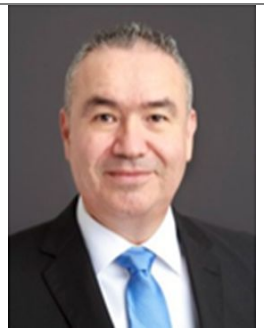
CALIFORNIA BUILDING OFFICIALS

60th Annual Business Meeting

Champlain Towers South Collapse
Surfside, Florida

Susan Dowty, *S.E.*
Government Relations Manager
International Code Council (ICC)

Kelsey Parolini S.*E.*
SEAOSC President 2021-22
Structural Engineers Association of Southern California



Victor Cuevas *P.E.*
Assistant Bureau Chief, Inspection Bureau, Department of Building & Safety
City of Los Angeles

Champlain Towers South

Champlain Towers South, a 12-story + Penthouse (126 Units) beachfront condominium in the Miami suburb of Surfside, Florida, partially collapsed on June 24, 2021, at approximately 1:22 a.m.

Ninety-eight (98) people died.

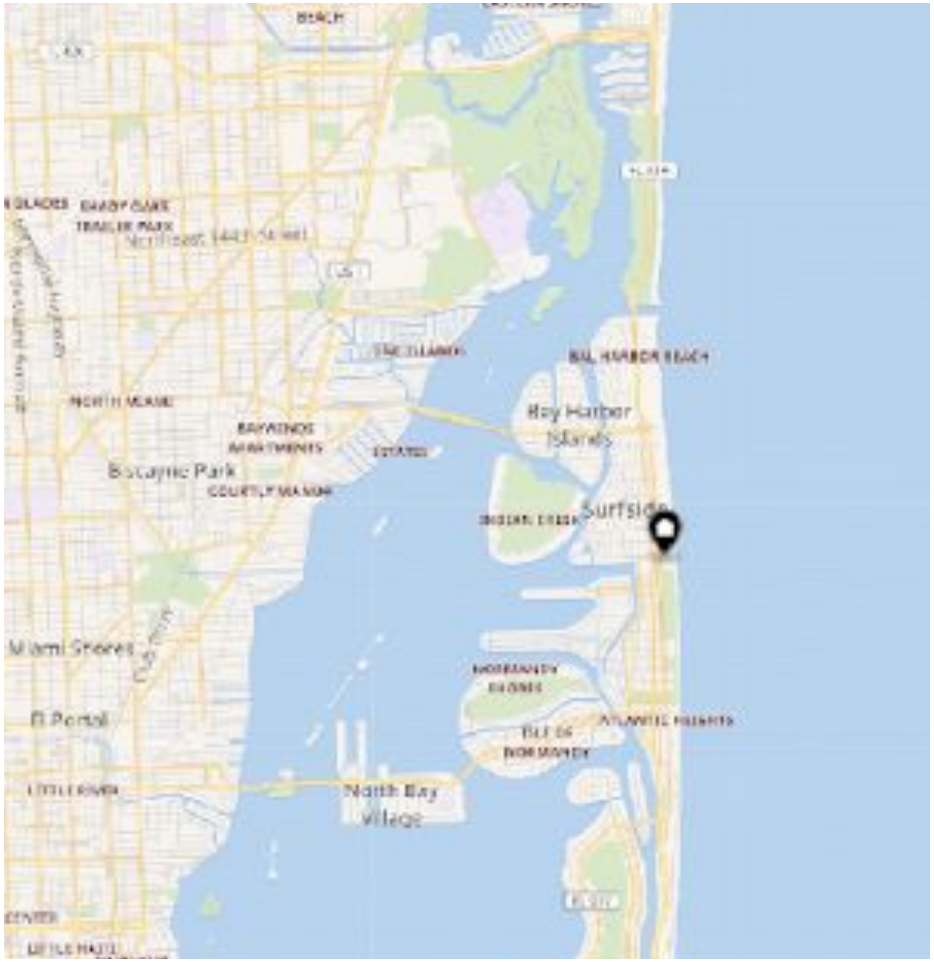
Four (4) people were rescued from the rubble, but one died of injuries shortly after arriving at the hospital.

Eleven (11) others were injured.

Approximately 35 were rescued the same day from the un-collapsed portion of the building.

The building was demolished 10 days later.

Surfside, Florida



Champlain Towers South

Champlain Towers South

When we review the Surfside collapse, the complete list of all possible causes of failure include:

Design

Installation

Operation

Maintenance

External acts

Act of God

Outline

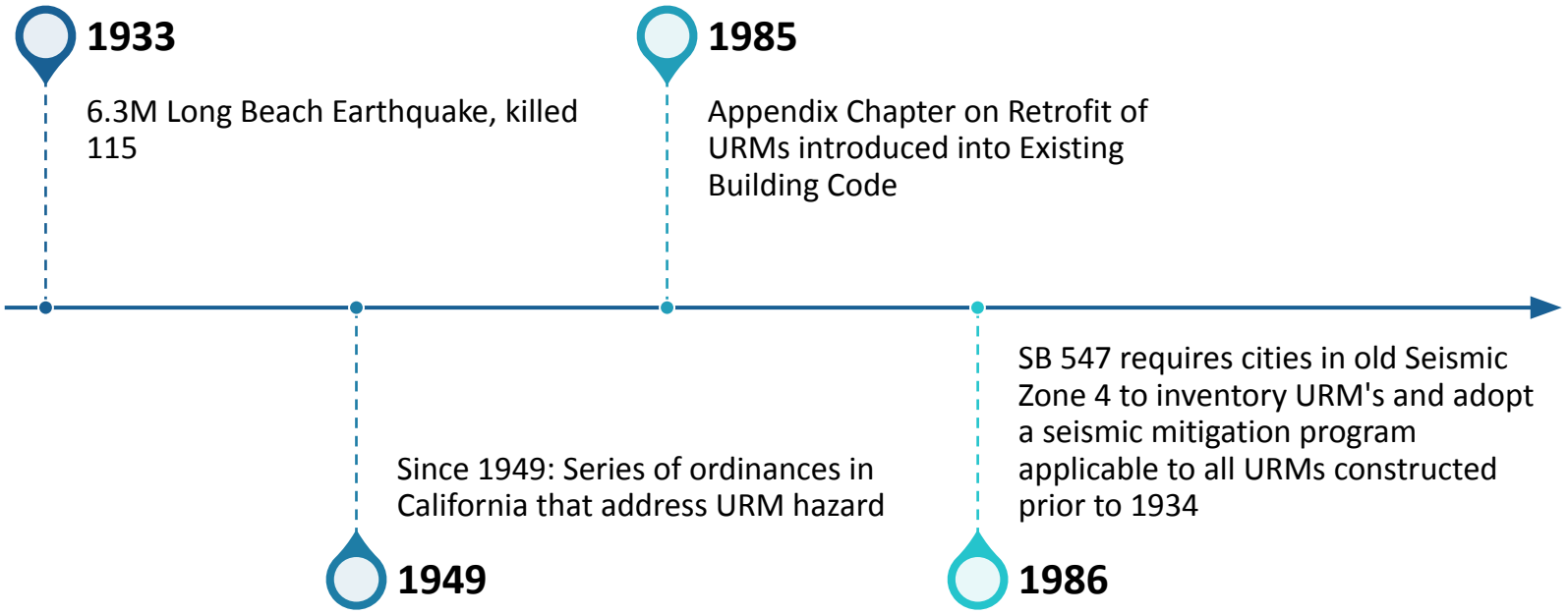
Examples of Reactions to Failures Before June 24, 2021

Reactions After June 24, 2021

Path Forward: Reactive or Proactive?

Unreinforced Masonry Buildings (URM)

Unreinforced Masonry Buildings (URM)



Nonductile Concrete & Wood Frame Soft Story Structures

Seismic Ordinances
OF CALIFORNIA

SPONSORED BY: WJE

WOOD-FRAME SOFT-STORY STRUCTURES

- Alameda
- Berkeley
- Beverly Hills
- Burbank
- Carpinteria
- Culver City
- Fremont
- Hayward
- Long Beach
- Los Angeles
- Mountain View
- Oakland
- Pasadena
- Richmond
- San Francisco
- San Jose
- Santa Monica
- Torrance
- West Hollywood

NON-DUCTILE CONCRETE STRUCTURES

- Beverly Hills
- Burbank
- Long Beach
- Los Angeles
- Santa Monica
- West Hollywood

Welcome to SeismicOrdinances.com, an informational site maintained by Wiss, Janney, Elstner Associates, Inc. (WJE). This page serves as a knowledge base for information regarding seismic assessment and retrofit requirements and relevant deadlines that pertain to seismic ordinances in various cities throughout California. It's intended for use by individuals and building owners seeking an introduction to seismic ordinances.

The information provided on SeismicOrdinances.com is general in nature and is subject to change as local authorities amend their current ordinances and adopt new ordinances. Those requiring specific information on seismic ordinances should contact their municipality.

What is a seismic ordinance?

A seismic ordinance is a law passed by local authorities requiring the evaluation and retrofit of specific building types proven to be vulnerable to seismic events. These ordinances were created in response to poor performance of certain classes of structures during previous earthquakes, such as the 1989 Loma Prieta earthquake and the 1994 Northridge earthquake. These ordinances outline minimum requirements for mandatory evaluation and structural improvements intended to reduce earthquake-induced damage to classes of buildings identified to be particularly vulnerable to earthquake damage. These ordinances are generally not intended to strengthen buildings to a level of seismic performance equivalent to that of a new building designed using current building code requirements. Rather, these requirements address critical safety concerns by increasing the likelihood that occupants are able to safely exit the building in the event of an earthquake.

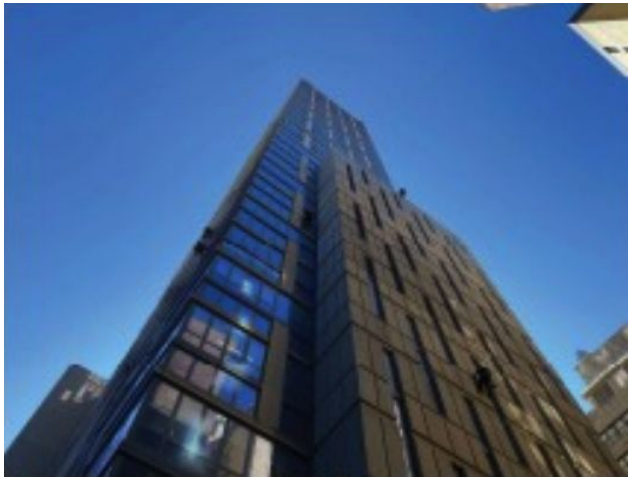
Is your building type included?

The new generation of seismic ordinances is categorized by one of two building types: (1) **Wood-Frame Soft-Story Structures** and (2) **Non-Ductile Concrete Structures**. Most of these newer ordinances apply to structures permitted for construction before January 1, 1978, although the specific cutoff date varies by municipality. Follow the links on this page for more information on each building type and the associated ordinance(s).

In California, there are also other types of mandatory seismic ordinances that apply to structure types such as unreinforced masonry (URM) buildings. The California URM Law was passed in 1986 and required local governments in high seismic zones to develop an inventory for URM buildings and establish a loss-reduction program. For a handful of California cities, ordinances requiring seismic retrofit were passed—but in the majority of cities, the local ordinances only required that owners identify buildings as being vulnerable. Typically, mandatory compliance dates for URM buildings in California covered by this older generation of seismic ordinances have passed, meaning that most of the buildings in California covered by these older ordinances should be in compliance. Because of this, SeismicOrdinances.com does not address URM ordinances in California. Those requiring specific information on URM ordinances in California should contact their municipality directly.



NYC Façade Inspection Program Dates Back to 1980



Buildings *greater than six stories* required to have their exterior walls & appurtenances inspected *every five years* and file a technical report to the Department of Buildings (DOB).

This report must be prepared and submitted by a licensed architect or engineer, also known as QEWI (Qualified Exterior Wall Inspector). A QEWI A is a DOB registered Professional Engineer (PE) or Registered Architect (RA) that has been registered and verified with the DOB Facades Unit.

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Welcome to FacadeOrdinance.com, an informational site maintained by Wiss, Janney, Elstner Associates, Inc. (WJE). FacadeOrdinance.com contains general information regarding facade ordinances in various cities throughout the United States. It's intended for use by anyone seeking an introduction to facade ordinances.

What is a facade ordinance?

A facade ordinance is a law passed by local authorities requiring the periodic inspection of certain building facades to help ensure public safety.

Which cities have facade inspection ordinances?

Boston, Chicago, Cincinnati, Cleveland, Columbus, Detroit, Milwaukee, New York, Philadelphia, Pittsburgh, San Francisco, and St. Louis currently have ordinances in effect that require periodic inspections of buildings that meet specific requirements. You can access more detailed information about a particular city's facade ordinance by selecting the link from the menu to the left or clicking one of the photo links above.

Who performs a facade inspection?

Local authorities generally require a facade ordinance inspection be performed under the direction of a licensed architect or licensed professional engineer in the state in which the building resides. For some ordinances, however, this is not a requirement.

How is a facade inspection performed?

The requirements and procedures for conducting facade inspections are outlined in ASTM E2270, "Standard Practice for Periodic Inspection of Building Facades for Unsafe Conditions." Published by ASTM International, this model standard reflects best practices for facade inspections and is intended for adoption by model building codes, local municipalities, or private owners of multiple buildings. Visit ASTM International to learn more.

Berkeley Balcony Collapse: June 16, 2015

June 2015 Berkeley Balcony Collapse

July 2015: Berkeley City Council passed ordinance “Exterior Elevated Elements” (EEE) requiring inspections within 6 months, and then every 3 years on all existing buildings.

Jan 2017: CBSC approved emergency building regulations for EEEs based on approved code changes for the 2018 IBC & 2018 IEBC

2018/19: Senate Bills 721 & 326 passed in response to the collapse requiring:

- ✔Inspection of all multi-family residential buildings’ exterior elevated elements prior to January 1, 2025.
- ✔Thereafter every 9 years for residential multi-family common interest buildings (SB 326) and every 6 years for multi-family apartment buildings (SB 721).

Miami Federal Office Building Roof Collapse: August 5, 1974

- Built in 1925, 49 years old
- 7 deaths and 15 injuries
- 6” concrete slab over steel framing.
- Report the roof served as storge for vehicles seized from drug dealers.
- Investigation found eroded steel structure, resurfacing of parking lot, and salt in sand as contributor of collapse.

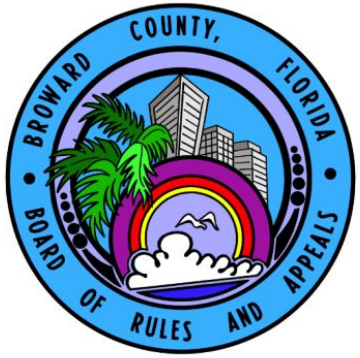
Florida Recertification Programs

1975: Miami-Dade County implements 40-year Recertification Program with follow-up inspections every 10 years. Currently in Section 8-11, Existing Buildings.

2006: Broward County, Florida implements Building Inspection Safety Program

2008: FL Legislature mandates that every condominium greater than 3 stories in height be inspected every 5 years by an engineer or architect licensed in the state; repealed in 2010.

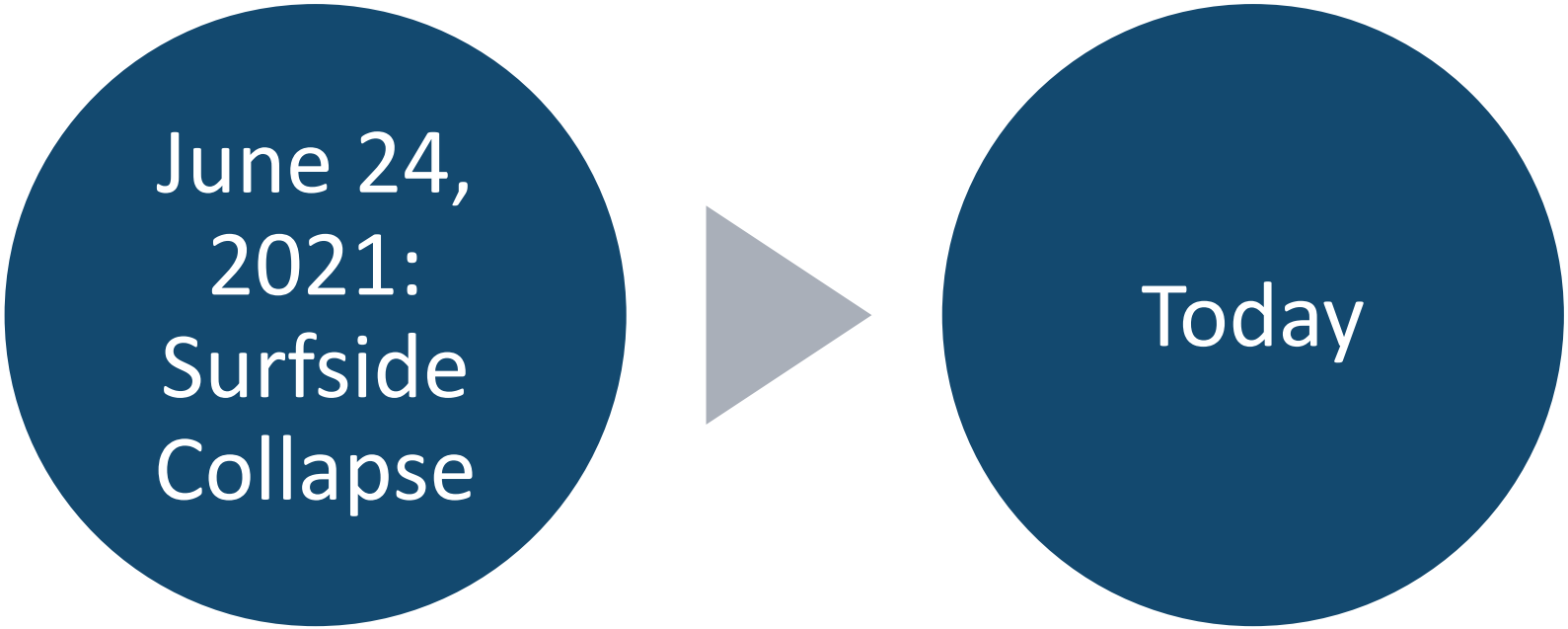
Broward County
Board of
Rules and Appeals



40 Year (and Older) Building Safety Inspection Program

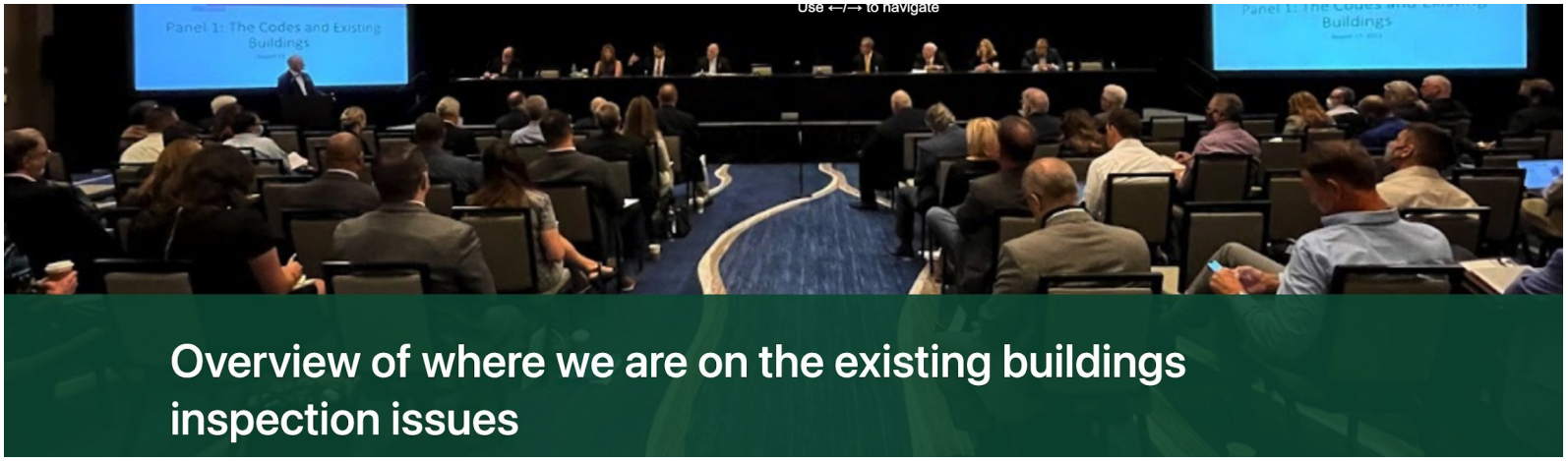
"Stronger codes mean safer buildings."

Sequence of Events

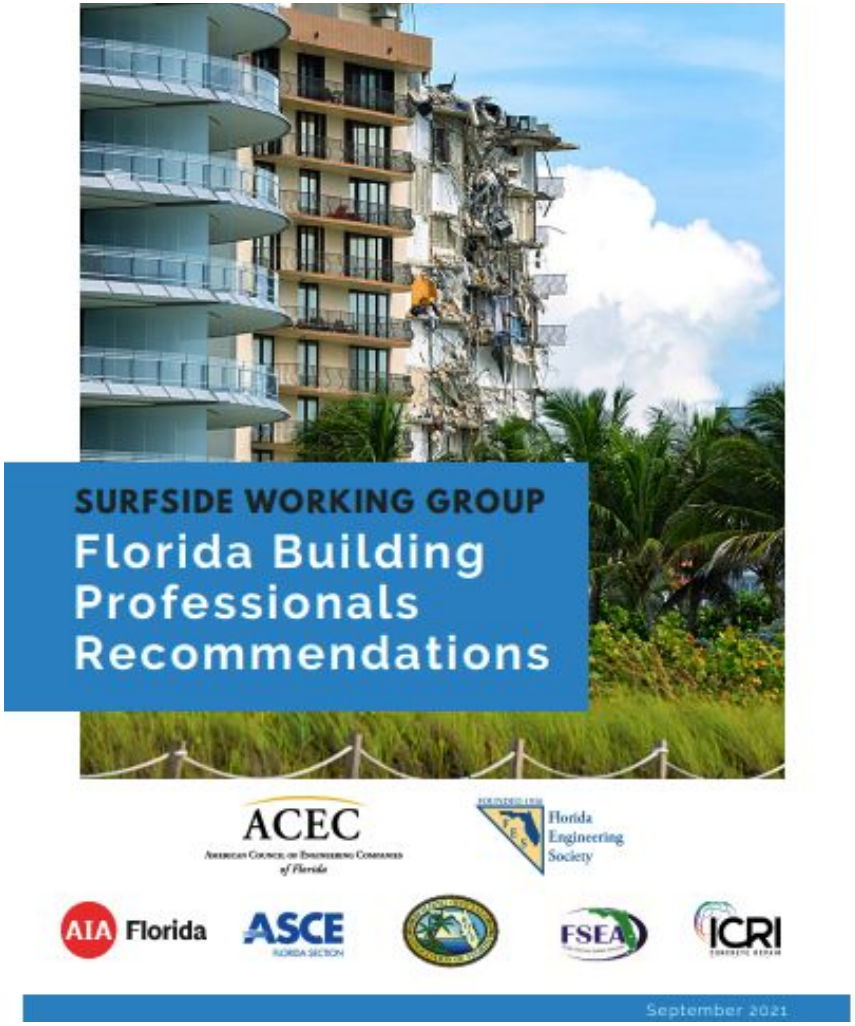


Sequence of Events

August 17, 2021: ICC, BOAF, BOMA and NIBS held panel discussion in West Palm Beach



Purpose: Share knowledge and recommendations on how communities monitor the safety of existing buildings, what guidance already exists and how future catastrophic events may be avoided.



September 2021

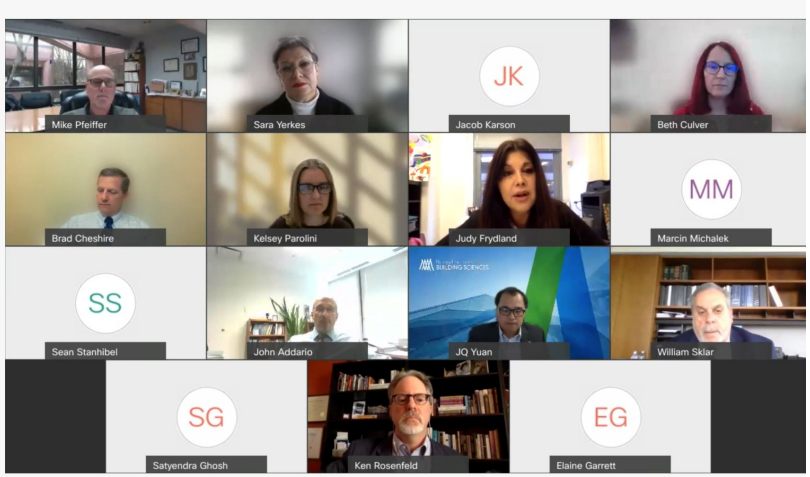
Recommended Frequency of Mandatory Inspections	
Initial	Every “x” years thereafter
30 years	10 years
If within 3 miles of saltwater	
20 years	7 years

Among Other Reports and Actions…

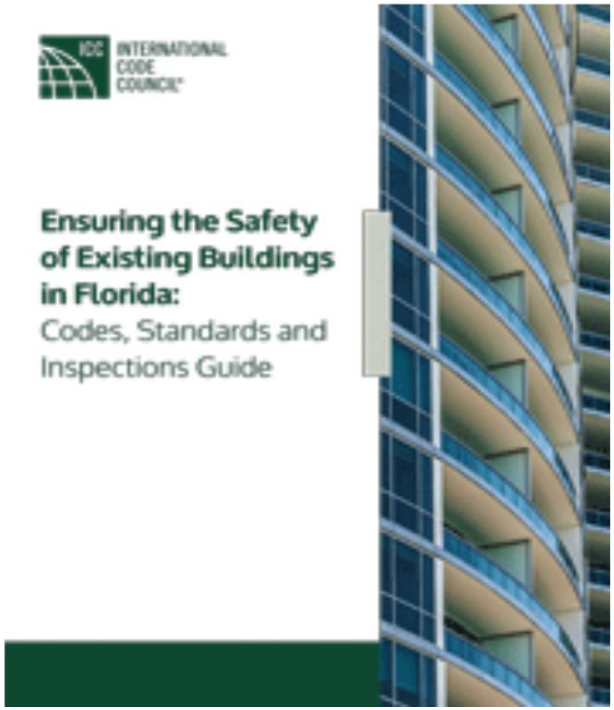
October 12, 2021: Florida Bar Advisory Task Force Report

October 2021: FLORIDA BUILDING COMMISSION
HURRICANE RESEARCH ADVISORY COMMITTEE MEETING

December 15, 2021: Final Report of the Miami-Dade County Grand Jury



Existing Building Maintenance & Inspections Dialogue with the Code Council, December 7, 2021



December 2021
ICC National Dialogue Webinar and release of "Ensuring the Safety of Existing Buildings in Florida: Codes, Standards and Inspections Guide"

Table 4.1 Use, Occupancy and Special Building Environmental Factors Frequency Intervals for Existing Building Inspections

FBC Use Risk Category	Special Building Environmental Factors Applicable (Yes/No)	Maintenance Inspection	Periodic Inspection (in years)	Milestone Special Inspection (in years)	Follow-Up Milestone Special Inspection (in years)
I (e.g. Ag buildings)	No	Recommended	N/A	N/A	N/A
	Yes	Recommended	N/A	N/A	N/A
II (e.g. commercial/ multifamily residential)	No	Annually	15 (N/A for buildings <4 stories or 3,500 sq.ft.)	30 (N/A for buildings <4 stories or 3,500 sq.ft.)	10 (N/A for buildings <4 stories or 3,500 sq.ft.)
	Yes	Annually	10 (N/A for buildings <4 stories or 3,500 sq.ft.)	20 (N/A for buildings <4 stories or 3,500 sq.ft.)	7 (N/A for buildings <4 stories or 3,500 sq.ft.)
III (e.g. large assembly)	No	Annually	15	30	10
	Yes	Annually	10	20	7
IV (e.g. Hospitals)	No	Annually	5	20	10
	Yes	Annually	5	20	7

2022:
Miami-Dade County Recertification Program Proposed Changes

- Accelerated recertification period from 40 to 30 years.
- Advance Notifications: Notify at 2-years, 1-year and 90 days
- Design Professional's Duty to Report
- Notify Condominium Unit Occupants

February 2022: Florida Bills Failed

Florida lawmakers failed to approve SB 1702 and HB 7069, which would have required more frequent inspections of high-rise condominium buildings across the state and condo associations to maintain their properties, make needed repairs and to regularly assess reserve funding available for upgrades.

Looking to the Future

- Insurance Policies: Inspection Requirements & Rate Increases
- Special Session of FL Legislature: May 23 – 27, 2022
- ICC's IPMC Guideline Committee

What is Our Path Forward?

Reactive

Proactive

A Look at Reactions & Responses Here in California

Structural Engineers Association of Southern California

Kelsey Parolini, S.E.
SEAOSC President, 2021-22

Assessing the Safety of High-Rise Buildings in Los Angeles County

Motion by Supervisor Janice Hahn: July 13, 2021

Action Items:

1. Collaborate w/ Fire Department to review the cause of the collapse
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5. Reach out to other neighboring jurisdictions to collaborate on developing joint action plans for high-rise buildings
6. Assemble a delegation to visit Surfside, Florida, when appropriate.

LA County Working Group

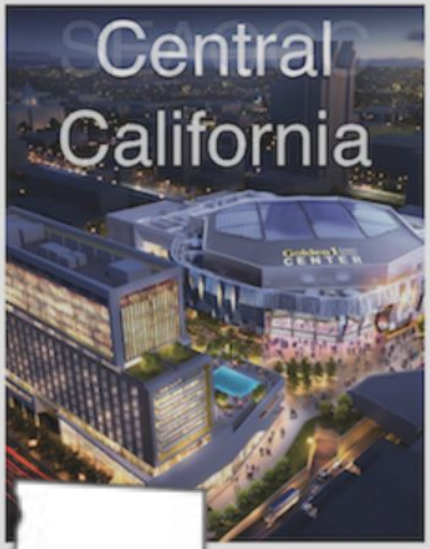
Public Works
LOS ANGELES COUNTY

CALIFORNIA
BUILDING OFFICIALS

Structural Engineers Association
of Southern California

ICC INTERNATIONAL CODE COUNCIL®

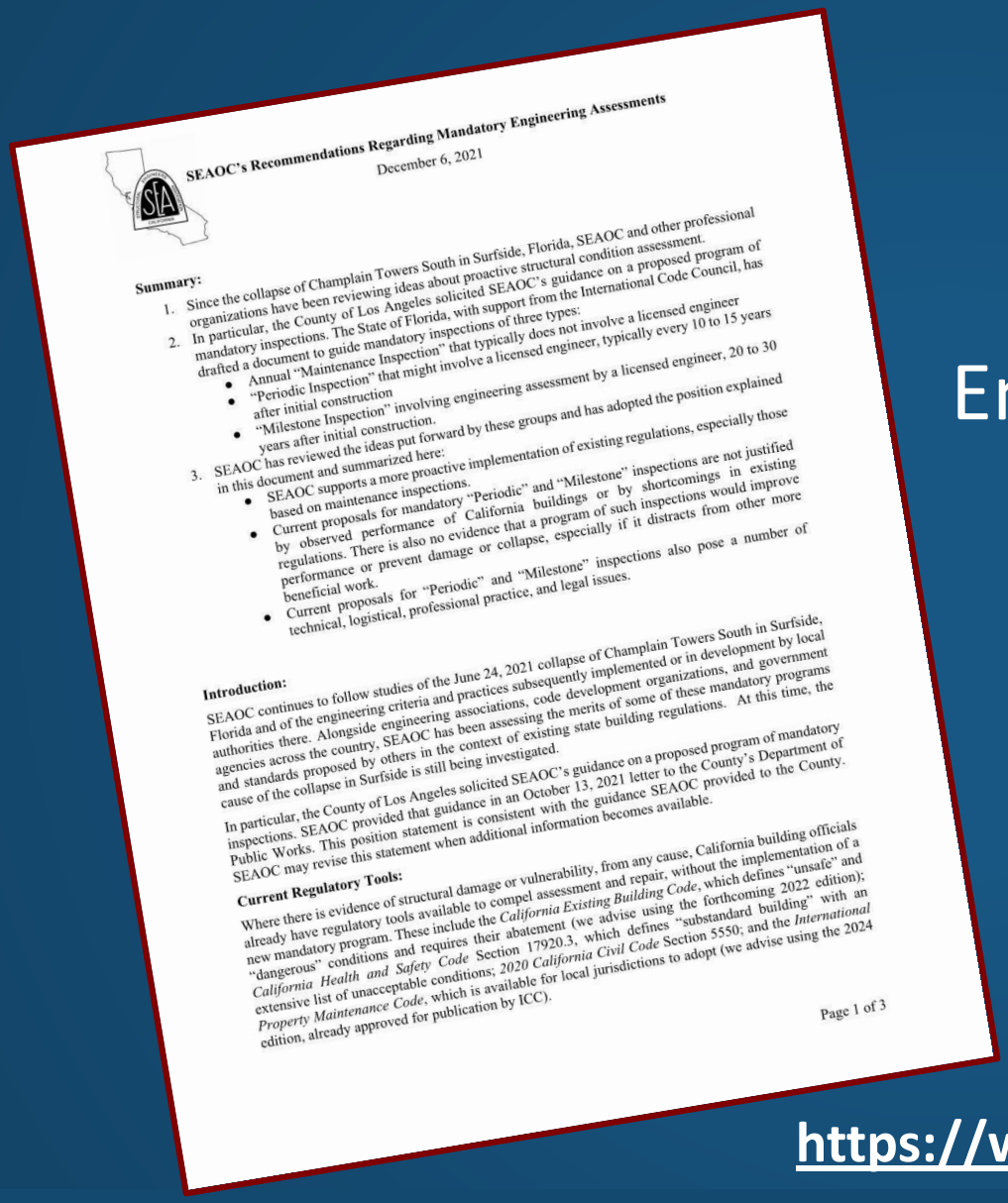
+ Participation from Neighboring Jurisdictions



www.seaoc.org

SEAOSC Safer Cities Program

https://seaosc.org/SE-What-is-safer-cities



SEAOC's Recommendations Regarding Mandatory Engineering Assessments

December 6, 2021

Summary:

1. Since the collapse of Champlain Towers South in Surfside, Florida, SEAOC and other professional organizations have been reviewing ideas about proactive structural condition assessment.
2. In particular, the County of Los Angeles solicited SEAOC's guidance on a proposed program of mandatory inspections. The State of Florida, with support from the International Code Council, has drafted a document to guide mandatory inspections of three types:
   - Annual "Maintenance Inspection" that typically does not involve a licensed engineer
   - "Periodic Inspection" that might involve a licensed engineer, typically every 10 to 15 years after initial construction
   - "Milestone Inspection" involving engineering assessment by a licensed engineer, 20 to 30 years after initial construction.
3. SEAOC has reviewed the ideas put forward by these groups and has adopted the position explained in this document and summarized here:
   - SEAOC supports a more proactive implementation of existing regulations, especially those based on maintenance inspections.
   - Current proposals for mandatory "Periodic" and "Milestone" inspections are not justified by observed performance of California buildings or by shortcomings in existing regulations. There is also no evidence that a program of such inspections would improve performance or prevent damage or collapse, especially if it distracts from other more beneficial work.
   - Current proposals for "Periodic" and "Milestone" inspections also pose a number of technical, logistical, professional practice, and legal issues.

Introduction:

SEAOC continues to follow studies of the June 24, 2021 collapse of Champlain Towers South in Surfside, Florida and of the engineering criteria and practices subsequently implemented or in development by local authorities there. Alongside engineering associations, code development organizations, and government agencies across the country, SEAOC has been assessing the merits of some of these mandatory programs and standards proposed by others in the context of existing state building regulations. At this time, the cause of the collapse in Surfside is still being investigated.

In particular, the County of Los Angeles solicited SEAOC's guidance on a proposed program of mandatory inspections. SEAOC provided that guidance in an October 13, 2021 letter to the County's Department of Public Works. This position statement is consistent with the guidance SEAOC provided to the County. SEAOC may revise this statement when additional information becomes available.

Current Regulatory Tools:

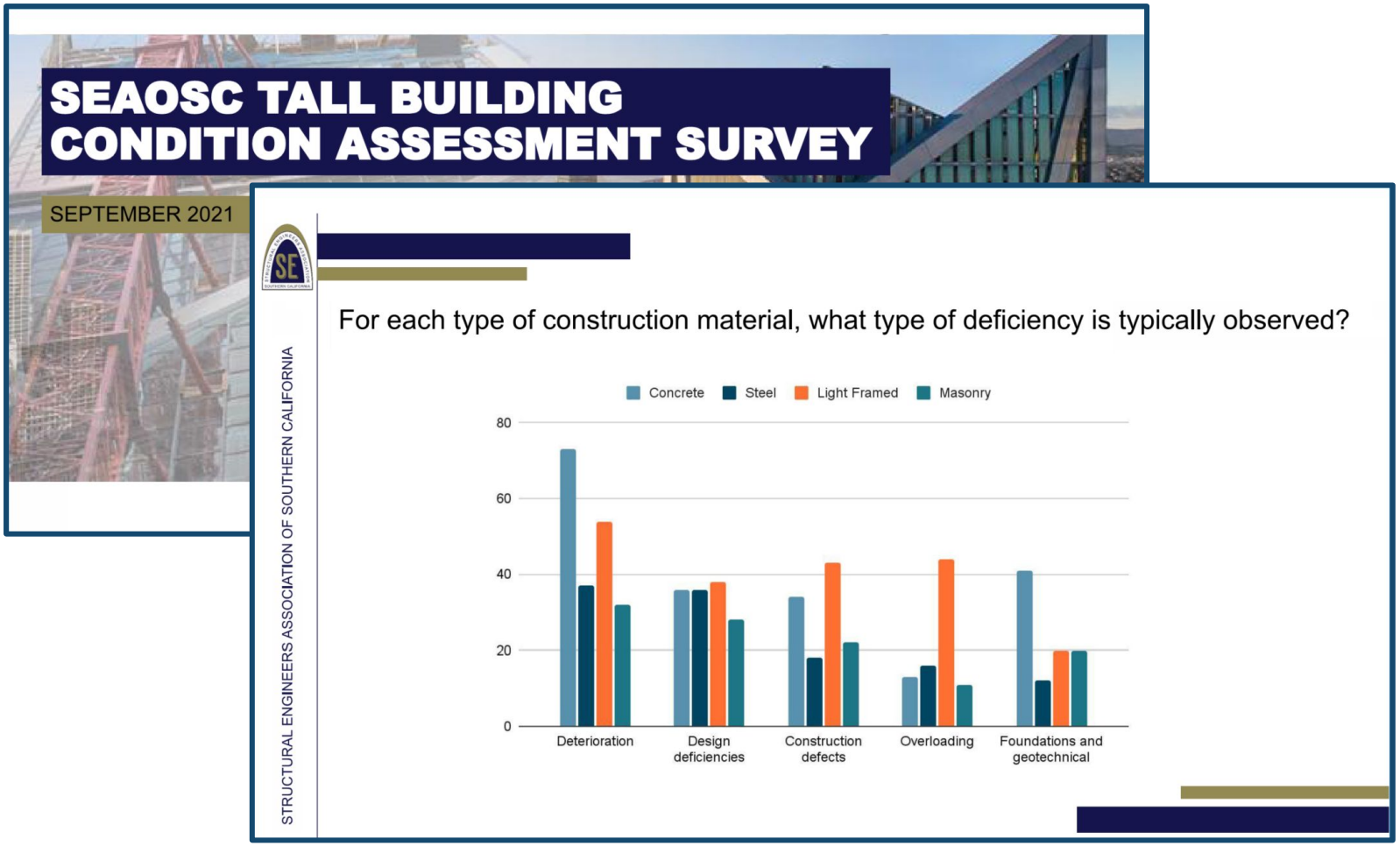
Where there is evidence of structural damage or vulnerability, from any cause, California building officials already have regulatory tools available to compel assessment and repair, without the implementation of a new mandatory program. These include the *California Existing Building Code*, which defines "unsafe" and "dangerous" conditions and requires their abatement (we advise using the forthcoming 2022 edition); *California Health and Safety Code* Section 17920.3, which defines "substandard building" with an extensive list of unacceptable conditions; *2020 California Civil Code* Section 5550; and the *International Property Maintenance Code*, which is available for local jurisdictions to adopt (we advise using the 2024 edition, already approved for publication by ICC).

Page 1 of 3

SEAOC's Recommendations Regarding Mandatory Engineering Assessments

https://www.seaoc.org/page/SEAOCPolicies

SEAOSC's Condition Assessment Survey



SEAOSC's Condition Assessment Survey

Life Safety is a Primary Priority

Concrete deterioration was the most common deficiency reported to be observed

Performing a Job Walk and Reviewing As-Built Docs is Common Scope

Removal of Finishes or Review of Maint. Records is Not Common Scope

Condition Assessments are Often Performed As Part…

- of Due Diligence During a Transaction
- Of a Voluntary Upgrade
- of a Mandatory Ordinance Related Upgrade

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

MARK PESTRELLA, Director

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331
Telephone: (626) 458-5100
http://dpw.lacounty.gov

ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

December 30, 2021

IN REPLY PLEASE
REFER TO FILE: B-0
10308-2-1-F

TO: Each Supervisor

FROM: Mark Pestrella, PE
for Director of Public Works

BOARD MOTION OF JULY 13, 2021, AGENDA ITEM 5
ASSESSING THE SAFETY OF HIGH-RISE BUILDINGS
IN LOS ANGELES COUNTY
FINAL REPORT

On July 13, 2021, as a result of the June 24, 2021, partial collapse of the Champlain Towers South 12-story beachfront condominium building in Surfside, Florida, the Board approved a motion by Supervisor Janice Hahn directing Public Works to assess the safety of high-rise buildings in the County of Los Angeles.

On September 9, 2021, Public Works submitted to the Board an interim report that addressed the progress on the motion's directives. The following is a detailed report of the findings and recommendations pursuant to the July 13, 2021, motion.

1. Collaborate with the Fire Department to review the cause of the structural collapse of the Champlain Towers.

   Investigation into the partial collapse of the Champlain Towers South condominium in Surfside, Florida, is still ongoing by the local authority. In addition, the U.S. Department of Commerce's National Institute of Standards and Technology is also conducting an independent investigation.

   Although these formal investigations are not yet completed, preliminary indicators on the cause of the collapse include:

   - Inadequate maintenance, in particular the parking and pool areas
   - Construction/design defects
   - Unpermitted alterations without approvals
   - Corrosion due to saltwater seepage

Assessing the Safety of High-Rise Buildings in Los Angeles County

Motion by Supervisor Janice Hahn: July 13, 2021

Action Items:

1. Collaborate w/ Fire Department to review the cause of the collapse
2. Create of an inventory of similar type high-rise privately-owned buildings and overlay the identified buildings on geologic hazard maps
3. Require building owners to hire a structural engineer to prepare engineering assessments of similar type (high-rise) buildings in the Marina del Rey area
4. Explore the feasibility of requiring a certification inspection program for all similar type (high-rise) buildings
5. Reach out to other neighboring jurisdictions to collaborate on developing joint action plans for high-rise buildings
6. Assemble a delegation to visit Surfside, Florida, when appropriate.

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"Similar Type, High-Rise Construction"

Height

- Occupied floors located more than 75 ft. above the lowest level of Fire Department vehicle access (more than 5 stories in height)

Occupancy

- Residential Use

Construction Material

- Concrete

Location

- Adjacent to the Ocean/Potential for Liquefaction

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County of Los Angeles Department of Public Works' Report Recommendations:

1. Utilize Existing Building Code Provisions to Identify and Respond to Unsafe Conditions
2. Work with Regional Partners to Develop High-Rise Maintenance Guidelines
3. Create Local Ordinance for Periodic Assessments
4. Assist Existing High-Rise Building Owners

County of Los Angeles Department of Public Works' Report Recommendations:

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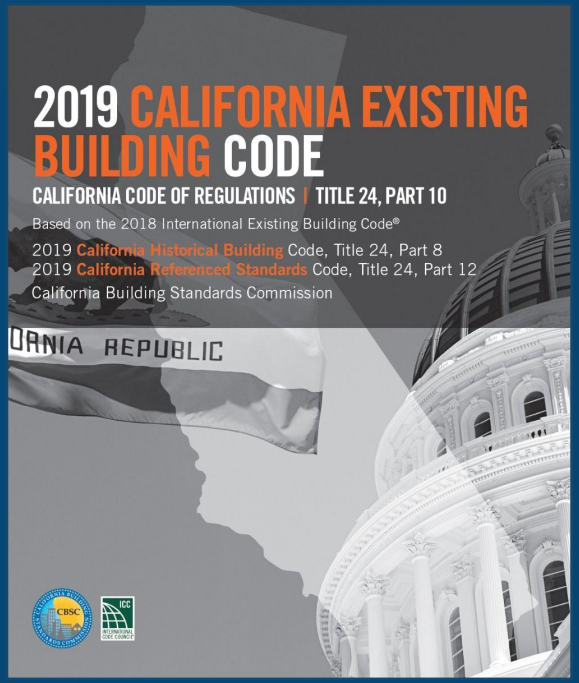
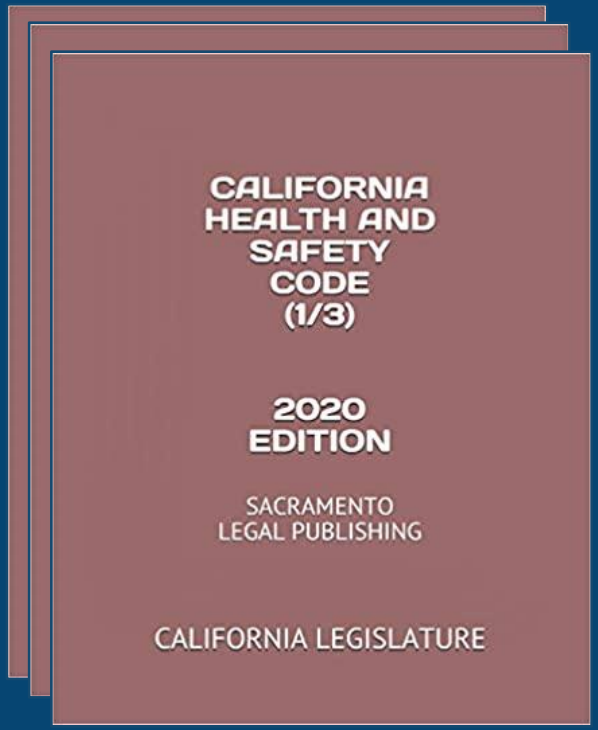
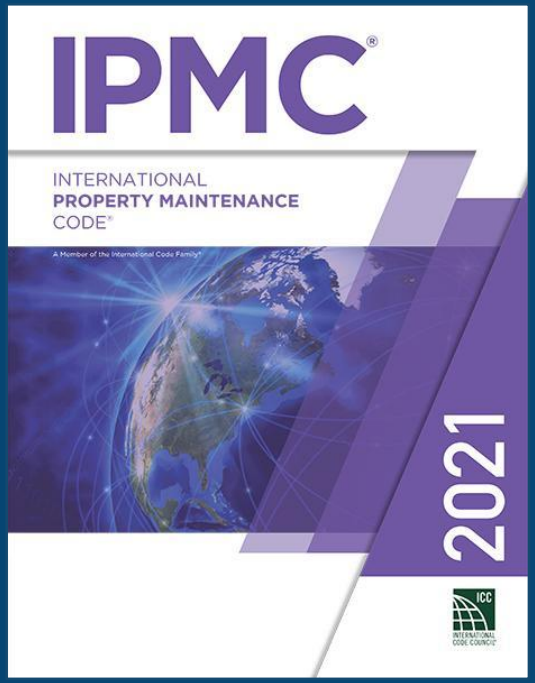
Relevant Existing Regulations that Address Building Repair



SEAOC recommends the **2022 CEBC**, available soon



Sec. 17920.3 defines “Substandard Building”



SEAOC advises using the **2024 edition** which includes changes to structural condition assessment

County of Los Angeles Department of Public Works' Report Recommendations:

1. Utilize Existing Building Code Provisions to Identify and Respond to Unsafe Conditions
2. Work with Regional Partners to Develop High-Rise **Maintenance Guidelines**
3. Create Local Ordinance for Periodic Assessments
4. Assist Existing High-Rise Building Owners

Maintenance Inspections

- Performed by the Owner or Owner's Authorized Representative
- Visual surveillance & documentation for obvious defects or damages
- Focus items such as deformations, cracks, efflorescence, water intrusion, and corrosion
- Not limited to structural systems. Considers building envelope and components.
- Completed regularly (annually)

Vs.

Periodic Inspections

- Performed by a Registered Design Professional
- All results, as well as any corrective measures, must be documented
- Visual Surveillance and Review of Existing Design and Construction Documents
- May include removal of finishes or material testing

County of Los Angeles Department of Public Works' Report Recommendations:

1. Utilize Existing Building Code Provisions to Identify and Respond to Unsafe Conditions
2. Work with Regional Partners to Develop High-Rise Maintenance Guidelines
3. Create Local Ordinance for **Periodic Assessments**
4. Assist Existing High-Rise Building Owners

An Engineer's Concerns Regarding a Mandatory Structural Assessment Program

- Targeting a specific subset of buildings can improperly suggest that other buildings are safe
- A Distinction b/t Seismic Performance & Normal Conditions is Imperative
- Terminology Used to Describe the Program can be Deceptive to Public
  - "Certify"
- Building Collapse is Rare w/out Extreme Event
- Feasibility of Enforcement
- Proactive Maintenance Inspection Possibly More Effective & Enforceable

https://www.seaoc.org/page/SEAOCPolicies

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Educating our Community

Questions?