The LAWSON GROUP

Thinking. Without the Box.

Is the Air Where I Work Making Me Sick?

Maine Indoor Air Quality Council

IAQ and Energy 2025

Holiday Inn By the Bay

December 9, 2025

Our Story

The Lawson Group has provided employee Health & Safety services since 1978:

Health & Safety Consulting

Workers' Compensation

Employee Wellness

One trusted partnership for clients to reduce workplace injuries, lower workers' comp costs, and improve employee health and wellness

Our People

- Family-owned business
- Family-first culture
- We run our business like it is the 1950s – customer facing, return calls, and help you be successful in running your business

My “Guys”

Beaker Bentley Bella

Beaker

Bentley

Bella

Meet the “Safety Siblings”

“Cautious” Clay

and

“Mindful” Mindy

These guys are our “Guides to Workplace Safety,” designed to make addressing health and safety issues more “relatable” and “personal”!

Meet the “Safety Siblings”

When you see them on a slide in this presentation, it means that slide provides key take-away information!

IAQ Issue: First Thoughts

- Is there a smoking gun, i.e. something obvious?
- Approximately one-third of the U.S. population suffers from some sort of allergy
- If you're only getting complaints from 20% to 30% of the building's occupants, you may be doing well!
- Is it really the "quality" of the air?

More First Thoughts

- Ventilation (HVAC system type and performance
- Contaminants in the air
  - Chemicals
  - Allergens
  - Microbial contaminants
  - Unknowns (except to Google searches that become less than helpful in this process! 🤦)

Basic HVAC “Suggestions”

- HVAC systems should “operate” 100% of the time the building is occupied
- HVAC system controls should be “designed properly,” set according to that design, left alone, and only adjusted *if and when necessary* by qualified individuals
- Outside/fresh air intakes should be properly located, “appropriately” open, and correctly controlled by the system

“More” Basic HVAC “Suggestions”

- 25 Cubic Feet per Minute (CFM) of fresh, outside air, per person in an occupied space should be constantly introduced into the space
- We notice we get many more complaints when the CO_2 levels we measure are above 700 ppm than we do when they are below 700
- CO_2 controllers for an HVAC system can work great!

“Stages” of IAQ Emotionality

1 Asking Questions

Building occupants are starting to question the healthiness/safety/quality of their work environment

2 “Questioning!!! The Issue

If concerns aren’t addressed promptly, occupants begin to think there really is something wrong and rather than “asking questions” they start “questioning”

3 “Certain” There Is A Problem

Management avoiding/not dealing with the issue leads to anger, emotion from occupants “convinced” there’s a problem and the solution becomes radically more time consuming, expensive and difficult[10]!

Dealing With An IAQ Problem

- A race with a moving finish line
- An IAQ investigation is a process, not an event
- **Communication is the key!**
- Occupant involvement at all levels
- Information and data sharing
- Always try to control the situation and not the other way around

”Testing” Is Rarely the Place to Start

- Cost versus benefit
- Conflicting data
- Confounding data
- Tested conditions are never the right ones in the eyes of the occupants (“You should have been here last week!”)

7 Steps to Follow

- Initial occupant meeting
- Conduct interviews
- Follow-up to interviews
- Targeted testing
- Follow-up testing
- Make, then implement recommendations
- Follow-up to recommendations

Initial Occupant Meeting

- The goal is to get folks to stop acting emotionally and start thinking “rationally” – talk them in off the ledge!
- Get them to trust the “process”
- Discuss the ”perceived” IAQ problem

Initial Occupant Meeting

- Explain the interview process – no right answers, we're looking for observations, opinions, and concerns
- Ask for involvement and cooperation: "You folks "live" here and we don't, so we need your help."
- Ask for privacy to be maintained, i.e., no info sharing before or during the interview process
- Advise that results will be shared and discussed – and then be sure to do so!

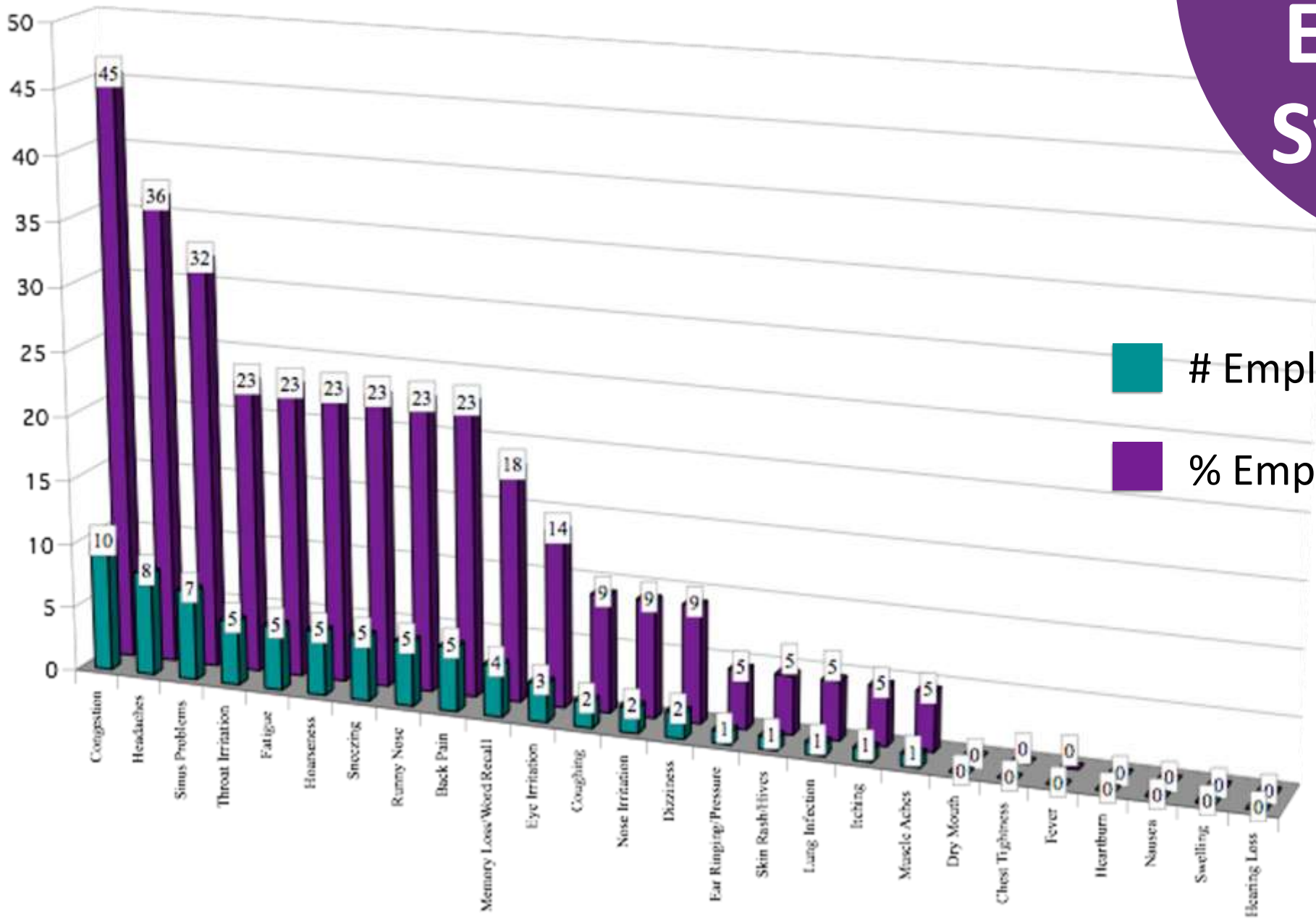
Suggestions for Effective Interviews

- Try to interview 25%+ of building occupants and **NOT** just those from the complaint area or those with complaints
- Ask for volunteers – do not require occupants to participate
- Encourage anyone who wants to participate to do so
- Encourage those with and without concerns to participate
- Remember – perception is reality!

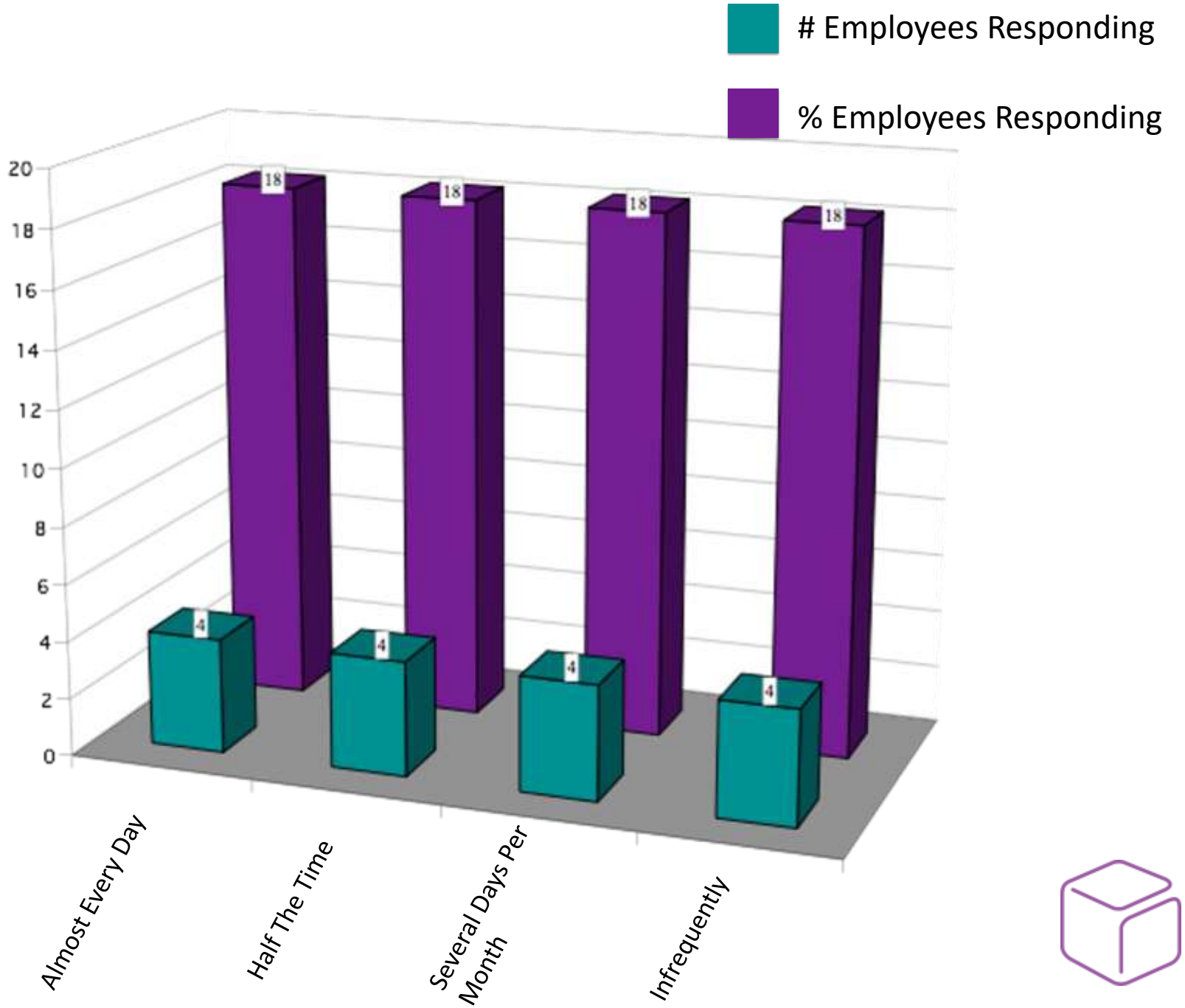
Follow-Up To Interviews

- Explain “statistical” results of interviews
- Use charts and graphs where possible to explain complex information
- Answer “all” questions
- Already have a strategy in place
- Be prepared to go to the next step!

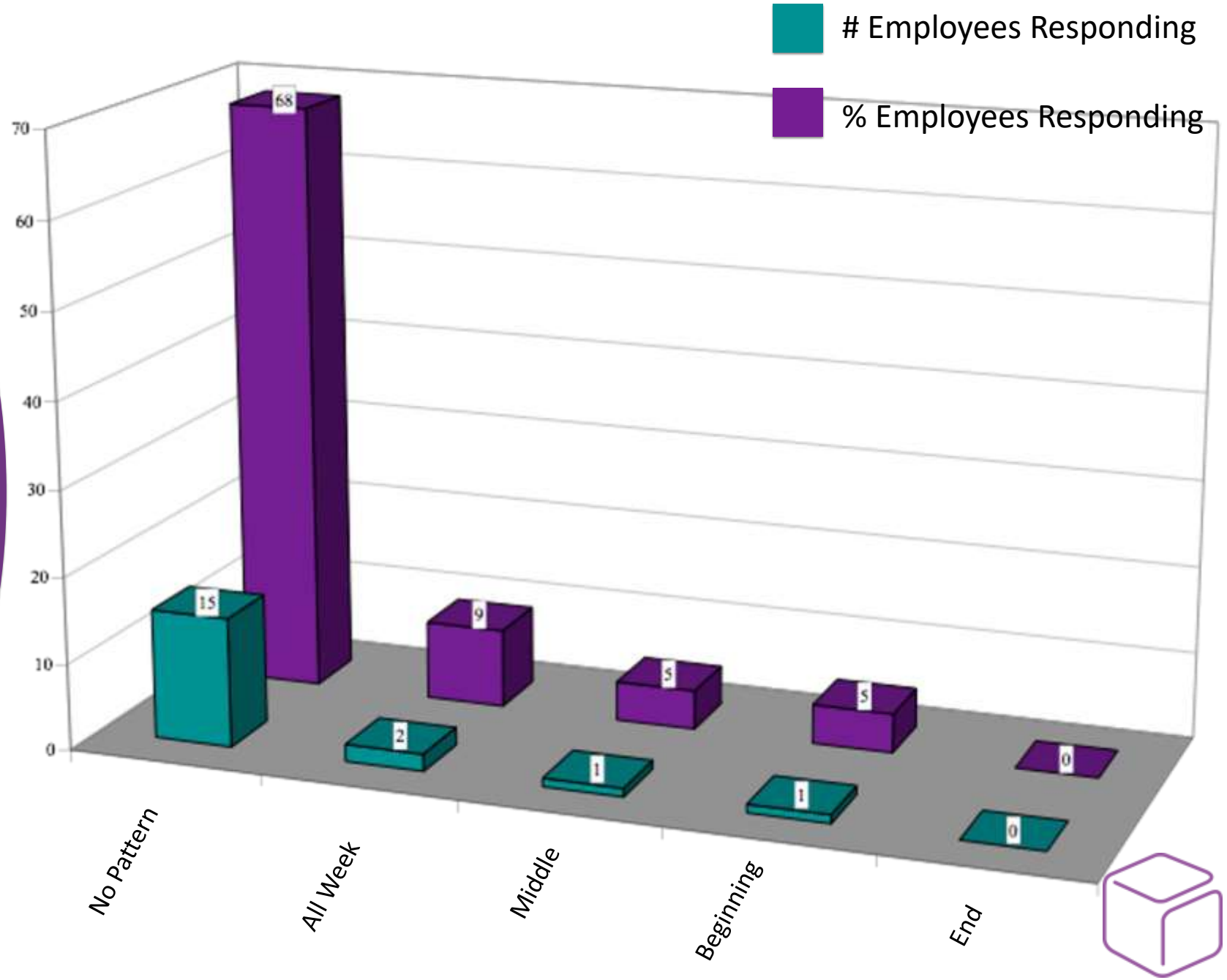
Employee Symptoms



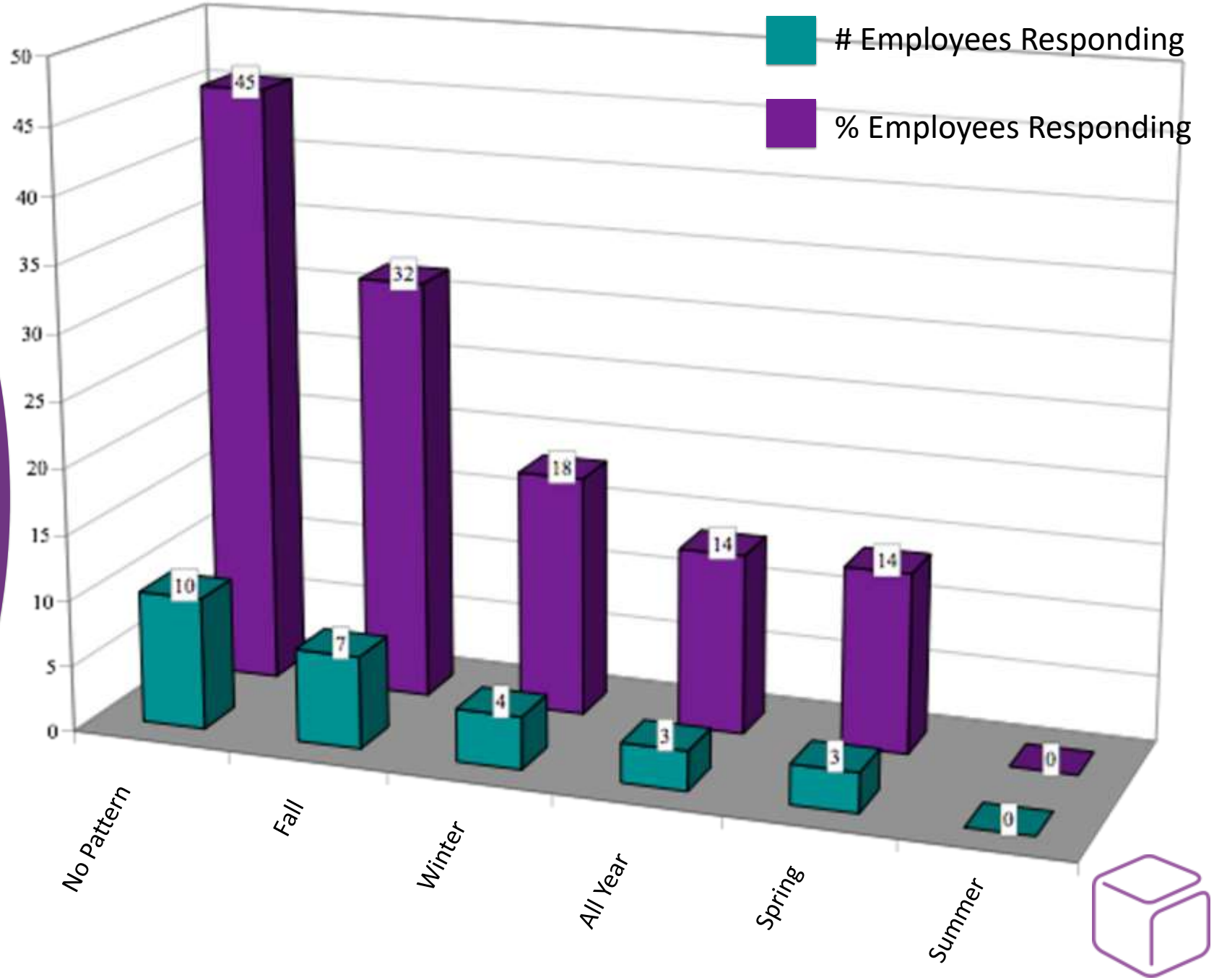
Employee Symptoms Frequency When In Building



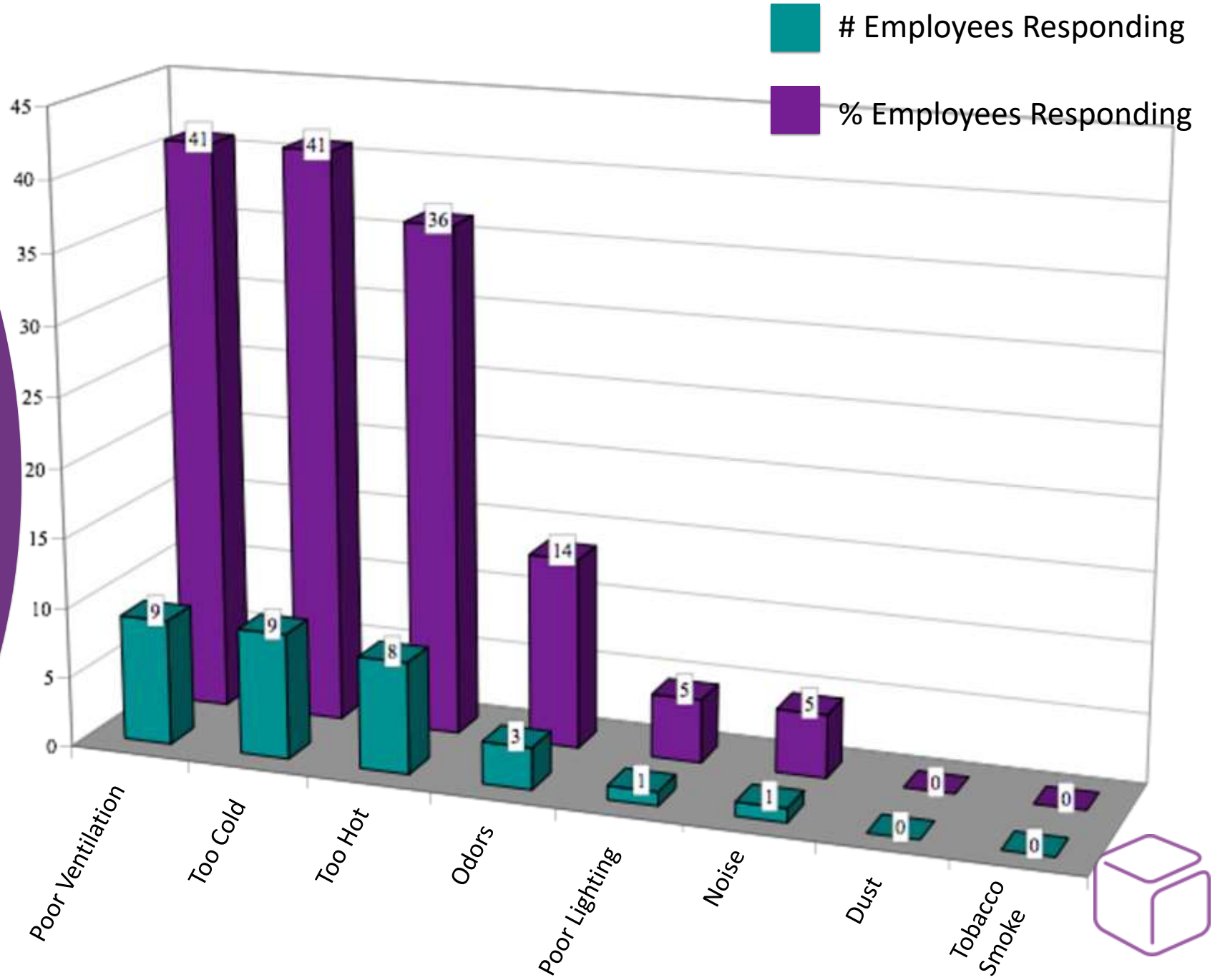
Employee Symptoms Worst Time of Week



Employee Symptoms Seasonal Frequency



Building Condition Concerns



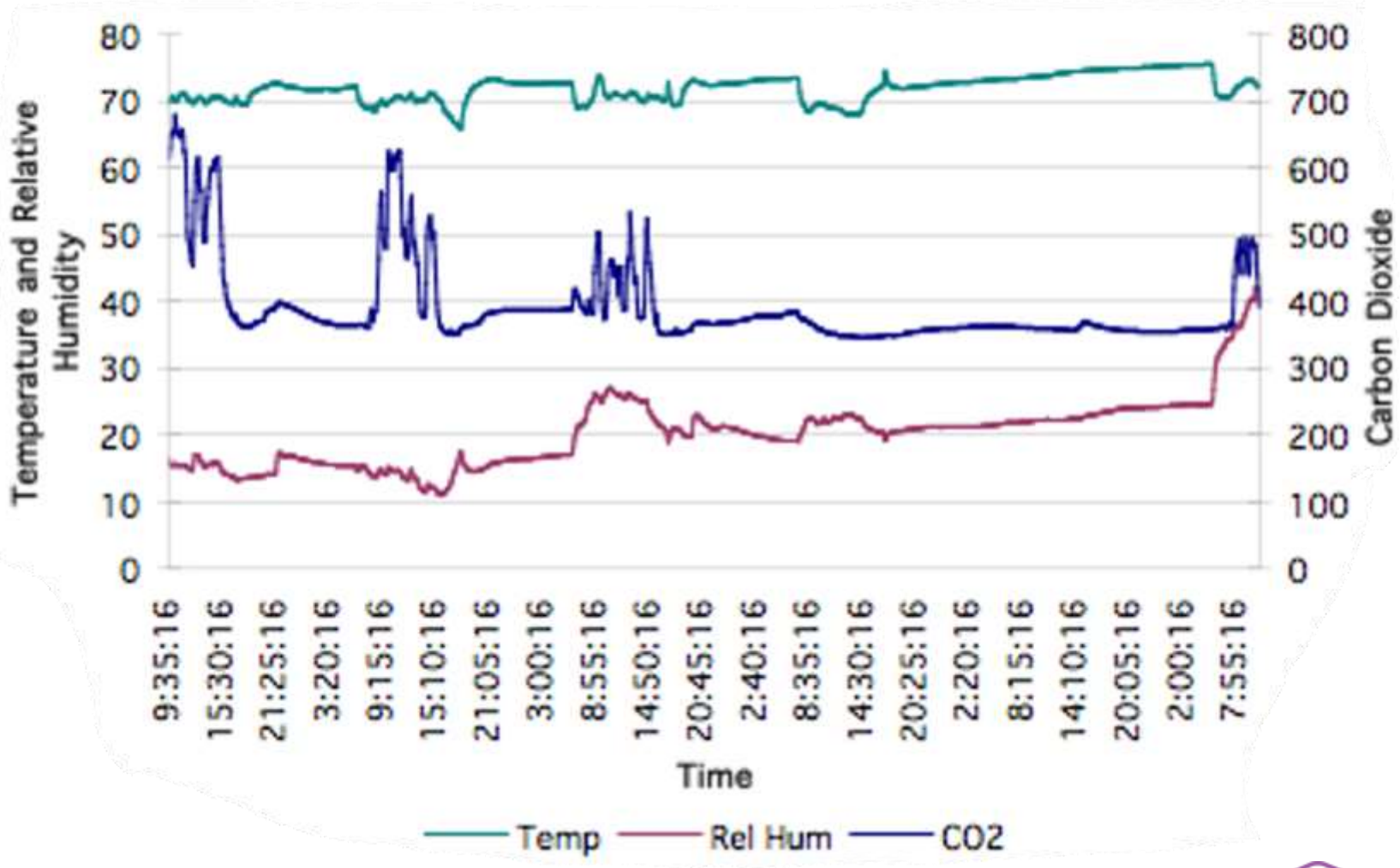
“Targeted” Testing

- Target based on symptoms and ”frequency” as reported by occupants – do not sample or test for everything, focus on complaint and/or symptom-based issues!!!
- Select appropriately representative locations for testing – you can’t test everywhere
- ALWAYS include some of the “contaminants” that may be problematic, regardless of whether occupants reported them or not: carbon monoxide, mold, formaldehyde

Potential Testing Items

- Datalogging of basic air quality information – temperature, relative humidity, carbon dioxide, and carbon monoxide
- Settled dust (very important as it tells a story)
- Total VOCs (sometimes)
- Selected chemicals – formaldehyde, specific organic vapors
- Microbial contaminants (oh boy!)
- HVAC system? Perhaps

Room #3


Temperature and Relative Humidity
Carbon Dioxide
80
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20:05:16
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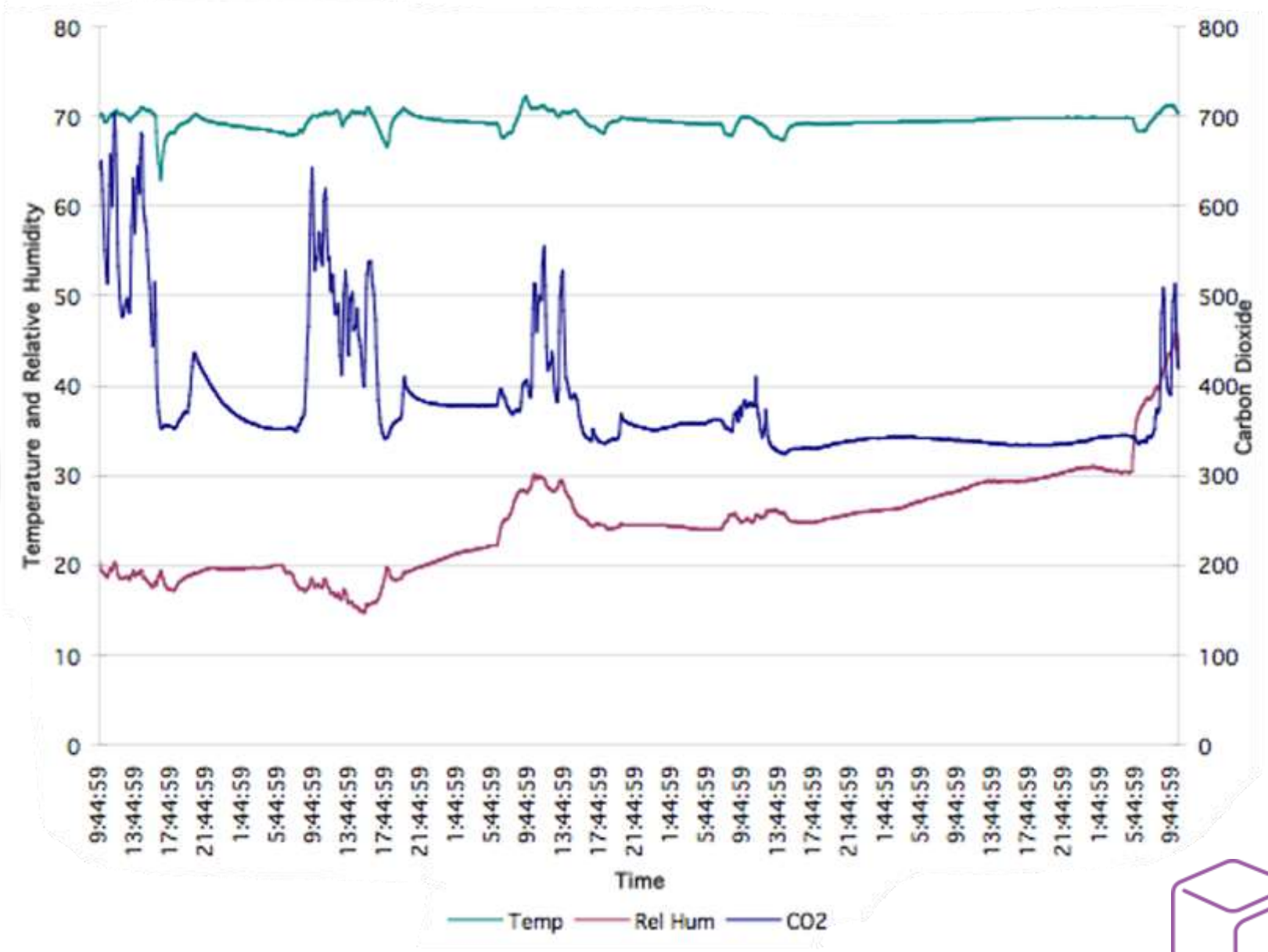
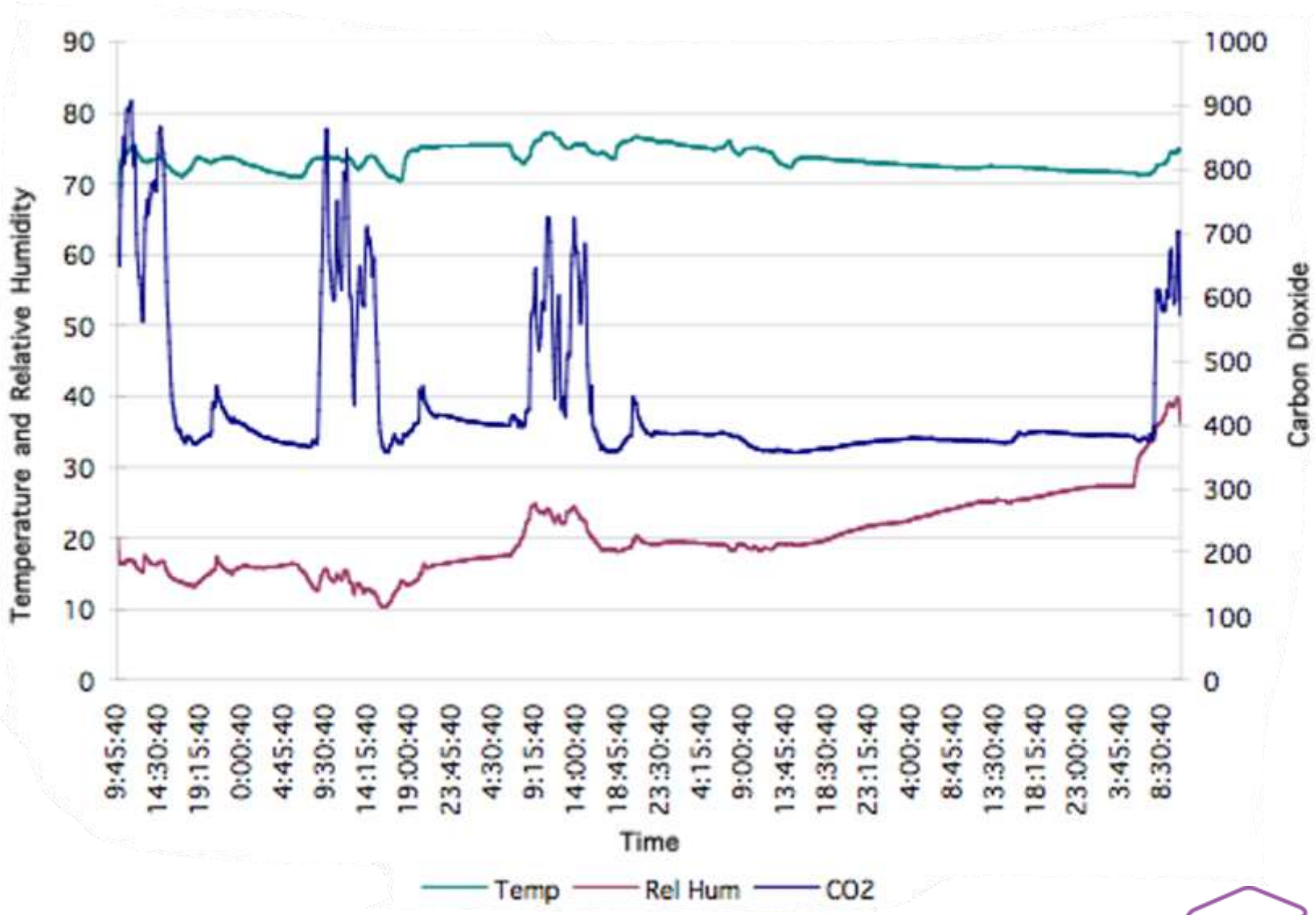
7:55:16
Time
Temp
Rel Hum
CO2

Library


Temperature and Relative Humidity
Carbon Dioxide
Time
Temp
Rel Hum
CO2

Room #2


Temperature and Relative Humidity
Carbon Dioxide
Time
Temp
Rel Hum
CO2
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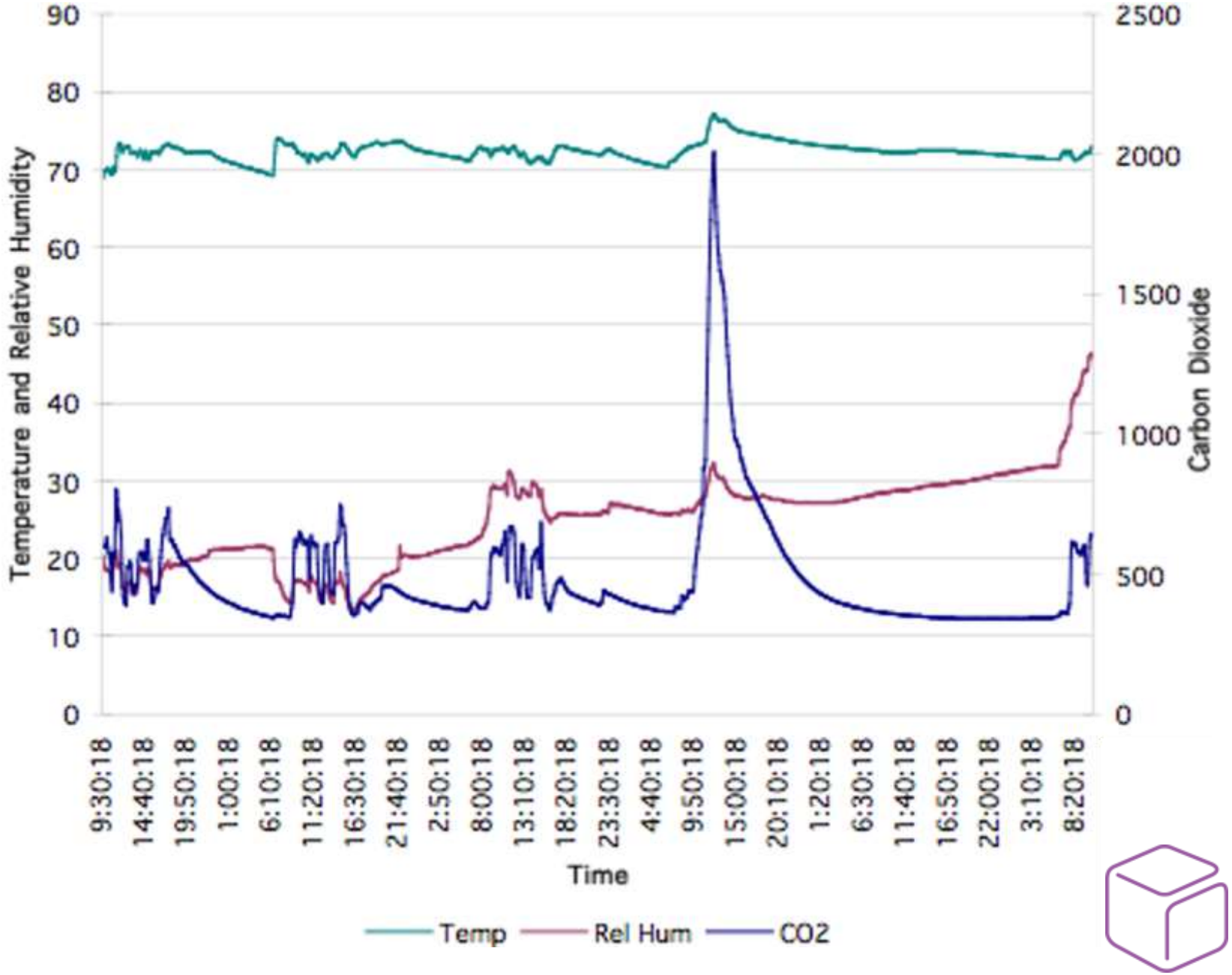
Room #1


Temperature and Relative Humidity
Carbon Dioxide
Time
Temp
Rel Hum
CO2
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22:00:18
3:10:18
8:20:18

Testing Data

- Settled dust components
  - Carbon
  - Allergens
  - Skin cells
  - Fungus
  - Silica
  - Fiberglass
  - Gypsum
- One percent rule – less than that don’t worry much!
- Irritant vs. non-irritant dust - makes a huge difference

Testing Data

- Selected chemicals based on location, “neighbors,” and previous building uses
  - Cleaning compounds
  - Formaldehyde (it’s everywhere and in everything!)
  - Total VOCs (be careful what you may get for results that confuse the issue; Benzene)
  - Kitchen exhaust issues if present
  - Vehicle exhaust

Mold Specific Testing Data

- Microbial contaminants
- We hardly ever find that mold is the cause of what we receive as a ”mold complaint”
  - Look for water damage – signs or history of water events
  - Total spore counts – hand grenades and horseshoes
  - ”Grow” what you do find and do genus and species ID
  - Always sample adequate/representative number of good and bad areas
  - Collect samples inside and outside of building noting weather conditions

Testing Data

- HVAC system
  - Generally evaluated by the time we get there
  - Placement, adequacy, and number of controls/supply and return diffusers
  - “Percent of OUTSIDE air”
  - Drip pans
  - Balancing

Air Things

- Dataloggers that can be left in place for long periods and monitor 24/7
- Economical
- Can review data remotely
- Can add radon sensors as well
- Not only see the changes during occupied times, but overnight and on weekends when no one is there—and across different types of weather and therefore changes in the HVAC system

All Parameters Measured Over Time

619 ppm	CO_2	19 %	Humidity	8 %	Rel light	N/A /10	Mold	13 µg/m³	PM1
23 µg/m³	PM10	15 µg/m³	PM 2.5	45 dBA	Noise	69°	Temp	380 ppb	VOC

This indoor air quality report presents the quality of the air in a home, school, office, or other building environments. The recommended thresholds are based on guidance from the WHO and national agencies. Measurements have been made using Airthings indoor air quality monitors. The highest and lowest measurements are from the source data and not averages.

CO_2

- Normal level < 800ppm
- Action level ≥ 800ppm < 1000ppm
- Warning level ≥ 1000ppm

Average within opening hours

619 ppm

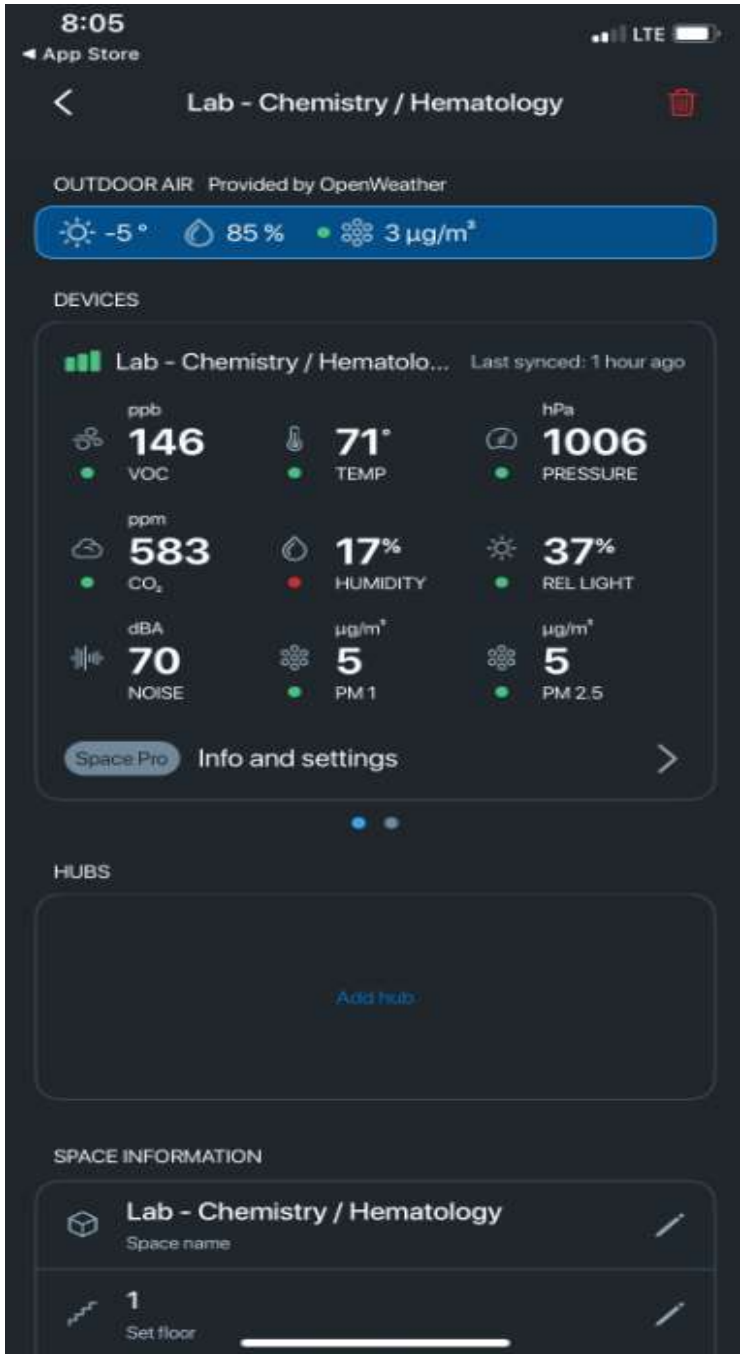
Average value

528 ppm

Carbon dioxide (CO_2) is an important consideration when it comes to comfort and productivity. Air with high levels of CO_2 can lead to difficulty concentrating, decreased cognitive ability, and fatigue. Typically, CO_2 levels outdoors are around 400 parts per million (ppm). Concentrations below 800 ppm are considered ideal for a healthy and productive workspace. To reduce your CO_2 levels increase space ventilation.

Average Hourly Measurements During Opening Hours With Carbon Dioxide Displayed

All Parameters Measured



IAQ Troubleshooting: Odors

- Look for the obvious – stuff that stinks!
- Food
- Dirty clothes
- Dead animals – no joke!
- Evidence of water events/microbial growth

IAQ Troubleshooting: Comfort Issues

- American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) guidelines
  - 30-60% relative humidity
  - 65-75 degrees F
- Hydrate more during winter months
- “Check mechanical systems to assure proper air balance/flow, filter adequacy, performance and condition, and routine maintenance”

IAQ Compliant Bottom Line

- Take all complaints seriously – do not dismiss them!
- Address promptly and professionally
- Involve occupants in the process and keep them informed throughout
- Do not dismiss complaints when causes are not obvious and/or complaints come from a single individual or small group
- Avoiding the issue can get both costly and expensive – there is a difference!

Questions, Anyone?

The LAWSON GROUP
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