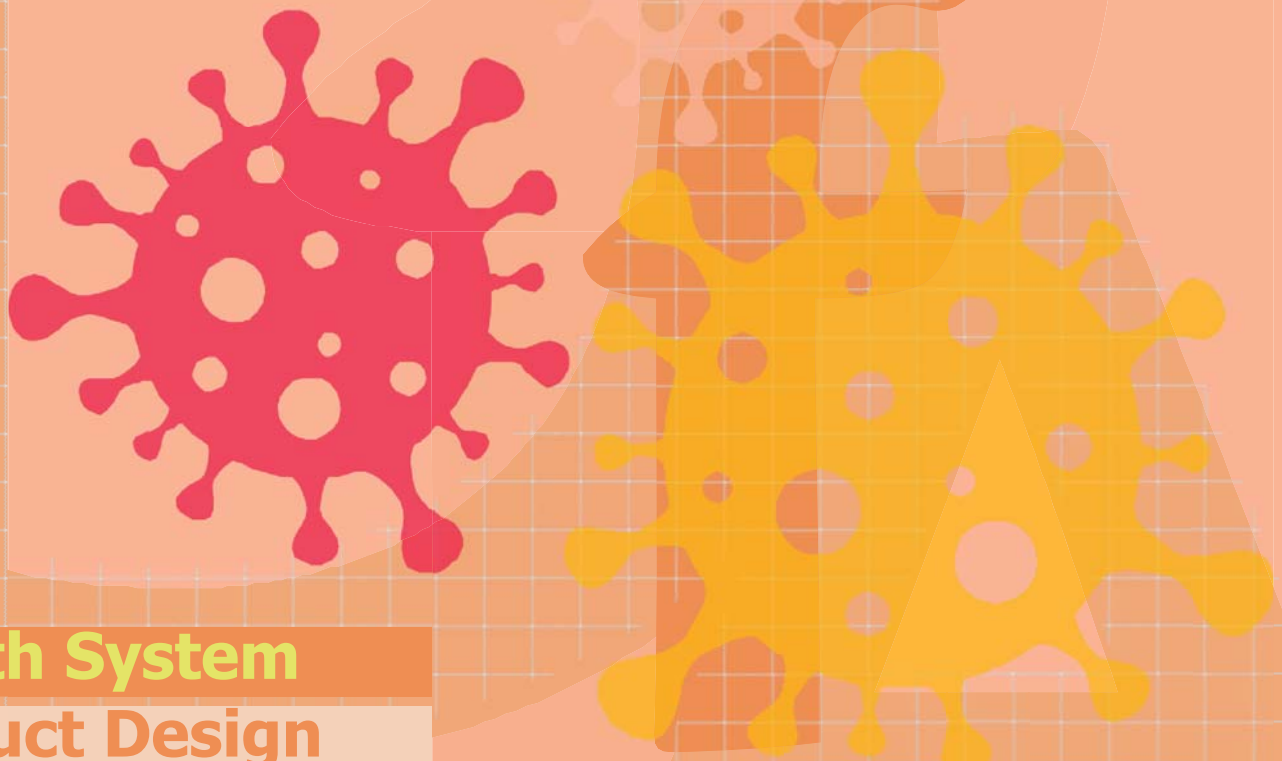
A Pubblication of Design for All Institute of India

DESIGN for ALL

ISSN 2582-8304

2020 • 12

COVID-19 and BEYOND IT



Health System

Product Design

Perceptual Design

Built Environment

Workplace

Guest Editor: Isabella Tiziana Steffan

December 2020 Vol. 15 n° 12

Cover Design
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DESIGN FOR ALL

Vol.15 N.12 - December 2020

A publication of
Design for All Institute of India

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ISSN 2582-8304

A publication of
Design for All Institute of India

Address for Correspondence:

13, Lodhi Institutional Area,
Lodhi Road, New Delhi-110 003India.

This journal is published monthly for free for benefits for readers, by Design for All Institute of India,3 Lodhi Institutional Area, Lodhi Road, New Delhi-110 003 (INDIA) and publisher name Dr. Sunil Kumar Bhatia, address A/2/70 Sector-18 Rohini, Delhi-110089 Tel: +91-11-27853470, E-Mail: dr_subha@yahoo.com

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Web site: www.designforall.in

 ISSN 2582-8304

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 ISSN 2582-8304

THE POST-COVID OFFICE WILL TRANSFORM WITHOUT DISAPPEARING

New design paradigma

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Abstract

For a long-time working community have been physical/virtual entities, only partially linked to a tangible place. The Covid19 pandemic has taken this polarity to an extreme by shifting the weights to the digital side. However, numerous testimonies coming from observers of the real estate market argue that in the era of social distancing the office will continue to exist, even if undergoing a deep transformation.

It is fundamental to maintain the sense of belonging, to review the organisational paradigm and to insert the appropriate technologies to guarantee welcoming, safe and accessible workplaces for all. To redefine the new densities, the new flows and to identify feasible guidelines, a 360-degree vision is required that integrates design, technology, managerial culture, management of environments, employees' operability, and sensitivity. Physical return, even if only for a part of the workforce, must be taken into account and this will constitute a technical-health challenge, but also a symbolic one.

In the medium term, with employees returning to the office more frequently and regularly, occupancy will be greater, therefore the spaces will need to be reconfigured. From the reception areas to the operational areas, it is necessary to review the geometry of the spaces by introducing touch-less systems and flexible and easily adaptable furnishing solutions to reconfigure spaces according to new needs. The choice of materials will also be much more careful to meet the requirements related to ease of cleaning and sanitation.

The global COVID-19 pandemic will change the workplace forever. The opportunity awaitng us is to make workplaces even better, also from the point of view of accessibility, than they were before the crisis.

1. Introduction

Only in relatively recent times has the term "office" been associated with a special building designed to contain administrative activities of public or private nature. The type of "office building" was born around the beginning of the twentieth century. Before then, there was no specialisation in terms of "type", indeed there are very few possibilities to distinguish the new buildings from those intended for residential use or hotels. This is the case of the office buildings of Victorian London, identical to apartment buildings. Another example is the Guaranty Building in Buffalo, the work of Louis Sullivan, inaugurated in 1895, that follows the hotel typology both inside and outside (Figure 1).

We have to wait until the early twentieth century to find buildings that express some typological novelty. But even buildings of this kind, such as Frank Lloyd Wright's Larkin Building, from 1904, will remain isolated cases in a very insignificant architectural landscape (Figure 2).

Fig ure 1 – Guaranty Building,
Louis Sullivan (Source: Jack E. Boucher-Wikipedia)

Figure 2 – Out side and inside of Lark in Building, Frank Lloyd Wright (Source: Wikiar quitectura)

Reversing the reading perspective from the outside to the inside, the story becomes much more articulated, complex and above all rooted in a very remote past.

It is during the Middle Ages, with the rebirth of commercial activities, that the need for spaces dedicated to work started to be felt, although they were not well specified except through a few specialised furniture. In the Renaissance period, private studios, furnished with great care and strongly characterised, spread.

These early office archetypes maintained their characteristics until the administrative and economic power required workspaces specifically intended to accommodate increasingly complex functions and tasks. The distribution scheme of the new buildings, in which long corridors give access to a number of rooms arranged laterally (cellular rooms), remained substantially unchanged until the end of the eighteenth century and beyond.

The Industrial Revolution with its mechanisation process and exaltation of the factory influenced the spaces intended for administrative work. The most evident character of the industrial office was an organisation conceived as an application of the assembly line, where simplification and specialisation of work and time optimisation were the fundamental principles. The most characteristic image of the office of this period is the "open space", with the distribution of workstations ordered according to a rigid orthogonal grid, where there isn't subdivision into rooms and corridors and where the internal partitions are non-existent.

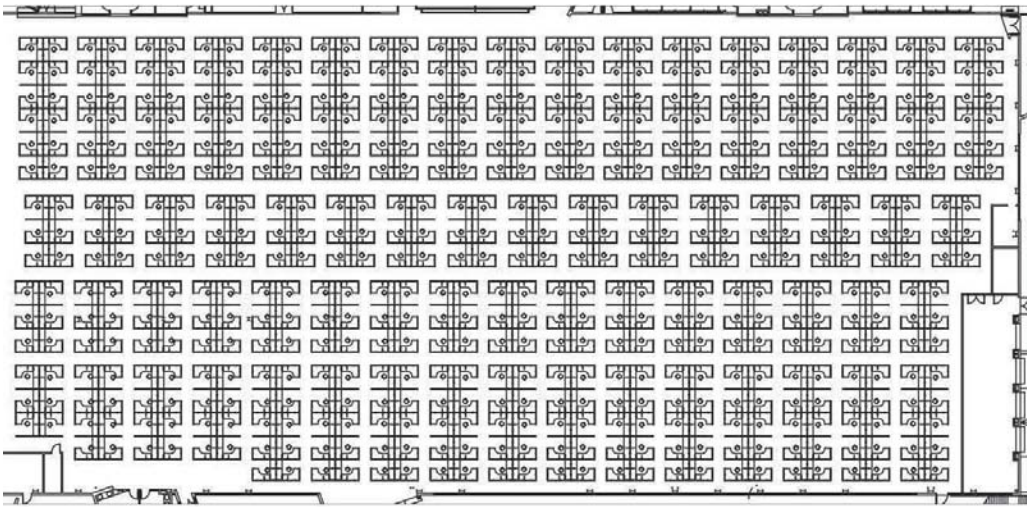


Figure 3 – Distribution of workstations in the office space (Source: Wikipedia)

The rooms are brighter and more spacious, but also wretchedly uniform and noisier. The space, although freer and more open, is stripped of any architectural quality and of all those elements, such as doors, windows, walls, which allow the worker to exercise control over his own microenvironment, to recognise himself in it and to avoid alienating situations from a psychological point of view. Efficiency and productivity were the only keywords, but the environmental conditions of the workplace didn't support them.

It was precisely from the failure of the productivism certainties of the open plan that another type called Bürolandschaft or office-landscape was born in Germany in the 1960s. This is the result of a group of environmental organisation experts, the Quickborner Team, which had fully realised the crucial role that psychophysical well-being has on work efficiency. But above all, it highlighted how the characteristics of the environment are among the factors that have the greatest impact on this well-being. The new organisational philosophy was based on two assumptions: the breaking of the traditional aggregation geometries of the desks and the

introduction of screens and green plants to improve the perceptual quality of the environment (Figure 4).

Figure 4 – Example of Bürolandsc haft in Colonia Versicherung AG in Köln, 1 984-86 (Source: Quickborner Team)

For the first time, therefore, the concepts of aesthetic research, lighting engineering, soundproofing and air conditioning were introduced into the office, with attention to environmental quality control. However, what the user of these spaces still lacked was the possibility of carving out and delimiting their own strictly personal territory. From the Bürolandschaft we move on to the Action Office, an open space, but with a recognisable spatial order, able to protect the individual territory, without hindering the flow of work.

These are principles underlying the contemporary office that renounces standardised solutions in favour of more free spatial arrangements. Today's offices, therefore, move away from the rigorous and authoritarian aspect of classic workspaces and move closer to informal furnishings, with open spaces designed to encourage dialogue and interaction. Spaces that can be adapted to architecture and furnishings, capable of responding to ever-changing needs, while presenting solutions that appear tailor-made for their users.

In the past, the keywords were: hierarchy - status - privacy, replaced in more recent times, but pre-Covid 19, by: teamwork - flexibility of spaces - corporate identity. The need for a rethinking of the office space, to meet these new needs, occurred through new service-spaces to be combined with conventional distribution layouts. The search for alternative reference models to the traditional ones has led to contamination with very different typologies, from the theatre with its changing sets, to the fast food where everyone quickly secures a place, up to the spaces for free time. Thus, we find ourselves faced with the most diverse typological solutions, with a wide configuration of work settings. There are therefore: individual work spaces, with open space or closed office workstations; workspaces for the team, characterised by meeting rooms, project areas, spaces for informal meetings; ancillary spaces, including break and refreshment areas, copy areas, archives and reception areas.

The optimal workplace must be flexible and accommodate a spatial and functional mix to respond, from a "right area at the right time" perspective, to the needs of different user categories, with different workstyles, desires, motivations, physical, perceptive and cognitive characteristics. In pre-pandemic times, workplace design included specific features to support new ways of working with high levels of human interaction and to feed creativity, innovation, speed and agility.

This is the working world, both in organisational and spatial terms, that we have left and now the old paradigms pose great challenges for the "new-normal", in the short and long term.

2. Interventions to ensure health, safety, and well-being

The pre-COVID 19 workplaces had characteristics that, when analysed today, bring out their criticalities. Open spaces, the dominant form in office design, can promote the circulation of pathogens in the air. High density, typical of the last decade due to the reduction of the space allocated per person, increases the probability of infections and diseases to spread. Shared spaces within the organisation, strongly requested by workers in order to choose and work according to the needs of the activity to be carried out, makes it difficult to monitor the correct distance between people.

High mobility within the workspace, guaranteed by technology, on the one hand it helps to create very dynamic environments, but on the other hand it favours gathering in some areas. The presence of common areas, such as break and refreshment areas, intentionally designed to encourage interaction and dialogue, now constitute a danger for the spread of infections. The trend of creating a more domestic and less corporate atmosphere in offices has led to the inclusion of furniture, for example sofas and lounge seating, contrary to the logic of social distancing.

These characteristics have allowed companies to promote new work styles, create corporate culture, attract talent and certainly respond to regulatory requirements for workplace safety. However, these characteristics did not allow to focus attention on the mitigation of the spread of diseases. All over the world, companies were not prepared to view the workplace as an environment that must be able to quickly adapt to health risks that can arise unexpectedly.

Companies are now aware that they can no longer overlook these risks if they are to survive. Therefore, what should be the interventions that companies will have to carry out in the workplace, in order to guarantee health, safety, and well-being, both physical and mental, of their employees? The answer to this question has encouraged the creation of numerous thematic groups, in Italy and abroad, animated by designers, companies, and industry experts.

The outcomes of these activities are concrete guidelines and ideas, such as those proposed by Design Force, set up by the DesignTech Hub of MIND Milano Innovation District, which was also attended by DEGW, a Lombardini22 Group brand dedicated to the integrated design of work environments. The common goal of all the task forces is the identification of possibilities and solutions that integrate design and technology, health and safety, in the short, medium, and long term.

The design lines can be summarised in: 1. Retrofitting, 2. Reconfiguring, 3. Reinterpreting, associating them, respectively, to three-time horizons: now, near, far. *Now* coincides with the first wave of re-entry, with a large portion of the workforce continuing to work from home. The focus is on workplace retrofitting, based on a common-sense approach that adheres to global government and health guidelines and which includes physical distancing, the adoption of protective screens, specific cleaning protocols.

Near is the stage where companies are ready to bring the majority of employees back to the office. For this it is necessary to reconfigure the spaces, offering long-term safety solutions (Figure 5).

Figure 5 – Proposal of retrofitting and reconfiguring of current workstation
(Source: Steelcase)

Concerning *far*, workplaces will have to be reinterpreted, if not reinvented, on the basis of new knowledge acquired over time on the transmission of the virus and on solutions that technology will offer. Design paradigms of the past dominated by costs and density in work spaces will have to be updated to be guided by the ability to easily adapt to sudden economic, health or climatic emergencies.

Reinventing the office means designing it with an even deeper commitment to the well-being of people, recognising that their physical, cognitive, and emotional conditions are closely related to their safety.

2.1 Now: Retrofit

The main criteria to be considered are:
1. Reduction of density in workspaces
To encourage physical distancing, it is useful to remove unnecessary chairs, armchairs and sofas, as well as space out the workstations to allow a distance of at least 2 metres between people (in Italy, 1 metre). If there are benches, a checkerboard configuration of the seats needs to be provided. In meeting rooms, the number of seats have to be reduced to facilitate spacing.
2. Change layout
Arrange and reorient workstations without following the typical linear configuration. Prefer freestanding desks to reduce face-to-face workstations without screens. Arrange desks at the right angles, so as to avoid frontal confrontation between people. When making changes, check that accessibility is guaranteed for all categories of users.
3. Increase in separation
Add screens or panels where it is not possible to distance according to the minimum requirement of 2 m (or 1 m). Choose easily cleanable materials.
4. Modification of the hotelling concept
This practice, now very widespread in the workplace, must be converted from multiple use for several people a day to a single use. It is essential to strengthen the company policy on the concept of "clean in, clean out".
5. Distance in ancillary spaces
The furniture in these areas, such as sofas, should be marked to indicate single use, if the distance between users is not respected; lounge seats must be removed if they cannot be

placed more than 2m (or 1 m) apart. Tables and objects, such as lamps, should be sanitised by employees after each use, as well as by the cleaning staff.

6. Use of visual and acoustic signals

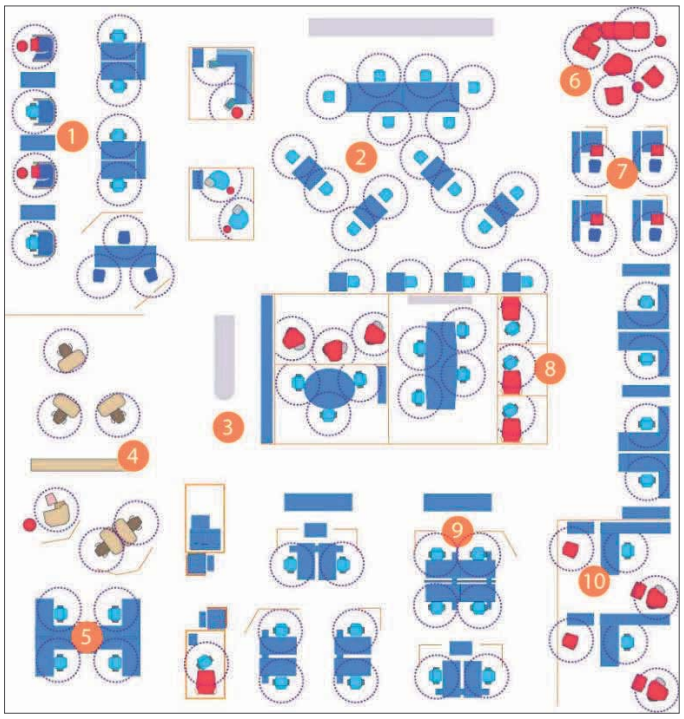
Arrange the appropriate signage to suggest to users the appropriate distance to keep in the different areas of the workplace and to direct the flows in the transit areas. Verify that the signs are understandable to the largest possible number of users.

2.2 Near: Reconfigure

The main design aspects can be identified as follows:

1. Flexibility of spaces

The needs of workers change rapidly, in the same way the space must be able to change. Setting up a workplace means imagining systems that can always be implemented. The size of the spaces must be able to be reduced or increased, but also the quality of the spaces themselves must be able to change promptly according to the type of activity carried out in them and the user. If someone feels more comfortable not sharing space with others, this possibility should be implemented with ease. The spaces to be shared must be bookable with a longer duration and easily cleaned between one use and another. Flexibility is also obtainable with the use of mobile separator panels or curtains made from certified antimicrobial / virucidal fabric, with the additional function of containing the spread of the virus in the air (Figure 6).



1 Higher space division and natural elements.
2 Decreased density in the café.
3 Sanitation stations.
4 Mobile boundary screens.
5 Changing the arrangement (geometry), no face-to-face orientation.
6 Individual seating in lounge spaces.
7 Individual workstations. Screens provide additional division.
8 Added video conferencing.
9 Movable boundary screens.
10 Reduced guest seating and adjusted orientation.

Figure 6 – Retrofitting and reconfiguring: the key requires changing the density, geometry and division of the space (Source: Steelcase)

2. Sanitizable materials
Choose finishing products, and furnishings, which allow for smooth and hard surfaces and which do not degrade due to frequent cleaning, often with chemicals. Fabrics must be sanitizable and / or washable.
3. Flexible furnishings
Furnish work areas with flexible and light furniture to move. This allows workers to adapt spaces according to the need of distance and, later, when possible, to increase the density in the working spaces.
4. The open areas fitting
Open areas can become the new conference rooms, thanks to the use of mobile screens, stools and digital tools. The fitting is quick, can be implemented directly by the workers and allows compliance with distancing rules. Arrange specific areas for stand-up meetings.
5. Installation of sensors
Technology plays an important role in containing the spread of the virus. Among the main sensors to be installed in the work spaces are those that provide information on the level of occupancy of rooms, with the consequent possibility of better managing air changes and cleaning.

2.3 Far: Reinterpreting

Possible solutions and approaches to reinterpret the workplace could include:
1. Design for adaptability
An adaptable space is one which makes itself available to the needs of each specific user. It is based on the interaction between a physical infrastructure determined by the place and mobile devices, both physical and digital, which make it possible to radically transform the perceptions and possibilities of space use.
2. Digital control
The management of flexible spaces passes through sensorization and use of mobile devices by users. Access to common platforms, in addition to defining the boundary of a community, allows to ensure a fluid and bottom-up interaction between different users.
3. Responsive building
A responsive building has its own intelligence that reacts to the different ways of space occupation. The workplace is crossed by actions and practices that can be read in the form of data. The responsive building processes these data (e.g. occupation of space, average temperatures, humidity) and changes its response by establishing active relationships with the occupants.
4. Design for All
Design for All is the design for human diversity, social inclusion, and equality. This holistic and innovative approach constitutes a creative and ethical challenge for designers. It is necessary that every design intervention is no longer aimed primarily at accessibility and the definition of design solutions capable of guaranteeing the accessibility of environments, products and services to people with disabilities. Instead, the culture of accessibility should gradually expand towards an inclusive vision of design, no longer oriented to the needs of specific user categories, but able to respond to the plurality of needs and expectations of the "maximum number of people possible".
The reinterpretation of workspace is an opportunity to consider the application of the Design for All approach, starting from the analysis of human needs and aspirations to get to the involvement of end users at every stage of the design process. Only in this way can the workplace ensure that each user can benefit from equal levels of participation in safety, regardless of age, skills and health problems.

5. Biophilic design

It is essential to maintain a relationship with natural elements within the workplace (Figure 7).

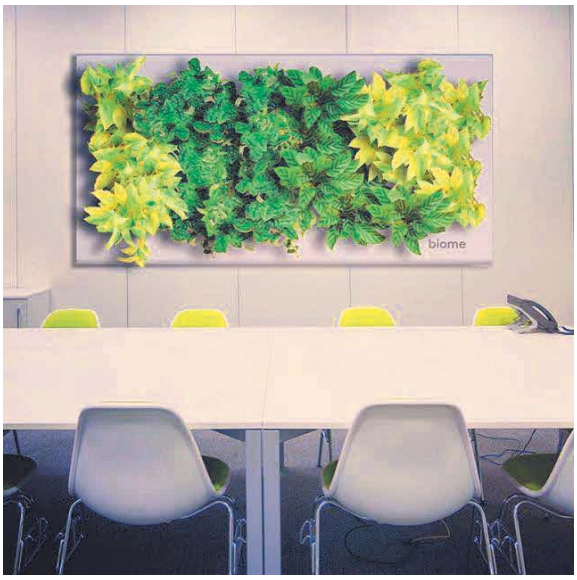


Figure 7 – Example of green wall (Source: Biome)

Quality of the environment also passes through the variety of the landscape you cross. The inclusion of natural elements in space, especially in urban contexts, also becomes a way to root the space in its territory, favouring specificity. A fresh and more intense connection with nature through the use of biophilic design will be a reassuring and intrinsic element to our new relationship with our office space. Employing natural materials, living plants, and colour palettes that reflect nature will enhance our senses and reduce stress levels (Figure 8).

Figure 8 – Prada factory - garden (Courtesy of Prada – Photo Credit: Gabriele Croppi)

6. Touch-less systems

More solutions will be available for gesture or voice-activated commands (i.e. raise desk-top,

open door and window, save whiteboard notes).

3. Conclusions

The pandemic is forcing organisations around the world to rethink the role and layout of workspaces. Among the priorities is to offer a safe, healthy, inclusive and enjoyable environment to maintain high levels of productivity, collaboration and involvement of people in times of uncertainty. This phase can be an opportunity to think of the workspace as a place to live and share with your colleagues.

The spaces will have to be reconfigured and adapted, according to the rules of distance and the density of people per room. It will also be necessary to rethink open spaces: the concept of privacy will have to be revised, balancing the need for privacy and distancing with the importance of socialisation and comparison.

In this process of rethinking the workplace, the most importance must be given to the Design for All approach. Implementing this approach will ensure that every user can benefit from equal levels of participation in safety, regardless of age, skills and health problems.

REFERENCES

1. Bengtsson, C. (2008). *Open-Plan Offices: The Importance of the Ambient Conditions' Characteristics for Employee Satisfaction*. VDM Verlag, Riga.

2. Caruso, St. J., Mozas, J. (2017). *The office on the grass. The evolution of the workplace*. a+t Publisher, Alava, Spain.

3. Casciani, S., Fiorenza, O., Roj, M. (2000). *Workspace/Workscape*. Skira, Milano.

4. Clarkson, P. J., Coleman, R., Keates, S., & Lebbon, C. (2013). *Inclusive design: Design for the whole population.* Springer Science & Business Media, Berlin.

5. Design Force (2020). *DesignTech for future* - White Paper

6. DiMillo, D. (2020). *Ace Your Space: Transform Your Workplace into Your Own Workspace*. New Degree Press, Potomac-Maryland.

7. Gillen, N. (2019), *Future Office: Next-generation workplace design*. RIBA Publishing, London.

8. JLL (2020). *The future of global office demand* - Research Report.

9. Kellert, S. R., Heerwagen, Mador, M. J. (2013). *Biophilic Design: The Theory, Science and Practice of Bringing Buildings to Life*. John Wiley & Sons, London.

10. Miller, R., Williams, P., O'Neill, M. (2018). *The Healthy Workplace Nudge*. John Wiley & Sons, London.

11. Oberti, I., Lecci, M. (2019). "When the green enters the buildings: the beneficial impacts on the users", in *Sustainable mediterranean construction. land culture, research and technology*, Vol. 9, pp. 57-61, Luciano Editore, Napoli.

12. Palmer, A. E., Lewis, S. M. (1977). *Planning the Office Landscape*. McGraw-Hill, New York.

13. Plunkett, D., Reid, O. (2014). *Detail in Contemporary Office Design*. Laurence King Publishing, London.

14. Rashid, N. (2020). *Creating a safe workplace during COVID-19*. Chartered Institute of Ergonomics and Human Factors, Warwickshire.

15. Steelcase (2020). *The post-Covid workplace* – Guide.

16. Steffan, I.T. (edit by) (2012). *Design for All-I The project for everyone. Methods, tools, applications*. Vol. I-II. Maggioli, Rimini.

17. Van Meel, J., Martens, Y., Van Ree, H. J. (2010). P*lanning Office Spaces: A Practical Guide for Managers and Designers*. Laurence King Publishing, London.

 ISSN 2582-8304

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