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THE NO  
OFFICE OFFICE

**EXPLORING UNCHARTED TERRITORIES  
FOR THE POST-PANDEMIC  
WORKING ENVIRONMENTS**

PAULA ABDELMALEK  
990682

OFFICE



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POST-PANDEMIC WORKING ENVIRONMENTS

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# ABSTRACT

00



The experience of the pandemic led to a drastic change in the fabric of the society that can be witnessed in changes as to how people behave, what they practice and, above all, where and how they work. As a result, the workplace is changing at an unprecedented pace and the reflection on the future of workspaces became an inevitable topic in favour of creating more balanced, forward-thinking and healthy working settings. Amidst these profound changes, companies are re-thinking the future of workspaces with special attention given to employees' mental health, well-being and comfort.

Nature and greenery played a fundamental role during the pandemic, either with their presence at homes or by people working in outdoor spaces that enhanced their productivity and concentration. Thus, in line with the rising need to re-imagine the role of future offices, the aim of the dissertation is to study how the observed interactions of people with nature during the pandemic could be translated into innovative biophilic applications that create unexpected working scenarios by bringing the indoor to the outdoor and vice versa.

"The No Office Office" aims to explore uncharted territories for the post pandemic working environments through extending working parameters to the outside and blurring the boundaries between indoor and outdoor workspaces. This synergy implies that biophilia will be re-introduced in indoors, yet also the possibilities of extending formal work to the outside will be extensively explored. The right balance between health and work is being pursued and celebrated, in order to create safe and productive environments that foster well-being and give workspaces completely new impetus.

## **KEYWORDS**

**BIOPHILIA | GREENERY | MID SPACES | NEW NORMAL |  
WELL-BEING | OUTDOORS | EXTENSIONS**

L'esperienza della pandemia ha portato a un drastico cambiamento nel tessuto della società che può essere osservato nei cambiamenti nel comportamento delle persone, e, soprattutto, nel modo di lavorare. Questo ha portato a una modifica costante dei modi di lavorare e alla conseguente riflessione sul futuro degli spazi di lavoro. Le aziende stanno ripensando al futuro degli spazi di lavoro con particolare attenzione alla salute mentale, al benessere e al comfort dei dipendenti.

La natura e il verde hanno svolto un ruolo fondamentale durante la pandemia, all'interno delle abitazioni private e nei luoghi pubblici adibiti temporaneamente al lavoro, migliorando la produttività e la concentrazione dei lavoratori. Pertanto, in linea con la crescente necessità di ripensare al ruolo degli uffici, lo scopo della tesi è studiare come le interazioni osservate delle persone con la natura durante la pandemia possano essere tradotte in innovative applicazioni biofiliche che creino scenari di lavoro inaspettati portando l'interno all'esterno e viceversa.

"The No Office Office" mira a indagare territori inesplorati per gli ambienti di lavoro post pandemici, estendendo i parametri di lavoro all'esterno e sfumando i confini tra spazi di lavoro interni ed esterni. Questa sinergia implica che la biofilia verrà introdotta negli spazi interni, ma saranno anche ampiamente esplorate le possibilità di estendere il lavoro formale all'esterno. Cercando il giusto equilibrio tra salute e lavoro, al fine di creare ambienti sicuri e produttivi che favoriscano il benessere e conferiscano agli spazi di lavoro un concept completamente nuovo.

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01

# **INTRO- DUCTION**



**1.1**

**RESEARCH  
FRAMEWORK**

**1.2**

**RESEARCH  
QUESTIONS**

**1.3**

**RESEARCH  
METHODOLOGY**

# 1.1 RESEARCH FRAMEWORK

Across the globe, the workplace is witnessing change at an unprecedented pace. Thus, a profound shift in the definition and essence of work has taken place, resulting into a “new normal” that has permanently invaded the working world and put its rules upside-down. Based on takeaways and experiences from the past years, organizations are rethinking the future of workspaces with special attention to well being and connectivity. Physical offices are being now re-imagined as playing fundamental role in creating better equitable and connected environments that benefit people as well as the surrounding community.

Among these takeaways from the pandemic is the observation of the heavy presence of greenery and plants in many homes. During the lock down greenery and plants became a cornerstone in many domestic environments, claiming it helped in creating more focused and relaxed ambiances. Moreover, outdoor places witnessed an increased number of workers, emphasizing that the breath of fresh air and surrounding nature motivated them to work more efficiently, amplified their concentration and reduced negative emotions amidst the difficult situation that the world was facing. (Whinsu et.al, 2022).

Taking these observations into account, the aim of the dissertation is to study and discuss how these interactions with nature during the lock down could be translated into meaningful applications in the working sector, giving birth to new working solutions that focus on bringing the outdoors indoors and vice versa: On one hand, bringing the outdoor to the indoor by infusing innovative biophilic concepts in interior spaces. On the other hand, bringing the indoor to the outdoor, by expanding the possibilities of extending workspaces to the outdoors and exploring the opportunity of undergoing formal work in mid-door spaces i.e in terraces, decks, rooftops or even gardens.

According to Ebbie Wisecarver, WeWork's global head of design, the outdoor workspace is certain to be staying now. "Working outside can increase productivity and happiness, [while] providing access to outdoor spaces is an excellent way for employers to create a more flexible, welcoming environment for their employees when they return to the office," she said (Tony Case, 2021).

Thus, the objective of the thesis is to investigate the concepts of extending the parameters of the workspaces to the outdoors and blurring the indoor/outdoor boundaries to create more intersecting environments that better correspond with the post-covid era, offering various solutions that meet people's different needs.

With the emphasis on extending offices to the outdoors, biophila will also be playing an important role in the thesis, aiming to push the limits of the mere applications of the biophilic concepts and to understand how they can be amplified to achieve innovative and unexpected working scenarios –indoors and outdoors- that foster well-being, treat workplaces as opportunities for improving the quality of life and surpass the circumference of the ordinary concrete walls.

It's now about the "No Office Office"!

# 1.2 RESEARCH QUESTIONS

Based on the definition of the research framework, the following research questions have been developed to better define and guide the research progress:

- 1. How can outdoor spaces be integrated into the working system, offering reliable and formal workspaces in the future era?**
- 2. Is the extension of offices' parameters to the outdoors a mean to enhance the employee experience after the pandemic?**
- 3. Can biophilic concepts be innovatively applied in workspaces to bring the outdoor to indoor and vice versa?**

# 1.3 RESEARCH METHODOLOGY

Throughout the research process, the following elements constitute the main milestones:

- 1) Preliminary Research: The preliminary research phase acts a guidance towards finding the suitable theoretical context and giving it a better definition
- 2) Desk Research: Extensive amount of references has been carefully conducted in order to get a deep understanding of all aspects that are related to the dissertation's focus topic.
- 3) Case Studies: The investigation of case studies directly related to the topic , in order to give an insight about former application, problems and challenges that are remaining. Moreover, indirectly related case studies have also been studied, to give a broader and deeper understanding of the topic.
- 4) Data Analysis: The data gathered has been meticulously interpreted and analysed in order to correctly frame and define the project's goal and objective
- 5) Project Development: The project development includes the takeaways from the research phase and introduces spatial solutions that address the dissertation's topic with innovative and original design approaches.

02



# **NEW OFFICE REALITY**



**2.1**

**THE PRE  
& POST**

**2.2**

**NOW IS  
THE TIME**

**2.3**

**RE-  
IMAGINING  
WORK**

# 2.1 CHANGING WORK BEHAVIORS

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The pandemic forced the adaptation of new behaviours, reinforced new technologies and pushed people to adjust to new ways of working. It led to profound changes in the very essence and purpose of workspaces and, as a result, an enormous shift in global work patterns took place (Gensler, 2021). In light of the lock down and the overnight shift to working remotely, the working sector has undergone circumstances that were the first of their kind and that forced employees as well as managers to approach the theme of working with completely new dimensions. The workplace itself and more importantly how we work in this workplace is now gaining more and more fundamental importance and the need to re-imagine the role of future offices in creating enjoyable, safe and productive jobs and lives is becoming a crucial and inevitable topic. The pandemic brought unpredictable challenges and the adaptation of new work modes is a situation that even the most extreme business-continuity plans couldn't have foreseen by any chance. Therefore, leaders across all industries are now utilizing the takeaways from this experience to boldly re-establish what role offices will play and how work will be done from now on (Mckinsey, 2020).

Macro trends in hiring, business management and consumer behaviour exhilarated rapidly and many defaults about working behaviours are now being questioned as a result of the insights gained from the various adjustments done to routines, schedules and work role. There is no doubt that the magnitude and type of change varies significantly among the different industries, nevertheless there is a general sentiment that safety and flexibility will be among the top priorities along with reconsideration towards the five-day work-week (The Harvard Gazette, 2021).

The traditional office served primarily as a space that provides comfort and safety to the employees, ensuring them a healthy working environment (Fruzsina et al., 2021). However, according to Visher, the demands of the tenants and real estate industry highlight that the quality expectations in workspaces are becoming an increasing necessity nowadays (Visher, 2008).

With the turn of the 21st century, advancements in computer technology and telecommunication meant that employees don't need to remain in a fixed time and space to be able to work. Like the pandemic resulted in the complete destruction of barriers between work and personal life, yet also at the time these barriers seemed to break down slowly, with people looking for career chances rather than jobs with fixed timing, social life at work and even sleeping there when needed. As a result, a shift started to take place from workplaces as a passive location for work- a backdrop- to the concept of workspaces as an active tool and tool to get work done. It is also highlighted in the research that evidence is showing that poorly designed workspaces lead to employees' wasting their time in trying to cope with these poor environments found especially in traditional offices. As a result, counter reactions such as "Activity-based" and "Agile" working modes started to rise before the pandemic, giving the freedom to choose where to work according to the work activity that they will perform, leading to the creation of various work settings supporting various activities.

Additionally, while the pandemic seems to have driven behavioural changes regarding offices' purposes, yet these changes have also been present even before the start of the Covid-19 pandemic- also with a special emphasis on well being and better workplace settings. The demand for enhanced workplaces driven with knowledge about the effect that indoors could have on mental well-being along has witnessed investments and attentions in the previous recent years. According to research findings, various pilot projects have been conducted in order to test workplace scenarios on the short and long run, highlighting that talent attraction; employee-engagement and increasing sense of belonging could be the enabled as a result of the enhancement of workplaces. Moreover, the relationship between office's layout and employees' attitudes has been observed long before the pandemic throughout an extensive amount of research that aims to investigate the negative and positive aspects of various office layouts. With no doubt, employees' satisfaction and well-being have found to be directly related to office design elements, including furniture, finishing and even lighting (Dominoni, 2022).

Moreover, a research study highlights that employees' satisfaction and productivity have been directly linked to the notion of comfort, highlighting that employees need more than healthy and safe buildings, emphasizing their urge for rather healthy environmental support in the actives that they perform (Vischer, 2008). Thus, promoting well-being, collaboration and cooperation has been paving its way also in the past, with various projects intending to break down physical barriers and thrive to new working solutions before the pandemic. The Etsy HQ designed by Gensler in 2016 is an example for a pre-covid design creation that brings the outdoors in, priorities employee well being in every space and, acts as a regenerative sustainable ecosystem and offers various work settings accentuated with greenery and colors (Natasha, 2016).



Figure 1: Etsy HQ by Gensler prioritizing employee well being and sustainability  
Source: <https://www.designboom.com/architecture/etsy-headquarters-gensler-brooklyn-new-york-12-01-2016/>



Figure 2: Etsy HQ by Gensler prioritizing employee well being and sustainability  
Source: <https://www.designboom.com/architecture/etsy-headquarters-gensler-brooklyn-new-york-12-01-2016/>

In understanding the magnitude of change caused by the pandemic, an effective research has been conducted by WeWork and Workplace Intelligence -an independent research firm- that was composed of a blind survey of 1000 C-suite and 1,000 non-C-suite employees. According to the survey, elements of the past like lack of flexibility and 9-5 working hours have been long found to be rather disruptive and out-dated. Therefore, it is evident that one of the key findings emphasised in the survey is the flexibility aspect, underlining that when employees are given the flexibility they ask for, it results in better engagement, loyalty and productivity. Further results show that employees would spend only around 34% of their time at the company's HQ while a stagnant 95% expressed their desire for control over when and where they work. It took companies a global pandemic to reveal that giving employees what they need is useful for the bottom line and the goal of the organization. But now that companies are taking the leap, there is a positive green line for the future of work and the following key findings of the survey are the corresponding way pavers when it comes to the discussion of the return to workspaces after the pandemic: (WeWork x Workplace Intelligence, 2021)

As employers worldwide are experiencing the challenge of bringing back employees to the offices, it is vital among their leadership roles to re-introduce workspaces that are more safe, productive and coherent with the new normal. It is also important now for companies to use this time to leave the passivity and inertia of the past and act on dispensing old routines and practices. The accurate planning of the return to the offices can be the birth of innovation, enhanced collaboration and also reduced financial burdens. Therefore, it is aimed to create a healthy place where employees delightfully work and collaborate with their colleagues to effectively reach the organisations' goals values. Now is the time! (Boland, 2020)

**“AFTER COVID-19, WHAT PERCENTAGE OF YOUR WORK TIME WOULD YOU PREFER TO SPEND IN THE FOLLOWING ENVIRONMENTS?”**

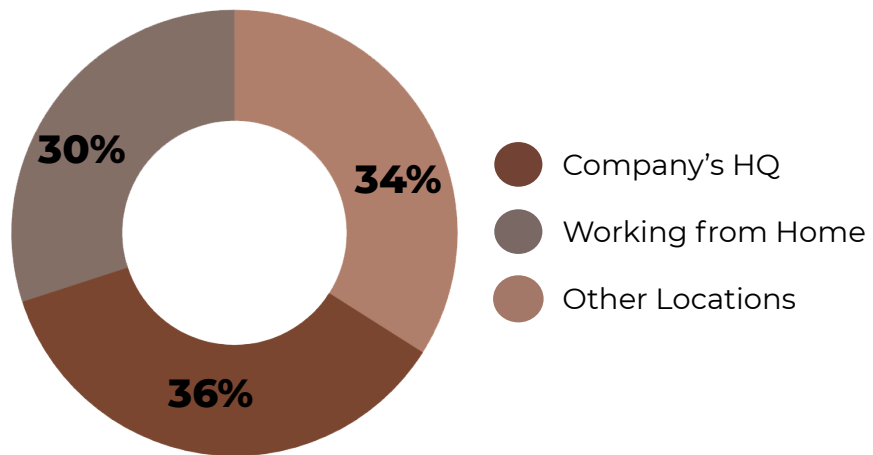


Figure 3: Pie chart showing percentage of employees work time spent in different environments according to their prefer. Source: WeWork x Workspace Intelligence

**95% OF EMPLOYEES WANT CONTROL OVER WHEN WHERE AND HOW THEY WORK**

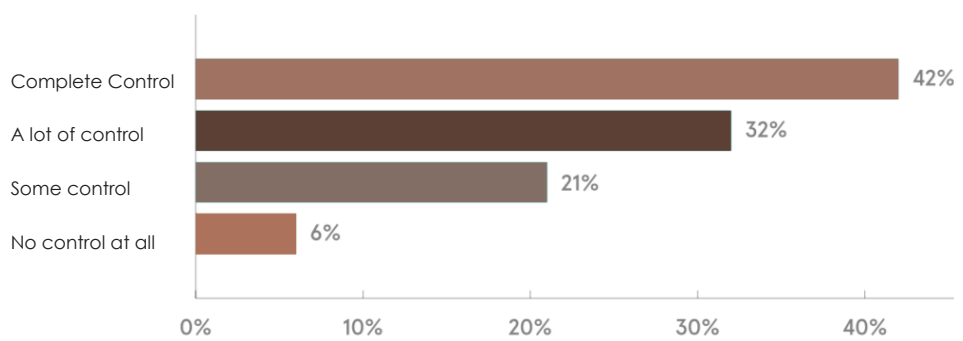


Figure 4: Bar chart showing how much control employees want to have over where, when and how they work. Source: WeWork x Workspace Intelligence

# 2.2 NEW WORK RESILIENCE

While there is no one-size-fits-all answer to the questioning of how work should be done after covid, yet what is certain is that all leading companies will boldly re-question the various long held assumptions about work and will reconsider many aspects regarding what the actual role of the office should be. The answer depends heavily on the nature of each organization and it could even vary across different geographical locations, functions and business. Therefore, collaboration between technology, real estate and human resources is vital in determining the future of work. Constant pivots and management skills are also further important pillars to ensure a solid and permanent change (Bronnie Boland et al., 2020).



Relevant questions on the table would be the ones like, if the essential function of a space for a company is collaboration, should most of the spaces serve this cause only? Should employees who don't attend meetings and work alone be asked to work from home instead? Also are offices closer to employees' home a solution to be considered?

In all cases, technology will be playing a fundamental role in shaping the offices of the future because they will allow workers to work in safe environments when returning back. Moreover, companies will need to consider how often the office will be cleaned, who will come to the office and whether the airflow is sufficient or not inside the different spaces of the office. It must be also be taken into consideration that the barrier between being present in the office and out of the office must dissolve, in order to cultivate engagement and productivity.

Video-conferencing inside the office, for example, will not involve anymore the passive participation with people in a screen seeing other people around a table staring at each other, making meetings very ineffective and boring. Working models will gradually shift from standard working models to new futuristic ones that reflect elements like asynchronous collaboration, seamless in-person interaction and remote collaboration spaces to facilitate communication and ensure effective outcomes in the post-covid era. (Brondie Boland et al., 2020).

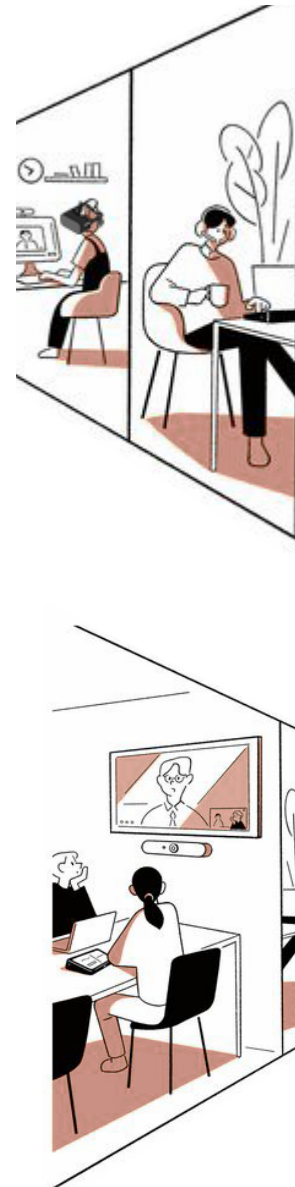


Figure 5: Scheme for Video-conferencing activity, Behance

A further important element in reinventing spaces is that organizations need to fully comprehend where and how much space is needed to foster the needed results regarding performance, culture and collaboration; instead of simply making an incremental adjustment to the existing footprint. This approach involves also the understanding of where offices need to be located: big cities and large urban squares could be the answer to some companies to attract young people while suburban areas may be the answer to others, who find a need to abandon the headquarters of the big-city after the pandemic.

The re-imagination of workspaces must also take into consideration the increasing importance that air ventilation will be playing after the pandemic. Current research emphasizes strong connection between the indoor cohabitation and infection. According to the World Health Organization (WHO), inadequate ventilation increases the risk of infection as a result of the increased probability of airborne transmission through aerosols in

specific conditions (WHO, 2020). Moreover, an indoor space with poor air circulation along with too many people inside the space and not wearing masks, could increase the risk of exposure to airborne aerosols (Frumkin, 2021). Therefore, a shift in the ventilation system's design is an increasing necessity in the new context of the pandemic, including air filtration efficiencies as well as increases in ventilation rates. (Bruno Perazzo et al., 2021).

Furthermore, a research was conducted on more than 100 SARS infected patients in five regions, in order to assess the relation between air pollution and the infection rate. The results of the study highlight that patients from regional areas with moderate API seemed to be in more danger than those coming from regions with lower API.



↑ **API**  
Air  
Pollution  
Index

↑ **84%**  
**death**  
**risk**

The infographic consists of two vertical arrows pointing upwards. The left arrow is positioned to the left of the text 'API' in a large, bold, brown font. Below 'API' are the words 'Air', 'Pollution', and 'Index' stacked vertically in a smaller, regular brown font. The right arrow is positioned to the left of the text '84%' in a large, bold, brown font. Below '84%' are the words 'death' and 'risk' stacked vertically in a large, bold, brown font.

Among the most important measures, the REHEVA, CDC, ASHRAE and the WHO recommend increasing the rate of the outdoor airflow to the maximum possible (100% if doable). The allowance of 100% outdoor airflow rate into commercial buildings leads to an energy penalty that is rarely declared. Further measures include an emphasis on advanced air distribution as well as source and occupant-based micro environment control. Along with increasing the supply of outdoor air, it is also vital to maintain exhaust ventilation and limit air recirculation (Burrige et al., 2021).

Furthermore, results highlight that the displacement ventilation technique proved better results in reducing the risks of covid-19 airborne infection over the conventional mixed ventilation technique. (Bruno Perazzo et al., 2021). In addition to that, since the current HVAC systems were designed to assist non-pandemic conditions regarding humidity, temperature and contaminant levels and since any efforts to modify them could be very costly and inefficient, therefore, it is suggested to develop new HVAC paradigms that reduce energy use and control fresh air exchange as well as thermal comfort (Frumkin, 2021). An approach suggested by Melikov is to offer personal ventilation supply to the breathing zones of the individuals, i.e. their work desk, instead of supplying a complete interior space, which is more costly and more energy consuming. The latter proves also to be less effective in protecting people from infection, while the delivery of fresh air directly to people would be much more effective and would provide higher protection and safety to the employees (Melikov, 2020).

# 2.3 RE-IMAGINING WORK

## RE MOTE

It is evident that the pandemic provided the working sector an array of lessons, which will keep evolving more over the coming years with the hope of reaching fruitful results in the near future. Moreover, the establishment of place making in human needs along with environmental sustainability and justice proved to be a further benefit that the world gained from the pandemic. (Frumkin, 2021). The panoply of lessons to be taken away from covid-19 are numerous and they reflect various metrics and

indicators that need to be adopted in the future to improve efficiency and use technology in order to create more resilient, healthier and sustainable places than before (Tompkins, 2020).

Perhaps the most obvious impact of COVID-19 on the labour force was the dramatic increase in employees working remotely. Although the basic idea of working remotely is rather generally understood, it has somewhat been frowned upon as being a productive and efficient method to get the job done. It even carried a connotation of laziness and lack of motivation. The pessimistic consensus has led many organizations to be rather unenthusiastic to entertain the idea. However, this concept which was perceived as a professional taboo to many has now deemed itself worthy (Randa Diab et al., 2020).

In order to determine how extensively remote work might persist after the pandemic, its potential was analysed by Randa Diab across more than 2,000 tasks used in some 800 occupations in eight focus countries. Considering only remote work that can be done

without a loss of productivity, about 20 to 25 percent of the workforces in advanced economies could work from home between three and five days a week. This represents four to five times more remote work than before the pandemic and could prompt a large change in the geography of work, as individuals and companies shift out of large cities into suburbs and small cities.

Moreover, the workers' perception to the workplace and new ways of work is one of the most significant results of the extended working from home period. According to surveys, employees wanted to remain working from home and refused the idea of returning back to the physical offices (Eunhwa Yang et al., 2021). Some companies are even already planning to shift to flexible workspaces after positive experiences with remote work during the pandemic, a move that will reduce the overall space they need and bring fewer workers into offices each day. (Suzan Lund et al, 2020).

According to American Community Service, the percentage of US workforce working remotely has significantly increased as a result of covid, reaching to a peak of more than 40% in February 2020. It was surprising to many people how effective technology served them during the pandemic and the quick adoption of various digital platforms were stunning and far better than what was imagined (Boland et. al, 2020). A further research done by Mckinsey shows that 80% of the interviewed people reported that they enjoyed working from home and 41% said that they felt more productive than before.

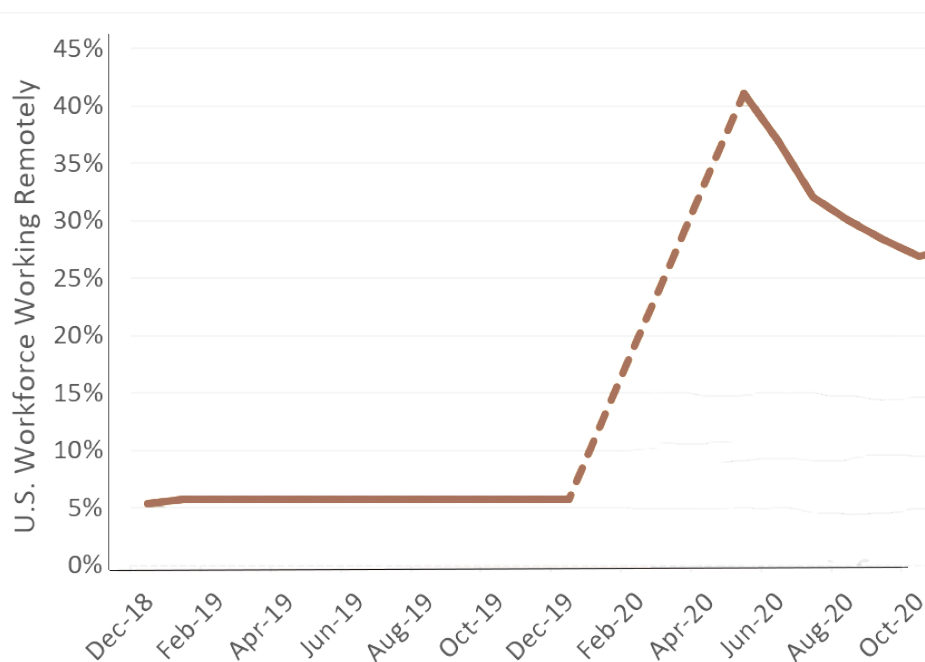


Figure 6: Chart elaborating the percentage in the rise of US employees working remotely  
Source: American Community Survey (ACS);

The further observed perk of working from home during covid was that employees got liberated from route commutes and used the saved time in other meaningful activities. Workplace flexibility means “the ability of workers to make choices influencing when, where and for how long they engage in work-related tasks” (Hill et al., 2008, p. 166). Therefore, the resulting flexibility in the working hours and schedules along with the complete freedom of choosing where and when to work where game changers that had positive impact on employees (Eunhwa Yang et al., 2021). This workplace flexibility on the other hand resulted also in a more balanced work-life condition as a result of more time spent with family and children and even with one self (Maruyama et al., 2009). The results of the research by WeWork also highlights that workers expect to continue working remotely or from home for several days a week and it also highlighted that businesses will be in favour of supporting this arrangement, as it has never proven to be a reason of a decline in work productivity (WeWork x Workplace Intelligence, 2021).



**Employees wanting to split time between office and remote work**

Total respondents 893

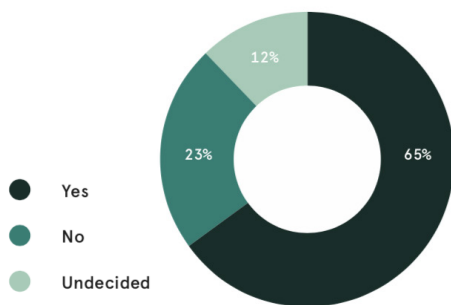


Figure 7: Pie Chart highlighting percentage of employees wanting to be allowed to split their time between corporate office and remote work  
Source: Wework x Workspace Intelligence

**Employers wanting to allow employees to split time between office and remote work**

Total respondents 1000

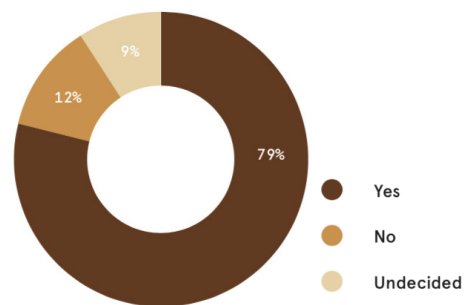


Figure 8: Pie Chart highlighting percentage of employers wanting to allow employees to split their time between corporate office and remote work  
Source: Wework x Workspace Intelligence

Nevertheless, it should be also mentioned that this is not a situation that is prevailing for all individual workers. There are clear differentiations between organizations and cultures, which also sheds light to the present difference between the different individual employers and employees. Many of them were completely delighted from the work from home experience, while others felt drained from it. It is also sometimes the same people who enjoyed the experience also felt drained at some moments and experienced different levels of satisfaction and dissatisfaction at different times. Some people's productivity increased, while for others it rather decreased for lack of motivation, home schooling, shortages in network and lack of technical facilities (Eunhwa Yang et al., 2021).

It is also evident that the virtual communication saved many people, but it also drained many others leading to the experience of drawbacks among

“

**Remote  
work is  
here to  
stay ”**

-Pittoos, 2021

which are distractions and tendency to work more than before along with reduced work-life balance (WeWork x Workplace Intelligence, 2021). Moreover, some people managed to keep up with mentorship and conversations with peers, while others completely missed out. Different people experienced different emotions during these hard times which all are valid and must be taken seriously into consideration in the future when thinking about the post-covid working scenarios (Boland et al., 2020).



# HYBRID

**“In a hybrid workplace model, employees have the ability to work in different spaces, including corporate offices, co-working spaces, public spaces, and from home”**

# 87%

**of surveyed employees support permanent hybrid adaptation**

While the shift to the overnight remote work benefited employers and employees in finding new ways of work management and adopting secure online work flows, yet these improvement in processes is seen to be continuing to benefit organizations as start their shift to hybrid work models. KPMG highlighted that The future of work is hybrid” (Pittoors, 2021). Setting the ground for a definition of this term, according to WeWork “In a hybrid workplace model, employees have the ability to work in different spaces, including corporate offices, co-working spaces, public spaces, and from home” (WeWork x Workplace Intelligence, 2021).

After one full year of working from home and with the increasing availability of a vaccine for all workers, companies started to focus on what to come next and this is where the hybrid model comes as a frequent answer. According to Pittoors, the return to the status quo of the pre covid situation is not an option, highlighting that 87 percent of surveyed employers explained that they are considering the permanent adoption of the hybrid work model with some employees going everyday to the office and others only some days. The improved working experience as a result of the forced use of collaborative technologies paved the way to re-imagine not only jobs and processes but also operation models themselves. It is also claimed that the improved digitization will contribute a lot in refining hybrid work (Pittoors, 2021).

However, in the hybrid model it is highly important to find the correct balance between the amount of time spent at home and inside the office while also wisely managing team dynamics and the level of autonomy given to employees to determine their own working schedules, in order to maximise the benefit for the employees and employers altogether (Morgan, 2004) However, organizations need to also consider relevant risk elements that come along with adopting hybrid work models: Remote and hybrid models could wear away leadership trust and the identification of the employees with the organization along with posing also some challenges in the structural hierarchy within an organization.

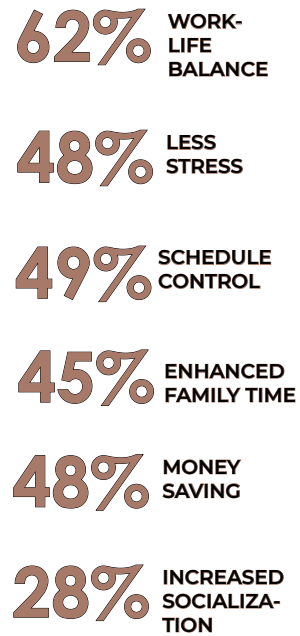


Figure 9: Hybrid Model Benefits, Source: WeWork x Workspace

The evolution of the hybrid work model could be a part of a bigger transformation/digitization initiative to enhance efficiency, creativity and agility. However, it is not enough to rely only on technology to reach these goals. It is necessary to make a transformation of existing governance and operating systems along with evaluating employees' skills in order to understand the best way to fulfil them and deliver their value accordingly (Pittoors, 2021).

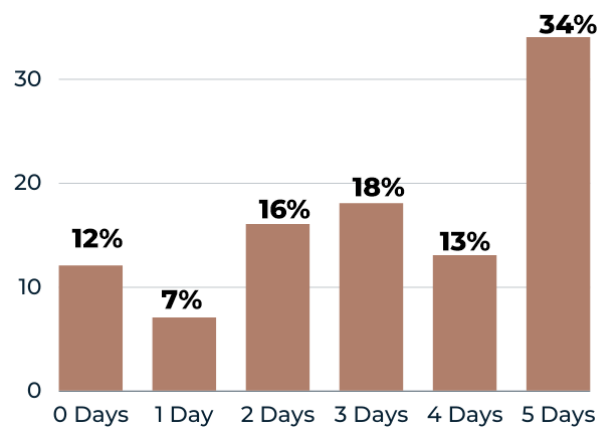


Figure 10: Employee responses when asked how many days they want to go to the office, WeWork x Workspace Intelligence

Furthermore, it should be also taken into consideration that while Hybrid working mode is foreseen to stay, yet the office- on the other hand- will not lose its autonomy and is needed more than ever. In Gensler’s latest workplace survey done for 14,000 employees across 9 countries and 10 industries, interesting findings highlight that work has shifted but relatively similar around the globe.

When the participants were asked how much time is needed ideally inside the organization’s office to maximize productivity, findings reveal that people are actually in need of the office in order to maximize their teams’ as well as their own productivity. Globally, workers expressed that they need to spend around 63% of the working week inside the physical office. The UK and Singapore witnessed the largest increase of 20% while, the Philippines and Saudi Arabia came at the second stage with an increase of 18% (McLaurin, 2023).

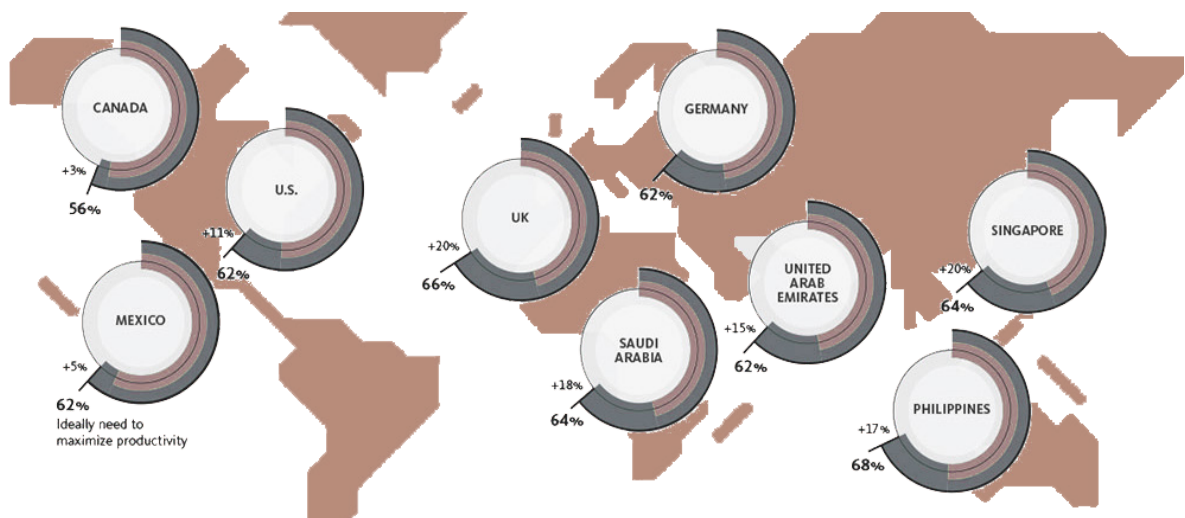


Figure 11: World map charting globally how much time is ideally needed to spend at the office in order to maximise productivity of the individual and of the team Source: Gensler Global Workspace Survey, 2023

# FOUR DAYS WORK WEEK

Other methods which companies are considering implementing in the post covid era is to increase employees' productivity through implementing a four-day work week, which is not a new concept.

France, for example, executed a decrease in working hours nearly 20 years back as a way of bettering the work-life balance for the country. Furthermore, Canada, the Netherlands and New Zealand experimented with the idea of a four-day work week and witnessed successful outcomes. In fact, they are working toward making these changes permanent. Moreover, when UK business pioneers authorized a four-day of work for some of their full-time representatives, they witnessed that employees' satisfaction was enhanced. They also witnessed an increase in staff efficiency/productivity and lower turnover (Laker and Roulet, 2019).

Unmistakably, there is a connection between the four-day work week and better personal satisfaction (Laker and Roulet, 2019). However, the notion is not yet universally accepted or adhered to as the needs of individual institutes must be considered and studied further. Yet, due to its reported success, a shorter work week may prove to be successful, especially in light of the lock down and the social distancing measures of the COVID-19 pandemic.

# KEY INSIGHTS

- 1.The pandemic forced the adaptation of new work behaviors**
- 2.Well-Being and Health have prevailed in the past as workplace enhancers, yet now they are gaining more emphasis and importance**
- 3.The regular return to the office is not favored by employees**
- 4.Remote and Hybrid working modes are foreseen to stay, yet the physical office did not lost its autonomy and is needed more than before**

03

# **MENTAL HEALTH IN UNCER- TAINTY**

**3.1**

**MENTAL  
HEALTH IN  
CRISIS**

**3.2**

**REVOLUTION-  
IZATION**

**3.3**

**NATURE  
GETAWAY**

# 3.1 MENTAL HEALTH IN CRISIS

The evident shortage in medical masks and sanitizers were among the earliest signs of anxiety that took over during the pandemic, which highlights that the corona virus is not only revolving around physical health risk but is also heavily related with mental health of ordinary individuals as well as workers (Shigemura et al., 2020). It should also be taken into account that since the pandemic outbreak introduced the risk of a new unknown virus, the overlooking of the mental health of the individuals was an understandable outcome.



Major depression and psychological distress are among the most significant mental health issues that arise from an epidemic outbreak or a pandemic (Hamouche, 2020) Psychological distress refers to “ a state of individual’s emotional suffering, accompanied by symptoms of depression and anxiety and somatic symptoms like insomnia (Drapeau et al., 2011). On the other hand, depression is a “psychiatric mood disorder, characterized by persistent reduced mood and interest” (Bonde, 2008). Both of these psychological conditions are outcomes of intense stress that has not been well managed and as the pandemic was and still remains an intense stress factor for the whole world, such mental issues were among the most apparent during that time.

Among the stressors that drained people’s mental health during the pandemic was the confinement that took place as a result of the imposed quarantine and travel bans over long periods of time. This social isolation was a catalyst for serious mental consequences that include insomnia, mood disorders, emotional distress, panic, fear, stress anxiety and depressive symptoms (Bai et al., 2004;Brooks et al., 2020;Cava, Fay, Beanlands, McCay, & Wignall, 2005;Desclaux, Badji, Ndione, & Sow, 2017;Hawryluck et al., 2004).

## **PSYCHOLOGICAL DISTRESS**

“ a state of individual’s emotional suffering, accompanied by symptoms of depression and anxiety and somatic symptoms like insomnia“

## **DEPRESSION**

“psychiatric mood disorder, characterized by persistent reduced mood and interest”

Nevertheless, the overnight switch to remote work was one of the most challenging adaptation processes during the pandemic, which played a significant role in workers' psychological and mental well-being. As much as there were many benefits associated with working from home. Nevertheless, working from home is a trade-off with a set of advantages but also a set of disadvantages that are believed to continue long even after the pandemic. Besides of the common benefits i.e. increased flexibility, time saving, work-life balance and more time with family, there are adverse factors that contributed to experiencing rather negative outcomes:

The prolonged stay at home while working caused people to have a tense and nervous mood. According to Brooks, the longer the quarantine duration is, the worse are the mental outcomes specially post traumatic stress disorder (PTSD), anger and avoidance behaviour (Brooks et al., 2020). Moreover, it was also observed that workers spent too much time working while facing a lot of difficulties in managing

technology and in setting up the proper workplace at home; which all together contribute in the deterioration of mental well-being and health of the individuals (Begen et al., 2021). Furthermore, the virtual presence of teams all over the world was challenging for the working people, causing problems such as lack of boundaries, physical and mental burnout and Zoom Fatigue (Reilly, 2021).

It is evident that the pandemic created global stress and uncertainty and its significant negative impact on mental health and well-being has been well documented in numerous research. Therefore, it is vital for employers to fully embrace the fundamental new role that mental health will certainly be playing in the post covid workplaces. It is not a surprise that the survey by "The Future Workplace 2021 HR Sentiment" highlights mental health and employee well-being as being top priority for 68% of senior HR leader (Meister, 2021)

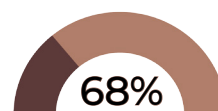


Figure 12: Percentage of Senior HR Managers putting employee well-being as top priority, Unispace

According to Harvard Business School, in the post pandemic era organizations are more prone to care about their employees' mental health and will put more effort in positively addressing their daily stress and pressures. Ashley V Whillians, a behavioural psychologists at Harvard Business School highlights that "We are observing high levels of burnout and stress ...employees are disincentivized to speak openly and honestly about their stress and frustration out of fear, or they cope by minimizing its effect with comparisons with others who seem to be worse off " (The Harvard Gazette 2020). Moreover, the co-founder of "Managing the future of Work" project at Harvard Business School emphasized that the pandemic acted as an alarm to all business leaders towards grasping the pervasiveness of mental health issues during the lock down. It was enlightening for them to witness their employees' daily hardships and challenges, making these issues –like taking care of children during work– now more relatable and understandable to them from personal as well as professional point of views.

Nevertheless, it should be also taken into consideration that mental health issues have been prevailing at the office even before the pandemic according to a research by the UK government along with the Health and Safety Executive (HSE). The study highlight that the rate of reported depression, stress and anxiety has even intensified as a result of the pandemic, leaving 822,000 reporting work-related mental health issues.

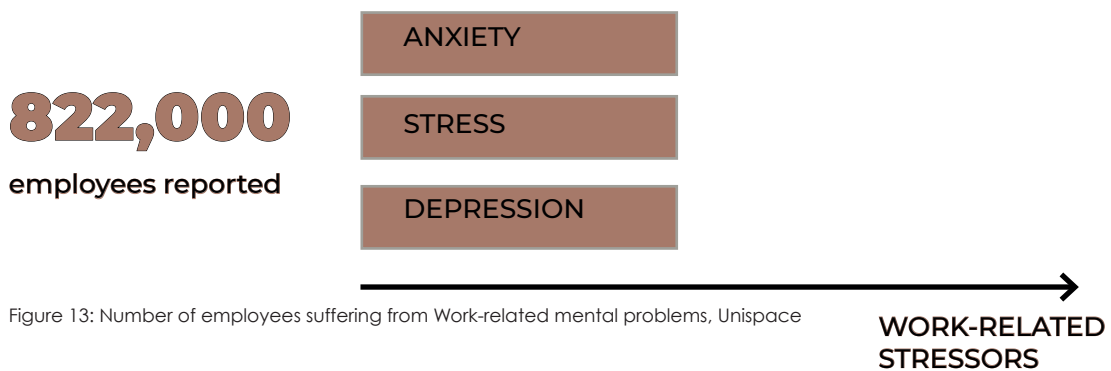


Figure 13: Number of employees suffering from Work-related mental problems, Unispace

In addition to that, employers should pay attention to foster human connection in the post covid working scenarios with efforts to defeat workplace loneliness that result from loss of social connection. It was essential for employers' well-being in the pre-covid time to interact in-person, however, the need to decrease this type of interaction in favour of supporting social distancing led to reduced well-being and mental health. Loneliness was considered an epidemic even before the start of the pandemic and, thus, needs special attention and emphasis in the new workplaces (Reilly, 2021).

All in all, the pandemic seemed to draw an opportunity for employers to reflect on their employees' lives and helped them in having a better comprehension of their everyday lives' complexities. This resonance constitutes one of the main drivers that lead to putting mental health and soundness on the top of the agenda of all post-covid working scenarios.

“

**We are observing high levels of burnout and stress ...employees are disincentivized to speak openly and honestly about their stress and frustration out of fear, or they cope by minimizing its effect with comparisons with others who seem to be worse off**

Ashley V Whillians, Behavioural psychologists at Harvard Business School

”

# 3.2 REVOLUTIONIZATION

According to Unispace, “a leader in the creation of people centric spaces—most of the offices are not designed to support mental health in a hybrid environment as a result of the lacking of designs and appropriate facilities. A report done by Unispace highlights that a staggering 95% of workers are not satisfied in their office spaces and would like to see improvements in the physical office concerning the number of private spaces and amenities. Moreover, 47% of the 3000 surveyed office workers highlighted their positive mental health experience during remote work, which means that a significant amount of workers trust that returning back to the office can have a major influence on their mental well being. It is also important to highlight that more than half of the surveyed staff in Europe were reluctant to go back to the office, expressing feelings of anxiety and uneasiness about the matter (Unispace, 2022).



Figure 14: Illustration for mental health problems  
Source: Collage re-created by the author

# mental health at work is at a “catalytic point in time”

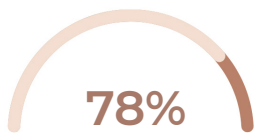
(Mind Share Partners, 2021)

Therefore, the discussion on mandating full-time return to the office must take into account how the well-being of the workers will be achieved and protected. Additionally, the “2021 Mental Health at Work Report” released by Mind Share Partners is also supporting the idea that the company’s culture has the duty of supporting mental health, highlighting that mental health at work is at a “catalytic point in time” (Mind Share Partners, 2021).

All this leads to the understanding that the re-imagination of offices must not only support hybrid set-ups but moreover, should bolster mental health and employee well being. This could be achieved, for example, by replicating homey atmospheres in offices that resonate with the comfort that employees felt during their work from home period (Unispace, 2022)

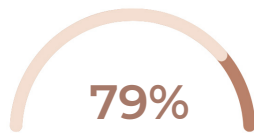
## HOME REPLICA- TION





**FELT DISCONNECTION FROM WORK PEERS**

Figure 15: Disconnection from peers during Covid-19  
Source: wework xWorkspace Intelligence



**MISSED SOCIAL ASPECT INSIDE OFFICE**

Figure 16: Social disconnection during Covid-19  
Source: wework xWorkspace Intelligence

# SOCIAL CONNECTION

The social dimension was a further aspect that was missed during the pandemic. Data show that 78% of the surveyed workers felt disconnected from their peers during the lock down and 79% missed the social aspect that they used to experience inside the office. This also means that the office remains a necessity and a provider of an experience that cannot be replicated anywhere else: human interaction. Therefore, it seems almost impossible to be able to reinforce chance interaction and bring teams together remotely in the same way as they organically take place inside the physical office.

However, tiny meeting rooms and individual desks in traditional workspaces do not encourage mental health because they simply don't reinforce the required real connection with others. Forced talks and discussions within strict corporate boundaries will never deliver the connection that employees missed and are seeking when returning to the physical office. In order to allow real natural engagement and drive creativity, it is necessary to create spaces – bars, cafés, lounges- that are solely dedicated for social activities. These socialisation experiences allow employees to interact with each other, build relationships and activate a supporting culture that will altogether result in fostering their well-being and positively improving their mental health (Unispace, 2022).



# 3.3 NATURE GETAWAY

50

**45%**

**Took greenery  
as a coping  
mechanism  
during Covid**

**70%**

**Reported mood  
enhancement  
when exposed  
to nature**

While most offices were shut down during the pandemic, nevertheless individuals remained yearning to keep their access to outdoor spaces as much as possible to get a breath of fresh air, reconnect with nature and mitigate their reduced physical as well as mental health.

According to a research done by Mental Health Foundation, time spent outdoors played a significant role in helping people to manage their stress during the pandemic. Research evidence highlight that going to green spaces like parks was one of the most popular “coping mechanisms” that was expressed to be helpful in positively coping with the new situation. According to its survey, 45% of the respondents explained that visiting green spaces helped them a lot in dealing with the stressful situation and a further 70% of the respondents admitted that their contact with nature helped them in improving their mood (Mental Health Foundation, 2020).



Figure 17: Collage depicting people in green area  
Source: Re-created by the author

Studies have also shown that the presence in green areas has found to promote community engagement and social cohesion, which were essential during the pandemic (Kuo et al., 2018). Further studies also elaborate that greenery and vegetated areas may contribute in reducing the spread of the Covid-19 virus: findings of a research conducted in the United States concluded that areas with more green spaces witnessed lower rates of Covid-19 infection compared to others with fewer vegetation levels, highlighting that the availability of greenness could potentially mitigate the infection rate (Lin J. et al., 2023)

No surprise that wework- international leasing company offering flexible office spaces- was one of few who managed to continue its operations because of their outdoor spaces availability. They managed to offer their clients the opportunity to work in outdoor completely safe environments with each outdoor space corresponding to its surrounding community (Forbes, 2020). Therefore, while the set up of offices can be a key player in reinforcing mental health, nevertheless, the importance of outdoor areas inside workplaces became fundamental and cannot be overlooked anymore after the pandemic. There is a good 21% of surveyed employees by Unispace that desire more access to green areas, explaining that outdoor spaces are lacking in their offices.

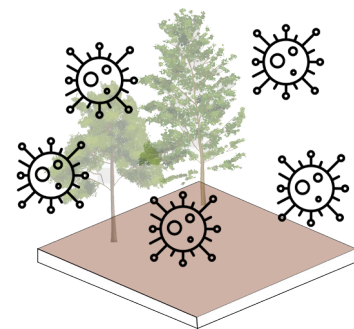
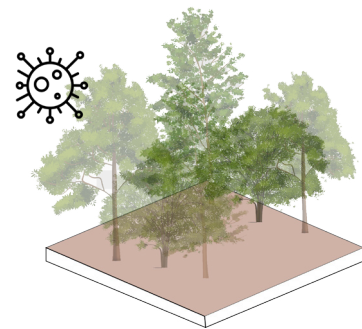


Figure 18: Scheme emphasizing importance of greenery in reducing Covid-19 infection, Source: figure created by the author

**More dense  
green spaces  
witnessed  
lower Covid-19  
infectin rate**

Previously, outdoor areas did not play a fundamental role in offices' layouts because it was believed earlier that the sole purpose inside an office was to work at a desk. However, especially with the rise of the pandemic and the better understanding of employee's needs, it is evident that external atmospheres are foundational elements in boosting mental health and reinforcing the well-being of everyone inside the workplace. A pale, concrete, grey balcony that gets turned into a working or socialization space surrounded with greenery can be a source of stress reduction and generation of happiness -regardless of how big the outdoor space is. Moreover, it could also be an extra facility to employees who don't have access to outdoor space at home, making the office to them a provider of a facility that is unavailable in their private premises- which would boost their mental health and well-being as a result.

According to Daren Bascome, CEO of Proveb, outdoor spaces could act as show stoppers and are a positive way to brand a working space that looks inviting and welcoming in its comeback to the physical presence (Tony Case et al. 2021).

Therefore, extending the premises of workspaces to the outside can be a game changer in the working experience of the employees. However, for those who do not have this extension luxury, introducing green elements like indoor gardens and living walls could be potential alternatives (Unispace, 2022). In support with these research findings, Claire Shepherd- Chief Operating Officer at Unispace- admits also that "The link between office design and mental well-being is often overlooked, but the fact that almost half of the workforce felt that their mental health improved while working from home, highlights that too many workplaces do not meet the needs of the people that use them.

**We know that the office - a place that many of us are returning to on a more regular basis - can support mental well-being, from the positive collaboration and socialization opportunities our colleagues afford us, to easy access to amenities, and much more" (Unispace, 2023).**

In addition to that, Gensler's Germany Workplace Survey 2019 also elaborated that as workers worldwide are re-prioritizing their well being and health, employers now are confronted with great pressure to synergize outdoor and indoor spaces, support mental health and nudge healthy behaviours. Moreover, since many employers found their homes more convenient because of the outdoor access and environmental adjustability, the pressure of establishing healthy policies inside the post-pandemic offices is even more exuberant and challenging to employers. As the future of offices is being redefined, it is important to acknowledge that most of the concerns facing today's' workplaces were already present, however, the pandemic only exacerbated them.

Now the post-pandemic office is not just a place for work, but a place for togetherness, since the physical presence and experience of being together is being valued now more than ever before. Nevertheless, privacy, choice, unassigned seating and well-being remain a top priority for employees in the new normal working scenarios. Hence, employee-centered visions are expected to be driving the evolution of the new physical offices, in order to generate spaces in which workers are encouraged to do their best individually as well as collectively. The pandemic is a true opportunity for rethinking the blueprint of what constitutes a workplace so as to create an office where employees want to be, because "great offices are employees' preferred place to work" ( McLaurin, 2021).

# KEY INSIGHTS

**1. Depression and Psychological Distress are the most prevailing mental health issues arising from a pandemic**

**3. Remote work resulted in positive mental health feedbacks**

**4. Anxiety and uneasiness are expressed regarding the return to the physical office**

**5. Well-being integration is a top priority in the future working scenarios**

**6. Going to outdoor spaces and re-connecting with nature was a coping mechanism to enhance the mental health**

04



# **INTRO- DUCING BIOPHILIA**

## **4.1**

**INTRODUCING  
BIOPHILIA**

## **4.2**

**BIOPHILIC  
DESIGN**

## **4.3**

**DEFINING  
ATMOSPHERES**

# 4.1 INTRODUCING BIOPHILIA

## 4.1.1 ORIGINS

Contact with nature has always been a basic need that is not connected to a person's preferences or even to a cultural tradition. Just as the human body is in need of regular exercising and healthy food to live, also the contact with the natural environment is as inevitable as the latter (Heerwagen, J. 2009). Our psychological functioning and behavioural patterns have strongly been affected from experiences of nature across revolutionary periods, which left a mark on each and everyone.

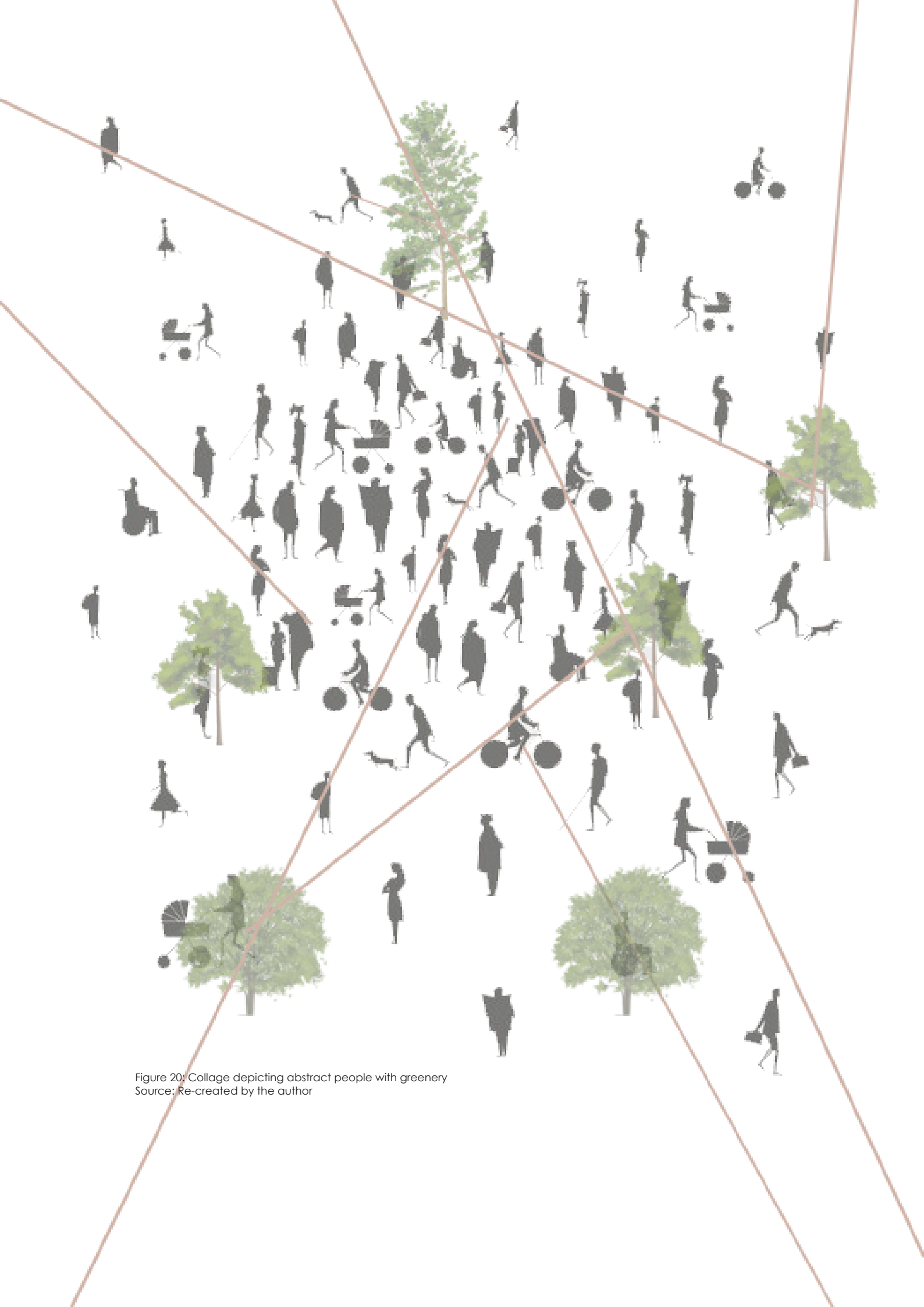


Figure 20: Collage depicting abstract people with greenery  
Source: Re-created by the author

The biophilia hypothesis and research about this topic highlight that human beings are strongly responsive to nature in terms of patterns, processes as well as forms. Therefore, the proper development and adaptation of our affinity to nature can result in the creation of environments that have a positive impact on our health and well being, offering experiences that enhance our safety as well as our sense of belonging. For instance, homes can become more comfortable, public spaces can be more inclusive and working spaces can be more calm and efficient (Heerwagen, J. 2009).

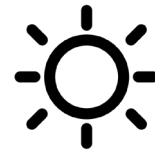
The biophilia hypothesis was first proposed and coined by the famed biologist Edward O. Wilson in his 1984 book "Biophilia", in which he stated that "Biophilia is the innately emotional affiliation of human beings to other living organisms. Innate means hereditary and hence part of ultimate human nature" (Edward O. Wilson, 1984). His hypothesis suggests that humans have an instinctual and innate connection with other living species and nature, which means that

humans have a natural tendency to connect with nature and, as a result, they get to experience relief and mental health enhancement. At the heart of the biophilia hypothesis is the notion that human species have developed a reciprocal connection with nature during their evolution. It is claimed that humans' physiological and psychological statuses have been strongly affected by the prolonged exposure to nature and natural environments as well as by their evolutionary history.

**"Biophilia is the innately emotional affiliation of human beings to other living organisms. Innate means hereditary and hence part of ultimate human nature"**

**(Edward O. Wilson, 1984)**

In order to understand the solid foundation of biophilia and its manifestation in nowadays' physical and cultural landscape, it is vital to grasp the fact that navigating the complexities of the natural environment was a significant aspect of the ancestor's survival strategies: Going back to the life of the ancestors, the natural landscape was a main provider for the basic resources necessary for their survival i.e. sunlight, water, fire as well as animals and vegetable food. The sunlight supplied warmth, light and guidance about the time. Large trees supplied protection from the sun and provided shelter at night. Additionally, rivers fulfilled the thirst and provided food among which were fish and other sea animals (Heerwagen, J. 2009)



As a result, this innate connection to nature has been plugged into humans' genes and got transferred from one generation to the other, leading to an automatic tendency to interact and seek out to being in natural environments, just like the tendency to protect the younger ones or even be territorial ( Patricia Zardec et al., 2013).

Therefore, the hypothesis emphasizes that it is highly important to maintain contact with nature in order to enhance the general well being, whilst reinforcing connectivity and harmony between nature and people.

Moreover, the biophilia hypothesis also proposes profound emotional benefits and a significant impact on humans' health sentiments( Gaekwad, 2022). The physical presence in gardens, green areas and parks proved to have positively affected stress levels, attention spans and cognitive functions. Hence, biophilia provides explanation and reasoning as to why crashing waves captivate people, why heights and shadows inculcate fear and awe, why animal ownership has restorative impacts and also why some urban spaces are more liked over others (William Browning et al., 2014)

## 4.1.2 EARLY APPLIC- ATIONS

Furthermore, numerous research has been conducted in the area of environmental psychology with the aim of investigating the relation between the nature's exposure and its psychological effects on humans: The primary findings of a meta-analysis experimental study conducted on a sample size of 3201 participants suggested that the exposure to nature had a "medium to large effect" on decreasing negative emotions as well as increasing positive ones, which supports the emotional aspect of the biophilic hypothesis that was anticipated by Wilson. In addition to that, the benefits are not limited only to concrete physical experiences but even immersions such as indoor plants or looking at images of nature has also been proven to have positive impacts (Gillis et al, 2015).

However, such environmental immersions have proven to have greater impact than laboratory stimulated ones (Gaekwad, 2022). It is, therefore, argued that the connection with nature can be created and nurtured even in the technological and urbanized context. Although the belief in the remedial effect of nature was ancient, yet the first actual empirical research to investigate this hypothesis was done by Roger Ulrich, who made his tests using data from a hospital setting in 1984. In his research the effect of windows' views on the health condition of the hospital's patients with the same type of surgery was investigated. Half of the tested patients were placed in rooms with windows facing a brick wall, while the other half were placed in rooms with landscape views from the window. The findings of this experiment highlighted that the patients occupying landscape-view rooms experienced lower pain levels and used less painkillers than those in the other type of room. Moreover, they were hospitalized for a shorter time and had a better recovery than the patients who

were located in the rooms with the brick view (Heerwagen, J. 2009).

The work of Ulrich highlighted that the contact with nature – simulated or real- is useful and has various positive impacts on ones health and well being. Among his findings in further research, it is pointed out that subjects exposed to real natural scenes have the most efficient recoveries with the best results in stress reduction. Nevertheless, even the exposures to stressors, which are composed of natural sceneries, have proven to be effective, positive and forceful. Hence, this shows that the research on the benefits of nature has been blossoming from a long time ago, paving the way to numerous studies and tests in order to comprehend the fundamental effect that nature plays in shaping and defining people's physical health, mental health and –above all- people's well being. However, as people tend to disconnect from nature as a result of the vast on-going urbanization, it is argued that this disconnection could lead to increased negative results on health and well being that cannot be mitigated.

In conclusion, the biophilia hypothesis proposed by Wilson suggests that humans have an innate affinity to other organisms and nature. It highlights the essential role that nature plays in human's physical, psychological as well as emotional health and well being; a fact that has been supported in numerous empirical research and studies. Through embracing the biophilic tendency proved in Wilson's hypothesis, humans would be able to cultivate more gratitude to nature and the natural world and, thus, would be able to work harder towards restoring and maintaining healthy and sustainable ecosystems.

However, while empirical evidence is increasing, the connection between humans and nature is ought to be further restored in the built environment, integrating sustainable activities that foster connectivity and true experiences with nature; as it is not a luxury but rather a necessity for the overall health and well being (William Browning et al., 2014). With the reinforcement of the connection with nature, it would be possible to unlock the extreme potentials and benefits that nature has to offer, promoting safer and healthier living modes for the coming generations.



the 1990s, the number of people in the UK who are employed in the public sector has increased from 10.5 million to 12.5 million, and the number of people in the public sector who are employed in health care has increased from 2.5 million to 3.5 million (Department of Health 2000).

There are a number of reasons for the increase in the number of people employed in the public sector. One reason is that the public sector has become a major employer in the UK. Another reason is that the public sector has become a major employer in the health care sector. A third reason is that the public sector has become a major employer in the social care sector.

The increase in the number of people employed in the public sector has led to a number of challenges for the public sector. One challenge is that the public sector has become a major employer in the UK, and this has led to a number of challenges for the public sector. Another challenge is that the public sector has become a major employer in the health care sector, and this has led to a number of challenges for the public sector.

A third challenge is that the public sector has become a major employer in the social care sector, and this has led to a number of challenges for the public sector. A fourth challenge is that the public sector has become a major employer in the education sector, and this has led to a number of challenges for the public sector.

A fifth challenge is that the public sector has become a major employer in the housing sector, and this has led to a number of challenges for the public sector. A sixth challenge is that the public sector has become a major employer in the transport sector, and this has led to a number of challenges for the public sector.

A seventh challenge is that the public sector has become a major employer in the energy sector, and this has led to a number of challenges for the public sector. An eighth challenge is that the public sector has become a major employer in the water sector, and this has led to a number of challenges for the public sector.

A ninth challenge is that the public sector has become a major employer in the waste management sector, and this has led to a number of challenges for the public sector. A tenth challenge is that the public sector has become a major employer in the telecommunications sector, and this has led to a number of challenges for the public sector.

A final challenge is that the public sector has become a major employer in the financial services sector, and this has led to a number of challenges for the public sector. The challenges for the public sector are many and varied, and they are all the result of the increase in the number of people employed in the public sector.

# 4.2 BIOPHILIC DESIGN

**“Biophilic design is a design philosophy that takes its reference from the biophilia hypothesis, which underlines the innate connection that humans have with nature. It is a design doctrine that encourages the integration of natural processes and systems in the design of the built environment” (Kellert 2015)**

Biophilic design is a design philosophy that takes its reference from the biophilia hypothesis, which underlines the innate connection that humans have with nature. It is a design doctrine that encourages the integration of natural processes and systems in the design of the built environment (Gillis et al., 2015). However, as the society continuous to develop, many obstacles have emerged that hold people back from taking the full benefits of the natural world. The development of the modern built environment, urbanization and the paradigm of development and design are among the most dominant factors that hinder the human-nature connection and impediment the positive experience to nature and its benefits (Kellert, 2015). Hence, biophilic design revolves around incorporating natural elements and systems into the built environment in order to provide humans with the necessary exposure to nature. It aims to foster the idea that the connection with nature is not just a side resource to be exploited or examined whenever possible, but rather it is a top priority and an obligation that must be experienced and enjoyed. (Kellert, 2015).

## 4.2.1 DEFINITION



Figure 21: Collage highlighting the integration of Biophilia in the build environment  
Source: created by author

## Stress Recovery Theory and Attention Restoration Theory

In the field of environmental psychology there are two theories that have been built on the concept of biophilia and biophilic design: The Stress Recovery Theory and the Attention Restoration Theory; which both suggest that there are some environments that can positively help people reclaim from mental tiredness and stress. These environments arouse positive vibes and have the ability to grab the attention without being demanding or exhausting. The natural environments, to be more precise, infuse sentiments i.e. the sense of allure, being away and compatibility, which positively complement the urban environments that are perceived to be demanding, stressful and aggravating atmospheres with rather dull and under stimulating features (Gillis et al., 2015).

Therefore, biophilic design could be considered as a recovering initiative that aims to restore environments and turn them into places that promote health and well being through the connection with nature.

### 4.2.2 PSYCHO- LOGICAL IMPACT

In addition to that, the building industry has paid significant attention over the last years and specific US building rating systems have evolved over time in order to promote the integration of biophilic design: The first rating system is the “ Living Building Challenge”, which makes this incorporation through the biophilia imperative and the second one is the “WELL Building Standard”, which focuses on biophilia optimization and prediction (Gillis et al., 2015). Moreover, a research was conducted with a focus on the psychological effects of biophilic design. The aim was to test people’s perceptions – in relation with biophilia- towards the natural as well as the built environment, along with examining their experiences, feelings and behaviours. The study relied on the “Stress Recovery Theory” and the “Attention Restoration Theory” and found confirmation regarding positive experiences linked to the presence in natural environments. The study also relied on testing the main biophilic design framework proposed by Kellert, which is composed of “The

Direct Experiences of Nature”, “The Indirect Experiences of Nature” and “The Experience of Space and Place”(Kellert, 2015). The study shed light on empirical evidence that confirmed the restorative function of these biophilic experiences i.e. enhanced mood, reduced stress and improved cognitive functions. Moreover, the study also emphasised the integration of water, wood and plants in the creation of spaces as they proved to be elements that reinforce wellness and support humans’ well-being and prosperity (Gillis et al., 2015).

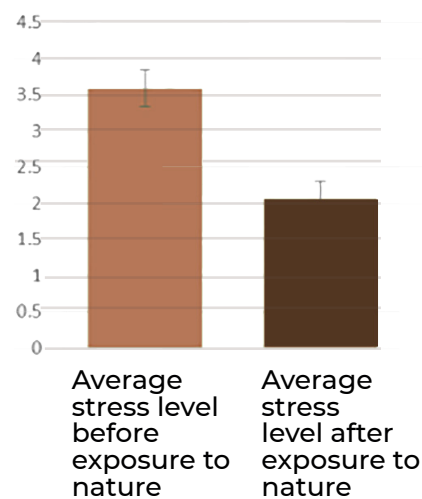
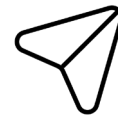
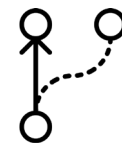


Figure 22: Bar chart showing the relation between stress levels and exposure to nature Source: University of Nebraska

Lastly, biophilic design can be experienced in a variety of ways, which can be summarized in three main categories: direct, indirect and integrated in the space. In addition to that, the sensory engagement in those modes is of high relevancy, as senses such as touching, smelling, tasting and seeing are all called to activation when it comes to natural engagements and interactions. In addition to this, biophilic design can be broken down into local design and organic design. The latter, includes direct or indirect connection with the natural environment i.e. natural lighting, ventilation and natural materials. While the local design in the biophilic context revolves more around giving value to nature without amending the local ecology (Delay, 2020).

**Direct****Indirect****Integrated**

In further elaborating the concept of biophilic design and its categories, the “CapitaSpring” skyscraper serves as a notable example for an organic biophilic design project that offers its visitors a smooth transition between the city and the garden. Designed by BIG and Carlo Ratti Associati, the 51-storey mixed-use building is located in the centre of Singapore’s financial district and its façade is composed of sculptural openings that frame embedded greenery pockets. The interior of the building is featured with offices, restaurants and apartments along with a series of gardens that aim to bring the nature into the city. Moreover, the lush spiralling gardens filled with various amenities along with the design of the façade allow a seamless transition between the city and the gardens, creating a remarkable experience that leverages both integration with natural elements and technology.

The “Green Oasis” is a further significant element of the project that consists of a four-storey vertical park, in which the four levels are infused with trees, tropical plants and spiralling walkways and that can be utilized for relaxation, exercise, events or even work (Crook, 2022).



Figure 23: Exterior Facade of "CapitaSpring" Project  
Source: <https://www.dezeen.com/2022/09/27/big-carlo-ratti-associati-capitaspring-skyscraper-singapore/>



Figure 24: Picture featuring the garden element inside the building  
Source: <https://www.dezeen.com/2022/09/27/big-carlo-ratti-associati-capitaspring-skyscraper-singapore/>



Figure 25: Picture showing the vertical park  
Source: <https://www.dezeen.com/2022/09/27/big-carlo-ratti-associati-capitaspring-skyscraper-singapore/>

**“CapitaSpring is like a vision of a future in which city and countryside, culture and nature can coexist, and urban landscapes can expand unrestricted into the vertical dimension**

**- Bjarke Ingels, BIG Founder**

**”**





# 4.3 DEFINING ATMOSPHERES

## “Ecological aesthetics of nature”

When it comes to space designing, it its –to a large extent- a factor of an atmosphere that is being created, developed and integrated. The word “atmosphere” was originally used in meteorological contexts, defining the upper mantle of air. However, the metaphoric utilization of the term, as rather spaces that resonate with certain moods, goes back to the eighteenth century.

This fundamental transition finds its roots in the theory “ ecological aesthetics of nature” developed by Böhme, a famous contemporary German philosopher. Böhme argued with his theory that humans are an essential part of nature and referred to the original coexistent relationship between both. He highlighted the need to abandon any practice that damages the nature and, instead, seek integration of ecological and human elements(Wang, 2014).

### 4.3.1 TERM DEFINI- TION

**“Designate that which mediates the objective qualities of an environment with the bodily-sensual states of a person in this environment”**

The concept of atmosphere pondered by Böhme is based on the notion that specific set-ups can reinforce and generate certain moods within people like, for example, the agitation mood that arises within a person when a thunderstorm takes place. He also imposed various applications in advertising, marketing, art and scenography, which made the original meteorological context of atmospheres no longer recognizable among the people (Shwarzpaul, 2014).

According to Böhme, the concept of atmosphere was introduced to “designate that which mediates the objective qualities of an environment with the bodily-sensual states of a person in this environment; the environment in its entirety generates an atmosphere in which I, as a human, feel in one way or another”.

## **4.3.2 TERM RE-DEFI- NITION**

Thus, as per his etymology, the concept of atmosphere revolves around subjective states and objective conditions, it's an "in-between", between the subject and the object (Shwarzpaul, 2014). Thus, it is argued that the atmosphere is an external, objective matter than can be experienced and accessed by various people, on the contrary to feelings, which are considered pure subjective and personal matters. On one hand, feelings cannot be localised or associated with specific places, while on the other hand, atmospheres are -in its core-fundamentally spatial. They are spaces "pregnant with a mood", which further explains the definition of atmospheres as spatially extended feelings and quasi-objective sentiments (Delay, 2020).

Ingression and discrepancy are the main tools with which atmospheres are best experienced. Ingression takes place when a new space is being entered and wafting moods start to be recognized as soon as the doorstep of that space is reached. While discrepancy is when a person sees the atmosphere of a place reflected in his own character or when that person is immersed in a mood that differs from the wafting mode of the space itself. Thus, the modes of ingression and discrepancy are unexpected and surprising incidents, making the mood character of spaces become more obvious, explicit and straightforward.

This leads to the conclusion that the mood that one feels when exposed to a specific atmosphere, is the main force that drives the character of that atmosphere: For instance, grand halls could generate festive moods, bright valleys could generate cheerful moods and, finally, funerals could generate sadness and tranquillity. Therefore, it is argued that atmospheres are recognized by their attributes, depending on the different moods that one is drawn into as soon as being present in a specific environment, space or location. (Delay, 2020).

# KEY INSIGHTS

- 1. The Biophilia hypothesis underlines the innate connection that humans have with nature's processes, patterns and forms**
- 2. Stress Recovery Theory and Attention Restoration Theory are based on the biophilic hypothesis, suggesting that some environments can reduce mental tiredness**
- 3. Biophilic design takes its reference from the biophilia hypothesis and encourages the integration of nature into the built environment**
- 4. Organic and local design are sub-categories to biophilic design**

05

# **NEW WELL- BEING**

**5.1**

**BIOPHILIA  
AND WORK**

**5.2**

**WHY  
OUTDOORS**

**5.3**

**TRENDS IN  
WORKSPACES**

# 5.1 BIOPHILIA AND WORK

**“well-being can be understood as how people feel and how they function both on a personal and social level, and how they evaluate their lives as a whole”**

**(Jarden et al. , 2023)**

The vigorous design evidence that supports the positive health impacts of biophilic design paved the way to explore how to apply and transform the biophilia principles into meaningful design practices. Thus, the basic research around biophilia started to transform into more solid practical applications that –later on- had a huge impact on the development of sustainable design strategies. With designers' attention shifting towards biophilia, the biophilic concept started to dwell in various design typologies among which are urban design, healthcare, commercials as well as workplaces.





Figure 27: Collage showing the integration of biophilic design in working environments  
Source: re-created by the author

For many years biophilia has been identified as a clear concept to scientists, architects and interior designers and was also tacitly recognized for decades by humanity itself. It nurtures love, celebrates humans as biological organisms and manifests the mind-body systems as indicators for well being and health. Thus, bringing biophilic design into the built environment is a crucial necessity, considering that people spend 90% of the time in indoor environments.

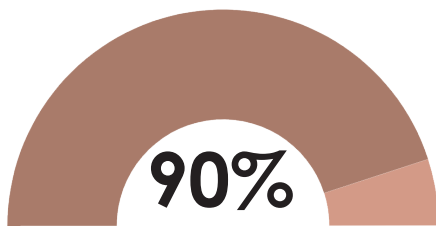


Figure 28: Pie chart showing amount of time spent indoors  
Source: created by the author

Nevertheless, the integration of natural environments inside working spaces has always been seen as an additional luxurious benefit utilized by managers to develop outstanding offices. However, the merge of biophilia in interior offices has proven to have a fundamental impact on worker's well being, affecting the communities' overall performance whilst also reducing financial costs. (Al-Dmour et al., 2020). Hence, biophilic integration should not be considered just

as a mere luxury but also a decent economic investment in productivity and health that leads to well manifested reinforcements in the overall performance inside office spaces (Browning, 2014).

Significant evidence highlights that there is a strong relation between the workplaces' environments and the psychological status of the workers- be it positive or negative. Empirical evidence elaborates the positive contribution of biophilic design for workplace's health and well being, highlighting the positive benefits it creates regarding workers' efficiency, productivity and study performance (Lei et al., 2022). Moreover, indoor workplace stressors i.e. thermal levels, poor lighting, noise and access to daylight, have been linked with severe serious impacts such as the "Sick Building Syndrome" (SBS), reduced productivity along with other building related illnesses. Nowadays, with the vast majority of workers spending huge amount of hours in stressful indoor workspaces, biophilic applications present a strategy for the creation of spaces that contributes in the improvement of well being, productivity and health inside the workplace (Al-Dmour et al., 2020).

Moreover, regarding the relationship between biophilic design and work performance, a human spaces research report elaborates that the incorporation of biophilic elements can improve work productivity by 6% and enhance creativity and well being up to 15%.

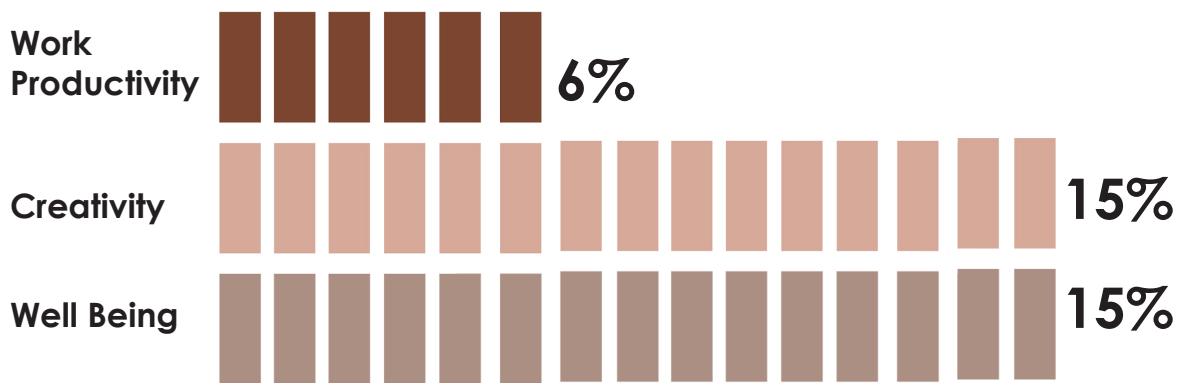


Figure 29: Figure showing effect of biophilic design on productivity and creative thinking  
Source: created by the author



Furthermore, vegetated spaces have the ability to improve one's mood and self esteem, in addition to water that imposes a relaxing effect and these benefits can start to be evident anywhere starting from 5 and up to 20 minutes. Moreover, a further findings of a study highlight that the presence of greenery in the workplace decreased the subjective drowsiness perception by 6.2% in the morning and 9.4 % in the afternoon (Sanchez, 2018). Moreover, in 2019 it was estimated by CBRE that there is a 14% of premium payment floors with terraces. Additionally, according to a research conducted by the University of Oxford, an office with an access to an outdoor space resulted in an increase of about 5-10% in rent premium (Gastoldi, 2023)

The interaction of workers with nature inside the office space constitutes a primary challenge faced by architects and designers. Thus, it is vital to deeply comprehend how the application of biophilic attributes can affect the quality of the work environment, which in turn would eventually impact the overall social environment in office spaces. This comprehension could pave the way to reaching suitable approaches that are applicable in indoor as well as outdoor design in order to achieve balanced and harmonious workspace set-ups.

Moreover, the very first actual biophilic experiment in a workplace took place in nineteen-fifty-five with the construction of a new facility for Simple, Quick , Affordable (SQA) - a company that used to refurbish old furniture and re-sells it to smaller businesses. The GreenHouse design was executed by architect William McDonough and construction took place with Hermann Miller. This project was one of the first design trials that aimed to explore how the integration of nature in buildings could result in financial and economic benefits.

Although, the building coasted a little more per square meter than the normal conventional buildings, yet this extra investment was recovered quickly as a result of the new endorsed plants that saved energy bills within five years of the building's opening. Moreover, workers inside the building admired the natural light incorporated by the plants and the connection with the outdoor natural environment resulted in demonstrated enhancement in productivity and performance of the workers(Silkin, 2021).

**“We weren’t trying to ride the green wave, we were driving that wave, trying to help set the standards that would become LEED. There was no such thing as LEED when we started the project”.**

- Ed Nagelkirk, Herman Miller Senior Workplace Strategy and Facilities Manager



Figure 30: Figure showing the GreenHouse project by Hermann Miller Source: <https://mermetusa.com/greenhouse-headquarters/ler-greenhouse>



Figure 31: Figure showing the GreenHouse project by Hermann Miller Source: <https://rockfordconstruction.com/projects/herman-miller-greenhouse>



Figure 32: Figure showing the GreenHouse project by Hermann Miller Source: <https://mcdonoughpartners.com/projects/greenhouse-factory-offices/>

# 5.2 THE NEED FOR OUTDOORS

Biophilic attributes are an essential element to be highlighted in relation to basic dimensions of biophilic design, as they are design strategies that aid in the integration of biophilic design in interiors as well as the built environment. Environmental features along with natural patterns, light and space and evolved human-nature relationships are among the basic biophilic design elements that lead to direct experiences with nature and, to which numerous attributes are related and emphasized (Kellert, 2008). With the working environment identified as a stress-generating environment, it is vital to understand how biophilic attributes could be integrated into offices' interiors and exteriors, in order to mitigate stress and other negative-related conditions commonly found in workspaces.

“

**Biophilic attributes are an essential element to be highlighted in relation to basic dimensions of biophilic design, as they are design strategies that aid in the integration of biophilic design in interiors as well as the built environment**

**(Kellert, 2008)**

”

# NATURAL SUNLIGHT

Natural sunlight proved itself as one of the most outstanding biophilic attributes with its dynamic shadows, sparkles and levels of intensity. How humans' bodies respond to daylight gives a hint to how biophilia could be harnessed in interior spaces. Studies highlight that the natural light balances the level of serotonin and melatonin hormones, which are responsible for the regulation of mood and sleep patterns. However, the imbalance in these hormones that could result from the lack of sunlight could potentially lead to disruptions in the immune system and neurological functions (Green, 2014). The regulation of the circadian cycle has also been emphasized as a further positive benefit to natural light's presence (Heerwagen, J. 2009).

## 5.2.1



Moreover, the movement, intensity, day to night shifts and season to season changes compose a very specific rhythm of sunlight that constantly reflects changing textures, patterns and colors . This dynamism captures one’s attention and helps in the reduction of stress, anxiety and mental pressures. Moreover, research on restorative environments emphasize the restorative potential that natural light and windows could be playing (DeLauer V. et al., 2022). The windows’ placements and the view that these windows show tend to be a major player affecting the health and well-being of the people. A research experiment with 100 participants conducted a test using virtual reality, in which different offices’ set ups – non biophilic as well as biophilic enhanced offices- with the aim of testing their reflexes and psychological impressions in these different environments. Findings of this experiment highlight that windows’ placements and outdoor views played a significant role in the recovery from psychological stress and anxiety. A further study elaborates that the window that offered views of landscapes and greenery resulted in more enhanced work performance and had a positive correlation with

employee’s stress and satisfaction over windows with no view offering (Yin et al., 2019). Moreover, findings of a further research study highlight that around sixty percent of a tested sample of workers emphasized the presence of natural light as a biophilic necessity inside their office spaces (Lei et al., 2022). A further 72% of surveyed employees highlight that having access to natural light and window views plays an important role in their productivity (ZipDo, 2023).



Figure 33: Collage emphasizing importance of windows’ landscape views in enhancing work performance  
Source: created by the author

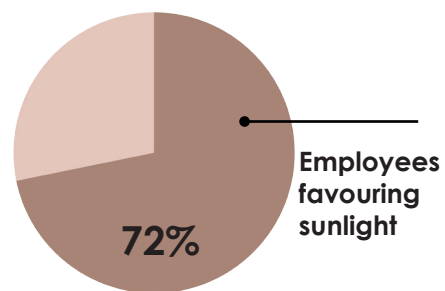


Figure 34: Pie chart with percentage of employees favouring window views and natural sunlight in offices  
Source: created by the author

# PLANTS & GREENERY

Plants and Greenery are a further fundamental biophilic design attribute with all their relatable elements. Sources of food, fodder and fiber all come from plants, making them an essential element for the humans' existence as a result of the nutrition they provide along with security and sustenance (Kellert, 2008). Research elaborates that both direct and indirect contact with gardens has social psychological and emotional benefits (Stewart-Pollack, 2006).

Plants are able to transfer light and bring nature inside any interior space. Bringlimark's conducted a study that concluded prevailing positive correlation between the presence of plants and significant demonstrated stress reduction and health benefits. Moreover, in relation to

## 5.2.2

workspaces and offices' settings, findings of a research study done by Larsen and colleagues emphasized that the more plants' quantity increased inside an office space, the more productivity and efficiency would be witnessed. Additionally, green offices in comparison to more minimal designed offices have shown a significant enhanced performance along with increases in the general occupational level (Gillis et al., 2015). Browning and Cooper also constituted a study in the UK that aimed to assess the correlation between the presence of nature in offices with productivity levels of the employees. They exposed two groups of employees to offices with different intensity of natural presence. The findings of the research indicate that the productivity of employees who worked in offices with natural aspects manifested a 15% increase in three months compared to the other batch of employees who worked in spaces that lacked greenery and natural elements. The interviewees of the same experience highlighted that the presence of plants inside the office was one of the main factors that reinforced their connection with nature. Proper interior air ventilation was a further benefit highlighted

by the interviewees, that resulted in better health, increased their job satisfaction and reduced SBS symptoms (Al-Dmour et al., 2020). Nevertheless, not all types of plants are beneficial to health and well being. According to a research dedicated specially to the comprehension of the most beneficial types of plants, the less scented and small-sized plants have proven to be having the best psychological impact in interior spaces (Quin J. et al., 2014).

**15%**  
**INCREASE IN  
PRODUCTIVITY AS A  
RESULT OF NATURE  
INTERVENTIONS  
INSIDE OFFICES**

# OUTDOOR ACCESS

Outdoors and natural landscapes are a further biophilic attribute relevant to this dissertation as the presence in natural views has proven to be significantly beneficial to the people's physical as well as mental health. Natural environments are hypothesized to be having a positive correlation with enhanced physical conditions, helping people restore and reinstate from severe chronic stress disorders (De Varies et al., 2013). According to Kellert, people express strong desire for access to exterior views, especially if they reflect nature or vegetation features. He also added that the experience is even more elevated when it is not too confined or restricted, meaning that the compatibility to the human scale is an essential aspect for the enjoyment of the view (Kellert, 2014).

## 5.2.3

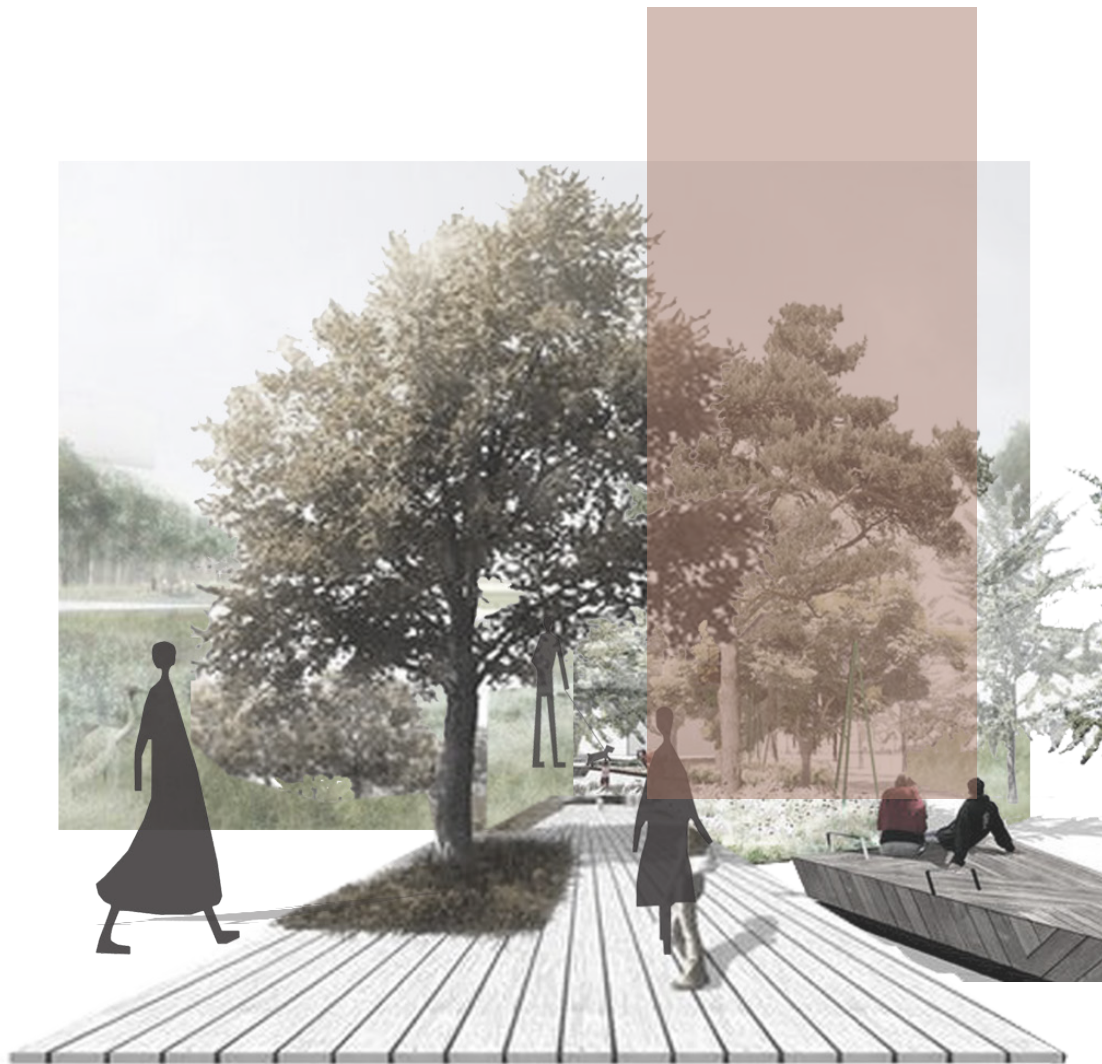


Figure 35: Collage depicting abstract people with access to outdoors  
Source: Re-created by the author

Moreover, being present in natural outdoor environments is demonstrated to having profound positive impact on ones physical health. Research also emphasizes that living environments with more green-spaces' availability tend to make people more physically engaging, which results in better overall health performance of these people (De Varies et al., 2013). Moreover, empirical research studies emphasize further physical benefits i.e. reduced cardiovascular diseases, longevity, enhanced self reported health along with shorter recovery spans (DeLauer V. et al., 2022).

Similarly in the working environment, access to outdoor areas encourages physical activity and motivates employees to move more frequently in order to break the static behaviour associated with daily desk work. Sedentary desk work has always been associated with numerous health risks as a result of the prolonged working hours. Thus, this physical activation as a result of access to outdoors results in the reduced risks of chronic diseases, improved cardiovascular health and increased energy expenditure.

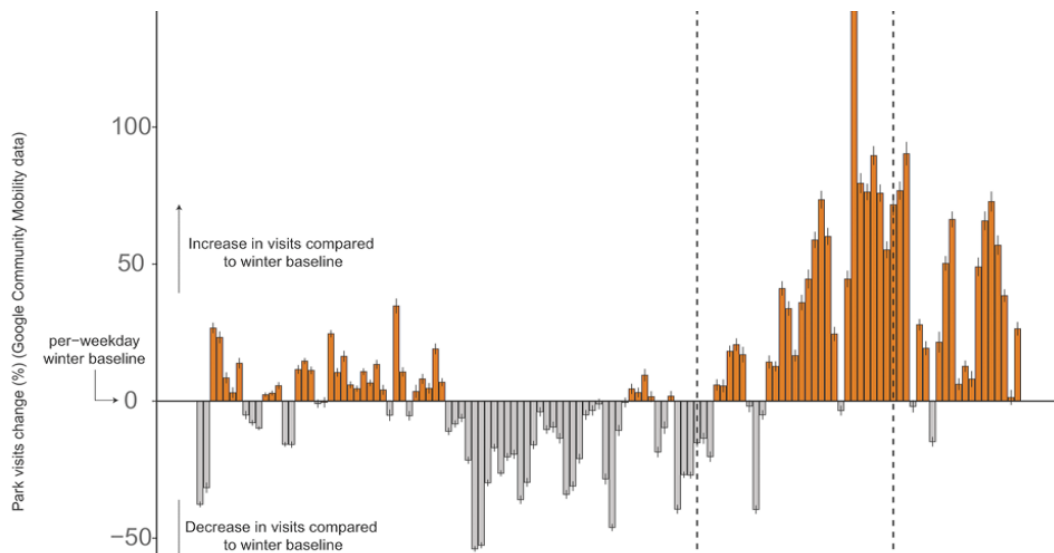


Figure 36: Chart showing park and outdoor trends for Google COVID-19 community in England during early summer of 2020 . There is an observable upward trend starting the month of May, in which visits were generally higher than the baseline. Source: Figure generated using Google COVID-19 Community Mobility data.

Additionally, findings of L.L. Beans' "Work and the Outdoors" survey that aimed to investigate the importance of outdoor workspaces highlight that 86% of its workers desire more time to work outdoors during the working hours and another 82% wished for an outdoor office in order to enhance their mental stability. A further research conducted by Cornell University emphasizes that time spent outdoors results in a 63% drop in headaches and 51% decrease in eye strains (Vanessa, 2023).

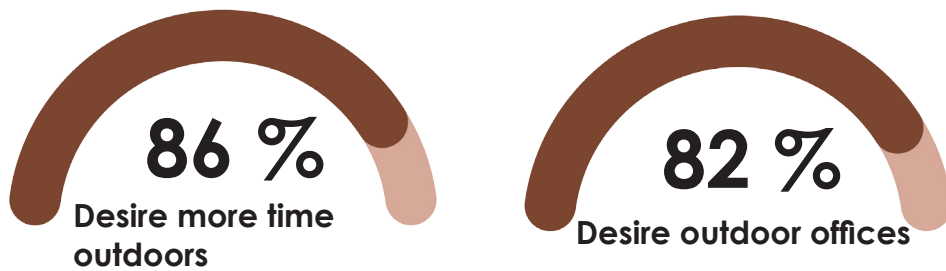


Figure 37: Percentage of employees at L.L.Beans yearning for outdoor access and wishing for outdoor offices  
Source: created by the author

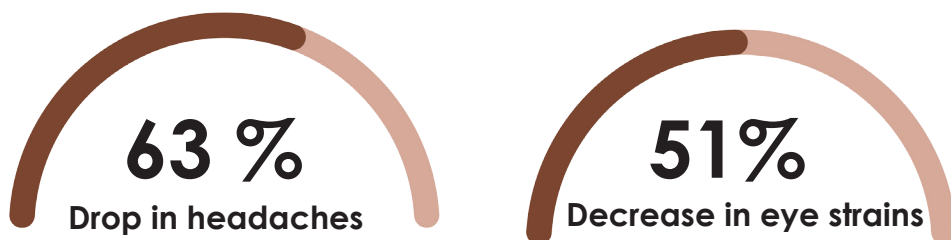


Figure 38: Percentage of decrease in negative physical symptoms as a result of time spent outdoors  
Source: created by the author

According to these takeaways, the experiences of natural light, plants as well as outdoors and natural environments are demonstrated as a non-negotiable necessities that have proven to be playing a distinctive role in enhancing humans' comfort, health and overall well being. It is evident that the framework of biophilic design incorporates numerous natural engagements ranging from sensory and metaphorical experiences and up to material and physical ones. Nevertheless, this framework together with universal and sustainable design strategies could play a major role in further developing healthy environments that truly enhance the taste and quality of humans' lives. Moreover, it is also evident that the deep understanding of biophilia and biophilic design is essential for the creation of spatial experiences, which, on one hand, reinforces design innovation and, on the other hand, significantly improves the quality of sustainable buildings in nowadays' built environment (Zhong, 2022).

Lastly and most importantly, it should be taken into consideration that the perception of these biophilic attributes as elements that are experienced from rather indoor spaces has been completely transformed as a result of the pandemic, which paved the opportunity of defining and applying these attributes no more indoors-but rather outdoors.





# 5.3 TRENDS IN WORKSPACES

Across the globe, there is an obvious substantial shift in the way people work, resulting in a change of workplaces at an unprecedented pace. Meanwhile, companies, tenants and landlords want to comprehend how -amidst this change- they can optimize their real estate, acknowledging that the experience designed for the employees is what will differentiate them from others. Companies are in need to provide an ecosystem of working environments –indoor and outdoor- to compete in the war of talent and create a place where talent can potentially thrive. Therefore, the unprecedented change offers an opportunity to redefine the purpose of the physical workspace as a place to offer a rather mix of fulfilling and one-of-a kind experiences that attracts people, whether through new digital advancements or through the integration of new types of spaces (Design Forecast 2023, Gensler)

# WELL- BEING & OUTDOORS

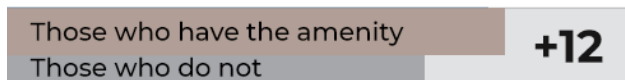
According to Gensler, as workers worldwide put their health and well-being in their priorities, employers are faced with enormous pressure to find a synergy between indoor and outdoor spaces, support mental well-being and infuse a healthy environment. Many employees reported that one of the benefits of working from home was that their domestic environments gave them facilitated outdoor access and more comfort than their offices. Gensler report highlighted that “Health and Well-being” are among the forces that play a role in the new workplaces, emphasizing that employees are now expecting well-being to be integrated in everything at the workplace. Additionally, according to Gensler’s 2023 global workspace research, findings highlight that employees in high-performing working environments are almost three times more likely to express a positive impact of the office on their personal health and work/life balance than employees in low-performing workplaces. (McLaurin, 2023). Moreover, according to HOK, wellness is on top-of-mind in working environments of 2023. Starting from the providing of natural light, to the integration of biophilia and up to the further level: brining working spaces to the outdoors (Hok, 2023).

While the importance of outdoors and its vital role during the pandemic has been significantly highlighted, moreover, when thinking about the offices of the future, outdoor offices are an inevitable and substantial component. Outdoor offices seem to have gained preference over the years, especially as a result of the pandemic and the rising awareness of the impact of outdoor spaces and air quality on the overall well-being outdoor workspaces have been integrated in various projects like Shutterstock's perch and Microsoft's treehouses, yet in the midst of the pandemic, plenty of organizations started highlighting their fresh-air digs as a result of fear from working in closed environments.

Moreover, considering moving indoor offices to the outdoors, Christopher McCartin, managing director of design and construction at real estate developer Tishman Speyer highlights that **"The benefits of light and fresh air are pretty self-evident, and the pandemic only reinforces that"** (Hounsell, 2020). Equipped roof-tops, ground floor outdoor spaces or terraces for work as an extension to the office space has become a "best practice" (McLaurin, 2023).

**Those with access to outdoor workspace amenities tend to score higher WPI and greater experiences than those who do not**

**EFFECTIVENESS (WPI)**



**GREAT EXPERIENCE**

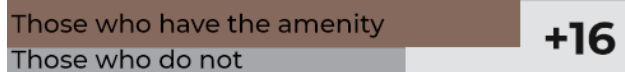


Figure 39: Bar chart showing WPI and Experience Score for the outdoor workspace amenity along with differences in scores between workers who have access to the amenity in their workplace and those who do not. Scores are on a 100-pt scale  
Source: Gensler UK Workplace Survey 202

Furthermore, according to Polucci, Director of Interiors, HOK: “More and more of our workplace projects have an outdoor element”, said Polucci. “That connection to the outdoors is a key component to wellness, as is promoting movement. I can’t tell you a project now that does not have a stair element that connects multiple floors and encourages people to move through the space.” (Hok, 2023)

The insufficient support of the need of humans to affiliate with nature has been strongly present in the modern society, putting up many barriers against the fulfilling experience of nature connection and always viewing it as an additional luxury—but not a necessity. However, the 2023 UK Workplace Survey by the Gensler Research Institute emphasizes the significant role that balanced and diverse workplace need to play regarding the offering of new variation in work modes after the pandemic, among which are outdoor spaces and well-being-related amenities (Gastoldi, 2023).

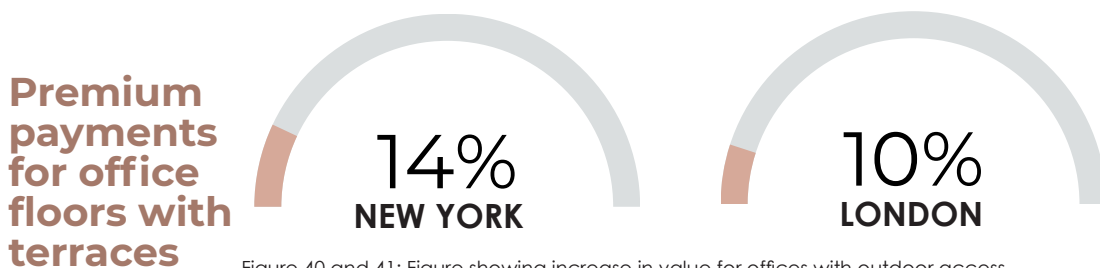


Figure 40 and 41: Figure showing increase in value for offices with outdoor access  
Source: created by the author

**“Agile office design is about providing workers with a variety of useful spaces where they can feel at their most productive. But agile is also a way of getting work done**

-Hogarty, 2021

”

## AGILITY

The nature of work is evolving and employees are becoming more agile, collaborative and versatile. Thus, worker's desire for choice in the workplace –although not new- seems to be a generating force for the reaching of better working outputs after the pandemic. According to Gensler's 2013 U.S. Workplace Survey, employees are more innovative and perform better when given the choice for where and when they work. Moreover, in 2016 findings show that employees at innovation companies spend more time away from their desks for collaboration activities and spend only 3.5 days of the working week inside the office itself. However, research finding show that after the pandemic there is a substantial need to workspaces that support working with others in person as well as places for learning and socializing.

In agile workspaces the design revolves primarily around the concept of flexibility, in which employees can freely move and choose where they want to work according to the activity that they will carry out. Hence, it provides employees with a variety of working set-ups that they can freely choose among. However, agile is not just a working configuration but rather it is a way of working: The removal of physical barriers between workers leads to enhanced creative thinking, improved collaborative skills and eventually leads to enhanced mood improvement by the employees. Further findings also shed light on the fact that the Covid-19 pandemic accelerated the agile working space trend, highlighting also that for business owners, an agile workspace is an opportunity for cost saving and efficient usage of the current space (Hogarty, 2021)

Therefore, it is evident that the flexibility aspect in workspaces continues to be demanded and a wider range of solutions, whether inside and outside the office, are inevitable. Moreover, it is also necessary to consider third places for work that act as extension to the physical offices, in order to provide employees with a variable mix of work experiences accompanied with a wide range of choice when it comes to working settings. (McLaurin, 2023).

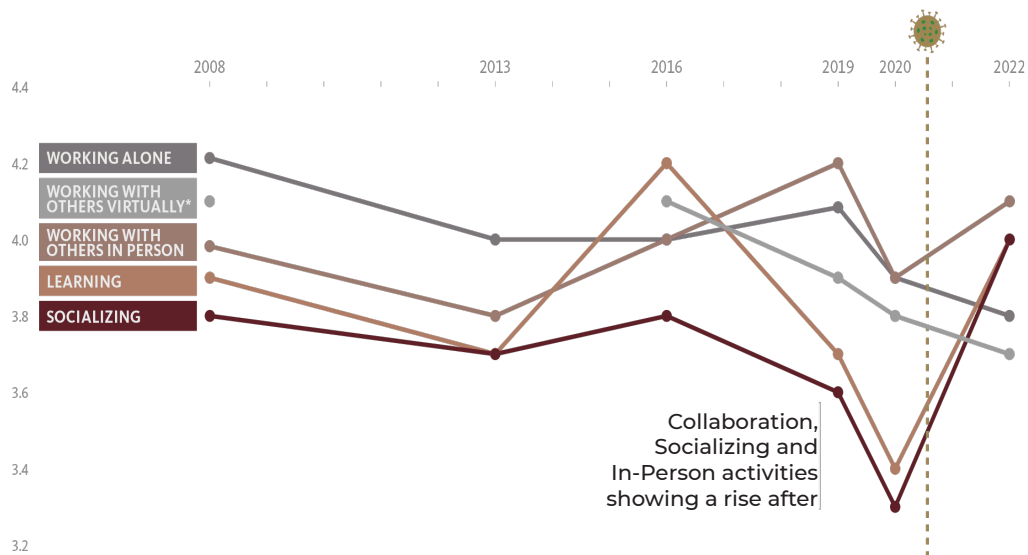


Figure 42: Figure demonstrating workplace's effectiveness in supporting different work modes  
 Source: Gensler US Workplace Survey, 2022

**“ They want access to a flexible space that’s responsive to their new way of working, that’s available when they need it, and that’s designed around communication, creativity, and interaction**

**”**

- Hogarty, 2021



# KEY INSIGHTS

**1. Well-being is how people evaluate their lives and how they feel on the personal and social level**

**2. Positive correlation has been found between the workplaces' environment and the psychological status**

**3. The integration of biophilia in offices proved to have a fundamental impact on employees' well-being, productivity and creative thinking**

**5. The experience of natural light, plants and outdoor spaces are biophilic attributes that playing major roles in enhancing well-being**

**6. Outdoor Workspaces are seen as substantial equalizers for the offices of the future**

06

# **CASE STUDIES**

**6.1**

**6.2**

**6.2**

**INTERIORS INSTALLATIONS FURNITURE  
& EXHIBITIONS SOLUTIONS**

# 6.1 INTERIORS

**NAME: MICROSOFT'S TREEHOUSE**

**ARCHITECT: PETE NELSON**

**LOCATION: 20**

**YEAR: 2017**

**COLLABORATION  
ROOM INSIDE A  
TREEHOUSE**

**SKYLIGHT FOR  
SEAMLESS  
CONNECTION**

**USAGE OF  
WEATHERPROOF  
AND RECLAIMED  
MATERIALS**

**OUTDOOR EQUIPPED  
SPACES**

**MAINTAINING  
TRADITIONAL OFFICE  
RELIABILITY IN  
OUTDOOR CONTEXT**

The treehouse is Microsoft's new branch-based meeting space that enables employees to work in new ways with the help of a larger system of outdoor districts that are technologically enabled and well connected to the rest of the buildings inside the campus.

The project consists of two treehouses and the "Crow's Nest", which is an elevated roost. The first treehouse is located twelve feet off the ground and has a charred-wood walls along with a round skylight reflecting the canopy of exterior trees. Its arched double-door is manually carved and inside there is a table in farmhouse style with rustic red seats. The rooms is carefully equipped with all necessary elements from Wi-Fi network to power outlets and even a fan. Moreover, there is an outdoor area with Wi-Fi network and waterproof benches. There is an extension of the indoor cafeteria to the outside along with essential weatherproof awnings. Local and reclaimed materials along with the wooden structures make a resonance with the origin of the site as a former sawmill.

Aims to make working in nature easier than before, the project acted as a mean for the evolution of outdoor workspaces through integrating connectivity with the nature whilst maintaining the reliability of a traditional office.

## 6.1.2

**"People said, given the opportunity, they**



Figure 43: Picture of Microsoft's Treehouse Source: <https://news.microsoft.com/source/features/work-life/meet-me-in-the-trees/>



Figure 44: Picture of Microsoft's Treehouse Source: <https://news.microsoft.com/source/features/work-life/meet-me-in-the-trees/>

**NAME: CAMP CHARELESTON**  
**LOCATION: SILICON VALLEY**  
**YEAR: 2021**

**OUTDOORS  
OPTIMIZATION**

**EFFECTIVE  
EXTENSION OF  
INDOOR FUNCTIONS  
TO THE OUTSIDE**

**CONVENIENT  
SHADING SOLUTIONS**

**DIFFERENT SEATING  
TYPOLOGIES**

In 2018 the company directed its attention to the research and development team through gathering a number of interior designers, industrial designers, architects, builders, structural designers and tech specialists led by Michele Kaufmann –former worker with Frank Gehry. This eclectic team was responsible to further research built environments in order to comprehend what needs to change and what could be done in a different way inside Google's premises.

In various locations around the world Google started building outdoor working spaces in response to the constant concerns of the easier spread of corona virus inside the traditional offices.

At its headquarters in Silicon Valley, Google converted its parking lot into an area called "Camp Charleston", which is a mixture of wooden and grass flooring supported with Wi-Fi connection and spreading in size to around four tennis courts. This facility is accommodated with open-air tents and groups of tables and chairs. Moreover, there are areas dedicated to meetings that are equipped with video-conferencing tools and have an American interior style decoration.

**"The future of work that we thought was 10 years out, Covid brought us to that future now "**

-David Radcliff -Google's vice president

## 6.1.2



Figure 45: Picture of Google's outdoor office in Silicon Valley Source: <https://www.nytimes.com/2021/04/30/technology/google-back-to-office-workers.html>



Figure 46: Picture of Google's outdoor office in Silicon Valley Source: <https://www.nytimes.com/2021/04/30/technology/google-back-to-office-workers.html>

**NAME: 9000 WILSHIRE**  
**ARCHITECT: NEIL DENARI**  
**LOCATION: LOS ANGELES**  
**YEAR: 2023**

**DIVERSITY IN  
SEATING MODULES**

**INFORMAL WORKING  
AREAS**

**INDOOR-OUTDOOR  
WORKING SPACES**

**OUTDOOR  
CONFERENCE  
SPACES**

**FUNCTIONAL  
TERRACES**

Numerous offices across the country are being developed with the concept of the getaway from the daily desk and taking a breath of fresh air from the outside world (Berg, 2021). The “9000 Wilshire” is one of those new offices’ projects encompassing the idea of outdoor workspace reinforcement in the heart of Beverly Hills in Los Angeles (Berg, 2021).

The project spreads around 50,000 square feet composed of a four-story edifice along with 97 parking slots on four subterranean levels. At street level there is a park-like shaded area accompanied with seats that could be used by the tenants as well as the public.

**ROOF DECK**

The façade shows a low rise structure with operable windows, open floor plates and an 11-square-foot rooftop deck that works as indoor-outdoor workspaces. This large patio has various seating modules that can accommodate various events i.e. it can be utilized as a breakout area during lunchtime, as a location for open-air presentations or even informal working areas. Moreover, there is also an enclosed conference room in the centre of the patio that can host cocktail receptions as well as formal meetings. The total area of outdoor terraces is 5,485 square foot.

## 6.1.3





Figure 47: Picture of 9000 Wilshire Roof Deck used as an area for outdoor working Source: <https://www.usa.skanska.com/what-we-deliver/projects/9000-wilshire/>

**NAME: PLAYA DISTRICT**  
**ARCHITECT: RIOS CLEMENTI**  
**LOCATION: LOS ANGELES**  
**YEAR: 2019**

Playa District is a flourishing tech hub in the west side of Los Angeles that aims to attract established businesses as well as innovative start-ups. The 33-acre Los Angeles campus -1.4 million square foot in size- offers flexible workspaces and serves as a productive, efficient and impactful working environment for a wide range of tenants.

**SYNERGY BETWEEN  
INDOOR AND  
OUTDOOR SPACES**

**INTEGRATING  
OUTDOOR  
MATERIALS INDOORS**

**GLASS GARAGE  
DOORS TO BRING  
OUTSIDE IN AND  
INSIDE OUT**

**VARIETY OF  
AMENITIES**

The campus has an agile and modern character, nevertheless, it must be also taken into consideration that the ground floor specifically is playing a fundamental role in transferring the required dynamism and energetic vibe to the whole site. Moreover, the offices on the first floor along with the lobbies and outdoor areas all flow into each other, creating continuous spaces that are in synergy with each other in order to offer productive, efficient and effective spaces.

The outdoor area of this project is designed as creative spaces with network availability, specific structures for shading as well as sufficient power to nurture the outdoor/indoor Californian lifestyle. Large glass garage doors are introduced in this project as key players in bringing the indoors to the outside and vice versa. Moreover, GAN rugs -typically used outdoors- have been integrated in the interior spaces to further infuse the desired indoor-outdoor synergy.

## 6.1.4



Figure 48: Picture of Playa District's ground floor Source: <https://www.1stdibs.com/project/playa-district-los-angeles-ca/144812/>



Figure 49: Picture of Playa District's outdoor stairs seating Source: <https://www.1stdibs.com/project/playa-district-los-angeles-ca/144812/>



Figure 50: Picture of People's Park Installation

Source: <https://www.archdaily.com/926701/peoples-park-interactive-installation-for-guangdong-fimes-museum-turtlehill-design>



Figure 51: Picture of People's Park Installation

Source: <https://www.archdaily.com/926701/peoples-park-interactive-installation-for-guangdong-fimes-museum-turtlehill-design>

# 6.2 INSTALL- ATIONS & EXHIBITIONS

**NAME: PEOPLE'S PARK**  
**ARCHITECT: TURTLE HILL DESIGN**  
**LOCATION: GUANGZHOU, CHINA**  
**YEAR: 2019**

**INTERACTIVE  
OUTDOOR  
ENVIRONMENT**

**ADAPTABILITY TO  
USER'S NEEDS**

**HIGH MOBILITY**

**VARIATION  
IN SEATING  
POSSIBILITIES**

Turtlehill Design was called to redesign the balcony of the "The Guangdong Times Museum", designed by Rem Koolhaas. The balcony is located in front of the main exhibition hall and was initially planned to be designed as a tea house and souvenir shop. However, later on the museum came up with a new solution for the balcony and that is the "people's park" – a place where visitors can have picnics, lie or sit.

The idea was realized with a transformable installation consisting of a devisable unit of block with wheels and tracks that enable independent sliding in vertical and horizontal directions. Moreover, these units are embedded with natural plants to evoke connection with nature. Similar to Lego toys, the block units can be intertwined or locked together to compose different forms according to the need of the user. Therefore, the composition of the balcony depends totally on the desire and wishes of the users themselves.

## 6.2.1



Figure 52: Picture of EBB installation Source: [https://www.archdaily.com/933378/ebb-and-flow-installation-i-thee?ad\\_source=search&ad\\_medium=projects\\_tab](https://www.archdaily.com/933378/ebb-and-flow-installation-i-thee?ad_source=search&ad_medium=projects_tab)



Figure 53: Picture of EBB installation with people Source: [https://www.archdaily.com/933378/ebb-and-flow-installation-i-thee?ad\\_source=search&ad\\_medium=projects\\_tab](https://www.archdaily.com/933378/ebb-and-flow-installation-i-thee?ad_source=search&ad_medium=projects_tab)

**NAME: EBB (AND FLOW)**  
**ARCHITECT: i/THEE**  
**LOCATION: MORONGO VALLEY, USA**  
**YEAR: 2019**

**COEXISTENCE OF  
NATURE AND THE  
OUTSIDE WORLD**

**IMMERSIVE  
EXPERIENCE WITH  
NATURE**

The installation, on one hand, refers to a literal resonance as the structure literally flows around the desert. On the other hand, however, the installation aims to convey a message and a mindset, which revolves around the conscious engagement and movement with the surrounding world. It breaks the barriers between the constructed and existing realities: Architecture, art and nature.

The installation aims to create a connection with nature and resulted in a neblus mirage on the landscape so that when visitors move around the structure, they get confronted with a psychedelic vision.

## 6.2.2

**“Plants are an extension of the ground;  
architecture is an extension of people;  
everything is an extension of nature”**



Figure 54: Picture of Garden Conservatory Installation Source: [https://www.archdaily.com/977049/garden-conservatory-seoul-lichtvision-design-plus-casper-mueller-kneer-architects?ad\\_source=search&ad\\_medium=projects\\_tab](https://www.archdaily.com/977049/garden-conservatory-seoul-lichtvision-design-plus-casper-mueller-kneer-architects?ad_source=search&ad_medium=projects_tab)



**NAME: GARDEN CONSERVATORY**  
**ARCHITECT: CASPER MUELLER KNEER**  
**ARCHITECTS, LICHTVISION**  
**LOCATION: YANGCHEON, SOUTH KOREA**  
**YEAR: 2021**

**INDOOR  
INTEGRATION**

**LIGHTING  
SOLUTIONS FOR  
HEALTH OF PLANTS**

**RE-INTERPRETATION  
OF TRADITIONAL  
SPACES**

**PLANTS & HUMANS  
WELL-BEING**

The installation is located at the top floor of Hyundai's Department Store in Mokdong. While the shopping experience inside the building is highly challenging to the senses, the top floor suggest a place for rest and tranquility with the minimalist "Glass House Garden Room". It acts as a gate to the surrounding residential towers and also as a host to exhibitions and events. The space is primarily composed of green plants forming island that are embedded inside the floor.

The ceiling of the space blocks the natural light as it is flat, therefore, the development of lighting solution that reinforces human well-being and the healthy growing of plants was of inevitable.

The lighting solution founds its way through "swarms of biophilic luminaries" and of plant-friendly LED lights that are allocated on the top of each island. These lighting fixtures diffuse luminous clouds and float above the islands, assuring healthy environment to both – plants and people.

The project has a state-of –the-art approach mixed with modern aesthetics ,approaching biophilic design and nature-oriented spaces. It brings natural elements inside the space with the sole purpose of enhancing people's well being, whilst creating a suitable environments for the healthy growing of the indoor natural plants.

## 6.2.3

# 6.3 FURNITURE SOLUTIONS

**LOCATION: GOOGLE'S R&D  
YEAR: 2021**

**SMART ADAPTABLE  
FURNITURE**

**INNOVATIVE  
INVENTIONS  
TO INCREASE  
FLEXIBILITY**

**ENHANCEMENT  
OF ONLINE  
COLLABORATION**

Google's research and development team is taking full advantage of the pandemic and trying to move forward with results that increase adaptability and enhance user experience.

## **BALLOON WALLS**

Google aims to change wall's rigidity through creating a series of movable walls that can be packed. A robot with sensors on wheels detects the surrounding environment and arrives to inflate the cellophane, transparent

## **OVERHEAD AIR DUCTS**

A ventilation and heating concept that allows facilitated movement of air ducts and increased flexibility to new designs. The overhead duct system is made of fabric and is attached with zippers.

## **PETAL AND OFFICE CHAIRS**

The "petal" is a partition with a leaf shape that gets attached to the desks' edge in order to reduce glare and accompanied distractions during work.

## 6.3.1



Figure 22: Picture of Balloon Walls by Google's R&D Department Source: <https://www.nytimes.com/2021/04/30/technology/google-back-to-office-workers.html>



Figure 55: Picture of Overhead Air Ducts by Google's R&D Department Source: <https://www.nytimes.com/2021/04/30/technology/google-back-to-office-workers.html>



Figure 56: Picture of The Petal by Google's R&D Department Source: <https://www.nytimes.com/2021/04/30/technology/google-back-to-office-workers.html>

**NAME: SYMBIOTIC URBAN FURNITURE**  
**ARCHITECT: B.L.U.E.STUDIO**  
**LOCATION: SHENZHEN, CHINA**  
**YEAR: 2022**

**CREATIVE  
FURNITURE FOR  
OUTDOOR USAGE**

**CREATION OF  
VARIOUS SEATING  
TYPOLOGIES FOR  
GROUPS AND  
INDIVIDUALS**

**DESIGN THAT  
REINFORCES  
PEOPLE'S  
INTERACTION AND  
NETWORKING**

**WEATHER  
RESISTANT  
MATERIALS**

Versatile components and diverse spaces create the daily life experiences in the free city. The contemporary society offers opportunities to its people that can expand their imagination and allow unique possibilities to happen in its protrusions. Creative people have the ability to transform these protrusions from a single-use space to a rather multifunctional one with agile activities.

In order to meet people's diverse needs, new urban furniture has been created bringing together individual life and urban space through the multifunctional "Simboitic Urban Furniture", which falls under the section of "More-than-Human Adventure". Included in the series, is a long and large table that is located on outdoor stairs, allowing people to meet people and enjoy the sun. Additionally, there are also long benches to further reinforce peoples' interaction. However, if someone seeks individual seating, the collection includes individual chairs and small benches. Furthermore, aiming to make architectural elements more interesting, a chair and a table board are created in a way that they embrace columns, making them more popular and interactive.

## 6.3.2



Figure 57: Picture of Symbiotic Urban Furniture Collection Source: [https://www.archdaily.com/1000365/symbiotic-urban-furniture-project-blue-architecture-studio?ad\\_source=search&ad\\_medium=projects\\_tab](https://www.archdaily.com/1000365/symbiotic-urban-furniture-project-blue-architecture-studio?ad_source=search&ad_medium=projects_tab)



Figure 58: Picture of Symbiotic Urban Bench and Chair Source: [https://www.archdaily.com/1000365/symbiotic-urban-furniture-project-blue-architecture-studio?ad\\_source=search&ad\\_medium=projects\\_tab](https://www.archdaily.com/1000365/symbiotic-urban-furniture-project-blue-architecture-studio?ad_source=search&ad_medium=projects_tab)



Figure 59: Picture of People using the Symbiotic Urban furniture Source: [https://www.archdaily.com/1000365/symbiotic-urban-furniture-project-blue-architecture-studio?ad\\_source=search&ad\\_medium=projects\\_tab](https://www.archdaily.com/1000365/symbiotic-urban-furniture-project-blue-architecture-studio?ad_source=search&ad_medium=projects_tab)

07

# PROJECT PROPOSAL

THE NO OFFICE OFFICE

**7.1    7.2    7.3    7.4**

**SITE                  PROJECT DESIGN    DESIGN  
ANALYSIS    FRAMING    CONCEPT    IDENTITY**

# LOCATION OVERVIEW



**1** Project's Site  
Via Olmetto, 9, 20123

**2** Duomo  
Di Milano



**3** Palazzo  
Reale



**4** Biblioteca  
Ambrosiana



**5** Teatro  
alla Scala



**6** Castello  
Sforzesco





# 7.1

## SITE ANALYSIS

The site is located in Via Olmetto and it used to be Il Prisma's former office location, which is Italian an international design and architecture company.

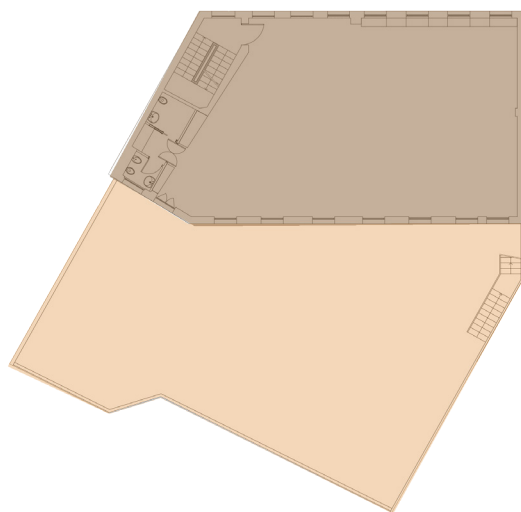
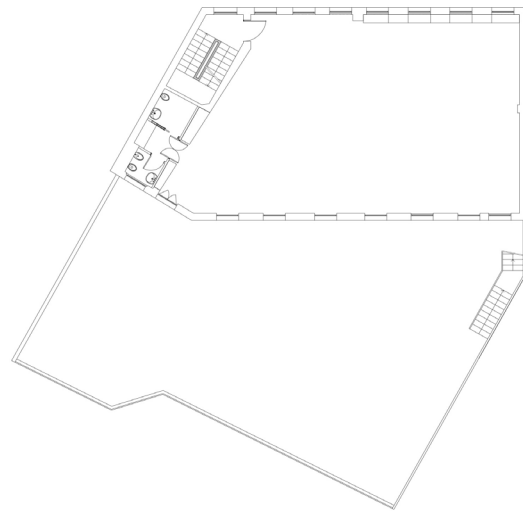
### FIRST FLOOR

**206 m<sup>2</sup>**

INDOOR AREA

**280m<sup>2</sup>**

OUTDOOR AREA



# INDOOR



Figure 60: Picture of the office's working desks



Figure 61: Picture of indoor common area



Figure 62: Picture of the office's working desks



Figure 63: Picture of meeting room

# OUTDOOR



Figure 64: Picture of the office's outdoor seating area



Figure 65: Picture of the office's outdoor seating area



Figure 66: Picture of the office's outdoor seating area



Figure 67: Picture of the office's outdoor seating area

# 7.2 PROJECT FRAMING

THE AIM OF THE PROJECT IS TO INVESTIGATE UNCHARTED TERRITORIES FOR THE POST-PANDEMIC WORKING OFFICES THROUGH EXTENDING CO-WORKING PARAMETERS TO THE OUTSIDE WHILST BLURRING THE BOUNDARIES BETWEEN INDOOR & OUTDOOR WORKING SPACES.

WITH THE INCREASED NEED FOR OUTDOOR PRESENCE, THE PROJECT WANTS TO OFFER AN OPPORTUNITY FOR CREATIVE DESIGNERS TO WORK OUTDOORS WITH THE SAME - OR EVEN BETTER- EFFECTIVENESS AND PRODUCTIVITY AS THAT OF INDOORS.

IT'S A NEW ERA FOR THE OFFICES!

## 7.2.1.OBJECTIVE



Figure 68: Collage showing the outdoors as an escape  
Source: re-created by the author

# FREELANCERS

- noun [free-lans-sr]
- 

“A term commonly used for a person who is self-employed and does not necessarily have long-term commitments to a particular employer or organization”

## 7.2.2 TARGET USERS

INTERIOR  
ARCHITECTURAL  
GRAPHIC  
PRODUCT  
ANIMATION  
**3D** VISUALIZATION

DESIGNER  
DESIGNER  
DESIGNER  
DESIGNER  
DESIGNER

IN THE  
CREATIVE  
INDUSTRY



NAME

SARAH 23 YEARS OLD

KEY ATTRIBUTES

INTERIOR DESIGNER

SHORT DESCRIPTION

SHE IS A GROWING FREELANCE INTERIOR DESIGNER MANAGING ALL HER PROJECTS ON HER OWN. SHE HAS BEEN WORKING FROM HOME FOR 1 YEAR BUT AS HER COMPANY IS GROWING QUICKLY, SHE IS LOOKING FOR ANOTHER SPACE TO WORK AT WITH HER SMALL TEAM.



“

I TRIED TO WORK IN VARIOUS CAFÉS FOR A CHANGE FROM MY GLOOMY HOUSE THAT DOES NOT HAVE A BALCONY, BUT ALL OF THEM DID NOT HAVE ADEQUATE TABLES AND NO SUFFICIENT SOCKETS WERE PRESENT. I WAS ALSO AFRAID TO LEAVE MY STUFF AROUND TO GO TO THE TOILET OR EVEN MEET A FRIEND. OUTDOORS INSPIRE MY WORK AND MAKE ME MUCH MORE PRODUCTIVE AND HAPPIER WHILE WORKING. WHAT I LIKE ABOUT CAFÉS, IS THAT EVERY TIME I FEEL I AM WORKING WITH A DIFFERENT VIEW. I ALSO ENJOYED THE CONSTANT ACCESS TO FOOD AND DRINKS. WHENEVER, I WENT INDOORS FOR MEETINGS, THEY WERE DARK, DEPRESSING AND NO GREENERY AT ALL WAS FOUND.

”

Figure 69: Illustration of girl working  
Source: Mijke Coebergh

**NEEDS**

OUTDOOR SEATING WITH PROPER WORKING FURNITURE

COLLABORATIVE SPACES

SAFETY GUARANTEE

INDOOR & OUTDOOR ACCESS TO GREENERY AND PLANTS

DYNAMIC & DIFFERENT SEATING TYPOLOGIES

SUFFICIENT CHARGING SPOTS

LAPTOP STATIONS

LEISURE SERVICES LIKE CAFE AND RESTAURANT

**CHALLENGES**

NO ADEQUATE OUTDOOR PLACES THAT CAN ACCOMMODATE HER WORKING CONDITIONS

HER TEAM IS GETTING BIGGER AND SHE NEEDS MORE SPACE FOR COLLABORATION AND INTERACTION

FEAR OF UNSAFETY WHEN WORKING OUTDOORS

THE FAVOURING OF CONSTANT DYNAMIC VIEWS DURING WORK

**OPPORTUNITIES**

CREATING ADEQUATE OUTDOOR SPACES THAT HAVE ALL NEEDED EQUIPMENT FROM DESKS AND FURNITURE TO SOCKETS AND CHARGING STATIONS.

OFFER INTERACTIVE OUTDOOR SPACES FOR COLLABORATION AND BRAINSTORMING

INTEGRATE BIOPHILIC-INFUSED INDOOR ROOMS FOR MEETINGS WITH MORE PRIVACY

CREATING DIFFERENT SEATING MOODS

INTEGRATING LOCKERS FOR PERSONAL STORAGES



**NAME**  
 JOHN 32 YEARS OLD

**KEY ATTRIBUTES**  
 GRAPHIC DESIGNER

**SHORT DESCRIPTION**  
 JOHN IS FROM GERMANY BUT HE RECENTLY MOVED TO MILAN WITH HIS SMALL TEAM. AS A DIGITAL NOMAD, HIS WORK DEPENDS HEAVILY ON HIS LAPTOP BUT HE CAN WORK FROM ANY OTHER PLACE. HE IS CLAUSTROPHOBIC AND DURING COVID-19, HE REMAINED FOR A LONG TIME AT HOME AND WAS VERY DEPRESSED FOR NO OUTDOOR ACCESS. SO NOW IN MILAN, HE WANTS TO MEET NEW PEOPLE AND MAKE NETWORKS AND ABOVE ALL, HE WANTS TO SEE THE SUN.



Figure 70: Illustration of man working  
 Source: Storyset

“ CLAUSTROPHOBIA IS SOMETHING I HAVE BEEN SUFFERING WITH FOR ALL MY LIFE. INDOORS (EVEN IF HOT) ARE NOT FOR ME, ESPECIALLY WHEN I NEED TO BE PRODUCTIVE. I MIGHT NEED CLOSED AREAS FOR URGENT MEETINGS WITH CLIENTS OR BRAINSTORMING WITH MY 4 TEAM MEMBERS, BUT OTHERWISE THE SUN AND GREENERY ARE KEY TO MY EFFICIENCY . AND EVEN IN THESE CLOSED AREAS, GREENERY AND SUNLIGHT HELP IN REGULATE MY BREATHING. UNFORTUNATELY, SOMETIMES OUR VOICES CAN BE LOUD, BUT WE TRY TO BE AS CONSIDERATE AS POSSIBLE. ”

**NEEDS**

SOUND-PROOF ROOMS

BRAINSTORMING AREAS

VARIATION IN TYPES OF SEATING FOR THE TEAM

GREENERY AND SUNLIGHT IN INDOOR MEETING ROOMS

INDOOR GREENERY & SUFFICIENT AIR CIRCULATION

OUTDOOR AIR CONDITIONING

COMFORTABLE SEATING OUTDOORS

**OPPORTUNITIES**

CREATING SEMI-OPEN OUTDOOR SPACES FOR TEAMWORK SO AS TO PARTIALLY AVOID DISTURBING OTHERS

INTEGRATE INDOOR GREENERY & SOUND PROOF INDOOR PARTITIONS TO REDUCE NOISE

DEVELOPING OUTDOOR AIR CONDITIONING SYSTEM TO ENSURE GOOD WEATHER

**CHALLENGES**

TEAMWORK CAN BE NOISY AND DISTURBING TO OTHERS

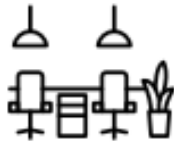
CLAUSTROPHOBIA COULD HAVE SERIOUS SIDE EFFECTS WHEN THERE IS NO ACCESS TO OUTDOORS

QUICK ACCESS TO INDOORS WHEN THERE ARE URGENT OR UNEXPECTED MEETINGS

THE WEATHER CAN BE TOO HOT OR TOO COLD

# SPATIAL REQUIREMENTS

**WORK**



**CO-WORKING AREA**



**BRAINSTORMING AREAS**



**MEETING ROOMS**



**INDIVIDUAL ROOMS**

**LEISURE**



**EVENTS/CONFERENCE ROOM**



**BREAKOUT/RELAXING AREA**

## 7.2.3 NEEDS



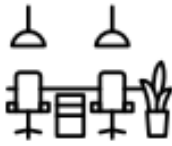
**THE PATIO  
LOUNGE**

**THE COLLAB  
LOUNGE**

**THE  
SOCIAL**

# SPATIAL REQUIREMENTS

**WORK**



**CO-WORKING AREA**



**BRAINSTORMING AREAS**



**MEETING ROOMS**



**INDIVIDUAL ROOMS**

**LEISURE**



**EVENTS/CONFERENCE ROOM**



**BREAKOUT/RELAXING AREA**



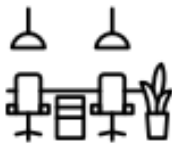
# SPATIAL CHARACTERISTICS

INDOOR	<p>HOT DESKS WORKSTATIONS FLEXIBLE FURNITURE</p> <p>FLEXIBLE/MODULAR FURNITURE COMFORTABLE SEATING INTERACTIVE TOOLS SCREENS &amp; PRINTERS BRAINSTORMING BOARDS</p> <p>SOUND ISOLATION EXPANDABLE ROOM ADJUSTABLE PRIVACY SCREENS</p> <p>INDIVIDUAL PODS SOUND ISOLATION</p> <p>LARGE SPACE FOR EVENTS CONFERENCE AREA MODULAR FURNITURE FLEXIBLE SPACE TO SUIT DIFFERENT SITUATIONS</p> <p>COFFEE/BAR</p>	<p>OUTDOOR RESISTANT FURNITURE SHADED AREAS COMFORTABLE SEATING</p> <p>OUTDOOR RESISTANT FURNITURE FOLDABLE/MOVABLE FURNITURE SHADING DEVICES ANTI-GLARE SCREENS WRITABLE GLASS</p> <p>AIR VENTILATION OPEN AIR ROOMS FOLDABLE PARTITIONING ANTI GLARE SCREENS</p> <p>ISOLATED SEATING SOUND ISOLATION</p> <p>OUTDOOR APERITIF OPEN AIR CONFERENCE ROOM SMART DURABLE FURNITURE FLEXIBILITY IN OUTDOOR EXPOSURE LEVEL</p> <p>MEDITATION/SPORTS</p>	OUTDOOR
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# SPATIAL REQUIREMENTS

**WORK**



**CO-WORKING AREA**



**BRAINSTORMING AREAS**



**MEETING ROOMS**



**INDIVIDUAL ROOMS**

**LEISURE**



**EVENTS/CONFERENCE ROOM**



**BREAKOUT/RELAXING AREA**

## 7.2.4 ACTIVITIES



## ACTIVITIES

NETWORKING | CO-WORKING | SHARING | ONE-ON-ONE DISCUSSIONS

ENGAGEMENT | COMMUNICATION | GROUP WORK | INSPIRATION | CONCEPTUALIZATION | INTERACTION

PRESENTATIONS | FOLLOW UP | VIDEO CONFERENCES | DISCUSSIONS

CONCENTRATION | PRIVACY | CALLS | UNINTERRUPTED WORK FLOW | BACKGROUND ACTIVITIES (I.E MUSIC, TV SHOW)

EVENTS | TALKS | CONFERENCE | PARTY | LECTURE

COFFEE & FOOD | APPERITIVO | SOCIALIZATION  
RELAXATION | SPORTS | MEDITATION | REFRESHING

# 7.3 DESIGN CONCEPT

In line with the rising need to re-imagine the role of future offices, the project aims to explore uncharted territories and introduce new working scenarios, that are innovative, coherent and aligned with nowadays' "new normal".

As employees return back to the offices, the need for outdoor access is becoming an inevitable necessity that is currently being handled with care from numerous organizations all around the world.

In light of these takeaways, it is aimed to explore the extension of co-working offices' parameters and investigate the yet uncharted outdoor territories in creating enjoyable, safe and productive environments that foster well-being and give workspaces completely new impetus.

## 7.3.1 IDEATION





Figure 71: Collage depicting the projects' objective of merging indoor and outdoor workspaces  
Source: created by the author

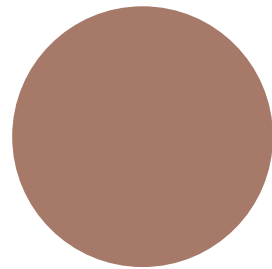
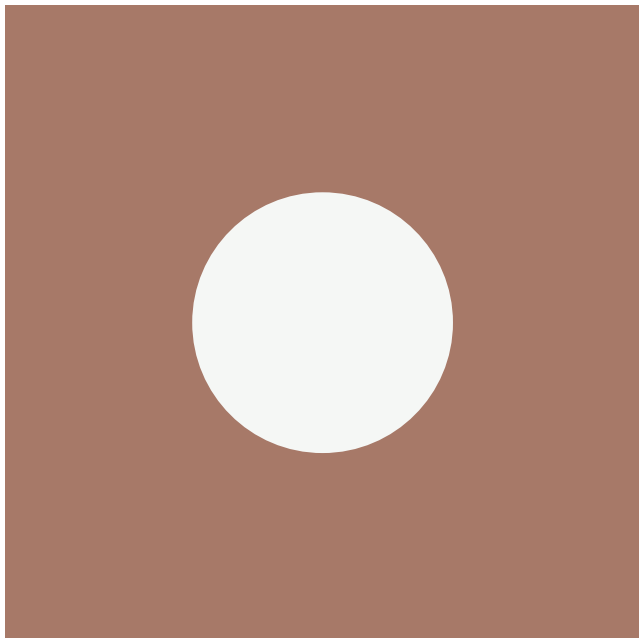
LIBERTY FROM THE CONFINES OF THE ORDINARY OFFICE WALLS -THE BOX-, THE CONCEPT AIMS TO EXTEND THE PARAMETERS OF CO-WORKING OFFICES' TO THE OUTSIDE AND EXPLORE THE UNMAPPED POSSIBILITIES AND OPPORTUNITIES THAT COME WITH THE ACTIVATION OF OUTDOOR ENVIRONMENTS AND STIMULATION OF "OUTSIDE THE BOX" WORKING SCENARIOS.

THROUGH BRINGING THE OUTSIDE-IN AND THE INSIDE-OUT, IT IS INTENDED TO FORMALIZE OUTDOOR SPACES AND EMBRACE NATURE, WHILST FOSTERING CONNECTIVITY, WELL-BEING, AND CREATIVE THINKING.

**THINKING  
OUTSIDE  
THE BOX**

**WORKING  
OUTSIDE  
THE BOX**

## **7.3.2 CONCEPT**



Derived from the famous term “thinking outside the box”, the design concept is re-applying this mentality in the adaptation of innovative scenarios for the future working spaces.

The term refers to the idea of finding solutions from unusual and extraordinary patterns and was later coined as “Lateral Thinking” by the famous British psychologists Edward De Bono in 1967.

The word “box”, however, rather than being metaphorical, originally referred to a specific box that was included in a puzzle known as the “Nine Dots Puzzle” recorded in Sam Lyod’s Cyclopedia of Puzzles in 1914.

Derived from Sam Lyods, in the 60s and 70s a resurrection for the old “Nine Dots Puzzle” took place by management gurus with the aim of testing trainees to have unusual ways of problem solving.

The puzzle has nine dots on a three-by-three grid and asks for the following:

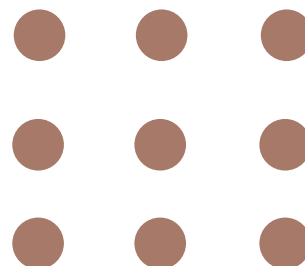


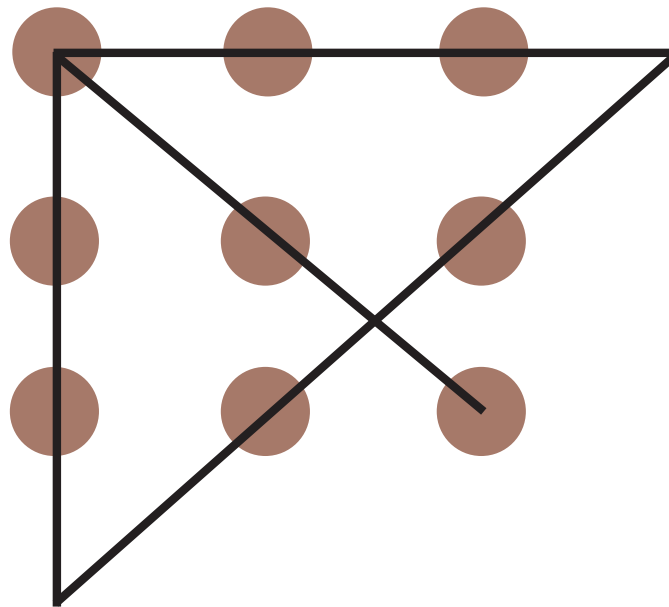
Figure 72: Picture of the “Nine Dots Puzzle”  
 Source: <https://www.phrases.org.uk/meanings/think-outside-the-box.html>

The rules of the puzzle dictated:

**“Draw a continuous line through the centre of all the eggs so as to mark them off in the fewest number of strokes.”**

1. Connect all nine dots
2. Using four straight lines
3. Without the pencil leaving the paper





## “THINKING OUTSIDE THE BOX”

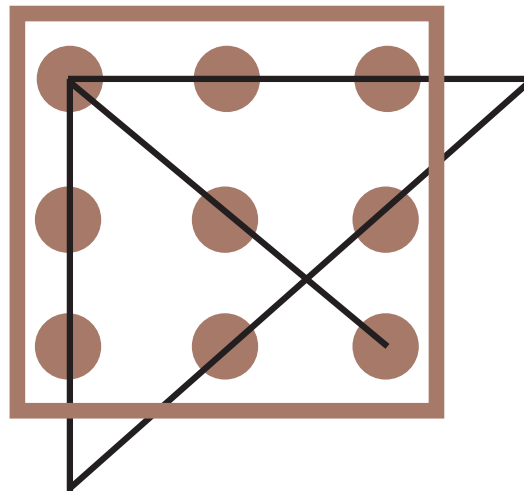
149

The result of this puzzle hints to the Gestalt psychology which emphasizes that people tend to make incomplete structures, complete in their minds.

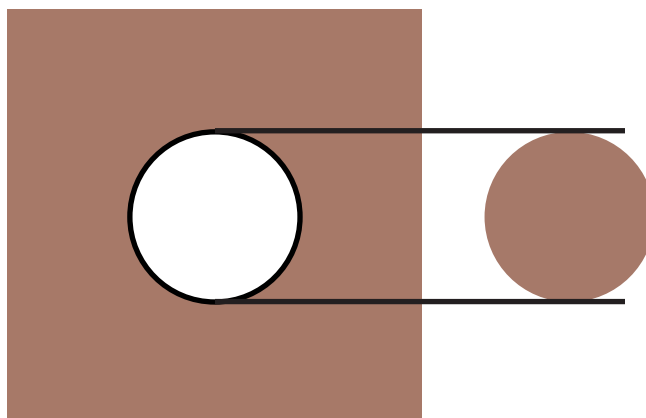
With the 3x3 grid, an imaginary box gets created in the mind of the player, resulting in a unconscious assumption that the pen is not allowed to move outside of this imaginary box -thus limiting the possibilities of the solution to zero.

While the real solution to this puzzle finds its way only through navigating the pen outside of this imaginary boundary- outside of the box in its very literal sense.

150

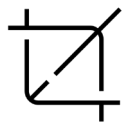


**“THINKING OUTSIDE THE BOX”**



**“WORKING OUTSIDE THE BOX”**

# 7.4 DESIGN IDENTITY



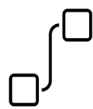
**SOFT EDGES**



**INDOOR GREENERY INTERVENTION**



**INTERACTIVE OUTDOOR FURNITURE**



**SYNERGY BETWEEN INDOOR AND OUTDOOR FLOORING**



## 7.4.1 ELEMENTS





Figure 71

### NCS COLOR CODES



NCS S 3020-B70G



NCS S 3020-G20Y



NCS S 2010-G80Y



NCS S 3030-G40Y



NCS S 2005-Y50R



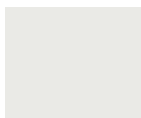
NCS S 5020-Y60R



NCS S 7020-Y40R



NCS S 4020-Y40R



NCS S 0500-N



NCS S 1500-N



NCS S 2500-N



NCS S 3005-G80Y

**NATURAL TERRAZZO**

**OAK WOOD**

**SOFT FABRICS**

**TEXTURED UPHOLSTERY**

**PLANTS & GREENERY**

**ACOUSTIC PANELS**

## 7.4.2 MATERIALS & COLOR SCHEME



08

# PROJECT IMPLEMENTATION

**8.1    8.2    8.3    8.4**

**DESIGN  
DRIVERS**

**DESIGN  
STRATEGY**

**SPACE  
PLANNING**

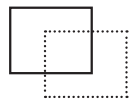
**PROJECT  
DEVELOP-  
MENT**

# 8.1 DESIGN DRIVERS

## INSIDE-OUT



Extending indoor parameters to the outside, through outdoor activation that re-establishes a sense of community and fosters performance, mobility and well-being. A wide range of functions -typically found indoors- will be innovatively re-integrated in the outdoor setting, in order to create variable fully functional, safe and creative outdoor workplace scenarios.



**MIRRORING OF INDOOR & OUTDOOR FUNCTIONS**



**FLEXIBLE & DIVERSE SEATING TYPOLOGIES**



**SUFFICIENT SHADING DEVICES**



**OUTDOOR RESISTANT MATERIAL**

## OUTSIDE- IN



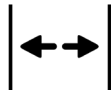
Bringing nature inside the office forms a fundamental cornerstone in completing the desired experience. As important as extending offices to the outside is, extending nature to the inside and creating immerse working environments plays a major role in assuring a complete and coherent design.



**NATURAL FINISHING  
MATERIALS**



**FLEXIBLE LIGHTWEIGHT  
PARTITIONING**



**INTERIOR OPENNESS**



**NATURAL ELEMENTS INTEGRATION**

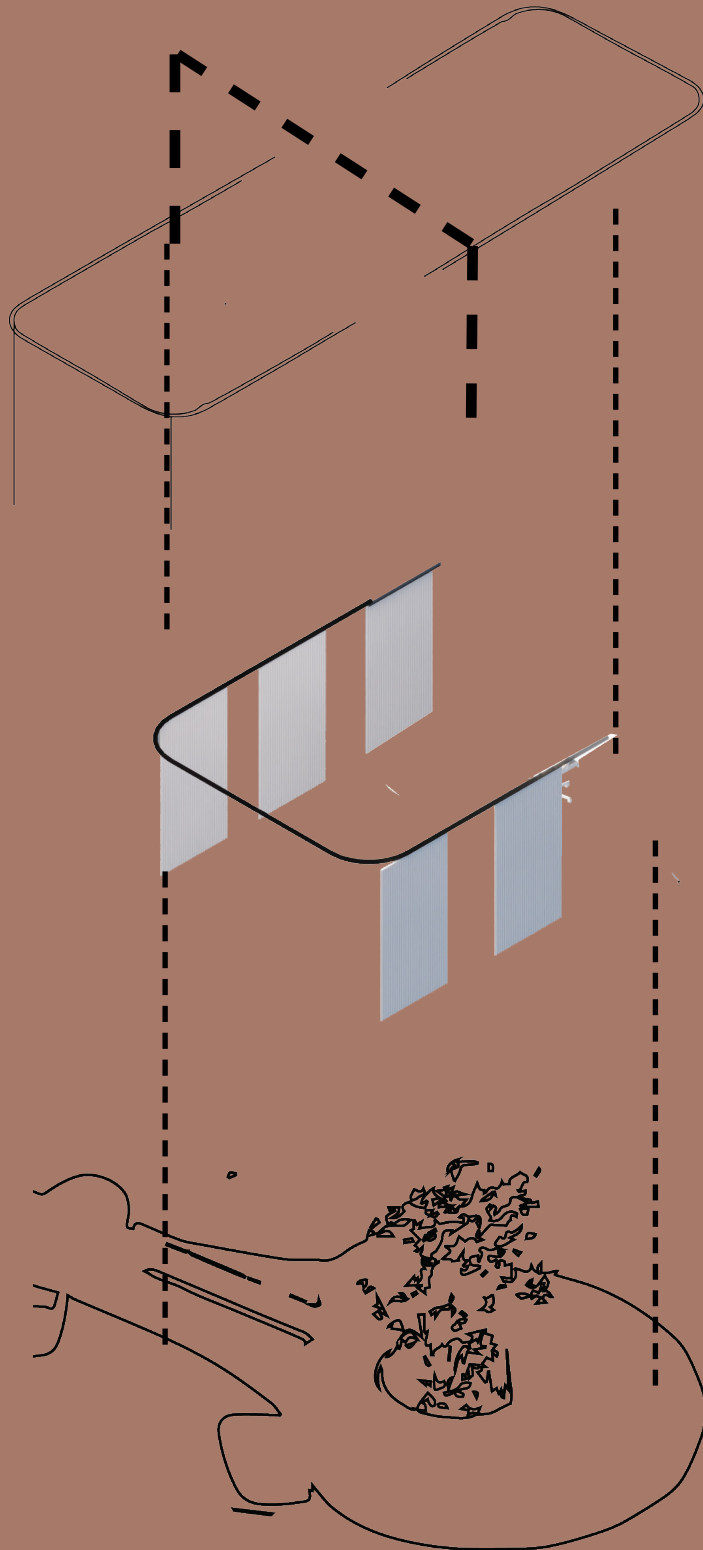
# 8.2 DESIGN STRATEGY

**1 EXTENSIONS**

**2 LIGHTWEIGHT PANELS**

**3 INDOOR VEGETATION**





# 8.3 SPACE PLANNING



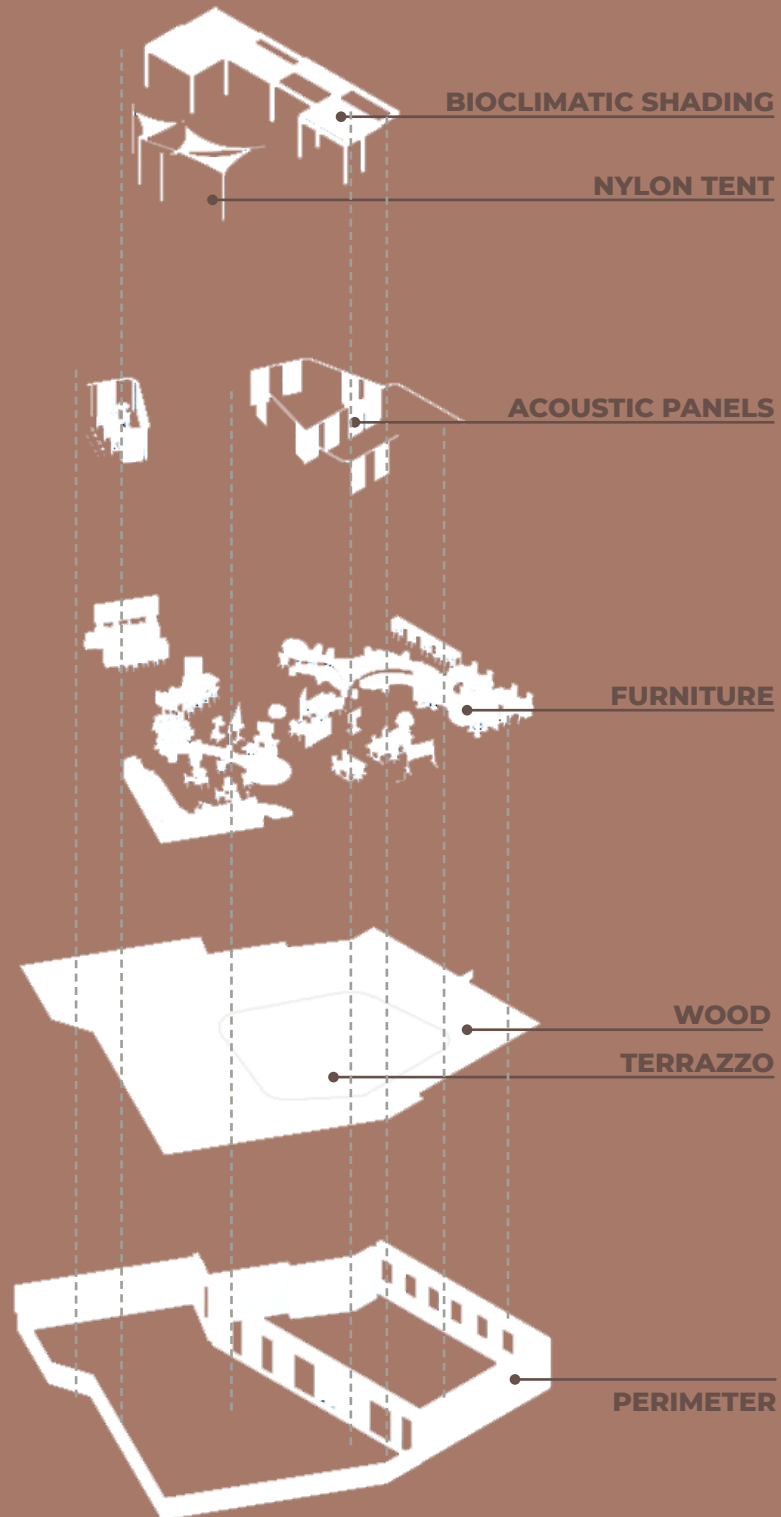
## INDOOR

- 1 OPEN WORKSPACE
- 2 WORKSTATIONS
- 3 ONE-TO-ONE DISCUSSION AREA
- 4 MEETING ROOM
- 5 BRAINSTORMING ROOM
- 6 INDIVIDUAL AREA

## OUTDOOR

- 1 OPEN WORKSPACE
- 2 CASUAL WORKING SEATING
- 3 DISCUSSION AREA
- 4 EXTENDED MEETING ROOM
- 5 EXTENDED BRAINSTORMING AREA
- 6 INDIVIDUAL AREA
- 7 BAR

### 8.3.1 LAYOUT

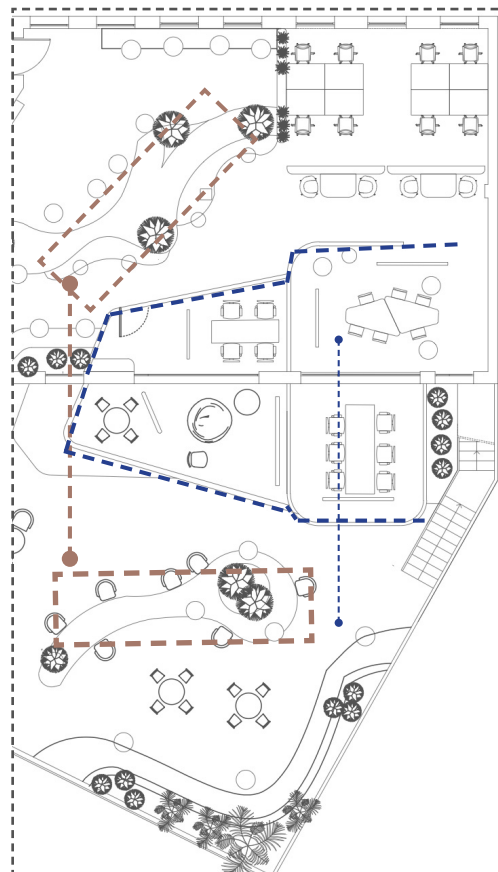


# MIRRORING

## MIRRORING OF INDOOR AND OUTDOOR FUNCTIONS & FORMS

- 1 OPEN WORKSPACE
- 2 WORKSTATIONS
- 3 ONE-TO-ONE DISCUSSION AREA
- 4 MEETING ROOM
- 5 BRAINSTORMING ROOM
- 6 INDIVIDUAL AREA

- 1 OPEN WORKSPACE
- 2 CASUAL WORKING SEATING
- 3 DISCUSSION AREA
- 4 EXTENDED MEETING ROOM
- 5 EXTENDED BRAINSTORMING AREA
- 6 INDIVIDUAL AREA
- 7 BAR

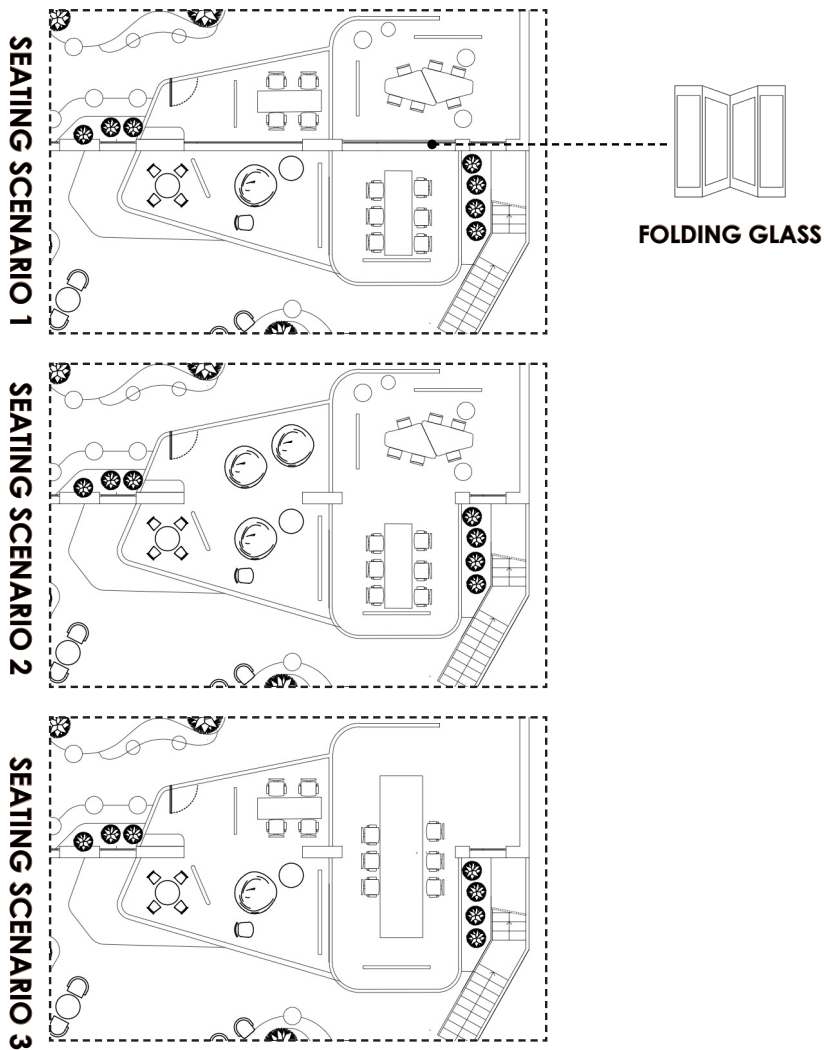


### 8.3.2 STRATEGY IMPLEMENTATION

# EXTENSION



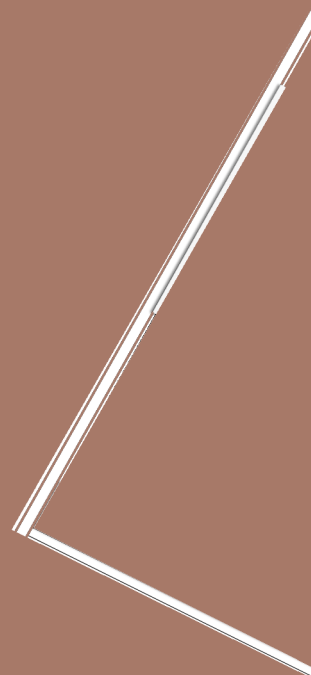
FOLDING GLASS DOORS ALLOWING THE INTERIOR SPACES TO EXTEND TO THE OUTSIDE AND CREATING DIFFERENT SEATING SCENARIOS AND INTERACTIVE MID SPACES



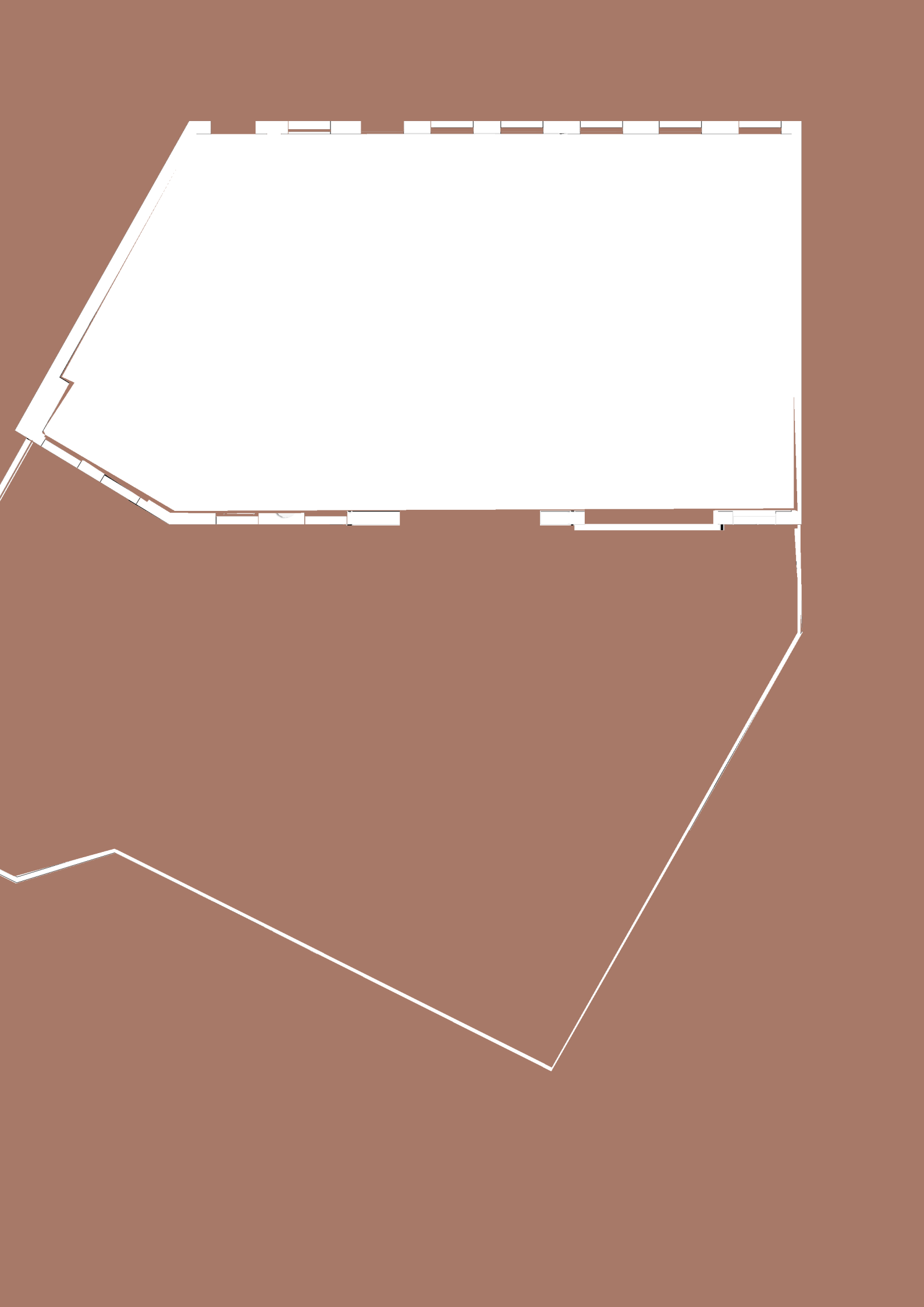
# **8.4 PROJECT DEVELOPMENT**



**OUTSIDE-  
IN**







# CO- WORKING SPACE

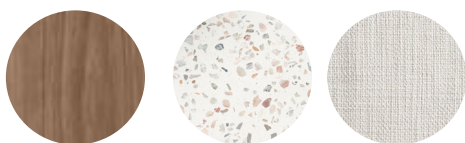
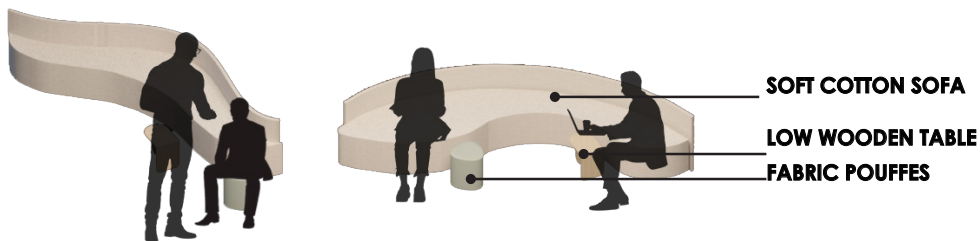






# KEYPLAN

The Co-working area is an open space that serves as a place for productive and efficient working momentum. The long curved table in the middle of the space has embedded natural vegetation, giving the area a nature-like sentiment that heavily contributes in increasing focus and concentration.





# **WORKS TATIONS & ONE-TO-ONES**





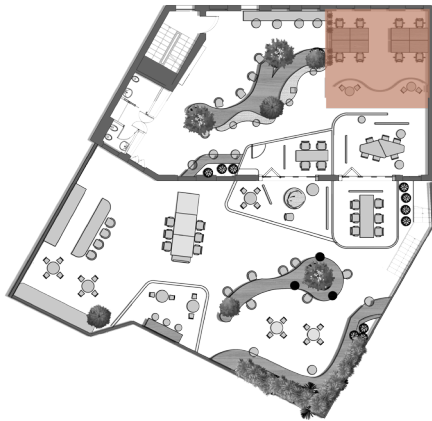




8:54 PM



## KEYPLAN



The workstations are the place for designers and visualizers to be able to work on the high-tech PCs for rendering and animation. It is in a secluded area, to maximize concentration. The wooden beams separate between the workstations and the one-to-one discussion tables, in which quick conversations or follow-ups could take place.



Privacy Separators

Wooden Desks with High-specs PC



Organic-Shaped Wooden Separator

Interactive Digital Screen

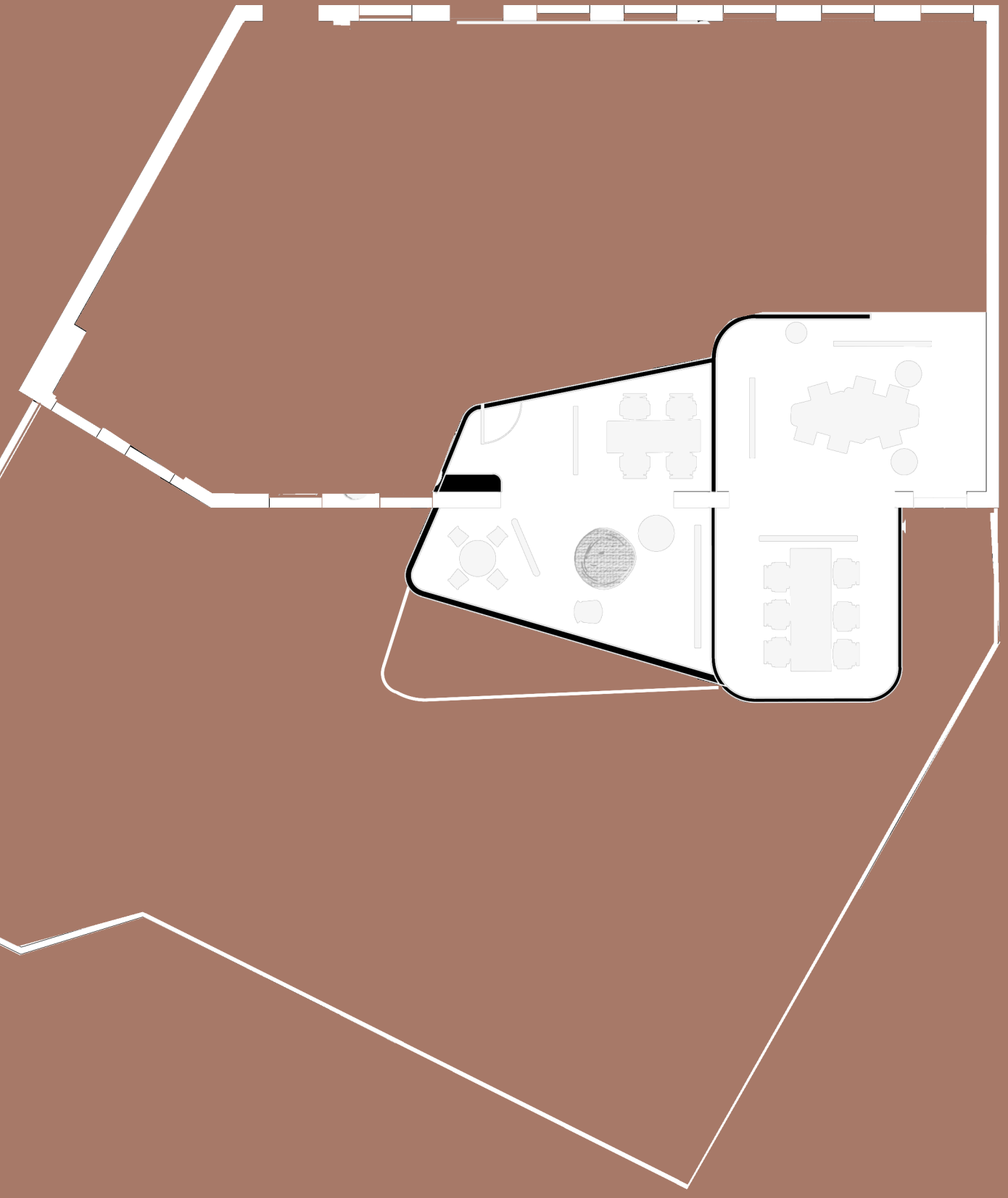
Discussion Table and Chairs







# THE EXTENSIONS



# BRAIN- STORMING AREA

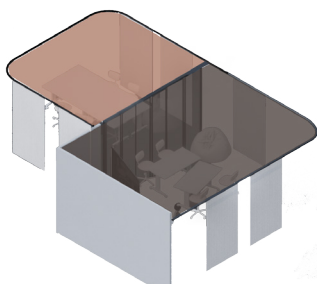




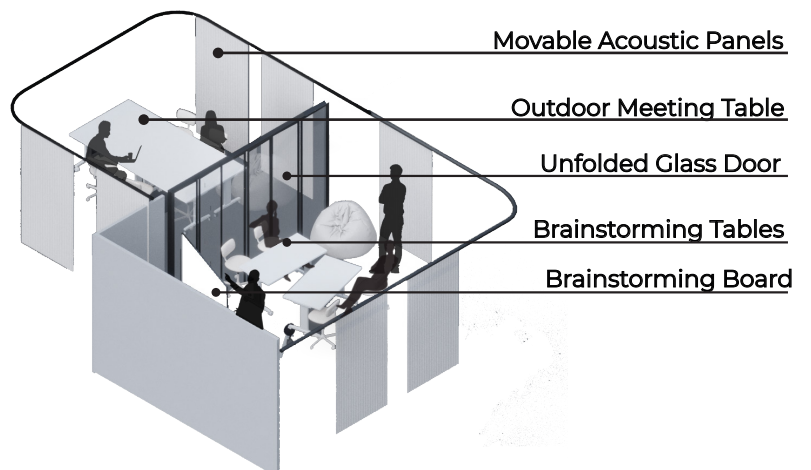


# BRAINSTORMING ROOM

ROOM CAPACITY: 5



- OUTDOOR MEETING ROOM
- INDOOR BRAINSTORMING ROOM



Movable Acoustic Panels

Outdoor Meeting Table

Unfolded Glass Door

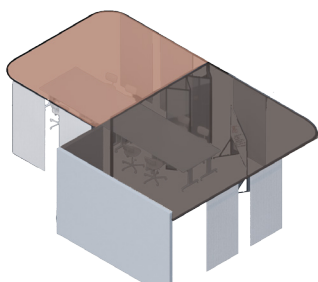
Brainstorming Tables

Brainstorming Board

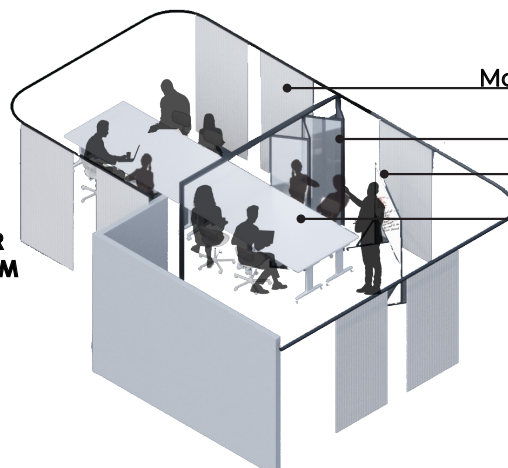


# CONFERENCE ROOM

ROOM CAPACITY: 10



● OUTDOOR/INDOOR  
● CONFERENCE ROOM



Movable Acoustic Panels

Folded Glass Door

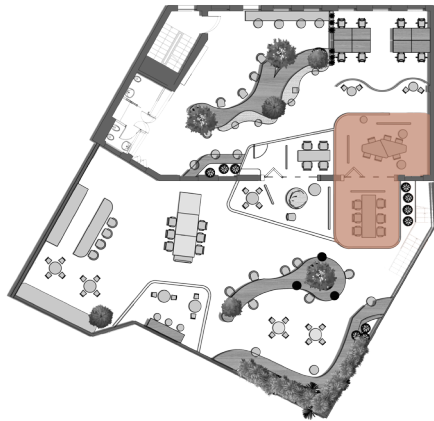
Mobile Screen

Conference Table



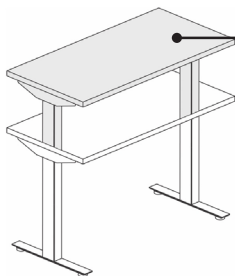
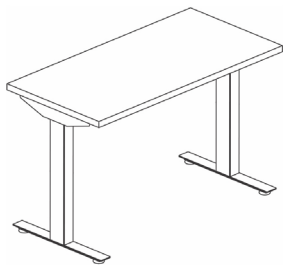


## KEYPLAN



The Collab Lounge, among which is the brainstorming area, is the place for creative minds and collaborative activities. Equipped with flexible and movable furniture, users can make the seating composition the suits their work practice best. Upon opening the folding glass, the area receives an exclusive outdoor extension that could be used as a large conference room for events, as an outdoor meeting room or as an extended brainstorming area.

190



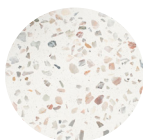
Extended Height  
Range: from  
650mm to  
1250mm



Nevi Sit-Stand desk  
Hermann Miller

Sedus Smile Stool

Se:Lab Monitor





# MEETING ROOM

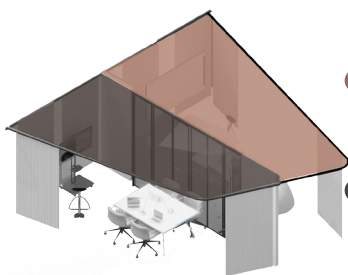






# MEETING ROOM ROOM

ROOM CAPACITY: 4



- OUTDOOR CASUAL ROOM
- INDOOR MEETING ROOM

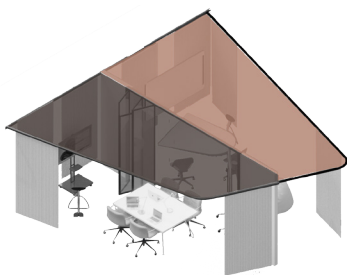


- Brainstorming Board
- Unfolded Glass Door
- Interactive Screen
- Meeting Table
- Movable Acoustic Panels

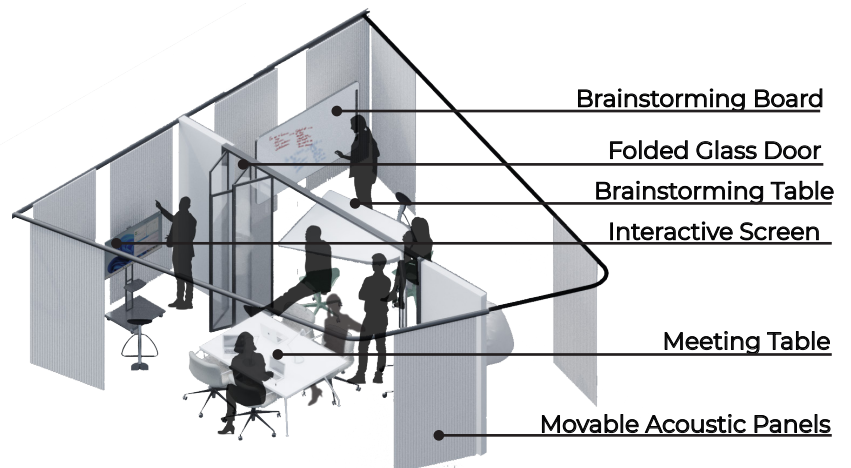


# WORKSHOP ROOM

ROOM CAPACITY: 10



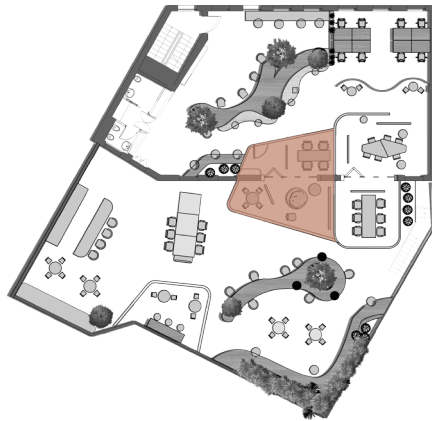
● INDOOR/  
OUTDOOR  
● WORKSHOP  
ROOM







## KEYPLAN



The meeting room is dedicated to more formal work needs that include professional meetings, on line video-conferences and virtual follow-ups. Equipped with movable screens, the connection to the virtual realm is facilitated. With the opening of the folding glass, the exclusive extension could serve as a workshop area, brainstorming area or a larger meeting room.

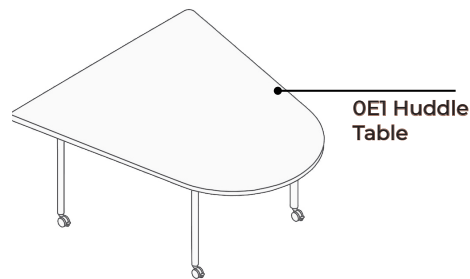


Wheels for mobility

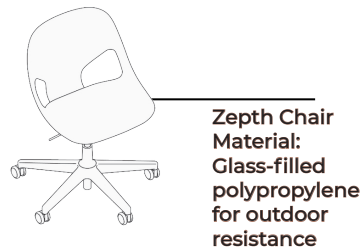


Soft back for brainstorming with physical materials

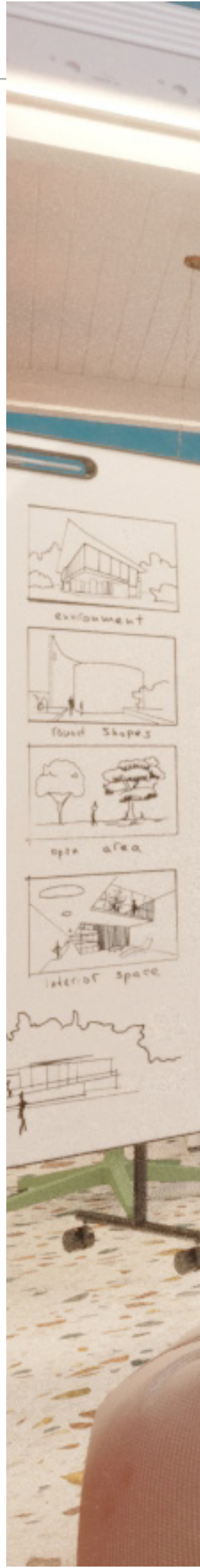
**OE1 Mobile Easel**  
Hermann Miller



OE1 Huddle Table



Zepth Chair  
Material:  
Glass-filled polypropylene  
for outdoor resistance





# OPEN COLLAB AREA

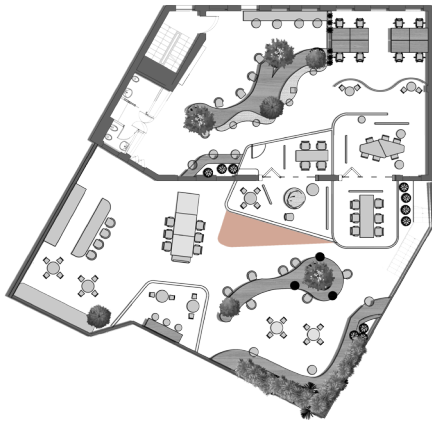








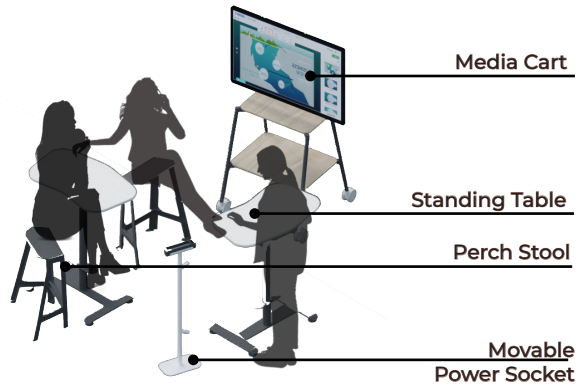
## KEYPLAN



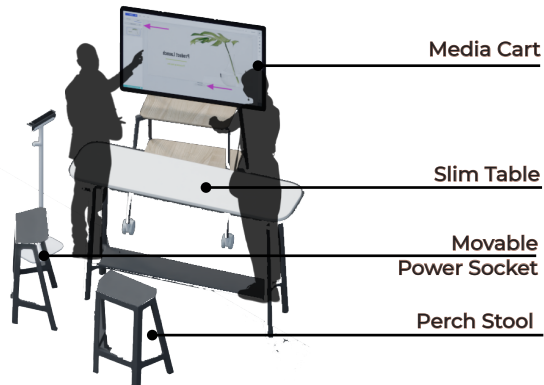
The open Collab area is the last extension area, which is a completely open space infused with smart and flexible furniture and digital screens. It allows designers to have their collaboration session in the complete outdoor, whilst enjoying the sun and breathing the fresh air.

## FLEXIBLE COMPOSITIONS

### 1 SEPARATE TABLES FOR TAKING NOTES/ PUTTING BELONGINGS



### 2 COLLECTIVE/ SHARED EQUIPMENT





**INSIDE-  
OUT**

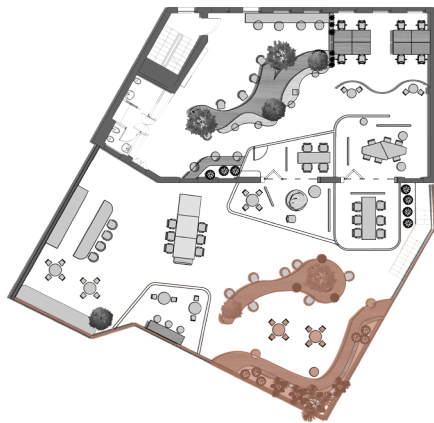




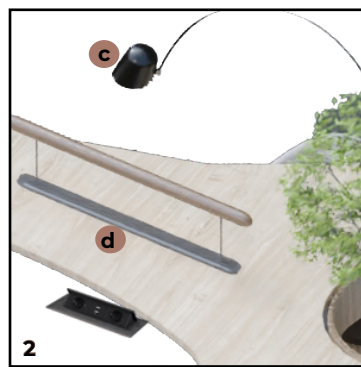
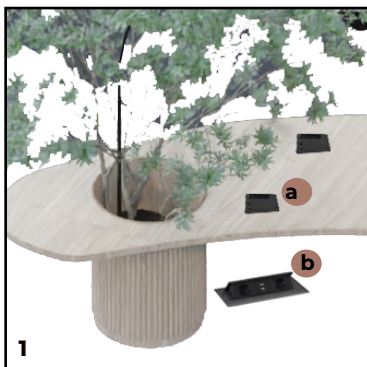
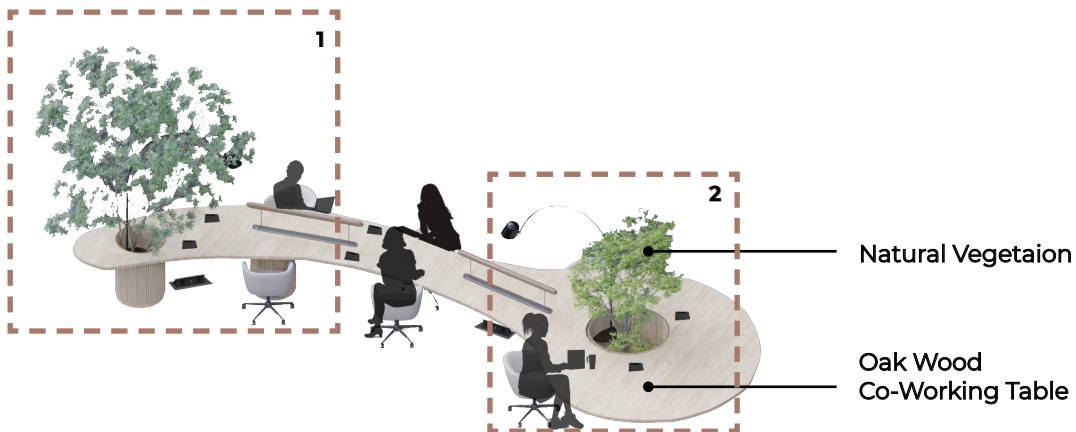


# CO- WORKING SPACE

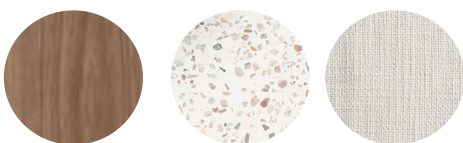




The outdoor co-working space is another version of the indoor co-working space, including the organic-shaped co-working table with embedded natural vegetation. Another additional seating typology is the stairs and the round tables, which allow designers to work in a more laid-back and casual condition.



- a** Built-in Table sockets
- b** Floor Sockets
- c** Floor Lamp for General Lightng
- d** Linear LED for Table





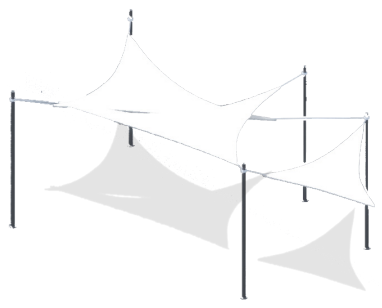




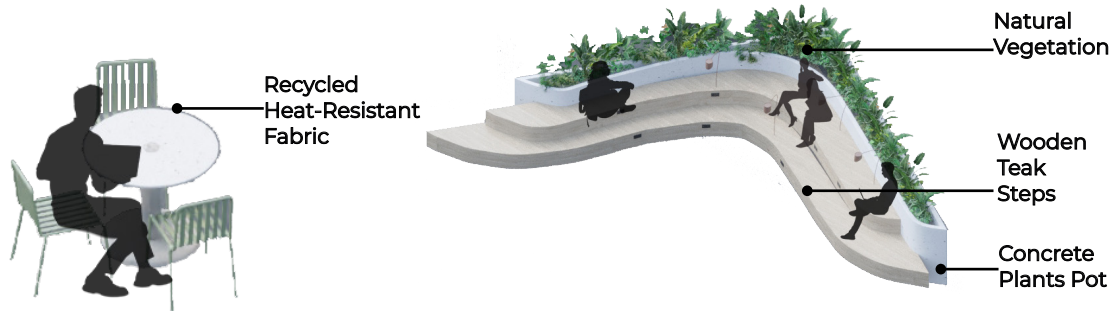
# SHADING DEVICES



Natural Vegetation



Nylon Heat and Fire Resistant



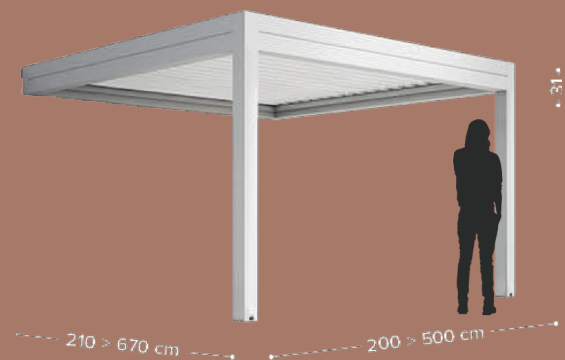
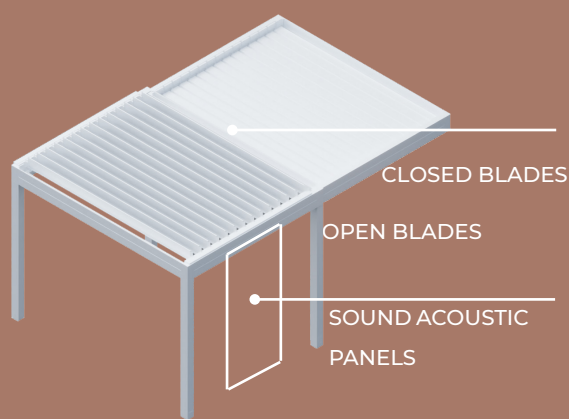




# MEETING ROOM

# SHADING SYSTEM BIOCLIMATC PERGOLAS

ENSURING CONTINUOUS WELLBEING IN CHANGING WEATHER  
CONDITIONS WHILE NOISELESSLY INTEACTING WITH NATURE  
WITH GIBUS



## **DIRECTABLE**

EASILY ROTATBLE  
BLADES TO BLOCK  
DIRECT SUNLIGHT  
AND ACHIEVE



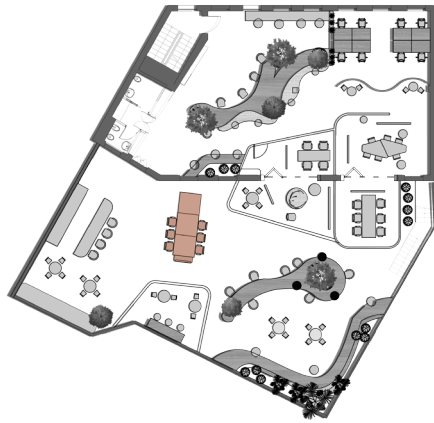
## **WATERPROOF**

WHEN BLADES ARE  
FULLY CLOSED, THE  
STRUCTURE PROTECTS  
AGAINST RAIN

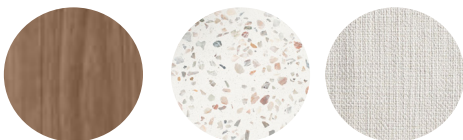
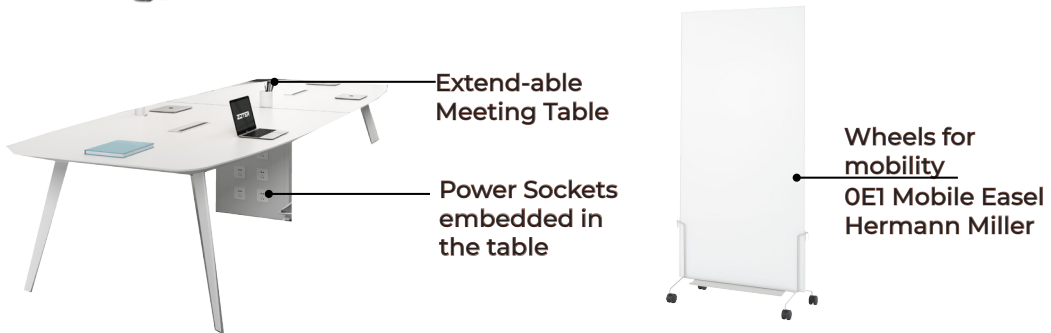
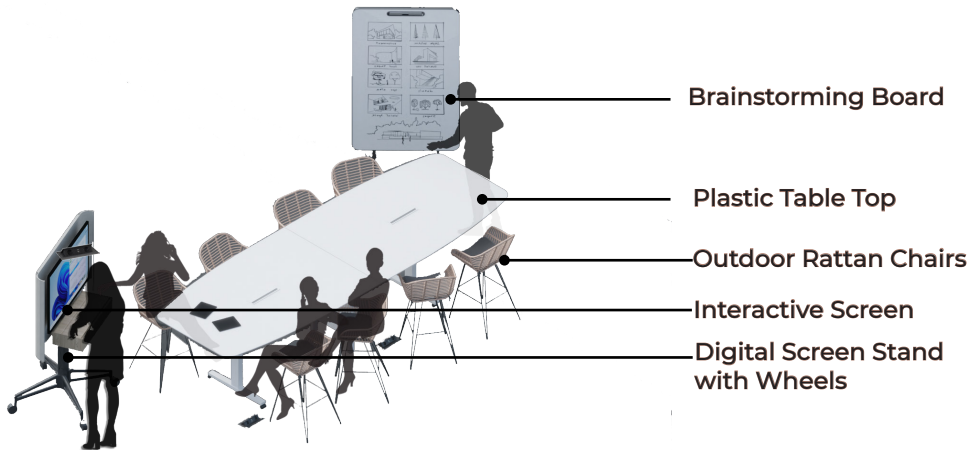


## **FOLDABLE**

PACKABLE BLADES  
ALLOWING FULL  
CONTROL IN AMOUNT  
OF SKY EXPOSURE



The outdoor meeting room is a semi-open space that allows designers to conduct meetings with peers or clients. Depending on the needed level of privacy, acoustic panels slide easily to give the desired level of noise cancellation. Equipped with screens, power sockets, lamps and indirect lighting in the bioclimatic pergolas, the meeting room can be effectively used during any time of the day.





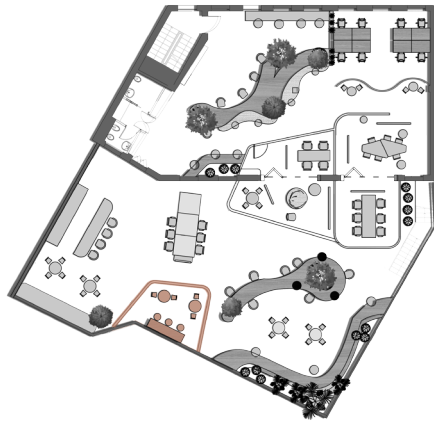




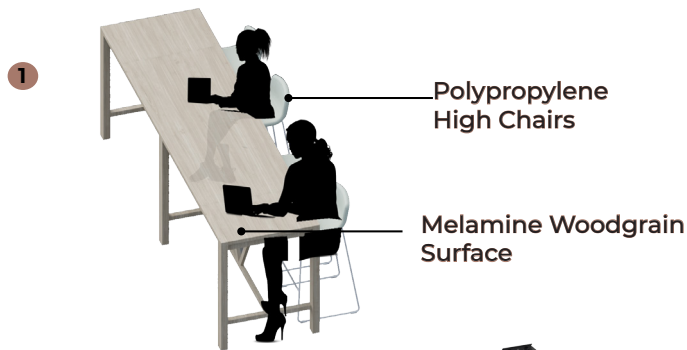
# FOCUS ZONE



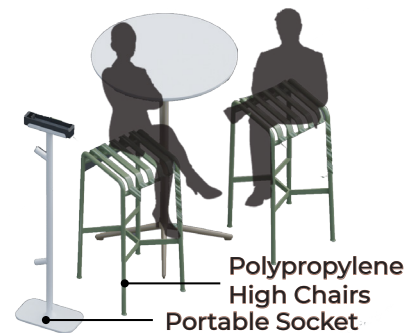
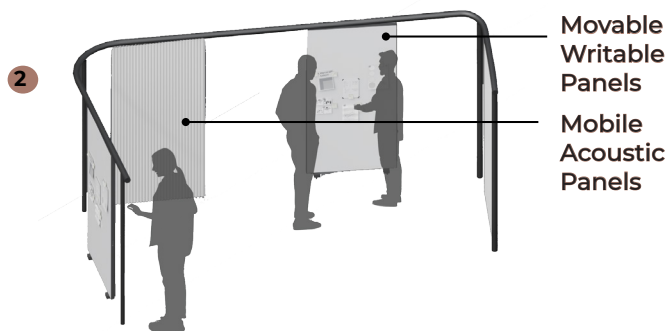




The focus zone is an area dedicated to small team collaboration or even to individual working. Sliding acoustic panels allow the area to zone out when needed, along with embedded sliding boards that can enhance creative thinking and collaborative engagement.



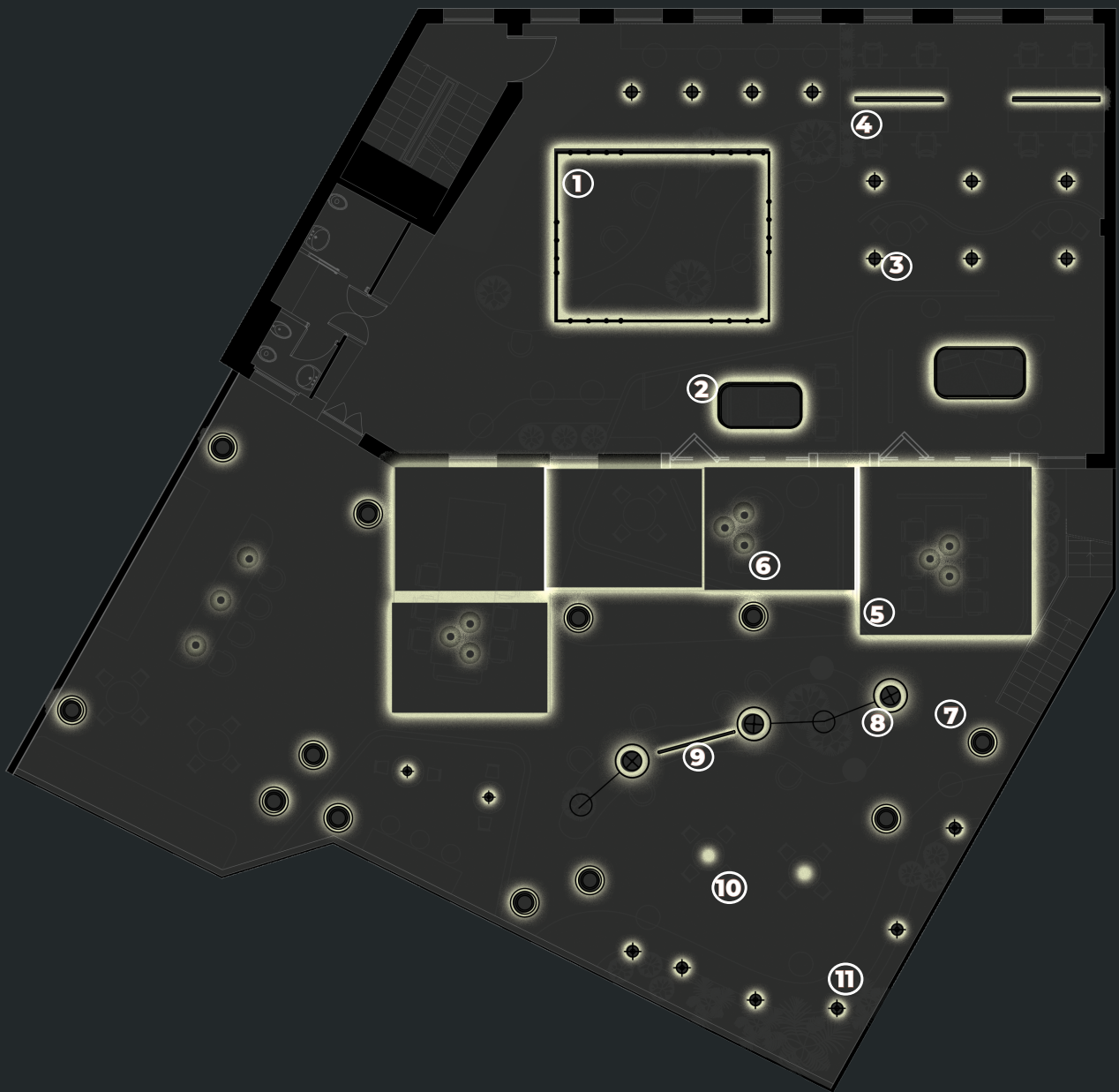
**1** **2**  
**INDIVIDUAL ONE-TO-ONE**  
**ACTIVITIES DISCUSSIONS**





**NIGHT  
MODE**

# LIGHTING SYSTEM



**1 TRACK LIGHTS**  
SPY 66 ADM- FLOS



**7 FLOOR LAMP**  
TURA- BENETO FAURE



**2 CEILING PENDANT**  
ZERO DUAL -BENETO FAURE



**8 FLOOR LAMP**  
MOON- SOLPURI



**3 MOUNTED SPOTLIGHT**  
NOX 30- BENETO FAURE



**9 TABLE LAMP**  
PELICAN- DEODORA



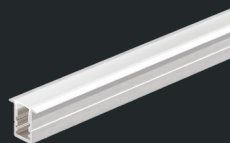
**4 LINEAR LIGHTING**  
FOREST- BENETO FAURE



**10 TABLE LAMP**  
STEM - BENETO FAURE



**5 INDIRECT LED ROFILE**  
BOX 11 - BENETO FAURE



**6 CEILING PENDANT**  
RALPH-PANZERI



**11 FLOOR LAMP FOR STAIRS**  
BEL-LIGHTING SAMI







# BIBLIOGRAPHIE

Afrianto, W. F., & Diannita, R. (2022). Having More Plants at Home During the Covid-19 Pandemic: Is It Just Following A Trend? *Jurnal Biologi Tropis*, 22(1), 200–211. <https://doi.org/10.29303/jbt.v22i1.3245>

Al-Dmour, Y., Garaj, V., & Clements-Croome, D. (2021). The flourishing of Biophilic workplaces: 'Second Home' offices as a case study. *Intelligent Buildings International*, 13(4), 261–274. <https://doi.org/10.1080/17508975.2020.1807895>

Barbosa, B. P. P., & De Carvalho Lobo Brum, N. (2021). Ventilation mode performance against airborne respiratory infections in small office spaces: Limits and rational improvements for Covid-19. *Journal of the Brazilian Society of Mechanical Sciences and Engineering*, 43(6), 316. <https://doi.org/10.1007/s40430-021-03029-x>

Birimoglu Okuyan, C., & Begen, M. A. (2022). Working from home during the COVID-19 pandemic, its effects on health, and recommendations: The pandemic and beyond. *Perspectives in Psychiatric Care*, 58(1), 173–179. <https://doi.org/10.1111/ppc.12847>

Böhme, G. (n.d.). The theory of atmospheres and its applications.

Boland, B., Smet, A. D., Palter, R., & Sanghvi, A. (n.d.). Reimagining the office and work life after COVID-19.

Bonde, J. P. E. (2008). Psychosocial factors at work and risk of depression: A systematic review of the epidemiological evidence. *Occupational and Environmental Medicine*, 65(7), 438–445. <https://doi.org/10.1136/oem.2007.038430>

Brooks, S. K., Dunn, R., Amlôt, R., Rubin, G. J., & Greenberg, N. (2018). A Systematic, Thematic Review of Social and Occupational Factors Associated With Psychological Outcomes in Healthcare Employees During an Infectious Disease Outbreak. *Journal of Occupational & Environmental Medicine*, 60(3), 248–257. <https://doi.org/10.1097/JOM.0000000000001235>



Burridge, H. C., Bhagat, R. K., Stettler, M. E. J., Kumar, P., De Mel, I., Demis, P., Hart, A., Johnson-Llambias, Y., King, M.-F., Klymenko, O., McMillan, A., Morawiecki, P., Pennington, T., Short, M., Sykes, D., Trinh, P. H., Wilson, S. K., Wong, C., Wragg, H., ... Linden, P. F. (2021). The ventilation of buildings and other mitigating measures for COVID-19: A focus on wintertime. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 477(2247), rspa.2020.0855, 20200855. <https://doi.org/10.1098/rspa.2020.0855>

DeLauer, V., McGill-O'Rourke, A., Hayes, T., Haluch, A., Gordon, C., Crane, J., Kossakowski, D., Dillon, C., Thibeault, N., & Schofield, D. (2022). The impact of natural environments and biophilic design as supportive and nurturing spaces on a residential college campus. *Cogent Social Sciences*, 8(1), 2000570. <https://doi.org/10.1080/23311886.2021.2000570>

Dominoni, A., Scullica, F. (2022). *Designing Behaviours For Well-Being Spaces: How disruptive approaches can improve living conditions*. FrancoAngeli Design International .

Diab-Bahman, R., & Al-Enzi, A. (2020). The impact of COVID-19 pandemic on conventional work settings. *International Journal of Sociology and Social Policy*, 40(9/10), 909–927. <https://doi.org/10.1108/IJSSP-07-2020-0262>

Drapeau, A., Marchand, A., & Beaulieu-Prevost, D. (2012). Epidemiology of Psychological Distress. In L. LABate (Ed.), *Mental Illnesses—Understanding, Prediction and Control*. InTech. <https://doi.org/10.5772/30872>

Frumkin, H. (2021). COVID-19, the Built Environment, and Health. *Environmental Health Perspectives*, 129(7), 075001. <https://doi.org/10.1289/EHP8888>

Gillis, K., & Gatersleben, B. (2015). A Review of Psychological Literature on the Health and Wellbeing Benefits of Biophilic Design. *Buildings*, 5(3), 948–963. <https://doi.org/10.3390/buildings5030948>

Gujral, V., Palter, R., Sanghvi, A., & Wolkomir, A. (n.d.). The workplace will never be the same: Imperatives for real-estate owners and operators.

Hamouche, S. (2020). COVID-19 and employees' mental health: Stressors, moderators and agenda for organizational actions. *Emerald Open Research*, 2, 15. <https://doi.org/10.35241/emeraldopenres.13550.1>

Heerwagen, J. (n.d.). Biophilia, Health, and Well-being.

Lei, Q., Lau, S. S. Y., Yuan, C., & Qi, Y. (2022). Post-Occupancy Evaluation of the Biophilic Design in the Workplace for Health and Wellbeing. *Buildings*, 12(4), 417. <https://doi.org/10.3390/buildings12040417>

Lin, J., Huang, B., Kwan, M.-P., Chen, M., & Wang, Q. (2023). COVID-19 infection rate but not severity is associated with availability of greenness in the United States. *Landscape and Urban Planning*, 233, 104704. <https://doi.org/10.1016/j.landurbplan.2023.104704>

Melikov, A. K. (2020). COVID-19: Reduction of airborne transmission needs paradigm shift in ventilation. *Building and Environment*, 186, 107336. <https://doi.org/10.1016/j.buildenv.2020.107336>

Morgan, R. E. (2004). Teleworking: An assessment of the benefits and challenges. *European Business Review*, 16(4), 344–357. <https://doi.org/10.1108/09555340410699613>

Olmsted, F. L. (2014). "...the enjoyment of scenery employs the mind without fatigue and yet exercises it, tranquilizes it and yet enlivens it;

Pataki-Bittó, F., & Kapusy, K. (2021). Work environment transformation in the post COVID-19 based on work values of the future workforce. *Journal of Corporate Real Estate*, 23(3), 151–169. <https://doi.org/10.1108/JCRE-08-2020-0031>

Qin, J., Sun, C., Zhou, X., Leng, H., & Lian, Z. (2014). The effect of indoor plants on human comfort. *Indoor and Built Environment*, 23(5), 709–723. <https://doi.org/10.1177/1420326X13481372>

Shigemura, J., Ursano, R. J., Morganstein, J. C., Kurosawa, M., & Benedek, D. M. (2020). Public responses to the novel 2019 coronavirus (2019-nCoV) in Japan: Mental health consequences and target populations. *Psychiatry and Clinical Neurosciences*, 74(4), 281–282. <https://doi.org/10.1111/pcn.12988>

Stewart-Pollack, J. (2006). For The First Optimum Performance Home™. 04.

Tušl, M., Brauchli, R., Kerksieck, P., & Bauer, G. F. (2021). Impact of the COVID-19 crisis on work and private life, mental well-being and self-rated health in German and Swiss employees: A cross-sectional online survey. *BMC Public Health*, 21(1), 741. <https://doi.org/10.1186/s12889-021-10788-8>

Yang, E., Kim, Y., & Hong, S. (2023). Does working from home work? Experience of working from home and the value of hybrid workplace post-COVID-19. *Journal of Corporate Real Estate*, 25(1), 50–76. <https://doi.org/10.1108/JCRE-04-2021-0015>

Yin, J., Yuan, J., Arfaei, N., Catalano, P. J., Allen, J. G., & Spengler, J. D. (2020). Effects of biophilic indoor environment on stress and anxiety recovery: A between-subjects experiment in virtual reality. *Environment International*, 136, 105427. <https://doi.org/10.1016/j.envint.2019.105427>

Zaradic, P., & Pergams, O. R. W. (2013). Trends in Nature Recreation: Causes and Consequences. In *Encyclopedia of Biodiversity* (pp. 241–257). Elsevier. <https://doi.org/10.1016/B978-0-12-384719-5.00321-X>

Zhong, W., Schröder, T., & Bekkering, J. (2022). Biophilic design in architecture and its contributions to health, well-being, and sustainability: A critical review. *Frontiers of Architectural Research*, 11(1), 114–141. <https://doi.org/10.1016/j.foar.2021.07.006>

# SITOGRAPHIE

4 priorities for a better built environment in the post-COVID city. (2020, December 18). World Economic Forum. <https://www.weforum.org/agenda/2020/12/4-priorities-better-built-environment-cities/>

9 Workplace Design Trends for 2023. (2023, January 23). HOK. <https://www.hok.com/news/2023-01/9-workplace-design-trends-for-2023/>  
Biophilic design—Future of Work Hub. (2021, April 7). Futureofworkhub. <https://www.futureofworkhub.info/explainers/2021/4/7/biophilic-design-and-the-workplace>

Coping with the pandemic: New mental health research reveals how UK adults are managing stress. (n.d.). Retrieved September 13, 2023, from <https://www.mentalhealth.org.uk/about-us/news/coping-pandemic-new-mental-health-research-reveals-how-uk-adults-are-managing-stress>

Crook, L. (2022, September 27). BIG and Carlo Ratti Associati complete garden-filled CapitaSpring skyscraper in Singapore. Dezeen. <https://www.dezeen.com/2022/09/27/big-carlo-ratti-associati-capitaspring-skyscraper-singapore/>

Design Forecast 2023: Transformation - Design Strategies for the Human Experience. (n.d.). Gensler. Retrieved September 17, 2023, from <https://www.gensler.com/publications/design-forecast/2023>

EQ Office's Playa District LA Campus Is Now Open for Business—Newsroom | EQ Office. (n.d.). Retrieved September 13, 2023, from <https://www.eqoffice.com/newsroom/eq-offices-playa-district-la-campus-is-now-open-for-business>

Four-Story Office Tops Out At 9000 Wilshire Boulevard In Beverly Hills, Los Angeles. (n.d.). Retrieved September 13, 2023, from <https://layimby.com/2022/04/four-story-office-tops-out-at-9000-wilshire-boulevard-in-beverly-hills-los-angeles.html>

From remote to hybrid work—KPMG Belgium. (n.d.). Retrieved September 13, 2023, from <https://kpmg.com/be/en/home/insights/2021/06/aud-from-remote-to-hybrid-work.html>

Gensler. (n.d.). PLACES AND SPACES IN A POST-COVID WORLD.

Hogarty, S. (2021, May 19). What is an agile workplace? Ideas. <https://www.wework.com/ideas/workspace-solutions/flexible-products/agile-workplace>

Hounsell, D. (2020, September 25). COVID-19: Commercial Office Options and Opportunities. Facilitiesnet. <https://www.facilitiesnet.com/facilitiesmanagement/tip/COVID-19-Commercial-Office-Options-and-Opportunities--47016>

Walls—The New York Times. (n.d.). Retrieved September 13, 2023, from <https://www.nytimes.com/2021/04/30/technology/google-back-to-office-workers.html>

Kohll, A. (n.d.). 5 Data-Backed Ways Working Outdoors Can Improve Employee Well-Being. Forbes. Retrieved September 13, 2023, from <https://www.forbes.com/sites/alankohll/2018/06/25/5-data-backed-ways-working-outdoors-can-improve-employee-well-being/>

McLaurin, J. P. (n.d.). 5 Trends Driving the New Workplace. Gensler. Retrieved September 13, 2023, from <https://www.gensler.com/blog/5-trends-driving-the-new-post-pandemic-workplace>

McLaurin, J. P. (n.d.). 10 Spaces That Are No Longer Optional to Create a Great Workplace Experience. Gensler. Retrieved September 17, 2023, from <https://www.gensler.com/blog/10-critical-spaces-to-create-a-great-workplace-experience>

McLaurin, J. P., & Grabowska, A. (n.d.). Hybrid Is Here to Stay. So Is the Office. Gensler. Retrieved September 17, 2023, from <https://www.gensler.com/blog/hybrid-is-here-to-stay-so-is-the-office>

Meister, J. (n.d.). The Future Of Work Is Employee Well-Being. Forbes. Retrieved September 13, 2023, from <https://www.forbes.com/sites/jeannemeister/2021/08/04/the-future-of-work-is-worker-well-being/>

Modes of transmission of virus causing COVID-19: Implications for IPC precaution recommendations. (n.d.). Retrieved September 13, 2023, from <https://www.who.int/news-room/commentaries/modes-of-transmission-of-virus-causing-covid-19-implications-for-ipc-precaution-recommendations>

Outdoor workspaces are having a post-pandemic moment. (n.d.). Retrieved September 13, 2023, from <https://digiday.com/marketing/a-breath-of-fresh-air-outdoor-workspaces-are-having-a-post-pandemic-moment/>

Playa District—Howard Hughes—RIOS. (n.d.). Retrieved September 13, 2023, from <https://www.rios.com/projects/playa-district/>

Reilly, C. (n.d.). Well-Being In The Workplace Post Covid-19. Forbes. Retrieved September 13, 2023, from <https://www.forbes.com/sites/colleenreilly/2021/11/30/wellbeing-in-the-workplace-post-covid-19/>

Sharp, S. (2020). 46,000-Square-Foot Office Building Breaks Ground in Beverly Hills. Urbanize LA. <https://la.urbanize.city/post/46000-square-foot-office-building-breaks-ground-beverly-hill>

The Building—9000 Wilshire. (n.d.). Retrieved September 13, 2023, from <https://www.9000wilshire.com/the-building>

The future of the workplace: Embracing change and fostering connectivity. (n.d.). Retrieved September 13, 2023, from <https://www.mckinsey.com/capabilities/people-and-organizational-performance/our-insights/the-organization-blog/the-future-of-the-workplace-embracing-change-and-fostering-connectivity>

The future of work after COVID-19 | McKinsey. (n.d.). Retrieved September 13, 2023, from <https://www.mckinsey.com/featured-insights/future-of-work/the-future-of-work-after-covid-19#/>

The future of work is hybrid – here’s what that will look like. (2021, April 13). Ideas (En-GB). <https://www.wework.com/en-GB/ideas/research-insights/the-future-of-work-is-hybrid>

The office of the future is outdoors. (n.d.). Retrieved September 13, 2023, from <https://www.fastcompany.com/90628880/the-office-of-the-future-is-outdoors>

Today’s office design does not support mental wellbeing for the modern workforce. (2022, October 11). <https://www.unispace.com/news/reluctant-returner-mental-health-workplace>

WeWork Bets On Outdoor Spaces For The COVID Era. (n.d.). Retrieved September 13, 2023, from <https://www.forbes.com/sites/amandalauren/2020/09/10/wework-bets-on-outdoor-spaces-for-the-covid-era/?sh=8b286384c54c>

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**POLITECNICO**  
MILANO 1863

SCUOLA DEL DESIGN



