

***Regular Meeting
of the
Building Inspection Commission***

July 16, 2025

Agenda Item 5

File No. 250702



July 10, 2025

Building Inspection Commission
49 South Van Ness Avenue
San Francisco, CA 94103

Re: Building Code – All-Electric Major Renovations

Honorable Members of the Commission:

On July 7, 2025 the full Code Advisory Committee (CAC) met to consider adoption of the File No.250702 amending the San Francisco Building Code to require buildings undergoing major renovations to remain or convert to All-Electric Buildings with exceptions. After a presentation from, Barry Hooper with the Department of the Environment, and a discussion about how this would affect Major Renovations of Existing Buildings. The committee voted 6-3 to recommend Building Inspection Commission (BIC) approve File No.250702 including suggested changes to the file and adding F-1 occupancy to commercial food service establishment.

Respectfully submitted,

Thomas Fessler
DBI Technical Services
Secretary to the Code Advisory Committee

cc. Patrick O'Riordan, C.B.O. Director
Mary Wilkinson-Church, Acting Deputy Director
Christine Gasparac, Assistant Director
Tate Hanna, Legislative Affairs Manager
J. Edgar Fennie, Chair, Code Advisory Committee

[Building Code - All-Electric Major Renovations]

Ordinance amending the Building Code to require buildings undergoing major renovations to remain or convert to All-Electric Buildings with exceptions for physical and technical infeasibility, commercial food establishments, non-residential-to-residential conversions, buildings with recent major system replacements, and 100% Affordable Housing; affirming the Planning Department's determination under the California Environmental Quality Act; and directing the Clerk of the Board of Supervisors to forward this Ordinance to the California Building Standards Commission upon final passage.

NOTE: **Unchanged Code text and uncodified text** are in plain Arial font.
Additions to Codes are in *single-underline italics Times New Roman font*.
Deletions to Codes are in ~~*strikethrough italics Times New Roman font*~~.
Board amendment additions are in double-underlined Arial font.
Board amendment deletions are in ~~strikethrough Arial font~~.
Asterisks (* * * *) indicate the omission of unchanged Code subsections or parts of tables.

Be it ordained by the People of the City and County of San Francisco:

Section 1. General Findings.

(a) The Planning Department has determined that the actions contemplated in this ordinance comply with the California Environmental Quality Act (California Public Resources Code Sections 21000 et seq.). Said determination is on file with the Clerk of the Board of Supervisors in File No. ____ and is incorporated herein by reference. The Board affirms this determination.

(b) On _____, the Building Inspection Commission considered this ordinance at a duly noticed public hearing pursuant to Charter Section 4.121 and Building

1 Code Section 104A.2.11.1.1. A copy of a letter from the Secretary of the Building Inspection
2 Commission regarding the Commission's recommendation is on file with the Clerk of the
3 Board of Supervisors in File No. _____.
4

5 Section 2. Findings Regarding Local Conditions.

6 (a) California Health and Safety Code Sections 17958.7 and 18941.5 provide that local
7 jurisdictions may enact more restrictive building standards than those contained in the
8 California Building Code, provided that the local jurisdictions make express findings that each
9 change or modification is reasonably necessary because of local climate, geologic, or
10 topographical conditions and that the local jurisdictions file the local amendments and
11 required findings with the California Building Standards Commission before the local changes
12 or modifications can go into effect.

13 (b) The Board of Supervisors hereby finds and declares that the following
14 amendments to the San Francisco Building Code are reasonably necessary because of local
15 climatic, topological, and geological conditions as discussed below.

16 (1) The topography of San Francisco creates increased risk of fire due to
17 high density of buildings on very small and steep lots with high population density. It is
18 necessary and appropriate to limit reliance on natural gas infrastructure and impose safety
19 measures on any natural gas infrastructure that would otherwise increase acute and
20 cumulative fire risk across the City.

21 (2) San Francisco's geologic and topographic conditions produce increased
22 risk for earthquake-induced failure, which can lead to fires due to local hazardous seismic
23 microzones, slide areas, and local liquefaction hazards. Natural gas infrastructure may
24 rupture, fail, and/or explode due to earthquake-induced structural failure. After seismic
25 events, natural gas infrastructure will take significantly longer to resume service compared to

1 electrical infrastructure. It is necessary, appropriate, and cost effective to reduce fire risk and
2 increase resiliency by reducing natural gas infrastructure when conducting major renovations,
3 requiring essential building systems be Electric Ready to function on electricity during natural
4 gas service disruptions, and imposing safety requirements for any new or remaining natural
5 gas infrastructure.

6 (3) San Francisco's climate and topography create wind patterns and
7 periodic seasonal high temperatures that produce smog and ozone that exacerbate the
8 respiratory ailments of residents. Natural gas combustion is a major source of indoor air
9 pollution that further exacerbates the effects of regional pollution for the City's residents and
10 can be particularly acute given the City's dense population and smaller dwelling units.
11 Studies have shown children living in homes with natural gas stoves have a 42% higher risk of
12 experiencing asthma symptoms, and those impacts may be exacerbated in a compact city
13 such as San Francisco where low-income households are more likely to have more people
14 living in smaller spaces with poor ventilation. It is reasonable and appropriate to reduce
15 pollution exposure and resulting human health impacts by utilizing All-Electric construction for
16 major renovations, and ensuring proper ventilation for any remaining or new natural gas
17 infrastructure.

18
19 Section 3. Chapters 1A and 2 of the Building Code are hereby amended by adding
20 Section 106A.1.17.3 to Section 106A, and revising Section 202, to read as follows:

21
22 **SECTION 106A – PERMITS**

23 * * * *

24 **106A.1.17.3 All-Electric Major Renovations.** After January 1, 2026, the Building Official shall
25 not accept permit applications to conduct Major Renovations, as defined in Section 202 of this Code, of

1 Mixed-Fuel Buildings. Permit applications for Major Renovations submitted to the Department after
2 that date may only be accepted for work that retains or results in All-Electric Buildings or Projects.

3 EXCEPTIONS: The Building Official may accept an application and issue a permit for Major
4 Renovation of a Mixed-Fuel Building that qualifies for one of the five exceptions outlined below. Any
5 permit qualifying for one of the exceptions shall be Electric-Ready and shall provide equivalent health,
6 safety, and fire-protection to a design with no gas piping systems. The Department of Building
7 Inspection, in consultation with the Environment Department, shall publish Design Guidelines and
8 Review Procedures for Public Safety and Electric-Ready Construction to facilitate implementation of
9 this requirement.

10 (1) Upon the Building Official's finding that converting to an All-Electric Building or
11 Project is physically or technically infeasible and that a modification pursuant to Section 104A.2.7 is
12 warranted. Financial considerations shall not play any role in determining physical or technical
13 infeasibility. Modifications shall only be issued under this exception if the Building Official finds: (a)
14 sufficient evidence was submitted to substantiate the infeasibility of an All-Electric Building or Project
15 design; (b) the installation of natural gas piping systems, fixtures, and/or infrastructure is strictly
16 limited to the system and area of the building for which an All-Electric Building or Project design is
17 infeasible; and (c) the project's modified design provides health, safety, and fire-protection equivalent
18 to that of an All-Electric Building or Project design; or

19 (2) The Building Official may issue a permit for Major Renovation of a Mixed-Fuel
20 Building that includes an area specifically designated for occupancy by a commercial food service
21 establishment (A-2 Occupancy) that is a Mixed-Fuel Building solely because it retains gas piping
22 systems, fixtures, and/or infrastructure exclusively for cooking equipment within the designated
23 commercial food service area; or

1 (3) Major Renovation projects that consist of a change of use from non-residential to
2 residential use shall be exempt from this Section 106A.1.17.3 through January 1, 2031 and are not
3 required to be Electric Ready. After January 1, 2031, this exception expires.

4 (4) The Building Official may issue a permit for Major Renovation involving a Substantial
5 Upgrade to Mechanical Systems if the following conditions are met: (a) The project installs either
6 space heating or water heating systems that will serve at least 80% of the total conditioned floor area
7 of the building; and (b) The project retains for ongoing use an existing water heating or space heating
8 system that serves at least 80% of the total conditioned floor area, provided the equipment was
9 installed within the last five years and complies with all applicable codes and safety standards.

10 (5) 100% Affordable Housing, as defined in Administrative Code Section 109.1, shall be
11 exempt from this Section 106A.1.17.3 until January 1, 2027. From January 1, 2027 to January 1, 2028,
12 100% Affordable Housing projects that demonstrate the cost of converting to All-Electric conflicts with
13 the projects' ability to meet their housing goals are exempt. After January 1, 2028, this exception
14 expires.

15 * * * *

16 **SECTION 202 – DEFINITIONS**

17 **ALL-ELECTRIC BUILDING OR PROJECT.** A building or project that uses a
18 permanent supply of electricity as the source of energy for all space conditioning (including
19 heating and cooling), water heating (including pools and spas), cooking appliances, and
20 clothes drying appliances. An All-Electric Building or Project may not install natural gas or
21 propane piping systems, fixtures, or infrastructure for those purposes in or in connection with
22 the building, structure, or within property lines of the premises, extending from the point of
23 delivery at the gas meter. An All-Electric Building or Project may contain natural gas infrastructure
24 dedicated solely to serve appliances covered by the Federal Energy Policy and Conservation Act (42
25 U.S.C. §§ 6201 et seq.), provided that the building complies with Design Guidelines and Review

1 Procedures for Public Safety and Electric-Ready Construction published by the Department of Building
2 Inspection.

3 * * * *

4 **MAJOR RENOVATION.** An alteration or addition to an existing building that includes
5 Substantial Upgrade to Mechanical Systems, and one or more of the following:

6 (1) a Non-structural Alteration that is substantial pursuant to Section 503.11.1 of the San
7 Francisco Existing Building Code;

8 (2) a Substantial Structural Alteration as defined by Section 202 of the San Francisco Existing
9 Building Code;

10 (3) an addition that is a Substantial Improvement as defined by Section 202 of this Code.

11 **MAJOR SYSTEM.** A space heating or water heating system serving 80% or more of total
12 conditioned floor area of the building.

13 **MIXED-FUEL BUILDING.** A building that uses natural gas or propane as fuel for space
14 heating or cooling, exterior heating, decorative uses and lighting, water heating (including
15 pools and spas), cooking appliances or clothes drying appliances, onsite generation of
16 electricity (except where primarily fueled by onsite digestion of organic material), or contains
17 fixtures, piping systems, or infrastructure for natural gas or propane equipment for such uses.

18 * * * *

19 **SUBSTANTIAL UPGRADE TO MECHANICAL SYSTEMS.** An alteration or addition to an
20 existing building where the proposed project either:

21 (1) Replaces space heating and hot water heating system for the entire building; or

22 (2) Installs space heating or water heating systems that will serve 80% or more of the total
23 conditioned floor area of the building; or

24 (3) Installs space conditioning or water heating systems serving the area of addition.

1 Section 4. Effective Date. This ordinance shall become effective 30 days after
2 enactment. Enactment occurs when the Mayor signs the ordinance, the Mayor returns the
3 ordinance unsigned or does not sign the ordinance within ten days of receiving it, or the Board
4 of Supervisors overrides the Mayor's veto of the ordinance.

5
6 Section 5. Scope of Ordinance. In enacting this ordinance, the Board of Supervisors
7 intends to amend only those words, phrases, paragraphs, subsections, sections, articles,
8 numbers, punctuation marks, charts, diagrams, or any other constituent parts of the Municipal
9 Code that are explicitly shown in this ordinance as additions, deletions, Board amendment
10 additions, and Board amendment deletions in accordance with the "Note" that appears under
11 the official title of the ordinance.

12
13 Section 6. Severability. If any section, subsection, sentence, clause, or phrase of this
14 ordinance, or any application thereof, is held to be invalid by a court of competent jurisdiction,
15 such decision shall not affect the validity of the remaining portions or applications of the
16 ordinance. The Board of Supervisors hereby declares that it would have passed this
17 ordinance, and each section, subsection, sentence, clause, or phrase of this ordinance,
18 irrespective of whether any one or more sections, subsections, sentences, clauses, or
19 phrases of the ordinance, or applications thereof, be declared invalid.

20 //
21 //
22 //
23 //
24 //
25 //

Section 7. Directions to Clerk. Upon enactment of this ordinance, the Clerk of the Board of Supervisors is hereby directed to transmit this ordinance to the California Building Standards Commission pursuant to the applicable provisions of State law.

APPROVED AS TO FORM:
DAVID CHIU, City Attorney

By: /s/ Robb Kapla
ROBB KAPLA
Deputy City Attorney

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Suggested Amendments to All-Electric Major Renovations

Section	Change	Purpose
<p><i>Definition: All-Electric Building Or Project</i></p>	<p>ALL-ELECTRIC BUILDING OR PROJECT. A building or project that uses a permanent supply of electricity as the source of energy for all space conditioning (including heating and cooling), water heating (including pools and spas), cooking appliances, and clothes drying appliances. An All-Electric Building or Project may not install natural gas or propane piping systems, fixtures, or infrastructure for those purposes in or in connection with the building, structure, or within property lines of the premises, extending from the point of delivery at the gas meter. <u><i>An All-Electric Building or Project may contain natural gas infrastructure dedicated solely to serve appliances covered by the Federal Energy Policy and Conservation Act (42 U.S.C. §§ 6201 et seq.), provided that the building complies with Design Guidelines and Review Procedures for Public Safety and Electric-Ready Construction published by the Department of Building Inspection. All-Electric Projects include additions or expansions of existing buildings that constitute Substantial Improvements as defined by Section 202 of this code, where the unaltered building area may remain a Mixed-Fuel Building.</i></u></p>	<p>Consistent with stakeholder outreach materials, limit this ordinance to systems that are part of the proposed scope of work.</p>

<p>Definition: Substantial Mechanical Upgrade</p>	<p><u>SUBSTANTIAL UPGRADE TO MECHANICAL SYSTEMS.</u> <i>An alteration or addition to an existing building where the proposed project either:</i></p> <p><i>(1) Replaces space heating and hot water heating system for the entire building; or</i></p> <p><i>(2) Installs space heating and-or water heating systems that will serve 80% or more of the total conditioned floor area of the building; or</i></p> <p><i>(3) Installs space conditioning or water heating systems serving the area of addition.</i></p>	<p>Stakeholder priority.</p>
<p>Permits – Exception (2)</p>	<p><i>(2) The Building Official may issue a permit for Major Renovation of a Mixed-Fuel Building that includes an area specifically designated for occupancy by a commercial food service establishment (A-2 or B Occupancy) that is a Mixed-Fuel Building solely because it retains gas piping systems, fixtures, and/or infrastructure exclusively for cooking equipment within the designated commercial food service area; or</i></p>	<p>CA Building Code</p> <p>303.3 Assembly Group A-2 Group A-2 occupancy includes assembly uses intended for food and/or drink consumption including, but not limited to:</p> <ul style="list-style-type: none"> Banquet halls Casinos (gaming areas) Nightclubs Restaurants, cafeterias and similar dining facilities (including associated commercial kitchens) Taverns and bars <p>304.1 Business Group B Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following:</p> <p>...</p>



All-Electric Major Renovations

Building Inspection Commission: 7/16/2025

Barry Hooper, Senior Green Building Coordinator

Cyndy Comerford, Climate Program Manager

SAN FRANCISCO
ENVIRONMENT
DEPARTMENT

All-Electric Major Renovations Ordinance

This proposal would expand the all-electric new construction requirement to limited, specific circumstances when a building is renovated or substantially expanded and building systems are replaced.

Installing electric equipment eliminates the need to retrofit newly installed gas-powered systems to all-electric in the near future.



Robust Stakeholder Engagement Conducted

PHASE I (June 2023 – January 2024)

- Building Operations Task Force
- Affordable housing developers, building owners, small contractors, tenants' rights organizations, CBOs

PHASE II (February 2024 – June 2024)

- Examples: Emerald Fund, SF & Chinese Chambers of Commerce

PHASE III (January 2025 – Current)

- Examples: SFAA, HAC, Better Housing Coalition, HMS Associates, Forge



Major Renovations Ordinance: Why Now?

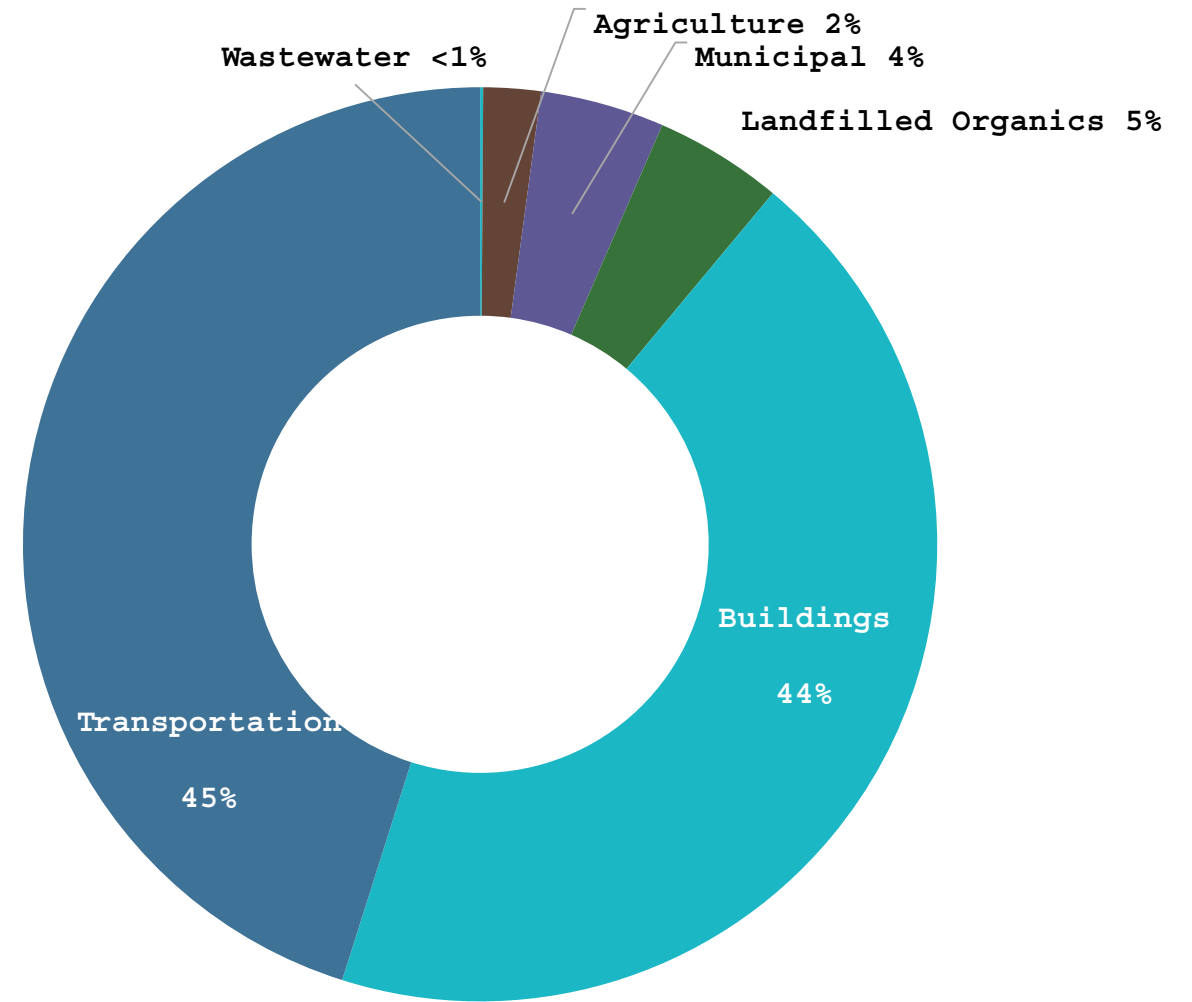
- **Saves Taxpayers Money** — Reduces long-term cost to residents and to the City. Incentives exist.
- **Protects Public Health** — Reduces chronic disease, premature mortality and healthcare costs
- **Creates a Resilient City** — Reduces GHG emissions, reduces disaster impacts and risks



Major Renovations Ordinance: Why Now?

- **Technology Exists** – majority of new construction *statewide* in 2023 was all-electric buildings
- **Supports CA Future Path** - Aligns with regional/state initiatives to reduce fossil fuel use

Climate Action Plan Goal: Net-Zero Emissions by 2040



2022 San Francisco Community-wide Emissions



All-Electric New Construction Ordinance

Requires newly constructed buildings to be all-electric with no on-site gas piping.

Applies to applications after June 1, 2021

New Construction



Mission Rock (Image: SPUR)

Major Renovation



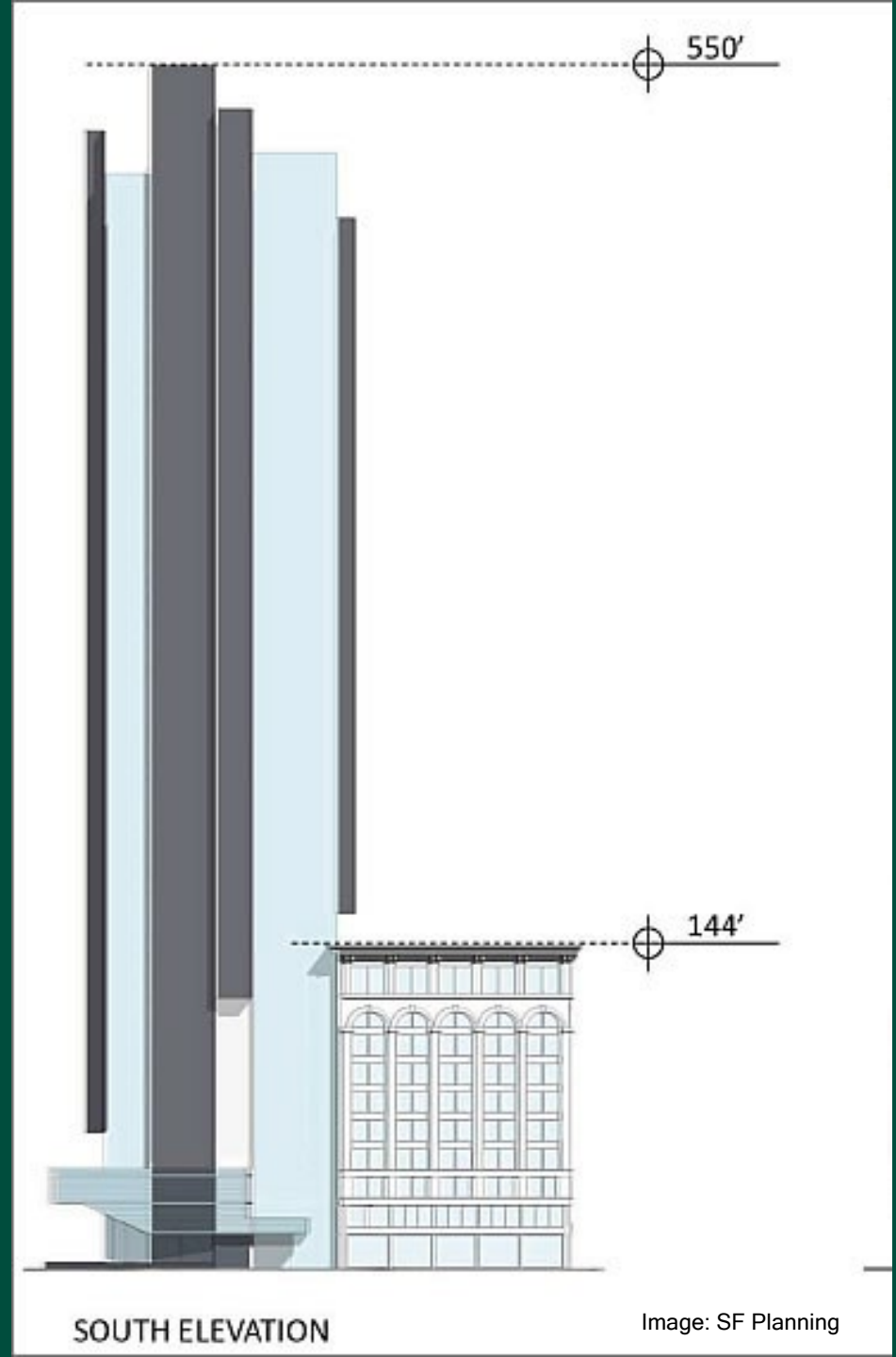
100 Van Ness (Image: SPUR)



Image: Wikimedia Commons

Additions

46-story addition
to historic
Aronsen Building



SOUTH ELEVATION

Image: SF Planning

Definition: Major Renovation

DRAFT DEFINITION FOR BUILDING CODE

Major Renovation is an alteration or addition to an existing building that includes **Substantial Upgrade to Mechanical Systems**, and:

- i. substantial non-structural alteration as determined by [SF Building Code 503.11.1](#); OR
- ii. Substantial Structural Alteration as defined by [CA Existing Building Code 202](#); OR
- iii. An addition that is a Substantial Improvement as defined by [CA Existing Building Code Section 202](#).

EXPLANATION

Major Renovation means replacing mechanical systems and either:

Substantially moves, removes, repairs walls or ceilings on 2/3 of floors or more; OR

Alters load-carrying structural elements supporting 30% of floor and roof area or more; OR

Adds on, investing 50% of the market value of the building or more.

Definition: Substantial Upgrade to Mechanical Systems

DEFINITION FOR BUILDING CODE

EXPLANATION

Substantial Upgrade to Mechanical Systems: is an alteration or addition to an existing building where the proposed project:

Like new construction, a 'substantial upgrade' is a project that either:

i. Replaces space heating and hot water heating system for the entire building; OR

Replaces everything: the entire heating and hot water heating system; OR

ii. Installs space conditioning and water heating systems that will serve 80% or more of total conditioned floor area of the proposed building; OR

Replaces most of the equipment that heats and provides hot water to most of the building; OR

iii. Installs space conditioning or water heating systems serving the area of addition.

Adds on to the building and installs new systems that serve the new area.

EXISTING EXCEPTIONS

- Physical or technical infeasibility
- Specific restaurant or food service needs
- Contractual obligations established before the ordinance
- State or federal regulations

EXCEPTIONS APPLY:

- An all-electric design is *not feasible*, and
- Gas use *directly addresses* the identified issue

SFE



Image: SFE Staff

Key Additional Exemptions for Major Renovations Only

ISSUE

APPROACH

Affordable housing

Permit application:

- Before January 2027 – Exempt
- In 2027 – Phase-in
- 2028 – Ordinance fully applies

Non-Residential
to Housing

Exempt until 2031

Delay for utility service
(feasibility)

State Action: In Sept 2024 CPUC set maximum timelines for PG&E energization. Timelines are based on utility infrastructure scale. (e.g. Faster deadline for small projects.)

Exception: If all-electric (specifically) would adversely impact project construction project timing, AB-112 enables DBI & SFE to allow mixed-fuel (*substantially similar conditions*)

Code Advisory Committee Recommendation

Draft: Exempts cooking equipment for commercial food service. Limited to A-2 Occupancy.

Recommendation: Include B and F occupancy food facilities

New
construction
and
renovations
are
opportunities
to electrify

Incremental Cost per Square Foot

Use	New Construction and Major Renovations
Single family	-\$2.14
Multifamily 2-3 floors	-\$0.64
Multifamily 5-10 floors	-\$0.47
Office	-\$1.19
Retail	\$0.00
Small Hotel	-\$14.56

Negative numbers indicate construction cost reduction.

Sources: localenergycodes.com/content/resources

Retrofitting
mixed-fuel
buildings
cost more

Incremental Cost per Square Foot

Use	Existing Building Retrofit - Low	Existing Building Retrofit - Higher
Single family	\$2.27	\$3.92
Multifamily 2-3 floors	-	\$6.92
Multifamily 5-10 floors	-\$1.94	\$12.12
Office	-	\$2.95
Retail	-\$0.01	-
Small Hotel	-\$2.53	-\$0.34

Negative numbers indicate construction cost reduction.
Sources: localenergycodes.com/content/resources

California is moving towards all-electric

Bay Area Air District

Zero NOx appliance rules

CARB

Statewide zero-GHG rulemaking

CA Energy Commission

2025 Energy Code: Heat pump baseline

CPUC

- Eliminated gas and electric service subsidies if gas is present*
- Setting rules to phase out gas distribution system*

SFE



Additional Resources

All-Electric New Construction Ordinance (current)

[DBI All-Electric New Construction page](#)

[Administrative Bulletin 112](#) (current)

San Francisco Building Code [Section 106A.1.17.1](#) lays out existing requirements for new construction

[All Electric Major Renovations Ordinance](#) (proposed)



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