

INDOORROLOGY: USING BEHAVIOR TO GUIDE OFFICE REAL ESTATE DECISIONS

It used to be easy to predict what your company's real estate needs might be over the term of a lease. Growth meant more space requirements. Contraction meant less.

But assumptions about corporate work have changed. We now know productivity is possible outside of the traditional workplace. The very purpose of the office is evolving.

What does this mean for corporate real estate?

Companies are seeking to manage their real estate footprints to balance both budgets and employee satisfaction. But they're working in uncharted territory.

Knowing how to invest in office resources and amenities – or even whether to expand or reduce square footage -- depends on understanding employee patterns of behavior onsite. Without hard data on how office space is being used today, the path forward is nothing but guesswork – and mistakes are expensive.

Fortunately, the means to capture this data exists, and InnerSpace can help you apply it to your company.

HOW? WITH *INDOOR*LOGY.

In this guide, we introduce the concept of Indoorology and demonstrate how it informs any office design moving forward.



“You could be a growing company that’s shrinking your real estate portfolio due to remote work. Or you could be a shrinking company that needs to grow its portfolio to build showcase spaces for prospective client meetings. These are not easy decisions. It’s a very tough position to be in for a business leader to try and predict the future.”

- *Andrew Lawson, Workspace Solutions*

TODAY'S DATA GAP



There are major gaps in information when it comes to understanding how offices are used and how employees work and feel in that space.

For example, a 2021 study in Building Research & Information identified a lack of quality intel on the relationship between indoor office space and a person's psychological and social well-being.

Furthermore, a report from the Center for the Built Environment (CBE) revealed a significant lack of systematic research and data on team spaces, finding only anecdotal evidence on the topic.

“We also found a lack of connection between the different specialists interested in this field, in terms of research methods and shared knowledge,” [the CBE writes](#). “There is a need for more earnest integration between researchers and professionals in the fields of building science, social science, organizational behavior, workplace design, and facility management.”



Introducing: Indoorology

THE SOLUTION TO THE CORPORATE REAL ESTATE DILEMMA

The key to well-designed, efficient, and productive offices lays in closing the gap between guessing and knowing what people do and how they work. This is essential to moving corporate real estate from arbitrary to data driven.

Removing the guesswork from office planning is found in the field of what we at InnerSpace call **Indoorology**.

Indoorology is the data-driven study of our behaviors and tendencies in the indoor world. Like other sciences, it replaces what we *feel* with what we *know* based on objective data and repeatable processes. Indoorology helps us understand our interaction with indoor spaces and informs the design of solutions to perfect our indoor experience.

Understanding behaviors indoors

The indoors is a finite resource. To make the most of these spaces, we must adapt them to the ever-changing ways in which we use them. And to do that we must understand behaviors.

So far, measuring indoor behavior has proven tricky. There has been no reliable way to gauge how people tend to use a space. Surveys, people counters, furniture sensors, and first-hand observation all provide limited, or overly subjective information.

But now we have a new way to approach space utilization.

In the study of Indoorology we find three critical components: problem, place, and people.

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PROBLEM: COMPANIES, ORGANIZATIONS, AND INSTITUTIONS WITH A PURPOSE TO ACHIEVE.

Expanding, contracting, saving money, attracting talent, improving productivity, increasing morale, rebuilding culture... there are myriad goals when it comes to informing and resolving common hurdles in the business world.

Each of these challenges presents important considerations for businesses looking to grow and evolve.

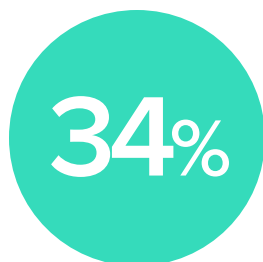
[One 2021 study](#) in the *Journal of Facilities Management* reviewed how we use technology to measure and evaluate space occupancy. Authors urged “critical thinking” about what existing measures and tools we have before adopting and creating new building occupancy measures. They suggest companies review their goals, their occupants’ behavior, and the environment overall before embarking on solving any problem to do with their space.

A shared data strategy is also key here. [A 2020 study](#) by KPMG looked at how real estate companies can evolve their data management journeys. It found that only 28% of companies surveyed were using data insights to improve tenant experience. Only a quarter said they were sharing data with tenants at all.

Clearly there is room for improvement.



of companies surveyed said they were sharing building data with tenants



said they have not yet shared data but are considering doing so.

INSIDE THE REAL ESTATE DILEMMA

Andrew Lawson is the Founder of Workspace Solutions and a Corporate Real Estate Strategist and manages large portfolios for office builds.

The number one problem he sees right now? Portfolio managers don't know whether to hold, shrink, or expand their leases because it's so hard to predict what the future of work looks like.



"Data is key here, but the challenge is, no one has a good history of acquiring or using it, so it's not always top of mind," says Andrew.

"Guesswork can lead to costly mistakes. If you're going to start investing in building out a revised space, or giving up a long-held address, you must first know how often the space gets used, how it gets used, and by whom."

Andrew routinely recommends doing a space utilization study to get the actual data that shows if you have enough, too little, or too much off space. Doing so impacts the bottom line and employee productivity.



"Redesigning or building offices should flow from a workplace strategy backed by data," he says. "Construction must be as valuable as possible. The better we understand who the users are, the better our design will be. Spending \$10 million on a build that doesn't meet your needs is less valuable than a \$1 million build that does."

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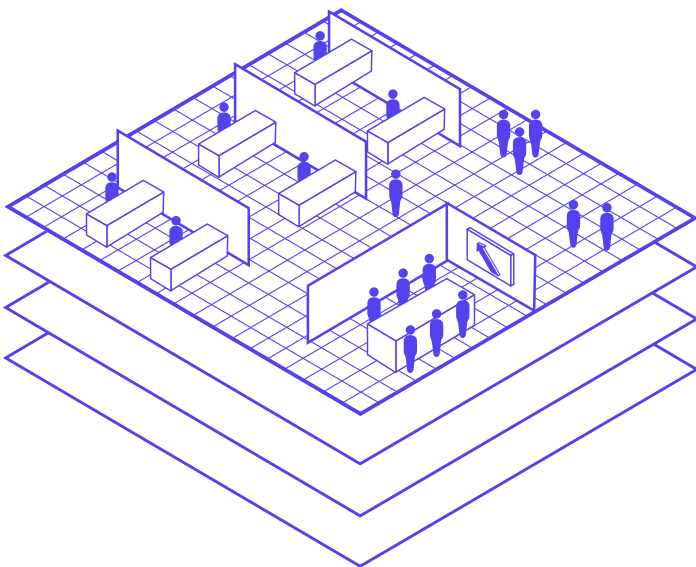
PLACE: THE LOCATIONS WHERE THAT PURPOSE IS UNDERWAY.

Where the problem resides – the space itself, its configuration, resources, functions, and feel – are crucial factors, especially in the hybrid work era.

How much time do employees spend on or offsite? Which teams are they? What teams are they on? Do closed offices still make sense, or is an emphasis on collaborative space a more practice approach? Understanding how to configure multiple workplaces to address evolving needs is a key benefit of Indoorology.

A study in the [*Journal of Corporate Real Estate*](#) found a disconnect between what many corporate real estate executives think they need, where they think they are, and where they truly are when space metrics are based on actuals, and not on targets.

Given that [most U.S. occupiers exceed the BOMA international density recommendation of 225 sq ft per person](#), we propose that Indoorology offers an important tool to right-size office configurations and account for hybrid work preferences.



Most US occupiers are above the BOMA international density recommendation of

255 sqft/person

03/

PEOPLE: THOSE WHO WORK TO ACHIEVE THE ORGANIZATION'S PURPOSE.

Your employees – who exist within and use the space – are key to success. This is where Indoorology truly shines: with a deep analysis of behavior patterns of real humans in the workplace.

Indoorology data is objective of the emotions and politics often present in other forms of office performance assessment.

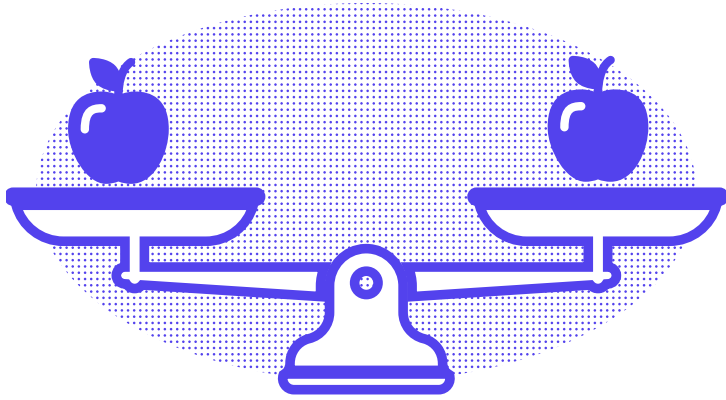
Surveys, polls, or interviews can make it hard to distinguish fact from fiction when evaluating spaces and resources. Take corner offices, those with doors that shut, oversized meeting rooms, access to natural light, private spaces — are these nice-to-haves (for status/hierarchy purposes) or must-haves? Is a team's claim to space legitimate and necessary, or traditional and entrenched?

By starting with objective, quantitative data that provides a baseline truth, companies can then delve more deeply into “why” with more qualitative exploration.

For example, Indoorology may reveal patterns that imply some teams are better off with assigned neighborhoods,

or that some seek out greater visual or acoustic privacy. There may be teams that gravitate to open-ended, collaborative spaces whereas others remain at assigned seating without much interaction at all.

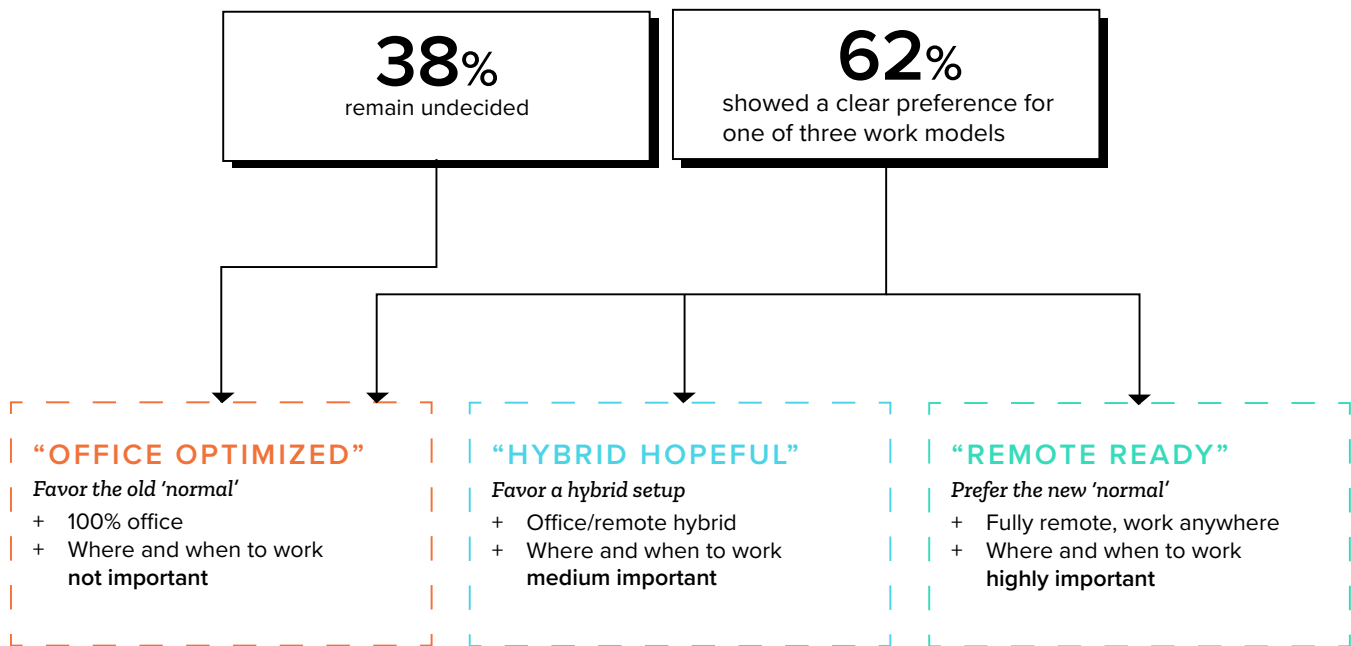
Office resourcing can be a delicate matter as many studies have shown over time. In *Administrative Science Quarterly*, an author explored why some employees perceived their identity and value were threatened after a move to unassigned seating. It found that employees felt this way because such work environments limited their ability to affirm what makes them distinctive. Thus, we can see how important office layouts can be for feelings of self-worth.



Without data, you compare only “apples to apples.” This can disguise the varying tendencies of different employees. With data, you can understand the “apples to oranges” nature of your teams.

According to a [recent study by EY](#), flexibility is now a key factor in recruitment strategies. Finding the balance of where and when to work while considering employee preferences – at a granular level – is crucial to attracting and retaining top talent.

By viewing your office through the lens of Indoorology, the picture emerges of how corporate real estate can best serve the needs of employees – by supporting productivity, strengthening morale, and rebuilding a sense of place.



INSIDE THE PEOPLE DILEMMA

Sara Shamdani is a Socio-Political Scientist and Co-Founder of Parable Conflict Solutions, which uses collaborative problem-solving to resolve workplace discord.

She says hybrid work models have caused concern by employees about the inequity of remote vs on-site staff. The expense and time spent commuting to the office is causing workplace conflict. Meanwhile, offices that are the same – now emptier and less vibrant than they once were – can elicit grief and sadness in employees.



“These are enormous times of change and employers are under a tremendous amount of pressure to make this work,” Sara says. “There is an absolute need – and desire – to make the new workplace as accessible for employees as possible to help offset the instability people are feeling and the erosion of a sense of place.”

Decisions on office changes must be made collaboratively, Sara says, so tension among employees can be replaced with empowerment, knowing that the spaces they expect and the resources they need will be there. Rather than unilateral decisions that risk dampening morale and productivity, employers must know how their corporate office space is being used each day – and for that, they need help.



“Having the most possible information is crucial at a time when we have a knowledge deficit around the hybrid office and an inability to predict what happens next,” Sara says. “Companies need to fill the gap with data, revisit the data, continue to measure change, and make sure there is a clear channel of communication between employer and employee.”

Understanding people’s behavior is essential during periods of change, so that office space serves the preferences of teams (quiet, professional, few interruptions vs. open, loud, collaborative) and the personalities of team members.



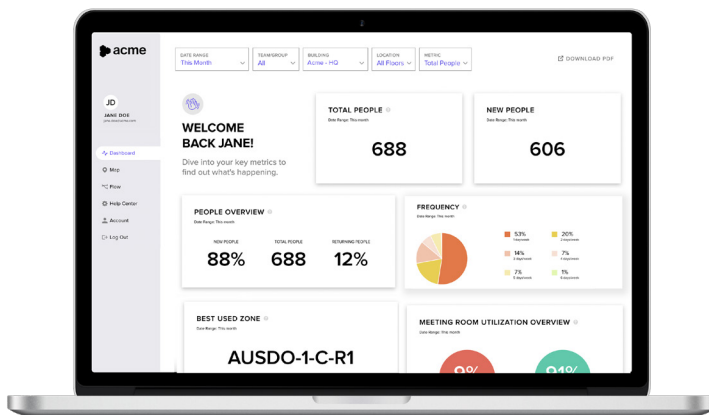
“It’s very important to be gathering data to shed light on its evolution, guide how it can be utilized, and how it can better serve the needs of the people using it,” she says.

TECHNOLOGY IS VITAL TO STUDY INDOOROLOGY

“The biggest driver of office construction costs is how many rooms you build, risking too many or too few. If your requirements aren’t reflective of people’s needs, you can’t accurately build out your space. Good data is crucial to good expense management.” – Andrew Lawson

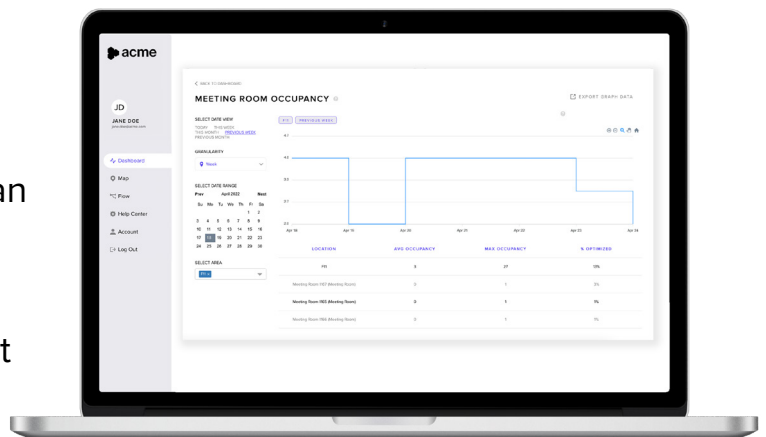
Indoorology requires technology to capture the data that shows how people are using an indoor space over time.

The InnerSpace platform does so by anonymously tracking smart devices or asset tags inside a building. Using existing Wi-Fi access points, the platform is quick to deploy, secure, and scalable across large spaces. It involves little to no hardware installation and is accurate within 1.8M, 90% of the time.



We know that most companies do not have data scientists on staff. That’s why we made our inTELLO dashboard user-friendly enough that anyone can understand what the data is showing.

Days, weeks, months, years of measurement data is presented visually as simple cards that answer common questions about space usage. Insights can be uncovered at-a-glance for immediate answers or used retrospectively by reviewing detailed charts and graphs that show historical data over time.



INSTEAD OF COUNTING PEOPLE IN A SPACE, INDOOROLOGY'S SPATIAL INTELLIGENCE ASKS:

Which team was there? How did they get there? How long did they stay? Where did they go next? How often do they return? What are the behaviors of employees in conference rooms, floors, zones, or entire buildings?

The Indoorology Method

Not sure where to start your Indoorology journey? InnerSpace has compiled this simple method based on its work with Fortune 1000 companies around the world:

- 1. Identify the problem you'd like to solve.** What decision do you want to make that needs more data? What data do you already have? Start with a hypothesis to confirm or disprove with a specific timeframe.
- 2. Confirm the technology solution that provides the most complete set of metrics.** People-counting solutions alone are not enough, so be sure to compare technology partners.
- 3. Configure the Indoorology solution across your real estate footprint,** matching floorplans to smartphones, sensors, and other Wi-Fi input devices.
- 4. Organize the data to start better understanding your space.** Once the system is operational, be sure to examine the data closely. InnerSpace's inTELLO Analytics platform provides data and visualization that are easy to use and interpret what's happening in your buildings.
- 5. Validate or disprove your hypothesis based on the actual data.** As you draw conclusions for the original problem, be sure to capture unrelated insights for possible future action.
- 6. Report and socialize findings beyond the core team to back up business decisions with real data.** As other departments start to understand the capabilities of Indoorology, there will inevitably be new use cases and applications in your organization.



BEST USED ZONE 
Date Range: This month

DATE RANGE
this month 

TEAM/GROUP
Legal Total 

BUILDING
Acme - Austin Domain Tower 

LOCATION
All Floors 

Collective IQ Room

INDOOROLGY IN ACTION

Over a three-month period in 2022, one major InnerSpace client practiced Indoorology in their corporate headquarters in a bid to gain a clear picture of how their 1,400+ employees on over 30 different teams were using the space since the return-to-office began in earnest.

By capturing and analyzing metrics throughout the office, from 7 a.m. to 6 p.m., the company discerned how, where and when their employees preferred to work. These actionable findings included new information regarding:

- + How often employees visited the office, for how long, and avg number in-office each day
- + What percentage of the space was used compared to what it could accommodate
- + What regions of the office were busiest, and at what times

- + The tendencies of each team in terms of where they spent the most time, how they moved through the office, levels of collaboration, and more.
- + The most-used zones in the office – overall and by capacity
- + What the zones were being used for (e.g., collaboration, focus)
- + How and when employees moved within and between office zones

Indoorology provided fresh insights for our client. By understanding the preferences of employees, our client can now decide where to plan resources, how to redesign meeting rooms, and how to customize working environments for each unique team.

In short, this global leader can make the most of every square foot.

FINAL THOUGHTS

It is hard to fly a plane – or direct a company – in the fog. Corporate real estate, in the era of hybrid workstyles, is uncertain. We need access to data to chart a steady course.

Indoorology accounts for space that evolves over time, according to people's traditional and emerging behaviors and interactions. Space is a social environment and companies can understand how employees are using it by deploying an always-on measurement tool that returns key insights on how people engage within their workplaces to feel comfortable and be productive.

An office does shape people's behavior. But people's behavior also shapes the space.

The data is valuable now to figure out the modern workplace, and essential going forward to operate it effectively. Offices must be examined and reexamined to see if the space is meeting its intended purpose or even evolving into new purposes, through a method of ongoing feedback.

Quantitative data is easy to share across disciplines such as office design, facility management, building science, architects, and others responsible for optimizing the office experience. As the CBE study pointed out, specialists in each of these fields speak different languages and focus on very specialized aspects of work, so knowledge is not jointly held. Indoorology can provide a starting point for a more holistic approach to efficient and effective space management.

Indoorology makes it possible to unite these fields under a valuable umbrella of insights, ultimately helping companies pin down the many needs they must first understand, then consider, as they transform or validate any real estate project.

ABOUT INNERSPACE

[InnerSpace](#) helps people make the best use of a finite and costly resource: our indoor spaces.

Our space utilization and analytics platform that provides advanced spatial intelligence for companies with large real estate footprints. Our technology uses existing Wi-Fi infrastructure to analyze anonymous signals from smart devices and translate them into actionable insights about how and where we spend our time indoors.

This reliable and insightful data about our behavior indoors is easily accessible to people who can design solutions to perfect our indoor experiences.

GET A DEMO

ABOUT OUR EXPERTS



Andrew Lawson is the Founder of Workspace Solutions and a Corporate Real Estate Strategist. He has ten years of managing large portfolios for office builds and executing large scale enterprise corporate real estate projects for leading organizations in Canada.



Sara Shamdani is a Socio-Political Scientist and Co-Founder of Parable Conflict Solutions, which uses collaborative problem-solving to resolve workplace discord. She combines her drive for theory and research with a warm and genuine interest in the people she is working with.