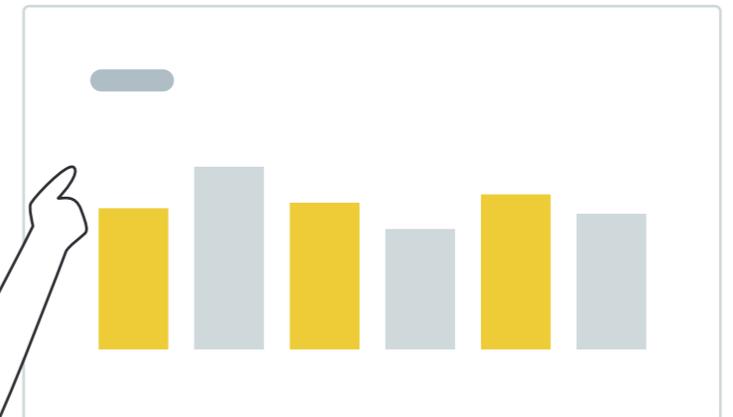
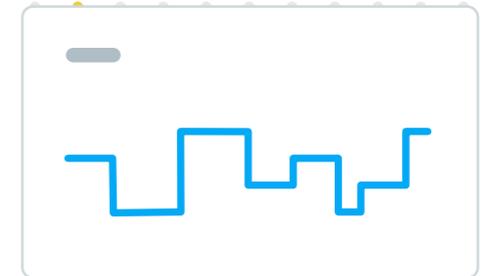
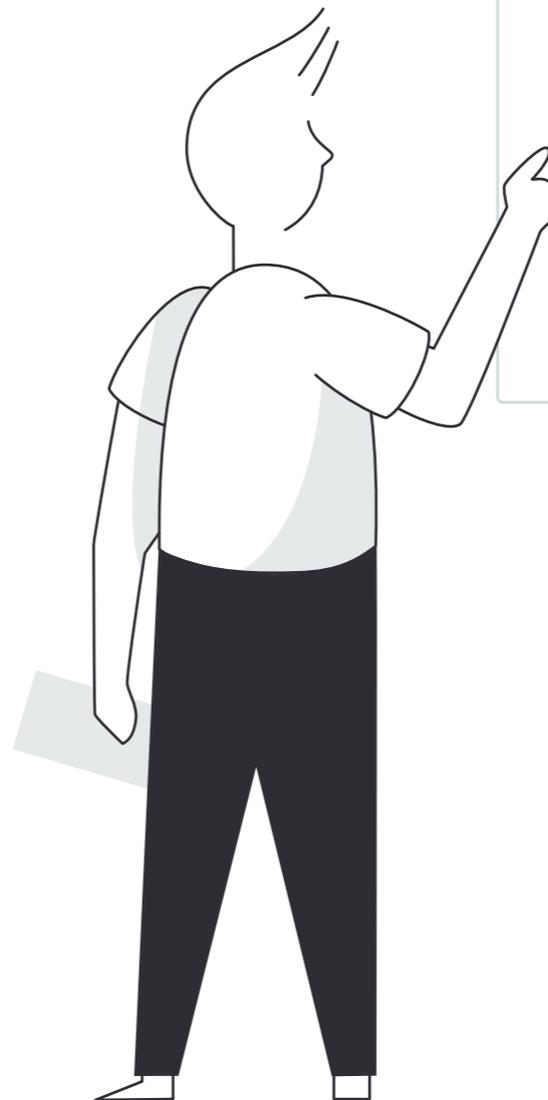


# Shaping the future of your workplace

Best practice guide on creating a data led workplace strategy



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# Message from Yodit Stanton, CEO & Founder at OpenSensors

## **The pandemic has forced a reckoning over where and how we work**

COVID19's work from home mandate finally proved that the office is not the only place for effective work. Research from [PWC](#) shows that most employees are just as productive at home. Now, many employees want a blend of remote and office work; and employers are rethinking the role and purpose of what the office needs to be.

## **The challenge: defining the purpose and setup of your spaces**

Before the pandemic, offices were one of the highest overall company expenses, yet significantly underutilised with peak occupancy maxing at 50%. Employers effectively wasted more than 50% of their office budgets while not serving their team needs.

Now, the question is, what is the purpose and ideal workplace set up for your organisation? One that optimises time, space, costs, energy and efficiency, while being a healthy, safe and productive environment for all?



*Now is the start of a new era of the data-driven office to help companies and employees find the right setup and balance.”*

**Yodit Stanton**

CEO & Founder of [OpenSensors](#)

## The truth is the future of the workplace isn't one size fits all

At [OpenSensors](#), we know from working with large multinational organisations and examining research that there's no simple answer to the future of work. It's a complex and complicated process to figure out the right approach for each company.

We help large organisations use workplace data - like [space occupancy](#), utilisation, noise and environmental factors such as air quality - to help create healthier, more efficient and effective workspaces. This data helps companies:

- › Understand how space is being used
- › Improve air quality and wellbeing productivity
- › Lower the probability of virus transmission with better temperature and humidity management, and much more.

### Focusing on needs

Across our experience, we realise there are some proven approaches and solutions to help you make a fit for purpose workplace. And it starts by understanding your user needs and tailoring solutions to meet them.

That's why we have put together this guide, to help you find out what your team needs, use data to inform your decisions and find the right fit for your organisation and team dynamics.

Now is the time to build for today and tomorrow, to truly understand what your teams and companies need to be the best.

**There's no  
simple answer  
to the future  
of work.**

# Executive summary

A summary of data driven solutions for your workplace.

As employees make a return to the office following COVID19 lockdown restrictions, companies are forced to re-evaluate old ways of operations. The office needs to evolve due to health protocols and emerging work trends that are here to stay. In order to craft fitting and resilient workplace and real estate strategies, HR, Facilities and Leadership teams are turning to data to provide answers for a growing number of questions.

**Safety:** As more employees fill in the workspace, one crucial concern is health. Guaranteeing safety for the return to the office requires monitoring the number of employees in the office at all times in order to comply with stringent health protocols.

With the available technology like [occupancy sensors](#) and [booking engines](#) to help keep track of who, and when employees are in the office, this job becomes much simpler. In the case of an outbreak, the reports can be used to provide a clear overview of employees at work and aid in the track and trace process.

**Data:** Companies now face the question on how to best ensure the health of employees. Making decisions for office spaces that can best realise this will require reliable data. Create a safer work environment by using [environmental sensors](#) that measure and control temperature, humidity and CO2 levels against recommended benchmarks.

**Employee needs:** Among the challenges that will arise in adapting to a different office setting are corresponding employee challenges. Companies will have to create a system that can make this transition easy for their employees. [Booking engines](#) not only ensure that physical distancing protocols are met but enable employees to book rooms according to their needs in advance, and enable businesses to make adjustments based on what the needs of employees look like.

**Occupancy sensors:** Restrictions may be easing up currently, but the overall situation is still far from stable with new insights changing health protocols regularly. Companies are faced with the difficulty of keeping in stride with changing environments. By using sensors that help generate real time [data on occupancy](#), decisions can be made faster and easier.

**Real estate strategies:** As the office space evolves so will real estate strategies. Businesses need to answer difficult questions like whether to increase or decrease their office space. [Occupancy sensors](#) which can generate reports on utilisation are an ideal tool for assessing the use of space and crafting a fitting and cost effective strategy.

**As the  
office space  
evolves so will  
real estate  
strategies.**

# Evolution of the workplace

The workplace has come a long way since its initial inception by the Romans. From cubicles to open spaces, workplace strategies have morphed continuously to keep up with changing needs. Today, it steps into another lifecycle with increasing understanding of the long term impact of the COVID19 pandemic, which challenges our evaluation of space requirements and workplace interactions.

Remote working, once eschewed for fear of low productivity and inefficiency, became the only way to operate as nations imposed strict lockdown regulations worldwide.

With these measures now being lifted and the slow return to the office imminent, this has opened the path for a hybrid work environment that merges employee autonomy with collaboration. With fewer people in the office, it is easier to maintain physical distancing protocols and follow up on track and trace in case of an outbreak.

The return to the office needs to accommodate not only these elements but to synchronise the evolving tasks of employees.

*Create a holistic vision for the future way of working that is supported from the top and integrates HR, IT, Real Estate, Facilities and Communication is essential.*

**Louis Lhoest**

Managing Partner at Veldhoen  
+ Company International

# Phases of return to the office

The pandemic and subsequent stages of lockdown turned many jobs to remote work overnight. In the US alone, nearly a quarter of office workers switched to working from home, while half of the entire population in the UK had done some work from home because of the pandemic. Surveys conducted during this time indicated improvements in mental well being and motivation from employees.

However, despite the initial eager attitude that accompanied working from home, mounting challenges from employees have turned the tide on remote working, yet again.

Inability to access vital resources and tools, lack of specific and designated places that the office had afforded, as well as the erasure of work life balance became the main drivers behind this.

**Hybrid working will become a natural evolution** of the workplace as businesses reopen offices.

As large numbers of employees sought to access the office, workplace managers will encounter numerous challenges to

manage a hybrid work environment, including:

- › Balancing space capacity and social distancing
- › Managing work rotations and phasing groups of employees return
- › Ensuring the needs of employees are met - giving them the tools and spaces to work productively
- › To ensure employee safety, organisations need a way to monitor and manage who, how and when people are in the office
- › Ensuring the office remains fit for purpose

Evidently, **the reliance on technology will be critical** to aid these complexities. It's more important than ever before to use data to make [evidence based decisions](#) in your strategies.

The complexities of these changes can be summarised in three phases.

## 1. Essential workers

Less than 5% of the workforce went into the office during the first lockdown. The low numbers meant each was typically assigned a personal workstation minimising safety concerns and requiring a relatively simple process of office management.

## 2. Employees encountering remote work challenges

During lockdown many employees struggled working from home due to:

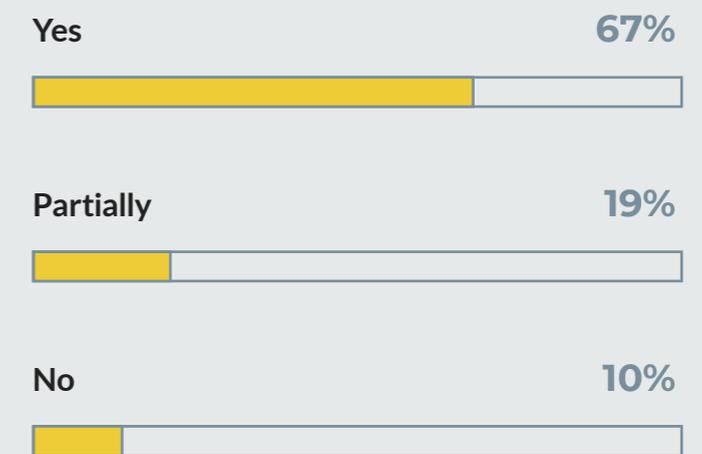
- › Lack of privacy and quiet spaces to do their work
- › Limited access to wifi or technology
- › Mental health affected due to lack of socialising
- › Childcare responsibilities which resulted in interruptions during work and the added responsibility of supervising school work due to the closure of schools

As lockdown eased, they were eager to return to the office and needed some form of normality.

Organisations were able to introduce internal systems with relative ease to coordinate their return. Simple track and trace as well as physical distancing measures were manageable.

### During COVID19, did your offices close during lockdown?

67% of offices closed during the first lockdown, with 29% partially or remained opened. The impact and business strain was minimal.



OpenSensors

Return to work survey 2021  
of over 1000 respondents

### 3. Employees choosing to return on a rotation basis

As an increasing number of employees return to the office following less stringent health requirements, businesses are now facing more complex organisational challenges. This will become even more complex with hybrid working and as it becomes business as usual.

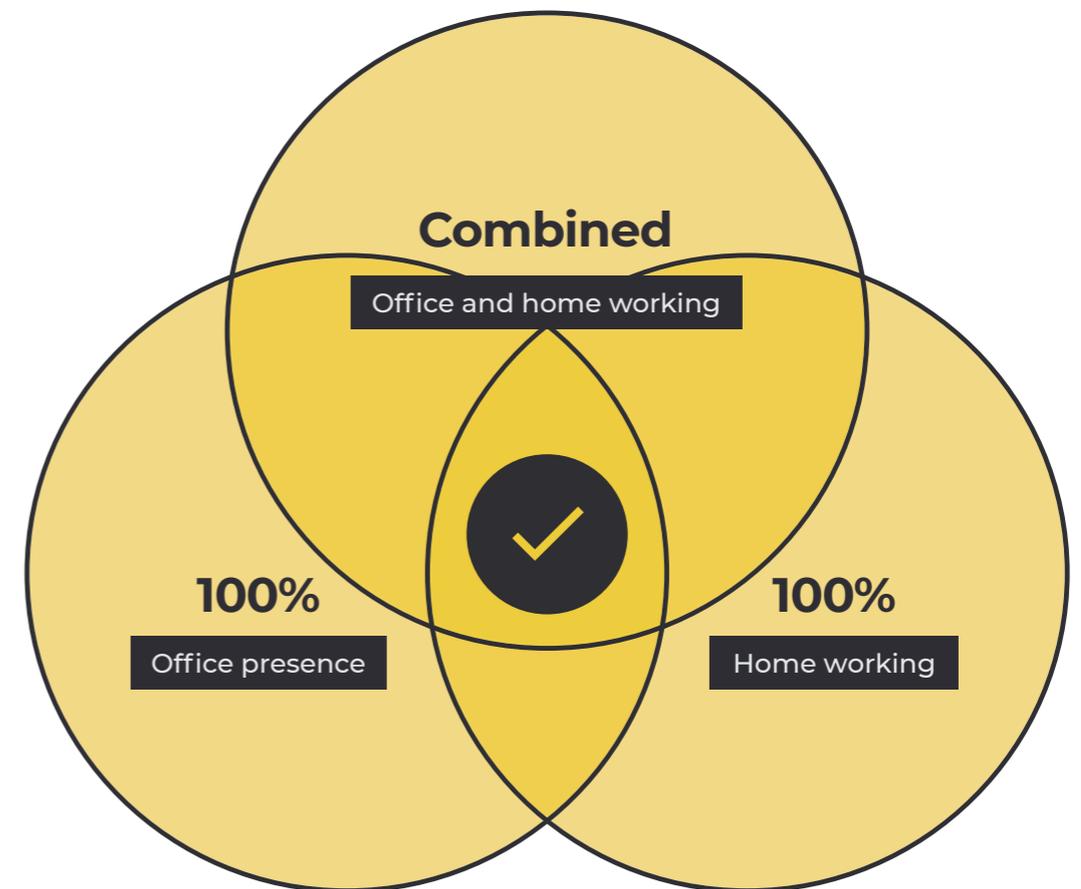
Allocating space for returning employees in line with health protocols, maintaining physical distancing and scheduling work and sanitation rotations now require a more precise calculation of workplace operations.

#### Blended workstyles

Data from the first two lockdowns has shown us that there will be a small percentage of the working population who will want to work 100% of the time either in the office or remotely.

Then there are those who will want to work in the office 2-3 days a week and the remainder of the time from home. This is where data will be critical to understand what impacts this has on the business as behaviours will change how workspaces or the office will be used.

#### Blended workstyles



## Mobility profiles

Mobility profiles will change considerably with differing work patterns, rotations and usage of the office as the workplace transitions into hybrid working.

Much consideration needs to be given to these changes and how it will change the dynamic and purpose of the office with an emphasis on:

- › How much additional semi fixed workspaces are needed for those who go into the office 2-3 days a week?
- › How much fixed spaces are actually needed for essential workers?
- › How many free desks can be made available for those going into the office 1 day a week or fortnight?

Before the pandemic, most businesses had some form of blended workstyles with a small percentage of the workforce already mobile or semi mobile. Managing space capacity was not as complex.

However, this will become even more problematic as most move towards hybrid working and the added safety measures required. Without the aid of technology and data to manage

mobile profiles or space capacity, Workplace and Facility teams will struggle.

## Safety

To ensure employee safety, organisations need to monitor and manage who, how and when people are in the office. Planning this phase of return to the office early has become top priority as increasing numbers of employees wanting to return on a rotation basis has led to a higher demand on time.

## Leveraging data to make decisions

Organisations are now leaning towards leveraging [workplace data](#), such as occupancy and booking insights, to manage work rotations and keep within social distancing occupancy limits.

There is a lot that can be learned from the global return to the office to ensure this phase runs smoothly and will evolve to form a central part of managing [hybrid working environments](#) that will become business as usual beyond COVID19.

## The role of the office

It is not just employees that see the benefits in returning to the office. Studies reveal that executives also value the office for productivity, collaboration and the growth of company culture.

# Use cases and how our solutions help

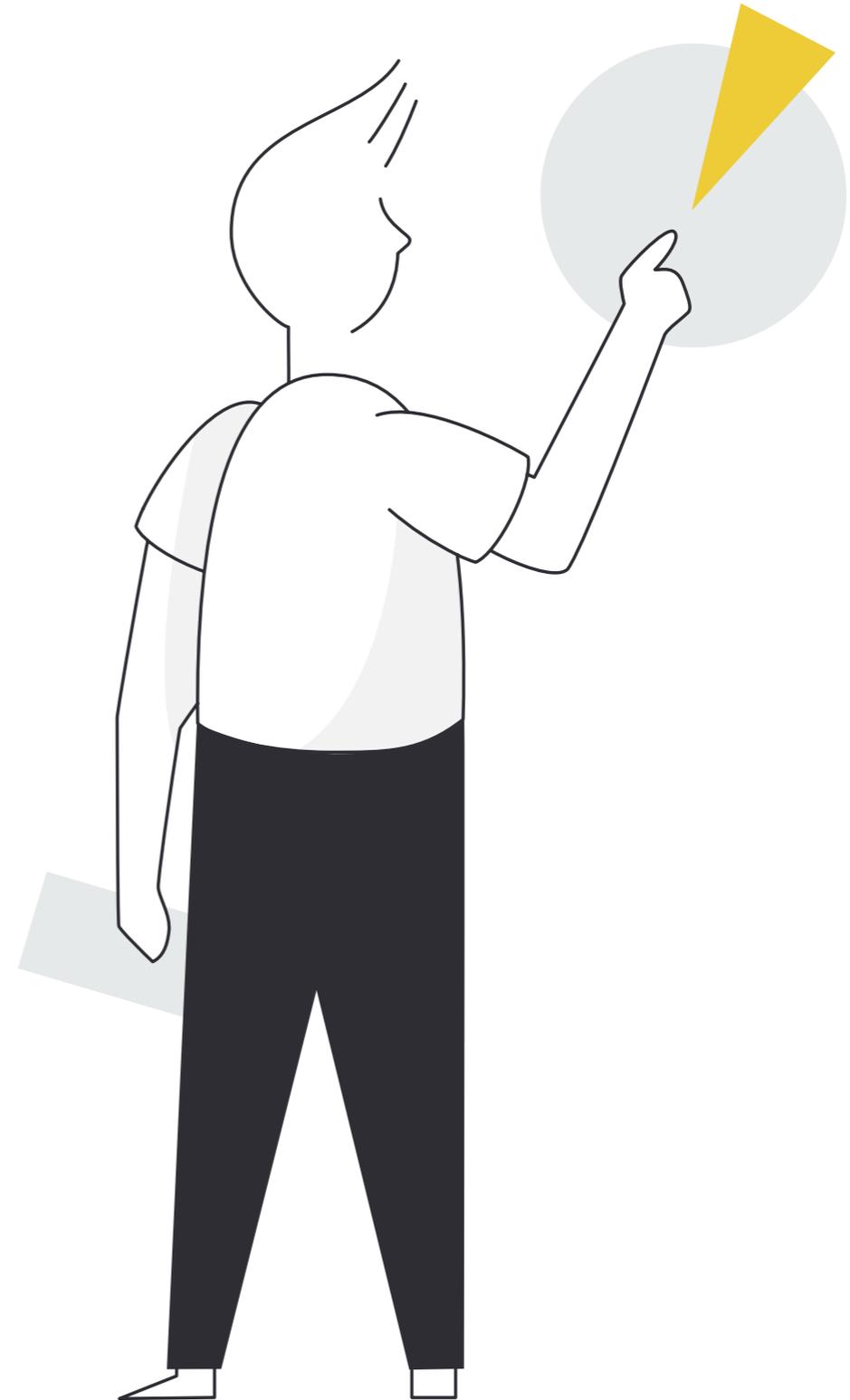
## 1. Managing space capacity

**Solution:** [Space occupancy software](#) can help provide a bird's eye view of what spaces are overcrowded or underused. In addition, see how workspaces are utilised.

In tandem with [booking engines](#), this can also allow for planning work scheduled ahead of time.

**Benefits:** This can guide Senior Leadership teams to keep the number of employees in line with health regulations:

- › Ensure that physical distancing measures are being followed
- › Support ease of track and trace processes
- › Coordinate cleaning teams efficiently



## 2. Adjusting the capacity of the office

**Solution:** Leverage [space occupancy data](#) to see in real time what workspaces may or may not be in use.

**Benefits:** This information can be used to identify workspaces that could be used as an overflow buffer during peak times.

- › Spaces with no usage can be allocated as temporary hot desks during peak occupancy in order to optimise space
- › Management can compare the utilisation rates of fixed vs. hot desk space and adjust the ratio balance
- › Mobility reports can be used to help influence the best way to reconfigure workspaces accordingly

## 3. Synchronise rotation of employees in the office

**Solution:** With employees back in the office, [desk booking engines](#) can fill in the high level of organisation required to keep track of the changing number of employees for a smoother experience.

**Benefits:** With the real time data booking engines provide, businesses can coordinate the allowed number of people in the office:

- › Easily relay communication on office use between different departments
- › Adjust the capacity of the office space based on a rotation
- › Empower employees to book space in line with their individual requirements and tasks.

## 4. Efficient use of space

**Solution:** Use [sensor technology](#) to gather floor and desk space occupancy data for a complete picture of utilisation rates across all workspaces. This is inexpensive compared to traditional manual surveys.

**Benefits:** This insight can provide Leadership teams with benchmark data on average and peak occupancy rates to make informed decisions on how space is interacted with, in order to ensure it remains relevant.

## 5. Manage track and trace

**Solution:** Using a desk booking engine facilitates track and trace process through updated reports on which employees were using the office space in case of an outbreak.

**Benefits:** With the location specific metrics desk booking engines can provide, businesses can keep track of who was where

in the office, securing employee well being as well as business continuity.

## 6. Coordinating cleaning of spaces

**Solution:** Automated occupancy and utilisation reports avail data on what workspaces have been used and vacated.

**Benefits:** Cleaning can be scheduled throughout the day. High touch areas can be demarcated for regular cleaning and low touch areas can be scheduled at the end of the work day.

## 7. Improve employee experience

**Solution:** [Booking engines](#) will enable employees to see if and what spaces are available; and auto check in when they are at their seats.

**Benefits:** This is especially valuable for employees that commute far to get to the office.

- › Using the insight for what days are busy in the office, employees can plan ahead for collaborative or focused work in the office
- › They can book with ease, auto check in, cancel or change their booking with minimal effort



## 8. Better conversations with leaders

**Solution:** Use [utilisation comparisons](#) to shift conversations from ‘how many desks do you need’ to ‘how can you use your space more productively’.

**Benefits:** With more data backed evidence in hand you can have better conversations with Leadership teams, giving you the negotiating power to:

- › Add value
- › Help align goals and budgets
- › Collaboratively work on plans to effectively utilise space as changes will impact occupancy and utilisation rates

## 9. Craft real estate strategy

**Solution:** Use [sensor technology](#) to gather floor and desk space occupancy data to have a complete picture of utilisation rates across all workspaces.

**Benefits:** Have benchmark data on average and peak occupancy rates to make informed decisions on how to efficiently use the available space.

This can aid leaders in assessing whether to downsize or upgrade their office space and develop real estate strategies based on the needs of their employees.

Business leaders can monitor trends and build up a bank of data to identify patterns of usage as well as forecast space capacity for new headcount.

# Hybrid working is here to stay

The sudden shift in global working culture has brought along with it a myriad of questions regarding the role of the workplace. Multiple surveys conducted since have revealed overarching patterns that point to a hybrid work setting that accommodates emerging employee needs.

While a significant number of employees have found a better work life balance in remote work, data shows many are looking forward to the return as it affords an optimal environment for productivity and social value.

Hybrid work may largely be a result of the restrictions following the pandemic but the flexibility it offers has made it invaluable to employees. It combines employee's flexibility in choosing when, where and how they work, a stronger work-home balance and the conducive and collaborative aspect of the office space.



*Organisations that offer employees flexibility over when, where and how much they work, see 55% of their work force as high performers*

Gartner 2021

# Rotation based working and a phased approach

Looking at the success of how other parts of the world have returned employees to the office, it is clear that the nature of work has changed and remote work forms part of a new blended way of working.

## Steps to transition employees return to the office

### 1. Leverage workplace data

Understand how workspaces are utilised. Build profiles associated with certain roles and requirements in terms of space and technology.

### 2. Reassess skills and roles

Reassess roles, skills, preferences and people's ability to work remotely and in the office when considering who to bring back in each phase.

### 3. Adopt technology

Facilitate productivity from home and in the office. In the UK, employees want to work 2-3 days in the office.

### 4. Integrate blended work styles

Incorporate remote work as standard, such as Singapore's occupancy cap and New Zealand's shift patterns.

Would you like to have the option to work remotely?



87% of those surveyed would prefer to be able to work remotely when offices reopen. Similarly, employers have witnessed improved productivity and reduced cost in a hybrid work setting.

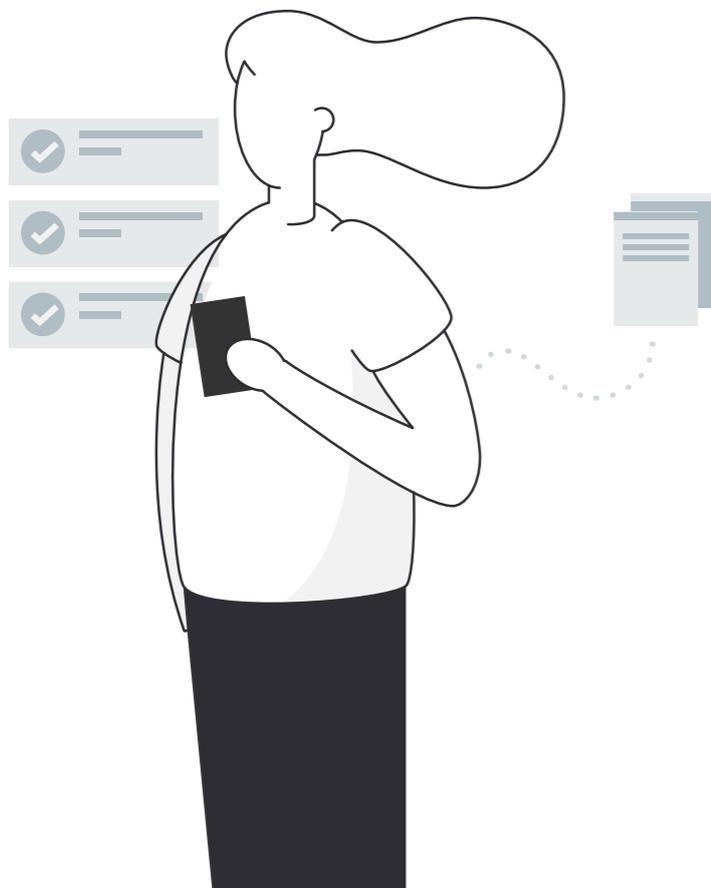
OpenSensors  
Return to work survey 2021  
of over 1000 respondents

# Activity based working

The pursuit of a fitting workplace strategy for this emerging trend has now brought Activity based work (ABW) back to the limelight.

With the pandemic and the multitude of health regulations that came subsequently, ABW has also become ideal for proper utilisation of space and for enhancing the potential for inter-team collaboration.

Designing an activity based workspace is increasingly becoming the desired aspiration as a new digitally connected generation is driving change in the workforce, but it is also important to consider that ABW may not be suitable for every organisation.



**ABW is designed to allow employees to choose the environment best suited for their tasks and provide a fluid working environment that can be routinely tweaked to improve its efficiency.**

## Employee wellbeing and productivity

 **21%** ↑

21% increase in the number of high performers compared to organisations that don't provide that same degree of support to their employees.

 **20%** ↑

20% increase in the number of employees reporting better mental and physical health.

Gartner

Reimagine HR employee survey 2020

# Re-evaluating your workplace strategy

Organisations now find themselves in a position in which they need to provide a workplace which is not only resilient to disasters, but caters to the varying work styles and preferences of employees.

## What you need to consider

### Agility

How to create a workplace that can react quickly with ease and minimise business risks.

### Flexibility

Provide choice to employees to choose the right set up and workspaces to perform their tasks.

### Security

Instilling employee confidence by providing the support they need to be productive.

### Technology

Enable employees with the necessary tools, skills and collaboration to perform in any work setting.

### Changing behaviour

Recognise that work patterns and expectations will change and there will be a need to evolve to adapt.

# How to get started

## 1. Purpose

Clearly define and understand the need for change and what support employees need.

## 2. Scope

Translate goals into tactical steps and take into account how technology, communication, people and the physical workplace will be affected.

## 3. Solution

Understand the impact the chosen solution will have to deliver in order to address these effects.

## 4. Implementation

Understand how and when solutions will be implemented to best deliver the results set out in your workplace strategy.

Businesses that gather and leverage data to make informed decisions will reap the benefits of their preparation in more ways than one.

## Retaining talent

Businesses need to recognise that employee expectations have changed and the purpose of the office needs to evolve in order to remain competitive and attractive. Remote work has proven to be successful and employees are no longer interested in returning to an environment where this is not an option.

Organisations that accommodate and prepare for this have a hiring advantage. Not adapting risks losing existing talent, narrowing the talent pool available and serves as a negative differentiator at the hiring process. Keeping employee experience central to hybrid working allows organisations to keep their finger on the pulse of employee sentiment and have systems in place to react accordingly.

## Enhance employee office experience

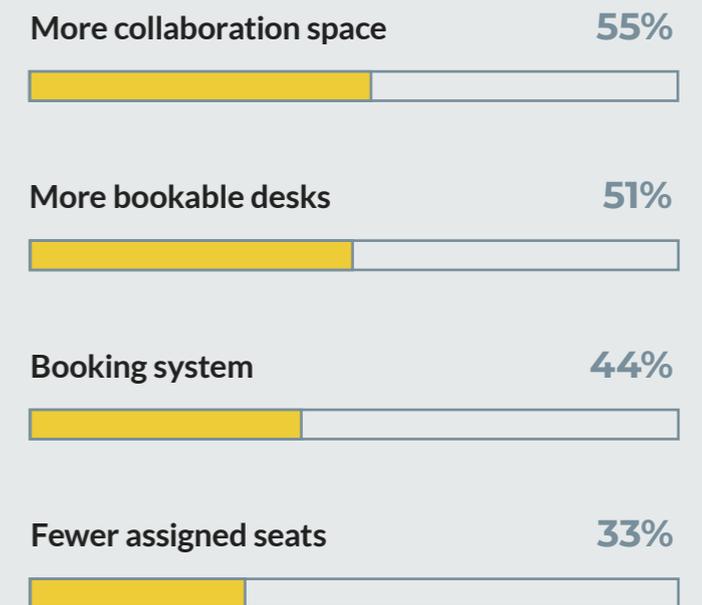
Employees can take advantage of [booking systems](#) to navigate the office smoothly and book spaces that best suit their needs. Filtering seat availability by floor or department, recommending spaces based on previous preferences and notifying users of bookings or cancellation make booking engines optimal to plan working weeks.

## Integrate a booking system

[Booking systems](#) are designed to respond to the evolving needs of a hybrid work environment. Businesses can plan for the return to the office by utilising booking engines to gather data and understand how office space is being occupied.

## What changes to the workplace do you expect to see?

The purpose of the office is changing and to provide employees confidence to return to a safe office environment, there are high expectations for organisations to readapt office space to accommodate new ways of working.



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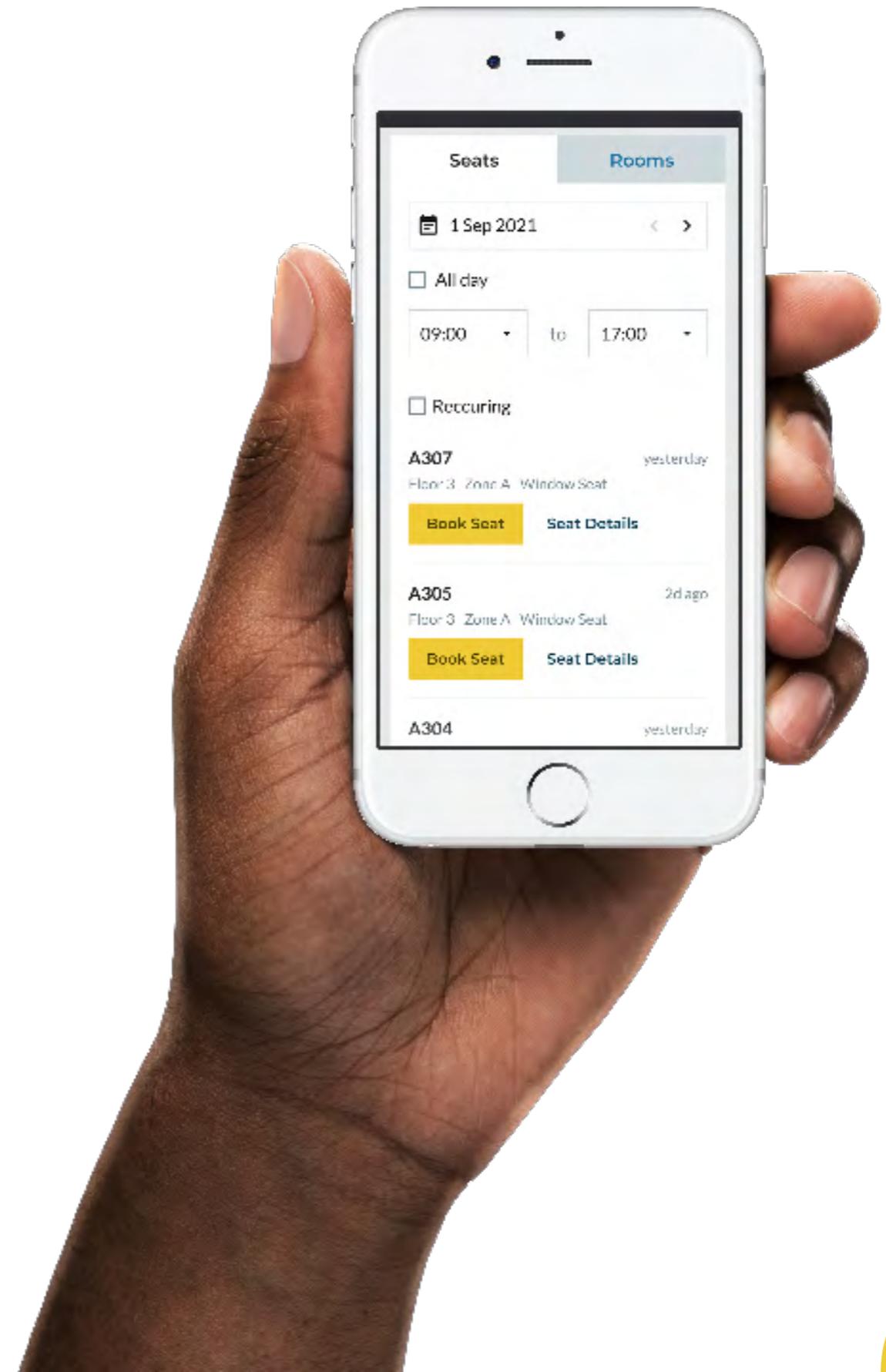
## Provide choice of where to work

Utilising booking software will:

- › Aid work rotations
- › Enable employees to book rooms fit for the task at hand
- › Make changes to the office based on what is in demand
- › Ensure physical distancing is enforced
- › Facility teams can manage cleaning teams efficiently

In addition, booking and occupancy reports can be used in track and trace protocols with a clear overview of employees at work.

While generic booking engines may be helpful in reserving workspaces, they don't necessarily reflect accurate utilisations as employees are likely to move around in a hybrid worksetting. Our [desk booking engine](#) goes one step further to pick up on actual usage through auto check in and reminders that mitigate no shows.



## Nurturing collaboration

Hybrid work environments offer the opportunity to incorporate the best of the traditional work setting, which provides ample opportunity for impromptu meetings and behind the scenes mentorships.

With employees working in shifts and remotely, businesses have struggled to recreate the social aspect of office life, central to maintaining and defining corporate culture.

The pandemic, whilst demonstrating that productivity can be maintained remotely, has increased awareness for the need of collaborative and creative spaces. This is why organisations need to ensure that they have the right spaces available for their employees to utilise.



## Building resilience

Organisations that adapt to workplace changes, build resilience over time. A hybrid work model which balances the emerging need of employees is able to evolve with changes in the workplace. It offers a:

- › Higher level of control
- › Safer work environment for employees
- › The ability to make evidence based decisions in physical workplace planning

This dovetails with a better understanding of [space utilisation](#) and long term real estate planning.

## Embracing technology

A hybrid working environment requires familiarity with the tech world. In order to foster this new work environment, IT teams will need an upgrade in user experiences to better engage users and provide more comprehensive support.

Though systems and software that enable remote working have been present for decades, companies must now move from merely tolerating its existence to embracing and enhancing it. Training employees on necessary new skills is the way to ensure that companies can keep up with the inevitable digital world.

# How to leverage workplace data

## How do organisations prepare for new ways of working?

The traditional office setup, with banks of allocated desks and designated hot desking areas, are not suited to facilitate hybrid working environments as empty space represents waste in terms of real estate spending.

Nor would traditional office environments enable teams to closely manage occupancy in order to adhere to new safety guidelines introduced as a result of the pandemic.

Health regulations also bring up questions of whether a company should downsize or increase space when offices reopen. This dovetails with costs related to maintenance, heating and cleaning.



*Leveraging office utilisation and environmental data is a way to efficiently aid office reopening and manage employees returning to work following COVID19 lockdown.*

**Yodit Stanton**

CEO & Founder of [OpenSensors](#)

# From guesswork to accuracy

## 1. Gather employee feedback

Employee surveys have revealed many gems that businesses can use to reshape their physical offices for better productivity. Sufficient desks, proper room management and conducive collaborative work spaces all influence how well employees accomplish tasks and work together.

A successful work environment will anticipate and accommodate employees' needs to focus, collaborate, and socialise.

## 2. Use sensors to gather occupancy and utilisation data

Prior to the advent of [space occupancy technology](#), employers relied on one time manual surveys to assess the workplace and its usage. As insightful as it is, data is only captured at one point in time and quickly becomes outdated.

Additionally, manual surveys are costly, time consuming and don't provide a clear enough picture to craft a fitting response for a rapidly evolving workplace.

The COVID19 pandemic has changed previous patterns of work significantly. Understanding the mobility profile of employees within the office space, and keeping up with this evolving need is critical in creating a workspace fit for purpose.

## 3. Integrate a occupancy analytics solution

A dynamic workplace strategy that responds to the current shifts at the workplace hinges on accurate and reliable data. Space occupancy data is stepping in to guide decision makers in finding out what works best for their tasks and teams as they venture into uncharted territory.

[Occupancy sensors](#) are an efficient way to gather occupancy data to analyse how building and office spaces are utilised, providing data on:

- › Average utilisation rates
- › Busy vs. off peak periods
- › Person to desk ratio
- › Meeting room size occupancy rates

## What you need to measure



### USE CASE

#### Creating a hybrid work environment

##### Measure

- › Average utilisation
- › Busy vs. of peak periods

##### Benefits:

Understand how employees are using the office and what new work behaviours are emerging in order to forecast space capacity and headcount growth.

### USE CASE

#### Re-evaluating real estate strategies

##### Measure

- › Compare utilisation rates of teams or departments
- › Compare usage of assets and workspaces
- › Mobility profiles
- › Busy vs. of peak periods

##### Benefits:

Benchmark data on average and peak utilisation rates to make evidence based decisions as to whether to downsize or upgrade office space.

Monitor trends and build up a bank of data to identify patterns of usage, understand what locations are used the least and repurpose space to cut down on real estate costs.

#### USE CASE

### Mitigate risks

#### Measure:

Combine booking and actual utilisation data for a clear view of attendance in the office.

#### Benefits:

Manage track and trace protocols efficiently in order to react quickly in case of an outbreak.

#### USE CASE

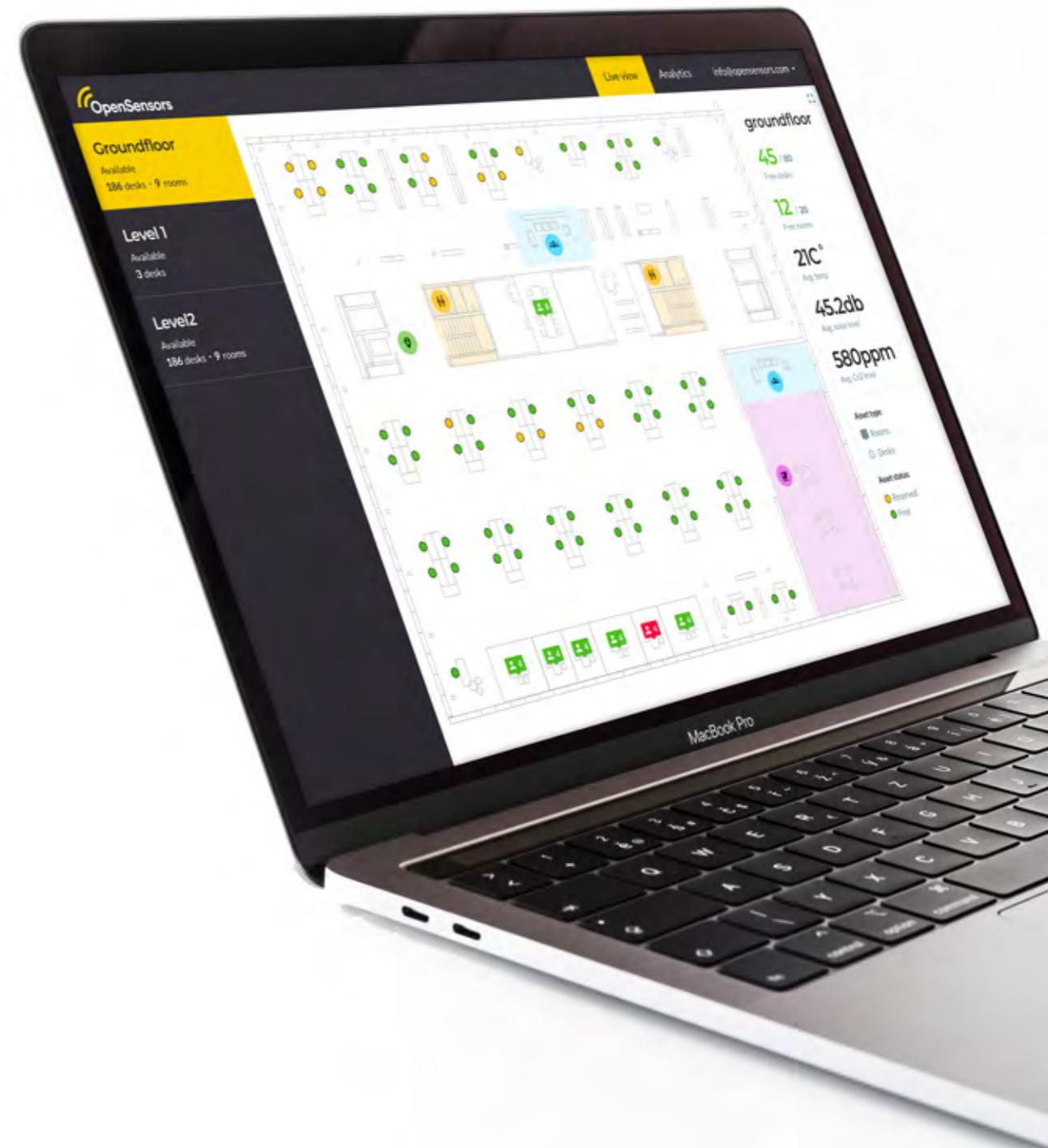
### Adjust office capacity

#### Measure:

Average footfall in open or collaboration areas by day or week

#### Benefits:

- › Ability to manage cleaning teams efficiently
- › Limit the number of people in an areas for physical distancing



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## USE CASE

### Manage workspaces efficiently

#### Measure:

Compare utilisation rates of specific workspaces or assets

#### Benefits

- › Understand how to repurpose underused spaces better
- › Insights on popular workspaces or assets can be used in future office redesigns

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## USE CASE

### Pre-plan work rotations

#### Measure:

Compare busy and off peak utilisation rates

#### Benefit:

Easily make informed decisions to avoid over capacity

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## USE CASE

### Mobility profiles

#### Measure:

Leverage [space occupancy data](#) to see in real time what workspaces may or may not be in use.

#### Benefits:

- › Influence decisions on how to reconfigure workspaces and how best to implement work rotations with mobility reports.
- › Understand how many fixed or semi fixed spaces are required for hybrid working and adjust these accordingly as more employees return to the office.
- › Identify workspaces that could be used as an overflow buffer during peak times or repurpose spaces with low usage into temporary hot desks during peak occupancy in order to optimise space.

Building and Facilities managers are installing these sensors to manage their spaces more efficiently as many businesses move towards agile working practices.

## 4. Monitor the air quality in office buildings

Indoor Air Quality (IAQ) depends on what's going on outside the building as much as what's going on inside. To optimise ventilation and filtration, you need to know what's coming in from outside. For example, it's a waste of energy to increase ventilation by circulating air from outside the building if that results in an overall increase in polluted air inside.

Equally, if you aren't accurately monitoring air quality within the building you run the risk of running HVAC systems when they're not needed.

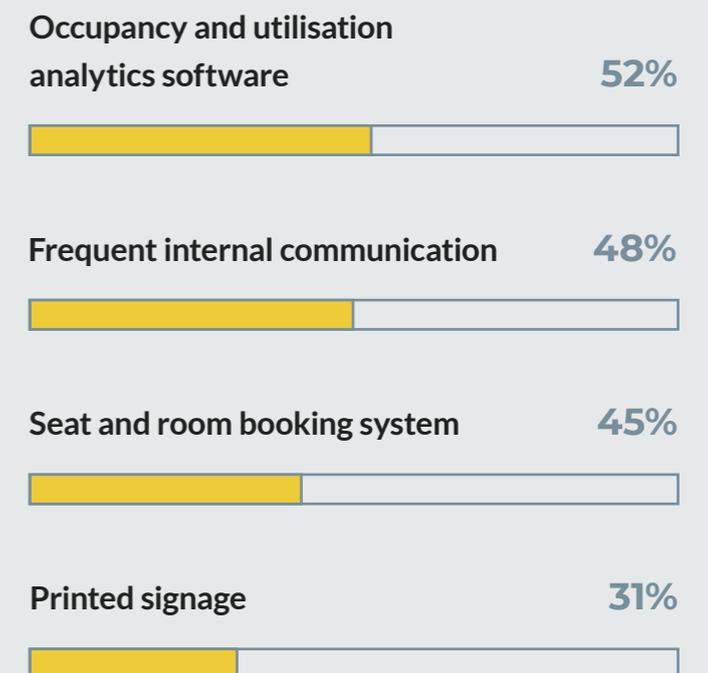
### Deploy environmental sensors

Low cost [sensors for environmental](#) monitoring, provide a solution for gathering the data needed to optimise systems, realise cost benefits and support energy efficiency in the workplace.

As more people return to the office, measuring the health of office buildings will become critical to ensure air quality levels do not exceed limits that would increase the likelihood of viruses spreading.

## What tools are you using to manage space capacity?

45% of businesses are already leveraging seat and room booking systems to manage employees returning to the office. As capacity increases over the coming months, integrating a booking solution will become even more important.



OpenSensors

Return to work survey 2021  
of over 1000 respondents

With environmental data you can:

- › Ensure air quality levels do not exceed the threshold limits
- › React quickly to adjust ventilations to allow fresh air to circulate as needed
- › Monitor CO2 limits as more employees return to the office
- › Control energy efficiencies in the office
- › Validate and assess the health of your workplace

## 5. Cost efficiencies

The growing demand to use data to drive workplace redesign projects has also led to a growing need for Facilities Management and Corporate Real Estate teams to find efficient and cost saving methods to gather utilisation data. [Occupancy sensors](#) help companies reduce resource expenses.

Sensors can enable you to get a complete picture of how real estate assets are utilised, including floor, desk and meeting room workspaces. They can be deployed across multiple buildings to gather data in real time.

## 6. Foster adaptability

Information gathered in real time provides higher accuracy rates and a complete representation of employee behaviour throughout the day. As such, companies can now adapt quickly to rapidly changing business needs.

Sensor data also provides an objective and a realistic view of how workspace are managed which means you can have better conversations with stakeholders to influence and inform decisions on how to effectively utilise space.

## 7. Make strategic data driven decisions

By taking away the guesswork, HR, Corporate Real Estate, Facilities Management, Workplace and Leadership teams are better equipped to make decisions on future strategies and accommodate a growing workforce.

# What technology can offer

## Safety

The safety and health of employees should be an organisation's number one priority when preparing for a return to the office. Recent research indicates that monitoring and controlling Indoor Air Quality (IAQ) is central to reducing the risk of transmission.

Our initial understanding of viral transmission relied on direct contact between an infected and susceptible host, via respiratory droplets. However, due to the exceptionally rapid spread of the virus other routes of transmission were investigated, and the involvement of particulate matter was uncovered.

Research indicates that particulate matter with a diameter  $\leq 2.5 \mu\text{m}$  (PM2.5) serves as a transport agent, enabling the virus to remain airborne within confined spaces and infect hosts indirectly.

Ensuring buildings are well ventilated and supplied with fresh air directly combats this transmission route, and gathering [environmental data](#) removes any guesswork.

## How to monitor indoor air quality

Low cost sensors for environmental monitoring can measure CO2 levels to show how well or poorly an area is ventilated as levels rise as tenants respire. CO2 levels therefore act as a proxy measure for particulate build up and can inform Facilities and Building Management teams on the application of HVAC systems.

Connecting respiration with PM2.5 build up calls for further controls on occupancy. The primary way to ensure that a building's IAQ remains safe is to introduce controls on capacity so HVAC systems are not overwhelmed.

The indoor health of a building can be further managed when [environmental data](#) is combined with occupancy data. Patterns linking air quality and employee behaviour can be identified throughout the week and processes introduced to mitigate the risks these pose.

Temperature, Humidity, CO2 and ventilation levels have been known to have an impact on comfort and even productivity of occupants of an office building. Add in safety concerns about COVID19 transmission in the workplace and IAQ becomes a factor that businesses need to pay close attention to.

## Recommended benchmarks to monitor indoor air quality

-  Temp  
21°C
-  Relative humidity  
RH = 40% - 60%
-  Carbon dioxide  
CO2 = 500ppm-600ppm
-  Particulate matter  
PM2.5 = <10 micro-grams per cubic metre
-  Air circulated per hour ACH
-  Occupancy rates

# Space

Ensuring that physical distancing and occupancy limitations are followed and clearly communicated to employees is vital as businesses start to reopen offices. It is fundamental that the office is a controlled environment where HR, Facilities Management, Corporate Real Estate and IT teams are able to respond quickly to any changes.

**Teams need to start planning how to control occupancy levels to reassure employees that the office is safe to return to.**

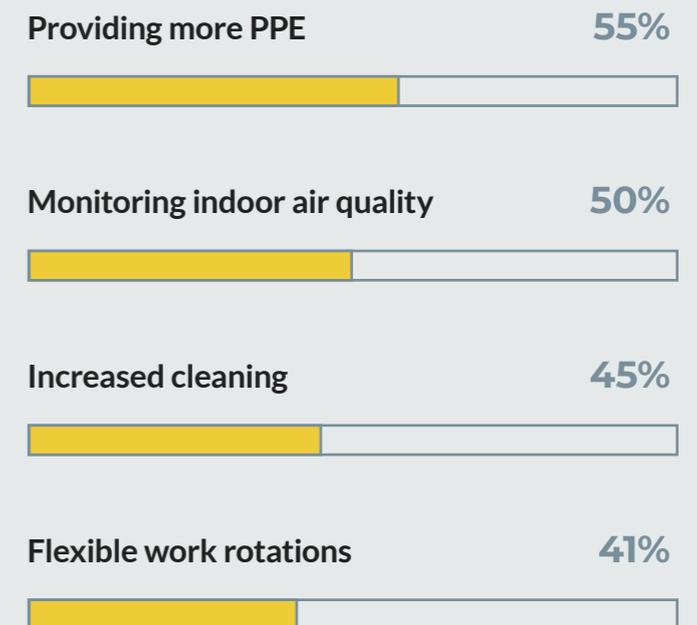
Monitoring occupancy enables teams to identify any spikes in occupancy and respond accordingly to ensure that the workplace remains safe.

A centralised point of control dictating which spaces are available can also serve as a direct communication tool that HR and Facilities Management teams can leverage to ensure physical distancing measures are followed as spaces can be withheld and released as safety guidance changes.

Additionally, as more people shift to working from home or other locations, many buildings are left with half empty offices and desk space. In the digital era, Facility and Corporate Real Estate teams are increasingly challenged with cutting building costs, improving operational efficiencies using technology and increasing occupancy rates.

## What factors have the greatest impact on employee health and safety?

50% state that monitoring IAQ is the second highest important factor in the safety of employees following the provision of PPE. Incorporating flexible work rotations and options to work remotely greatly adds to employee confidence.



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Return to work survey 2021  
of over 1000 respondents

Using [desk or meeting room sensors](#) is one way of increasing workspace utilisation and saving up to hundreds of thousands of pounds. Space occupancy data automatically generates the reports on:

- › Utilisation rates
- › Person to desk ratios
- › On and off peaks

There is no 'one size fits all' approach to office space and teams will need to ensure that they are providing the appropriate variety of spaces for their employees to choose from.

## Synchronisation

Remote work has left businesses struggling to recreate the collaborative and spontaneous nature of office interactions - to bring people together once again.

Gaining insights into how employees interact with the workplace enables HR teams to remove the guesswork when introducing shift rotations and staggering employees' return to the office.

In addition, [booking systems](#) provide a centralised point of reference for employees, removing worries regarding missed communication as the system itself demonstrates any changes, highlighting where and when is available on an individual basis.

If collaborative or private areas are difficult to access, frustration will rapidly grow among employees. Measuring the usage of assets allows teams to:

- › Repurpose spaces which are underutilised
- › Increase employee satisfaction within the workplace
- › Reduce costs

By establishing peaks and quiet times, you can assess whether different teams and departments are working on the best schedule. Perhaps the office is over capacity on Mondays because everyone has their team meeting that day. In which case, staggering meetings across the week might be the answer.

# Building the foundations for sustainability

Powering and heating buildings is extremely damaging to the environment and developing further office spaces when existing spaces are underutilised is neglectful.

Creating sustainable buildings is much more than just the impact to the environment. It is the combination of good building designs, good technology to facilitate activity based working coupled with good behaviour of occupants.

Both physical and physiological factors play a role in achieving higher satisfaction scores in the quality of the workplace. Employees are also likely to be more forgiving and acceptable to change that leads to a 'greener' footprint.

Lowering CO<sub>2</sub> emissions, increasing the circulation of fresh air in buildings or workspaces with natural light can improve employee productivity levels. An analysis by [Carnegie Mellon](#) concluded natural ventilation or mixed mode conditions could achieve the following benefits with an average ROI of up to 120%.

- › Up to 1.3% in health costs savings
- › Up to 18% productivity gains
- › Up to 79% HVAC energy savings

**Buildings and construction together account for 36% of global energy usage**



39% of carbon dioxide (CO<sub>2</sub>) emissions are from buildings.

# Security and data protection

Our **occupancy sensors** do not record individual personal or health information and are compliant with GDPR.

Sensors are typically triggered by motion and heat to gather anonymous data to illustrate overall occupancy or utilisation rates.

The data is immediately encrypted and transmitted to a cloud based platform where users have instant visibility of occupancy.



## Connectivity

Our solution uses the leading open global standard for secure, carrier grade IoT LPWAN connectivity, which means:

- › It does not require access to an organisation's IT infrastructure to deploy
- › Sensors will not interfere with or are affected by existing systems and networks

## LoRaWAN is a network layer that runs on top of the LoRa radio layer

LoRa stands for Long Range which in a building context means exceptional range

It is an open standard allowing seamless interoperability between different manufacturer's devices

LoRaWAN networks can be public or private

Provides end to end device security



Occupancy data can be layered with other data points such as booking information which will provide personal information if an organisation wishes to record this intelligence, and will need to make sure they are aligned to GDPR.

- › Uses low power and low bandwidth sensors enabling simple deployments of thousands of sensors in buildings with a small number of gateways
- › Scalable - network independence allows for easy to install IoT gateways serving hundreds of sensors

It is securely set up with minimal effort and sensor deployments can take place over a few days.

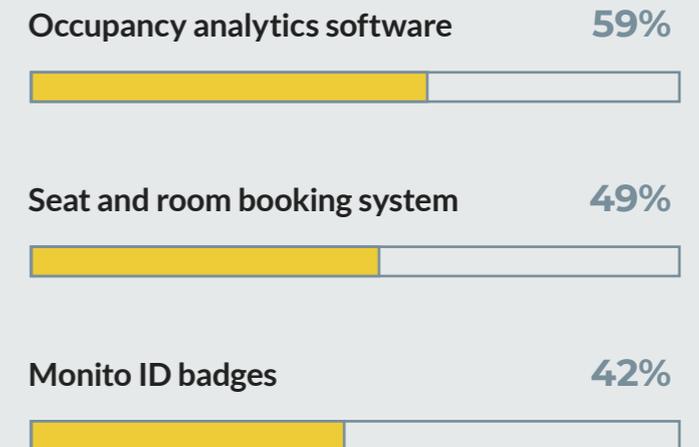
## Managing track and trace processes

Utilisation software analytics are useful for ensuring that work spaces are not overcrowded. Additionally, knowing the number of people present in an office space, and the specific spaces they occupy can aid in track and trace in case of an outbreak.

Businesses need to be taking every step possible to maintain business continuity should the situation worsen once again. This means centering workplace strategies and design around resilience, with an increased focus on developing employees' remote and digital capabilities.

### What systems do you have in place to manage track and trace?

Most businesses have already integrated certain technology as part of their risk management process to manage track and trace protocols.



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# Employee wellbeing

The future of the workplace will need to support the needs of employees if they are to thrive in this new setting. Factoring in office environments that provide adequate technology to support employees and a dedicated space for focused work and for relaxing goes a long way in employee satisfaction and well being.

Mapping out the office space to accommodate this can:

- › Flip the current high dissatisfaction of employees with office spaces
- › Improve their focus
- › Increase happiness and productivity

As more employees make a return to the office, it is imperative that health protocols are followed in order to ensure a safe environment. Behavioural changes are a necessity for the foreseeable future but sticking to these changes over a longer period of time may become challenging. As posters and signs fade into the background with repeated exposure, employees may lapse into old habits.

**Occupancy sensors** are invaluable in keeping companies informed of these trends. Generated reports on where employees spend most of their time, along with where they tend to gather together can assist leaders in understanding the reasoning behind these behavioral changes and finding fitting office redesigns to secure employee well being.

**Productivity increases by 12% - The happiness of employees is linked to an increase in productivity.**



**12%** ▲



55% cite their workplace environment impacts their productivity.

## Retaining and attracting

Retaining and attracting talent continues to remain a high priority for organisations irrespective of how the future of the workplace will change.

Employee costs make up 90% of operating costs for UK businesses according to the [World Green Building Council](#) report. Therefore, wellbeing and happiness is a key driver in workplace strategies.

[Duncan Weldon](#), Economist and former BBC Newsnight Economics Correspondent stated that even a 1% increase in the UK's productivity will add £20bn to the UK economy.



# About OpenSensors

OpenSensors delivers data powered workplace transformation solutions.

Our mission is to make sustainability (human, social, economic and environmental improvements) a reality for every workplace in the world.

We're a technology company that provides advanced evidence based solutions for workplace optimisation. We believe, in the current global situation with Covid-19, we have the safest and most efficient path back to the office for our customers and their employees.

Our technology works seamlessly, behind the scenes, to reveal workplace and workforce patterns and conditions that generate the insight required for confident evidence based decision making.

**Our solutions are easy to use, instantly beneficial, and 'just work'.**

We believe data powered decision making is the foundation for the future of work and a requirement for bringing people back to the office safely with wellbeing in front of mind.

We support all stakeholders: Employees, HR, facility management, corporate real estate, IT and finance, by solving the most immediate issues quickly while also providing a strategic core competency for their long-term success.

Headquartered in London since 2016 we have a growing footprint across Europe and North America.