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Evolving Workplaces

Applying Occupancy Measurement Technologies to measure today's work patterns

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By the Numbers...

10.9B square feet, owned & leased corporate office space in the U.S.

393M square feet, owned and leased by the General Services Administration (GSA)

... or the equivalent of **240** U.S. Capitol Buildings

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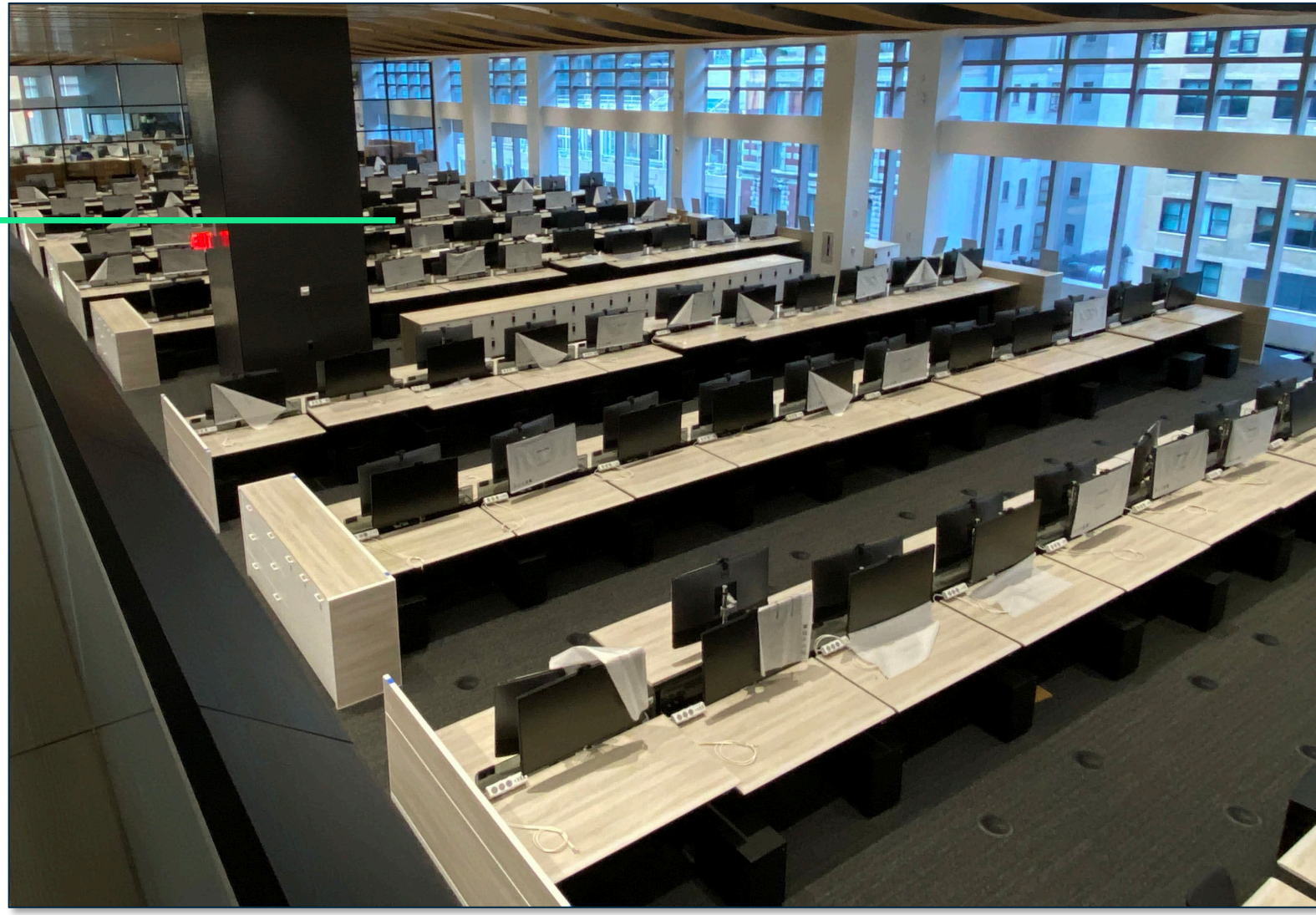
Challenge:

Supply Imbalance

According to 2023 CBRE Global Workplace and Occupancy Insights report, commercial office utilization rates remain under **40%**

According to the Government Accountability Office, most Federal Agencies are using less than **25%**, on average, of their surveyed building capacity in Washington.



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Opportunity:
Effective Workplaces

Corporate Real Estate (CRE) leaders will be tasked with making the workplace experience more effective in supporting organization's mission goals while prioritizing portfolio optimization.

CRE teams plan to increase use of macro- and micro-level utilization data gathered through sensors, WiFi network activity to measure showup and employee behaviors to reduce occupancy costs and carbon emissions.

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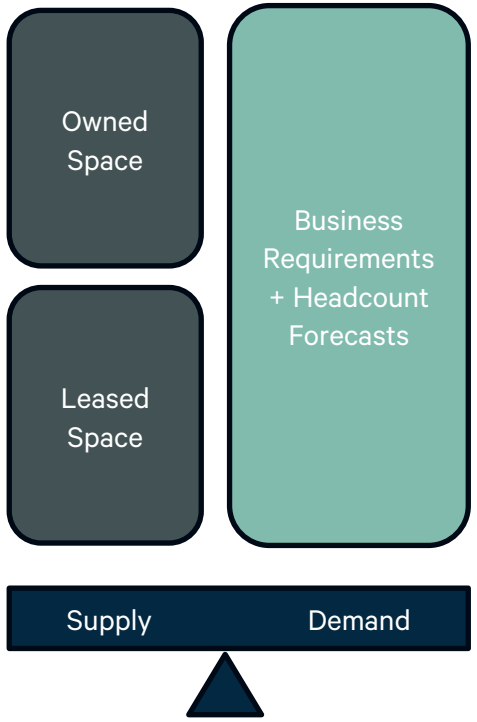
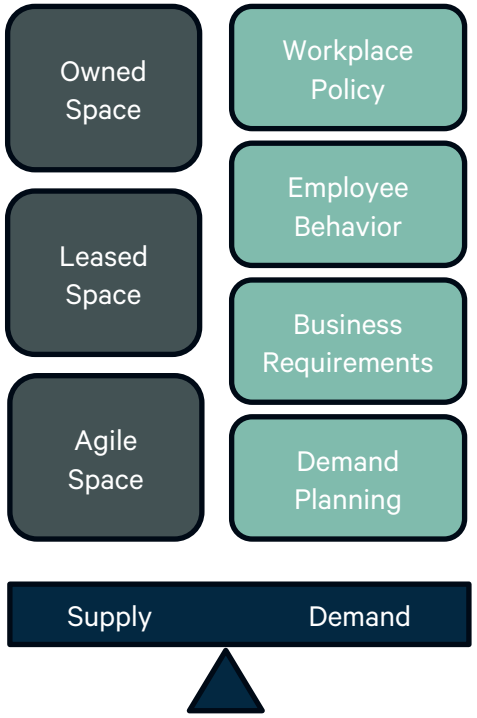
Aligning the New Demand for Space

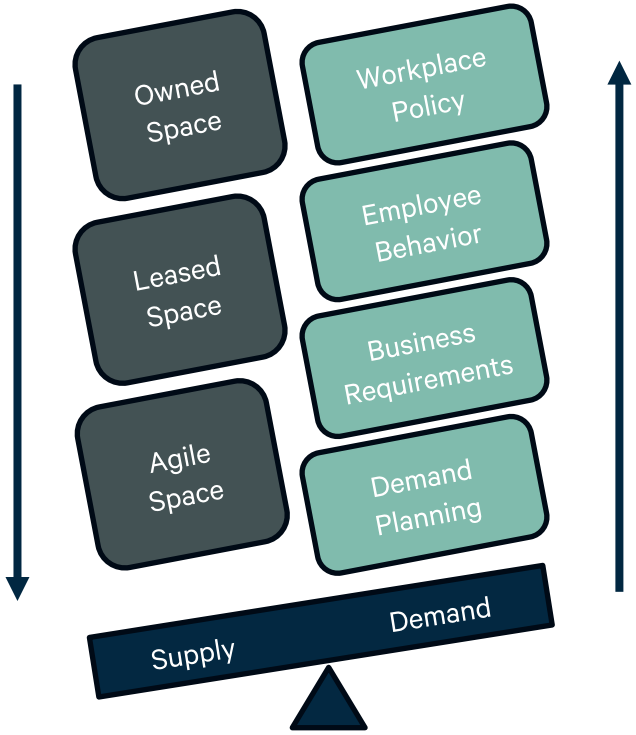
Traditional Supply & Demand



New Supply & Demand



Hybrid Work CRE Strategy



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Decreasing the Supply of Workspaces

According to the 2023 CBRE Occupancy Benchmarking Study, **43% of survey participants plan to reduce their portfolio by more than 30% by 2026**

One of the few changes in the past three years, portfolio optimization remains the top objective for CRE teams. 75% of those surveyed plan to dispose of under-utilized spaces and 82% plan to increase space-sharing.

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Rethinking Metrics | Occupancy Strategy Terms

Office attendance helps organizations understand their office demand, while utilization rate measures how effectively the space supports that demand.

Office Attendance

Total number of employees who visit the office in a given time period

Office Show-Up Rate

A method of understanding the demand for space based on employee attendance patterns.

Calculated by dividing office attendance by total headcount of the office

Office Utilization Rate

Method of comparing space demand and supply to determine if space is being used effectively.

Calculated by dividing office attendance by the capacity of the office.

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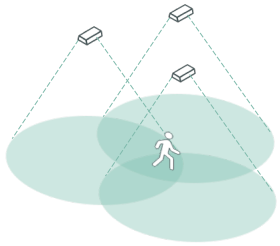
Utilization Methodologies & Sources

Predominant Utilization Data Sources

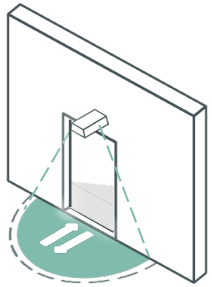
Badge Swipes

- Detect ingress only
- Measure capacity vs. utilization
- PII concerns
- No real-time data



WiFi/Network

- Bluetooth beacons or access points
- General positional accuracy
- Reliance on active detection
- Not anonymous



Threshold Sensors

- Permanent install
- Real-time data
- Highly accurate building, floor utilization at scale

Passive Sensors

- Battery-powered
- Real-time data
- Detect room and desk presence
- Low first-cost

Active Area Sensors

- Permanent install or battery-powered
- Real-time micro-level data
- Count zone occupants
- Accurate positional awareness

DATA RESOLUTION & ACCURACY

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Utilization Data Source Comparison

	Badge Swipes	Network Access	Threshold Sensors	Passive Sensors	Active Area Sensors
Advantages	• Existing infrastructure • Prevalence	• Existing infrastructure • Prevalence	• Improved accuracy for building or floor level utilization measurement.	• Improved accuracy for desk and room utilization measurement.	• Improved accuracy for desk, room, and open area utilization measurement. • Captures count of people in a space. • Some solutions capture “signs of life”.
Challenges / Considerations	• Data Accuracy. May over- / under-represent reality. • Data accessibility, consistency, and usability. • Manual effort required for aggregation and usability of data.	• Data Accuracy (detects devices, not people; double-counting) • Software investment required to enhance accuracy and usability of raw data. • Emerging data source, not broadly proven.	• Hardware and software/data investment required.	• Hardware and software/data investment required. • Captures whether space is occupied or not (Y/N), not count of people in the space.	• Hardware and software/data investment required.
Insights	• Building or floor level “attendance” • Trends, not real-time	• Utilization by port/workpoint (wired) and/or zone (WiFi AP”). • Trends and real-time	• Trends and real-time utilization at Building-level, floor-level.	• Trends and real-time utilization of workpoints and rooms.	• Trends and real-time utilization of workpoints, rooms, and open spaces including counts.
Investment	• Low ($) • May choose to invest in analytics resource(s) (people, BI platform)	• Low ($ - $$) • Raw data may be free • May choose to invest in software to improve data accuracy and usability.	• Medium ($$ - $$$) • One-time fee ($0.35 - $0.45 / SF) • Annual fee ($0.35 - $0.45 / per SF)	• Medium / High ($$$ - $$$$) • Implementation cost range ($1.00 - $1.25 / SF) • Annual cost range ($1.00 - $1.25 / SF)	• Medium / High ($$$ - $$$$) • Implementation cost range ($1.25 - $1.75 / SF) • Annual cost range ($1.25 - $1.75 / SF)

Source: CBRE Global Occupancy Planning Insights

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Case Study - CBRE

Case Study Outcome

2.2m square feet threshold sensors deployed across CBRE US portfolio to capture floor level utilization (peak & average)

24% reduction in footprint, as a result of consolidating, disposing of under-utilized excess office space over three years

$33m annual lease savings as a result of portfolio optimization efforts

CRE Strategy:

Leverage utilization technologies to increase workplace effectiveness across following criteria:

- Portfolio Savings
- Reduced Carbon Emissions
- Increased Employee Engagement
- Increased vibrancy of our workspaces

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Macro-Utilization | Threshold Sensors

Do I have the right amount of space?

Location: CA070 - El Segundo - 2221 Rosecrans Ave

Year-Month: All

Last 4 Months: Yes

Primary Function	Location	Utilization Capacity	Avg Utilization (Mon-Thurs)	Avg % Utilization of Total Seats (Mon-Thurs)	Peak	Peak % Utilization of Total Seats
Advisory	CA070 - El Segundo - 2221 Rosecrans Ave	146	82.5	56.5%	146	100.0%

Utilization by Location

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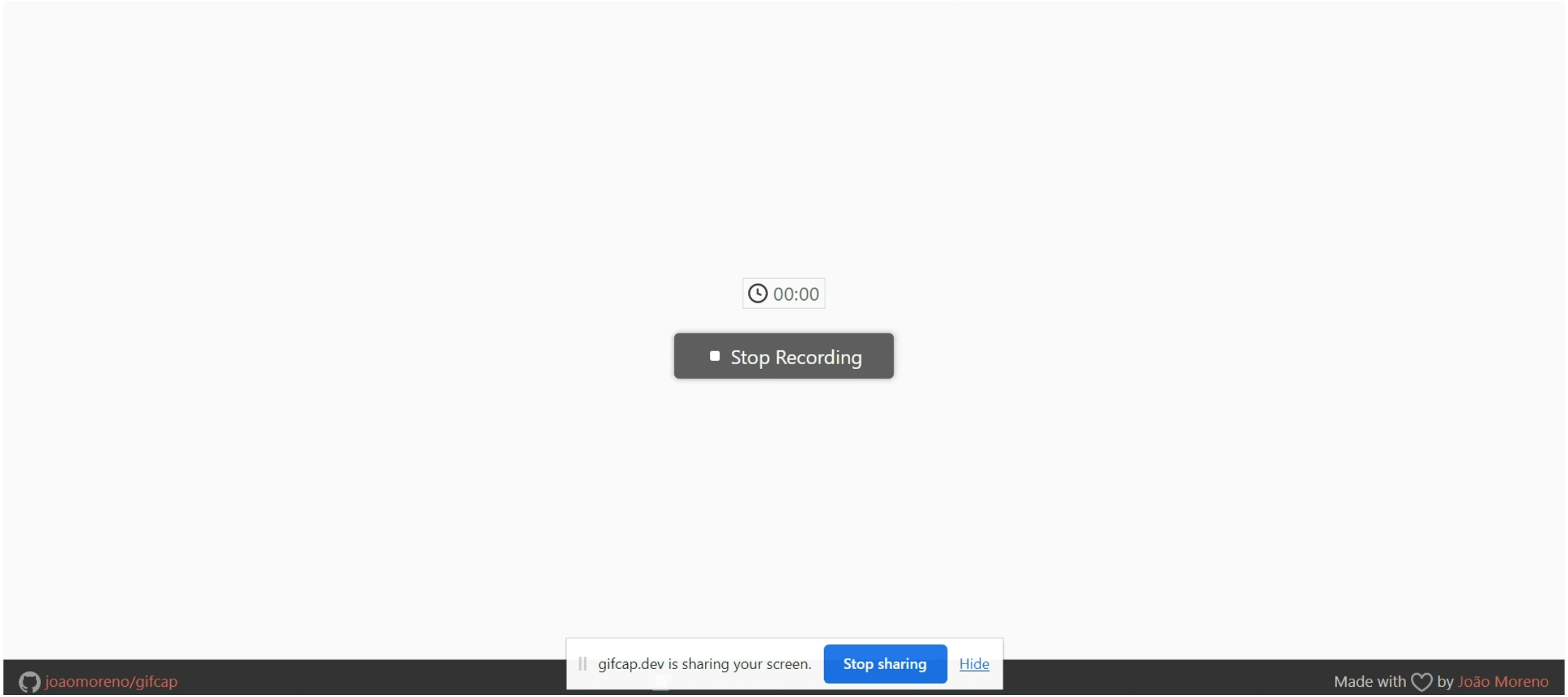
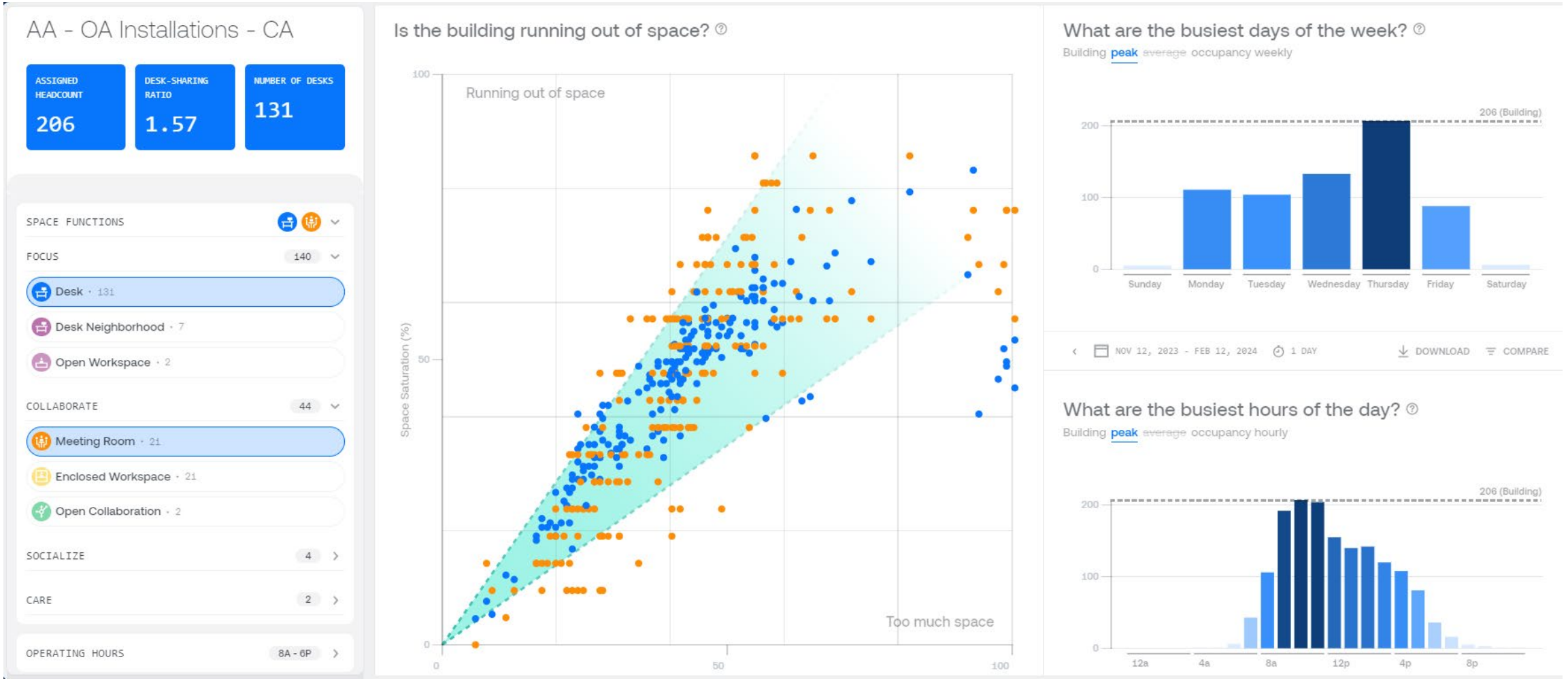
Micro-Utilization | Active Area Sensors

Do I have the right mix of space?



Micro-Utilization | Analytics

Do I have the right mix of space?



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