



**TITLE 24, PART 6**

**2028 CODE CYCLE**

# Healthcare Prototype Enhancements

## To Account for Healthcare Exceptions Proposals

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# Model Prototype and Energy Savings

## *Methodology and Assumptions*

- Scope and Background
- Measures and Savings Methodology
- Energy Use Intensity
- Healthcare Hospitals – Existing Prototype Building Characteristics
- Modification to current Healthcare Hospital Prototype
- Skilled Nursing Facilities – New Prototype
- Impact on Compliance



# Scope of the Workshop

- Modifications to the current Healthcare Hospital Prototype
- New prototype for Skilled Nursing Facilities (SNF)
- Add prototype enhancements to compliance software

# Background Information—Codes and Standards

## California Department of Health Care Access and Information (HCAI)

- HCAI and the Hospital Building Safety Board develop codes and standards for healthcare facilities and enforce them through Office of Statewide Hospital Planning and Development (OSHPD)
- HCAI regulations are adopted into the California Buildings Standards Code as per the [Code Application Notice §129851](#)

## Title 24, Part 6

- The Statewide CASE Team has been working with HCAI and Healthcare SMEs to identify changes to Title 24 Part 6 that would bring significant energy savings in healthcare buildings

## National Model Codes

- IECC & Standard 90.1 already require many of the requirements for healthcare facilities included in this CASE Proposal

## AHJs

- Non-licensed healthcare facilities, some healthcare-specific areas, outpatient facilities are under the control of AHJs

***Goal: increased alignment between HCAI, Title 24 Part 6, and ASHRAE 90.1/IECC***

# Proposed Code Change Update

## New Construction

- Modify or remove exceptions for healthcare buildings for new construction requirements in sections 120.2(e), 140.4(d), and 140.4(m).
  - **120.2(e) Shut-off and reset controls for space-conditioning systems.** New healthcare requirement to reset to the minimum occupied or unoccupied turndown air flow allowance
  - **140.4(d) Space-conditioning zone controls.** New healthcare specific provision to limit volume of air to zone or mixed zone to not exceed minimum allowable levels – limiting simultaneous heating and cooling or VAV to reduce cooled air before reheating
  - **140.4 (m) Fan control.** At least two stage fan control for DX > 65 kBtu/h, variable speed fans for VAV systems

**See**  
**Title24stakeholders.com** for  
proposal description,  
justification, draft code  
language, and requested data  
[https://title24stakeholders.com  
/wp-content/uploads/2025/08/  
2028\\_T24\\_Measure\\_Summar  
y\\_Healthcare48.pdf](https://title24stakeholders.com/wp-content/uploads/2025/08/2028_T24_Measure_Summary_Healthcare48.pdf)

# Proposed Code Change Update - Alterations

- 1. The following blanket exception will be removed.  
**Existing Buildings – Alterations Exception to Section 141.0:** Alterations to healthcare facilities are not required to comply with this Section.
- 2. Healthcare facilities are required to meet the subsections identified in the table below.
- 3. The Exceptions will be added to all other individual subsections that are not listed in this table

Section	Requirement	Description
141.0(b)1.A - Roof and Ceiling Insulation	Mandatory	Minimum levels for roof insulation
141.0(b)1.D - Fan Energy Index (FEI)	Mandatory	Achieving a FEI of 1.0 for constant air volume systems and 0.95 for variable air volume systems
141.0(b)1.E- Exterior Windows	Mandatory	Requires replacement windows do not exceed a maximum U-factor of 0.58
141.0(b)2.B- Altered Roof	Prescriptive	Solar reflectance and minimum insulation requirements during roof replacement
141.0(b)2F – New Lighting System	Prescriptive	Spaces with lighting systems installed for the first time shall meet the requirements of Sections 110.9, 130.0, 130.1, 130.2, 130.4, 140.3(c), 140.6 and 140.7.
141.0(b)2I - Altered indoor lighting systems	Prescriptive	Replacement lighting must meet certain lighting power density requirements

# Energy and Energy Cost Savings Methodology

- Use California Energy Commission's standard methodology and metrics
- Compare baseline system compliant with *current* code requirements to system compliant with *proposed* prescriptive requirements
  - **Baseline:** 2025 compliant building Systems with all healthcare exceptions
  - **Proposed:** 2025 compliant buildings systems with 2028 proposals
    - New Construction Exceptions: *120.2(e) Shut-off and reset controls for space-conditioning systems, 140.4(d) Space-conditioning zone controls, 140.4 (m) Fan control,*
    - Alterations Exceptions: *141.0(b)1A Roof/Ceiling Insulation, 141.0(b)1D Fan Energy Index, 141.0(b)1E Exterior windows, 141.0(b)2I Altered Indoor Lighting Systems*
    - Parametric Runs: *Each measure proposal will be separately modeled as it was done for the CASE report*
  - For the final CASE report, the modified hospital prototype and SNF prototype will be used to recalculate the energy savings and determine the cost-effectiveness

# Background of Healthcare Prototypes

- The existing hospital prototype's Energy Use Intensity is lower than typical
- Some of the current Healthcare Hospital Prototype model inputs are not consistent with other California Building Code requirements
- Part 6 healthcare facilities exceptions currently apply to all Hospitals and SNF
- The CEC construction forecast includes Hospital and SNF buildings as a single building type
- The construction ratio for hospitals and SNF is approximately 3:2 by floor area
- Currently no prototype available for Skilled Nursing Facilities

# AB 130 and SNF – An overview

- The scope of the T24 2028 Code cycle is different from all other previous code cycles
- Per CEC pre-rule making process, “ The updated standards will be proposed for adoption in 2027 with an effective date of January 1, 2029, consistent with [Assembly Bill 130 \(2025-2026\)](#)”
- There is a concern raised that SNF is subjected to AB 130 requirement, not to be included in the 2028 code cycle.
- Outcomes of the CASE team’s research and the consultation with HCAI:
  - CBC 310.1: “Residential Group R includes buildings or structures where people sleep, excluding those classified as Institutional Group I.”
  - Per conversation with HCAI, SNF is I-2 occupancy. Not designed and approved as residential building.
  - Skilled Nursing Facilities [OSHPD 2] HSC preempts the local building jurisdiction from plan review and approval and construction inspection of skilled nursing facilities and intermediate care facilities and authorizes OSHPD to review and inspect these facilities. This authority is similar to that established for hospital buildings.
- The CASE team is working to include SNF buildings in the final CASE report. If AB 130 is amended to exclude SNF I-2 occupancy from, all exceptions for the SNF will be added back to the revised final report.

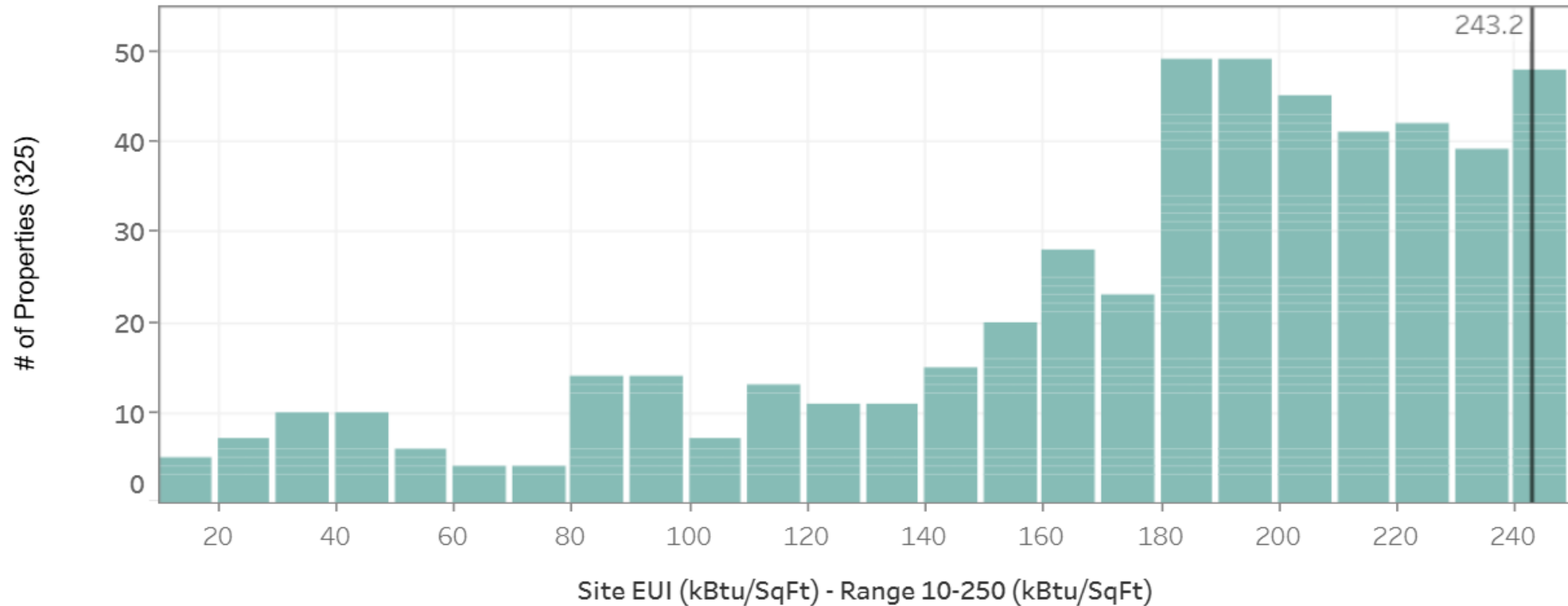
# Background Information—Building Types

OSHPD Classification	Facility Type	Occupancy Classification	Enforcing Agency
<b>OSHPD 1</b>	<b>Hospitals: general acute care hospitals</b>	<b>Institutional Group I-2</b>	<b>HCAI and LBD</b>
<b>OSHPD 2</b>	<b>Skilled Nursing Facilities: intermediate care facilities</b>	<b>Institutional Group I-2</b>	<b>HCAI</b>
<b>OSHPD 3</b>	Licensed Clinics: out-patient clinical services, primary-care clinics, and specialty clinics	Business Group B	HCAI and LBD
<b>OSHPD 4</b>	Correctional Treatment Centers	Institutional Group I-3	HCAI and LBD
<b>OSHPD 5</b>	Psychiatric Hospitals: Acute Psychiatric Hospital	Institutional Group I-2	HCAI
<b>OSHPD 6</b>	Chemical Dependency Recovery Hospital: not with an acute care hospital building or psychiatric facility	Institutional Group I-2	HCAI and LBD

Note: Jurisdictional limits should not be thought of as a physical or spatial boundary, but as specifically related to the codes and regulations being enforced, as charged to the respective authorities. The extent of OSHPD’s jurisdiction is not simply everything inside the exterior skin (or 5 feet beyond) of those buildings or structures with everything outside the building remaining under the jurisdiction of the local enforcing agencies. Some local jurisdiction is retained inside these buildings, and OSHPD does have some jurisdiction over certain elements of the site or campus outside the building.

# CEC Benchmarking EUI

## Site Energy Use Intensity Weather Normalized (kBtu/ft<sup>2</sup>)



Source: [California Building Energy Benchmarking Program](#)  
Property: Hospital (General Medical and Surgical) Year: 2018-2024

# Energy Use Intensity (EUI) of California Hospitals

Hospital Size	Typical Site EUI (kBtu/ft <sup>2</sup> -yr)	Notes
Small	~150-200	Lower plug loads, fewer ORs
Medium	~180-230	Most Common Category
Large	~200-260	More ORs, imaging, 24/7 loads

**Notes:**

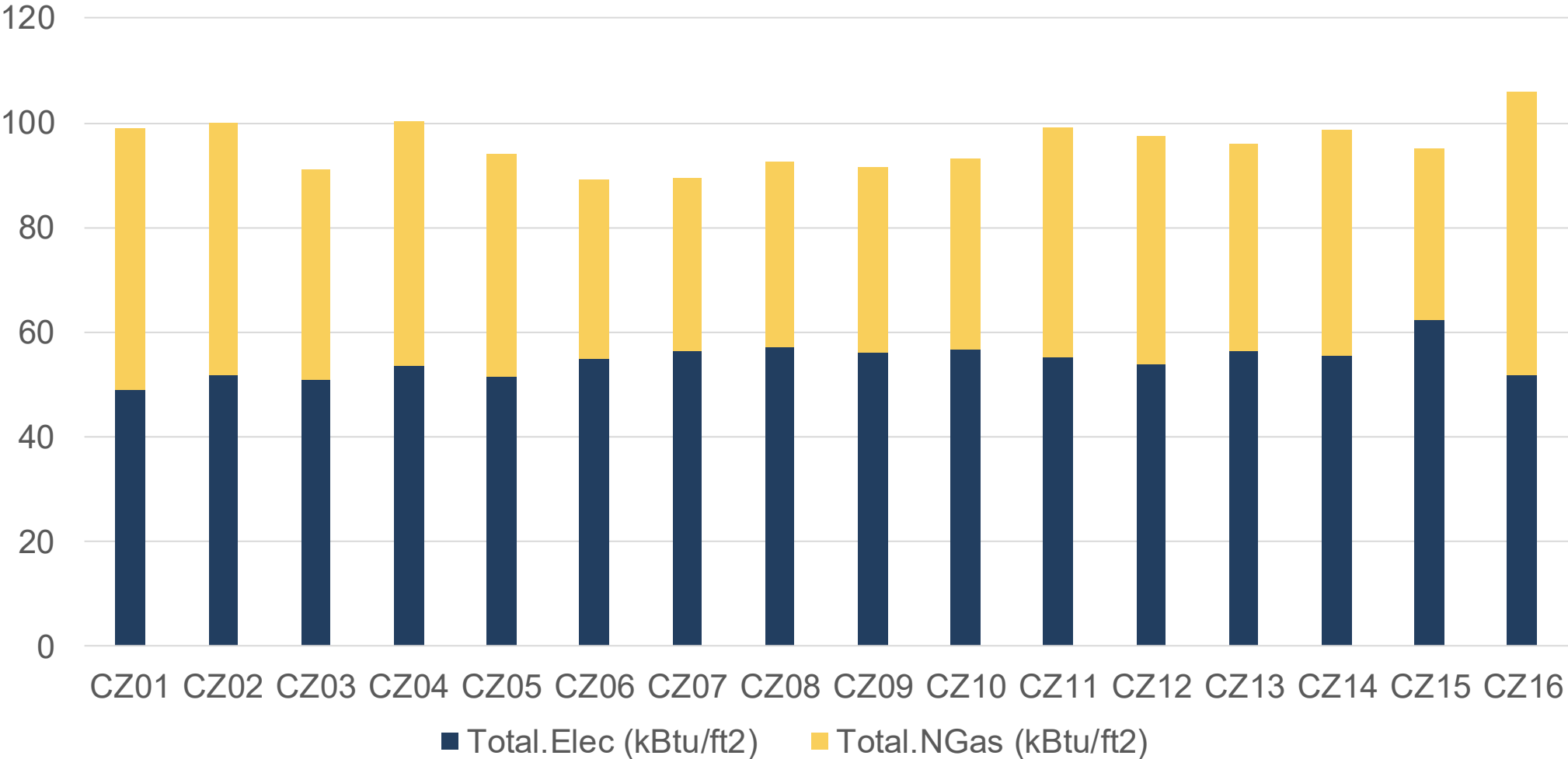
1. Ranges in this table inferred from ASHE Energy to Care public summaries. Exact values vary by climate zone
2. SNF EUIs are comparable to hospital EUIs and both share some spaces.

# Current Healthcare Hospital Prototype Total EUI (kBtu/ft<sup>2</sup>)

Prototype (2025 Compliant)			
CZ Group	Climate Zones	EUI Range (kBtu/ft <sup>2</sup> )	Average EUI (kBtu/ft <sup>2</sup> )
GR1	16	106	106
GR2	1,2,4,11,12,13,14,15	96 - 100	98
GR3	3,5,6,7,8,9	89-95	94

*Note:* The Climate zone group is based on the EUI.

# Current Healthcare Hospital Prototype Energy Use Intensity



*Note:* Total forecast is 5.83 million ft<sup>2</sup> for New Construction and 400.51 million ft<sup>2</sup> for Existing Building.  
 The EUI ratio between Electricity and Natural Gas may change with the prototype enhancements

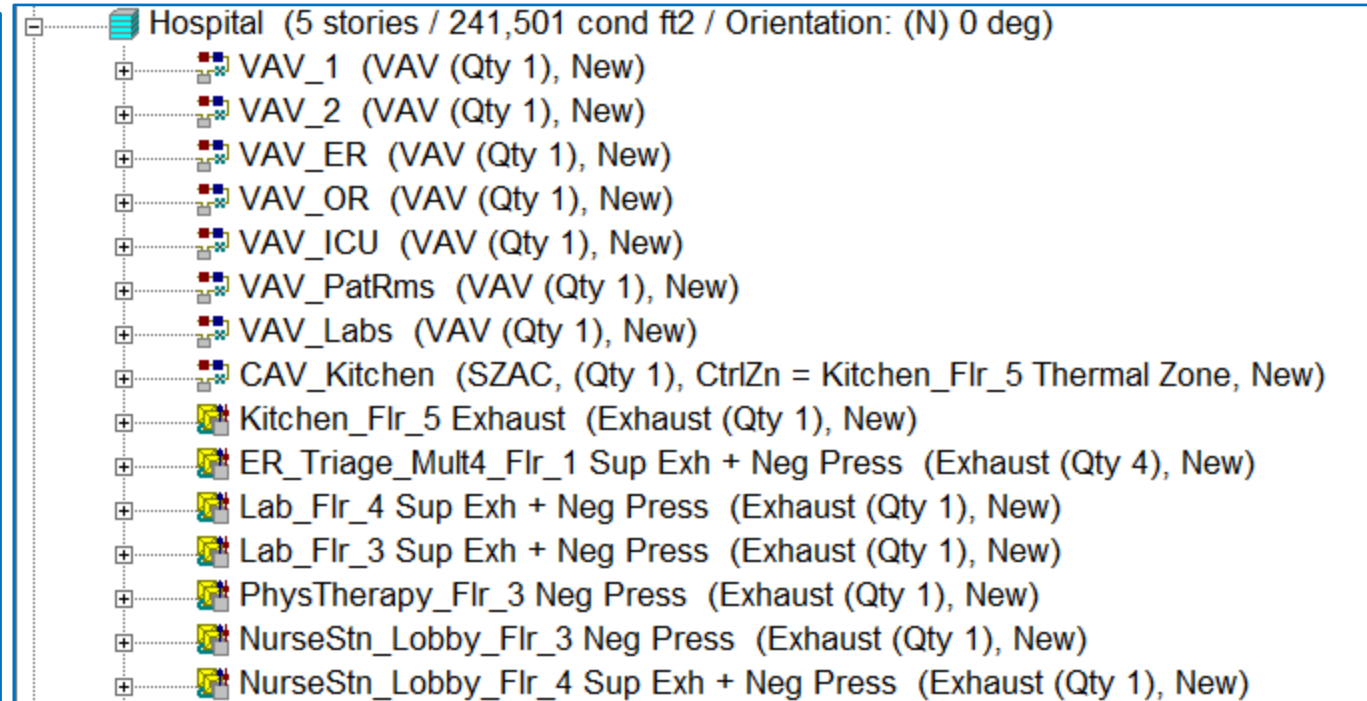
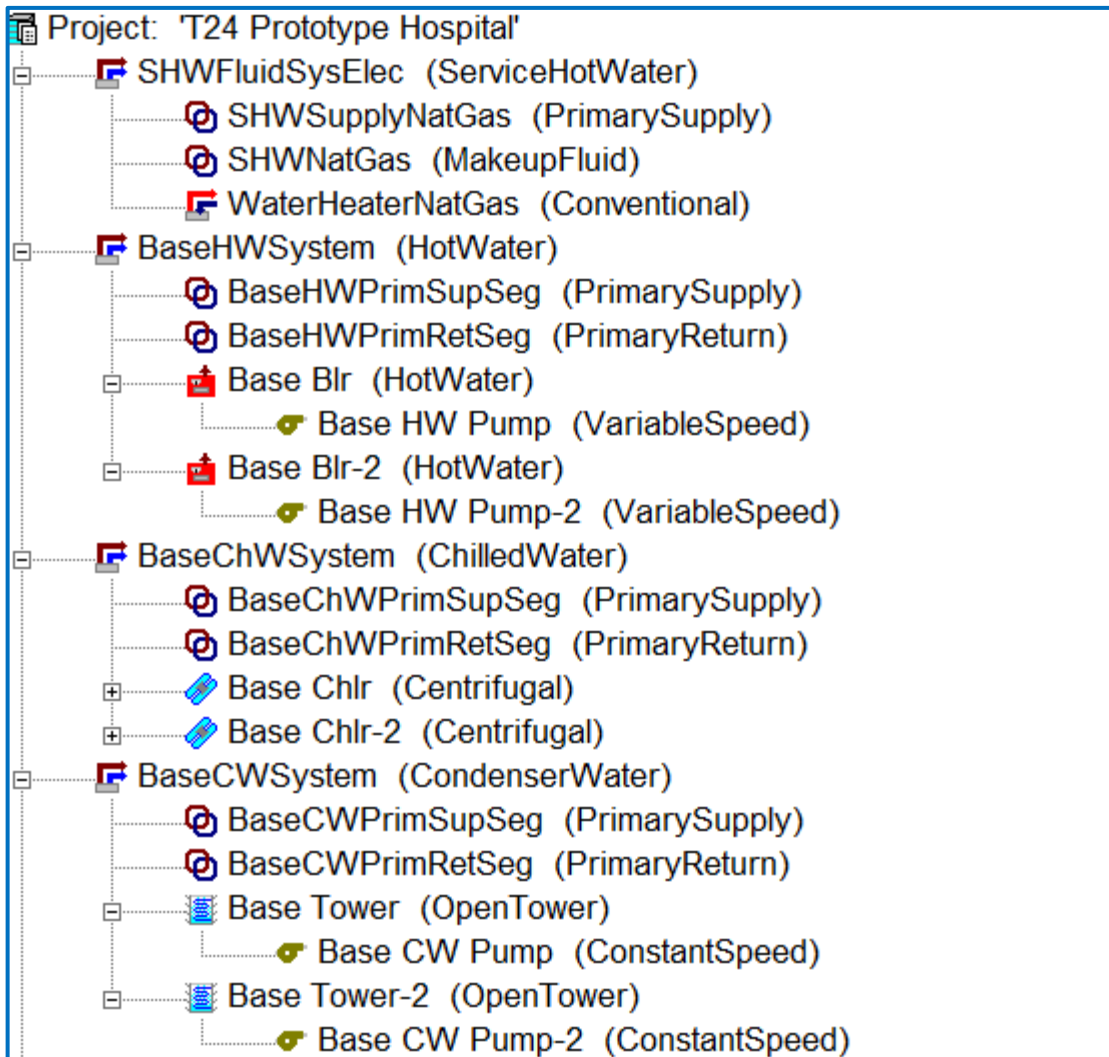
# Summary of Prototype Enhancements

- Update Healthcare Hospital prototype model aligned with typical EUI
  - Include all applicable exceptions for both Hospital and SNF prototypes:
    - Spaces
    - Thermal Zones
    - Systems
  - Update plug loads and schedules that represent typical healthcare buildings in CA
- Develop hospital-specific and SNF-specific Appendices to be included in the compliant software
  - App5-4A\_SpaceBySpace
  - App5-4A\_CompleteBuilding
  - App5-4B\_FunctionScheduleGroups
  - App5-4C\_Ventilation

# Current Healthcare Hospital Prototype Summary

- **Floor Area:** 241,501 ft<sup>2</sup>
- **Number of floors:** Five + Basement
- **Basement:** One Thermal Zone (Office)
- **First Floor:** Lobby, ER-Trauma, ER-Nurse Station-Lobby, Corridor, ER-Exam, ER-Triage, Office
- **Second Floor:** OR, ICU, IC-Patient room, ICU-Nurse Station-Lobby, OR-Nurse Station-Lobby, Corridor
- **Third Floor:** Patient rooms, Physiotherapy, Lab, Corridor, Nurse Station-Lobby
- **Fourth Floor:** Patient rooms, Lab, Corridor, Nurse Station-Lobby, Radiology
- **Fifth Floor:** Office, Kitchen, Dining, Corridor, Nurse Station-Lobby

# Current Prototype Building Characteristics – Central Plant and HVAC



## Poll

What percentage of the hospital chiller plant load is met by water-cooled chillers?

1. <50%
2. 75%
3. 100%
4. Varies

## Poll

What percentage of the total conditioned floor area (CFA) of the hospital is served by the DX systems?

1. <5
2. 5-10%
3. 10-25%
4. >25%

## Poll

Do you recommend air-cooled HVAC plants over water-cooled HVAC plants for hospitals?

1. Never
2. Always
3. Only in projects where water resiliency is critical
4. Depends on the project scope
5. Prefer to discuss in detail

# Current Prototype Building Characteristics – Space Functions

Space Function \ Floor	1	2	3	4	5	Basement	Grand Total
Corridor	2.5%	2.5%	5.1%	5.1%	2.2%		17.4%
Dining					3.1%		3.1%
ER_Trauma	0.2%						0.2%
Exam Room	1.0%						1.0%
ICU		2.8%					2.8%
ICU_NurseStn_Lobby		3.0%					3.0%
Kitchen					4.1%		4.1%
Lab			1.2%	1.2%			2.4%
Lobby	6.6%						6.6%
NurseStn_Lobby	5.5%		4.0%	4.0%	4.6%		18.2%
Office	0.3%				2.5%	16.7%	19.5%
OR		2.7%					2.7%
OR_NurseStn_Lobby		4.5%					4.5%
PatRoom		1.1%	4.2%	4.2%			9.6%
Phystherapy			2.2%				2.2%
Radiology				2.2%			2.2%
Triage	0.5%						0.5%
Grand Total	16.7%	16.7%	16.7%	16.7%	16.7%	16.7%	100.0%

Space location

Space %

# Current Healthcare Hospital Prototype Space Summary

- >10% to <20% of CFA: Corridor, Nurse Station Lobby, Office
- >5% to <=10% of CFA: Lobby, Patient Room
- >1% to <=5% of CFA: Dining, ICU, ICU Nurse Station Lobby, Kitchen, Lab, OR, OR Nurse Station Lobby, Physiotherapy, Radiology
- <=1% of CFA: ER-Trauma, Exam room, Triage

## Poll

What spaces that will impact the energy use intensity, need to be included in the prototype?

# Default Parameters for Standard Design

- The following appendices provide default values for Standard Design of the hospital prototype in addition to mandatory and prescriptive requirements.
  - App5-4A\_SpaceBySpace-T24N\_2025.csv
  - App5-4A\_CompleteBuilding.csv
  - App5-4B\_FunctionScheduleGroups.csv
  - App5-4C\_Ventilation-T24N\_2025.csv

# T24 2025 App5-4A

- App5-4A\_SpaceBySpace-T24N\_2025.csv covers Function type:
  - Occupancy density, Occupancy ventilation fraction, Occupancy sensible heat rate, Occupancy latent heat rate
  - Receptacle power density
  - Hot water hourly use per person, Base water heater type
  - Interior Lighting Power Density, Detail task allowance, Decorative allowance, High ceiling lighting allowance, Video allowance, Parking ATM Allowance, portable office lighting allowance, Exterior illumination Mirror Allowance, Interior illumination Mirror Allowance, Transition Lighting Off At Night Allowance, and a few more
  - Cooling load unmet load hours, heating load unmet load hours
  - Gas equipment power density,
  - Illumination setpoint minimum, illumination setpoint maximum, illumination setpoint adjustment factors (primary and secondary)

# T24 2025 App5-4B and C

- App5-4B\_FunctionScheduleGroups.csv covers Function groups: (Health)
  - Occupancy schedule
  - Receptacle schedule
  - Hot water heating schedule
  - Interior lighting Schedule
  - Gas equipment Schedule
  - Commercial refrigeration schedule
  - Infiltration schedule
  - Availability schedule
  - Heating and cooling thermostat schedule
  - Elevator and Escalator schedule
  - Water heater temperature setpoint schedule
- App5-4C\_Ventilation-T24N\_2025.csv covers VentSpcFuncDef : (Misc-All others) Minimum occupant density, area outdoor air rate, continuous and intermittent exhaust rate, exhaust rate, air class

# Ventilation and Internal Loads (App5-4A\_SpaceBySpace-T24N\_2025)

FuncType	//SpaceBySpace	Healthcare Facility and Hospitals (Exam/Treatment Room)	Healthcare Facility and Hospitals (Imaging Room)	Healthcare Facility and Hospitals (Medical Supply Room)	Healthcare Facility and Hospitals (Nursery)	Healthcare Facility and Hospitals (Nurse's Station)	Healthcare Facility and Hospitals (Operating Room)	Healthcare Facility and Hospitals (Patient Room)	Healthcare Facility and Hospitals (Physical Therapy Room)	Healthcare Facility and Hospitals (Recovery Room)
VentSpcFuncDef		Misc - All others	Misc - All others	Misc - All others	Misc - All others	Misc - All others	Misc - All others	Misc - All others	Misc - All others	Misc - All others
OccDens	# per 1000 ft²	10	10	10	10	10	10	10	10	10
OccVentFrac		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
OccSensHtRt	Btu / occupant	250	250	250	250	250	250	250	250	250
OccLatHtRt	Btu / occupant	200	200	200	200	200	200	200	200	200
RecptPwrDens	Load W/ft²	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
HotWtrHrlyUsePerPers	Gal/h per person	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
BaseWtrHtrType		Electric	Gas	Gas	Gas	Gas	Gas	Gas	Electric	Gas
IntLPDReg	W/ft²	1.15	0.6	0.55	0.8	0.85	1.9	0.7	0.75	0.9
DefTaskAllow	W/ft²	0	0	0	0	0.2	0	0	0	0
DecorativeAllow	W/ft²	0	0.2	0	0	0	0	0.15	0	0
TunWhtOrDimToWarmAllow	W/ft²	0	0.1	0	0.1	0.1	0	0.1	0.1	0.1
ClgUMLHLimit	Hrs	150	150	150	150	150	150	150	150	150
HtgUMLHLimit	Hrs	150	150	150	150	150	150	150	150	150
GasEqpPwrDens	Btu/h-ft2	1.12596	0	0	0	0	0	0	0	0
IllumSetptMin	lux	300	75	50	20	75	300	20	75	20
IllumSetptMax	lux	3000	500	300	200	500	3000	200	500	200
IllumSetptAdjFacPri		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
IllumSetptAdjFacSec		2	2	2	2	2	2	2	2	2

# Ventilation Function Type Details (App5-4C\_Ventilation-T24N\_2025)

<b>VentFuncType</b>	<b>MinOccDens</b>	<b>CodeVent PerArea</b>	<b>CodeExhCont PerFixture</b>	<b>CodeExhIntrmt PerFixture</b>	<b>CodeExh PerArea</b>	<b>AirClass</b>
	Minimum Occ Density, Pz	Area Outdoor Air Rate, Ra	Continuous Exhaust Rate,	Intermittent Exhaust Rate,	Exhaust Rate,	Air Class
	people/1000ft2	cfm/ft2	cfm/unit	cfm/unit	cfm/ft <sup>2</sup>	
<b>Misc - All others</b>	5	0.15	0	0	0	2

# Summary of Key Changes to Prototype

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Modify Baseline for hospitals and develop baseline for SNFs consistent with HCAI and Part 6 requirements

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Modify HVAC MAP

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Modify VAV to CAV system for critical spaces like operation rooms

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Generate new functional groups based on space types in CMC Table-4A

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Develop schedules specific to space, and functional groups for hospitals and SNFs

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Allow performance credit where exception does not exist

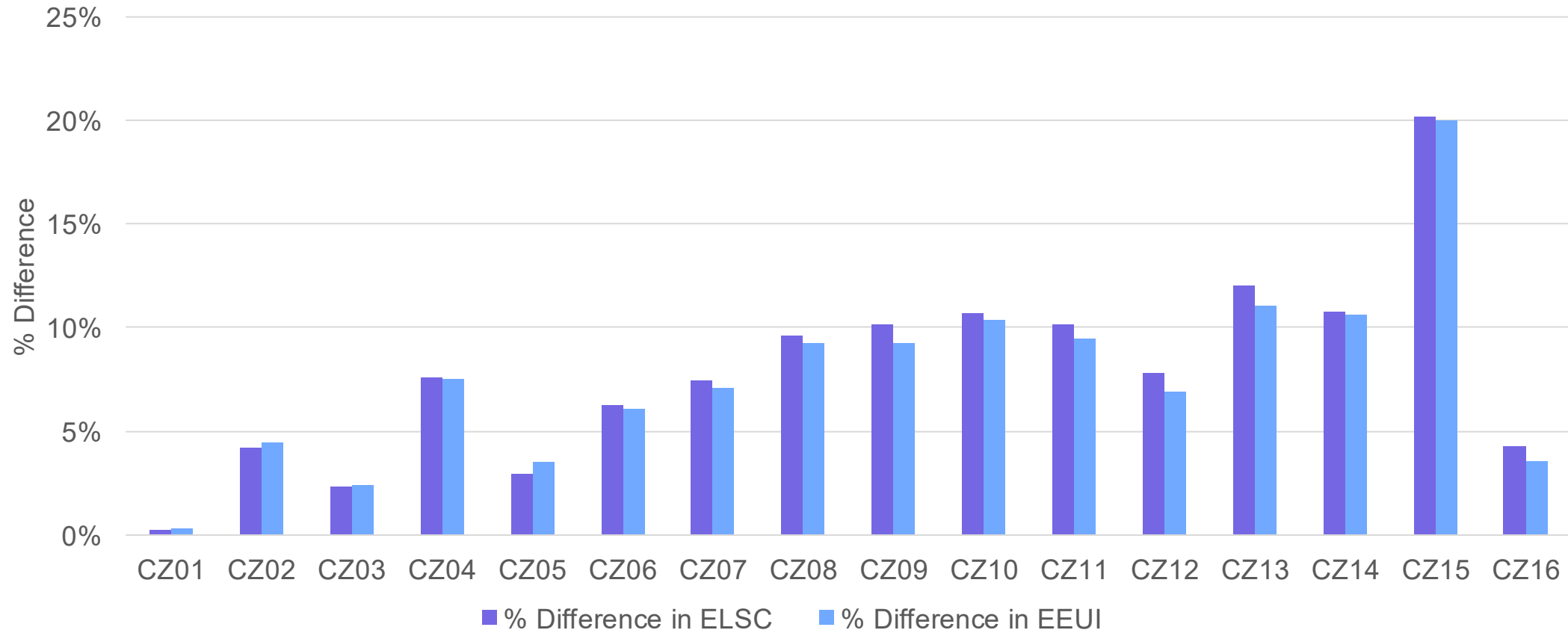
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# Details of Prototype Model Changes

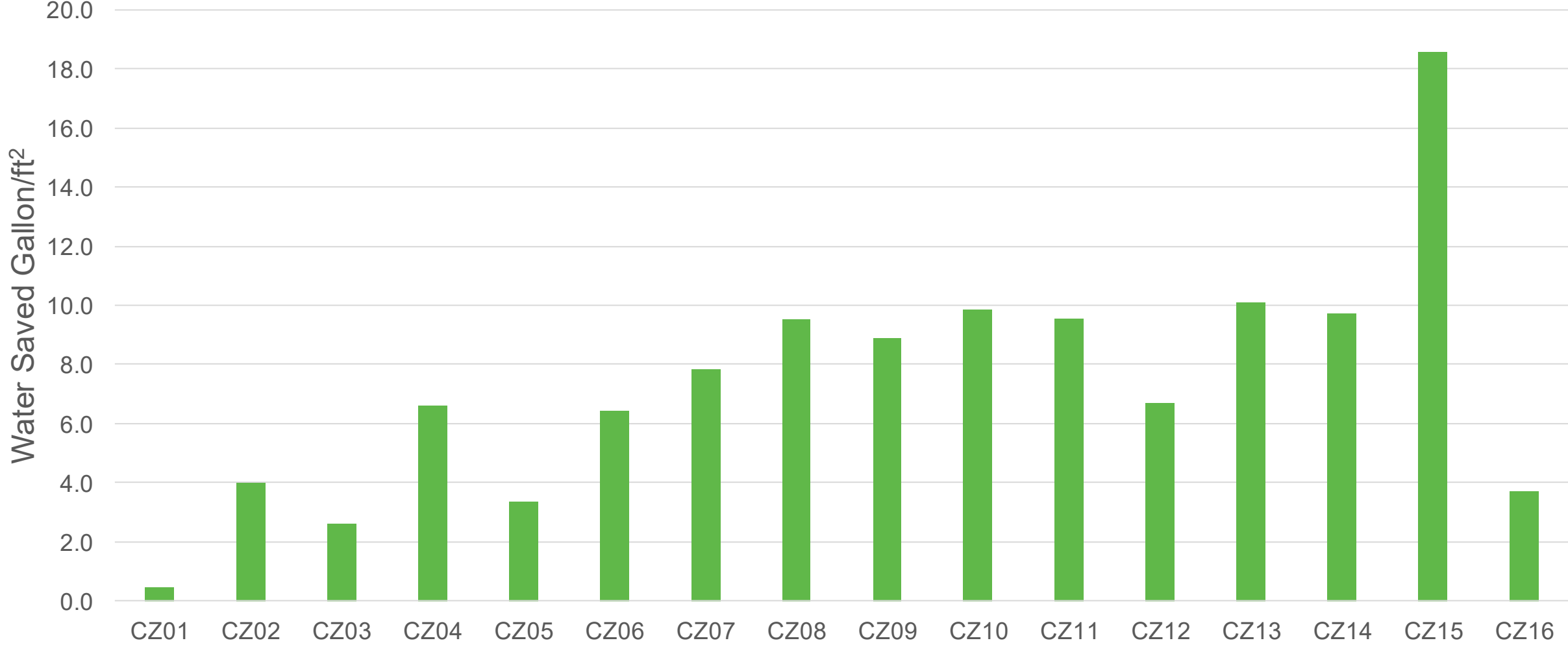
Building System	Description	Hospital Standard Design (Current)	SNF Standard Design (Current)	Hospital Standard Design (Proposed)	SNF Standard Design (Proposed)	Reference
Envelope	Roof – Wood-framed and others	Prescriptive Requirement	None	No Change	Same as Hospital	ACM
Envelope	Wall – Metal-framed	Prescriptive Requirement	None	No Change	Same as Hospital	ACM
Lighting	LPD and controls	Prescriptive Requirement	None	No Change	Same as Hospital	ACM App5-4A and Market Research
HVAC	Central Plant	Equally sized Water-cooled chillers	None	No Change	None	ACM
HVAC	Air-side	VAV	None	<b>VAV, CAV and CRAC</b>	<b>PVAV and SZAC</b>	ACM and Market Research
SHW	Central	Boiler and electric heating	None	<b>Equally-sized Boilers</b>	<b>Gas Storage-tank Water heaters</b>	ACM and Market Research

# Impact of Air-cooled Chillers

Water-Cooled Chillers Vs Air-Cooled Chillers  
EEUI and ELSC



# Current Prototype - Impact of Air-cooled Chillers – Water Savings



## Poll

Are critical spaces like operation rooms served by constant volume air handler?

1. Yes, but combined with other non-critical spaces
2. No
3. In some projects based on Basis of Design or Owner's Project Requirement
4. Always with a dedicated CAV system

## Poll

Which spaces will you consider for turn down in your projects?

1. Patient Rooms
2. All spaces as identified in CMC Table 4A
3. None
4. Kitchen and other support spaces

# Alignment of ACM/CBECC with Part 6 and other CA Codes

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1. Ventilation (ACH/OA) — CMC/HCAI vs Part 6 ORs, ICUs, isolation rooms, sterile processing have non-negotiable ACH and OA. Part 6 cannot reduce these values in Standard or Proposed Design.

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2. Pressure Relationships — CMC/HCAI vs Part 6 Positive/negative pressure rooms cannot be “turned down” for energy savings. ACM Standard Design sometimes assumes lower minimum flows than CMC requires.

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3. Exhaust Systems — CMC/CFC vs Part 6 Hazardous exhaust, soiled utility, lab exhaust must run continuously. Part 6 cannot reduce runtime or airflow.

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4. SWH Recirculation & Temperature — CPC vs Part 6 Hospitals require hotter water, larger storage, and continuous recirc. Part 6 wants to reduce recirc losses, but CPC sets the minimum.

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5. Essential Electrical Systems — Electrical Code vs Part 6 Emergency/essential loads are not modeled in Part 6. But normal loads on essential branches must be included.

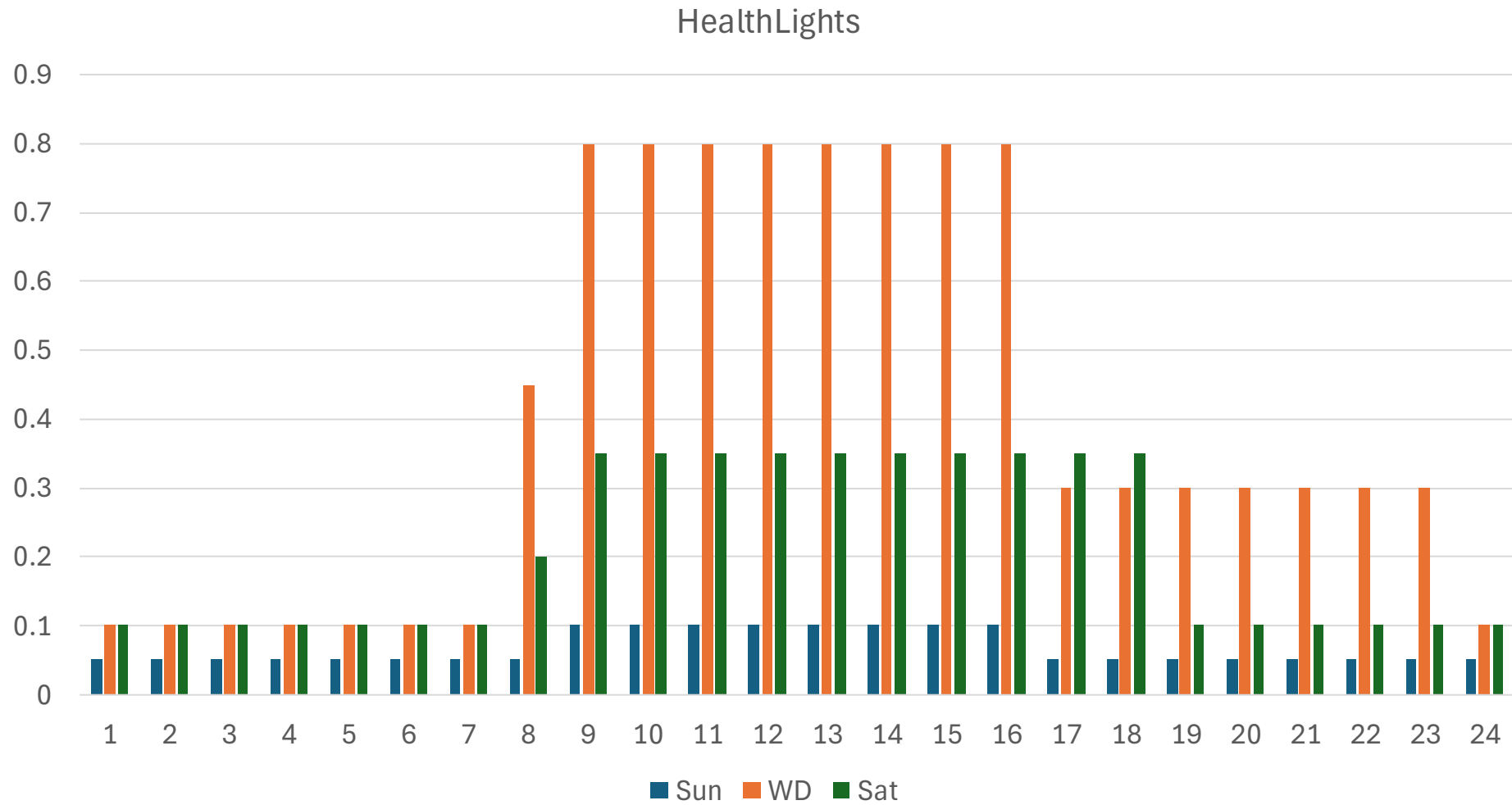
# Modifications to Spaces and Schedules

1. Hospital - 24\*7: Healthcare - Emergency exam room, Healthcare - Emergency triage area, Healthcare - Corridor, Pharmacy - **100% 24/7**
2. Hospital – Storage: Soiled utility/workroom or soiled holding/support - **80% 24/7**
3. Hospital – Clinical: Healthcare - Nurse station, Healthcare - Medical Supply, Healthcare - Rad/Imaging, Healthcare - Exam Room, Healthcare - Physical Therapy, Healthcare-Sterilizing equipment room
4. Hospital - Food Prep: Food preparation , Dining
5. Hospital - Mech/Elec: Mechanical/Electrical, IDF/MDF
6. Hospital – Office: Office, Conference Room, Lobby
7. Hospital – OR: Operating Room
8. Hospital – Patient Room: Healthcare - Patient Room (ICU), Healthcare - Patient Room, Healthcare - Recovery

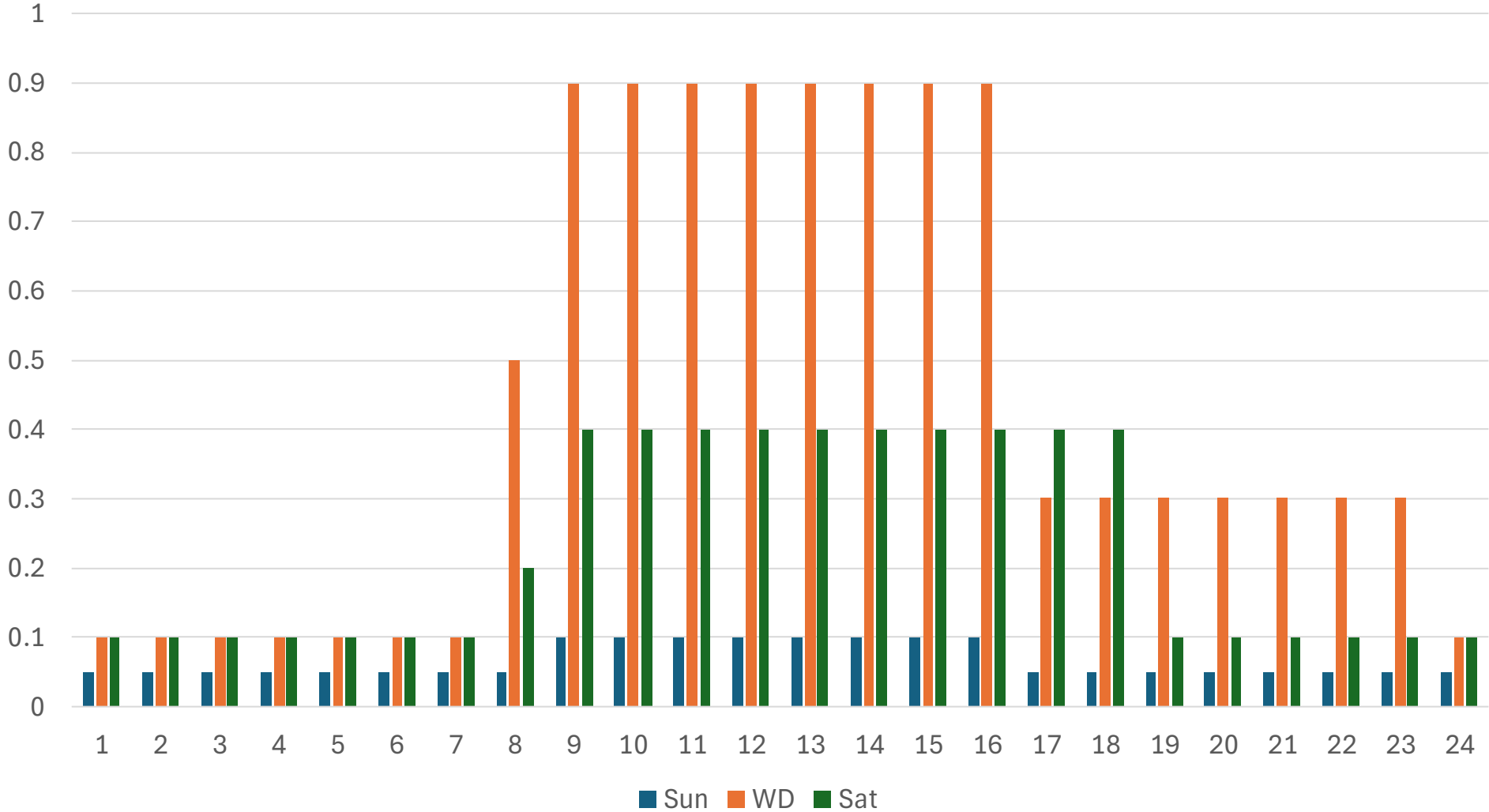
# Modification to Ventilation Groups and Loads

Function or Space	Space %	Pressure Relationship to Adjacent Areas	Minimum Air Changes Outdoor	Minimum Air Changes Total	All Room Air Exhausted Directly Outdoors	Recirculated by Means of Room Units (%)	Unoccupied Turndown	Design Relative Humidity (%)	Design Temperature (°F/°C)	LPD W/ft2	Plug Load Electric W/ft2
Healthcare - Nurse station	3%	N/A	2	4	N/A	NR	Yes	N/A	70-75	0.85	1
Healthcare - Operating room	2%	Positive	4	20	N/A	No	Yes	20-60	68-75	1.9	4
Healthcare - Patient Room (ICU)	9%	N/A	2	6	N/A	No	Yes	30-60	70-75	0.7	2
Healthcare - Patient Room	14%	N/A	2	4	N/A	NR	Yes	Max 60	70-75	0.7	2
Healthcare - Emergency exam room	2%	N/A	2	6	N/A	No	Yes	Max 65	70-75	1.15	2
Healthcare - Emergency triage area	1%	Negative	2	12	Yes (q)	NR	No	Max 60	70-75	1.15	2
Healthcare - Medical Supply	2%	NR	2	4	NR	NR	Yes	Max 60	70-75	0.55	1.5
Healthcare - Rad/Imaging	2%	N/A	2	6	N/A	NR	Yes	Max 60	70-75	0.6	2
Healthcare - Exam Room	7%	N/A	2	4	N/A	NR	Yes	Max 60	70-75	1.15	2
Healthcare - Corridor	30%	N/A	N/A	2	N/A	NR	Yes	N/A	NR	0.6	0
Healthcare-Sterilizing equipment room	1%	Negative	N/A	10 (exhaust)	Yes	No	No	N/A	NR	0.5	5
Pharmacy	1%	Positive	2	4	NR	NR	Yes	Max 60	70-75	0.55	2
Office	4%	N/A	N/A	N/A	N/A	NR	Yes	N/A	NR	0.6	1
Conference Room	1%	N/A	N/A	N/A	N/A	NR	Yes	N/A	NR	0.85	2
Lobby	1%	N/A	N/A	N/A	N/A	NR	Yes	N/A	NR	0.7	0.2
Food preparation	1%	N/A	2	10	N/A	No	Yes	N/A	72-78	0.95	3
Dining	2%	N/A	N/A	N/A	N/A	NR	Yes	N/A	70-75	0.45	1
Soiled utility/workroom or soiled holding/support	7%	Negative	2	10 (exhaust)	Yes	No	No	N/A	NR	0.5	0
Mechanical/Electrical	9%	N/A	N/A	N/A	N/A	NR	Yes	N/A	NR	0.4	0.5
IDF/MDF/Computer Room	1%	N/A	N/A	N/A	N/A	NR	Yes	N/A	NR	0.4	20

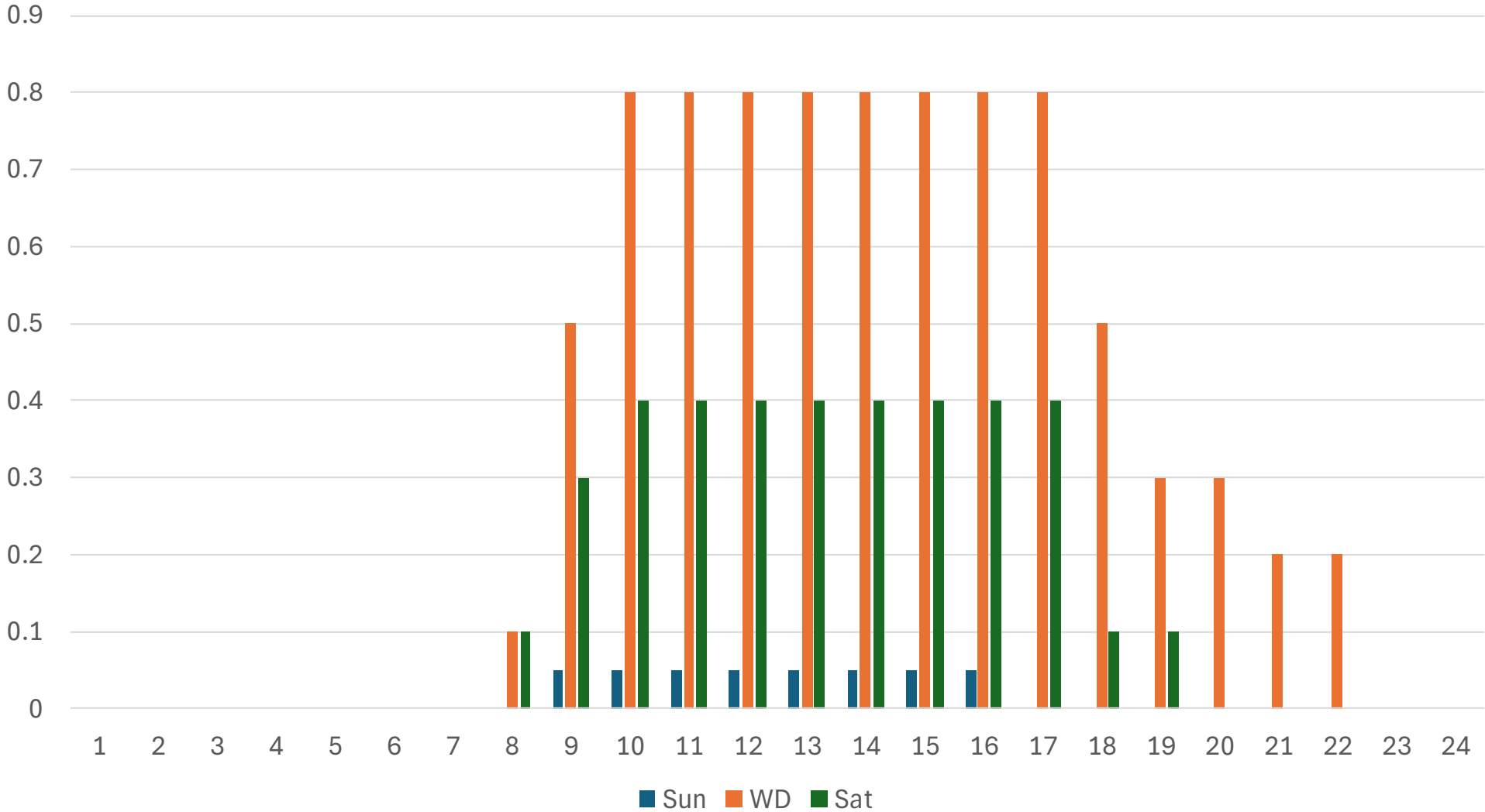
# Current Prototype Schedules - Lighting



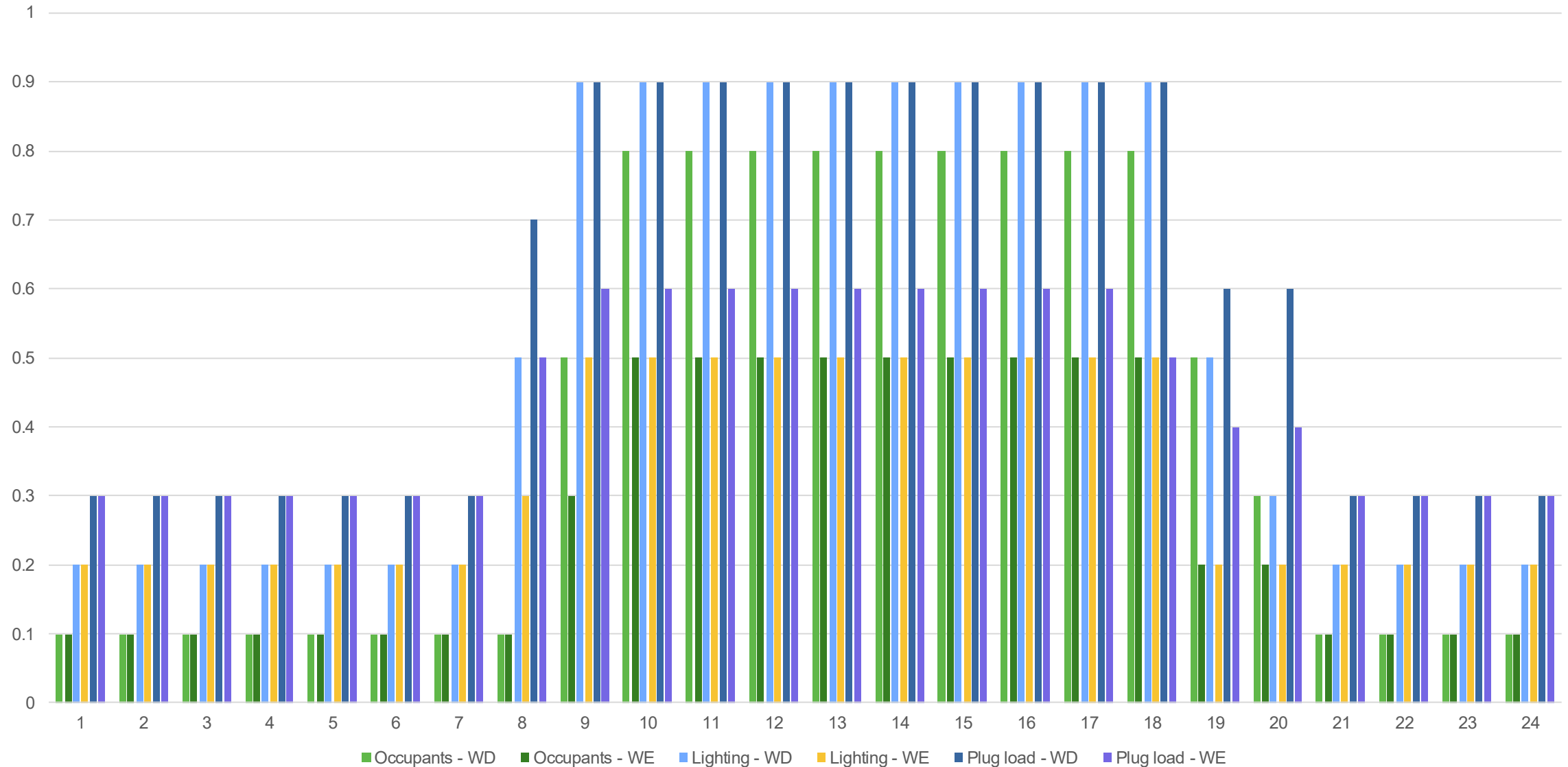
# Current Prototype Schedules – Receptacles



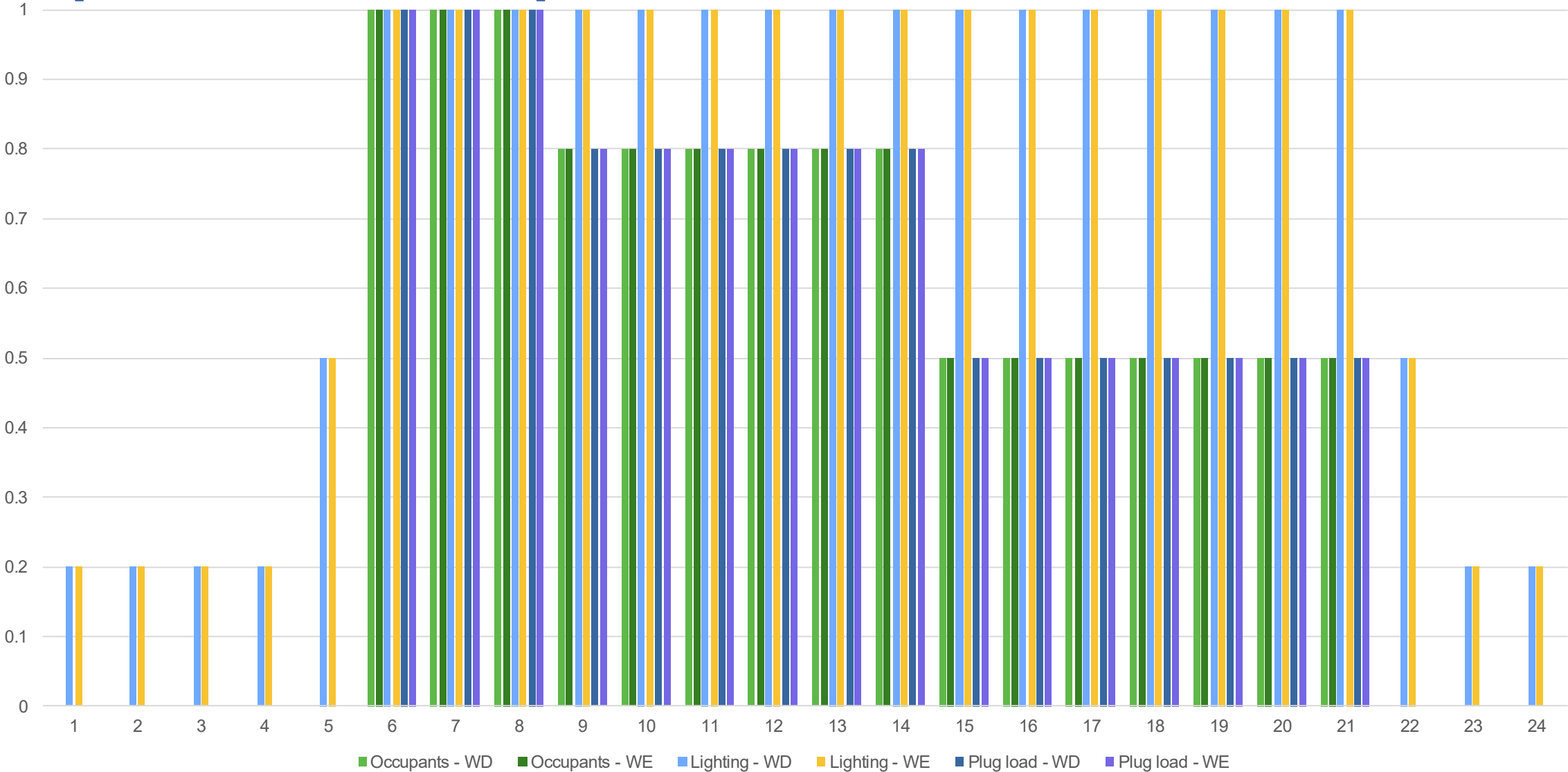
# Current Prototype Schedules - Occupancy



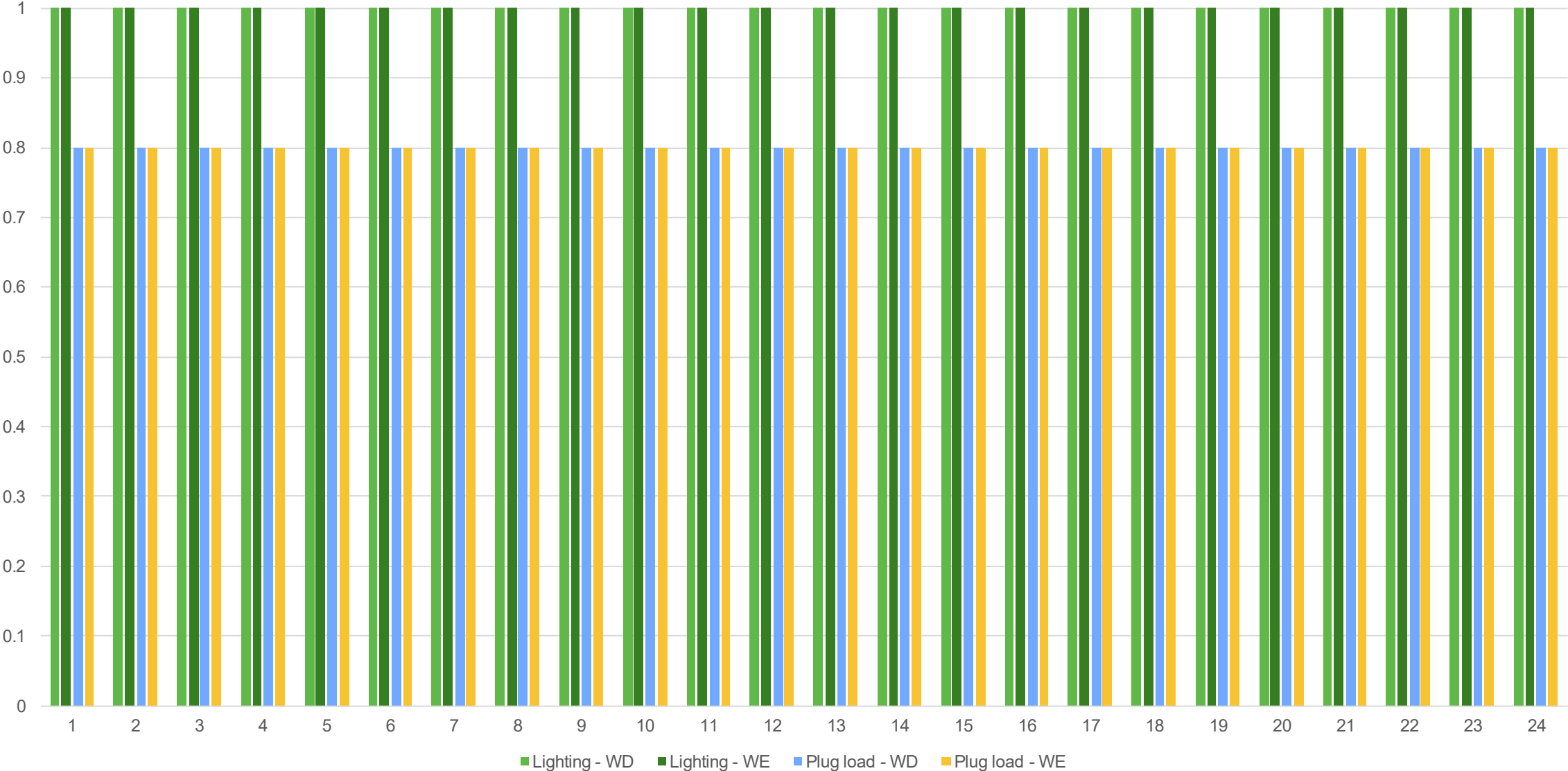
# Hospital – Clinical



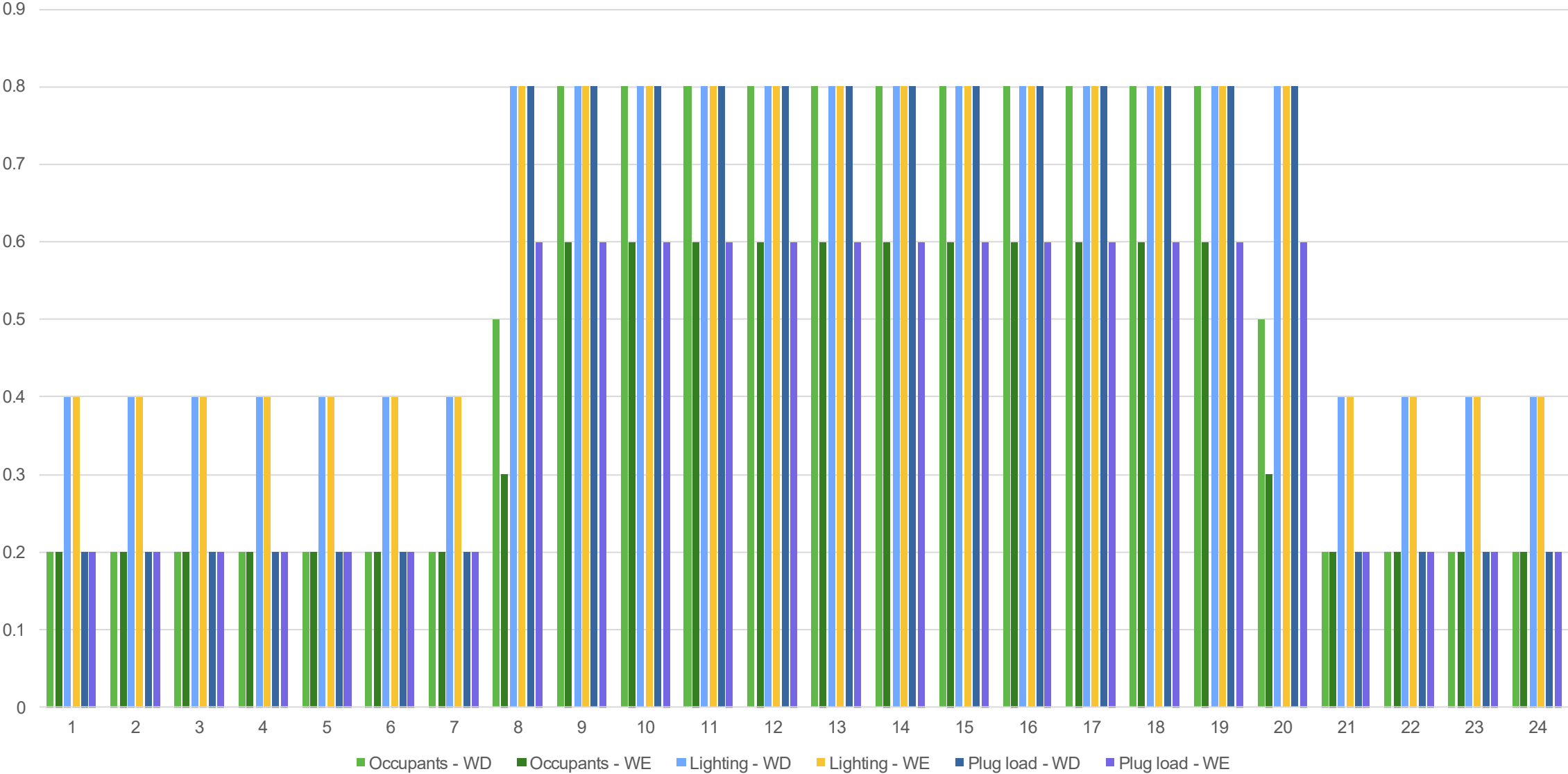
# Hospital – Food Preparation



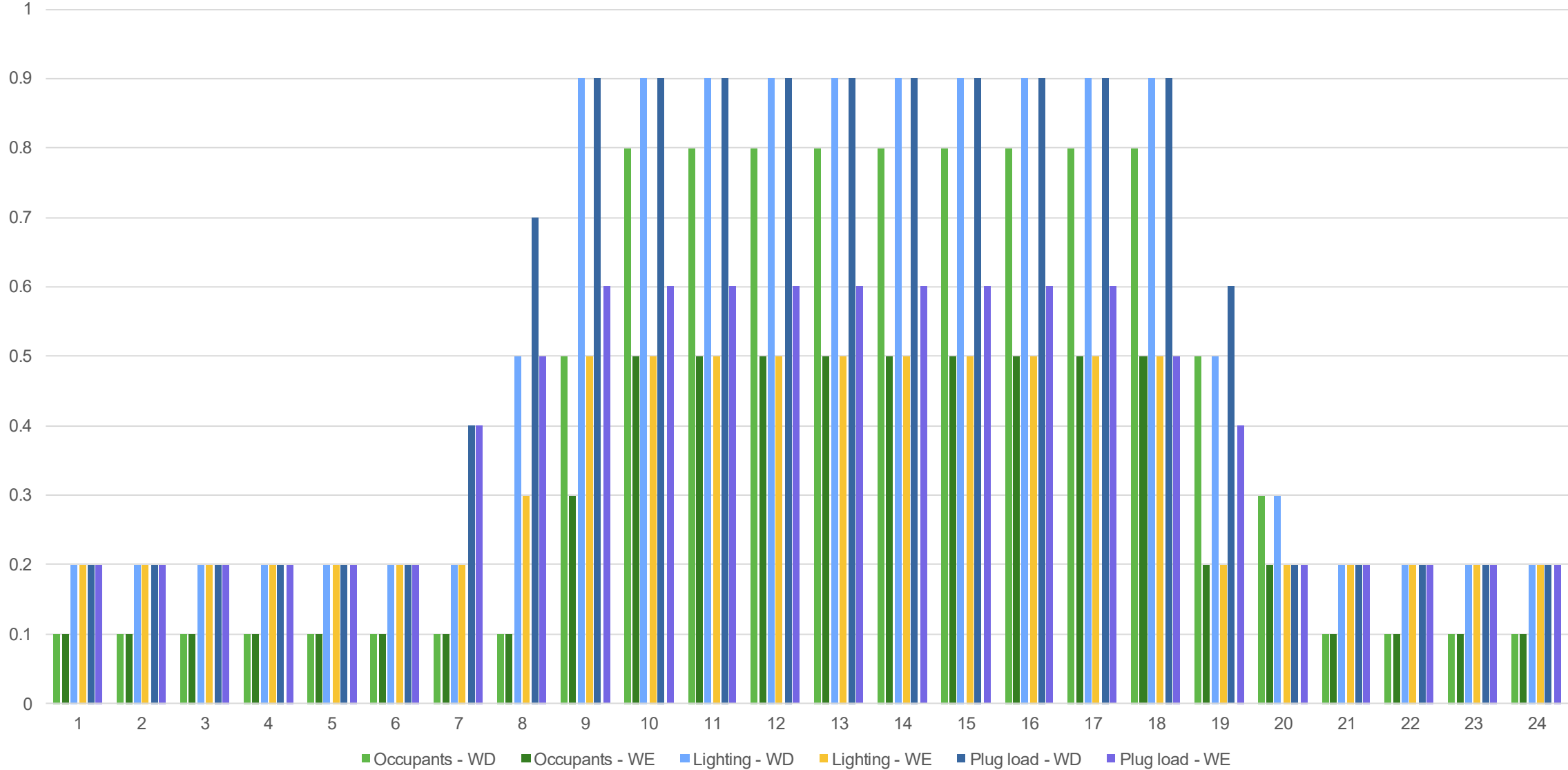
# Hospital – Mechanical and Electrical Room



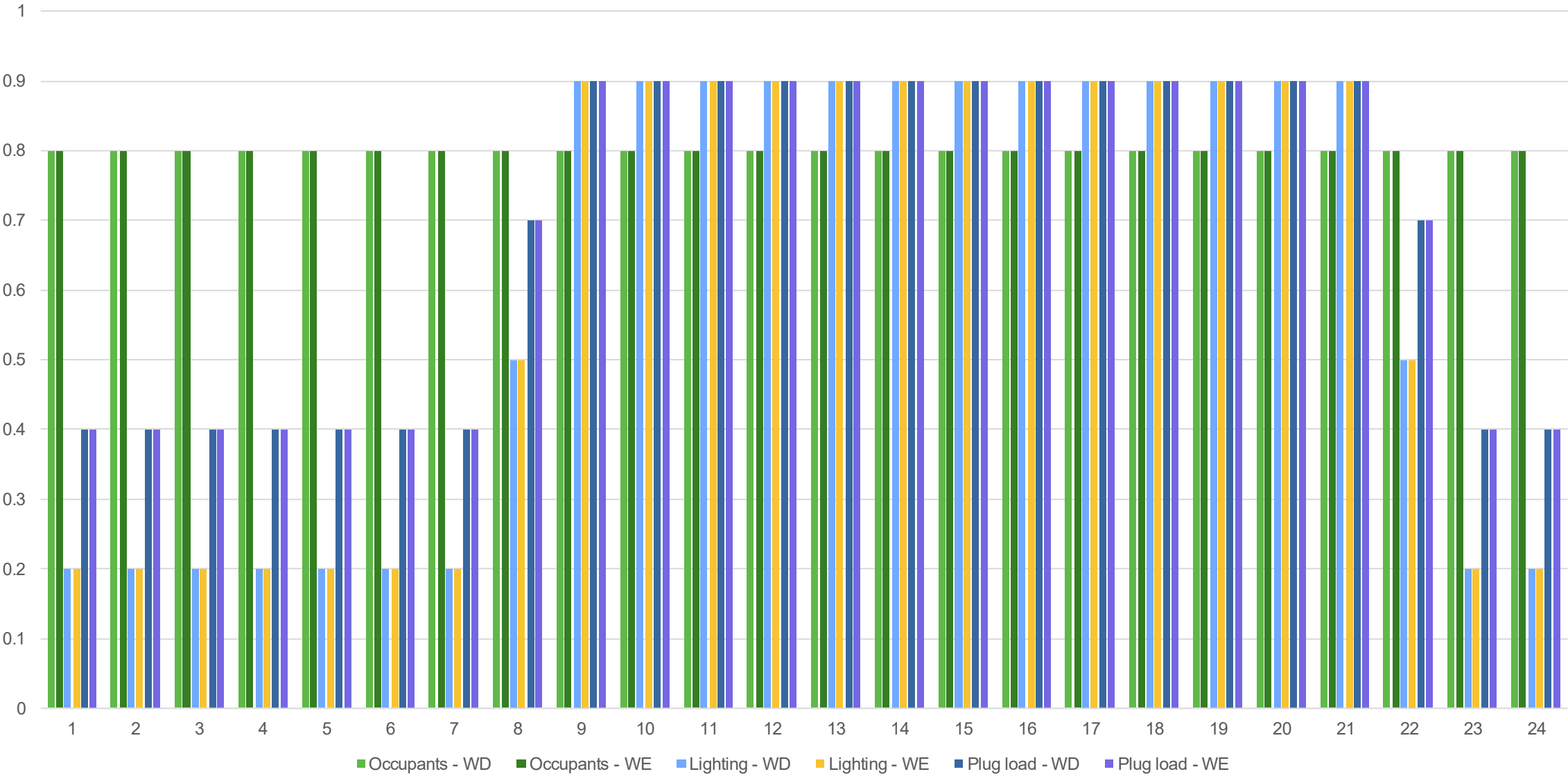
# Hospital – Operation Room



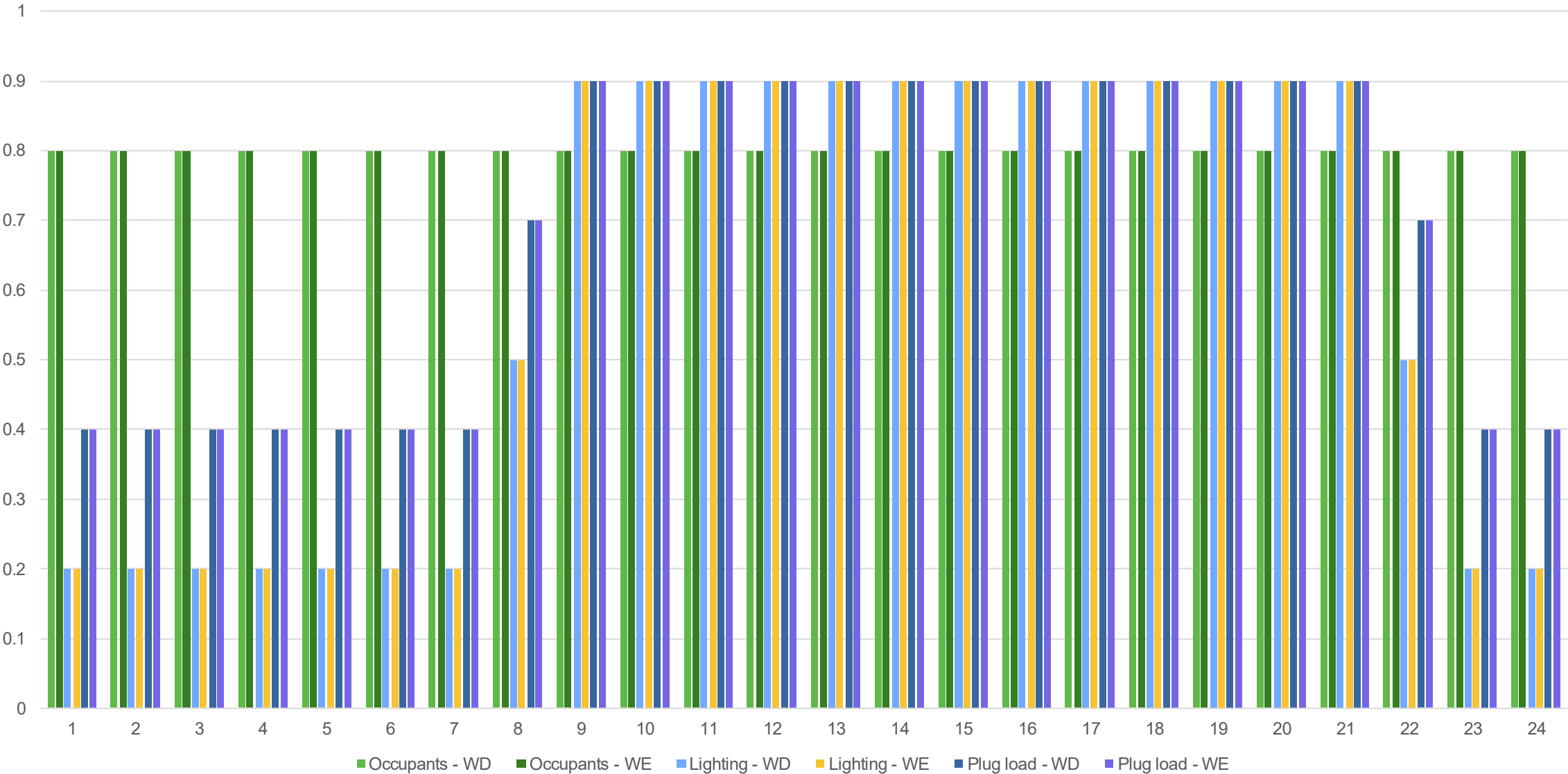
# Hospital – Office



# Hospital – Patient Room



# Hospital – Patient Room, cont



# SNF Prototype Development - Resources



- California Department of Public Health
- General Data of the facilities



- California Building Code Part 2
- Building detailed Specifications Chapters 3 & 12 & 11B & 5



- Facilities Guideline Institute/ National
- Detailed Space Planning and building Requirements



- Public Utilities Commission
- DEER Prototypes

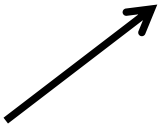


- **Federal Requirements**

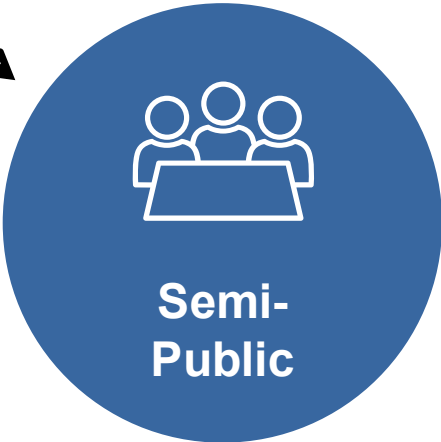
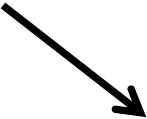
**Main source for Building Characteristics: SNF Sample Drawings**

# SNF Space Types

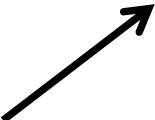
**Private Spaces:**  
Including:  
Patient Area  
Special purpose rooms



**Service Spaces:**  
Nursing Zone  
Storages  
Treatment Rooms  
Pharmacy  
Assisted Bathing  
Laundry



**Semi-Public:**  
Dinning Rooms  
Recreation



**Public Spaces:**  
Administration  
Staff Rooms  
Kitchen

# SNF Prototype Building Characteristics

- Single story building, 50-Bed capacity with **45,000** sq.ft CFA
- Corridor – 10%
- Patient rooms with toilet – 40%
- Admin and other ancillary spaces such as multi purpose room, living room, nurse station etc ~ 20%
- Private Office – 2%
- Physical & occupational therapy – 10%
- Kitchen, recreation and dining – 10%
- Mechanical, electrical, MDF/IDF Closet – 3%
- Storage – 5%
- Misc. Spaces e.g. laundry, utility - <1%

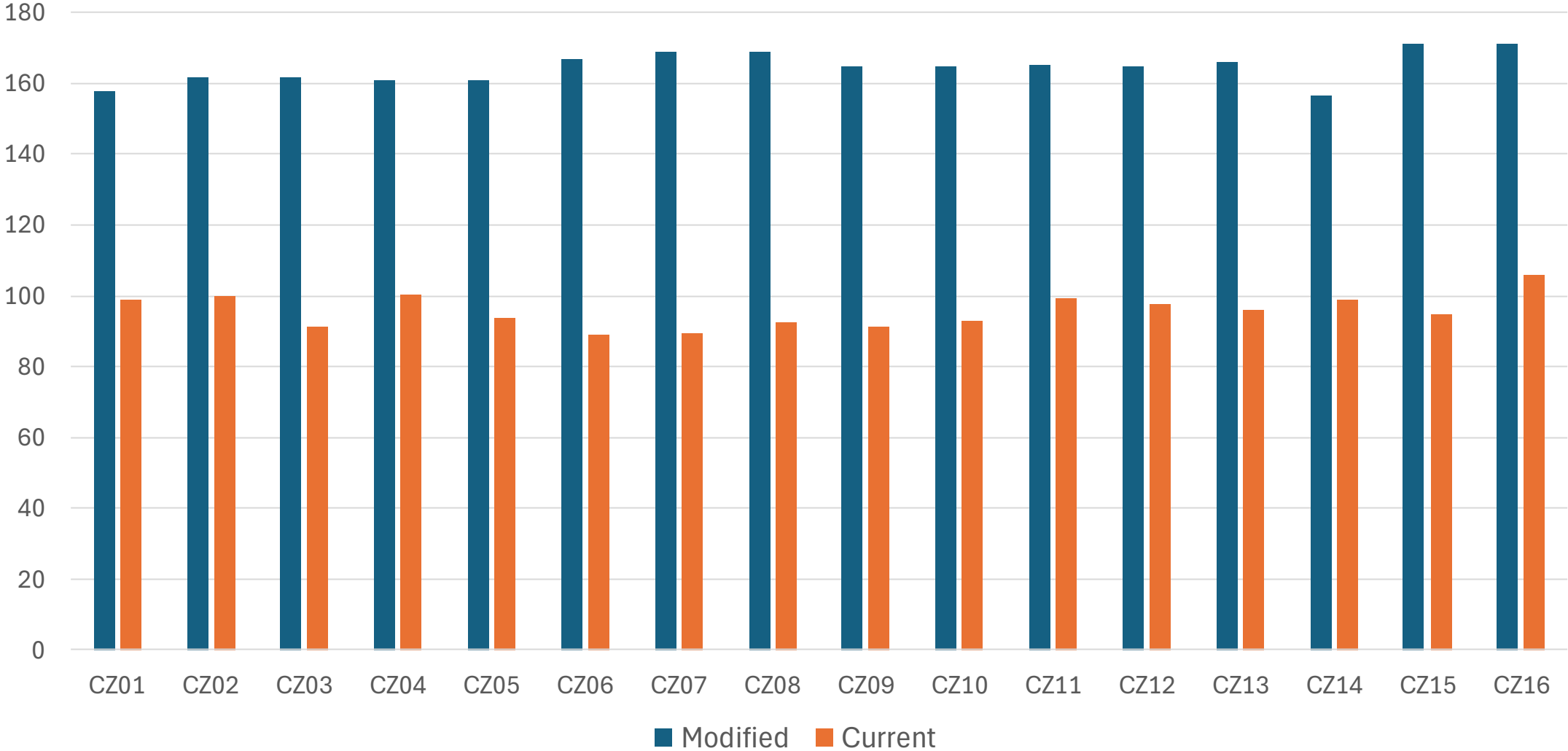
# SNF Prototype Space Requirements Summary *(CBC 2025)*

Section	Space	Area / Requirement
1225.4.1.1	Nurse Station	125 ft <sup>2</sup> (>25 beds) 1 room/60 beds
1225.5.2.4.3	Clean utility	15 ft <sup>2</sup> + 1 ft <sup>2</sup> /patient for over 15 patients
1225.5.2.4.4	Soiled utility	20 ft <sup>2</sup> + 1.5 ft <sup>2</sup> /patient for over 15 patients
1225.4.1.5	Examination room	80 ft <sup>2</sup>
1225.4.1.5	Treatment room	120 ft <sup>2</sup>
1225.4.1.6	Toilet room and bath facilities	bathing 1 per 20 beds
1225.4.1.8	Special-purpose rooms	1 room/35 beds 120 ft <sup>2</sup>

# SNF Prototype Space Requirements Summary (CBC 2025) *contd...*

Section	Space	Area / Requirement
1225.4.2.1.2	Dining space for patients	15 ft <sup>2</sup> / person
1225.4.2.1.2	Dining space for Staff (43 nurse staff for 97 beds)	15 ft <sup>2</sup> / person
1225.4.2.2.3	Food preparation Area	1% of the CFA based on sample projects
1225.4.2.2.9	Office space	100 ft <sup>2</sup> *
1225.4.2.2.10	Storage	<b>2 ft<sup>2</sup>/ bed 1-99 beds</b>   Total 200 square feet plus 1 square foot/ bed in excess of 100 beds for 100-199 beds   Total 300 square feet plus 1/2 square foot/ bed in excess of 200 beds for 200 beds and over*
1225.4.2.2.11	Public Toilet rooms	For 76-100 1 ADA and 4 non-ADA* = 180 ft <sup>2</sup>
1225.4.2.2.12	Lockers	100 ft <sup>2</sup>
1225.4.2.2.13	Housekeeping room	15 ft <sup>2</sup>

# Healthcare Hospital Baseline EUI Comparison (kBtu/ ft<sup>2</sup>)



# Preliminary Results – All Climate Zones

(Based on Existing Prototype)

Measure	BCR	Statewide GWh	Statewide GHG
120.2(e) – System Airflow	>1	0.3	82
140.4(d+m) – Zone Controls + Fan Control	34.40	29.2	541
141.0(b) – Envelope Alterations	1.63	0.34	71
141.0(b) – Lighting Alterations	1.48	2.60	-183
141.0(b) – HVAC Alterations	1.61	2.61	169



# Compliance Verification

- Key Aspects of Compliance Verification
- Barriers and Solutions
- Revisions to Compliance Software

# Key Aspects of Compliance Verification

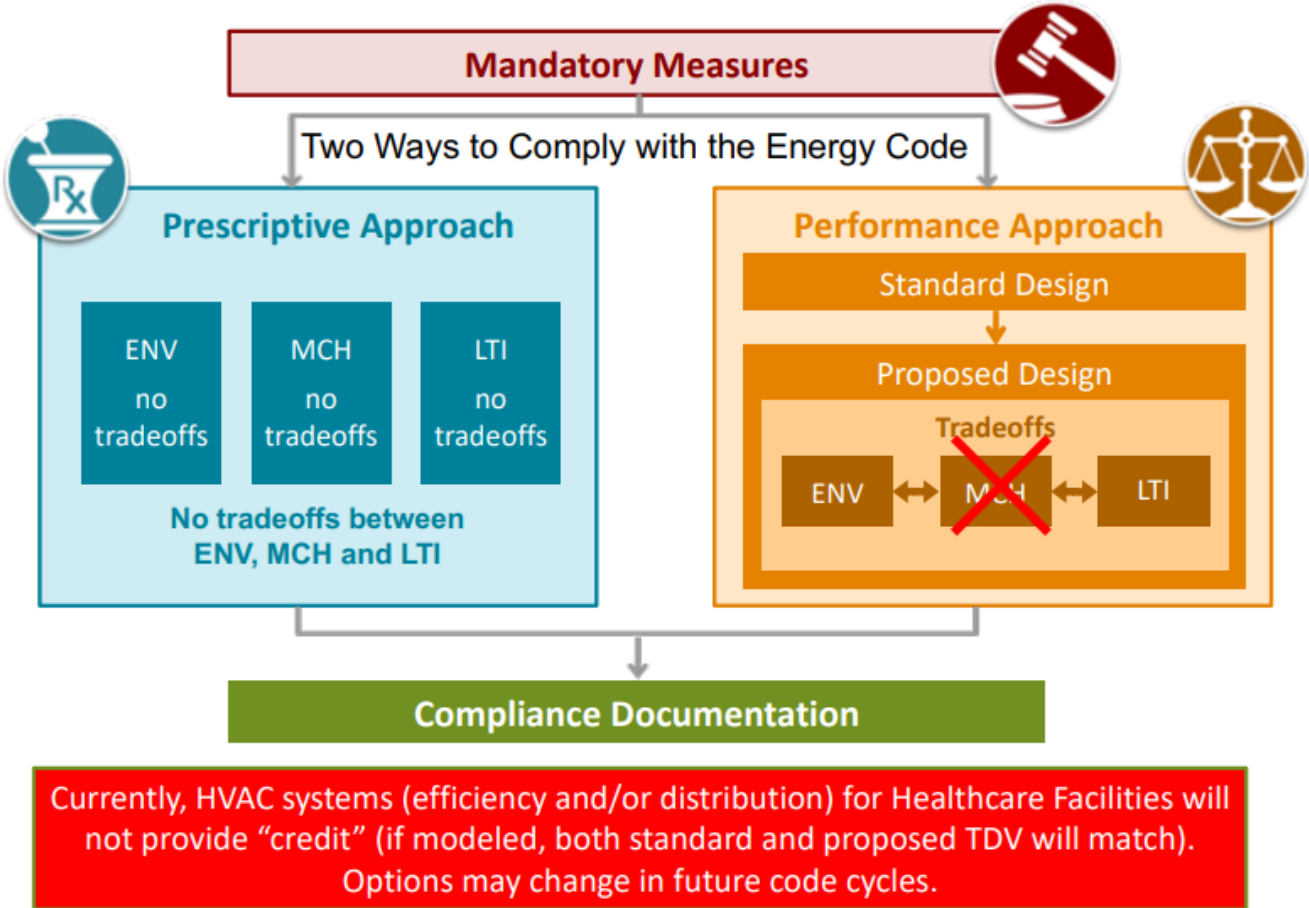
- For all exceptions modified and removed, the compliance should be met as required in Title 24 Part 6
- There will not be any change to the HCAI's IOR requirement
- For commissioning, Healthcare facilities shall instead comply with the applicable requirements of Chapter 7 of the California Administrative Code (Title 24, Part 1)
- Requirements for performance compliance path shall meet all Standard Design requirements and mandatory Design requirements per the modified ACM manual

# Performance Path Approach – Feedback Requested

**Issue:** 2025 Energy Code treats Healthcare mechanical equipment standard design in performance path the same as the proposed design.

**Proposal:** 2028 Energy Code to treat Standard Design as the minimum code requirement and the Proposed Design as designed, when there is no exception.

## 2028 Energy Code – Proposed Performance Path



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More information on  
[CEC's 2028 proceeding website.](#)

# We want to hear from you!