

# Meeting Notes

Posted June 2023



Notes from 2025 Title 24, Part 6 Code Cycle Utility-Sponsored Stakeholder Meeting for:

## Nonresidential Envelope, Existing Buildings, and Multifamily Restructuring

### Meeting Information

**Meeting Date:** 5/22/2023

**Meeting Time:** 9:00 am – 12:20 pm

**Meeting Host:** California Statewide Utility Codes and Standards Enhancement Team

### Meeting Agenda

Time	Topic	Presenter
9:00 AM	<b>Welcome and Introduction</b>	Nikki Westfall, Energy Solutions Javier Perez, PG&E Mark Alatorre, PG&E
9:20 AM	NR Envelope - Opaque Assemblies	Maureen Guttman, Energy Solutions
9:50 AM	NR Envelope - Vestibules	Maureen Guttman, Energy Solutions
10:05 AM	NR Envelope - Windows	Maureen Guttman, Energy Solutions
10:20 AM	<b>Break (10 min.)</b>	
10:30 AM	Existing Buildings Commissioning - Windows	Maureen Guttman and Alamelu Brooks, Energy Solutions
10:45 AM	Existing Buildings Commissioning - Lighting	Maureen Guttman and Alamelu Brooks, Energy Solutions
11:00 AM	Existing Buildings Commissioning - HVAC	Maureen Guttman and Alamelu Brooks, Energy Solutions
11:30 AM	<b>Break (10 min.)</b>	
11:40 AM	Verification (HERS/ATT) Clean-Up	Lucy Albin, TRC Companies
12:10 PM	Conclusion / Wrap-Up	Nikki Westfall, Energy Solutions
12:20 PM	<b>Adjourn</b>	

### Members of the CASE Team

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**Meeting Participants** (available upon request by emailing [info@title24stakeholders.com](mailto:info@title24stakeholders.com))

### Action Items from Meeting

- The Statewide CASE TEAM followed up on all questions or comments that required a response and were not discussed during the meeting.

## Key Points from Meeting

This proposal for **Nonresidential (NR) Envelope, Existing Buildings, and Multifamily Restructuring** is important because:

- The Nonresidential (NR) Envelope proposal would improve thermal performance and simplify code language for opaque assemblies, windows, and vestibules in nonresidential buildings.
- The Existing Buildings Commissioning proposal assures building systems function efficiently as they are designed to, by requiring commissioning of new or altered equipment and systems in additions and alterations.
- The Verification (HERS/ATT) Clean-Up will align compliance options for all multifamily buildings, regardless of numbers of stories, to streamline requirements and compliance.

## Stakeholder Feedback Impacting Proposals

CASE Teams rely on feedback from stakeholders to create the best proposals possible. Since Round 1, stakeholder input has impacted the proposals in these ways:

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### NR Envelope, Opaque Assemblies - Maureen Guttman and Alamelu Brooks

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- The mandatory mass wall proposal was dropped, and the code language was modified since the first stakeholder meeting.

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### NR Envelope, Vestibules - Maureen Guttman and Alamelu Brooks

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- Code language has been heavily modified with triggers and requirements.
  - Air curtains were added as an alternate compliance option.
  - Exceptions were not clearly identified in the first stakeholders meeting as vestibule requirements were not determined at that time. Following stakeholder feedback, the code language was updated with six exceptions.

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### NR Envelope, Windows - Maureen Guttman and Alamelu Brooks

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- Code language has been modified to include Relative Solar Heat Gain requirements.
- Different baselines and proposals were considered for new construction and alterations.
- Incremental costs were modified based on the revised baseline and the proposal.

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### Existing Buildings Commissioning: Windows/Lighting/HVAC Commissioning, Maureen Guttman and Alamelu Brooks, Energy Solutions

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- For commissioning measures, the code language was modified to include commissioning for alterations in Section 120.8.
- Data has been collected from real life project applications that were submitted for code compliance.
- The proposal was enhanced with responses to a list of survey questions collected from Cx agents to collect cost, identify barriers and a list of non-compliant measures.

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## Verification (HERS/ATT) Clean-Up

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- Based on stakeholder feedback that some compliance options (central fan ventilation cooling systems, whole house fans, and evaporatively cooled condensers) have very low uptake in multifamily, the proposal was changed to remove these options from the multifamily chapter.
  - These compliance options are currently available for multifamily buildings with three or fewer stories only.
  - Originally proposed extending these measures to all multifamily buildings, including buildings with four or more stories.
  - Removing these options will avoid compliance issues with uncommon measures and streamline multifamily code language to include applicable measures only.
- Based on stakeholder feedback, we are proposing to remove the HERS verification requirement for buildings with three or fewer habitable stories to align requirements for Verified EER/EER2, SEER/SEER2, HSPF/HSPF2, and Rated Heat Pump Capacity Verification.
  - No diagnostic tests are involved so these values can easily be confirmed by a building inspector rather than a third-party HERS Rater.
  - This aligns with the current requirement for buildings with four or more stories, which can claim these performance credits without HERS verification.

## MEETING NOTES

During the meeting, questions and comments were submitted in three distinct formats which are provided in these meeting notes in these [hyperlinked for quick access] sections:

1. **In-Meeting Questions / Comments:** Questions and comments submitted verbally during the meeting via the 'raise hand' function in GoTo Webinar, where participants were unmuted to speak, or in some cases, comments submitted in writing were discussed verbally during the meeting (in which case the person that commented may not be identified in these notes).
2. **Questions / Comments Submitted Via GoTo Webinar:** See this section for questions and comments submitted in written format via the GoTo Webinar question pane.
3. **Mentimeter Polls & Responses:** This section includes public comments and questions, including screen shots of the polls that were conducted during the meeting, and responses to those polls.

Due to time limitations, not all written questions and comments were discussed during the meeting but all have responses available in these meeting notes.

## In-Meeting Questions / Comments

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### NR Envelope, Opaque Assemblies - Maureen Guttman and Alamelu Brooks

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1. **Question asked via GoTo Webinar by Marina Blanco: Since wall and roof insulation values are more stringent in the mandatory section, will these affect alterations? It seems that cost effectiveness for alterations might be difficult since it would require changing framing depth.**
  - a. CASE Team Response (Maureen Guttman): The mandatory requirements will be more stringent but not as stringent as the prescriptive requirements. We are looking into and want to take into account if it alters framing.
2. **Question asked via GoTo Webinar question pane by Marina Blanco: Think hard about additions and conditioning buildings for the first time; trying to match up with existing framing or systems might be challenging, will there be exceptions?**
  - a. CASE Team Response (Maureen Guttman): If you have ideas about how to write exceptions for the various exceptions needed, please let us know.
3. **Verbal question asked by Aaron Phillips: Thanks for the information. The team is focused on the U-factor aspect of proposal. Has there been work done to look at the effect on the cost-effectiveness when you're merging the roof radiative properties for hotel motel into nonresidential, because it not only increases the requirement but also expands it into a lot of additional CZs.**
  - a. CASE Team Response (Maureen Guttman): Yes, thanks for bringing up that point. We're going to look at this but we haven't yet. We recognize that it's a complicated change and it's come up before as a proposal to the CEC. We want to take this into account and make sure it makes sense as we try to simplify the code.

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### NR Envelope, Vestibules - Maureen Guttman and Alamelu Brooks

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4. **Comment via GoTo Webinar question pane by Marina Blanco: Please please do not make vestibules mandatory. Planning departments might not allow this as it is a visual feature. If this proposal is really wanted, please make it prescriptive.**
  - a. CASE Team Response (Maureen Guttman): We'll take it into account. In order to make it a prescriptive requirement, we would need to be able to give it a value that can be traded. Thank you for your thoughts on this.

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### NR Envelope, Windows - Maureen Guttman and Alamelu Brooks

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5. **Verbal comment by Marina Blanco, Gable Energy: It's challenging to meet the prescriptive requirements when there existing conditions - there are many factors make it challenging (size, finding a NFRC rated product, structural is too heavy,**

size), but the prescriptive path allows tradeoffs which help us, so please be careful about making this mandatory because we can't trade those away.

a. CASE Team Response (Maureen Guttman): Thank you, please get in touch with me to discuss further; I'd like to hear more.

**6. Verbal comment by Marina Blanco, Gable Energy: Most of the time, lighting, mechanical, plumbing use the prescriptive, but when they can't meet the prescriptive code, we go performance.**

a. CASE Team response (Maureen Guttman): Thank you that's great to know.

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**Existing Buildings Commissioning: Windows/Lighting/HVAC Commissioning, Maureen Guttman and Alamelu Brooks, Energy Solutions**

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No questions were asked during this portion of the meeting.

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**Verification (HERS/ATT) Clean-Up, Lucy Albin, TRC Companies**

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**7. Question asked via GoTo Webinar question pane by Larry Denyer: Why hasn't CEC adapted from low-static to medium static? What is the main reason why they won't come off of low-static only**

a. CASE Team Response (Lucy Albin): We are not proposing any changes and will have the appropriate person follow up with you after this meeting.

**8. Comment via GoTo Webinar by Wayne Alldredge: The VHCP compliance option should allow for room specific transfer fans.**

a. CASE Team Response (Lucy Albin): Thank you, we will take this into consideration.

**9. Question asked via GoTo Webinar question pane by Wayne Alldredge: If it's a compliance OPTION, why eliminate it?**

a. CASE Team Response (Lucy Albin): Because those were carried over from single-family homes and not evaluated for multifamily buildings, and there's no uptake for these in MF buildings so there's no reason to leave irrelevant requirements in the code. We want to streamline compliance options especially for those not familiar with the code, and make sure that across the board (regardless of stories), multifamily buildings are handled the same way. [Also see response to this question in the GoTo Webinar Q&A table in these meeting notes.]

**10. Question asked via GoTo Webinar question pane by Tan Diep: Will the verification of SEER, EER and HSPF all need to meet, or will only one or 2 of the 3 need to meet?**

a. CASE Team Response (Lucy Albin): That would be up to the instruction team and whatever compliance options they want to claim - one or another or all three; however the building is designed should comply with the chosen pathway. [Also see response to this question in the GoTo Webinar Q&A table in these meeting notes.]

## Wrap-Up

- All Draft CASE Reports will be posted May through June at title24stakeholders.com
- Meeting adjourned at 3:11 PM PST

## Questions / Comments Submitted Via GoTo Webinar

The questions and comments below are provided as-submitted in the GoTo Webinar Question pane. Responses provided by CASE Team support team. In addition, some of these questions were verbally discussed during the meeting and are captured in the In-Meeting Questions / Comments\_ section above.

Participant	Question Asked	Response	Responder
<b>Wayne Alldredge</b>	Alterations in our projects are big and not just a TI refresh	Thank you Wayne, we will set up a call to discuss these alteration measures.	Julia Forberg
<b>Wayne Alldredge</b>	I recommend that Carbon Monoxide systems in garages are placed into Cx because we are finding many errors with these systems in the field. i.e, the mechanical code states 50ppm and the energy code states 25ppm. Also the calibration requirement does not include functional testing of the fan system, only the sensors	Thank you for your input, Wayne. We will take this into consideration.	Michael Hsueh
<b>Wayne Alldredge</b>	The VHCP compliance option should allow for room specific transfer fans	Thank you for this comment. We will consider this recommendation and may reach out to you for further discussion.	Elizabeth McCollum
<b>Wayne Alldredge</b>	If its a compliance OPTION, why eliminate it?	There are two reasons we would like to remove uncommon compliance options for multifamily buildings: 1 - There is concern that compliance options that aren't claimed frequently are more likely to result in compliance issues or incorrect verification by an out-of-practice HERS Rater, and 2 - It reduces the amount of code language, to offer more simplicity.	Elizabeth McCollum
<b>Marina Blanco</b>	Since wall and roof insulation values are more stringent in the mandatory section, will these effect alterations? It seems that cost effectiveness for alterations might be difficult since it would require changing framing depth.	Yes, it will affect alterations. Agree, the framing depth may need change but not for all cases; also, the savings in alterations are higher compared to NC.	



<b>Participant</b>	<b>Question Asked</b>	<b>Response</b>	<b>Responder</b>
<b>Marina Blanco</b>	Suggest adding the ability to model staggered stud walls into the software or add them into the JA4 assemblies since it is another way to meet this beefier wall requirement.	Thank you for your input. We will take this into consideration.	Melissa Schellinger Gutierrez
<b>Marina Blanco</b>	For large remodels that involve changing wall or roof insulation, our office typically uses the performance path to provide flexibility because existing conditions have a hard time meeting code requirements.	Great feedback, thank you. This is the main reason why we want to focus on envelope backstop for existing buildings.	Julia Forberg
<b>Marina Blanco</b>	Structural changes or hardware changes should absolutely be taken into account for added R-2 insulation at the walls.	Thank you for your input. It is hard to justify the cost for structural changes. We would like to discuss this with you for additional feedback.	Julia Forberg
<b>Marina Blanco</b>	Also think hard about additions and conditioning buildings for a first time. Trying to match up with existing framing or structural systems might be challenging. Will there be exceptions?	See verbal response number 2 in the 'In-Meeting Questions/Comments' section above.	Maureen Guttman
<b>Marina Blanco</b>	Please do insulation requirements by occupancy rather than hotel motel vs nonres. The corridors in a hotel / motel are still a hotel motel building or occupancy and should be treated as such.	Thank you for your input. We will take this into consideration.	Julia Forberg
<b>Marina Blanco</b>	Please please do not make vestibules mandatory. Planning departments might not allow this as it is a visual feature. If this proposal is really wanted, please make it prescriptive.	See verbal response number 4 in the 'In-Meeting Questions/Comments' section above.	Maureen Guttman
<b>Marina Blanco</b>	Warehouse seems like a challenging choice since large opening are needed for moving items is required. All other occupancies on the list seem realistic.	Thank you Marina for this input, we will take this into consideration.	Michael Hsueh
<b>Marina Blanco</b>	If these vestibules are unconditioned, there might be floor insulation requirements if there is a lower level that is conditioned since that "floor" is now a demising roof per code.	Thank you for your input, Marina. We had not previously considered this aspect, and we will take it into account.	Melissa Schellinger Gutierrez



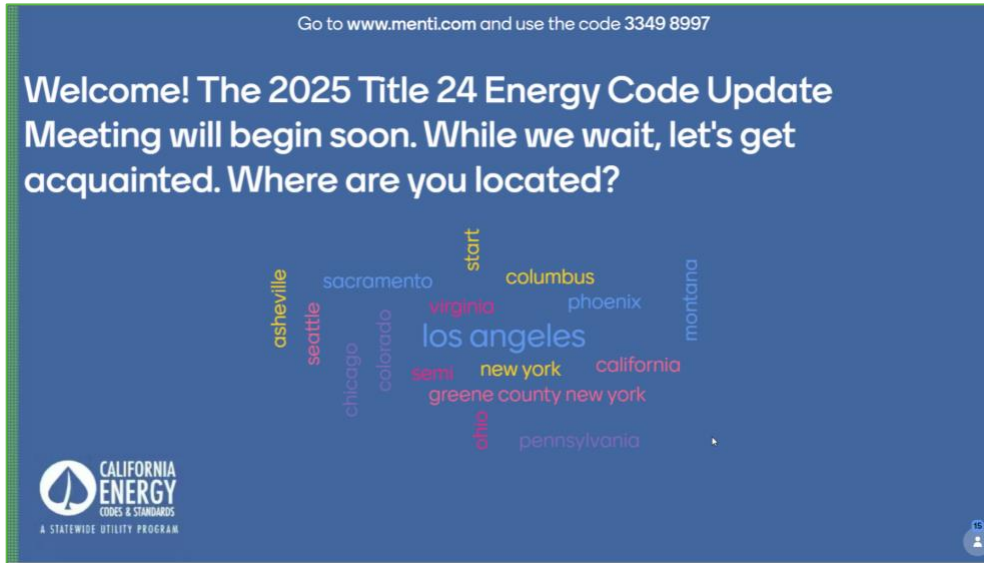
<b>Participant</b>	<b>Question Asked</b>	<b>Response</b>	<b>Responder</b>
<b>Marina Blanco</b>	Also, lighting in the vestibule needs to make it into the lighting code sections. Also suggest clearly adding Vestibule to lighting section. Lobby main entry would like likely be the same, but if code requires a vestibule, the other parts of code should also reflect this.	Thank you, Marina. We are working on incorporating these suggestions.	Melissa Schellinger Gutierrez
<b>Marina Blanco</b>	I think the existing floor space is extremely low!	Thank you for this input.	Julia Forberg
<b>Larry Denyer</b>	By using inverter compressors, there is a huge reduction in amperage needed for project. These chillers are more \$ but the savings to the grid are immense. There should be rewards for using inverter technologies.	Great point, thank you. This is exactly why we are expecting the CX professional to get involved in the design review process.	Julia Forberg
<b>Larry Denyer</b>	Why hasn't CEC adapted from low-static to medium static? What is the main reason why they won't come off of low-static only	The Statewide CASE Team does not propose changes to the existing verification processes with this proposed code change. We would like to follow up with you following the presentation to understand and respond to your concerns.	Elizabeth McCollum
<b>Tan Diep</b>	Will you be modeling full year down to months or weeks? Would be interested in the lower u-value and higher R-value's impact to summer months and trapping heat leading to higher cooling load.	The modeling is based on hourly analysis. The final savings will include summer, winter, and floating seasons.	Julia Forberg
<b>Tan Diep</b>	Will the verification of SEER, EER and HSPF all need to meet, or will only one or 2 of the 3 need to meet?	The Statewide CASE Team proposes to remove HERS verification of these measures for buildings with three or fewer habitable stories. We propose that above-minimum efficiencies can be claimed through modeling in the performance approach, but that verification would fall on the local code official, and not on a third party. We expect that all three (SEER, EER, and HSPF) would be verified for installed heat pumps.	Elizabeth McCollum

<b>Participant</b>	<b>Question Asked</b>	<b>Response</b>	<b>Responder</b>
<b>Ben Edwards</b>	R-2 cavity $\neq$ R-2 c.i.	Understood that there are different thermal losses accounted for between cavity and continuous insulation. Table 4.3.14 in JA4 provides modifiers for effective R-value of continuous insulation that include thermal efficiency of the furring type used. This is to be used in conjunction with the JA4 enclosure U-value tables (which already account for cavity insulation efficiency based on framing size and spacing).	Michael Hsueh
<b>Michael Huhtala</b>	Is there any consideration for adjusting JA4 U-factor tables to be consistent with methodologies used in ASHRAE 90.1? also, RE adding additional insulation, contractors will want to add cavity insulation, but for thermal efficiency and to minimize losses of cavity insulation between metal framing, the industry should be pushed more to continuous exterior insulation.	Thank you. We will discuss this and get back to you. JA4 Tables currently account for thermal efficiency losses due to framing factors based on calculations procedures derived by ASHRAE.	Julia Forberg
<b>Michael Huhtala</b>	RE slide 17, metal-framed walls are not listed in the table but are the most common for nonresidential buildings - better to distinguish metal-framed from "Wood & Other" when evaluating construction forecast.	Thank you for your comment. Metal-framed walls were covered, and U-factors were modified in the last code cycle.	Julia Forberg
<b>Michael Huhtala</b>	Do air curtains actually save energy? they blow at such a high force and are loud - hard to understand how they save energy when exterior temperature is often close to interior temperature (in CA). Vestibules may be more effective in limiting air leakage but energy savings with either approach really needs to be demonstrated.	Thank you for your feedback, Michael. We will conduct modeling for various prototypes with air curtains and we welcome the opportunity to discuss and refine our assumptions with you.	Melissa Schellinger Gutierrez

<b>Participant</b>	<b>Question Asked</b>	<b>Response</b>	<b>Responder</b>
<b>Michael Huhtala</b>	RE percentage of projects using performance paths, it completely depends on the project and whether addressing leaks through the envelope (likely using prescriptive) but if involves more systems (HVAC, lighting, etc.) then it seems most projects go performance approach. This is the opposite of what one person shared, so I am guessing this is case-by-case.	Thank you for your feedback. We will take this into consideration.	Julia Forberg
<b>Michael Huhtala</b>	As long as commissioning still only applied to nonresidential (and no single or multi-family), then it is probably cleaner to have the requirements in 120.8 (but may need to be cross-referenced in 141.0).	Thank you for your input. We will take this into consideration.	Julia Forberg
<b>Jon McHugh</b>	Limit to high rise buildings, more traffic and more impact due to stack effect.	Thank you for your input, Jon. We will take this into consideration.	Melissa Schellinger Gutierrez
<b>Martha VanGeem</b>	Increasing the mandatory requirements doesn't make sense because the energy is made up in the performance path. These mandatory requirements have not been demonstrated to be cost effective for all building types in all climate zones.	Thank you for your comment. The final report will include the comprehensive results for all building types. If you are interested, we would be happy to engage in a discussion regarding the cost implications of adding insulation to alterations.	Melissa Schellinger Gutierrez

# Mentimeter Polls & Responses

## Introduction



## NR Envelope, Opaque Assemblies - Maureen Guttman, Energy Solutions

How is the Hotel and Motel Guest Room U-factor Table used in practice?

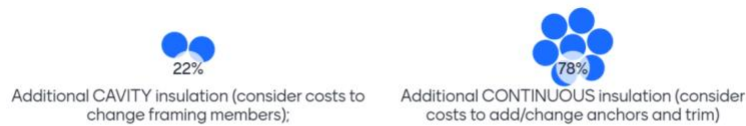
1 Answer

Mentimeter

Yes, unclear how to differentiate from corridors vs. guest room requirements, both in new construction and alteration code.

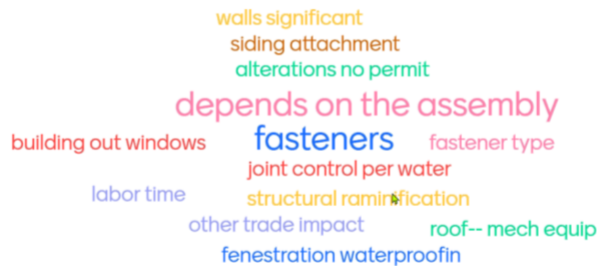
For the purposes of modeling savings, should the Statewide CASE Team assume additional R-2 cavity insulation, or additional R-2 continuous insulation?

Mentimeter



What values should be used as incremental costs for adding R-2 to each assembly?

Mentimeter



## NR Envelope, Vestibules - Maureen Guttman, Energy Solutions

Should we limit the requirement to buildings with high-traffic entrances? If yes, how do we identify those building types?

7 Answers



Yes

It should also be the primary entrance door for the public, not a door to a balcony used by the public

Maybe occupancy density similar to ventilation or egress requirements?

Energy savings needs to be demonstrated.

Coordinate with fire/occupancy limits? Target large entrance floor area, stack effect in most affected climate zones.

Building use and types make the most sense

Zoning of air conditioning at entrance compared to inner zone.

Should the Statewide CASE Team assume a minimum vestibule area or a maximum vestibule area for estimating energy savings and costs? (90.1 language...)

6 Answers



The 2% was to prevent gaming.

Minimum

People were assuming the entire first floor was a vestibule.

Persons per hour passing through based on occupancy and clients

It depends on occupancy levels.

Occupant density

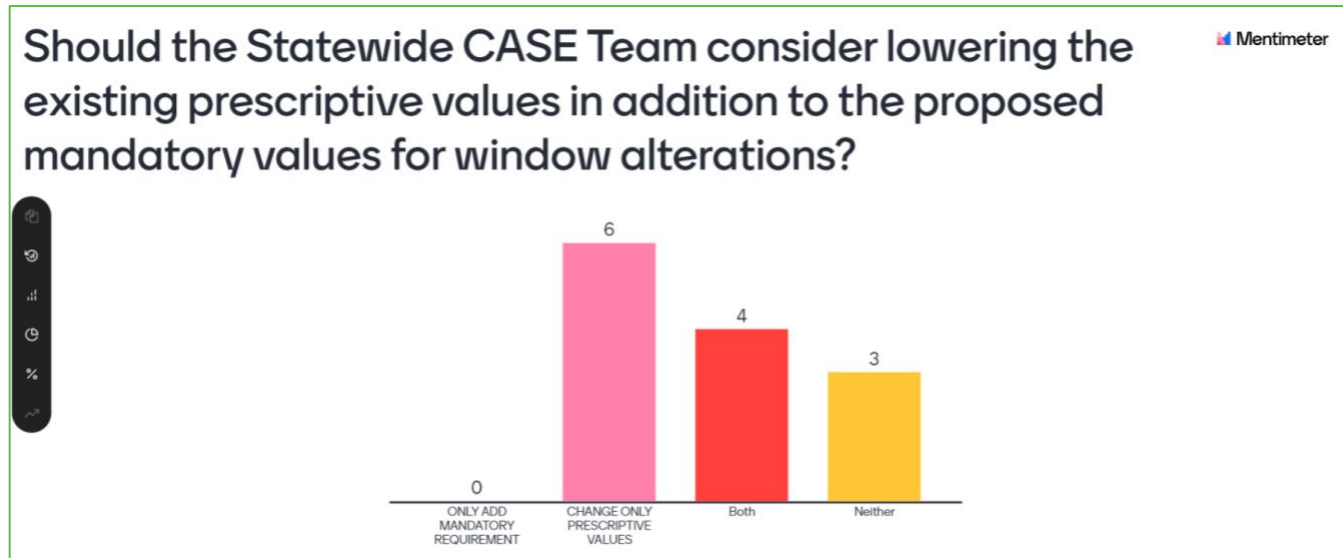
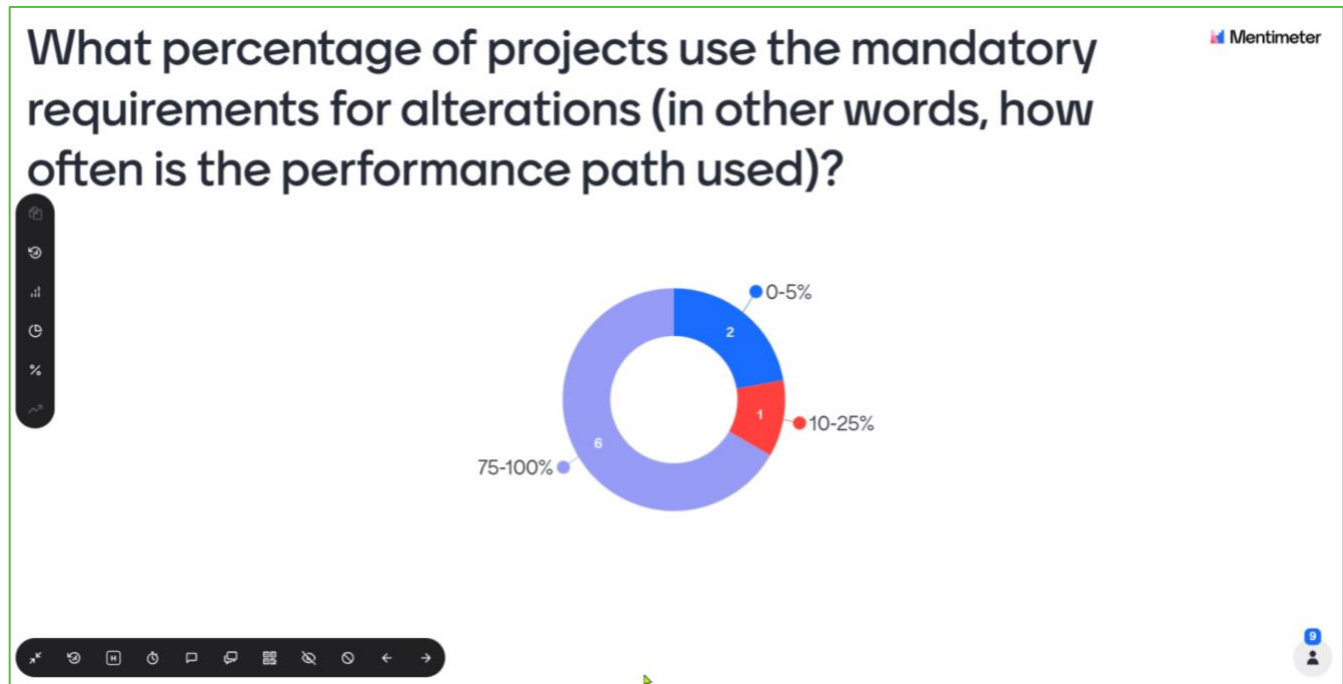
What is a good cost/sf for an unconditioned vestibule?

2 Answers



Might be easier to look at cost of revolving doors and side doors. It's expensive.

Maybe cost per entrance/door rather than per square foot





## Existing Buildings Commissioning: Windows/Lighting/HVAC Commissioning, Maureen Guttman and Alamelu Brooks, Energy Solutions

In general, what are your thoughts on mandatory commissioning for additions and alteration work? 9 Answers Mentimeter

Yes Yes and Yes! But I would also propose pushing Design Review to play a stronger role. The CXR form could be so powerful as an energy code design guide.

Envelope/enclosure commissioning requirements need to be clarified in the code (e.g., if the intent is to commission the windows for alterations)

Question the value depending on the type of alteration.

it will likely cause more projects to avoid permits.

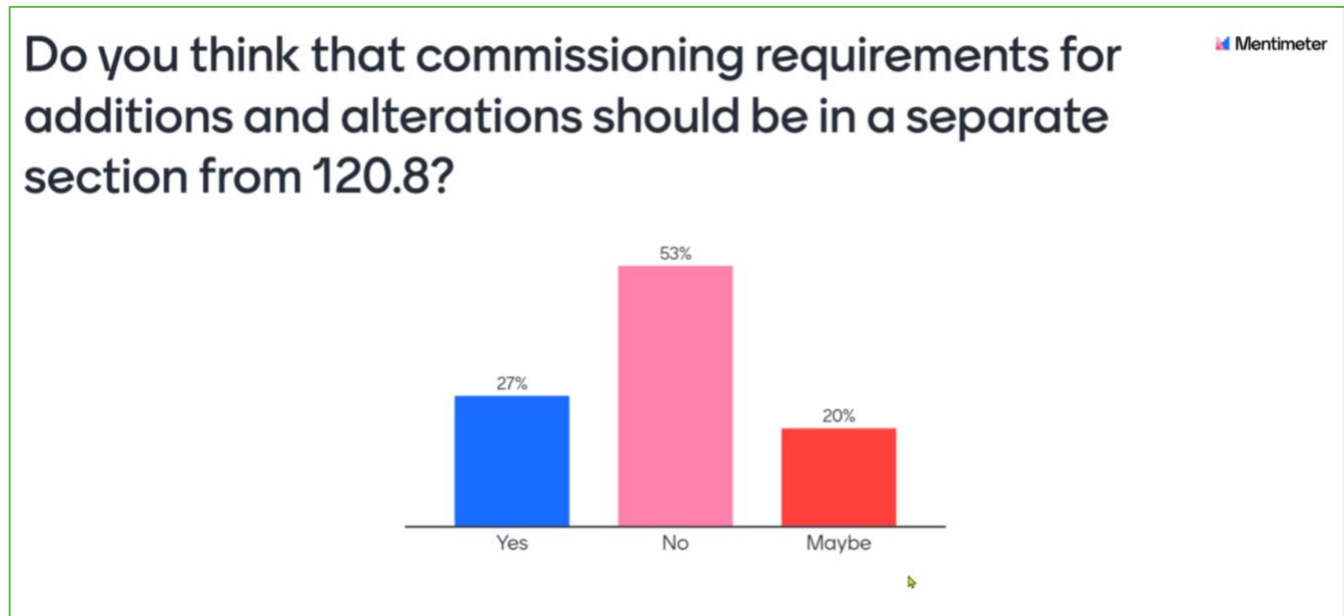
Good idea. Also commission any existing central/shared systems that serve the space.

In my experience this "loop hole" has been used to leave out Cx for tenant build-outs of new construction core and shell work.

Highly important. Two considerations: limiting small-scope projects and minimizing construction delays. See MA Stretch for tenant build-out example.

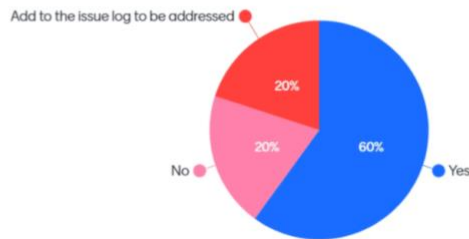
it depends

9 Person icon



# The CxA should review, record, and flag the Certificate of Acceptance forms completed by ATTs. Do you agree?

Mentimeter



# What recommendations can you make to improve commissioning demand and enforcement?

4 Answers

Mentimeter

Has to be required

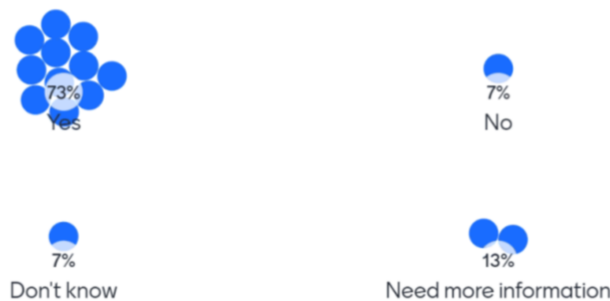
refund Cx \$ after completion

Ensure minimum standards are being upheld so the owners are getting value from the process rather than it being a check box process and the building still doesn't function the way it is intended to.

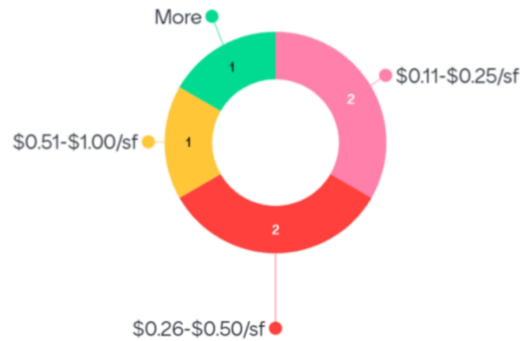
Quality is an issue when requiring Cx. There are more requirements to qualify an ATT rather than a CxA. An independent PE is required for the design review but not all Cx services.

# Should California adopt training and certification requirements for commissioning providers?

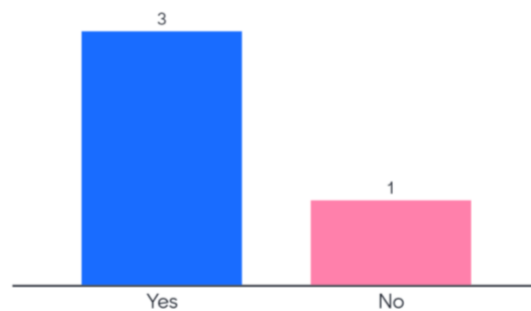
Mentimeter



# What is the approximate cost/square foot for commissioning a single system in an addition or alteration?



# Do the estimated percentages of impacted floor area look reasonable?



# What are the top 5 areas of noncompliance identified on commissioning issue logs?

1 Answer

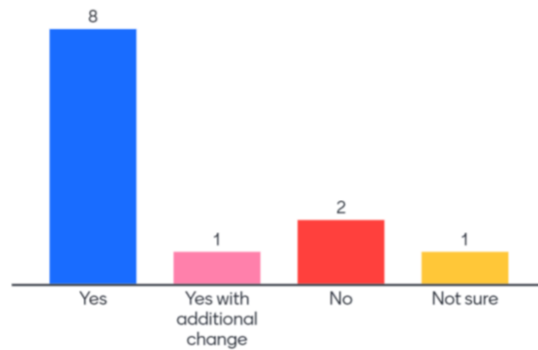
Cx generally doesn't look for code compliance. CxAs are looking for functionality issues.



## Verification (HERS/ATT) Clean-Up, Lucy Albin, TRC Companies

Do you support the proposal to extend low leakage air-handling units and VCHP compliance options to all multifamily buildings?

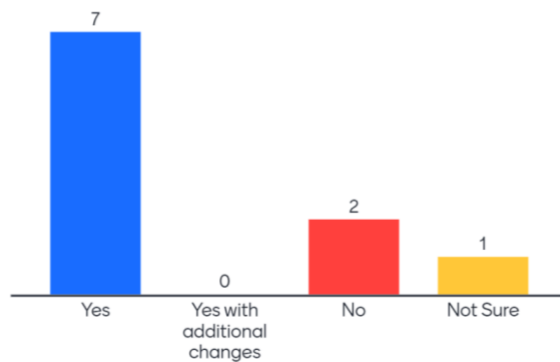
Mentimeter



12

Do you support removing verification requirements from compliance options in MF blds  $\leq 3$  stories to align with current requi. for MF blds  $\geq 4$  stories?

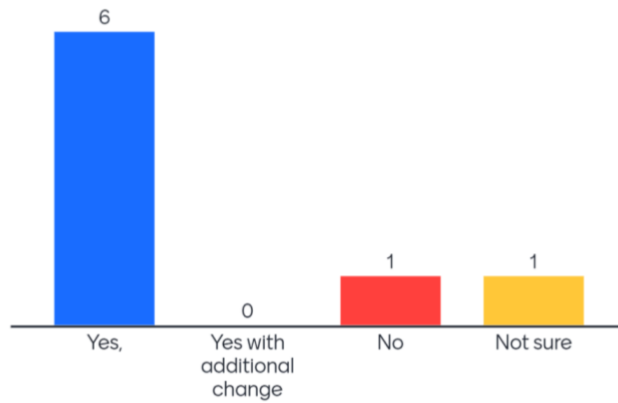
Mentimeter



10

Do you support the proposal to remove compliance options that are uncommon in multifamily buildings?

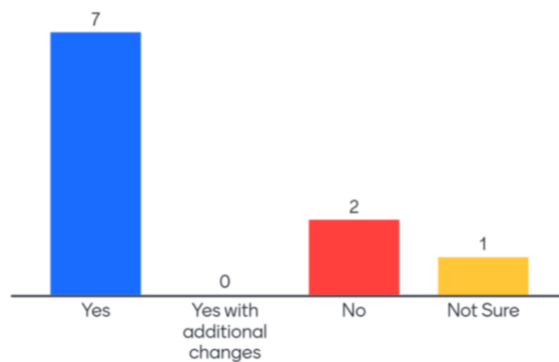
Mentimeter



9

Do you support removing verification requirements from compliance options in MF blds  $\leq 3$  stories to align with current requi. for MF blds  $\geq 4$  stories?

Mentimeter



10