

INTRODUCTION

The post-occupancy evaluation (POE) process allows architects to study the outcomes of design decisions through observation and data. This process can take many forms, but ultimately, the goal is to clearly identify areas for improvement and provide lessons for future work. Many evaluations focus on user experience and efficiency, such as thermal comfort, acoustics, mechanical system performance, and efficiency. While these features are important to measure, they often do not help us better understand the efficacy of design decisions that can impact an individual's or group's working dynamic. Understanding how space is used and experienced can help us better understand the qualitative aspects of the environment.

This mixed-method POE explored how employees use different workspaces in a recently renovated design company under the hybrid working mode in the post-pandemic era. The study first analyzed how conference rooms were used considering time and attendance. Additionally, the study explored people's sentiments, behaviors, and usage patterns in different types of workspaces (e.g., focus, meeting, and social spaces) and how ambient factors (e.g., acoustics, furniture/layout, light, privacy/enclosure, technology, and views) affect people's preferences and usage patterns in those spaces.

Conference Rooms and Meeting Spaces Usage Report

KEY TAKEAWAYS

- The hybrid working mode impacts conference room usage situation in the post-pandemic era. Data suggests occupancy rate is on the lower end according to the industry benchmark.
- The workday and time of the day has influences on meeting room usage.
- Not all rooms are used in the same way. People have strong preference for certain conference space for in person meetings. The company runs meetings with more remote attendees than inperson attendees.
- Over half of the meetings are hosted by 4 or less people in-person in a conference room.
- Smaller rooms have higher occupancy rate. Correlation analysis between the seat occupancy and seat capacity indicates a moderate trend that conference rooms with fewer seats are used more frequently than large conference rooms (r = -.60).

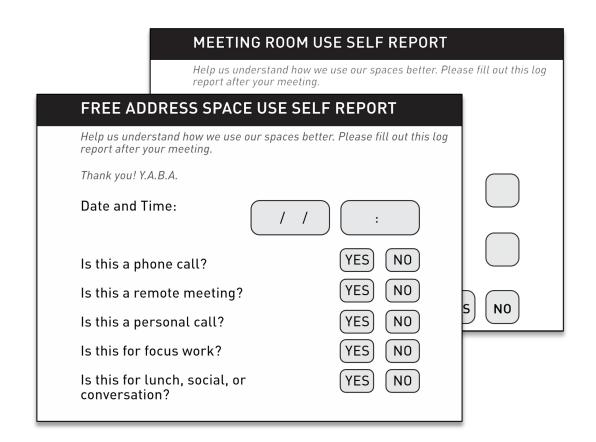
RESEARCH DESIGN AND METHODS

Source of Data

- Self-reported space usage report for a three weeks period in 2022
 - Week 1: Dec. 5-9, 2022
 - Week 2: Dec. 12-16, 2022
 - Week 3: Dec. 19-23, 2022
- Office entry system and occupancy count from IT
- Outlook and Zoom reservation data analyses

Data Analysis

Quantitative analysis; statistics



1. How many employees work in the office during a week? What's the meeting space per capita?

Week	Day	In-Office Rate	Distinct Card Number
1	Monday	63.3%	57
	Tuesday	83.3%	75
	Wedensday	82.2%	74
	Thursday	77.8%	70
	Friday	62.2%	56
2	Monday	61.1%	55
	Tuesday	77.8%	70
	Wedensday	71.1%	64
	Thursday	80.0%	72
	Friday	58.9%	53
3	Monday	63.3%	57
	Tuesday	75.6%	68
	Wednesday	78.9%	71
	Thursday	64.4%	58
	Friday	4.4%	4

GBBN Cincinnati Office Total Employee = 90 (Nov. 2022)

The highest number of in-office employees in a typical work week is 75 (Week 1 Tuesdays), about **83.3%** in-office rate.

The lowest number is 53 (Week 2 Friday), about **58.9%** in-office rate.

The in-office work rate for GBBN Cincinnati office is between **58.9%** to **83.3%** in a non-holiday work week.

The average ratio between formal conference room seat to in-office employee is **1.12**, which means each in-office employee could find a formal conference meeting seat in a non-holiday work week.

^{*}Week 1: Dec. 5-9, 2022; Week 2: Dec. 12-16, 2022; Week 3: Dec. 19-23, 2022; Source of data: IT and Director of Technology

2. What is the occupancy rate for each conference room according to the Outlook reservation data?

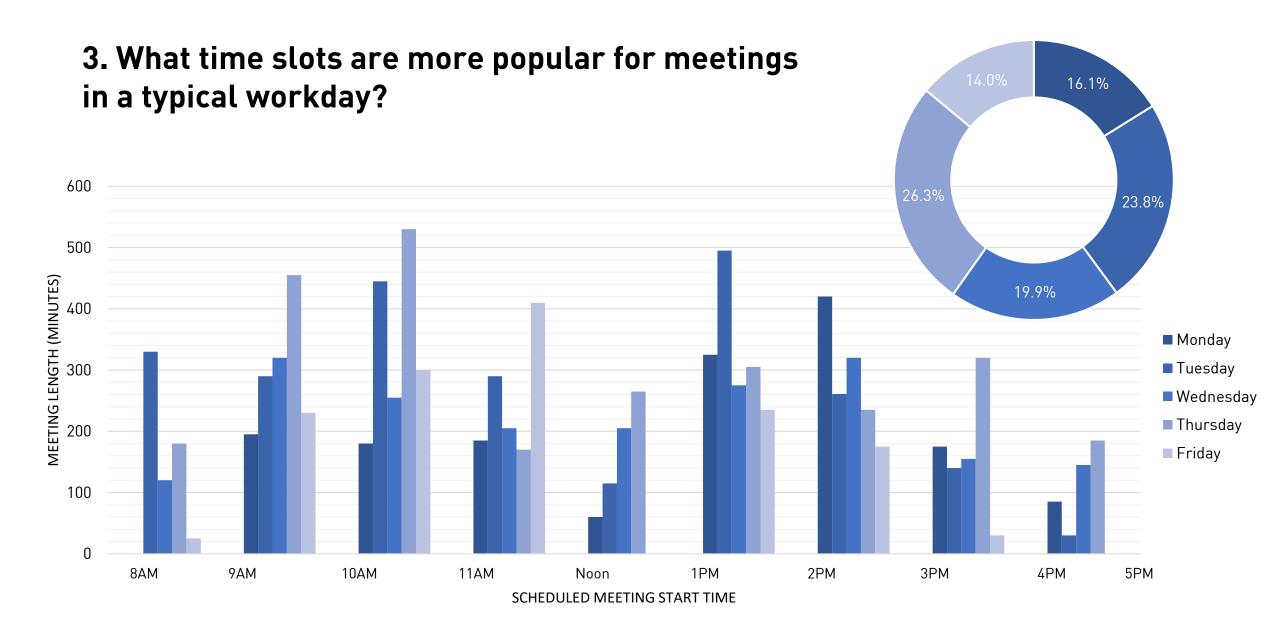
Outlook Data		Week*			Occupancy Rate	Occupancy Rate		
Room	Total		1	2	3 Total Occupancy	Week 1-2 Occup	pancy Time and Rate	
Café	600	13.0%	8.7%	0.6%	7.4%	585	10.8%	
Small One	120	0.6%	3.9%	0.0%	1.5%	120	2.2%	
Half Pint	1430	24.6%	22.4%	5.9%	17.7%	1270	23.5%	
Large Two	1780	35.0%	26.7%	4.3%	22.0%	1665	30.8%	
Corner Two	1925	28.3%	43.0%	0.0%	23.8%	1925	35.6%	
Elevator Two	840	15.0%	12.0%	4.1%	10.4%	730	13.5%	
Corner Three	1540	19.8%	32.6%	4.6%	19.0%	1415	26.2%	
Elevator Three	675	7.0%	15.0%	3.0%	8.3%	595	11.0%	
Corner Four	1886	32.8%	36.0%	1.1%	23.3%	1856	34.4%	
Elevator Four	535	12.6%	6.3%	0.9%	6.6%	510	9.4%	
Average	1,133.1	18.9%	20.7%	2.4%	14%	1,067.1	19.8%	

*Week 1: Dec. 5-9, 2022; Week 2: Dec. 12-16, 2022; Week 3: Dec. 19-23, 2022. Total meetings = 236; Week 1-2 total meetings without outliers = 219.

According to the Outlook booking data, GBBN Cincinnati Office conference room average occupancy rate for non-holiday work week is **19.8%**.

A 2014 benchmarking report of the financial services industry by consulting and design firm HOK found that the average conference room was occupied about 29% of the time [1].

Researchers in the industry recommend that the most ideal conference usage rates are between 3.5 to 6.5 hours each day, equivalent to a range of 38.9% - 72.2% occupancy rate [2].

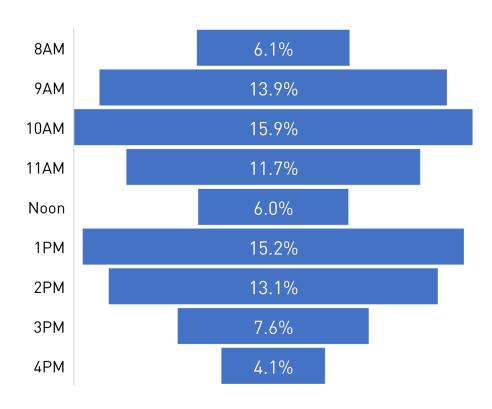


Thursday has the topmost meeting time: about **26.3%** all meetings happened on Thursday, followed by Tuesday (23.8%) and Wednesday (19.9%).

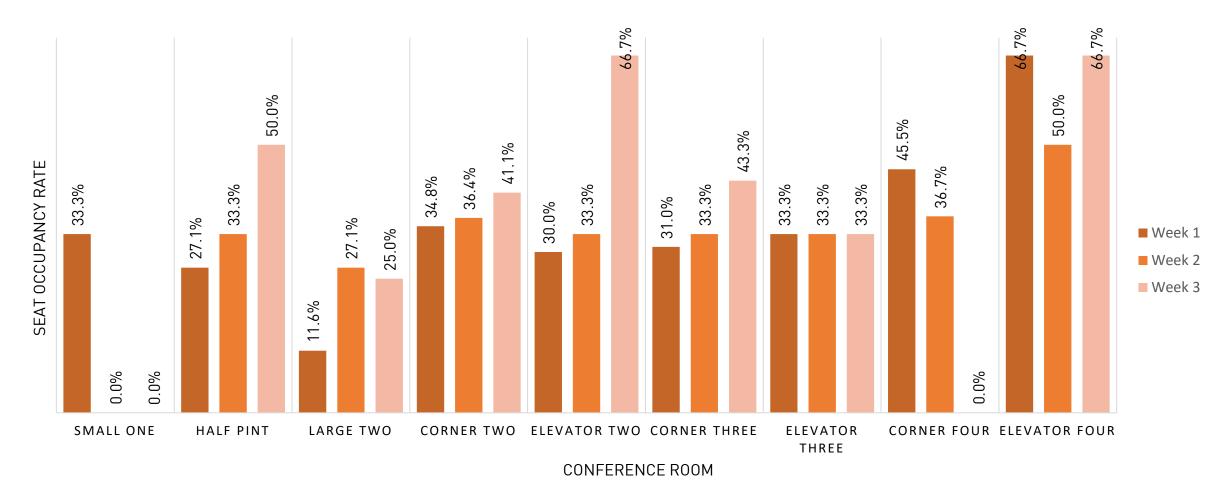
More meetings were scheduled in the morning; **15.9%** of all meetings were scheduled during the **10AM** hour slot, followed by 9AM (13.9%) and 1PM (15.2%) hour slots.

The least favorite meeting times are 4PM, (4.1%), noon (6.0%), and 8AM (6.1%).

MEETING SCHEDULED START TIME BY TIMESLOT

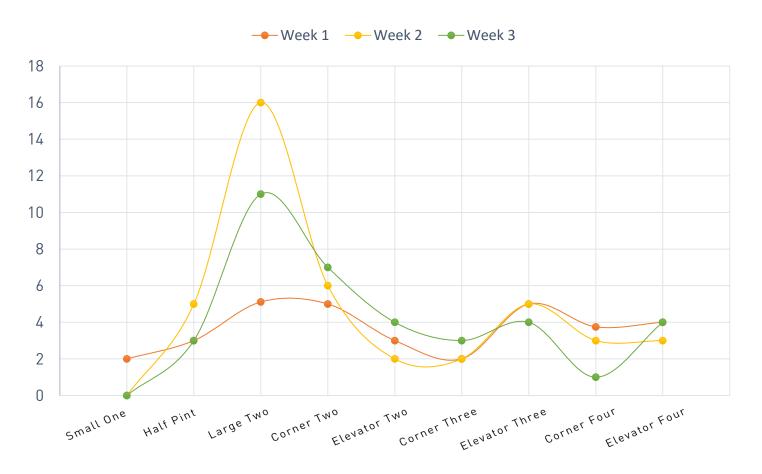


4. What are the seat capacity and occupancy rate for each conference room?



^{*}A total of 199 counts of activities collected through self-reporting cards during three weeks' data collection.

5. What is the average attendance at a meeting?



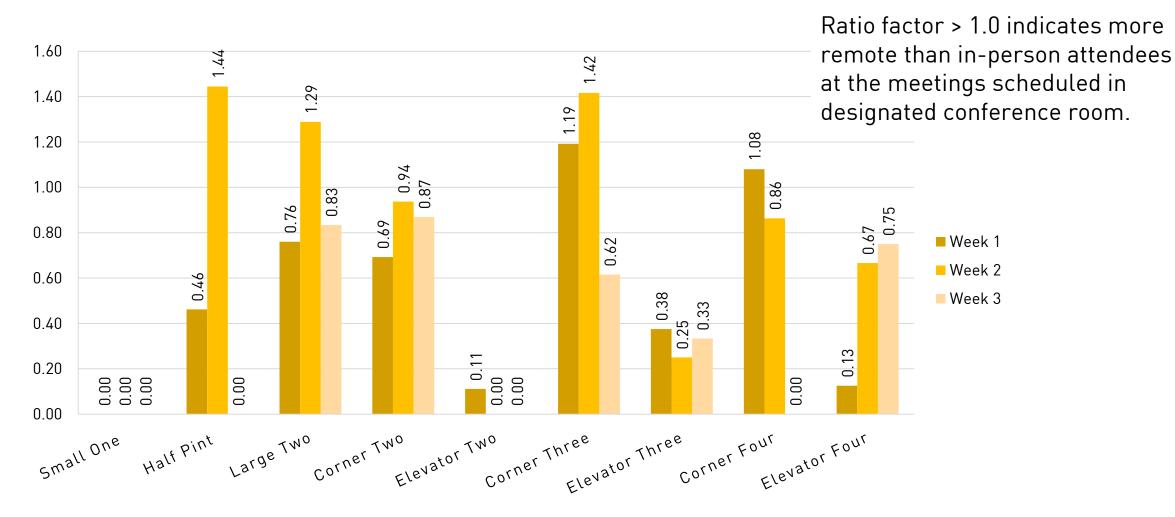
A typical meeting has 4-5 attendees, including in-person and remote attendees.

Large Two has the highest number of total attendees during the data collection period. During Week 2, there were averagely 16 attendees per meeting scheduled in that room.

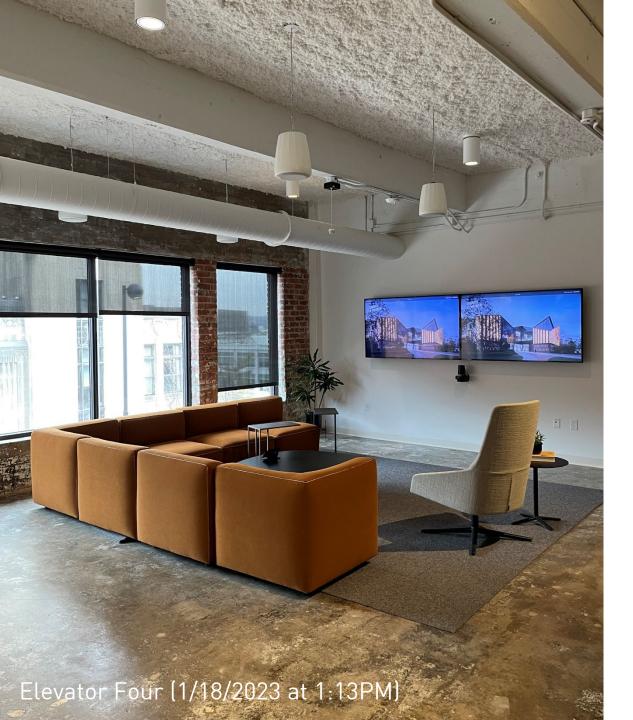
55.6% of meetings have an average of 4 or less in-person attendees.

^{*}A total of 199 counts of activities collected through self-reporting cards during three weeks' data collection.

6. What is the situation of in-person vs. remote meeting attendees?



^{*}A total of 199 counts of activities collected through self-reporting cards during three weeks' data collection.

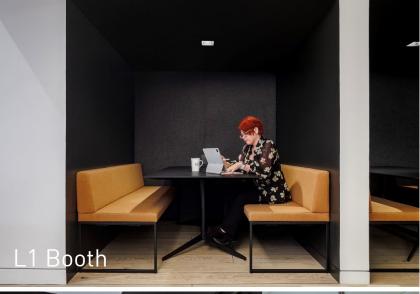


Elevator Four has an average seat occupancy rate **61.1%**, the highest in-person occupancy rate during the data collection period, followed by Elevator Two (43.3%) and Half Pint (36.8%).

Large Two has 24 seats, with an average 21.2% seat occupancy rate. It means that there are about 6 in-person attendees in a typical meeting scheduled in the large conference room, equivalent to **25%** of the seat capacity.

Small One has the lowest in-person occupancy rate (11.1%).







7. What types of activities happen in different conference spaces?

- Booths are popular for focus time: 51.4% focus time happened in the L1 Booths.
- Booths are also popular spaces for lunches, conversations, and casual social (55.3%).
- The most popular private spaces are the Huddles: a total of **63.8%** remote meetings happened in Huddles, including 33.8% in Huddle 4, 16.3% in Huddle 1, and 13.8% in Huddle 3.
- 78.6% business calls and 74.1% personal calls happen in Huddles. Huddle 1 is the most popular for private calls (41.5%).

Overall Workplace Experiences via Walk-n-Talk Interview

KEY TAKEAWAYS

- Preliminary results revealed higher satisfaction with the collaborative spaces (meeting spaces) than other workspaces in the office
- Privacy/sense of enclosure has noticeably positive comments, and the acoustic environments gained negative comments in the office building
- Elevator meeting spaces are more used for internal meetings, and Corner rooms for meetings involved sensitive conversations
- Lighting conditions and technology could make certain spaces undesirable for Zoom meetings
- Level 1 canteen, kitchen, and green wall seats have become popular social spaces during work time
- The central open offices on each floor have lower usage as compared to other conference/meeting spaces due to a lack of tables and technology, or insufficient lighting conditions.

RESEARCH DESIGN AND METHODS

Source of Data

- Walk-n-Talk interview
- Purposeful sampling of employees that represent different business units across the company (N = 15)
- Qualitative data including researcher's notes and interview transcripts

Data Analysis

- Content analysis (manually)
- Sentiment analysis (Al and manually)
- Thematic analysis (AI)

ChatGPT



Consume the following list of text and provide three outputs. 1. A sentiment analysis ranking the overall tone of the text from 1-10. Do not explain this ranking. Simply provide a number from 1-10. 2. Create a bulleted list of common themes that are observant of design features. Offer a category and description for each. 3. Assert judgement against the usage frequency of the space. Provide a ranking from 1-10. Do not explain this ranking. Simply provide a number from 1-10.



Free Research Preview, ChatGPT may produce inaccurate information about people, places, or facts, ChatGPT May 24 Version

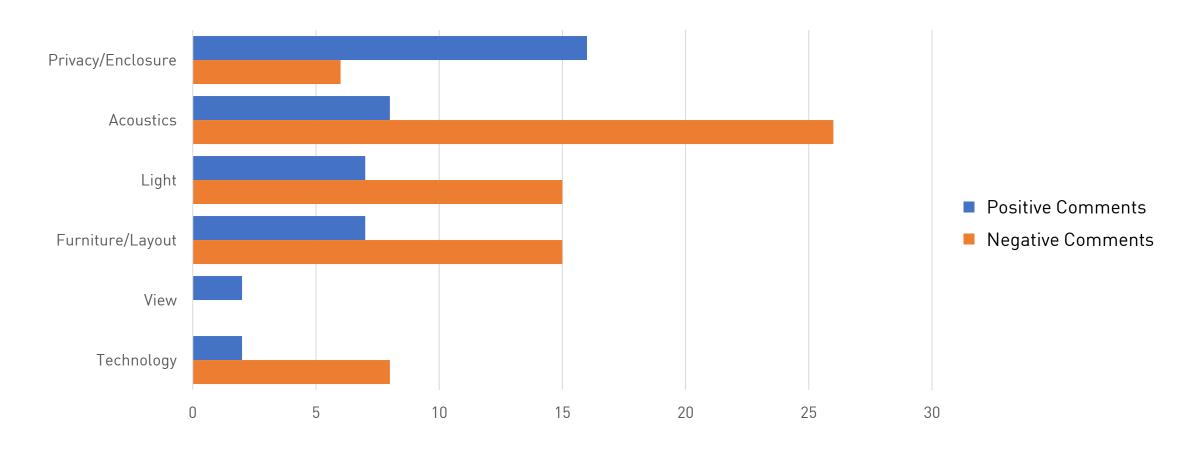
COMMENTS PER TYPE OF SPACE

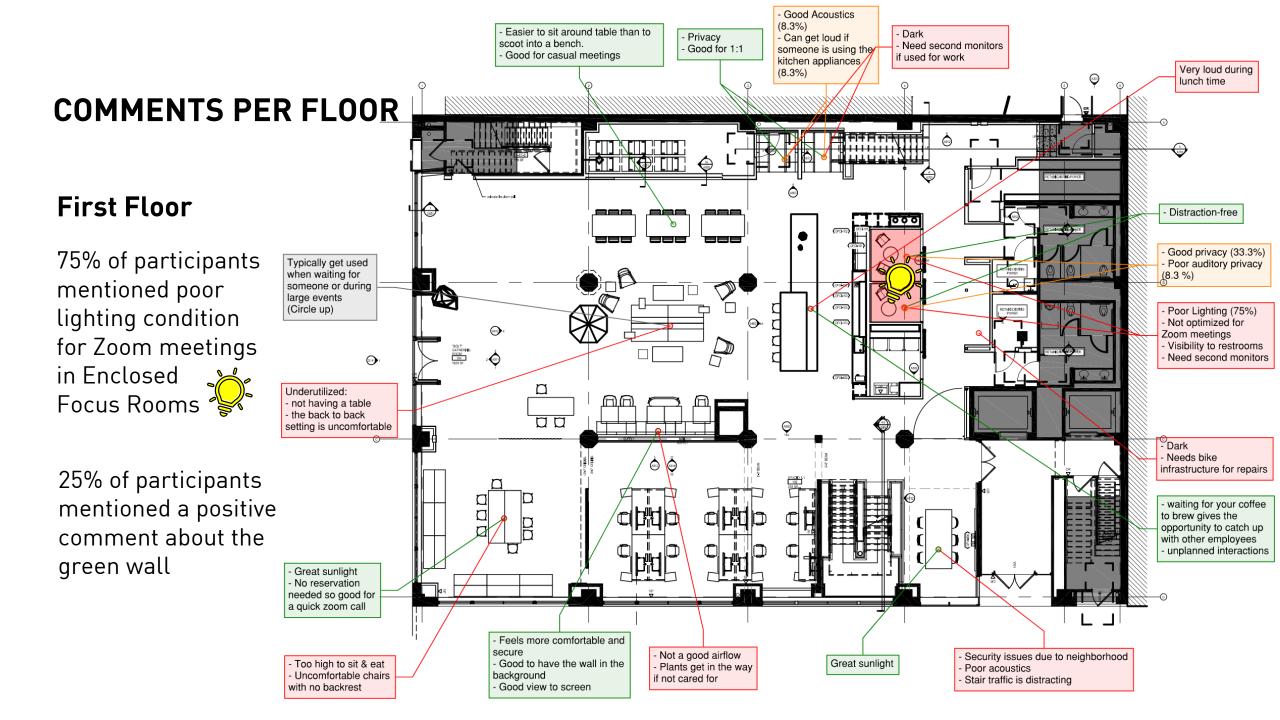
Meeting spaces gained the most positive comments than the focus and social spaces.



COMMENTS PER AMBIENT FACTOR

Privacy/enclosure gained significant positive comments. Acoustic factors had noticeably negative comments.

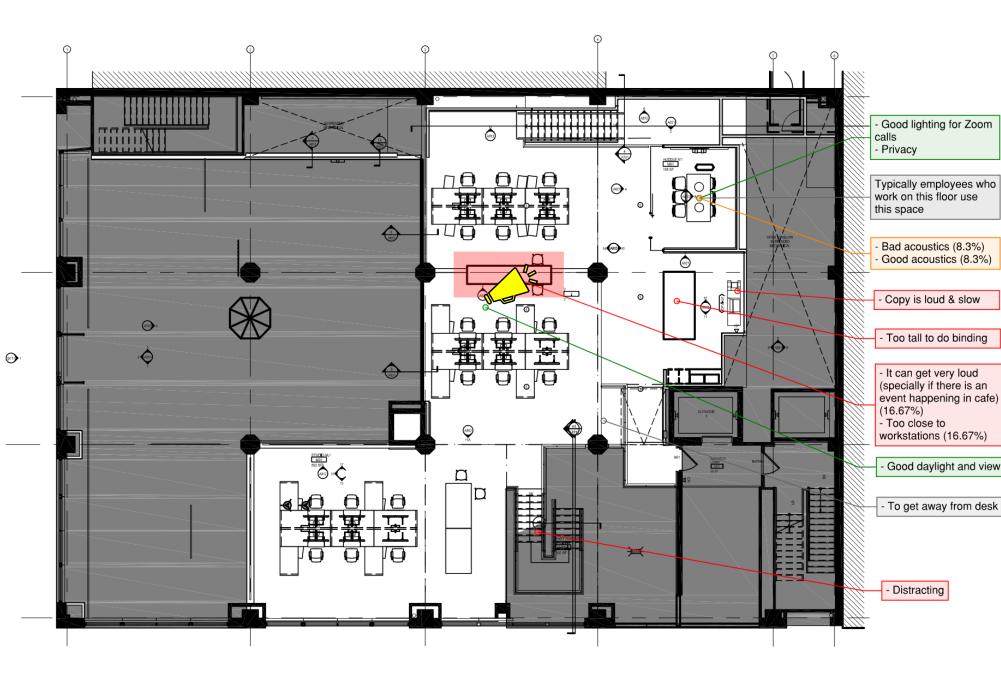




Mezzanine

75% of negative comments about Mezzanine are poor acoustical conditions

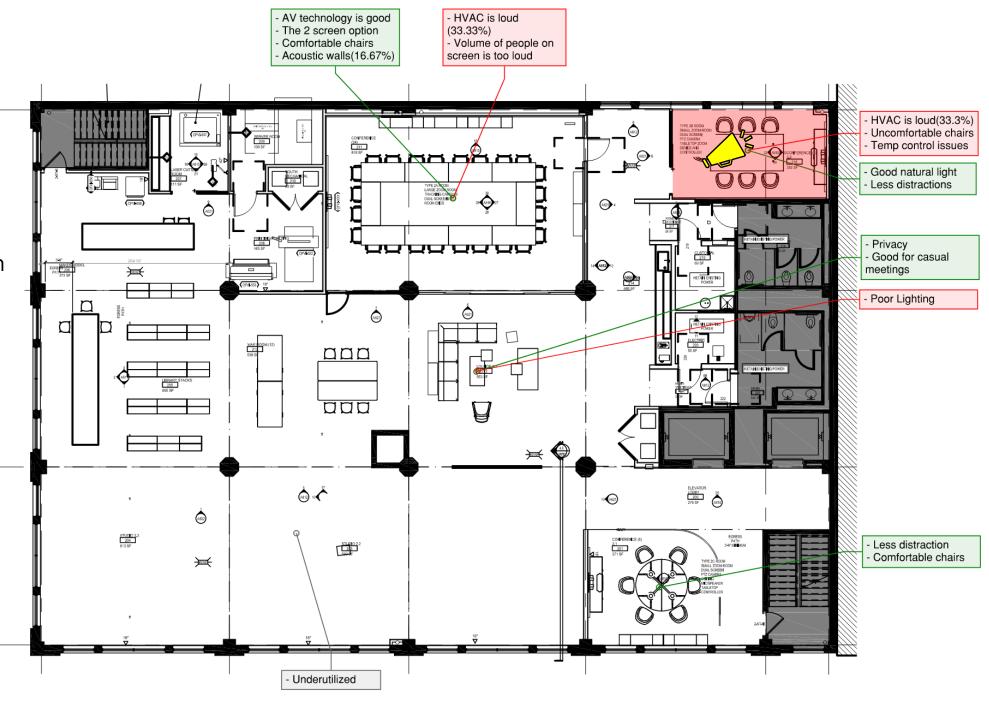
Most of the positive comments about Mezzanine mentioned good lighting and a good view



Second Floor

56% of negative comments are poor acoustical conditions in conference spaces (i.e., Large 2, Corner 2, Elevator 2)

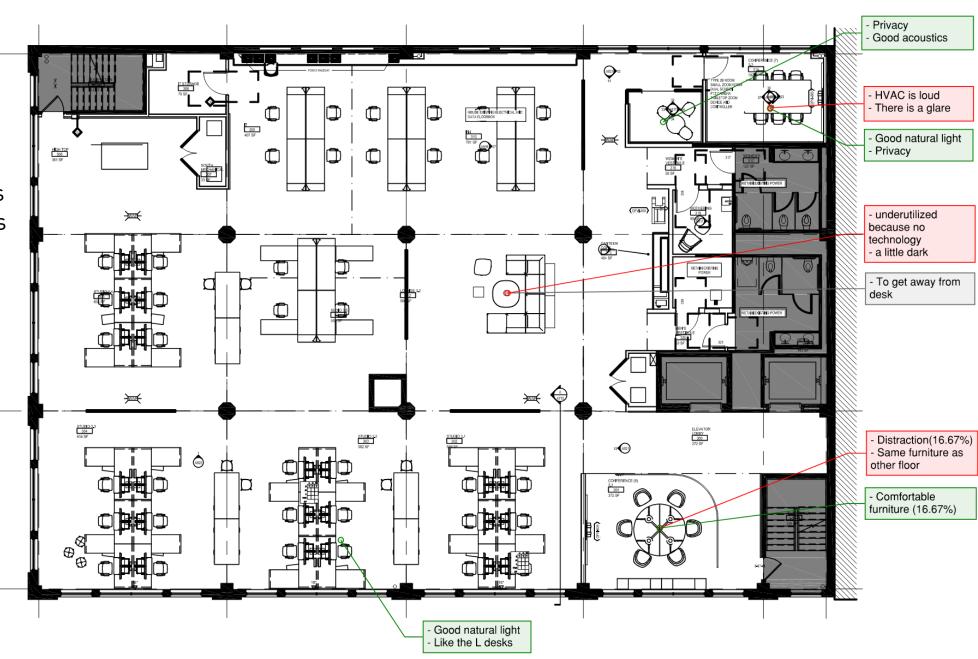
Elevator 2 has the most positive comments among all three Elevator Conference spaces.



Third Floor

16.67% of interviewees mentioned distractions on the third-floor spaces.

25% of interviewees gave positive feedback about the Furniture of the Elevator 3 conference room.

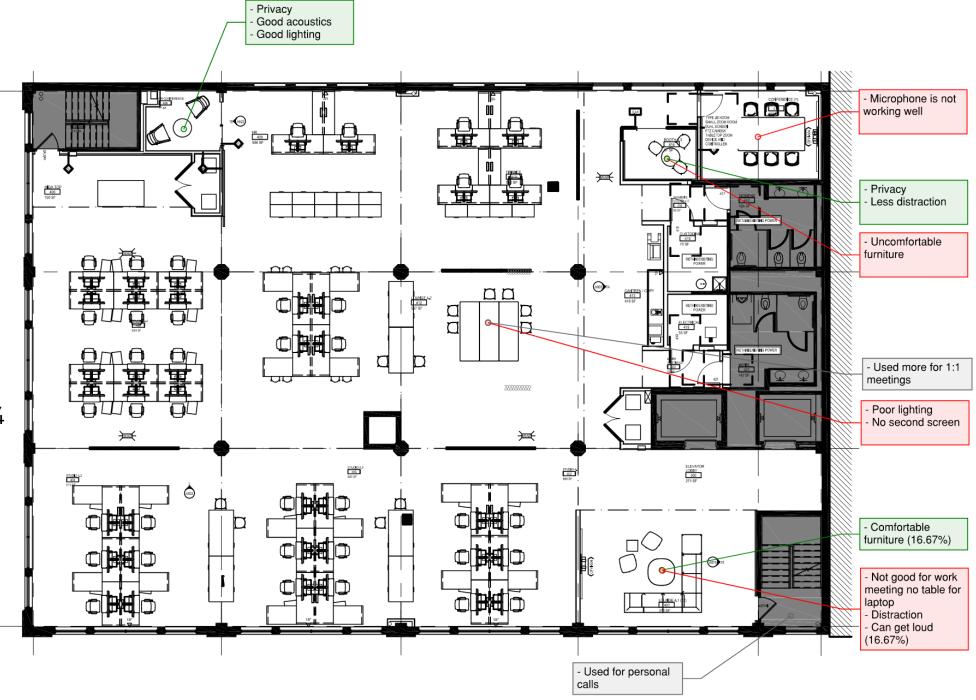


Fourth Floor

Most of the *negative* and *positive* comments on fourth floor is about Elevator 4

16.67% of interviewees mentioned bad acoustics for Elevator 4

16.67% of interviewees has positive comments about the comfortable furniture of Elevator 4



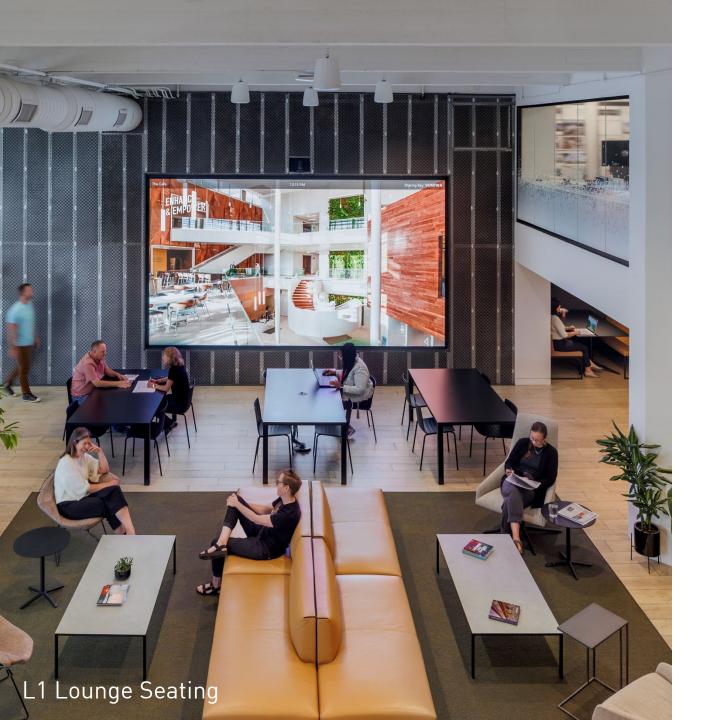


"I do prefer of the booths when they're one on one meetings that are need to be a little bit more private"

"I think the kind of sound dampening and the ability to really pull all the way back into the space and sequester is a big plus for me. "

Selective Negative Comments

"So here, it's a little dark. That doesn't bother me in that setting because I wouldn't take a meeting there."



"there's like something bigger happening like a happy hour or you know I think like some of the like this circle up like post circle up lunches or things like that."

"Usually with all my one-to-ones, I'm down here....Makes it feel more casual, not so formal. Just again to make it feels more conversational versus over the tabletop."

Selective Negative Comments

"I feel like it's not a place I go to work. I think that's mostly a product of not wanting to have my laptop on my lap."



"Sound quality is great. I do love that. You could record a show because sound quality is just a It's quiet. There's no reverb. There's no bouncing off the walls. Very high quality."

"I know the tables are meant to be flexible, but I don't know that they have ever moved."

Selective Negative Comments

"it's like the HVAC is really loud. the screen is often too loud in my experience."

"I wish there was a furniture orientation that didn't have to feel like you needed 20 people for it to feel comfortable."

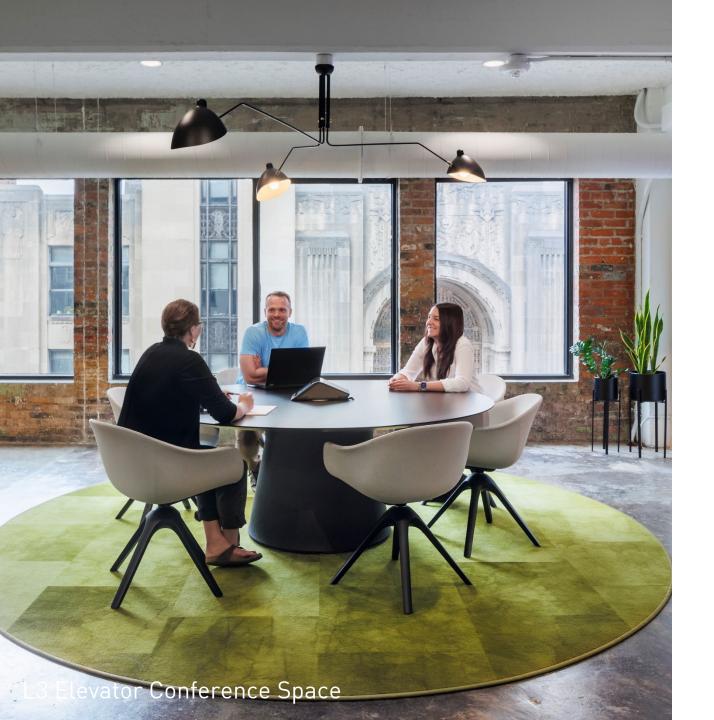


"Having that audio quality and without the background noise"

"So, the like, totally free of distraction. Totally enclosed, yeah. Free spaces can be really helpful sometimes. "

Selective Negative Comments

"The sound, I've never really noticed much. That vent blows in the wind....it just catches everybody's attention for a second. I know, it was a big mystery for a while what that noise was."



"I prefer scheduling this one because of the furniture."

"This elevator three, which has a table and chairs, if you're presenting or you're marking up and making comments on documents, this is easier to work with than up there (Elev. 4), which is probably more conversational or watching content "

Selective Negative Comments

"Maybe if this was, like, differently furnished, like, to distinguish it from that (Elev. 2) might be something to think about. Have three distinct offerings."

OVERALL SENTIMENT AND THEMATIC ANALYSIS

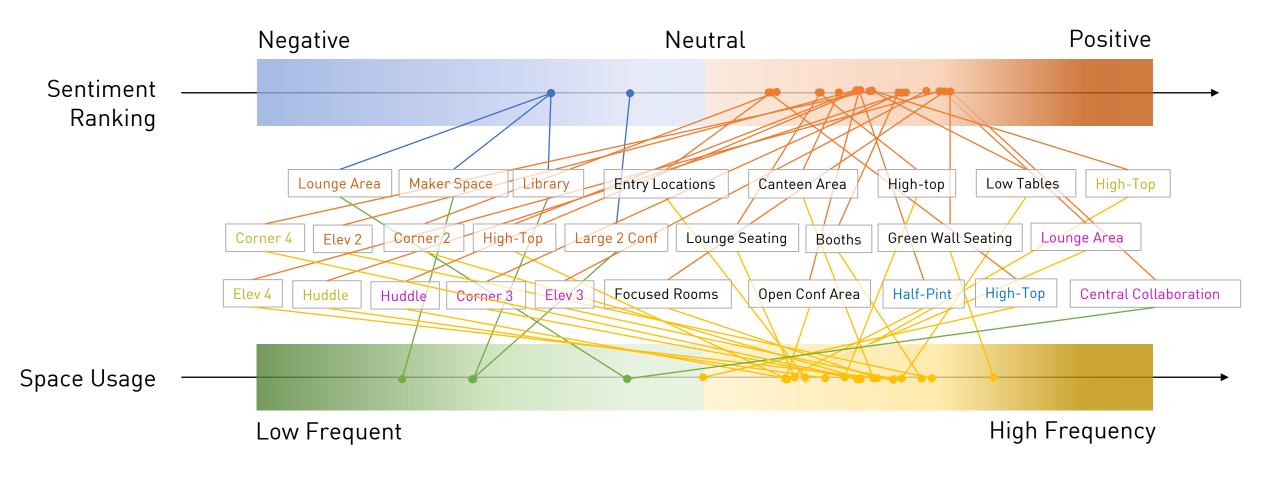
First Floor

Second Floor

Mezz

Third Floor

Fourth Floor



SENTIMENT AND THEMATIC ANALYSIS DETAILS

Floor	Location	Themes	Sentiment Ranking	Space Usage
	Entry Location	 Entry Points and Frequency of Use Access Convenience Interaction with Colleagues Bicycle Accessibility Morning Routine 	5.8	6.3
1	Canteen Area	 Usage Patterns Social Interactions Dining and Refreshments Furniture Layout Adjacency Effect Meeting Spot Multi-Purpose Use Preference for Familiarity 	6.7	7.2
1	High Top	 Workspace Variety Privacy and Proximity Noise Considerations Social Interaction Backrest Preference Flexibility and Adaptation Meeting and Eating Dynamics Age and Comfort Space Usage for Connection 	6.4	6.8
	Low Tables	Meeting FunctionalitySeating DynamicsComfort and Casual AtmosphereDrawings and Sharing	7.2	7.6

Floor	Location	Themes	Sentiment Ranking	Space Usage
1		Casual vs. Formal MeetingsFrequency of UseFunctionality of Space		
	Lounge Seating	 Formal vs. Informal Meetings Work Mindset and Posture Lounge Furniture Usage Table Necessity Furniture Spacing and Arrangement Utilization During Events Team Preferences Community Building 	6.6	6.1
	Booths	 Private and Confidential Meetings Nooks and Retreats Retreat and Seclusion Comfort and Distraction Free Work Booths for Privacy Casual vs. Formal Work Retreat for Coding Gathering Spaces Improved Social Interaction 	7.5	7.9
	Green Wall Seating	 Comfortable Seating Green Wall Attraction Pride in Workspace Convenience for Personal Calls Eating Preferences 	8.2	8.7

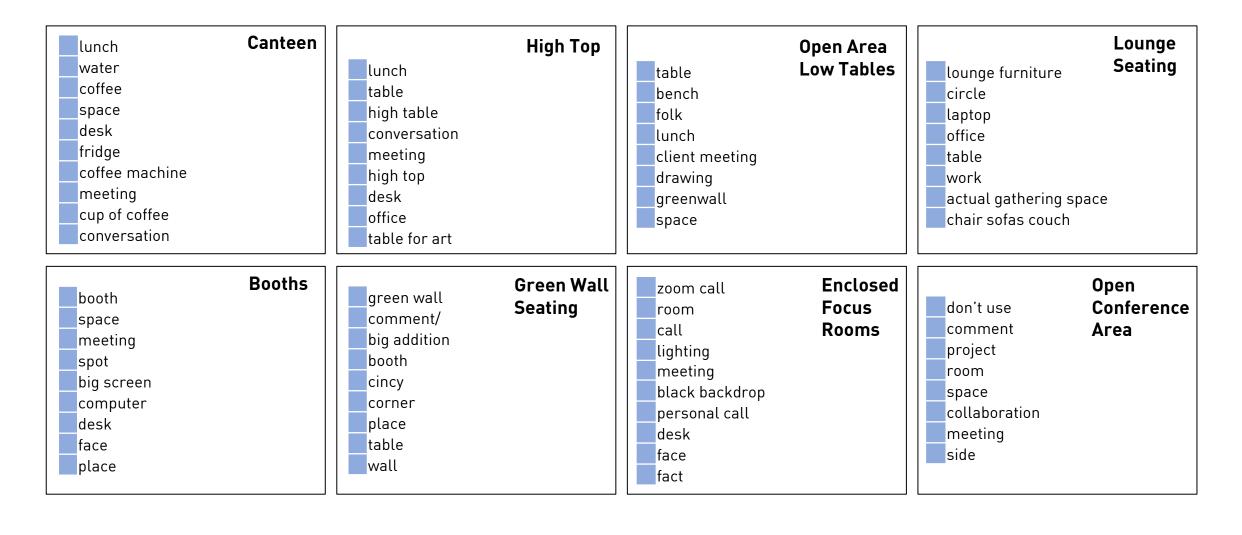
Floor	Location	Themes	Sentiment Ranking	Space Usage	Floor	Location	Themes	Sentiment Ranking	Space Usage
1	Green Wall Seating	 Productivity and Focus Aesthetic and Functionality Airflow and Comfort Engagement in Office Activities 	8.2	8.7			Islands for Huddles and StorageHigh Top FurniturePractical Considerations		
	Enclosed Focus Rooms	 Privacy for Calls Concerns About Lighting Seating Preferences Work Needs- Convenience and 	8	7.3	Library - Ownership and Organization - Changing Work Dynamics - Access to Tools - Desire for Curated Workspace - Hot Desking and Quiet Area	3	2		
		Availability - Distinctive Features- Acoustic Usage - Distraction-Free Environment - Discomfort with Darkness - Decline in Usage				Maker Space	 Underutilized Space Lack of Structure Flexible and Multi-Purpose Prototyping and 3D Printing Collaborative Projects Learning and Technology 	3	1
	Open Conf Area	 Collaborative Workspace Impromptu Meetings Concerns About Noise and Distractions Lighting and Atmosphere Use of Presentation Equipment Seating Arrangement 	6.4	6.8	2	Large 2 Conf Room	 HVAC Noise AV Technology Meeting Size Comfortable Chairs Cleaning and Organization Use for Meetings Remote Participation 	4	2
М	Half-Pint	 Flexible Usage Preferred Conference Room Acoustics and Privacy Proximity to Amenities Noise and Openness Last Resort Usage Elevator Reservation Temperature and Sun Glare 	7	6		Lounge Area	 Casual Meetings Informal Interviews Limited Technology Privacy and Comfort Lighting and Condition Utilization for Spillover Preference for Transparency 	3	4
	High-top Tables	 Sketching Space Noise Adaptation Noise Cancelling Headphones Presentation Impact 	6	5		Reversable High-top tables	 Space Naming and Reservability Client Meetings vs. Team Meetings Flexibility and Usage Organization and Messiness Specific Use Cases 	7	6

Floor	Location	Themes	Sentiment Ranking	Space Usage	Floor	Location	Themes	Sentiment Ranking	Space Usage
		 HVAC Noise and Disruption Chair Comfort and Clunkiness Floor Location and Convenience Comparison of Conference Rooms Lighting and Ambiance Case Study Meetings and Project Teams Temperature Control Issues Usage Frequency and Convenience Likes and Dislikes of Corner Conference Room Cafe Area and Refrigeration Nostalgic References 	6	7	3	Corner 3 Conf Room	 Preference for Corner Rooms Consideration of Meeting Type Blinds and Glare Door Management Vent Noise 	7.5	7
	Corner 2 Conf Room					Elevator 3 Conf Room	 Furniture Preference Purpose-Oriented Selection Consideration of Noise Furniture Distinction Background Activity 	7.8	7.5
2						Corner Small	Solo UsageLimited Group Usage	6.4	6.2
	Elevator 2 Conf Room	 Preference for Privacy Floor Location and Noise Elevator Access Chair Comfort and Noise Use for Recurring Team Meetings Focus and Hard Work Thoughtfulness and Inclusivity Suitable for Client Meetings Discomfort and Awkwardness 	7	8		High-top Meeting Area	 Workspace Utilization and Adaptation Collaboration and Conversations Design and Orderliness Personal and Team Dynamics: Perception of Ownership 	7	6
					4	Huddle Room	Preferred ComfortWorkspace DistinctionsView and Light	7.5	6.5
		Utilization for Casual MeetingsLimited Physical Drawing Use	7	6			Comfort and EnclosureUtilization for Specific Activities		
3	- Informal Collaborative Space Lounge - Challenges with Technology and Lighting - Comfort and Furniture Preference - Noise and Distraction - Feedback and Improvement				Corner 4 Conf Room	 Preference for Specific Spaces Functionality of Spaces Enclosed Concentration Light and Comfort Room Dynamics 	7.2	7	
	Huddle Room	 Need for Audio Privacy Preference for Smaller Rooms Room Selection Based on Participants Internal Calls 	7	6		Elevator 4 Conf Room	 Furniture and Comfort Suitable for Group Discussions: Sketching and Collaboration View and Atmosphere Noise and Privacy Concerns 	7.8	7.5

KEYWORDS ANALYSIS

First Floor

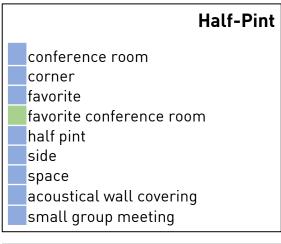
Extract the most relevant keywords from text. These might be aspects (i.e. things mentioned in the text) or opinions (i.e. what is said about aspects).

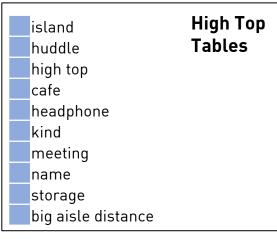


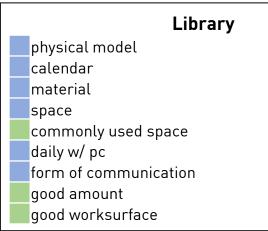
KEYWORDS ANALYSIS

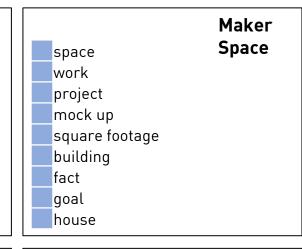
Mezz + Second Floor

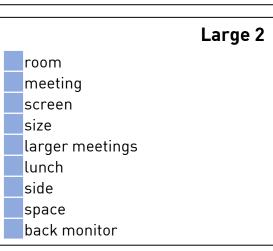
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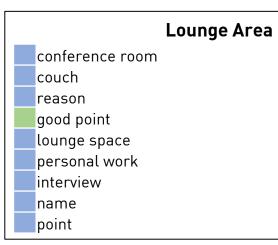


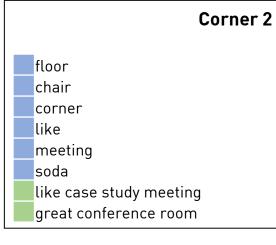


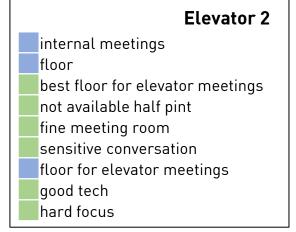








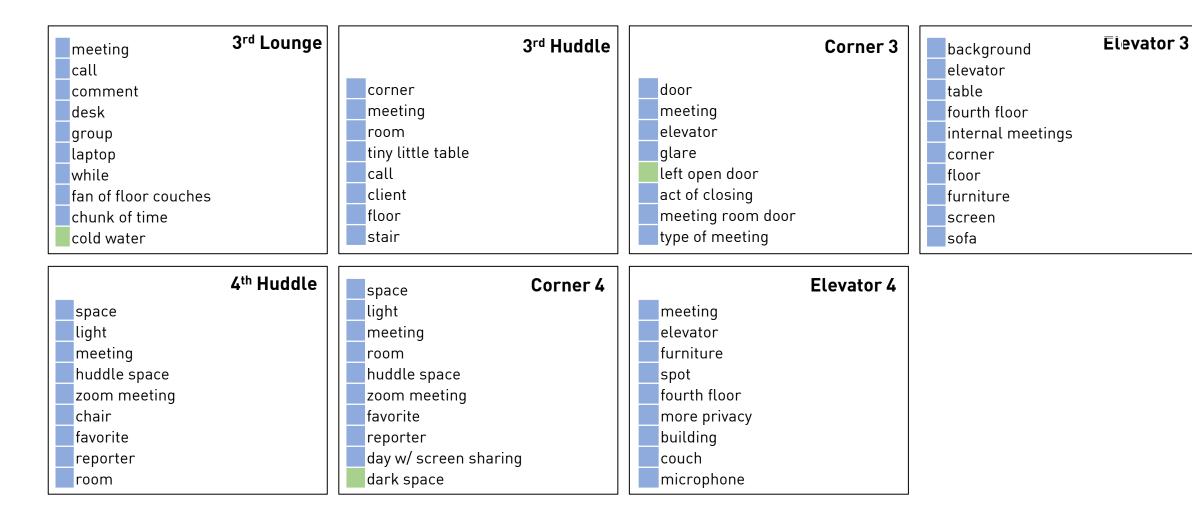




KEYWORDS ANALYSIS

Third Floor + Fourth Floor

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EXPERIENCE

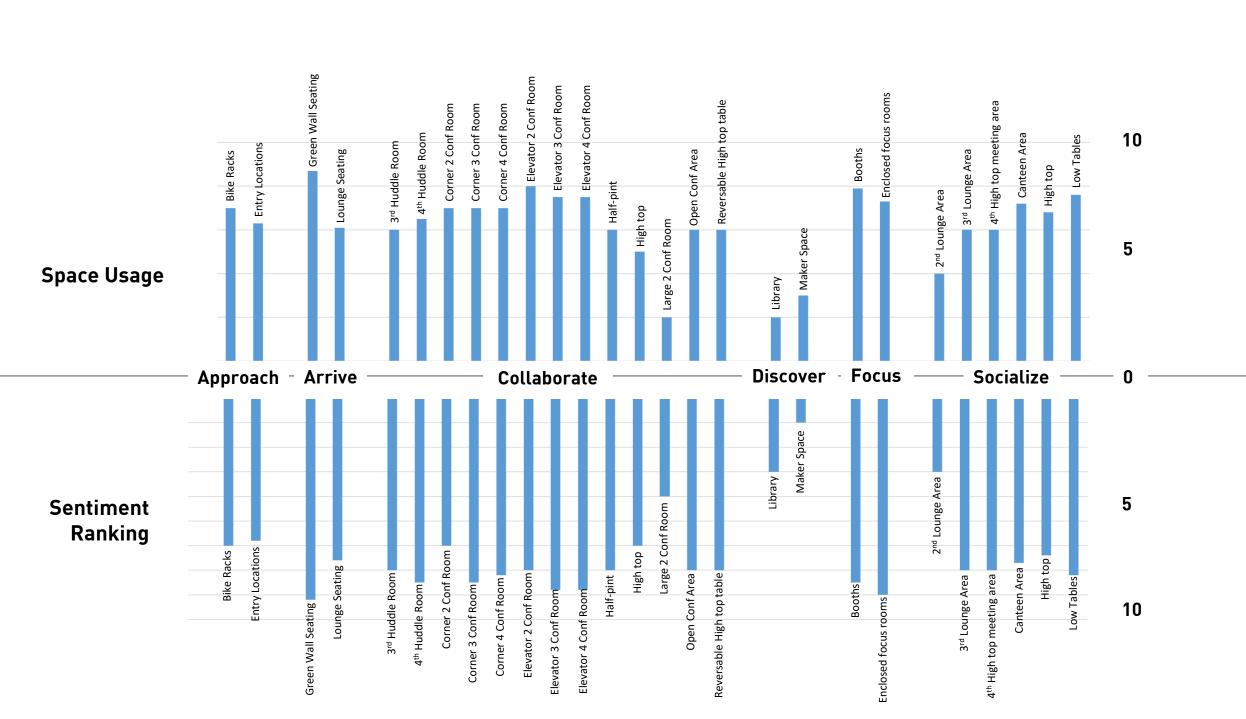
A major project goal for the renovation of the GBBN office was to create an "Experiential Program" that would create a "Choose your own adventure" work ecosystem. This POE study should look at how successful the project has been able to achieve this goal.



GOALS

A major project goal for the renovation of the GBBN office was to create an "Experiential Program" that would create a "Choose your own adventure" work ecosystem.

MODE	SPATIAL TYPE	SENSORY ELEMENTS
APPROACH	STREETSCAPE, STOREFRONT, PARKLET, DIGITAL PRESENCE	A beckoning storefront, sparking curiousity. Interior bleeding out, curated window, facade as an art installation
ARRIVE	LOBBY, RECEPTION, LOUNGE, CO-WORK, GALLERY	Light-filled, open, airy. Nature infused, a place of respite. Curated music, happy face, conversation starter, hospitality and luxury, view of creativity at work, media wall as installation art
SOCIALIZE	COFFEE BAR, CAFE & LOUNGE, CANTEEN, PARKLET, GALLERY	A centralized hub, beating heart, gathering. Kitchen table mixed with favorite coffee shop or bar. Vibrant, clean, & fresh. Attitude of health & wellness. Chance encounters and socialization.
COLLABORATE	MEETING SPACES, TOUCHDOWNS, DIGITAL PORTAL, WORK CAFE	A study. Reading, writing, and small group hudldes. A VIP lounge, a kitchen table, board room, sophisticated and impressive, a town hall.
FOCUS	OFFICE, DESIGN STUDIO, FOCUS ROOMS, PHONE BOOTHS, PRIVACY LOUNGE	A workstation that promotes workplace satisfaction, productivity, & wellbeing. Adapts to individual & team scales. Virtual connectivity. Transformable. Integrated storage. Customizable.
DISCOVER	RESOURCES, LIBRARY, MODEL SHOP, FAB LAB, GALLERY	Inspiration everywhere - tactile and visual education. Digitized resources & virtual pin-up wall. Explore, research, test ideas. Making things. Studio vibe. Organized (beautiful) chaos.
RECHARGE	FITNESS, PRIVACY POD, GARDEN, MOTHER'S ROOM, WORK CAFE	Soothing and still. Mindful & meditative. A place to breathe, recenter, disengage, rest, & recharge. Stretch, sweat, & be active.



Reprogramming physical workspaces to maximize support for hybrid meetings; diversified spaces for collaboration and socialization represent the future trend in workplace design.