



## White paper: The post-COVID19 Workplace

July, 2020

**BATCh**  
ARCHITECTURE for the SMART CITY



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We are stepping into the era  
of remote work.

The new office must **boost  
teamwork**, particularly  
tasks that require face to face  
or representative ones.

Short-term: **health**.  
Mid/long-term: productivity  
in a place for  
encounter.

## Preface

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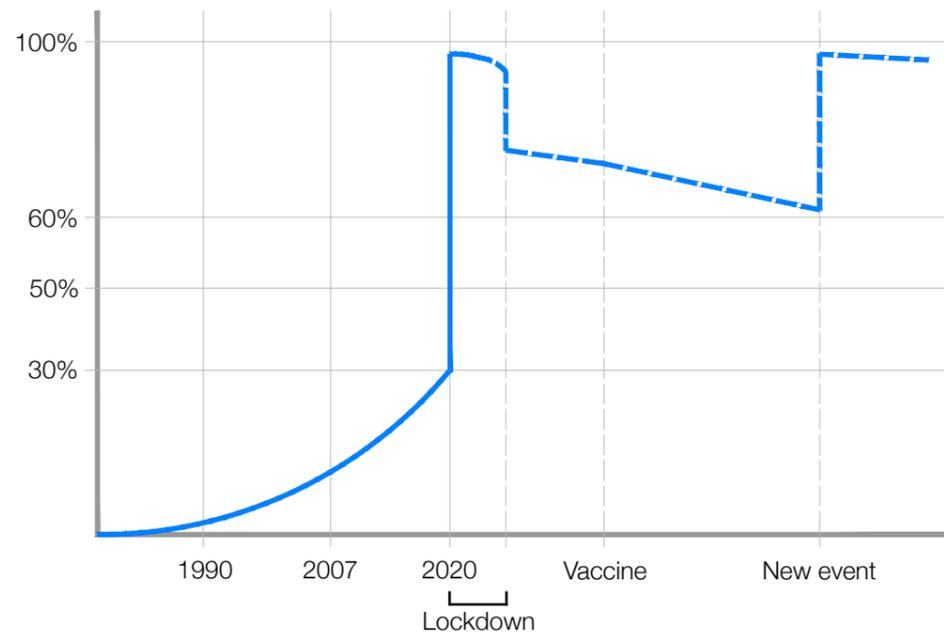
The COVID19 pandemic has **abruptly transformed our way of working and interacting** around the world. Nonetheless, current circumstances are doing nothing but to accelerate some trends that were already on-going. That way those trends will become the norm in a shorter time than expected. Due to the pandemic, in the next 12 to 18 months we might see changes that otherwise would take 5 to 10 years. And it has already started: **since may 2020 remote work is a right regulated by law in Germany** and this will be generalised sooner rather than later.

The purpose of the office has changed with the extensive use of remote work. **The value of the workplace will be to boost creativity as a key ingredient in the growth of a company.** For a company to access and retain talent, the office will have to be the secure place where things that benefit the employee happen in both the personal and the professional levels. The tasks that represent an unavoidable use of the office will probably hit a 50% low. The rest of the time the worker will commit to individual and focused tasks that will be possibly done remotely.

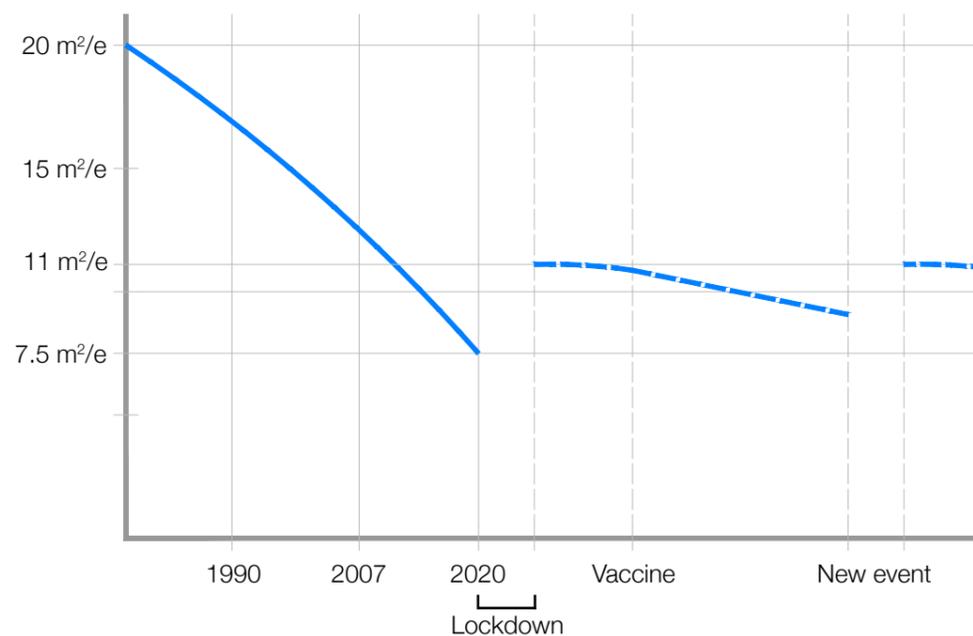
What will the post-COVID19 office look like?  
How will space needs for the workplace change?  
How must the workplace look after the health of employees?

We are in the midst of constant and unpredictable changes. Yet another proof of that is what has happened in the short period since the beginning of the lockdown, unimaginable before february 2020. **Our proposal for the workplace is organised in two phases: pre-vaccine and post-vaccine.** Based on our long experience and our close relationship with key actors in the workplace arena, we are familiar with the last trends and we keep including them in our general proposal.

## Implementation of remote work



## “Office space / employee” ratio



General considerations

## New space needs for workplaces

### The “remote work” factor

The most frequent question these days is *how will the implementation of extensive remote work affect the office space needs for companies?* During the lockdown we lived a type of mandatory remote work that should not be prolonged in time. The levels of psycho-social stress and the logistics problems in working from ill-prepared places are far from optimal. This “forced experiment” has **wiped away all remaining reluctances** among the managerial levels that were mostly related to lack of trust and an excess of presenteeism. Nonetheless, there is a high percentage of day-to-day tasks that benefit from presential interaction between employees and others that must be performed in the office. All the above mentioned could mean **a plausible decrease in the space needed** for workplaces.

### Economics will push this shift:

A **U.S. Census Bureau survey** reveals that “**companies** are managing to **save about \$11,000 annually** for every employee who works from home approximately half the time”.

Moreover, “for **employees**, the change translates into savings of between **\$2,500 and \$4,000 annually** if they work from home half the time”

### Social distance: new indoor health

However, the need to **provide indoor health and a perception of safety for the worker** are forcing us, in the short-term, to implement social distancing measures that were simply unthinkable before the pandemic. In the absence of a treatment and an eventual vaccine, fear modifies people’s behaviours and their demands in the use of spaces. Increasing the distance between posts and reducing the capacity of different work spaces could bring **a growth in the “office space / employee” ratio**. So, in light of this, *how will the social distancing measures affect the office space needs for companies?*

## Surveys:

Gallup Poll (May 2020)

# 62%

want to continue working from home as much as possible

Workplace Insight (May 2020)

# 60%

would be willing to give up their assigned desk in exchange for the chance to work from home some or all of the time

## Foreseeable result:

Short-term

# 62%

of the staff in

# 100%

of pre-COVID19 space

Mid/long-term

# 40%

of the staff in

# 60%

of post-COVID19 space

General considerations

## New space needs for workplaces

### Foreseeable result

Before March 2020 occupancy of offices in the Madrid market kept decreasing slowly until hitting 70% approximately. Once all reluctances to remote work are now overcome, 40% to 50% of employee's tasks will be performed outside the office. Some say this percentage will be even bigger. This way, an occupancy of around 50% will lead to lower space demands for workplaces.

But, **will this cut in space demand be compensated by the increase brought by social distancing?** To reach a credible answer we must know the evolution of the "office space / employee" ratio. In 2007 this ratio was about 12-14 m<sup>2</sup>/e and has steadily decreased until reaching 7-8 m<sup>2</sup>/e in 2019. However, factors such as 2-meter distance between posts and space capacity reduction will bring an increase in the "office space / employee" ratio for the short-term.

So, considering all mentioned above, we are inclined to think that **in a pre-vaccine scenario, the effects of both circumstances combined will tend to cancel out.** As social distance starts to relax with the arrival of treatments, we will witness a slight global reduction of space demand (always speaking of the short-term). Eventually, **in a post-vaccine phase, the impact of remote work will be heavy but social distances will be relaxed, as a result of which we will find a lower number of square meters per employee** compared to the time of the pandemic.

## The new workplace will be focused on:

1 Work tasks that require **face-to-face relation**, creativity, design. The workplace will no longer be the addition of working desks and offices.

2 The **representation of company values** towards the staff and the exterior (both visitors and media).

General considerations

## Workplace real estate

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The purpose of the Workplace is changing in the minds of all the players involved. From asset owners to end users, companies, architects, engineers and facility managers. The post-COVID19 office will be focused on:

Work tasks that require face-to-face relation, creativity, design. The workplace will no longer be the addition of working desks and offices.

The representation of company values towards the staff and the exterior (both visitors and media).

Not all buildings will come out of the crisis well positioned regarding indoor health and security. We must understand that the real value is **how will our building operate in terms of air quality**. The ownership must learn how to communicate all this to the tenant and the end user. There is **huge brand value** in showing you dominate this field.

**Companies no longer want an office. What they are looking for is a productive workforce.** It is no longer about space renting but about renting a complete package of services developed in a space. These services can be: space design, furniture, space management, building systems, air quality, new indoor health, IT equipment, telco package (including hosting and data), etcetera.

Eventually, when facing a new office opening, companies will say: "tell me how my staff will be more productive with your services and back that with the right indicators". This way, real estate proposals that **combine a building with a correct physical performance and a pack of services that boost productivity** will end up renting less space per tenant but for a much higher price. And with good cause. Their competition will suffer a lot. The model will go from a product industry to a service industry.

We will probably see **fewer new office buildings** but way many more adaptations, refurbishments and **new openings in existing buildings**.

## Workplace real estate

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### Contracts

On legal binding between owner and tenant, we will hardly see long term agreements again. Rather, we will probably face a huge fall of leasing. **We will see way shorter and much more flexible contracts.** Packaged contracts to help mitigate risks will be commonplace downsizing in terms of both time and content.

Regarding supplies it is possible that we will also see the addition of new **clauses to contracts to provide more maneuverability for the tenant.** More open hours, more equipment and the ability to measure results rather than hours.

### Asset location

Until recently, for large companies, the attraction to open in world-class cities compensated massive expenditures. However, **in the new post-COVID19 picture, location in top cities is no longer imperative.**

Second and even third level cities will benefit from the new real estate market. Particularly those with features such as **good climate, connectivity and quality of life.** If, additionally, these cities have productive poles that are well communicated with urban centers, other strategies could be of use. Strategies like **going from having one large office to having two places for different purposes:** locating creative and group work in the productive pole while the representative function could be in the urban center with less space.



General considerations

## Adaptive office in the post-COVID19 era

The office must provide creative spaces for the **4 types of knowledge work: concentration, collaboration, learning and socialisation**. People will commute to the office to be a part of something larger than them as the work environment must enrich and bring purpose to our lives. **What companies are after nowadays is productivity, security and the attraction of talent**. However, we know that those can be changing attributes as changing are the parameters under which they are judged. Finally, above all that we must understand each **company's idiosyncrasy and its possible evolution**.

In consequence, success will be based on the achievement of an office able **to adapt perfectly to all scenarios** (predictable and unpredictable) in the next months and years. To what extent will remote work be adopted? How will social distances evolve? How long until we find a vaccine? Is a new viral or economic episode expected any time soon?

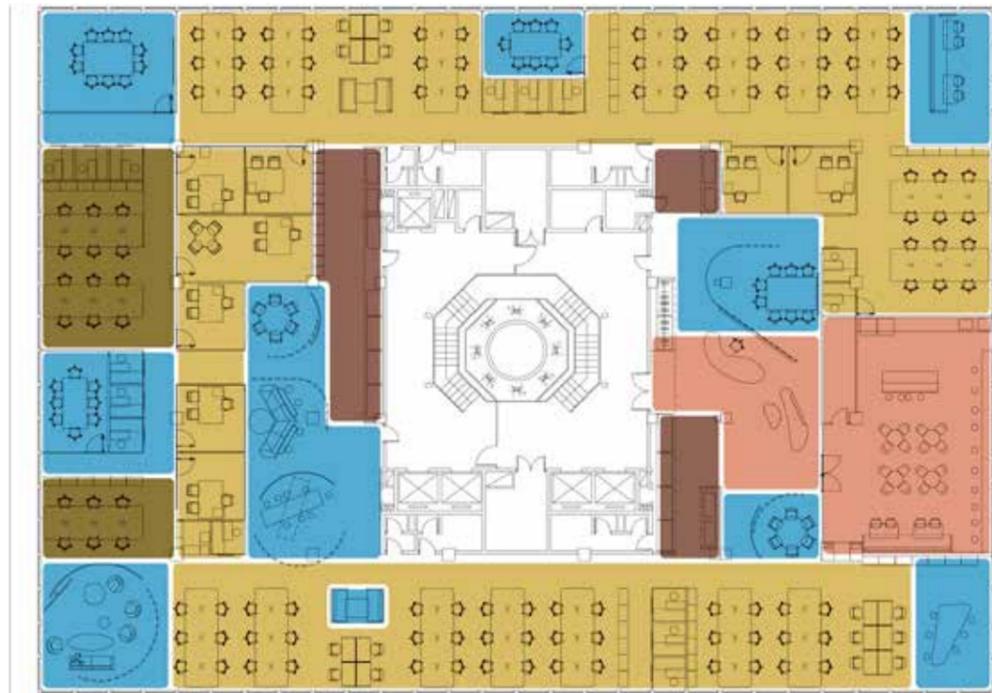
In light of this state of things, it seems clear that **adaptability will be a key feature in the post-COVID19 office**. Our workspaces must allow all changes needed to guarantee the wellbeing of the employee and the productivity of work teams. To reach all that we must pay attention to 3 aspects:

- **Design**, to make flexible spaces (current and new) to boost human capabilities in tasks that can only be performed in person, increasing the variety of work posts and being aware of materiality of shapes and finishes.
- **New health and well-being** with indoor air quality and HVAC mechanical systems, facility services such as hygiene (achieving a new dimension) and automation for the office to become "touchless".
- **Digital tools** to obtain a seamless transit between remote and in-person work and back, optimising the office use and, on a building scale, managing incidences and monitoring energy performance. Technology must allow to follow the right metrics to make the right decisions.

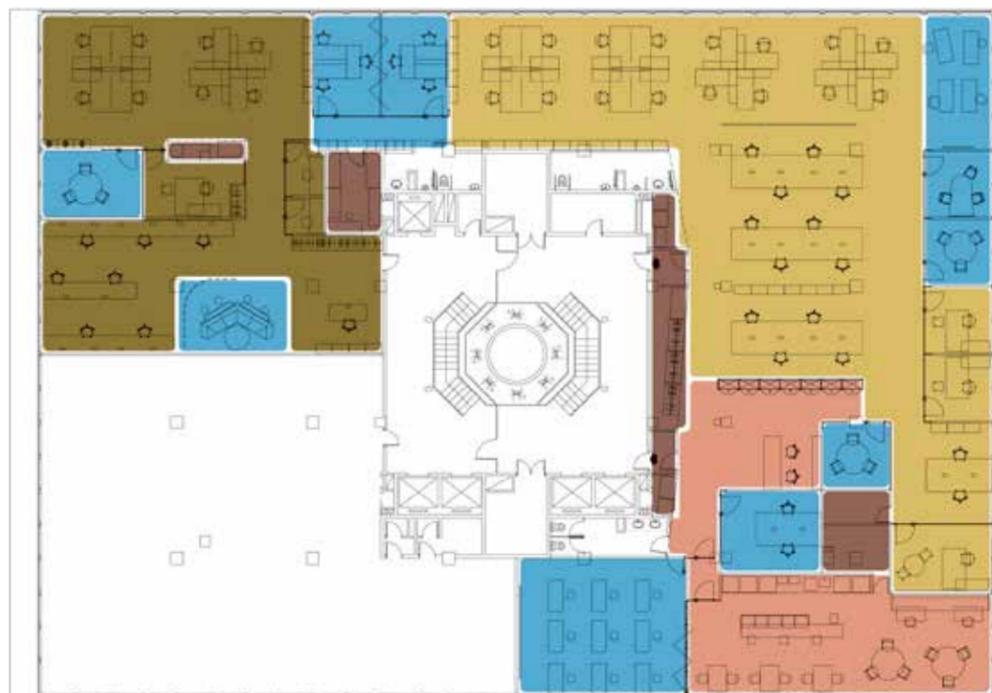
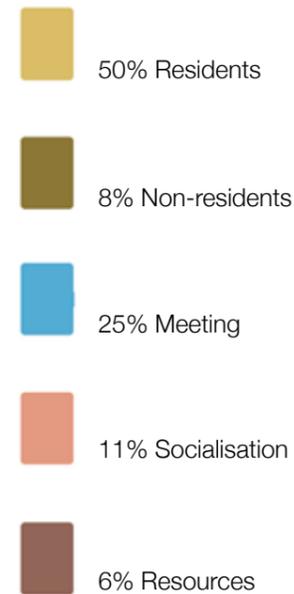
The post-COVID19 Workplace

## The post-COVID19 Workplace

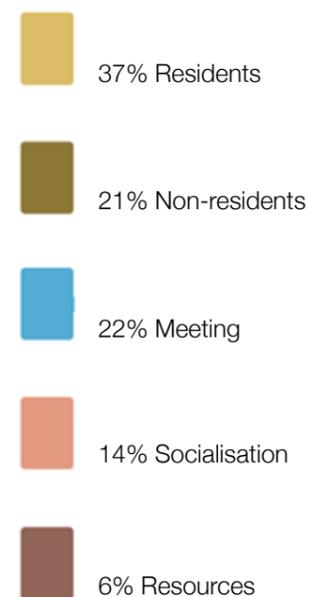




Pre-COVID19



Post-COVID19



## The post-COVID19 Workplace

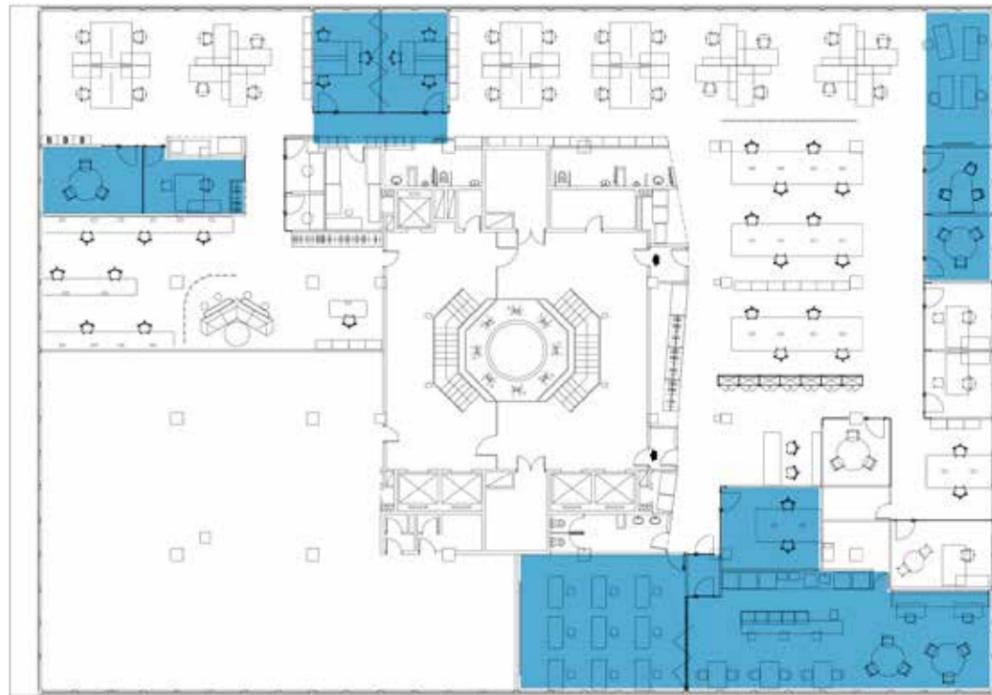
From our perspective, this will be a two-phase process. These phases will be clearly differentiated: a **first pre-vaccine phase** in the short-term and a **second post-vaccine phase** for the mid/long-term. What is needed pre-vaccine is very different from what we will need after a vaccine is developed.

**Prior to the discovery of a vaccine**, it will be mandatory to immediately **guarantee people's health in the office at any cost**. Social distancing and physical boundaries will be necessary. In absence of any longer term and impact actions performed on the office space and the building itself, the worker's trust will have to be re-earned by taking some actions that make them aware of the fact that their **workplace looks after their health**. These short-term measures can be achieved by **acting upon design** of office spaces as we know them (we will later see how). But in addition, there are many tools to be implemented in the short-term that can help us reach our goal. We are referring to **digital apps** to help keeping social distance, manage space booking and facilitate logistics and schedules for hygiene tasks that will become much more important and precise.

However, the post-COVID19 office will outlast the pre-vaccine uncertainty period so **we must look beyond in ambition**. Due to the addition of remote work and new health, post-vaccine office will need to focus on becoming **the place that boosts creativity and teamwork**. All the tasks that can be performed solo will tend to be done remotely. Nobody wants to go back to long commutes to sit in an office doing things that could be done at or near home. In addition, **representative function in the office will grow in importance** gaining a brand communication value both internally (company culture for employees) and externally (values to be transmitted to the market). Therefore, in terms of the "new office", space design will pursue versatility and the boost of team tasks, nonetheless, with a strong accent on health safety. In this document we detail our proposals for these spaces.

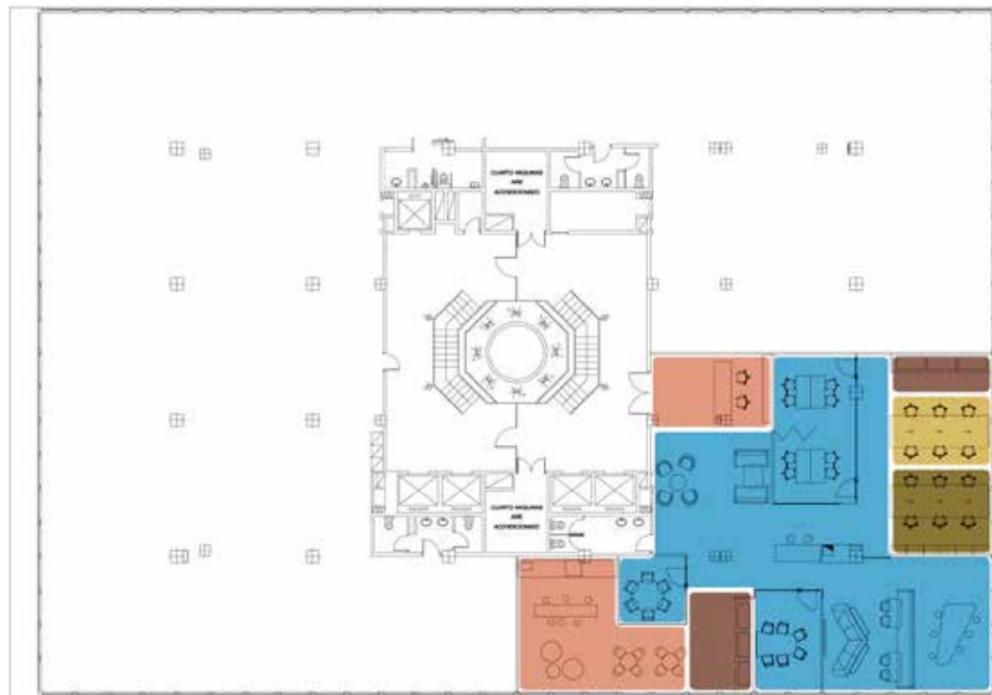
From now on, **hygiene and air quality become a priority** comparable to, for instance, fire prevention measures. This way, in most already constructed buildings, the necessary changes on HVAC and indoor air quality installations can affect all floors. Public realm in general and buildings in particular should **become touchless places** ASAP, by increasing automation and sensorization of interior spaces. These actions will be vital for the very feasibility of the building and should be undertaken in the building scale and not taken lightly.

Lastly, new offices must provide a **"digital layer"** to facilitate the mentioned measures, to help with the user experience tasks, to understand the building's performance, to boost on site / remote integration and to manage key indicators.



### Adaptability

30%  
Rearrangeable  
spaces



### Potential

6% Residents  
6% Non-residents  
60% Meeting  
20% Socialisation  
8% Resources

## The post-COVID19 Workplace

### Adaptability

A flexible space is always a good idea from the standpoint of potential changes in the culture and needs of a company. Right now, the need to provide flexibility to an office is even bigger due to **the differences between pre-vaccine urgencies and an optimal post-vaccine situation**. Given all the above mentioned, when thinking about the post-COVID19 Workplace, **adaptability is the best strategy**.

Ideally, all decisions made for the pre-vaccine phase must be fully compatible with potential and desirable actions for the post-vaccine phase. But in any event, **decisions in the short-term must never hinder the mid/long-term goal**: a place of work that boosts creativity and the safe and productive encounter between coworkers. At the same time, corporate space will gain a representative function however small the office may be.

Last but not least, it is of the utmost importance to make sure, for both the short and the long terms, that the new office spaces are 100% apt for the visit and use of **all kinds of persons regardless of their physical and mental capabilities**.

## Short-term: pre-vaccine phase

Immediate needs in pre-vaccine phase push towards **guaranteeing interior air quality, security and well-being of the employee. Nobody will go back to an office they do not feel safe in.** That is why, in the short-term, we must implement and communicate the right health measures thus boosting productivity. Perception of safety is crucial.

Nonetheless, this situation will not last forever and so we must make sure that any short-term actions **do not potentially interfere with later measures in search of a mid/long-term normality.** Therefore, providing adaptive spaces is vital. And these spaces must help us with future changes which are likely to happen even if we cannot predict them in detail.

In the short-term, office space is forced to give good answer to immediate needs in terms of social distance for the new normal. **How does my office look after my health?**

We must reduce our exposure to pathogens bringing on a sense of safety without hindering the necessary tasks. It is all about **adaptation to new health directions** and the right configuration of uses to make them more secure and hygienic.

It is worth to bring up **perception of safety.** We need to convey to the user the group of actions taken along with the new protocols of implementation and the plans for future adaptations.

60% employees in 100% of pre-COVID19 floor area

### **Remote work**

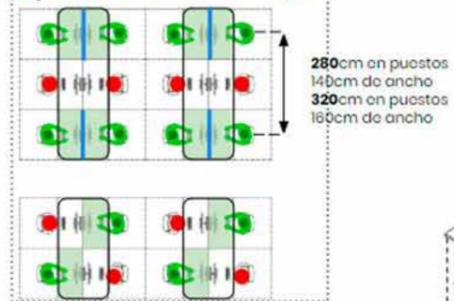
This measure is almost an imposition by the circumstances with a huge benefit for the day-to-day of the office both in the short-term and in the mid/long-term. **Without the chance to reduce functional posts** (having fewer people in the office at any given time), **no new hygiene or distance standard is possible.** Workspace has changed forever.

### **Physical boundaries**

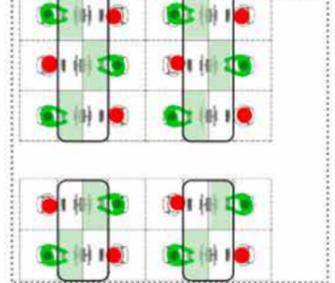
It is not possible (nor it is desirable) to enclose every employee in a private space. Therefore, in this first phase we will look for **boundaries to stop aerosol transmission** such as screens or panels to limit the space surrounding the employees. These boundaries must rise up to a **minimum height and also be easy to clean.** These elements will help, in the short-term, limit the exposure increasing the staff's perception of safety.



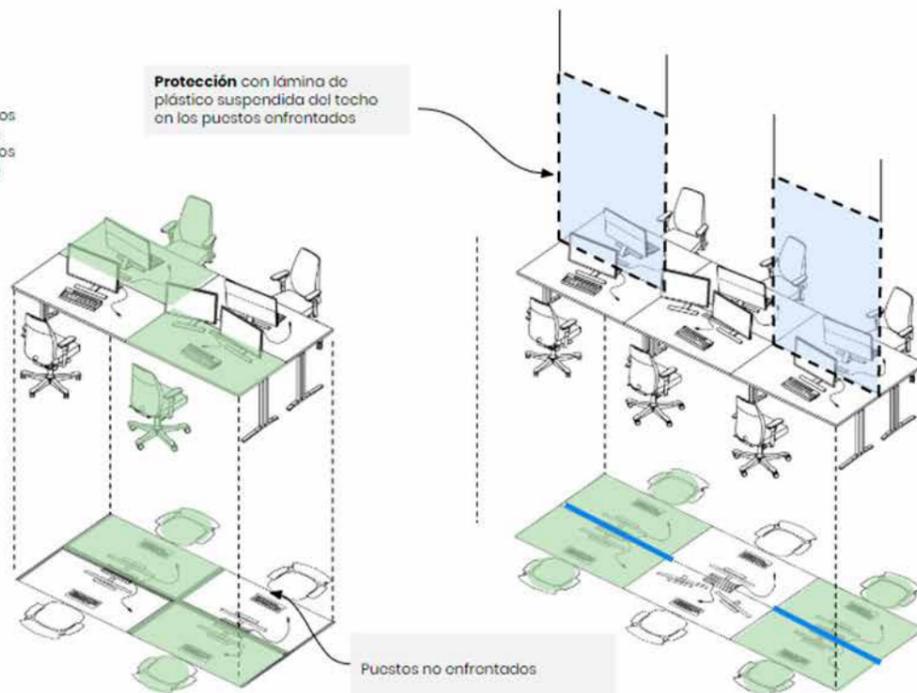
### Opción 1 Reducción 40% de pers.



### Opción 2 Reducción 50% de pers.



Protección con lámina de plástico suspendida del techo on los puestos enfrentados



Strategies by 3G office

The post-COVID19 Workplace

## Short-term: pre-vaccine phase

### Work post rearrangement

We will face a **reduction of 40% to 50% of operational posts** in current layouts towards new configurations in order to observe new distance measures. This way, in “bench” configurations, we will seek “W” positions or “facing” positions but with protection screens. 1 out of every 2 posts can be suppressed. Depending on the new arrangements, we will have a smaller or larger percent reduction.

**Meeting spaces will limit their capacity** and must guarantee hygiene (see the point on systems) and pursue social distance.

### Social distance strategies

For a better use of posts and spaces, **visual communication is very important. Signage**, typeface play, arrows, stripes, circumferences and everything needed in terms of graphic design are very useful tools. Identification of free posts, circulation signage and warnings for minimum distances are clear examples.

### Secondary uses

Regarding spaces that provide service to the working areas such as toilets, canteens and waiting areas, we propose strong controls and limitation of use for as long as deeper reforms cannot be implemented. Mid/long-term measures will focus on hygiene and social distance.

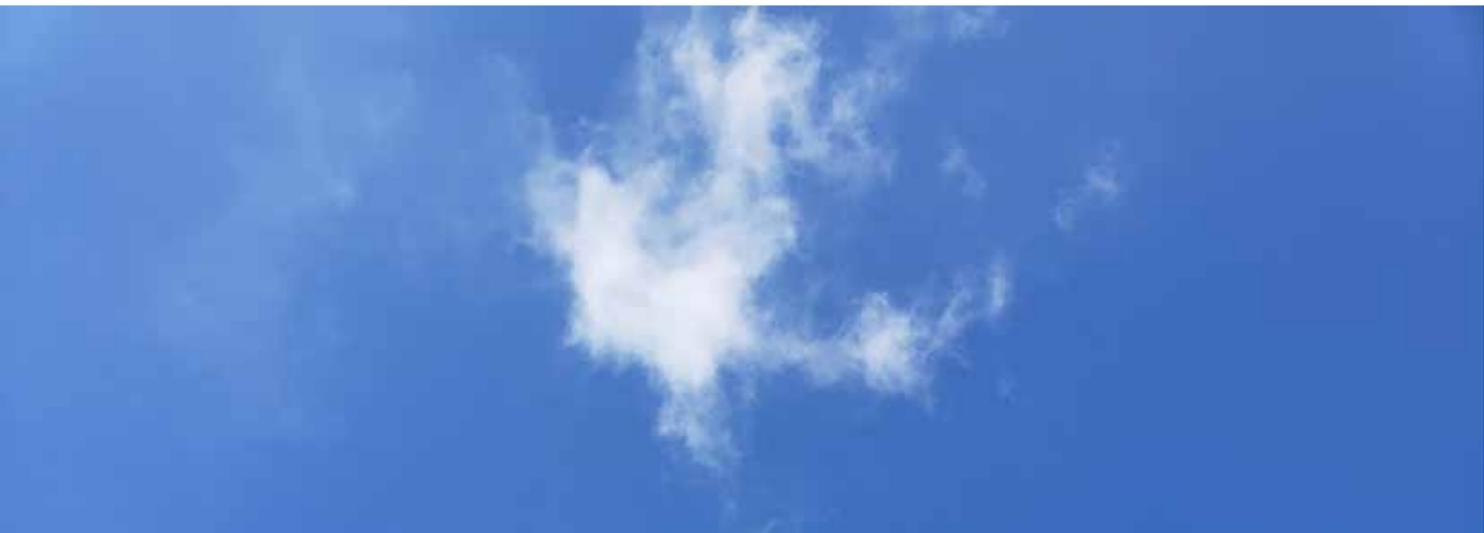
### Digital tools

To implant measures of **social distance and space optimization**, digital tools are key. Examples such as “Indoors” by ESRI combine work post location, mobility and “usage maps” of every zone that allows the design of **secure routes, time-tables and secure distances.**

The help can be even bigger in **achieving the touchless office**, cleaning logistics, space booking, canteen use and communication of incidences.



6 Feet Office: a Cushman Wakefield proposal



The post-COVID19 Workplace

## Short-term: pre-vaccine phase

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### **New indoor health: HVAC in the short-term**

HVAC becomes of the utmost importance in Workplace viability as spaces that look after employees health. The following is a schema of short-term measures to follow in current offices, short of redesigning the whole system.

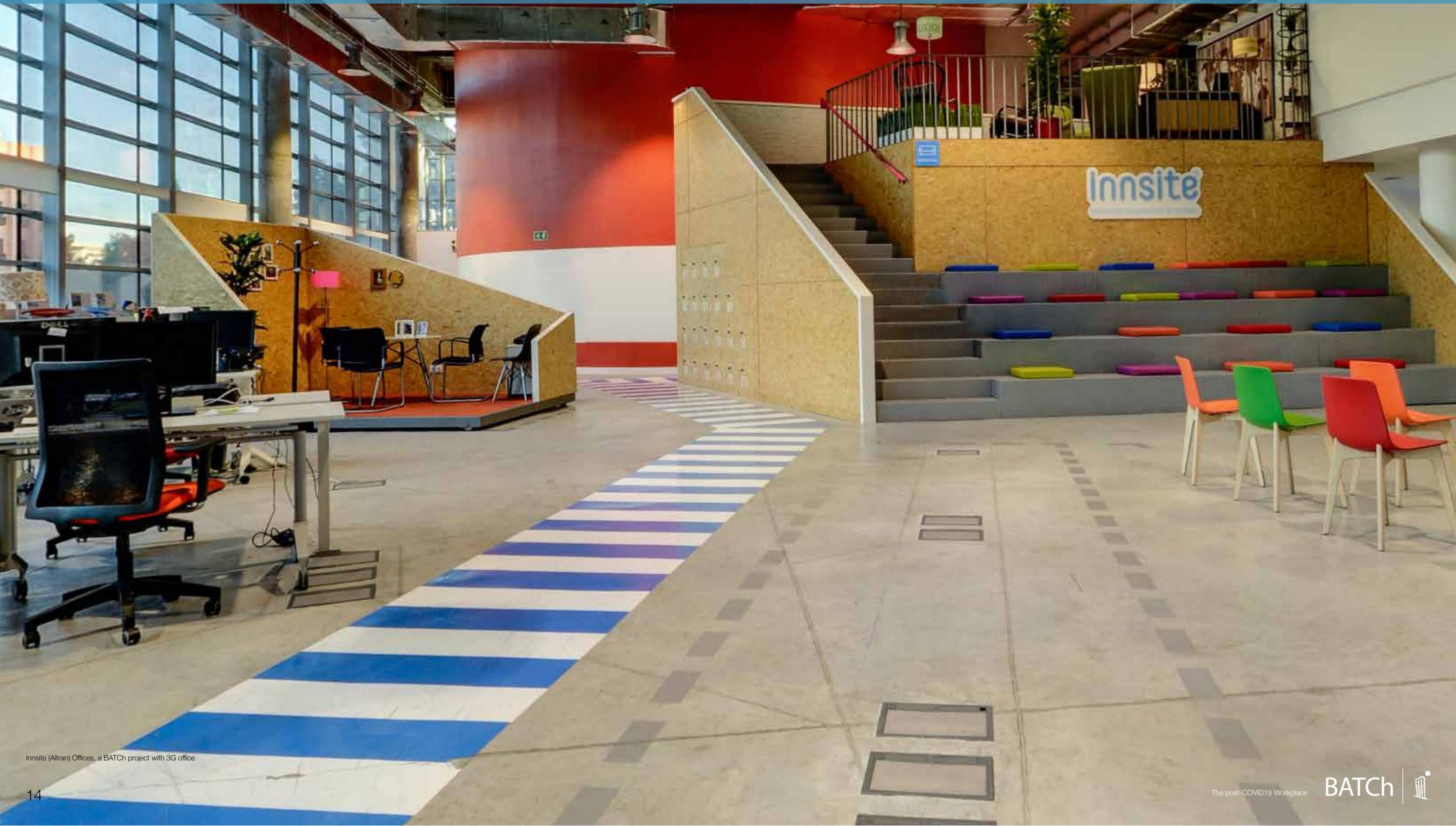
#### **Everyday HVAC operation**

- Relative humidity: set between 30% and 60%.
- Ventilation: try to use as much exterior air as possible
  - Natural ventilation, as much as possible.
  - Mechanical ventilation; periodic non-stop 24-hour ventilations and 2 hours at maximum speed before opening time.
- Through water, rise temperature to 60°C for 1 hour and to 40°C during 1 day.

#### **Correction measures**

- Change to HEPA filters. At least the F7 to F9.
- Install purifiers.
- Install UVC lamps in conducts.
- Redesign the distribution to a more granular schema.
- Eventually, substitution of some elements if necessary.

## Mid/long-term: after the vaccine





WIZINK Offices, a BATCh project with 3G office

## Mid/long-term: after the vaccine

As seen previously, this crisis leaves us two main consequences regarding Workplace. In one hand, **remote work is implemented extensively**. In the other hand, **health conditions of the spaces become priorities**. In this scenario, once we have found a vaccine, and with more relaxed safety measures, we will find ourselves in a reality that will never be the same as before the pandemic because health and well-being have become overall main issues.

The goal of opening a company's new office today must be approached **with the post-vaccine mid/long-term in mind**. The office of the future will no longer be just an addition of work posts, desks or benches. It will be a collection of spaces to catalyze human abilities. This way it will host mostly **face-to-face, creativity, design and any other type of work that require presential contact**. The rest of the tasks will be performed remotely.

40% employees in 60% of pre-COVID19 floor area

The configuration of a post-vaccine Workplace will require satisfying all the needs for spaces for creativity and human relation. These spaces will become the main areas of the office and must be designed according to their **versatility and inspiration function**.

For the former to work properly, it will be important to **increase and enrich the catalog of different individual work posts** to help with the required agility and to support the areas of teamwork.

Furthermore, there is the need to adapt secondary spaces to the new normal. **Toilets, canteens, circulation areas and others**. Finally, with the whole building in mind, pedestrian access, lifts and waiting areas must be rethought as well.

In addition to this main purpose in the new office, a second purpose rises up: **the representative use**. Optics are of the utmost importance and corporate values must be conveyed to the staff and to the outside (both office visitors and media communication).



## Design: Spaces for personal contact, teamwork & creativity

In a post-vaccine reality **with distance measures in slow relaxation**, workspaces that boost face-to-face, creativity and committed productivity will be the primary features.

Companies will look for **places that help them with staff performance** and to achieve that, we need a close knowledge of internal processes and a **high dosage of innovation** in design

These areas must make the employee feel very comfortable, secure and inspired at teamwork. People must be able to control their experience at work and in order to do that, we need to provide **a rich variety of spaces that can be freely shared by people in the organization**. Workers must feel that the office is the place **where things that benefit them take place** both on a personal and on a professional level.

Spaces must be **dynamic and must trigger conversations and proposals** for which we must avoid monotone design. We must take advantage of ergonomic comfort to achieve welcoming spaces to attract the staff.

These spaces must help as much as possible to **create and promote company culture and values**, for which we must acquire a deep understanding of it for the design phase. Culture is generated in community and in spaces and protocols that connect people and shape their interactions.

The modern Workspace offers the right infrastructures to **promote relations**, build communities at work and allow for people to thrive. We must work along with the company to provide privacy, options and control over the work experience. Through design we must achieve **collaboration spaces that facilitate a seamless transition between remote and presential work**. Furniture must bring flexibility to work individually or with colleagues and in both formal or informal ways. All this adaptability is more important than ever.

At the same time, corporate space will have a **strong representative function** (regardless of the size of the office). Good design will act as a showcase of the company **for visitors and for corporate visual communication**. In the same way that companies demand an attractive space to “surround” the product they are making public in a trade show, corporate spaces will promote their representative function by visually communicating the values they want to transmit.

Mid/long-term: after the vaccine

## Design. Expansion of the catalog of flexible posts





Mid/long-term: after the vaccine

## Design: Expansion of the catalog of flexible posts

Even if the main post-COVID19 office use is teamwork and creativity, there is no doubt that the employee will **still need to spend some time on individual tasks related to that main use.**

With the purpose of attracting and retaining talent and, of course, to promote productivity, teamwork areas must be supported by an expansion of the catalog of **options both mixed and individual that must be as attractive as possible.**

The following are some already tested proposals. The adjustments for each company will derive from the correct study of their specific needs.

### **New individual posts**

Assigned posts are a thing of the past. Suffice it to say that:

**The cleaning of a table with papers on it is inefficient and, as such, pointless and dangerous**

The trend towards the non-assigned post must nonetheless come with more thorough and frequent cleaning procedures. This way, non-assigned posts should stick to established cleaning periods. These posts could adapt their geometry, orientation and protections (shape, materials and height) to the distance needs applicable at each time.



Mid/long-term: after the vaccine

## Design: Expansion of the catalog of flexible posts

### **Moving posts**

They offer the possibility to move the furniture elements in search of **flexibility in the use of the general space**. This can involve a different kind of electrification and data transmission. These elements on wheels and with a plug-in type of connection provide the mobility that allows the worker to get temporarily close to or away from a given zone.

### **Standing posts**

Many experts say that **standing work increases creativity**. Some even say it does so by 60%. Besides an individual flexible work post, standing posts offer the **possibility of aggregation for agile meetings** while keeping security distances if needed. Posts with tall tables and stools make a good addition to the catalog for a dynamic office.

### **Concentration**

Imagine you just wrapped up a meeting and you need a moment of more concentration to recap the conclusions. These type of concentration posts will help with higher separation screens that **“disconnect” you from your surroundings both physically and visually**. Tall and short versions provide more options.

### **Cabins**

These are seclusion posts configured as cabins or **protected by bulkheads for calls or 2-person meetings**. They must guarantee health by strong air extraction and cleaning after each use. The use of germicide and non-porous finishes is important.

Mid/long-term: after the vaccine

## Design: Spaces for secondary uses





WIZINK Offices, a BATCh project with 3G office

Mid/long-term: after the vaccine

## Design: Spaces for secondary uses

### **Remote communication and meeting rooms**

We must include in the catalog spaces designed to boost **remote contacts from a corporate environment**. Health must be taken care of by facilitating **social distancing and providing correct ventilation and physical boundaries**. But at the same time these spaces must **fulfill a representative function** by visually transmitting the values and culture of the company both to the worker (presential) and to the counterpart (remote).

### **Toilets**

These uses must undergo a **complete redesign** due to the new health needs. Up until now, profitability of the sqm has prevailed over usability and hygiene focusing in the number of cabins instead of their comfort and safety. Now, however, we must take into consideration **factors such as total gross area destined to these spaces, capacity** and even the need to create the post of **“toilet assistant”**.

As mentioned previously, all publicly accessible spaces must **become touchless and toilets should lead that way**. Doors, toilets, faucets, soap dispensers and dryers must be 100% free of contact. In order to achieve that, we must count on technology of automation. But there are some **design strategies** we can develop such as “S” shape cabins to ease flows inside and out.

Toilets must **avoid the expansion of aerosols** and droplets that would transport pathogens through the air. Sinks must be placed within enough distance from one another.

We might need to think about solutions that enable frequent and deep cleaning and about **possible self cleaning tools**.

Wall finishes, floors and ceilings must have anti-pathogen treatments.

### **Informal areas**

We seek the comfort and safety of the workers to increase their commitment and productivity. This way, we must **introduce some spaces in which furniture and interior design help with relaxation for working and for resting**. Spaces with a home feel to them can be a good example. In them, sofas must be destined for only one user to allow distance between people. Tables and lamps must be easily cleanable by the users and not just by the cleaning personnel.



Mid/long-term: after the vaccine

## Design: Spaces for secondary uses

### **Canteens**

This is another space that must also be rethought. We must even propose a **different sequence of use**. The whole cafeteria dynamic (waiting in line to pick from an overly exposed set of foods) must evolve to avoid crowds, unnecessary waits and breaches of social distances.

This is a crucial part of the office that **can very much benefit from the digital transformation**. Employees can order their food from their own work post and the system can send notification whenever it is ready to be picked up in different places. Food can be collected in a specific area of the former cafeteria, in the employee's locker (this will also require a profound redesign treated later in this document) or even delivered in the very work post. Once suppressed the need for space for the cafeteria dynamic, design efforts must be focused on **creating comfortable, secure and attractive areas** for the lunch break.

### **Transition spaces**

On occasion, it is possible that we generate a space "between inside and outside". This space would be located **once we leave the access behind but before reaching the reception**. It must be ample and prepared for disinfection in whatever necessary depth. It will also work for short contacts with external people that require the employee's presence without them abandoning the office but also avoiding the visitor stepping inside working. Also, in a specific space, **we must place one locker per employee** in which, through previously sent codes, packages can be delivered. This is what specialists call a "Smart point".

**This space must be designed carefully** because, besides being fully functional for all the different needs, it must fulfill a representative function **being the first glance some people will have of our office**.



Mid/long-term: after the vaccine

## Design. Materiality: shapes and finishes

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Cleaning of interior spaces is more important now than ever before. We have no doubt that interior well-being and people's health have immediately come to be as important as fire protection or energy efficiency. In fact, it could be possible that **we start speaking about some sort of "health efficiency"**.

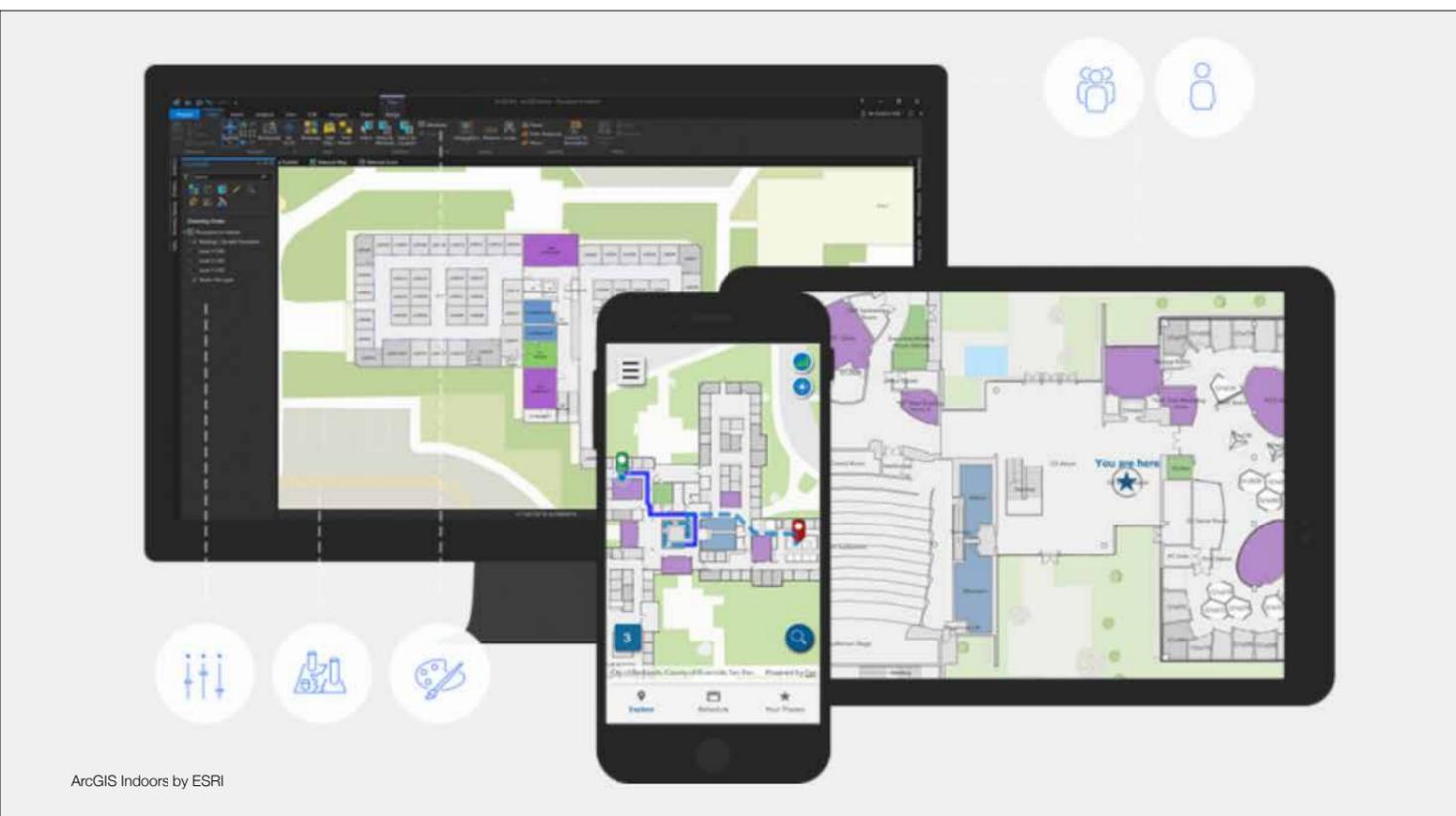
In the design phase, accessibility of cleaning products and tools to every square centimeter of the office is crucial. This way there will be a **direct relation between shape simplicity of the finishes and resources applied for their cleaning**.

Without sacrificing esthetics, we can make some decisions on the **choice of materials** that help create healthy spaces, highly cleanable and attractive.

Recommendations on furniture cleaning must always be aligned with authorities directions until **foreseeable new regulations** to that effect are released.

**Laminated materials, painted metals and other solid surfaces** must be easily cleanable with commercial cleaning products without that meaning further trouble for cleaning staff.

For textiles in chairs and vertical surfaces, it is recommended the use of **high performance fabric** that have lasting colors that allow for the use of bleach based solutions.



Mid/long-term: after the vaccine

## Digital tools

Digital technology must be included as part of the building, in the same way that structure, envelope or systems are. There are multiple benefits to applying digital tools to the Workplace (and to buildings in a larger scale). The reality shift (remote work and new health) is yet another area in which digital tools are largely useful. The collection of data for analysis and decision making is the direct consequence of the use of sensors and IoT. We divided digital tools for the Workplace in 4 different lines.

### **User experience** (example: SpaceOS)

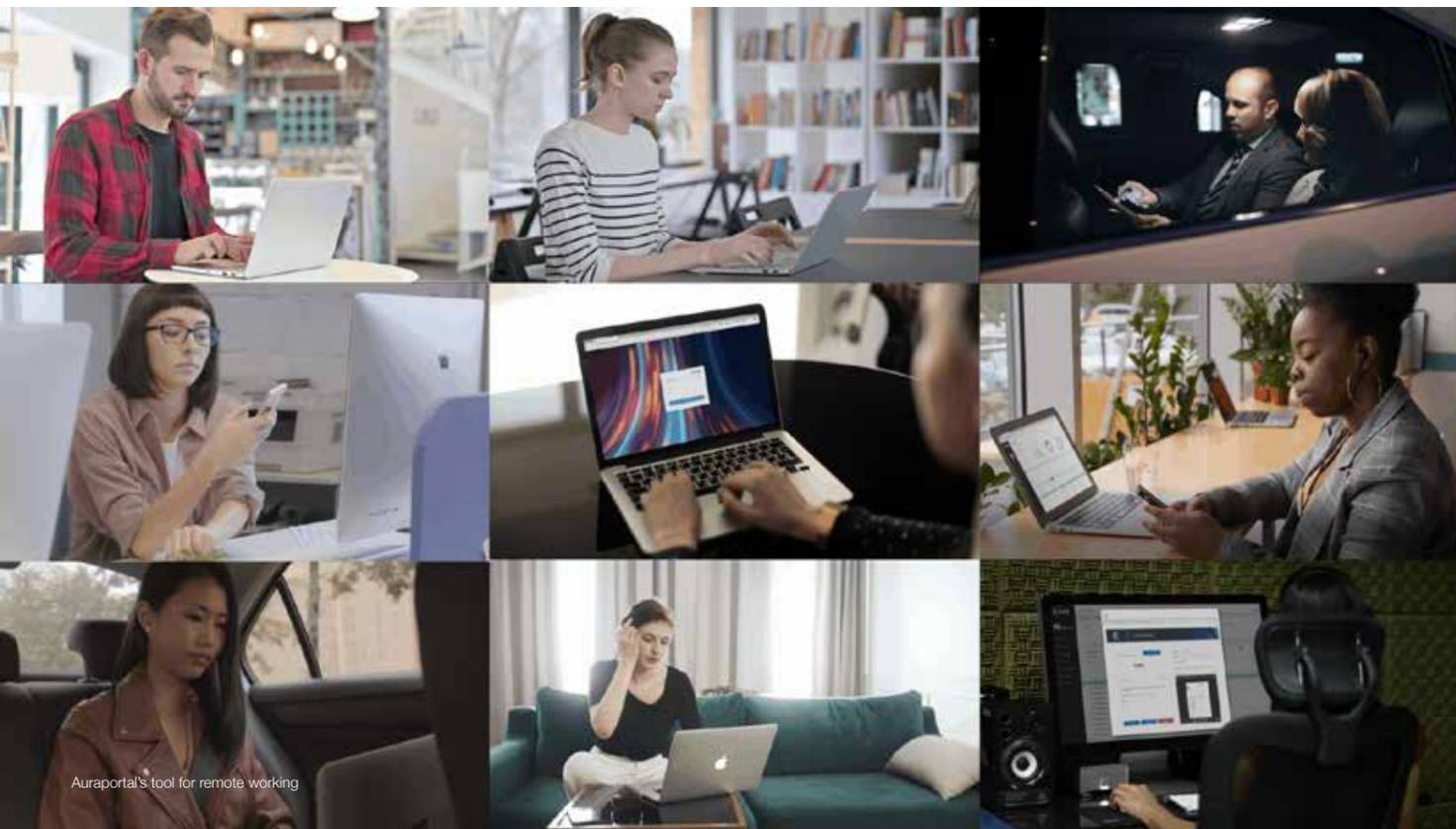
These are tools for the tenant to focus on a good user experience.

- Occupancy management with space and work post booking.
- Touchless mobility around the office.
- Delivery management with private codes.
- Payment platform.
- Integration with building management for the tenant.
- Owner/tenant communication and management.

### **Digital office (building)** (example: Digital Twins, ESRI's Indoors, BMS)

In the building scale, these tools are focused on monitoring the building's performance and on managing what goes on inside of it. Sensors and IoT use for data collection are basic parts of these tools.

- Performance management of the HVAC systems, envelope and indoor air quality, today more important than ever.
- Energy use management.
- Maintenance and operational management.
- New hygiene management: schedules, logistics, equipment, teams.



Auraportal's tool for remote working

Mid/long-term: after the vaccine

## Digital tools

### **BPMS, the company's internal processes** (example: Auraportal)

These automated process managers of the workflow of the company must, among many other things, facilitate a seamless integration between presential and remote work. In the end, we might start thinking about changing the expression from "remote work" to "distributed work". Employees must feel that they can choose, with no downside, between staying home (or near home) for the tasks that do not demand physical presence and commuting to the office.

- Robust video or text communication.
- Document management for ubiquitous access.
- Real time workflow with all the stakeholders in each task.

### **Metrics** (example: Leesman)

At this time, it is of the essence to be able to make data driven decisions. Data that can come out of sensors or derived from the employee's perception of their Workplace. The office must provide an effective environment that boosts productivity.

- Environment impact regarding productivity, culture and community.
- Perception of health and safety.
- Favorite activities in the work environment.
- Mobility and preferred physical features of the spaces.

## New indoor health:

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This pandemic leaves us in a new situation regarding health in buildings and activities in their interiors. The health of the user grows in importance up to the level that energy efficiency and fire protection already had.

**How will our office or our building look after our health?** Especially in the sense of a clean and healthy environment to mitigate the risks of getting infected. To that regard we have gone deeper in hygiene, HVAC and interior air quality.

### **Hygiene**

Social distance must be enabled in any situation in which it is needed. Disinfectant kits must be provided to the staff.

We must rethink the toilet space (as shown in the point “Spaces for secondary uses”).

Also, **we need to advance towards the touchless office based on automation.**

Boost cleaning of surfaces by means of **reinforcing hygiene teams** and applying the necessary measures including **digital tools for schedules and geographic location management.**

Currently, measures such as cleaning based on UVC light are carried out by lamps and robots in empty spaces because exposure of human skin and eyes to that type of light produces cancer. However, there are recent advances towards UVC with a wavelength shorter than 222 nanometers that is harmless to people.

### **HVAC and interior air quality**

What indicators must we monitor to be able to guarantee safe environments? Currently it is very difficult (if not impossible) to measure in real time viral, bacterial and mould loads. But in the absence of these indicators, being able to meet the parameters of **a standard like RESET** (<https://www.reset.build/>) is a sign in the right direction regarding air renovation and HVAC.

Beyond short-term measures (detailed in the point “Pre-vaccine”), **more granular systems** will be the new goal, meaning that they will be more specific for each of the office areas and more agile in concrete places not depending on the general system. We must understand the behaviour of the building, the user and how to integrate all that to boost comfort, health and productivity.

### **Pandemic-smart buildings: digital tools for hygiene**

**Occupancy analysis** help optimise the number of workers, comfort and productivity **adding health as a new metric** and considering social distance. We must study as well **mobility throughout the building and times for each task of disinfection and cleaning.** All that can be met with tools based on location such as ESRI's “Indoors”.

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The post-COVID19 Workplace

## BATCh Arquitectura, an integrated proposal

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Our experience in the Workplace sector and the extensive use of technology allow us to propose a process in 5 phases.

- 1. Workplace due diligence** to extract an accurate picture of the client's use of their current office. We add to this due diligence a detailed briefing for which we work with all stakeholders until we obtain the adequate change management process.
- 2. Project development** from the agreed upon keys. In this phase we develop all extents of the new office: space design, new health (systems and installations) and digital tools.
- 3. Bidding process.** We work with specialised building companies and we know what we must look for to make a successful recommendation.
- 4. Execution management.** We develop our projects based on BIM technology and we use this collaborative technology during construction to avoid mistakes and to cut on times and expenditure.
- 5. Complete life cycle management.** Thanks to this technology, we update every change and unify everything in the same model managing all transformations of any element in the office, from systems to furniture. This way we facilitate control over all features since construction kick-off until their moment of recycling or reuse, promoting a circular economy culture.

## BATCh Arquitectura: *We speak Workplace*™

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Among our most significant Workplace projects in a highly competitive office market such as Madrid, you can find examples for the following companies:



## Sources and acknowledgements

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The present document has been developed during the months of May and June and is based on the ample experience by BATCh Arquitectura in the Workplace sector and the opinion of experts collected through interviews, papers, podcasts (“The real estate innovators by Antony Slumbers”, “The Smart Podcast by 3G-office”) and webinars (“The Future of work by EDGE”, “Propel by MIPIM”):

### **Experts:**

- Mark Richardson, Marked Performance Sustainability Consultancy
- Antony Slumbers, Proptech consultant
- Gonzalo Delgado, Vodafone
- Tim Oldman, Leesman
- Joseph Allen, Healthy buildings, Harvard
- Enrique Dans, Forbes
- Rafael Cauqui, Renfe
- Pedro Alarcón, Repsol
- Raúl Gómez de Ávila, Firmenich
- Lluís Dalmau, GenCat
- Jordi Llargués, Bayer
- Ángel Toledo, Pfizer
- Javier del Agua, Orange
- Francisco José Lorenzo, Cuatrecasas

### **Surveys:**

- The Gallup Poll, May 2020
- Workplace Insight, May 2020
- US Census Bureau

### **Papers:**

- “Getting ahead of the looming Commercial Real Estate Crisis”, Heda Jordan Consulting Group.
- “Wide ranging antibacterial & antiviral applications in medical fields and daily life”, Kobe University.
- “Plan Estratégico post-COVID19”, Consejo Dentistas (Organización de colegios de España)
- “El espacio de trabajo después del COVID”, Steelcase.

Images in pages 0, 8, 15, 20, 21, 22 and 23: Javier de Paz García

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