residential retrofits versus non-residential?*

**A2.** *We are working on it, but we will need help from the working group.*



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### **Wrap Up & Next Steps**

Laurel Mathews provided an overview of next steps for how the working group's comments will be incorporated into a draft non-ductile concrete program ordinance. Laurel reminded working group members about the topics for the next meetings scheduled in February 2023 and beyond. Working group members were encouraged to share their thoughts about future meeting topics with Laurel via email. Terri Feeley thanked everyone for their participation and closed out the meeting.

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