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CEA Comments on CEC Energy Accounting Workshop

Additional submitted attachment is included below.

November 23, 2022

California Energy Commission
Docket #22-BSTD-01
1516 Ninth Street
Sacramento, CA 95814-5512

Re: CEA Comments on Energy Accounting for 2025 Building Energy Efficiency Standards Workshops

Dear Commissioner McCallister and Staff,

Thank you for the opportunity to provide comments on the California Energy Commission (CEC) Energy Accounting for 2025 Building Energy Efficiency Standards Workshops held on July 18th and November 10th, 2022. The California Energy Alliance (CEA) is a leading advocacy organization for California's energy stakeholders. Founded in 2016, CEA is a nonprofit, non-partisan alliance of business, government, academia, and NGO leaders advocating for energy productivity to achieve economic growth, environmental justice, energy security, affordability, and resilience. Our work focuses on research, advocacy, outreach, and evolution of codes, standards, and policy.

CEA and its Members are pleased to see that the CEC is engaging stakeholders regarding cost-effectiveness methodologies to support proposed changes for the 2025 Building Energy Efficiency Standards (Energy Code). We have, amongst us, a diverse array of experiences on the implementation of the Energy Code and would like to offer the following comments related to the building energy model prototypes.

Response to CEC Energy Prototype Categories – "Hospitals"

The CEA recommendation is for a revision to the way the CEC looks at the "Hospitals" category. We feel this should be revised to "Health Care" with a separate category for "Medical Professional". As shown below the California Department of Health Care Access and Information (HCAI.ca.gov) has the following categories and subcategories within the California Healthcare industry:

1.1. **Clinic** (2,083 locations)
   - 1.1.1. Alternative Birthing Center
   - 1.1.2. Chronic Dialysis Clinic
   - 1.1.3. Community Clinic
   - 1.1.4. Free Clinic
   - 1.1.5. Psychology Clinic

1.1.6. Rehabilitation Clinic
1.1.7. Surgical Clinic

1.2. Home Health Agency/Hospice (5,290 locations)
1.2.1. Home Health Agency
1.2.2. Hospice

1.3. Hospital (525 locations) -- Licensed healthcare facility per H.S.C.s1204/s1250*
1.3.1. Acute Psychiatric Hospital
1.3.2. Chemical Dep. Recovery Hospital
1.3.3. General Acute Care Hospital
1.3.4. Psychiatric Health Facility

1.4. Long Term Care Facility (1,376 locations)
1.4.1. Congregate Living Health Facility
1.4.2. Hospice Facility
1.4.3. ICF/Dev. Disabled
1.4.4. Skilled Nursing Facility

1.5. Medical Office Building

* Section 1204 facilities are nonprofit health clinics, which might be more like "Medical Professional" buildings than hospitals. Section 1250 facilities are the overnight facilities (24/7) [**See Appendix.**]

(Source: www.hcai.ca.gov)

From this information we see that Hospitals and Long-Term Care Facilities which are 24/7 locations, make up a combined total of 1,901 locations. Clinics and Home Health Agency/Hospice categories which are outpatient-based operating on limited “office-hours” schedules, make up 7,373 facilities. It is understood that these types of Medical Professional facilities are currently included in the “Office Building” category as they are normally located within these types of structures to be convenient to the public and to keep construction and lease rates lower, even though they have a different set of requirements for energy use than the rest of the building. Conversely, Hospitals and Long-Term Facilities, in addition to being 24/7 operations, have increased energy demands for imaging suites, surgery centers, trauma centers, 24-hour nursing care, etc. Revising this category and re-evaluating the “Office Building” category to not include “Medical Professional”, will also bring a truer understanding of energy use for these types of facilities and their needs, as well as Hospitals and Office Buildings.

During the mid-1990’s, PG&E developed a new incentive program as a spin-off of the ***Performance By Design (PBD)*** program developed in 1992, called ***Performance By Design – Hospitals (PBD-H)*** program. In developing **PBD-H**, PG&E surveyed every hospital in PG&E’s service territory broken down by task area. These audits revealed the idiosyncratic nature of each facility when viewing the entire facility. As a result, PG&E developed custom baselines for each facility based on what task areas comprised it combined with operating hours for each task area. Then PG&E compared advanced efficiency recommendations versus standard practice per task area and applied this to the whole building simulation to determine performance improvements

versus the individual site baseline. This concept could be applied to new code, especially as we look to migrate to outcome-based code. **[Please see Appendix for additional detail.]**

CEA recommends either of the following:

- As section 1204 and 1250 do not adequately allow for a “Medical Professional” building, this should be addressed as a separate category under California Building Code Chapter 12 Interior Environment, or
- Include a definition in Title 24-2025 for “Exempt Licensed Healthcare Facility” that can be invoked in the regulations wherever necessary for an exemption and would be applied to "Hospital" or "Medical Professional" when the building is in fact licensed under section 1204 or 1250. (i.e., separate the classifications for 1) research and T24 allowance/specification purposes, and 2) exemption purposes.)

CEA and its Members thank the CEC for the opportunity to submit these comments, and we would encourage the CEC to continue to convene workshops and other conversations with stakeholders on these topics.

Sincerely,

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Supported by CEA Cost-Effectiveness Metrics Working Group

Appendices

CALIFORNIA BUILDING CODE — CHAPTER 12 — INTERIOR ENVIRONMENT (Excerpts)

Source:
https://up.codes/viewer_export/juris_key/california/pub/california_building_code_2022/ref/12

Section 1204 Lighting

1204.1 General

Every space intended for human occupancy shall be provided with natural light by means of exterior glazed openings in accordance with Section 1204.2 or shall be provided with artificial light in accordance with Section 1204.3. Exterior glazed openings shall open directly onto a public way or onto a yard or court in accordance with Section 1205.

[HCD 1] *Glazed openings may open into a passive solar energy collector provided the area of exterior glazed openings in the passive solar energy collector is increased to compensate for the area required by the interior space.*

1204.2 Natural Light

The minimum net glazed area shall be not less than 8 percent of the floor area of the room served.

1204.2.1 Adjoining Spaces

For the purpose of natural lighting, any room is permitted to be considered as a portion of an adjoining room where one-half of the area of the common wall is open and unobstructed and provides an opening of not less than one-tenth of the floor area of the interior room or 25 square feet (2.32 m^2), whichever is greater.

> **Exception:** Openings required for natural light shall be permitted to open into a sunroom with thermal isolation or a patio cover where the common wall provides a glazed area of not less than one-tenth of the floor area of the interior room or 20 square feet (1.86 m^2), whichever is greater.

1204.2.2 Exterior Openings

Exterior openings required by Section 1204.2 for natural light shall open directly onto a public way, yard or court, as set forth in Section 1205.

> **Exceptions:**
>
> 1. Required exterior openings are permitted to open into a roofed porch where the porch meets all of the following criteria:
>
>   1. Abuts a public way, yard or court.

2. Has a ceiling height of not less than 7 feet (2134 mm).

3. Has a longer side at least 65 percent open and unobstructed.

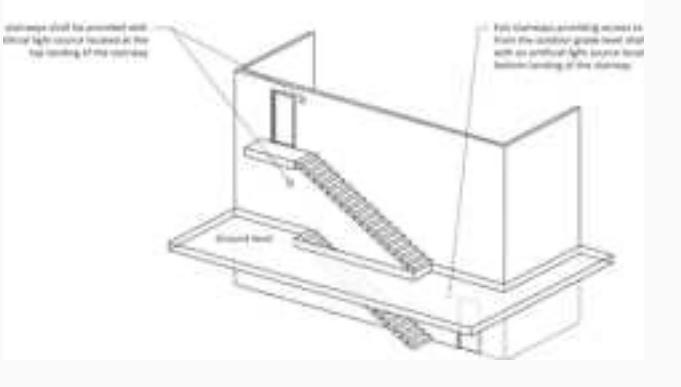
2. Skylights are not required to open directly onto a public way, yard or court.

1204.3 Artificial Light

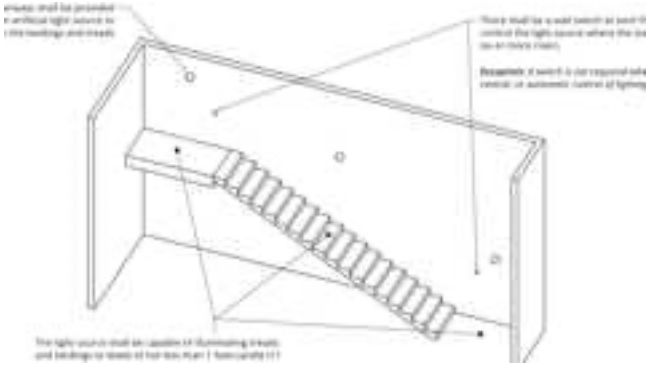
Artificial light shall be provided that is adequate to provide an average illumination of 10 footcandles (107 lux) over the area of the room at a height of 30 inches (762 mm) above the floor level.

1204.4 Stairway Illumination

Stairways within dwelling units and exterior stairways serving a dwelling unit shall have an illumination level on tread runs of not less than 1 footcandle (11 lux). Stairways in other occupancies shall be governed by Chapter 10.



Ext. Stair Illumination - Res.



Int. Stair Illumination - Res.

1204.4.1 Controls

The control for activation of the required stairway lighting shall be in accordance with the *California Electrical Code*.

1204.5 Emergency Egress Lighting

The means of egress shall be illuminated in accordance with Section 1008.1.

1204.6 Light Pollution Reduction

[BSC-CG] See *California Green Building Standards Code*, Chapter 5, Division 5.1 for additional light pollution reduction requirements.

1204.7 Campus Lighting for Parking Facilities and Primary Walkways at California State Universities, Colleges and Community Colleges

[BSC] Artificial light shall be provided for parking facilities and primary walkways at California State Universities, colleges and community colleges in accordance with provisions of this subsection. This subsection shall not apply to the University of California unless the Regents of the University of California, by resolution, make it applicable.

1204.7.1 Lighting Requirements

Based on the recommendations of the most current edition of the Illumination Engineering Society lighting handbook, the following lighting standards shall be used for all new construction of open parking facilities, covered parking facilities and primary walkways:

1. *Open and covered parking facilities.*
    1. *Medium-level activity usage when medium usage is present.*
    2. *High-level activity usage when high usage is present.*
2. *Primary campus walkways.*
    1. *Medium-level activity usage when medium usage is present.*
    2. *High-level activity usage when high usage is present.*

Source: ***https://up.codes/viewer/california/ca-building-code-2022/chapter/12/interior-environment#1250***

Section 1250 [CA] Pharmacies

1250.1 Application

This section applies to pharmacies listed in Section 1.4.1 regulated by the Department of Consumer Affairs.

1250.2 Restrooms

A pharmacy shall maintain a readily accessible restroom. The restroom shall contain a toilet and washbasin supplied with running water.

1250.3 Sink

All pharmacies shall be equipped with a sink within the pharmacy for pharmaceutical purposes. The sink shall be supplied with hot and cold running water.

1250.4 Compounding Area for Parenteral Solutions

The pharmacy shall have a designated area for the preparation of sterile products for dispensing which shall:

1. *In accordance with Federal Standard 209 (b), Clean Room and Work Station Requirements, Controlled Environment as approved by the Commission, Federal Supply Service, General Service Administration meet standards for Class 100 HEPA (high efficiency particulate air) filtered air such as laminar airflow hood or clean room.*

2. *Have nonporous and cleanable surfaces, ceilings and ceiling tiles, walls, floors and floor coverings.*

3. *The pharmacy shall be arranged in such a manner that the laminar-flow hood is located in an area which is exposed to minimal traffic flow, and is separate from any area used for bulk storage of items not related to the compounding of parenteral solutions.*

   There shall be sufficient space, well separated from the laminar-flow hood area for the storage of bulk materials, equipment and waste materials.

4. *A sink with hot and cold running water must be within the parenteral solution compounding area or adjacent to it.*

5. *Any pharmacy that compounds sterile injectable products from one or more nonsterile ingredients must compound the medication in one of the following environments:*

   1. *An ISO class 5 laminar airflow hood within an ISO class 7 cleanroom. The cleanroom must have a positive air pressure differential relative adjacent areas.*

   2. *An ISO class 5 cleanroom.*

   3. *A barrier isolator that provides an ISO class 5 environment for compounding.*

Note: *For additional pharmacy mechanical standard requirements, see Chapter 5, California Mechanical Code*

Source: https://up.codes/viewer/california/ca-building-code-2022/chapter/12/interior-environment#1204

2016 Savings By Design Healthcare Baseline Procedures

(Source attached: https://www.calmac.org/publications/2016_Savings_by_Design_Healthcare_Baseline_Study_FinalES.pdf)

During the mid-1990's, PG&E developed a new incentive program as a spin-off of the **Performance By Design (PBD)** program developed in 1992. The **PBD** program was designed to provide performance-based incentives to commercial new construction projects that were able to perform better than a basic Title 24 compliant building. The program had an incentive mechanism in place that rewarded projects in tiers based upon the relative performance of the project. However, the **PBD** program was targeted at general commercial building construction, and was ill suited for the healthcare industry. Given the significant differences in construction practices, as well as operating parameters of hospitals, it was decided to develop a program that would specifically address this market. The result of this development work was the **Performance By Design Hospitals** (**PBDH**) program. The work done for the **PBDH** program included a wide range of activities involving both PG&E personnel as well as outside engineers and building owners. The initial work performed on **PBDH** included a series of focus groups involving various industry stakeholders including architects, mechanical engineers, lighting engineers, building owners as well as operations engineers. In addition, regulatory agencies such as the Office of Statewide Health Planning and Development (OSHPD) and the California Energy Commission (CEC) were involved in the development and direction of the program.

Development work included an initial assessment of normal practice for the building types slated to be encompassed by the program. To help determine appropriate baselines, industry practice for energy efficiency was studied. This included obtaining detailed plans and specifications for numerous projects under design, and compiling those results in spreadsheet form. Included in this study were the following projects:

- Chico Community Hospital
- Clovis Community Hospital
- Community Hospital of Monterey Maternity Wing
- Kaiser Hospital San Francisco Geary
- Kaiser Hospital Vallejo
- Kaiser Hospital Fremont
- Kaiser Hospital Walnut Creek
- Kern Medical Center
- Marshall Medical Office Building
- Merrithew Hospital
- Natividad Hospital
- Oroville Hospital
- St. Joseph's CVS, Eureka
- St. Joseph's, Eureka

- St. Joseph's Heart Center Stockton
- San Joaquin General Hospital
- San Joaquin ER Addition
- Santa Clara Valley Memorial Hospital
- Santa Rosa Memorial Hospital
- Sierra Nevada Memorial Hospital
- Sutter Health Davis
- Sutter Health Santa Cruz
- VA Martinez
- Valley Children's Hospital
- Washington West Fremont
- Watsonville Community Hospital

As of 2016, OSHPD, the California Department of Health Services, California Energy Commission, and California Building Standards Commission are the governing regulatory bodies for building healthcare facilities in the state of California. The program transitioned from **Performance By Design Hospitals (PBDH)** to **Savings By Design Healthcare (SBDH)** in 1999, and is funded by ratepayers of private utilities in the state of California through the Public Purpose Program.