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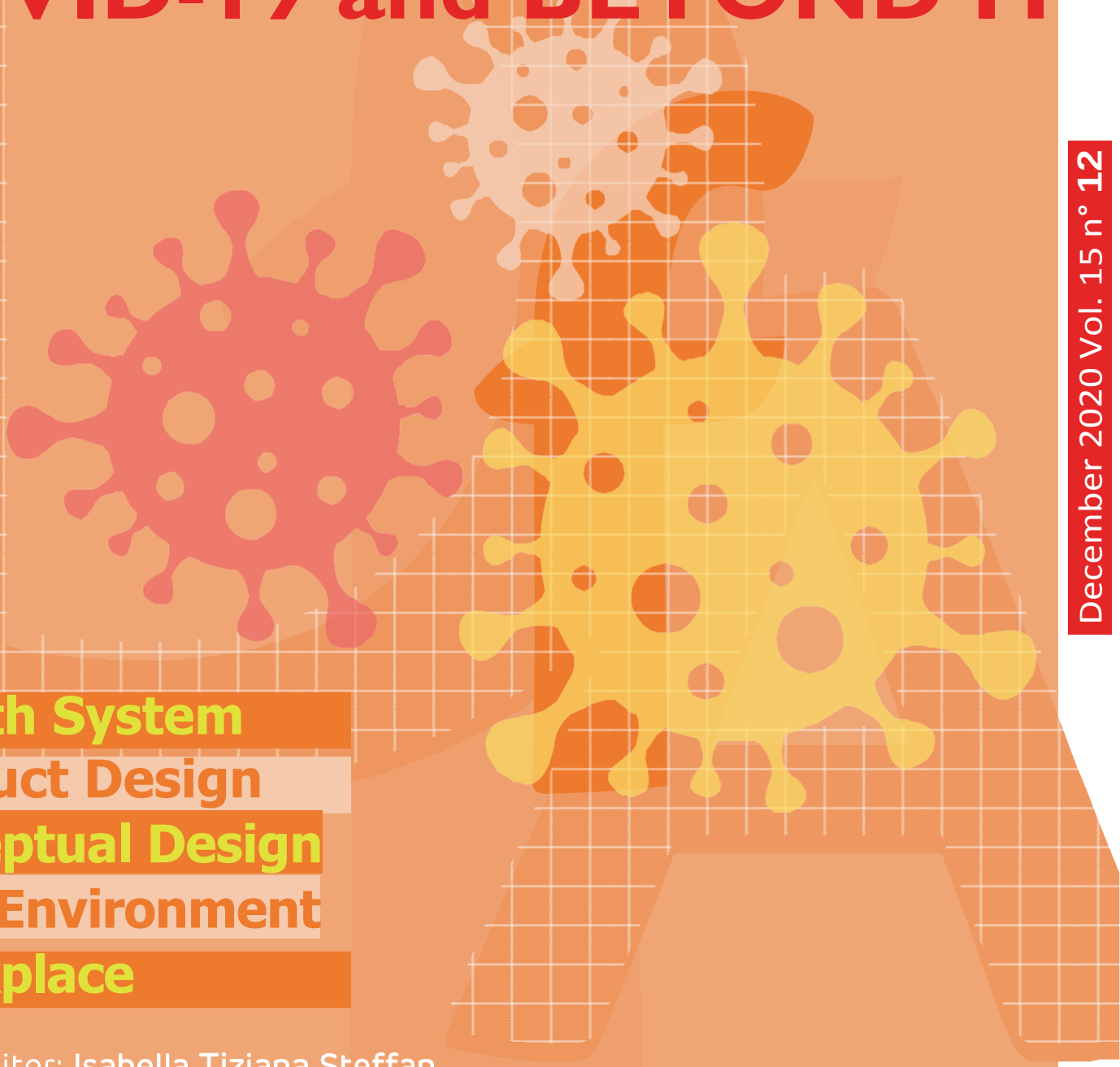
COVID-19 and BEYOND IT



Health System

Product Design

Perceptual Design

Built Environment

Workplace

Guest Editor: Isabella Tiziana Steffan

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COVID-19 and BEYOND IT

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Isabella Tiziana Steffan

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LETTER FROM THE CHAIRMAN'S DESK

'BIOLOGICAL DISTANCING' IS NEW TREND OF 2020 FOR CHALLENGES OF 'COVID 19'

I requested Arch. Isabella Steffan for making this special issue as reference for COVID-19 for future and she did her level best to make it.

I hope our readers will appreciate her effort for making our concluding issue of declared Women Designer 2020 as reference source for academic knowledge. Once again thanks Isabella.

Merry Christmas and prosperous 2021

Lambert Academic publication for celebration of 150th special issue by publishing a book by compiling editorials "Design for All, Drivers of Design" translated in eight different languages from ENGLISH into French, German, Italian, Russian, Dutch and Portuguese. Kindly click the following link for book. "Morebooks", one of the largest online bookstores. Here's the link to it: https://www.morebooks.de/store/gb/book/design-for-all/isbn/978-613-9-83306-1

With Regards

Dr. Sunil Bhatia

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COVID AND BEHIND IT

Isabella Tiziana Steffan

Guest editor

Introduction

I wish to thank dr. Sunil Bathia for inviting me once again as a guest editor, after my first experience, back in 2014. In such a particular and dramatic moment due to the pandemic that is shaking the entire world, I am asked to collect and coordinate contributions related to the role of design in this circumstance - not an easy task.

Italy has been heavility hit by the pandemic, starting from March 2020, in the northern regions, particularly in Lombardy and Veneto. These are leading regions from an economic point of view, with significant trade and commercial exchanges with foreign countries. The first case of Covid-19 occurred in Codogno (Lodi-Milan) on February 21st.

During the first lockdown, from March 9th to May 3rd, we had to change our life and work styles; our behaviours had to adapt to unexpected, unimaginable, often cruel situations. Many have endured the pain of knowing that their loved ones were gone, without having had the opportunity to give them the comfort of a hug, a smile, to hold their hands.
Our relationship with other people, with the built environment, with the natural environment, had to change and adapt to the new reality.

On Wednesday March 11th, the World Health Organization (WHO) categorised the coronavirus as a pandemic: there were 118,000 cases in 114 countries and 4,291 people had already lost their lives. The situation then turned even worse. A few days after the start of the containment measures, Italian cities emptied themselves, leaving room for surreal atmospheres. Life in public places paused. Shutters were lowered, offices closed, events cancelled, and people retreated to their homes in order to allow this situation to pass as quickly as possible.
In mid-March, the number of deaths in Italy caused by the coronavirus almost reached two thousand units with an increase of almost four hundred victims in a single day. A disturbing figure, if we take into account the fact that not even in China a similar value has ever been reached, not even in the most serious period of the epidemic.

We had to cancel scheduled commitments and trips, suffer a long period of isolation in confined spaces. Some people infected or at risk of contagion due to their work have had to lead parallel lives, isolated from the rest of their family.
We are social beings: the decrease or lack of physical interaction with others and movement in the open air makes especially the elderly, children, people with disabilities, but also our pets suffer.

Work has changed: those who could work from home have worked much more than before. Smart working should be defined more simply home working: it requires constant availability, at all hours. The consequences on health soon started to manifest themselves and were related to sitting posture and stress, with problems to eyes, hand, shoulders, back, head.

People with disabilities have particularly suffered from a lack of interaction with others, with the people who care for them, with the people they work with.

Social distancing is the only way, besides the mask, to protect oneself and others. But Italians, as we have often seen during the first lockdown, are supportive people and made up something that would be welcomed and replicated all over the world: at 18:00 every evening, they met on their balconies to sing, dance and play together. A moment of sharing to stay united, despite distances.

We realised that in city apartments there are no spaces for the noisy play of children, or the quiet and secluded spaces needed for the smart working, or those more private in case of illness. The spaces for family sharing suddenly seem small, in Italy historically the dining area and the kitchen. Apartments with balconies or terraces become the lifeline for many, especially children.

During the days of the lockdown, a series of videos become viral that see groups of animals strolling undisturbed through deserted cities, or dolphins approaching ports. Thus the discussions on the role of man on the planet have multiplied: without humans, animals regain possession of their habitats, vegetation thrives, air quality improves. The Planet lives. "We are the virus", write some readers on social media.
We have invaded the spaces of the animals, the relationship between their and our habitat should therefore be reconsidered.

The second lockdown, which we have been experiencing since November 6th, turns out to be lighter than the previous one, as Italy has been divided into regional zones, with three different degrees of isolation based on the number of infected people. One of the latest decrees of the President of the Council of Ministers DPCM also concerns children with disabilities in the age groups in which face-to-face teaching is allowed: it allows to maintain an educational relationship that achieves the effective scholastic inclusion of students with disabilities and special educational needs. The emergency has meant that what has always been invisible was recognised as essential.

What we are experiencing is a period full of uncertainty. The articles in this issue try to give a brief overview and food for thought on the role of design during this particular period of emergency.

Sara Albolino and Giulia Dagliana describe their experience on the front line during the emergency and what measures have been adopted to support the reorganisation of their health system;

Giorgio Buratti and Luca Dellera describe their point of view on the role of design and give some examples of product design that can be useful for hospitalised people, and to contrast the infection;

Aldo Bottoli and Giuseppe Muriglio illustrate experiences and a project method, the perceptual design, that can improve living comfort in indoor spaces and make environments more communicative and safer, especially for weak users;

Isoilde Dillon, Cliona Rooney and Bernadette Egan explore the impact that the Covid-19 pandemic has had on the built environment in Ireland and consider how our homes might suit the future needs of all citizens, and in particular, the needs of the most vulnerable members of our society;

Ilaria OBERTI explains how the global COVID-19 pandemic will change the workplace, as the physical office will continue to exist, even if the spaces need to be reconfigured.

Mariela Fernández-Bermejo and Antonio Tejada Cruz describe changes in urban design and some of the interventions carried out by the team of La Ciudad Accessible, in relation to the restriction of the spread of COVID-19 in Spain.

Have a good read!
Isabella Tiziana Steffan

Isabella Tiziana Steffan is an Italian architect and Certified Professional Ergonomist by CREE-Centre for Registration European Ergonomists, with experience in environmental quality, accessibility and Design for All.
She is active in the fields of: planning, research, on the subject of mobility of weak users and environmental usability, audit on usability of products, places, services, urban pathways and furniture, both for public and private customers.
She has been Vice President of the Italian Society of Ergonomics and Human factors, and of t Organising Committee of the XX International Congress IEA2018 "Creativity in practice". She President of National board for the Certification of the European Ergonomists, and member the Scientific Committee of the IEA2021 Congress.
She has been teaching for different Institutions (Università degli Studi di Firenze, Università Studi di Milano Bicocca (Department of Psychology, Sociology, ICT), and regularly teaches at Politecnico di Milano (Department of Architecture).
She has been member of juries for idea competitions, among which the UIA Award “Friendly Spaces Accessible to All” editions, and the jury student design contest "U Design for real peo
She is active in standardisation at the national, European and international levels. She is a selected expert (2016) within the European Community Mandate 420, for developing a new standard “PrEN 17210- Accessibility and usability of the built environment – Functional requirements” and two related technical reports: FprCEN/TR 17621 “Accessibility and usabil the built environment –
Technical performance criteria and specifications” and FprCEN/TR 17622 “Accessibility and usability of the built environment – Conformity assessment”. She has also worked on the rec revision of ISO 21542 “Building construction – Accessibility and usability of the built environment”.

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MANAGING THE UNEXPECTED DURING COVID-19: HUMAN FACTOR AND ERGONOMICS FOR IMPROVING PATIENT SAFETY IN TIME OF CRISES

The experience of the Tuscany Region

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Abstract

Italy has been the first country after China to be affected by COVID-19. The surge of patients that arrived to the first aid in need of intensive care assistance completely overwhelmed our healthcare system and forced our health workers to shoulder an unprecedented level of cognitive and physical workload and psychological stress. Our country was not prepared to cope with these unexpected and sudden requests of assistance, and to guarantee the proper protection and safety for health workers.

The Human Factor and Ergonomics (HFEs) approach has thus played a fundamental role to support the reorganisation of the entire health system. The network of risk managers, experts in patient safety, human factor and ergonomics of the Tuscany Region has tried to provide concrete solutions by supporting the frontline staff to cope with the consequent and sudden adaptation of the working methods in hospitals (micro level); supporting the regional crisis unit in order to redesign clinical pathways, evaluate the potential risk of the new procedures, protocols and clinical pathways, supporting risk evaluation and assess organisational preparedness, create a memory of the organisation collecting adverse events and failures of the systems (meso level); giving advice to the population for an active collaboration to stop the virus from spreading into the community (macro level).

Most of the key issues have been addressed thanks to the use of user-centred visual alerts on clinical and organisational procedures at the front line as well as thanks to the introduction in the wards of easy-to-read visual messages for "translating" the complexity of national and international protocols and guidelines into local operative procedures. A massive communication campaign dedicated to the population has been realised by the diffusion of communication tools such as posters and leaflets focused on the most important hygienic behaviours to followed during daily life for reducing the spread of the virus at home and in the community.

1. Introduction

Italy has been the first country after China to be affected by COVID-19. On 31 January, wright on the same day when the WHO declared the public health emergency of international concern, Italy declared the state of emergency after that 2 Chinese tourists resulted positive

in Rome. On the 18th of February the National Institute of Health reported the first case of second-generation transmission in Lombardy and after 5 days a sanitary cordon was activated around some areas of Lombardy and Veneto and an emergency task force was formed there to lead the outbreak. At this time, we had 221 positive cases.

In the following days increasing restrictions and social distancing measures were imposed to the population according to the regional epidemiologic situation. On the 8th of March our Prime Minister declared the entire country "red zone" followed by a step-by step strategy in terms of geographical extension and restriction's intensity. At this time, we had 12.462 positive cases[1].

The surge of patients that arrived to the first aid in need of intensive care assistance completely overwhelmed our healthcare system and forced our health workers to shoulder an unprecedented level of workload, physical and psychological stress.

In a few days the number of patients that needed hospitalisation has increased very quickly, from 742 on the 2nd of March to 6650 on the 12th of March and the same trend was observed for those that needed intensive care assistance that jumped from 166 to 1153 in a few days.

Our country was not prepared to cope with this unexpected and sudden request of assistance. We were not prepared to manage a massive reorganisation of pathways, to re-design departments, to move staff from a department to another, to re-train staff for performing new tasks, to collect, adapt and transfer huge number of information arriving from the international and national level and directed to the local one. We were unprepared also to guarantee the proper protection and safety for health workers, unprepared to allow them to work in safety and with usable and comfortable personal protection equipment (PPE).

We can now say that the several of key issues were related to human factors, ergonomics and safety culture. It appeared very clearly that health staff had to deal with new environments, new way of working, different and complex interaction with new equipment, protocols and interfaces, new colleagues and an unknown disease.

The Human Factor and Ergonomics (HFEs) approach has thus played a fundamental role to support the reorganisation of the entire health system.

2. The approach to the pandemic: HFE makes a difference

During the pandemic the Centre for Clinical Risk Management and Patient Safety of the Tuscany Region (Centre GRC) – WHO Collaborating Centre in Human factor and Communication of the Delivery of Safe and Quality Care, has played its role in the regional system according to its internal specific competencies in communication, human factor and ergonomics.

The system approach focused on understanding how to support the clinicians in their challenge against the virus, drove the entire strategy and actions designed by the Centre GRC.

[1] Source: dashboard Civil Protection
http://opendatadpc.maps.arcgis.com/apps/opsdashboard/index.html#/b0c68bce2cce478eaac82fe38d4138b1

Since the very beginning coping with the pandemic revealed very critical aspects related to the usability and design of medical devices and healthcare procedures.

It was vital to support healthcare trusts and hospitals with HFE competencies which are very rare in these kinds of context. Not only the role of the Centre, but also the role of risk managers' network, with their specific training in ergonomic principles, was fundamental in being the point of conjunction and continuity of information and communication between the top management and the frontline, different transversal services and different clinical units.

The patient safety culture, based on learning from errors and act for improvement, is a successful element for facing the emergency in a productive way.

It is incredible how soft skills (i.e. communication, team work, situational awareness) as the capacity of translating meanings from a community to another, identifying the key communicative messages to transmit at all levels, bridging different stakeholder to have a multidisciplinary, revealed to be strategic during the emergency and to be a peculiarity of risk managers as operators trained in HFE principles.

With this approach, as experts in human factor and ergonomics, safety and quality of care, it was impossible not to place ourselves at the service of a profound understanding of the change created by the COVID-19 pandemic and to try to find a position to support the crisis.

3. The HFE intervention for supporting the regional healthcare service

Many of the key organisational issues that we have had to address at the micro, meso and macro level in the emergence of this crisis can be read and interpreted through the lens of human factors, ergonomics and the culture of safety.

The network of risk managers, experts in patient safety, human factor and ergonomics of the Tuscany Region has been able to provide concrete solutions to the uncertainty that derived from the rapid and unexpected transformation that our health system has to undergo due to the pandemic.

The network has tried to:

- support the frontline staff to cope with the consequent and sudden adaptation of the working methods in hospitals (micro level)

- support the regional crisis unit in order to redesign clinical pathways, evaluate the potential risk of the new procedures, protocols and clinical pathways, support risk evaluation and assess organisational preparedness, create a memory of the organisation collecting adverse events and failures of the systems (meso level)

- to give advice to the population for an active collaboration to stop the virus from spreading into the community (macro level).

In the following paragraphs we illustrate some actions realised by HFEs experts of the Tuscany Region health system in order to make the health system safer at each level of the organisation: micro, meso and macro.

3.1 Support to the frontline staff

One of the main interventions realised to support health workers at the front line was to create visual tools, such as scenario-based visual clinical pathways, for coping with the cognitive overload generated by the new working conditions.

Due to the emergency, the routinely organisation of the work as well as many pathways changed drastically pushing most operators to learn new tasks, procedures, guidelines and protocols. Most of them had to move to new services or department with new colleagues, in unknown environments and under the stressful climate of a new virus to stop.

Most of the information material and guidelines release by the World Health Organisation (WHO) and by the European Centre for Diseases Control (ECDC) need adaptation to the local organisation and workflow and need to be put in an easy-to-read design.

Fig ure 1 - For heal thca re w orkers - 5 Moment s fo r hand hy gi ene .

Use a n alco hol- ba sed fo rmulatio n or soap and wa ter:

1. Before touching a patient;
2. Before a clean/aseptic procedure;
3. Aft er body fl uid exposure;
4. After touching a patient;
5. After touching patient surroundings

Posters and visual alerts were focused on:

- hand hygiene (Figure 1)
- environmental hygiene
- correct practices to prevent and manage infection
- appropriate use of Personal Protective Equipment (PPE)
- procedure for donning and doffing PPE (Figure 2)
- algorithm for the correct procedure for ventilation in ICU

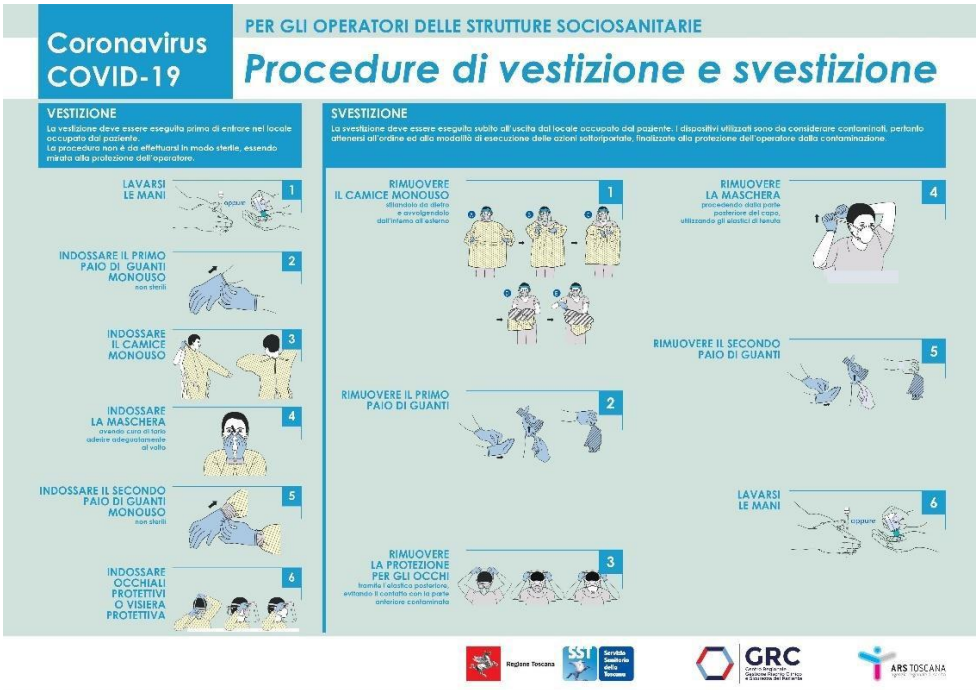

Figure 2 - For healthcare workers and long- term care structure workers - Procedure for donning and doffing PPE - Personal Protection Equipment .

Donning PPE- Donning must be done before entering the room occupied by the patient. The procedure is not to be carried out in a sterile way, being aimed at operator protection:

1. Perform hand hygiene
2. Put on the first pair of gloves (non-sterile)
3. Put on disposable gown
4. Put on face mask. Make sure it fits sugly to the face
5. Put on the second pair of gloves (non -sterile)
6. Put on goggles or faceshield

Doffing PPE -Doffing must be performed immediately upon leaving the room occupied by the patient. The devices used are to be considered contaminated therefore be sure to comply with the consequentiality and methods of execution of the actions listed below, aimed at protecting the operator from contamination:

1. Remove disposable apron tearing it off from the back and roll the apron forward
2. Remove the first pair of gloves
3. Remove eye protection by pulling the string from behind the head avoiding contact with the contaminated front
4. Remove the mask from behind the head using the strings
5. Remove the second pair of gloves
6. Perform hand hygiene

3.2 Support to the regional crisis unit

At the meso level, in support to the regional crisis units, one of the main functions of the network of HFE experts was to act as a point of junction between the decisional organisms

and the field through a continuous updating of operational procedures and making sure that new procedures arrived to the line.

The very high number of patients in need of intensive care and mechanical ventilation required hospitals to change rapidly pathways, to redesign departments in order to make them suitable to high level of assistance, to reorganise services and to introduce new medical protocols, new equipment (PPE) and devices.

The uncertainty of this new situation could have hid many hazards for patients and health workers. Proactive analysis and assessment of the risk for patient and health workers represent indeed something of paramount importance to avoid additional stress to the system. Risk management tools such as multidisciplinary debriefing, the SWOT Analysis[2], audits and mortality and mobility reviews, huddles[3], Safety Walkround[4], observation using ad hoc checklists, trainings with simulation and the use of the Failure Mode and Effect Analyses (FMEA)[5] methods to asses safety and quality of the "new normal" showed and still show their effectiveness and power to make the system safer.

A proactive analysis of possible hazards and failures in the new emergency-dictated scenarios represented thus a pillar for preventing gaps and holes in the safety of the patient and health workers.

3.3 Community active involvement

Another important role played by HFE experts was that of working with regional communication offices and regional media for making the community aware of the important role that they could play in stopping the spread of the virus by adopting appropriate health behaviours.

The theme of "infodemia" has been at the core of the public debate for almost the entire phase one and it had a very strong impact on the population and its ability to distinguish paramount information from the unnecessary.

For the community selecting information and translating the most important ones into daily appropriate behaviours turned out to be very difficult.

We established therefore a communication campaign to diffuse all the key messages related to preventive behaviours and measure to be observed for avoiding infections such as respiratory etiquette, hand hygiene, social distancing, hygiene for indoor including how to manage waste in case of people positive to COVID-19, how to use protective equipment and

[2] SWOT Analysis (also known as SWOT Matrix) is a strategic planning tool used to assess the Strengths, Weaknesses, Opportunities and Threats of a project, a business or any other situation in which an organisation or individual has to make a decision to achieve a goal.

[3] A huddle is a short, stand-up meeting — 10 minutes or less — that is typically used once at the start of each workday in a clinical setting. Institute of Healthcare Improvement.

[4] The Safety Walkround (SWR) is a risk assessment technique, which involves visits and structured interviews by members of the management to operators on safety issues and the causes that can determine adverse events or situations of critical issues. Ministry of Health

[5] The FMEA (Failure Mode and Effect Analysis) is a methodology used to analyse the failure or defect modes of a process, product or system, analyse the causes and evaluate which are the effects on the entire system.

how to use the dedicated phone number to call in the event of the onset of symptoms for a preliminary phone triage.

For this purpose, we adapted WHO visual alerts and we put into a clear-to-understand format all the information spread by the national health authorities (Figures 3-4-5-6).

Figure 3 - For the population - Community behaviours: protect yourself and the other from germs spread .

When coughing and sneezing cover mouth and nose with flexed elbow or tissue. Throw the

ti ssue into a closed bin immediately after use.

Clean hands with alcohol- based hand rub or soap and water after coughing or sneezing and when caring for the sick .

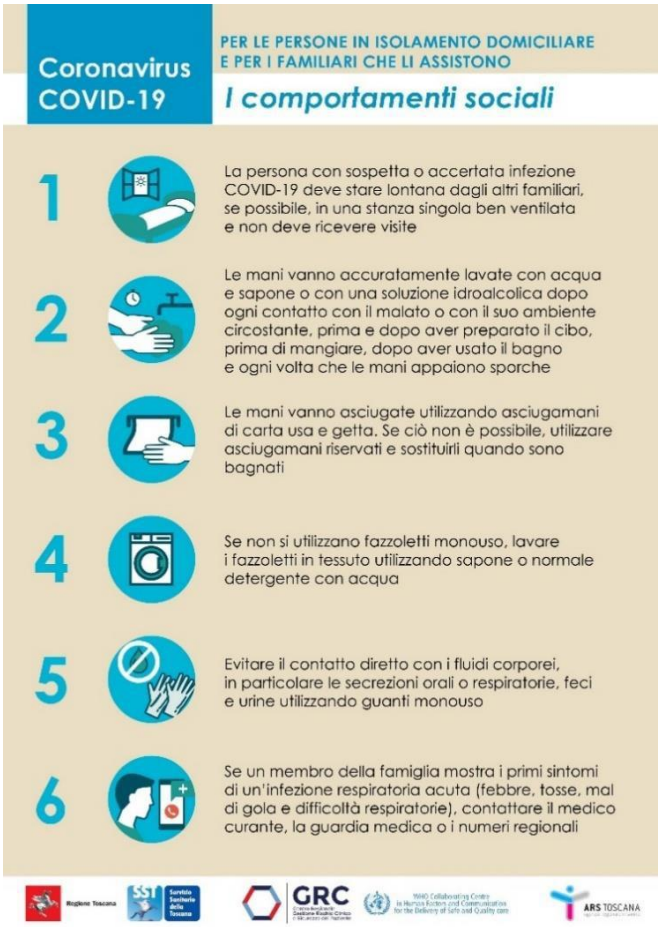

Fig ure 4 - Home ca re fo r people w it h suspect ed o r conf irm ed COVI D -19 and for ca r egivers - Social Behavio ur.

1. People with suspected or confirmed COVID-19 must stay away from other family mem bers, if possi ble, in a well -ventilated single room and must not receive visitors.
2. Clean hands with soap and water or alcohol -based rub after any type of contact with the ill person or their surroundings, before and after preparing food, before eating, after using the toilet and anytime hands look dirty.
3. Hands should be dried using disposable paper towels. I f this i s not possibl e, use reserved towels and replace them when wet.
4. If you are not using disposable handkerchiefs, wash the tissue handkerchiefs using soap or normal detergent with water.
5. Avoid diect contact with body fluids, especially oral or respiratory secretions, faeces and urine by using disposable gloves.
6. If a family member shows the first symptoms of an acute respira tory infection (fever, cough, sore throat and breathing difficult ies), contact the family doctor, the emergency medical service or regional telephone numbers dedicated to the COVID emergency .

Figure 5 -Home care for people with suspected or confirmed COVID -19- For caregivers .

1. Those who care for the sick must be in good health and have no diseases t hat could put them at risk of being infected.
2. Family members must stay i n other rooms or, if this is not possibl e, keep a distance of at least 1 meter from the sick person and sleep in a different bed .
3. Caregivers m ust w ear asurgical mask carefully placed on t he face when i n the same room of the sick person. If the m ask i s wet or soi led by secretions, it must be replaced immediately and hands washed after removing it.
4. Caregivers m ust cover their mout h and nose when coughing or sneezing using disposable handkerchiefs or flexed elbow, then wash their hands .
5. Avoid shari ng toothbrushes, cigarett es, ki tchen utensil s, towels, bedding, etc. with t he sick person .
6. Use t he face mask when changing bed sheets .

Fig ure 6 -Home care for people with suspected or confirmed COVID -19-Cleaning.

1. Use containers with pedal opening equipped with double bags (one remains in the container and the other is thrown away), positioned inside the patient's room, to throw away gloves, handkerchiefs, masks and other waste.
2. In the case of home isolation, separate collection must be suspended to avoid the accumulation of potentially dangerous materials which must instead be disposed of in the unsorted bin.
3. Put the contaminated laundry in a bag dedicated to soiled laundry while wearing glov es. Do not shake dirty laundry and avoid direct contact wi th skin and clothing .
4. Clean and disinfect surfaces such as bedside tables, bed bases and other furniture in the pat ient' s bedroom, t oilets and bathroom surfaces daily wearing gloves and protective clothing (e.g. a plastic apron) with a normal household disinfectant, or with a chlorine based (bleach) product with a concentration of 0. 5% active chlorine or with 7 0% alcohol .
5. Washing c lothes, sheets, to wels, etc. of the patient i n the washing machine at 60 - 90 ° C using a normal detergent or by hand with a normal detergent a nd wat er, and dry them thoroughly .

4. Getting ready for new waves: organisational preparedness and the systemic approach

The debate on the issue of the preparedness of health systems to cope with the pandemic has been long and complex and has given rise to several questions on the "how" and the "if" we were properly ready to this kind of emergency. As HFE experts we have tried to give an answer to the several queries by adopting a systemic approach to the analyses of the critical aspects that emerged during the assessment and response phases. The SEIPS model [6] has been the referral framework for a systemic analysis at the regional level (meso level) while for the analysis of preparedness at the hospital level (micro level) proactive risk assessment tools, such as briefings and de-briefing and the Failure Mode and Effect Analyses tool have been widely used.

The SEIPS Model has been applied at the macro level in order to understand all possible interactions between clinical staff and between clinical staff and other elements of the system: organisation, technology and tools, task and environment. What emerged was that at the core of the interaction with technology and tools there was an issue of how to use PPEs and their usability, the complexity and danger of the donning and doffing process as well as the physical discomfort in wearing them for very long shifts. From the point of view of the organisation, may hospitals resulted unprepared to manage the communication between different levels of the system: top management, mid-management and front line as well as to manage devices supply chain or to guarantee the appropriate workforce.

The environment has represented one of the most complex aspect that the system had to cope with: most hospitals needed a rapid transformation from the logistic point of view. Many wards have been transformed into COVID-19 dedicated areas were the appropriate division between dirty and clean line had to be strictly surveyed and maintained. Also access points and first aid rooms have undergone a massive reorganisation in terms of logistic of spaces and organisation of the work. The admission points and first aid accesses needed to keep potential COVID-19 positive patients far from COVID-19 negative patients. All hospitals created a check-point for the first triage outside the main entry of the hospital to avoid COVID-19 positive patient to spread the virus inside the hospital. This led to the need of a deep risk analyses of the new pathway and the new work environment organisation in order to identify of potential failures and hazards for patients and health workers.

Finally, many workers had to rethink their role within their department or had to learn new tasks and acquire new competences in order to move to new areas of the hospitals were additional workforce was missing. This meant to be forced to learn very quickly how to work with new colleagues, new devices, new organisation of the work and space within a system that was very much affected by uncertainty and a certain level of emotional and organisational chaos.

At the hospitals level, with the support and collaboration of the network of risk managers, a risk assessment, gap analyses and evaluation of the preparedness of COVID- 19 dedicated departments have been conducted through on-the-wards multidisciplinary debriefings and FMEA. An ad hoc debriefing tool has been designed starting from the Ministry of Health preparedness plan (7) and the ECDC checklist translated into Italian and adapted to the local

[6] Systems Engineering Initiative for Patient Safety (SEIPS) is a model of work system and patient safety which provides a framework for understanding the structures, processes and outcomes in health care and their relationships.

context, characteristics of the work organisation and environment. The dimensions assessed by the checklists belong to the following areas:

- Establishment of a core team and key internal and external contact points
- Human, material and facility capacity
- Communication and data protection
- Hand hygiene, personal protective equipment (PPE), and waste management
- Triage, first contact and prioritisation
- Patient placement, moving of the patients in the facility, and visitor access
- Environmental cleaning.

All these dimensions were declined and made suitable to be assessed with front line staff and interested stakeholders in order to collect information related to how the work was done in the real word. The very high number of new procedures and protocols and their clinical and organisational complexity, have made very hard to translate them into easy-to understand and quick- to-read tools that could support front line staff during the daily work. It has been thus necessary to create a safe space were health workers could express their needs, opinions, and perceptions on the way in which they were working in order to design for the, most appropriate materials, cognitive tools and clinical pathways. This space was a debriefing meeting, conducted by risk managers using the adapted ECDC checklist.

5. Risk managers in the healthcare trusts: an emergency with a memory

Risk managers adopted their approach of learning from errors to promptly support clinicians. They realised continuous patient safety walkaround to identify and collect criticalities, make an analysis of the critical issues, based on HFE principles, and find practical solutions that could be implemented to improve safety at the front line. They also continued to report adverse events on the informative system through the patient safety network present in each healthcare trust. They have been also involved in the analysis of risks related to the reorganisation of healthcare services inside the physical environment of the hospitals, this was an on-going activity, present not in all the healthcare trusts, depending on the cultural level the organisations have concerning the proactive approach to quality and safety. There was also a joint collaboration with the operators responsible for the healthcare workers' safety. This collaboration is something new and vital to face the pandemic into the healthcare settings. Thanks to their HFE competence the risk manager could also play a zipper function among the different operational levels of the organisation. In fact, one of the most critical aspects during the emergency is to guarantee the continuity of transmission of the key information from the back end (national, regional, medical direction) to the front end (units and services). Risk managers were able to translate the numerous and sometimes uncertain messages coming from different sources into clear communication for the clinicians to use for their daily work. This capability to adapt the content to the context is one of the fundamental competencies of HFE experts. It was also vital to monitor the correct application of best practices (washing hands, correct use of antibiotics, correct disinfection process) for patient safety in a simple and real time way. Risk managers adopt a field observation methodology that helped them in having a real time feedback of what was going on.

Thanks to the real time reporting risk managers could work together with the clinicians to pragmatic solutions centred on the attention to human factors, such as:

- Realisation of Safety Walkround to illustrate updated and new procedures and verify their correct and appropriate application
- Realisation of training sessions based on simulation of PPE dressing and undressing for new hires and all healthcare professionals
- Development of tools such as PPE counters
- Definition of frontline support algorithms for the correct use of PPE
- Design of corporate procedure documents to facilitate the reading and identification of essential information elements
- Definition of protocols focused on hospital teams with quality and safety network supporting the management of territorial medical teams and home care facilities
- Realisation of de-briefings with the clinical departments in all the healthcare trusts to evaluate the organisational preparedness for next phases.

6. Conclusions

Thanks to the HFE training and approach in the organisation of the patient safety activities, risk managers were able to promptly support clinicians during the emergency. Risk management is a “zipper function” able to guarantee communication continuity and response to criticalities in uncertain organisational situations. Risk managers indeed can play the paramount role of maintaining the communication flow from the management to the front line and to make sure that any information is clear, well distributed, well understood and that it reaches the appropriate target.

It is important for the future to integrate patient safety with the other aspects of safety in healthcare trusts and re-organise the safety system around the capability to respond, the preparedness towards new emergency and in general towards the unexpected.

The outbreak of COVID-19 has made very evident the need for coordinated and multidisciplinary approach to the emergency management. HFEs and safety experts such as risk managers represent paramount figures to be integrated in emergency management task forces and pandemic plans redaction groups where they can contribute through a systemic approach to the crises.

Finally, the experience on the ground in support of the front-line staff, made us aware of the importance of a HFEs approach in understanding the profound correlation between the different parts of a complex system and in supporting the implementation of rapid and locally-customised solutions that take into account different stakeholders, their connections and needs.

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THE IMPORTANCE OF DESIGN IN THE TIME OF CORONA VIRUS

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Abstract

As most of the world's population is under some form of lockdown because of global pandemic, we find ourselves in the middle of an unprecedented social experiment with many people working remotely and entire families staying home. Duress lays fertile ground for innovation, and during times such as these, eager designers and creatives can't help but see opportunities for improvement. If we approached COVID-19 as a design problem, could we find innovative ways to apply design thinking and human-centered design principles to mitigate the most pressing issues?

Design thinking is a methodology that provides a solution-based approach to solving problems. It combines what's desirable from a human point of view with what is technologically feasible and economically viable. It's useful in tackling loosely defined, complex problems by understanding human needs. This article will describe the most striking design cases involved in solving the problems due to coronavirus, analysing both the project interventions that took place in the midst of the emergency and those capable of responding to hygienic and social changes that occurred. These examples are a blend of product design, experience design, and service design problems that are searching for a solution. Human-centered design offers a chance to question the wisdom of old habits and to explore out-of-the-box thinking.

1. Introduction

For years, dozens of researchers[1] from different medical disciplines have feared similar scenarios and in 2015 Bill Gates highlighted how concrete this possibility was in a TED conference: "If anything kills over 10 million people in the next few decades, it's most likely to be a highly infectious virus rather than a war". Despite forecasts and warnings, the disorganized and irregular response of many governments has shown a general unpreparedness, a surprising aspect if one considers that the pandemic did not occur synchronously around the world. Could it help to face COVID 19 as a human-centered design problem? After all, design in Italy was born in the 1950s, in the middle of the desire for redemption following an event of deep crisis such as a war. Assuming a parallelism between

[1] Among many Stephen S. Morse (living) American epidemiologist, to whom we owe the definition *Emerging Viruses* (1993) and Edwin Kilbourne (1920 -2011) one of the most important American virologists who in *Genetically modified viruses conference* Genetically held in mid 1980s, hypothesized the birth of the MMMV virus, characterized by the polio's environmental stability, the flu's high mutation rate and the latency potential of herpes virus.

global pandemic problems and those related to design of products and services, the correspondences are evident. This article describes some cases that demonstrate how the design thinking methodology has contributed to mitigate problems during the health emergency or that propose new long-term behavioural solutions, specifically designed to defuse the chain of contagion.

2. Design thinking to fight the pandemic

Design Thinking is usually used to define a design model to solve complex problems. This approach integrates the set of cognitive, strategic and practical processes necessary to combine what is desirable from a human point of view with what is technologically and economically feasible. Although used in the Italian language, the definition Design thinking[2] refers to a recently introduced method, the approach has its roots in the long-standing culture of Italian design, as demonstrated among others by Munari's studies[3]. Considered one of the greatest protagonists of the art, design and graphics of the 20th century, the whimsical designer has deepened and outlined the idea of project understood as a conscious process that, starting from some basic constraints, follows a general plan of development. Compared to other problem-solving methods, Design thinking is a non-linear method that focuses on providing solutions to a problem, rather than focusing on a precise definition of the problem itself.

Assuming that in the initial phase of any project, not all information is available, and never the fundamental information to guarantee the resolution of a problem, the method focuses on the Human Centered processes organisation. This method is not expressed only in the collaborative way with which designers, engineers, other professionals work in a participatory model of co-creation, but also in considering the user and project recipient as a partner of the entire creative process, from the collection of data up to the involvement in new ideas prototyping. The prototyping is carried out quickly, implemented with cheap materials that can range from cardboard, balsa or clay, to models made with the most modern 3D printers, in a "fast" process that allows to test pros and cons of a first product, service or business model. Moreover, the fact that the materials for this type of prototyping are cheap, it allows early failures and consequent solutions, in a circular process of continuous iteration that makes sure to reach the final goal using the least possible amount of resources.

In this sense the path that led to the creation of the "Charlotte valve" for assisted ventilation created by the startup Isinnova for the hospital of Chiari (area of Brescia), is exemplary (Figure 1). As in other areas very affected by COVID-19, in the hospital of Chiari the medical devices for intensive care were insufficient and the traditional production chain were not able to meet all the needs. In particular, the Venturi valves for resuscitation respirators were insufficient and could not be replaced by the supplier or manufactured in the time required by the pandemic emergency.

[2] *Design thinking* was codified around the 2000s in California, at Stanford University. The definition authorship is commonly referred to Prof. David Kelley Professor, founder of IDEO, one of the most influential design companies globally.

[3] See for further information Munari B., 1981 *Da cosa nasce cosa. Appunti per una metodologia progettuale*, Economica Laterza.

Through the Giornale di Brescia and FabLab digital manufacturing laboratory The FabLab, the head of the hospital Massimo Temporelli got in touch with Christian Fracassi, engineer and founder of Isinnova, who reproduced the piece with a reverse engineering[4] operation for free. A few days later, Fracassi was contacted by a retired department head, Dr. Renato Favero, who proposed him an idea: to transform a snorkeling mask featuring a large facepiece, produced by the French multinational Decathlon, into a C-PAP[5] mask for sub-intensive therapy. In a short time, having obtained the mask's CAD drawing from the manufacturer, the designers designed and 3D printed the new component for the respirator connection.

Figure 1 –Charlotte valve e mask C-PAP, Isinnova.

The new valve was quickly patented to prevent speculation on the component price: the intention of the designers is that the patent remains free for all hospitals. The mask is not a replacement for the pulmonary ventilator, but can be used effectively in the emergency room while waiting for a bed in the wards. The duration of the new device is on average lower than that of the objects produced by the standard supply chain, but it has proved to be absolutely suitable for the emergency period.

The designers and the company underlined that neither the mask nor the valve fitting are certified and their use is subject to a situation of mandatory necessity. In fact, in order to be used on a patient, it requires a signed declaration in which the use of a non-certified biomedical device is accepted.

[4] Reverse engineering, also called back engineering, is the process by which a man-made object is deconstructed to reveal its designs, architecture, code or to extract knowledge from the object. The reverse engineering process is not concerned with creating a copy or changing the artifact in some way; it is only an analysis in order to deduce design features from products with little or no additional knowledge about the procedures involved in their original production.

[5] CPAP, acronym for Continuous Positive Airway Pressure. It's a method of continuous positive pressure mechanical respiratory ventilation commonly used for patients with severe respiratory failure, including premature babies. In these individuals, PAP ventilation may prevent the need for endotracheal intubation or may allow for the removal of intubation more readily.

However, since the prototype was tested at the hospital of Chiari and was found to be in perfect working order, Decathlon has decided to donate several thousand snorkelling masks to transform them into respirators to those who requested them.

3. Interpreting the change

Beyond this emergency quick response, Design is already foreseeing the universe of objects, services and spaces in accordance with the new and changing social needs. The need to comply with the distancing measures will continue, according to the unanimous opinion of the most accredited studies, for a long period of time.

It cannot be ruled out that, even once out of today's crisis, some methods of managing interpersonal relationships, organizing work spaces, using commercial establishments, visiting places of culture, will have irreversibly changed. The evolution of individual and community relationship modalities requires a new paradigm, based on standards that are not necessarily pejorative. Effective solutions are needed for the countless problems caused by COVID-19, paradoxically the pandemic is fuelling innovation at an atypical scale and rhythm.

The Milanese brand PLH, for example, offers an electric control interface equipped with an efficient and long-lasting antibacterial coating of switches and support frame. The Abaco® treatment of the plates is a special process, conceived by the Italian company Protim®, as part of the PVD-Physical Vapor Deposition treatments, capable of eliminating the proliferation of bacteria within a few hours (Figure 2).

Figure 2 – Electric control interface equipped with an efficient and long-lasting antibacterial coating, PLH.

Manuela Simonelli and Andrea Quaglio have designed an innovative wireless mobile phone charger with a built-in sanitizer for the French brand Lexon.

Under the guise of a small flower box with soft shapes, the device called Oblio recharges the mobile phone in 20 minutes thanks to a wire-read device while a UV-C lamp sterilizes the screen (Figure 3).

Figure 3 – Wireless mobile phone charger with built-in sanitizer, Lexon.

The Belgian company Materialize shares its files for free to 3D print a "hands-free" door opener that allows, by simply fixing two 3D printed pieces on the existing handle, to avoid direct contact with the door handles. By integrating Design for All philosophy, this solution is able to improve the quality of life even for users with upper limbs motor or prehensile problems (Figure 4).

Figure 4 – "Hands-free" door opener, Materialise.

In the Avion office furniture, by Keith Melbourne Studio, a modular configuration of the working environment is studied. The curvilinear and elegant shape isolates and at the same time enhances the proxemic relationship, leaving enough space for socialization (Figure 5).

Figure 5 – Modular configuration of the working environment.

The Hygiene Hand by Avi Goldstein and William Crocker is a key ring with a slight protuberance on the tip that works like a metal fingertip, allowing one to press the elevator buttons or a cash machine PIN number without using your hands. Brass made, the device allows the necessary conduction to operate on touchscreens or to digitally sign. The shape also facilitates door handles traction, sliding and rotation, making the device a useful aid for disabling diseases affecting the upper limbs and, in synergy with the brass antimicrobial nature, reducing the possibility of contamination (Figure 6).

Figure 6 – Key ring Hygiene Hand, Avi Goldstein e William Crocker

As for the public transport sector, Andrea Ponti, an Italian designer based in Hong Kong, presents an interesting concept of a double-decker driverless tram designed to be used in the post-pandemic era.

The use of public transport is essential to keep pollution levels low, especially in densely populated cities such as Hong Kong where many inhabitants do not have cars, but makes it difficult to respect distances.

Isola is a tram organized to facilitate distancing in a city where such public transport is a tradition: driverless technology facilitates time management and optimizes the internal space of the tram, allowing better use of the environment for disabled users and increasing the safety for all. The internal reorganisation into large circular benches, in addition to allowing

passengers a safe distance, ensures the ideal sizing for strollers and wheelchairs. Curved windows and a domed top allow plenty of natural light indoors during the day, at the same time offering an unobstructed view of the landscape at night, while large vertical LEDs provide visibility in all weather conditions. The stops, in addition to allowing the vehicle to be recharged, which therefore does not require suspended power wires, have been created to allow passengers to maintain a greater distance, move freely and have natural ventilation for a healthier environment.

Figure 7 – Double-decker driverless tram, Andrea Ponti

4. Conclusions

A design characteristic, the ergonomic design strong point, is that of being able to grasp the changes of the era in which we live and convert them into objects and ideas, interpreting the needs of people. It is interesting to note that most of the presented examples go beyond the concept of a design aimed at specific needs. The advent of this pandemic is simply another design variant that does not prevent us from guaranteeing technical solutions capable of

offering a better quality of life to as many users as possible. In a scenario characterized by evident social changes, Design represents a key tool not only for measured economic development, but above all for progress based on physical and cultural accessibility. The post COVID era requires designers to make the greatest commitment to reconstruct the economic and social fabric, by developing key ideas and projects that can help strengthen bonds and confidence at international level. This is the only antidote to the regressive characteristics that a crisis period inevitably brings with it.

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THE CONTRIBUTION OF PERCEPTION DESIGN TO DESIGN INDOOR SPACES

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Abstract

COVID-19 is a painful experience for many countries of the world in the same way other epidemics have been in the past, but it is the first time that, in such a short time, it has turned into a pandemic involving everyone. Yet, no matter how severe the events they have to endure, human beings have always reacted by studying and designing solutions; now it is the COVID-19 emergency that requires a mobilization of the world of design and new forms of knowledge sharing. Great collaboration and sharing were promptly initiated in the scientific world and for medical research, but less so in other areas - wrongly deemed of less urgency and importance. In this short article we will illustrate experiences and a project method, the perceptual design, that can improve living comfort in indoor spaces and make environments more communicative and safer, especially for weak users. These environmental requirements are also considered useful in order to contribute to maintaining a good immune level and to suggest useful behaviours for social distancing.

1. Introduction

With the pandemic underway, not only the numbers and worrying current conditions are relevant, but above all what the numbers and conditions of tomorrow will be in the event that more aggressive pandemic forms than the present reappear. Unfortunately, we will hear about the severe acute respiratory syndrome Coronavirus-2 (SARS-CoV-2) and COVID-19, the name of the disease associated with the virus, for many years to come. The questions that we will have to ask ourselves as designers are many, we hope that the answers identified so far can help to foreshadow a better future. COVID-19 is a painful experience for many countries of the world, in the same way other epidemics have been in the past, but it is the first time that, in such a short time, it has turned into a pandemic involving everyone. The extent and speed of propagation, triggered by several concomitant factors of both geopolitical and technological nature, have caused serious health, economic and now also social problems. Initially, the way of reacting in the various countries was very different, but a few months later - at least in Europe - the reactions and choices to contrast the pandemic are more similar and

this will guarantee better results. COVID-19 is showing that no country can be completely autonomous and delude itself into solving problems only by closing its borders.

Italy has been one of the most affected countries, where health problems immediately appeared more urgent. In a very short time, all intensive therapies were saturated, placing all health personnel and the entire system in conditions of extreme difficulty.

Politics and science quickly took action, and so did civil society, adapting to the indications and obligations that were gradually given to it and reacting with great responsibility. The protests, for now, have been limited only to cases of significant criticality and suffering, or, among the less prepared sections of the population, therefore subject to the easy slogans of not very responsible politicians or to the false rumors spread by the web. Initially, the urgency and the lack of dedicated equipment made it necessary in many cases to improvise responses that proved to be not particularly valid, but gradually designers and companies were able to react and collaborate.

2. Designing behaviours

COVID-19 is not just a disease and a health problem: personal distancing, no handshake or close contact even between acquaintances and in some cases family members. The obligation to always wear a mask in closed public environments leads to a strong reduction in identity and expressiveness, creating strong discomfort. These conditions affect social behaviours by imposing, in fact, new proxemic distances and technologies and the availability of detection and protection tools is not enough to face them (Riccò, 1999). Proxemics refers to that part of semiology that studies the meaning assumed, in human social behaviour, by the distance that the individual places between himself and others and between himself and objects, and therefore, more generally, the value given by culturally or historically different social groups to the way they place themselves in space and the way they organize it.

The use of more or less specialized masks represents an effective barrier for containing the virus, but it cannot be defined as the solution for effectively fighting a pandemic. To do this successfully, it is necessary to involve people, their way of being together and, in the most critical cases, also suggesting what their individual behaviours should be.

3. The role of indoor spaces design

How can we make living and working environments more adequate and able to facilitate relationships and well-being? It would be easy to answer: designing them in accordance with the psychophysical characteristics of those who live there, but this presupposes a good knowledge of the biological and perceptive needs which, in reality, is lacking. This knowledge is lacking because there is little sharing and dialogue between the disciplines involved in the project: humanists, scientists and technologists with regard to the design of inhabited spaces, behave as if it was not necessary to share knowledge and experiences among themselves.

Those who know the person best are unable to communicate the needs to those who know how to design spaces, and those who design such spaces paradoxically do not know the needs of those who have to live in them.

Too many “habitable volumes” have been created without considering the biological and relational needs of those who have to occupy them. The consequences are known to all and suffered by many. We live in poorly designed environments and work in spaces that are too often unsuitable because they are created ignoring the needs and gestures of those who will have to use them. (Mallgrave, 2013)

These skills are also lacking because the diverse world that studies perceptual mechanisms, which is succinctly called neurosciences, is recent. By neurosciences we mean the set of studies on the nervous system which, unlike other biological disciplines, also tap into fields of study such as psychology and linguistics. This science was born during the second half of the twentieth century, and has expanded thanks to techniques capable of studying from the molecular aspects of the single nerve cells, up to the functional organisation of brain activity on a large scale, through the use of advanced techniques, called functional neuroimaging (Donald, 2004; Hubel, 1989).

To this day, skills and languages are not easily shared even among experts, therefore the world of design still has to make a considerable effort to experiment and apply what can improve living conditions. An effort that for Aldo Bottoli and Giulio Bertagna began in the nineties and that science and technology have made possible. An activity that, over the years, has been shared with young professionals such as Giuseppe Muriglio, in university courses, and at the two study centres dedicated to colour, which were active from 2002 to 2012 in Liguria and Lombardy.

Fig ure 1 –Asilo Mariuccia Foundation of Milan: elevator access dedicated to mothers with small children

In recent years, the various aspects that neuroscience clarified and made available to a wider audience have been tackled, tools for governing colour appearances have been tested and developed and a method for the perceptual redevelopment of inhabited spaces has been shaped. Colour was used in particular for its physical, emissive and optical characteristics, but

also for the meanings it expresses and for the value it takes in the social context in which it is perceived. Through colour and light, spaces have been modified to increase well-being and - where possible - we have tried to generate emotions, the basis for any non-superficial relationship and for the possibility of remembering.

In figure 1 we can see the example of an access to an elevator used by mothers with small children of the Asilo Mariuccia Foundation in Milan, which is located in a very small room, over six meters high. Against the custom of painting all small spaces with poor light in white or very light colours, it comes instead with saturated and dark colours. Two blues, one red and one orange that frames the elevator door. The two blue colours (high frequency) in contrast with the red and orange (low frequency) that "come close to each other" give even more depth to the small room. The painted fairy tale makes everything unusual by communicating surprise the first time, and then later a sense of care.

In Figures 2 and 3 we can see the underground corridors connecting the different parts of the San Pietro di Monza health facility and the loading bay area for goods waiting to be placed in the warehouses that welcomes operators and the loading and unloading staff with a landscape also communicate surprise and care.

Figures 2-3 – San Pietro di Monza Health Facility (Province of Monza Brianza): underground corridor and loading bay area

4. The person at the centre of the design

Every feeling and every gesture takes place within a physical and relational context capable of affecting it. Each observed image is never isolated, but belongs to the flow generated by the scenes crossed, from the closest to the farthest in time and their meaning depends on what the emotions experienced has fixed in the observer's memory. Consider that what we call a scene is the set of spaces, surfaces, objects and relationships with which we interact. People within a space look for the best possible solution for the conditions that led them to be in that place. They therefore find themselves seeking, for a matter of biological conservation, the best "synchronization" with what they deem useful within the scene; find a condition seen as protected, recognize a face, choose a place to sit down to talk, play, write or call. Each external

stimulus constitutes an input to perceptual processing and is analysed through a series of personal filters defined as "referents". At the "limbic" level, (that is, at the level of the system that supports various psychic functions such as emotionality, behaviour, short-term memory, and smell), in a very short time a kind of mental map of the situation is drawn, in which new referents are created, permanent referents are recognized or some temporary referents are consolidated into permanent ones. The "referents" can be defined as containers of cognitive sensations, they can be considered as activators of emotions useful for environmental and situation monitoring, for productivity and evolution, for the purpose of psychophysiological homeostasis (Ronchi, 2006). By "homeostasis" we mean the maintenance of a situation of balanced synergy between the psychological and physiological state, to consciously deal with the contingent situation, in the continuous search for the best possible balance between performance and stability of the organism.

This is precisely the area, if it can be defined as such, given that it is a complex synaptic system, where the design can be integrated in order to activate positive emotions on the basis of gratifying referents, opening up different emotional paths and triggering positive behavioural attitudes for the individual.

Perception design is a design sector that aims to create a bridge between different disciplinary areas dealing with colour, in order to bring in a greater scientific approach. Physics can explain the essence of light and its ability to interact with matter, physiology is able to better clarify the functioning of the eye, neurobiology provides the reasons for the presence of specific neurons for vision, neurophysiology explains the different activations that light is able to trigger on the autonomic nervous system to help the human being to survive. Thanks to the psychophysiology of vision it is also possible to understand the transduction mechanisms which, after a physiological stimulus, cause an emotional and psychological response.

From this complexity we can deduce the importance of recreating, even in artificial environments, the conditions, rich in information and variability, that occur in the natural environment.

For example, we would like to mention the intervention carried out in the Domenico Sartor Residential Centre for the elderly in Castelfranco Veneto. In the dining area, warm colours were used for the ceiling and part of the partition wall, in which an opening was created, a generic natural landscape with cool colours. Warm colours are low-frequency and generate an advancing effect, while cool colours are high-frequency and generate a distance effect. In this way a larger interior has been obtained, which activates the emotions of the elderly guests: the scene is enriched by the references generated by their experience (Figure 4).

Another example is given by the "Rediscovered Country" of Monza, a village dedicated to Alzheimer's, in which an attempt was made to equip artificial environments with the variability we can find in nature (Figure 5). The alternation between light and shadow, as well as the presence of multiple colours or surface qualities, helps to better grasp the depth of the environments. The village entrances are all different to facilitate their identification and are characterized by colours, illuminants, surfaces and street furniture designed to support and stimulate the cognitive abilities of the residents.

Figure 4 – Domenico Sartor Residential Centre for the elderly in Castelfranco Veneto: dining area

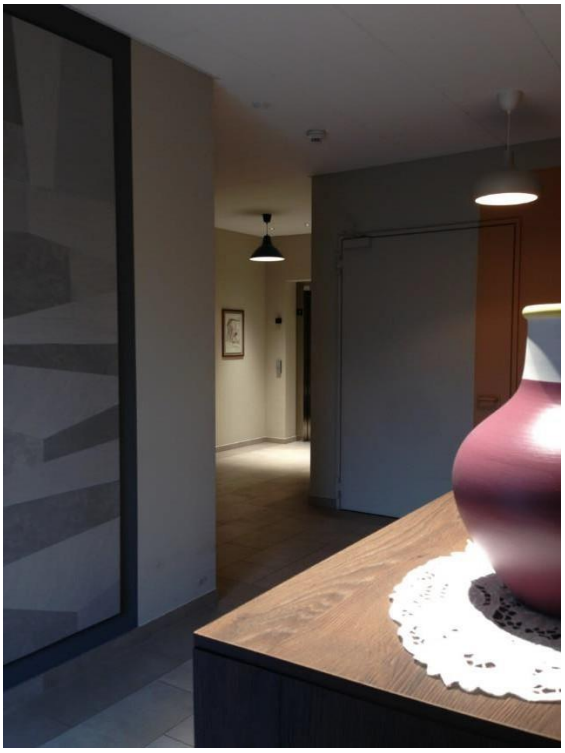

Figure 5 – Alzheimer's village "The Rediscovered Country" of Monza (Province of Monza Brianza): entrance

Figure 6 shows the role of colour and the boundary lines between the different chromatic backgrounds: our gaze is forced to detect them, overshadowing all the ducts of the existing systems.

Figure 6 – CPS- Psycho-social centre of Milan (Zone 4): detail of walls and ceiling

It is important to consider what many scientists claim: external stimuli, the way we perceive them, induced emotions and the consequent behavioural attitude, have a positive or negative influence, even on the immune system. They also believe that many non-traumatic pathologies can be triggered by a suffering of the immune system induced by chronic emotional distress. With reference to the ongoing infections, other scientists have shown how much the response to viruses also depends on the conditions of the immune system. It follows that a better perceptive environmental quality can bring considerable advantages.

In the light of this information, it is clear that making people today most at risk of contagion and isolation from relatives such as the elderly feel welcomed and at ease must be a priority for any project. Even if the COVID-19 infections are far from over, we should already begin to consider what is useful to do next. It is not easy to rethink situations and environments that now appear consolidated, but the most evident thing is that the inhabited space will have to guarantee the coexistence of many more functions. Distant work and schooling, but also new forms of relationships with friends and relatives. Less mobility and personal distancing even among family members will be the aspects that will break into the way we design living spaces.

The problem will therefore not be of an aesthetic nature only, but will concern the overall performance of residential spaces. From this point of view, keeping on accepting public spaces of low quality will represent an increasingly less bearable condition: less comfort, shorter duration, high maintenance costs, perceptual disorder, low level of "affordance", cumbersome and expensive compliance to safety standards, low level of production and energy efficiency, little communicative effectiveness, already cause considerable dispersion and waste. These discomforts can be faced with a more aware design of biological and

relational needs. In fact, every environment also communicates biological information which, even if unconsciously, is recognized as coherent or not by our perception systems.

Information that helps make that particular environment comfortable or repulsive, suitable for the task or tiring even in front of cognitive deficits. For example, making an environment more welcoming and well-kept can be achieved through a direction that highlights what is most important and deletes what is useless.

It should be remembered that the term “affordance” was introduced by James Gibson, in an attempt to propose an ecological approach to visual perception, with the meaning of “set of actions that an object invites to perform on itself”. Affordances, according to Gibson, are the potentials for action that are activated by the mere vision of an object. For example, the vision of an apple can enhance the action of grabbing it, eating it or moving it etc. Later based on their findings, Ellis and Tucker (Tucker and Ellis, 1998; Ellis and Tucker, 2000; Tucker and Ellis, 2001; 2004) proposed that the presentation of a visual object includes not only a description of its perceptual properties, but also of the motor components that are relevant to that object. Chemero has convincingly argued that affordances are not properties of the environment, since they are no longer conceived as properties; rather they are the relationships between the characteristics of a situation and the capabilities of an individual. To distinguish between the properties and functions of an object, that is, perceiving a property of the object itself, one must identify the object as such and know that this object has those properties. Conversely, to perceive affordance, "there is no need to know anything about any particular entity". All that is needed is the ability to perceive "that the situation as a whole has a certain function, so that the situation as a whole can support (maybe) the demands for a certain type of action" (Chemero, 2009).

5. On the role of colour

The unease that is felt within many institutions is the loss of aspects that we recognize as domestic. Fire doors are not domestic, fire extinguishers, emergency lights on every door, escape route signs, panic bars and handrails on every wall free of furniture are not domestic. Also in these cases, colour can play an important role in mitigating the most invasive items or in directing the eye to those aspects that are considered most engaging.

The colour alone is not enough to obtain the desired effects, it is also vital to make good use of the effects that can be obtained by inserting clear border lines, necessary to direct the gaze. Tricks that we call "allocative": that is, able to solve different perceptual problems (Bertagna - Bottoli, 2013).

The allocations are made up of bands, border lines and colour backgrounds to build more or less articulated perceptive units. They can play the role of attractors or destructors to direct the gaze where it is considered most useful. These are devices that are configured as real perceptual systems without which we consider it difficult to be able to develop an organic colour project.

For example in “Il Paese Ritrovato”, the colour and the border lines have been used to make the fire door more similar to an entrance door, therefore more “domestic” (Figure 7).

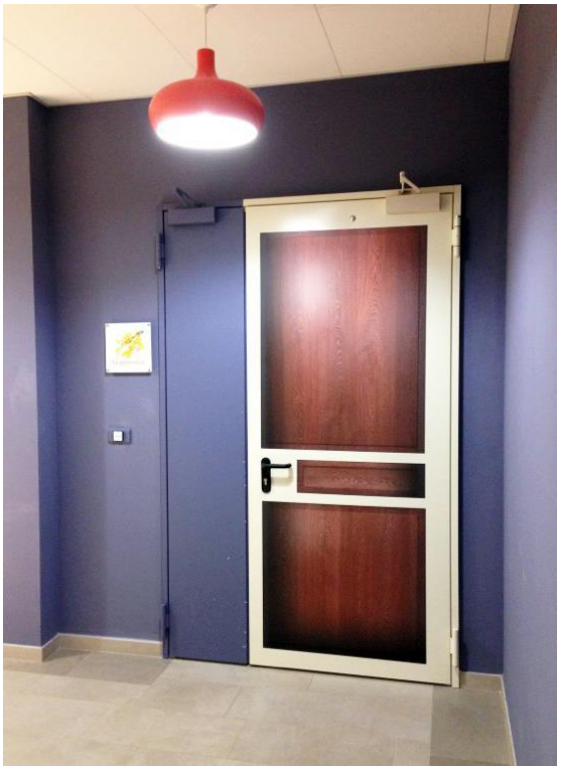

Figure 7 – Alzheimer's Village "The Rediscovered Country" of Monza (Province of Monza Brianza): firefighting door

In the retirement community of the Honegger Foundation in Albino, the use of colour and border lines have been used to hide the door that gives access to the cloakroom. The horizontal bands of different colours prevent the simple identification of the door. At the same time, the glass door on the side allows you to see the interior of the hairdresser's and draws the attention to itself. This joint condition (masked door and crystal door) has solved the problem of the constant attempts by the residents to access their coats or bags in order to leave the centre (Figure 8).

All cognitive processes, including the ability to process them quickly and effectively, originate from ancestral foundations formed in the natural environment, including the ability to orient oneself. This means that the visual-perceptual abilities of the human being, developed during the adaptive process, are in tune with the model of the natural environment, extremely rich in stimuli, colours and diversity. Such conditions have been reproduced within the Alzheimer village "The Rediscovered Country" of Monza. The chromatic variability obtained within the range included in the Colour Plan of the city of Monza has allowed the characterization of buildings and places, facilitating their identification, and therefore the orientation of the residents (Figures 9-10).

Figure 8 – Day care centre for elderly people, the Honegger Foundation of Albino (Bergamo): hairdresser's door and cloackroom door

Figure 9-10 – Alzheimer's village "The Rediscovered Country" of Monza (Province of Monza Brianza): the different colours used for the facades of the buildings

6. Final considerations

In the state of emergency, design proved to be a fundamental aid; the many solutions created to combat COVID-19 are a proof of this. However, not everything proved effective and the emergency led to the acceptance of solutions far from the needs of users. While it is clear that the most effective defence against a virus is virtuous behaviour, capable of reducing the risk of contagion, a design that focuses on the person and which uses neuroscientific skills can represent a good help.

Methods that we define perception and colour design and which are configured as an effective method for bringing together humanistic and scientific knowledge and the professional worlds of design, architecture and communication. We know that it is not easy to make worlds that are sometimes very distant from each other to communicate, but the role of the project is to mediate. If the project is able to take into proper account the perceptive and relational needs, it will be able to fulfil its task: designing for people and not for the market. We hope that the tragic experience generated by COVID-19 not only constitutes an aggravation of what has not previously been resolved, but that can also contribute to the creation of new and more virtuous behaviours.

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SHORT BIOGRAPHY

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THE IMPACT OF COVID-19 ON OUR RELATIONSHIP WITH THE BUILT ENVIRONMENT

A Perspective from the Republic of Ireland

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Abstract

This article aims to explore the impact that the Covid-19 pandemic has had on the built environment in Ireland and to consider how our homes might suit the future needs of all citizens, and in particular, the needs of the most vulnerable members of our society.

The central role of the State in shaping society and the built environment has been re-asserted by the pandemic. The growth in 'working from home' has highlighted architectural issues such as space within the home and the local community, as well as the importance of public and private open space. The concept of home has been redefined as a place of safety, work, childcare and education. Covid-19 has exposed the most vulnerable, and the nursing home model of housing for older people is under scrutiny and will need to be addressed. Social distancing measures and the use of technology for remote working have led to the risk of retreating to a low-density, car orientated way of life.

The Covid-19 pandemic offers the potential for architects to provide a vision of a built environment that addresses biosecurity issues, accessibility and climate change. Architects need to re-purpose towns, villages, and urban areas, and develop new housing typologies which will integrate living and working within the one dwelling, and promote a sense of community in local neighbourhoods. Adaptable, flexible buildings alongside usable and accessible public spaces are necessary to meet change.

"A city that is well designed is well designed for all.
Accessibility, as a collective good that benefits all,
should, therefore,
be considered a central component of good policy to
achieve inclusive and sustainable urban development." [1]

1. Introduction

The built environment can strengthen and connect communities [2], is often regarded as the foundation for health and wellness [3] as it continually shapes the way that we feel and behave, and is one of the most substantial ways that design affects daily lives [4].

Today, as humans spend more than ninety per cent of their lives in the built environment [5], it has the potential to harm health [6].

Due to the Covid-19 pandemic, our relationship with the built environment has been dramatically changed and reorganised through the lens of public health and safety. The recent restrictions imposed to limit the spread of Covid-19, have highlighted the inequalities in accessing and using the built environment, particularly for people on lower incomes, older people, and disabled people, and has demonstrated the importance of a high-quality built environment to ensure the health and wellbeing of all.

There is now a critical opportunity to reshape the built environment to allow everyone to feel safe and exercise their human rights. However, there is a common misunderstanding that the built environment is accessible, but many people are still denied their fundamental human rights as they continue to be left out of society by exclusive building design that does not consider the age, size and ability of users. Measures are urgently needed as the accessibility of the built environment remains a significant challenge facing a diverse range of the world's population today [7].

Assumptions need to be rethought and the built environment radically reassessed as a place to achieve safe, inclusive and sustainable communities, as this will lead to essential improvements in the wellbeing of all people. **Designing for access is simply designing for equality.**

2. Context

Ireland – Key Facts [8]	
Population of the Irish Republic	Nearly 5 million people.
Older (over 65) population	This age group saw the largest increase in population since 2011, rising by 102,174 to 637,567. Over half a million or 577,171 in this older age group live in private households.
Younger population	Younger Irish city-dwellers are more likely to be single, have a higher disposable income and be located much closer to essential services, but they also face a higher rent burden and are less likely to commute by car.
Number of people with a disability.	The 2016 Census tells us that 643,131 stated that they had a disability. That is 13.5 per cent, or 1 in 7, of the population in Ireland has a disability.
Dwelling type	The most popular dwelling type for private households in 2016 were detached houses, and this was especially pronounced in rural areas. 49,546 multi-dwelling buildings housed 277,716 units; this represented 14 per cent of the housing stock at an average of almost six dwellings per building.
Density	In 2017 Ireland ranked 122nd in the world in terms of population density. The highest population densities can be found in Ireland's two biggest cities, Dublin and Cork.

Ireland's first case of coronavirus was confirmed on 29th February 2020 and within three weeks it had spread to all parts of the country. The Irish Government took a pro-active role in seeking to control the spread of the virus. On 12th March, all schools, colleges, childcare facilities and cultural institutions were closed, and large gatherings were cancelled. By the 24th March, almost all businesses, venues, facilities and amenities were shut, but gatherings of up to four people were allowed. Three days later, the Government banned all "non-essential" travel and contact with people outside one's home (including family and partners). Older people and those with underlying health conditions were told to stay at home. People were made to keep apart in public and the police were given the power to enforce the measures. The pandemic affected all parts of society.

By mid-April, the National Public Health Emergency Team (NPHET) reported that the growth rate of the pandemic had been driven "as low as it needs to be," that the curve had been flattened and that there would be no peak coming. On 1st May, the Irish Government announced a phased roadmap for the reopening of Irish society. However, due to a rise in cases, in Ireland and abroad, additional restrictions were added.

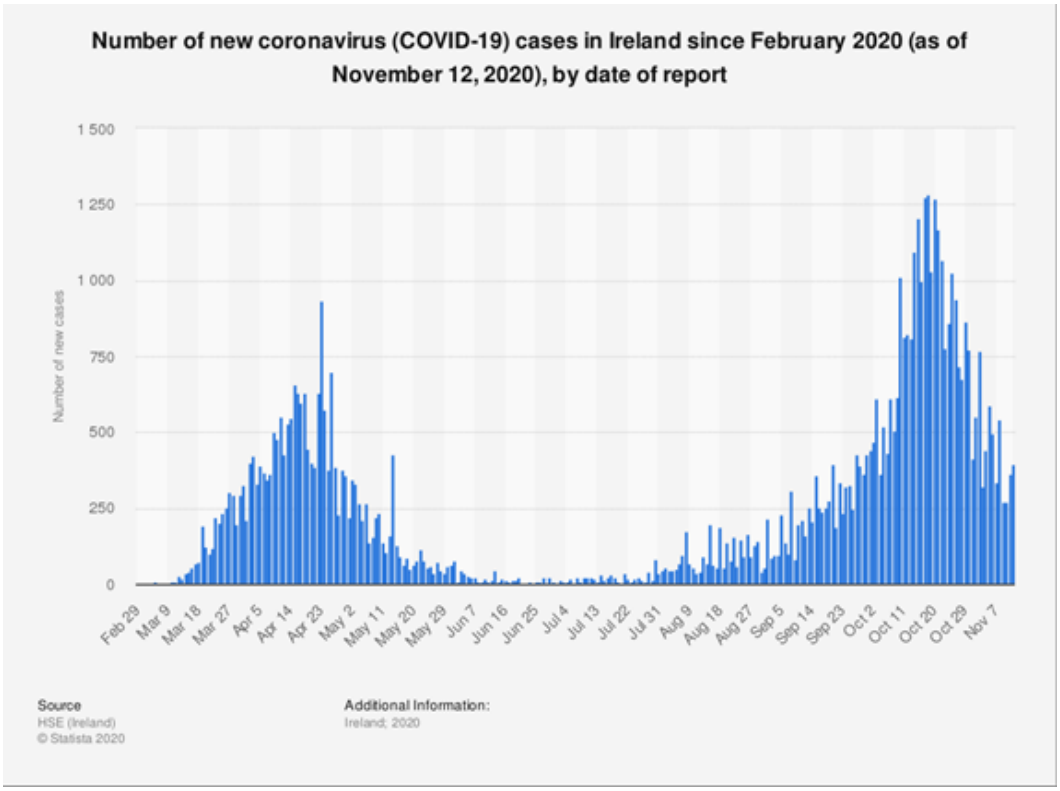

Fig ure 1 —Source: Statista available at <htt ps://www.stat ista.com/ sta ti stic s/1 107 064/coro navirus-cases- development - ireland/>(accessed 15 th November 2020).

3. Impact of Covid-19 on people's lives

The global pandemic has had an impact on people's lives. For instance, children could not attend schools for long periods. This had a negative effect on many parents, especially those with low incomes, who needed to work remotely and care for children in their homes [9]. Undesirable effects include limited contact with the outside world, leading to an increase in violence, abuse, stress and fear [10]. It also has potential psychological effects where families feel anxious about Covid-19 confinement which could lead to parents using harsh parenting techniques due to stress [11]. Vulnerable children were exposed to more time with potentially abusive families and less contact with professionals such as social workers or teachers [12], whilst positive effects included forging stronger intergenerational relationships [13]. The crisis also has the potential to increase inequalities. Early indications show that those aged under 25 have experienced high unemployment levels during the pandemic [14]. Existing housing typologies such as smaller accommodation, crowded homes, homes with shared facilities, and high-density accommodation make it difficult to social distance [15]. Although high rise accommodation reduces environmental footprints, it is harder to control infection in this type of accommodation [16]. Families living in temporary accommodation often live in spaces with shared kitchen and toilet facilities or have inadequate space for children to play [17].

The tourist industry was also one of the first sectors to feel the negative impact of the pandemic as tourists cancelled their plans [18]. There was also less road traffic during the pandemic, and this highlighted a need to invest in public spaces and greenways. Predictions for architectural approaches in future include the use of low-rise buildings, focusing on green spaces, self-sufficient food production and buildings with improved air quality [19]. There may be an impetus towards adaptive reuse where buildings can easily be changed for other uses or adaptable structures that can be quickly assembled. The "design of residential housing is a reflection of our cultural construction of home and its domestic attributes" [20]. New homes may require multipurpose adaptive spaces.

4. Process of adapting the built environment to reduce transmission

Due to the Covid-19 pandemic, our relationship with the built environment has been radically altered. All types of space, both within and around buildings, has been scrutinised, to try to reduce the transmission of this contagious virus by discouraging social interactions. As people move through the built environment, there is direct and indirect contact with the air and surfaces around them, which could all potentially be contaminated. Managing the risk of infection has become paramount. Human behaviour, spatial configuration, building services and operational factors could all possibly promote and mitigate the spread and transmission of Covid-19. Therefore, numerous measures have been introduced into all publicly accessible built environments and public open spaces, including places of work, offices, construction sites, processing plants, educational, healthcare, retail, cultural and leisure buildings, as well as cafes, pubs and restaurants. The measures introduced include two-metre physical distancing, the setting up of one-way pedestrian and queuing systems, marked out in signage or tape on floors and footpaths, hand washing and sanitising stations, often using hands-free and touchless technology. There have also been new installations using walls, screens and barriers to separate people and an increase in fresh air into buildings through openable windows or air handling systems, as well as an increase in the use of outdoor open space.

There is now a key opportunity to implement universal design, to allow the best possible use of space, to enable everyone to live, work and socialise safely and equally. An accessible built

environment is a vital prerequisite for the realisation of human rights [21] and fundamental freedoms [22]. If an environment is accessible, safe, usable, convenient, and a pleasure to use, everyone benefits. **Simply put, universal design is good design.**

5.Discussion

The Covid-19 pandemic has exposed pre-existing accessibility issues in the public realm, and how we design homes and workplaces. Changes made to meet new social distancing guidelines often had a disproportionately negative impact on some people. Issues such as overcrowding, small spaces and spatial planning were amplified during the pandemic. This section discusses how our designs can become more human-focused to consider the impact of the built environment on all people.

5.1 Public realm

As a result of social distancing guidelines, shop keepers and business people were advised to rearrange their premises, to enable people to maintain a two-metre distance from others. However, less consideration was given towards access due to the urgency of the Covid-19 situation and many shops and business were already too small or narrow for many people to comfortably move around.

Figures 2-4 illustrate the impact of some of the measures on disabled people creating additional barriers and hazards.

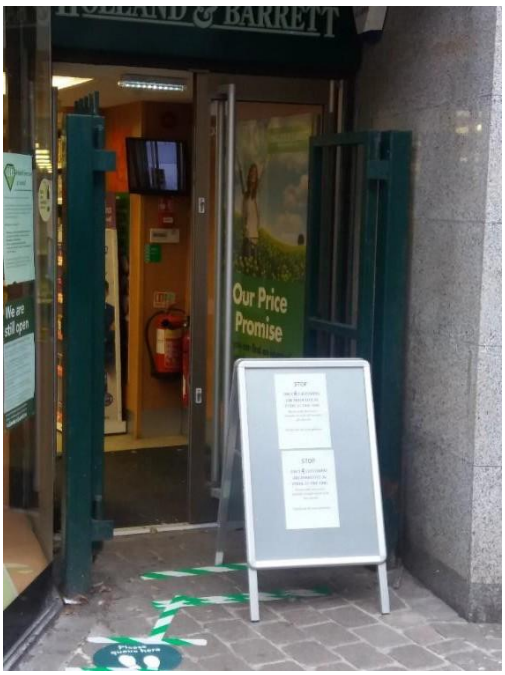

Fig ure 2 –Difficult entry hazardous for disabled people

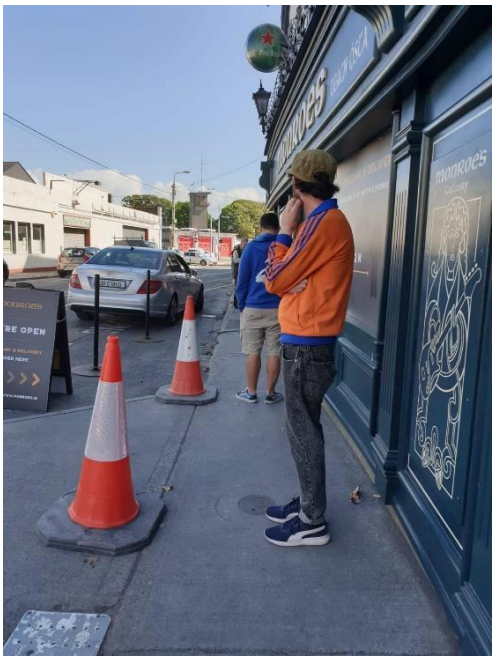

Fig ure 3 – Footpath queues creating hazards with no space for disabled people to pass

Fig ure 4 – Ramp in, stairs out is common place, with no allowance for wheelchairs

5.2 Housing Types

Instructions to stay at home have led to psychological challenges for housing occupants. Carefully locating and designing a mix of housing types can increase independence, connectedness and care. Many vulnerable people, including disabled or older people, choose to remain in their homes. Many homes are not equipped to serve their basic needs as they are either unsafe and can cause tripping or falling or are too large which exacerbates the feeling of loneliness, thus creating confusion, which deters some from preparing their own meals. Many also live in isolated areas disconnected from essential services such as amenity spaces, supermarkets and public transport. An ageing population has reduced demand for living spaces, but at the same time, increased the need for senior care, greater accessibility in public places and new types of mobility.

Ireland, like other countries around the world, is looking at new housing modelsi that allow older people to live independently, while also having access to the care and support services that they may need over time. The much-needed flexibility in the built environment can be delivered through different types of inter-generational housing in the right location that, although complex to deliver, can cater for the needs of people from all age groups with different personal and household needs.

5.3 Barriers and neighbourhood green infrastructure

Barriers in the outdoor environment can negatively impact people's desire to undertake recreational or physical activity. In many cases, a barrier does not always mean a fence or a

wall, and necessary actions such as crossing a road can be a challenge and often a deterrent because of air quality and noise issues. This can deter people from engaging with their community and surroundings. Many people may also struggle to stay at home or move around during prolonged inclement weather and extreme weather events may become more commonplace in the future due to climate change. Designing cities to be barrier-free, connected and with an abundance of safe outdoor environments will improve the quality of life of all. Cities can also contribute to climate change adaptation and mitigation by building green infrastructure systems at the heart of neighbourhoods, providing shelter and respite, stimulating recreational and physical activity. Imagine having long linear parks instead of local roads, and tree-lined avenues designed for pedestrians, cyclists and public transport only, instead of arterial roads. The Covid-19 global pandemic has highlighted the need to improve neighbourhoods and the quality of our green infrastructure. Before traffic returns, cities can seize this opportunity and deliver key pilot projects that will ensure the health and wellbeing of neighbourhoods for generations.

5.4 Planning for smart and green transport systems

Planning for smart and green transport systems will improve city mobility and accessibility. Smart mobility systems will play a more significant part in supporting the independence and mobility of all. On-demand transport and Autonomous Vehicles require less road coverage, could be safer and provide a green option which supports the environment. In providing a door-to-door solution, those with limited mobility are encouraged to leave home and become more independent in serving their own basic needs and engaging in social activity. On-demand transport will also provide easier access to public transport modes for those who live further away from stations. Many of these smart mobility solutions were already trialled and implemented in some cities but it will take time until they are fully operational and accessible for all. However, now is the time to prepare our urban environments for this change and plan with future systems and technology in mind. We must fully consider the impact of these new systems on how we design our built environment, balancing operational efficiency with creating quality liveable places for all. Modest positive interventions in some cities and towns have increased the width of pavements, created new temporary cycle routes and pedestrianised some streets.

5.5 Technology

Technology will improve independence and connectedness for all people. Adapting homes to the changing needs of vulnerable people will ensure that they can enjoy their living environments as they age or their physical independence deteriorates. This is relevant for how homes are physically designed but increasingly, is also about access to digital technology. However, many of the most vulnerable do not have access to adequate digital technology and consequently are deprived of independent access to services that would help them to fulfil their basic needs independently. The dramatic increase in digital tools to socially connect means that those without basic internet access, or who are unsure how to use them, are deprived of social interaction with family or their surrounding communities. Digital platforms can also enable better health monitoring as well as dealing with aspects of home maintenance

related to energy use and other utilities, which can help realise savings in household expenditure as well. As we move towards cities where physical and digital aspects work closer together, it is timely to ensure that all parts of society are technologically enabled and accessible everywhere.

5.6 Creating vibrant urban environments

Creating vibrant urban environments that better utilise major venues and culture will stimulate social interaction for all. For many people, it can be challenging to access these venues independently as they sometimes require long commutes, can be crowded and expensive and sometimes challenging to navigate. During this crisis, we have seen cities work closely with owners and operators to convert major venues into temporary hospitals. Capitalising on optimised logistics systems and large indoor space, these venues have proven highly flexible in accommodating the unique needs of Covid-19 patients and providing excellent medical care. Many reports indicate that once the crisis is over and most venues reopen again, it is likely that some restrictions on crowding and social distancing measures will still apply. This is an excellent opportunity to open them up to local communities and adapt them to support a broader set of activities that help improve the livelihoods of all people in our cities. It may also be an opportunity to re-imagine venues in our cities and promote inclusivity in the long-term.

6. Conclusions

Addressing the needs of all groups requires an integrated approach, one that looks at a city from a strategic lens, from an institutional perspective and governance to how the city is planned, with practical and punctual interventions. It requires simultaneous consideration of multiple aspects such as medical and social care, policy and legislation, organisational change, technical aspects such as air quality, transport and logistics, as well as economics, to name a few.

Doing this requires a strategic urban viewpoint that can make a significant improvement to people's everyday lives. As Covid-19 has put our bustling, hectic urban environments are on pause mode; there is a unique opportunity to improve the lives of all people in our society.

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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.

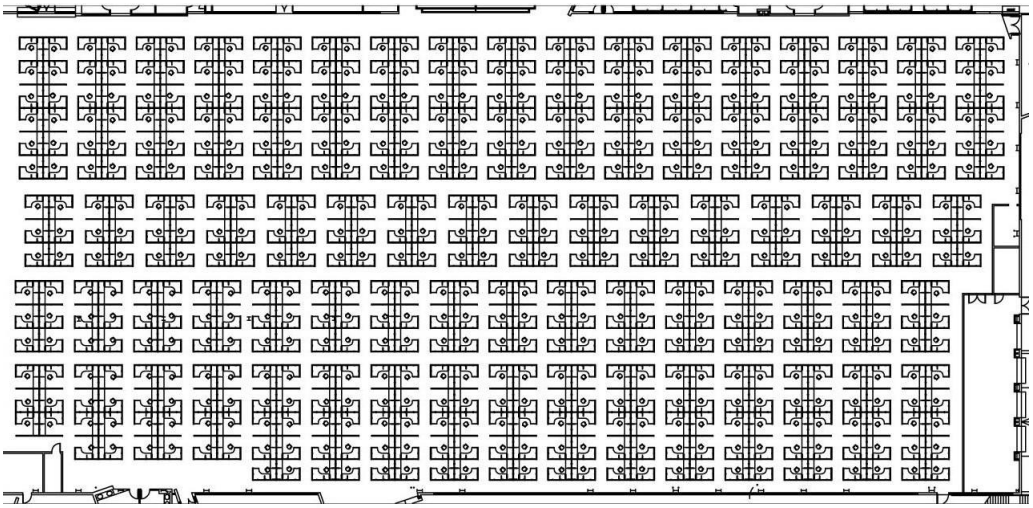


Figure 3 – Distribution of workstations in the office space (Source: Wikipedia)

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

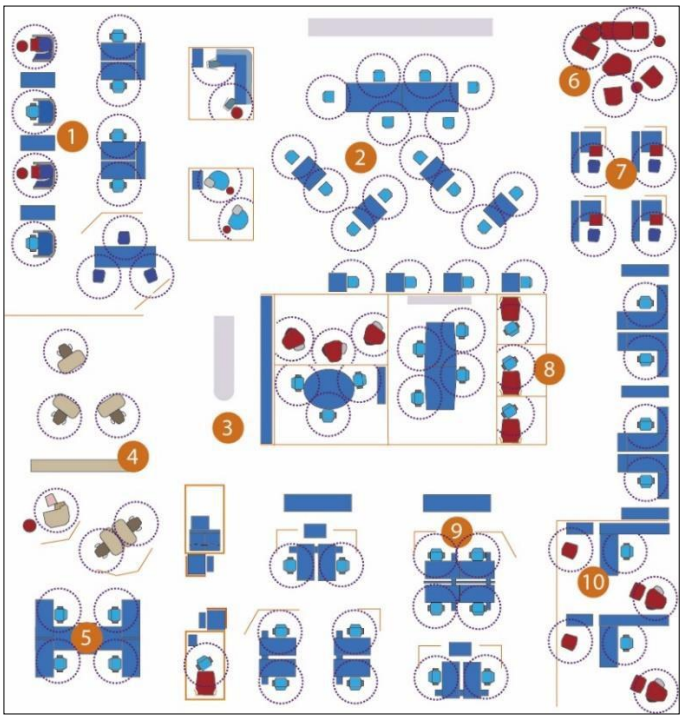
Arrange the appropriate signage to suggest to users the appropriate distance to keep in the different areas of the workplace and to direct the flows in the transit areas. Verify that the signs are understandable to the largest possible number of users.

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).

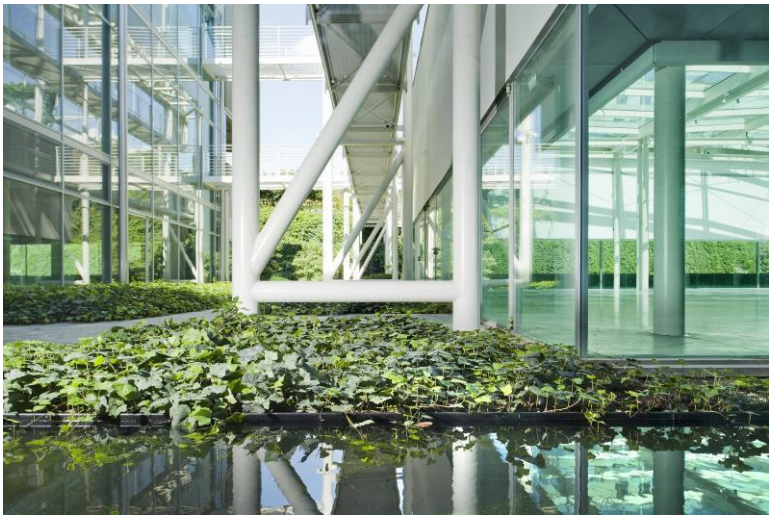


Figure 8 – Prada factory - garden (Courtesy of Prada – Photo Credit: Gabriele Croppi)

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.

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ARQUITECTURE AND PUBLIC SPACE IN SPAIN BEYOND COVID-19

Changes in urban town design. Management and new uses of settings, equipment and infrastructure before the de-escalation and the "new" normal. The successful case of Puerto Sotogrande's de-escalation plan.

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Abstract

The COVID-19 crises has supposed a point of inflexion on how design of open urban spaces and buildings of whatever type in our towns should be. The initiatives that are starting to take form are diverse, with the object to readapt the cities and settings, so that they allow adequate methods of movement, meeting and to enable day to day activity to be carried out without supposing a health risk. So we must then have in mind this new space design, together with a new planning and organisation for the people who use them. This could vary amongst them in how they use them, likewise how to apply the disciplines which influence the design of any setting. In this article some of the interventions carried out for the architectural study and by the multidiscipline technical team of La Ciudad Accessible are displayed, in relation to the restriction of the spread of COVID-19, in the middle of the pandemic: from specialized publications through to technical projects in urban spaces and buildings during this world health, social and economic crises. These actions have served to adapt areas to the new reality and to improve the safety perceived by the same, without losing that human touch and generating liveable areas abiding to the recommendations of "Recommended Safe Space" and social distancing. Lastly, to show a case study of a real space which corresponds to the actions carried out successfully with the "de-escalation plan of Puerto Sotogrande leisure harbour: First safe harbour / Marina Safe in Spain, where the modifications and adaptations are carried out in a harbour setting to adapt to the new situation and convert into an international reference. It is important to point out that this plan has implanted an array of universal accessible measures, which show that they should form design strategies across the board to be taken into account with the new paradigm in this post COVID-19 era.

1. The influence of architecture in other pandemics

On very few occasions has humanity been obligated to confine themselves to their homes for months, as has occurred with COVID-19, which has made us value the living space which we have in our day to day.

In other pandemics, which during centuries have scourged our world, like the polio plague, Spanish flue etc, humanity has been able to adapt its housing, buildings and spaces in regard to the necessities of the moment.

Some examples: -

- The Haussman Plan – Paris 1800, due to wars, the famines and revolts;
- The new towns that were created in England due to cholera outbreaks of 1854;

- The adaptation of American towns to attend the unhealthy conditions, during the XIX century;
- The great flooding in Italy of 1966. Where the Italian Renzo Piano adapted infrastructures using reinforced polyester, to build economical housing in as short a time as possible;
- The earthquake of Fukushima in 2011, where the architect Shigery Ban constructed separations with sheets and cardboard tubes to enable the affected cases to have the maximum privacy possible.

It is then that the versatility of architecture plays a more than relevant role within the present pandemic, as it can radically transform the life of the inhabitants.

2.Architecture and COVID-19

In the case of the design of the interior and exterior spaces of the buildings, technicians face new design challenges to ensure indoor security in a way which complies and in turn, offers, the maximum safety, accessibility and health conditions. This will require, to a certain extent for design to contemplate wider spaces, with more green areas, larger houses with terraces, etc.

Nor should we forget the role that Universal Accessibility plays to prevent contagion due to the presence of COVID-19 : automatic doors, use of cranks, elongated lever taps, toilets with self-discharge system, automatic dispensers, use of signalling and way-finding for a safer wandering, etc.

In the case of hospital infrastructure, it has been seen how the health sector is particularly affected by COVID-19. In various cities, hospitals have been built in record time or units for temporary care, together with field hospitals, such as:

- In Madrid to attend the collapse of mortuaries in the area, the use of the building Medicina Legal of the Ciudad de Justicia, which had been abandoned since 2008;
- In New York, Central Park has been converted into a support installation for the Monte Sinai Hospital, together with the Cathedral of San Juan del Divino, in Manhattan;
- Wuhan, where 7000 workers built the hospital Huoshenshan with a capacity of 1000 beds, in just 10 days;
- Simultaneously, in another area of Wuhan the Lieshenshan hospital was built with 1600 beds, which entered into service one week later.

3.Architecture in the post COVID-19 era

Various experts already suggest predictions for tendencies that will influence the architecture sector and the construction of interior design in the future. Among them, there will be the need of:

- Disinfectant paintwork, with additives to prevent bacterial growth;
- Give solutions for the requests of increasing health and comfort, as regards temperature, humidity, concentrations of C02 and other pathogens and contaminants in interior spaces;
- Hospital with a flexible and elastic construction, with the object that the spaces can be transformed quickly or amplified;

- Conditioning and isolating as regards sound in homes and commercial premises open to the public for greater comfort, especially in housing interior;
- Natural textiles and accessories as they are antibacterialand hypoallergenic;
- Housing with more exterior space, good orientations, a better sense of space and versatility, work areas, etc.;
- Buildings with decontamination space systems;
- Supermarkets with enclosed aisles to control occupation, pressurized aisles with decontamination systems;
- Hospitals without physical waiting rooms;
- Enclosed waiting boxes, around the hospital with technology to communicate with the patients and enable self-cleaning;
- Voice activated lifts and localised technology to auto disinfect;
- Give solutions for the increased tendency of working from home;
- Give solutions for the increased request of automation in public areas to limit contagious;
- Increasing the use of automatic opening of doors, foot pedals, elbow buttons, entrance in hotel rooms controlled by mobile telephone, hands free switches, automatic labelling for cases and check-in etc.;
- Self-cleaning bathrooms in hotels and smaller modular spaces which can be closed to other guests yet open and disinfected at the same time;
- Towns with open spaces for emergency situations close to hospitals.

As you can see, universal accessibility together with measures and accessible criteria reclaimed years ago, as fundamental rights, can today be recovered as they offer valid solutions to the recommendations, suggestions and obligations required for efficiency and safety in the fight against the new Coronavirus SARS-CoV-2.

4.The Accessible City as a laboratory and innovation centre pioneer in comfort and safety against COVID-19

The Innovation Hub 'Ciudad Accesible' has actively participated with prominence and leadership in numerous projects of various kinds in COVID-19 containment. Together with recognition by both health authorities and public administrations, and with more than proven efficiency in both processes and the results obtained, in the months of confinement as in the de-escalation after the crisis and health emergency.

4.1. "Municipal Mobility Recommendations Manual for de-escalation from COVID-19"

Editors of this technical document of maximum rigor, published with the"Ciudad Accesible's" own Editorial Service and inside the 'Accessibility' Collection, corresponding to its Twentiethvolume. This document has become the first with technical rigor to address factors as important as the optimal social distancing, the real risk of contagion in the trail of virus created by a moving person – differentiating whether he's walking, running or cycling, the recommendations to generate in our cities Recommended Safe Spaces and (ESR) infrastructures, Reconciliation in Safety, etc.
This manual has been disseminated as a 'roadmap' and a first-hand book for the de-escalation among hundreds of municipalities across Spain, thanks to various Provincial Councils such as

Granada and Cadiz, the Network of Municipalities towards Sustainability (GRAMAS Network) and the Federations themselves – both Andalusian as of Spanish - Municipalities and Provinces -the FAMP and the FEMP- (Figure 1).

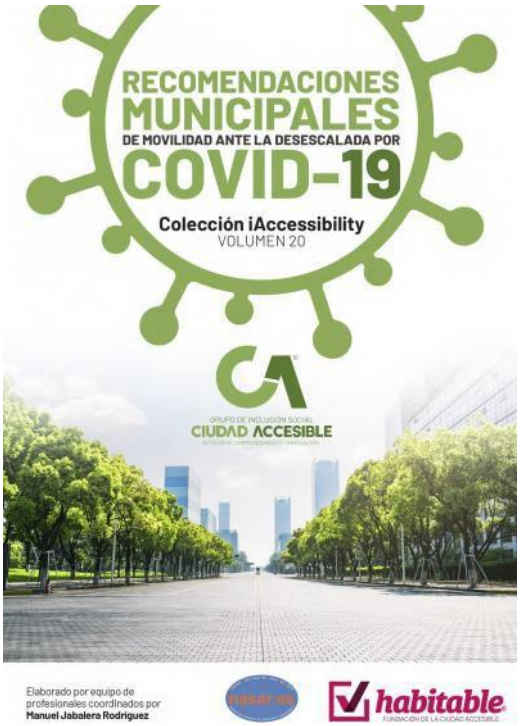

Fig ure1 –Book Cover "Municipla mobilitiy recommendations manual for de-escalation from COVI D -19

4.2 Different actions with Covirán Supermarkets

Work has been done on strategic design and elaboration of different urgent implementation operational programs, which were transferred to other supermarket chains. Items in particular, which stand out for their connection to their self-designed space, interior free movement and their interaction with the general setting :

- The "Safe Shopping Action Plan in Supermarkets in Emergency Situations";
- A "Store Access Protocol" to avoid crowds at points of sale and guarantee safe purchases;
- "Queue Management and staggered Access Control System" in supermarkets.

4.3 Proposals to improve urban and metropolitan mobility in Granada following the Covid-19 pandemic and lockdown

Member of this document drafting team has been delivered as a tool to work with the different Public Administrations that have aptitudes in de-escalation processes at the municipal, provincial, regional and national levels.

4.4 Various actions with the Chair in Sports Innovation Ebone (CIDE) of the University of Granada

Together with Ebone and the Chair in Sports Innovation Ebone (CIDE) of the University of Granada, Cuidad Accesible has developed three projects related to architecture and urban planning to alleviate the crisis generated by COVID-19 in vulnerable groups together with the general population.

4.4.1 Homeless Sport

Pioneering training, tailored to the needs of the homeless, which aims to improve minimum well-being conditions through the practice of sport. From the architectural, point of view; the planned new use, of sports infrastructure in disused, together with adapting public equipment, to the needs of these people and the pandemic situation, while they used as lodging, pavilions and recreation areas in all the big Spanish cities.

4.4.2 Exercises for COVID-19 patients according to the latest

SERMEF recommendations (Spanish Society for Rehabilitation and Physical Medicine) adapted for people with reduced mobility; wheelchair users' Where exercise tables have been adapted for sports and rehabilitation exercises prescribed by different Regional Health Counselling for COVID-19 patients in rehabilitation. Fundamental in this case is the role of the use of the home as a gym, the analysing of the new roles of housing and our relationship with it.

4.4.3 Management Plans for the New Use of Public Space for Sports Practice in Post-COVID-19

The beneficiaries of this project are the cities, their inhabitants and the Environment, as the development and design at the urban level of these plans, are inserted within the strategic action ' Active Cities. Healthy Cities. Safe Cities'. It's important to emphasise that as a result of Coronavirus, this new use of open spaces, already exists, where sports practice can be guaranteed to be healthy and contagion avoided, the key being to maintain the safety of the population. These plans involve joint work by a multidisciplinary team to establish the different uses in each space.

4.5 Technical report with King Juan Carlos University research group

Development of 'A quantitative analysis of the vulnerability of the entrepreneur and of the self-employed person with disabilities in the COVID-19 scenario: Threats and Opportunities', where the patterns of de-escalation are taken into account with regards to; the level of non-exclusive equipment, infrastructure and public space to ensure that no one is left behind for lack of accessibility or any other feature.

5. The success story of Puerto Sotogrande leisure harbour and its Adapting against COVID-19

The innovative “Puerto Sotogrande de-escalation Plan: First Safe Harbour / Marina Safe in Spain”, has implemented the mandatory and recommended technical criteria in excellence to considered Puerto Sotogrande as 'Safe Space' in the 'Gold plus' category, or in other words, 'Safe Harbour / Marina Safe / GOLD+', distinction based on the excellence that can be achieved today in environments, products, goods or services in terms of safety, health and habitability. This refers in this post-COVID-19 era, not just by evaluating and auditing management and its

protocols, but physical implementation and tangible measures related to urban planning, architecture and interaction with public space, where it has adapted to the needs and characteristics of existing health and government, technical, academic and scientific literature, with special analysis of publications and guidelines of the competent public administration.

The design and activation of this de-escalation plan and return to normal post COVID-19, takes root in the creation of a space action protocol which has been rewarded with this distinction, on a reviewable basis as the phases are passed through and then, subsequently, on a quarterly basis, ensuring over time that updating safety standards and health care criteria are being met. The Ciudad Accessible and the Management of Puerto Sotogrande leisure harbour, due to the predisposition, strategic vision and responsible outlook, of its managing director Miguel Angel Díez, were able to create those protocols and ensure they were put into place. Thus, coordinating and implementing it, to then monitor and ensure that everything works perfectly and ensures the risk of zero contagion and maximum containment of the virus (Figures 2-3).

Figures 2- 3 –Recovery of public space for pedestrians in Soto grande

5.1 Previous analysis: Universal Accessibility Diagnosis and Mobility

In 2019 a “Diagnosis of accessibility and mobility of the Puerto Sotogrande leisure harbour. Proposals for improvement in the public space”, was produced, in order to achieve a port much more linked to the Sustainable Development Goals (SDGs); a more sustainable, healthy and comfortable harbour. This plan raised that a number of actions needed to be carried out to improve the quality of urban like, moving towards a more 'human' port, with greater accessibility and comfort, also linked to indications established in the Spanish Urban Agenda, with the criteria established for 2030, by the new United Nations Urban Agenda (UN-HABITAT) and the Urban Agenda for the European Union.

This is a very up-to-date document proposing measures that have been able to be applied in this time of the pandemic. The following sections refers to the most prominent accessibility measures that are COVID-19 contagion prevention measures.

5.2 De-escalation plan

The circumstance that came about through the COVID-19 pandemic have made it even more necessary than ever, to work for urban spaces – be they public or private - to be safe, liveable and healthy, and provide visitors the quality together with the exquisite and personalised attention to which they are accustomed. That is why, following the line of work that began with the Accessibility and Sustainable Mobility, project a "de-escalation plan in Puerto Sotogrande harbour "was carried out, which takes into account all the variables involved in achieving a Safe High-quality Tourist Destination in the new post-COVID-19 era. This de-escalation plan collects the following points:

- Measures universal accessibility focused on urban planning, building, urbanisation, ICT, among others;
- Zoning spaces to be able to establish the most suitable uses in each of the identified areas. Difference has been made between:
    - Dynamic spaces: fast and slow;
    - Static spaces: Terraces of establishments and squares and areas of occupancy.

- Space organisation, implementing measures such as:
    - Reordering parking and removing the over exploitation of un- catalogued areas for such use;
    - Changing the direction of vehicle flow;
    - Prioritising pedestrian use of the streets;
    - Provision of electric car and electric boat services to transport those who have parked at a distance;
    - Indicate senses of pedestrian traffic, especially in the narrower areas.

- Signalling. Different signage schemes which have design recommendations that should be indicated in the different spaces defined in zoning. There is also a question of the signage of pedestrian traffic in dynamic spaces, three arrow models have been proposed with the corporative design.
- Signs have been selected and designed with the following messages:

    - Personalised and with general recommendations: hand washing, use of masks, maintain social distancing etc.
    - Recommendations for entrances and buildings, commercial premises and a digital information point.

Calculation of estimated **Capacity** in spaces to be used. The capacity of each space has been calculated in accordance to the space necessities. These (temporary) capacities, should be increased as the de-escalation proceeds, as every Recommended Safe Space will gradually decrease, together with the transition areas and exchange, identified as "Safe cross path", or "Safe Area of concentric conciliation". For this calculation, the following aspects must be taken into consideration: age (5 levels), physical condition (wheel chair or walking stick users, prams etc), activity (walk, run, cycle) and area: square, halls, roads.

Recommendations **restaurant and catering** establishments. A series of steps and recommendations as regards new capacity for terraces, cleaning of the same, table-wear, disinfectants available, use of the toilets etc., together with recommendations for the other commercial premises: capacity, requirement of open-air terraces, reopening of hotels and tourist accommodation.

Recommendations for **navigation**. Likewise, recommendations and conditions have been laid out with regard to safe sailing with the virus.

3. Conclusions

As it can been seen, the role of Architecture and the professionals involved in the design of spaces, play a very important role in the face of various situations or casuistry, such as that which is occurring with COVID-19. Hence it is very important to have professionals specialised in the design of safe, accessible, comfortable and liveable spaces for all people and for any situation. The efficiency and success of Puerto Sotogrande is set as an example.

Architecture has always played a leading role in times of global health crisis and there have been substantial changes in the way we design and conceive spaces linked to new formulations of health, use of environments, etc. In this global health crisis, this reality could not be any different and we are immersed in a maelstrom of changes in the use of public space.

As an example, in this article we have explained the Puerto Sotogrande De-escalation Plan, which represents a change and a redesign of the use of public space. It is clear that at the moment it is not so much about rebuilding and re-thinking public space, as to generate new models of use. Therefore, the priority of a healthy public space, accessible, designed for people, in which the private vehicle passes to a second level and in which the pedestrian use of spaces is primed, is essential.

Working on new models of use not only in public space but also in our homes, will, in the medium term, make housing design that has been the same for centuries, to be modified. The application of technology, that we have experienced in these times of pandemic, the confinement, the need to carry out all our daily life in the home, also makes us rethink as to how our housing spaces should be, allowing the versatility of them and adapting to the new needs. It should be remembered that houses must have an outdoor relief space, good natural light and good ventilation.

In short, we must rethink how we use existing spaces and modify the use of them to serve their end: that people live with the greatest possible dignity and are the protagonists of the city and the environment.

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SHORT BIOGRAPHY

Antonio Tejada. He is a Social entrepreneur with 66% disability: "Transforming the world from within to show that inclusion is possible".
Political Marketing Consultant & Policy Making. Prof. Investig. by URJC. Creator of 'Politics and Inclusion', 'The Accessible City' and 'Entrepreneurs with Disabilities'. Dip. Education Sciences, Ldo. Audiovisual Communication and Interuniversity Master in Political Marketing of Electoral Strategies and Political Communication, among other postgraduate courses. In the famous 140 characters of Twitter: "Teacher who educates in equity. Journalist who denounces social injustice and makes minorities visible. Researcher who shows another possible reality ". 13th in the Choisel 2018 Ranking where they are classified 'The 100 Spaniards who will be the economic leaders of the future' who demonstrate business and professional excellence with an age range of 30 to 42 years.**tejadacruzantonio@gmail.com**

SHORT BIOGRAPHY

Mariela Fernández Bermejo. She is a s Social architect. Researcher in universal accessibility, strategy and city marketing. Committed to people through architecture and politics. People first, people second, and people third. Always people as the epicentre of any innovation and process, keeping in mind the improvement of their quality of life as well as equal opportunities regardless of their gender, size, status, abilities, level of literacy, sexual orientation, etc.
Architect by the Higher Technical School of Architecture of the University of Granada in 2007. Mentor in urbanism, mobility, smart city and accessibility, she is a Master's Degree in Urbanism and Spatial Planning from the University of Granada (UGR) in 2013, Master's in Urbanism , Urban Planning and Management by the Official College of Architects of Granada (COAGR) in 2007, University Master in Universal Accessibility by the University of Jaén (UJA) in 2012 and University Expert in Accessibility and Physical Environment by the University of Granada (UGR) in 2011. **marielafernandezbermejo@gmail.com**

Forthcoming Issues

Africa Origin Designer year 2021

February 2021 Vol-16 No-2
Samuel M Maina PhD
Motto: Ignore Design that Ignore People

Designer with a passion for creating tomorrow for all. Dr. Maina believes in eco-ethical design while delivering solutions to everyday problems. My approach is empathy with the low-income earners desiring "beyond reach solutions" meant for the affluent with the aim to avail them to the masses. I am also the editor of the Africa Design Review Journal of the school of the Arts & Design, University of Nairobi and the Creativity and Innovation Journal of the University of Transylvania, Brasov, Austria. Author of Qualitative & Quantitative Research Methods Simplified, How to Write a Good Proposal, Communication Skills- Edition for University and College Students among others.

March 2021 Vol-16 No-3
Michael Munene, PhD

Lecturer, School of The Arts and Design College of Architecture and Engineering, [PhD, UoN | M.A., UoN | B.A., UoN | PGD, KIM]. DR.MICHAEL MUNENE, Ph.D. Researcher, Educator and Designer with great passion for universal design, integrating and mainstreaming people with disabilities. Ardent about design for social change and an activist for social justice and equity.

April 2020 Vol-16 No-4
Saki Mafundikwa

I have been a graphic designer, author, and educator for over thirty years. As a globally recognized expert on African writing systems, I have lectured, exhibited, and given workshops all over the world, including:

Workshop with Sadie Red Wing, Art Center, Los Angeles, CA, 2019

Keynote speaker, 1st Pan African Design Institute Congress, Ghana, 2019

Keynote speaker, SAVVY Spinning Triangles, Kinshasa, Congo, 2019

In addition to starting Zimbabwe's first graphic design and new media college, I wrote and published a comprehensive review of African writing systems (Afrikan Alphabets, 2004). I'm currently working on an updated edition that should be out early next year, 2021.

While in New York, I taught design at Cooper Union for three years, creating a course, "Writing Systems from Non-Western Societies," inspired by my MFA thesis on writing systems in Africa – this was the birth of my Afrikan Alphabets book.

I had realized during the research for my thesis that there was no group of people anywhere on the planet who did not devise some form of writing or record keeping, yet relatively few of these are covered in contemporary graphic design courses.

The Cooper Union course was wildly popular, sitting very well with their diverse student body. In the final year of my work there, the course morphed into "Experimental Typography," which is still being offered at Cooper Union today.

In the past decade I have turned some of my attention to documentary filmmaking. My first film, Shungu: The Resilience of a People (2009) which had its world premiere at IDFA (International Documentary Festival of Amsterdam) and has won awards, notably the Ousmane Sembene Prize at Zanzibar International Film Festival and Best Documentary at Kenya International Film Festival. It has screened all over the world, where it has been received very well by both critics and audiences, except in my own country where it remains banned. The film follows the brutal Zimbabwean presidential election of 2008, during the campaigns of Mugabe and Morgan Tsvangirai, the leader of the opposition party. Shungu also explores the everyday survival practices undertaken by the Zimbabwean people as they cope with political and economic strife.

I took a two-year sabbatical to get a breath of fresh air and ended up teaching design and film at the Cornish College of the Arts in. This past year, I had the vision to collaborate with a young Indigenous designer, Sadie Red Wing because I felt we have a shared colonized background.

The result was a resoundingly successful workshop at Art Center. We insisted that the workshop be open to the community and this made it even more interesting. We have agreed that this was the beginning of a long collaboration that will take us to campuses across the United States! Art Center sensing that this was an important and necessary collaboration, invited us to be interviewed for their series of podcasts called, "Change Lab Podcast". Ours is number 29.

July 2021 Vol-16 No-7
Raja Schaar

Raja Schaar, IDSA is Program Director and Assistant Professor of Product Design at Drexel University's Antoinette Westphal College of Media Arts and Design. She also co-chairs IDSA's Diversity, Equity, and Inclusion Council. She is an industrial designer with an extensive background in museum exhibit design who is passionate about ways design can make positive impact intersections with health, the environment, and education.

Raja's interdisciplinary research focuses on addressing inequities in maternal health; methods for engaging black girls and underrepresented minorities in STEM/STEAM through design and technology; innovation and entrepreneurship education; and biologically-inspired design and sustainability.

Raja currently co-leads two collaborative research projects. She works with faculty from Drexel's College of Nursing and Design and Merchandising Programs the development of low-cost wearables for maternal health. She is co-PI on an interdisciplinary research project funded by the US Department of Education Promise Neighborhood Grant entitled "Black Girls STEAMing through Dance," where she works with students and faculty from Drexel's departments of Computing and Informatics, Dance, and the School of Education to uncover STEAM identities, literacies, and self-concept in African American girls through the development of wearable technology. Raja is also PI on a VentureWell Faculty Grant that connects Product Design, Biomedical Engineering, and Entrepreneurship to examine the role of clinical immersion on product innovation on campus.

As an educator, Raja works to infuse Drexel's Product Design Curriculum with society-centered design principles that address impactful, real-world problems. She teaches a number of traditional and research-based studios across the curriculum, but her favorite courses to teach are Interdisciplinary Product Design, Bio-Inspired Design and Sustainability, Design and Waste, and Wearables for Health.

Before joining Drexel's Product Design faculty, Raja taught at Georgia Tech School of Industrial Design and the Wallace H. Coulter Department of Biomedical Engineering at GA Tech and Emory University. Raja received her BSID from Georgia Tech in 2001 and completed her graduate work at the School of the Art Institute of Chicago in 2003.

December 2021 Vol-16 No-12
Ricardo Gomes, IDSA

Professor Ricardo Gomes has been a faculty member in the School of Design at San Francisco State University for over 29 years. He was the Chair of the DAI Department from 2002-2012.

Prof. Gomes coordinates the Design Center for Global Needs and the Shapira Design Archive Project in the School of Design (DES).

This non-profit international research and development center is dedicated to promoting responsive design thinking methods and solutions to local, regional and global issues such as: inclusive/universal design, health care, the aging, community development, social innovation and sustainability of the built environment.

Prof. Gomes was awarded the 2020 Faculty Award for Excellence in Service Learning, from the Institute for Civic and Community Engagement, SFSU; and the IDSA 2020 Education

Award presented in recognition of significant, distinguished, and long-term contributions of faculty to the field of industrial design academia

Prof. Gomes is on the Board of Directors of the Institute for Human Centered Design in Boston. He is also a member of the Industrial Designers Society of America; and Trustee of the Beta Beta Chapter, Epsilon Pi Tau International Honor Society for Technology in the School of Design, SFSU.

Prof. Gomes was a Fulbright Research Scholar from 1984-1986 at the University of Nairobi, Kenya. He conducted post-graduate research and product development of a container system for mobile health care delivery in East Africa from 1982 – 1987. In 1986, he was Program Coordinator of Design Projects in Developing Countries, Les Ateliers, Ecole nationale supérieure de création industrielle (ENSCI) in Paris, France where he directed student liaison projects with European international development agencies.

For over 30 years, Prof. Gomes has conducted keynote speeches, presentations, symposiums and workshops at universities and international conferences throughout Africa, Asia, Europe, Latin America and the U.S. In addition, he has served on juries related to Inclusive Design; Universal Design; Design for Social Responsibility; Sustainability; and Equity for BIPoC in the Built Environment.

Prof. Gomes received his MFA in Industrial Design for Low-Income Economies from the University of California, Los Angeles (Design of a Container System for Mobile Health Care Delivery in East Africa). He received an M.A. in Architectural Building Technology from School of Architecture and Urban Planning at UCLA (Analysis of Alternative Building Materials and Construction Systems for Small-scale Industries in the Cape Verde Islands, West Africa); and a BFA in Industrial Design from Massachusetts College of Art (Design of an Adaptive Structural Environment for Severely Disabled and Developmentally Challenged Children).

New Books

It is available on www.morebooks.de one of the largest online bookstores. Here's the link to it:

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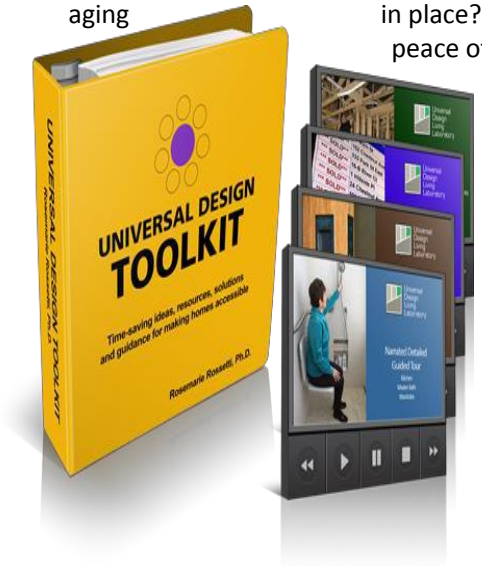

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EDITED BY SHERYL E. BURGSTAHLER • FOREWORD BY MICHAEL K. YOUNG

This second edition of the classic *Universal Design in Higher Education* is a comprehensive, up-to-the-minute guide for creating fully accessible college and university programs. The second edition has been thoroughly revised and expanded, and it addresses major recent changes in universities and colleges, the law, and technology.

As larger numbers of people with disabilities attend postsecondary educational institutions, there have been increased efforts to make the full array of classes, services, and programs accessible to all students. This revised edition provides both a full survey of those measures and practical guidance for schools as they work to turn the goal of universal accessibility into a reality. As such, it makes an indispensable contribution to the growing body of literature on special education and universal design. This book will be of particular value to university and college administrators, and to special education researchers, teachers, and activists.

SHERYL E. BURGSTAHLER is an affiliate professor in the College of Education at the University of Washington in Seattle, and founder and director of the university's Disabilities, Opportunities, Internetworking, and Technology (DO-IT) and Access Technology Centers.

"Sheryl Burgstahler has assembled a great set of chapters and authors on universal design in higher education. It's a must-have book for all universities, as it covers universal design of instruction, physical spaces, student services, technology, and provides examples of best practices."

—JONATHAN LAZAR, PROFESSOR OF COMPUTER AND INFORMATION SCIENCES, TOWSON UNIVERSITY, AND CO-AUTHOR OF *ENSURING DIGITAL ACCESSIBILITY THROUGH PROCESS AND POLICY*

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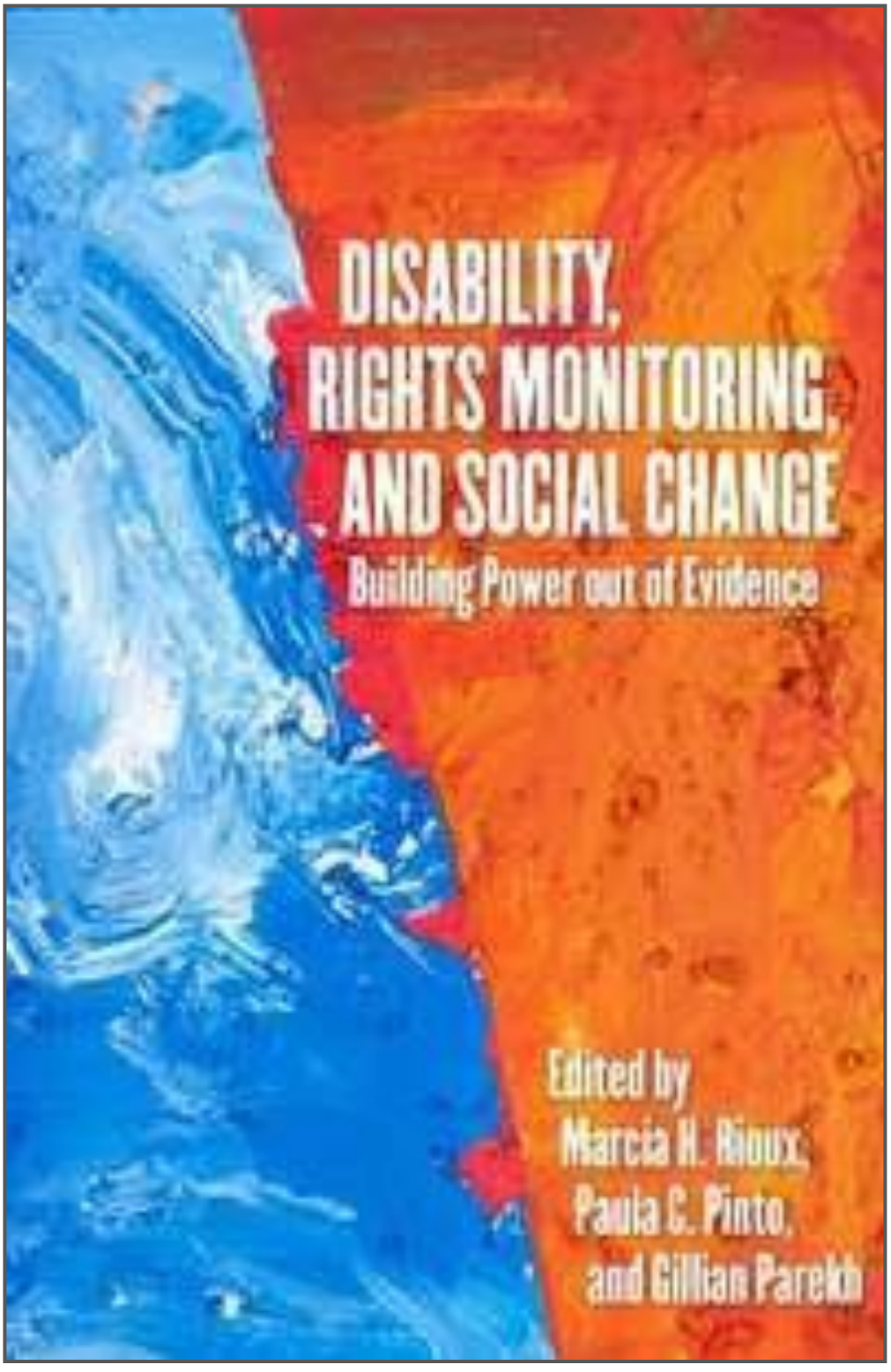
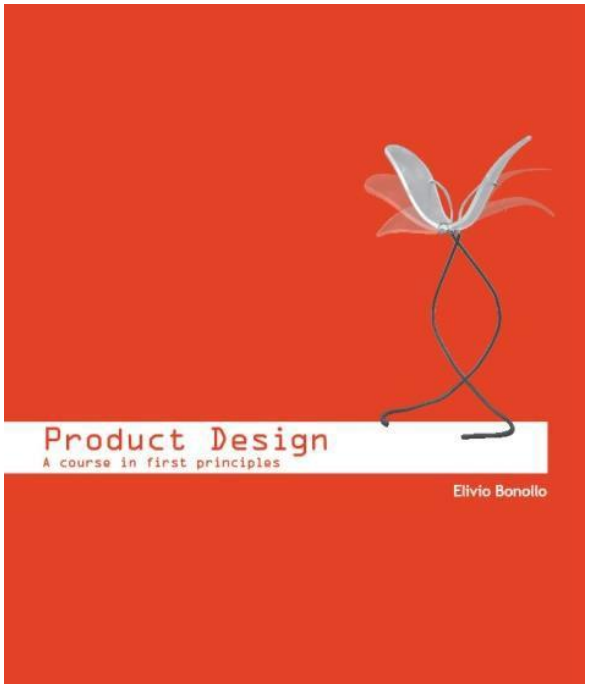
Disability, Rights Monitoring and Social Change:



New Update: ELIVIO BONOLLO (2015/16) PRODUCT DESIGN: A COURSE IN FIRST PRINCIPLES



Available as a paperback (320 pages), in black and white and full colour versions (book reviewed in Design and Technology Education: An International Journal 17.3, and on amazon.com).

The 2018, eBook edition is available in mobi (Kindle) and ePub (iBook) file versions on the amazonand other worldwide networks; includingon the following websites:

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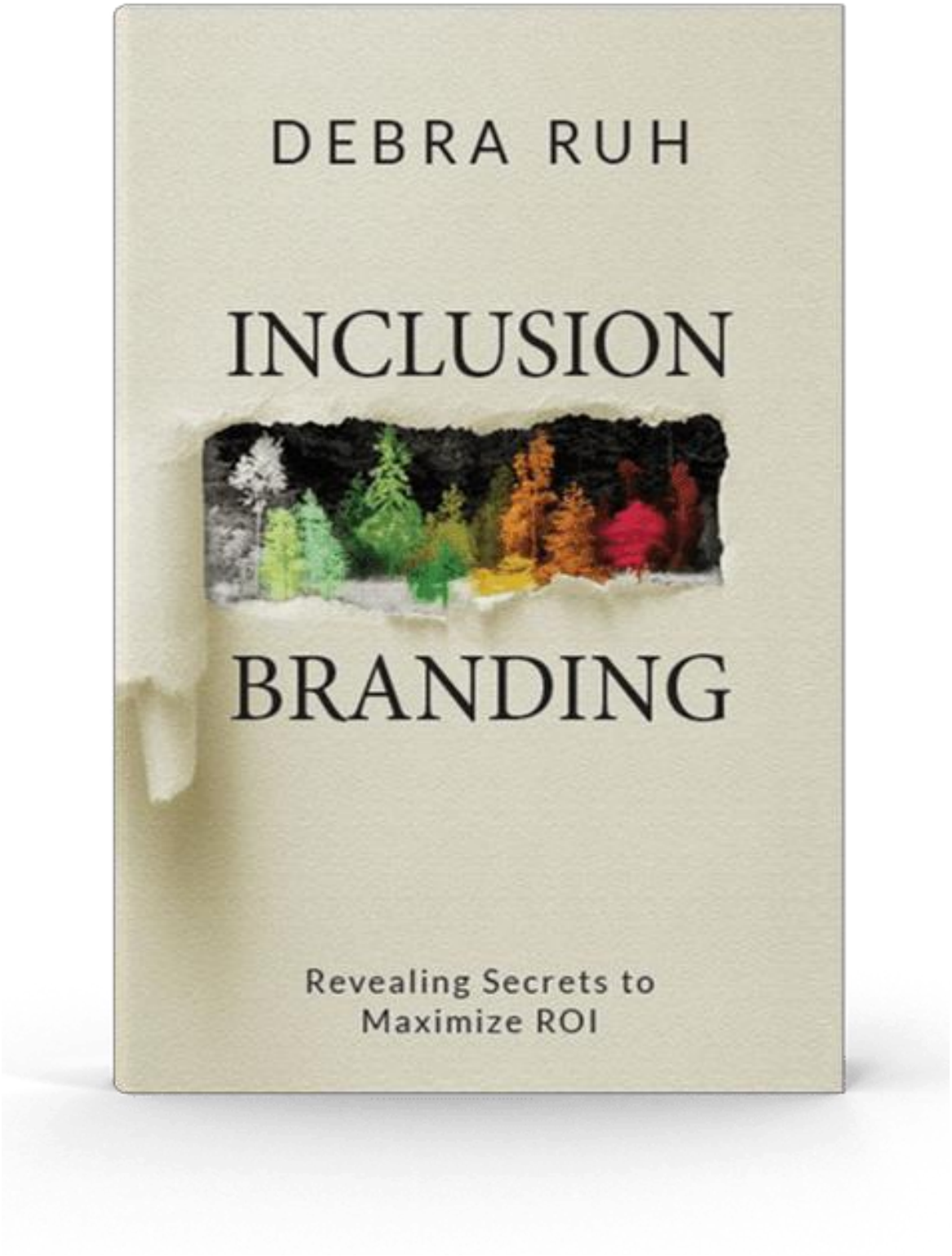

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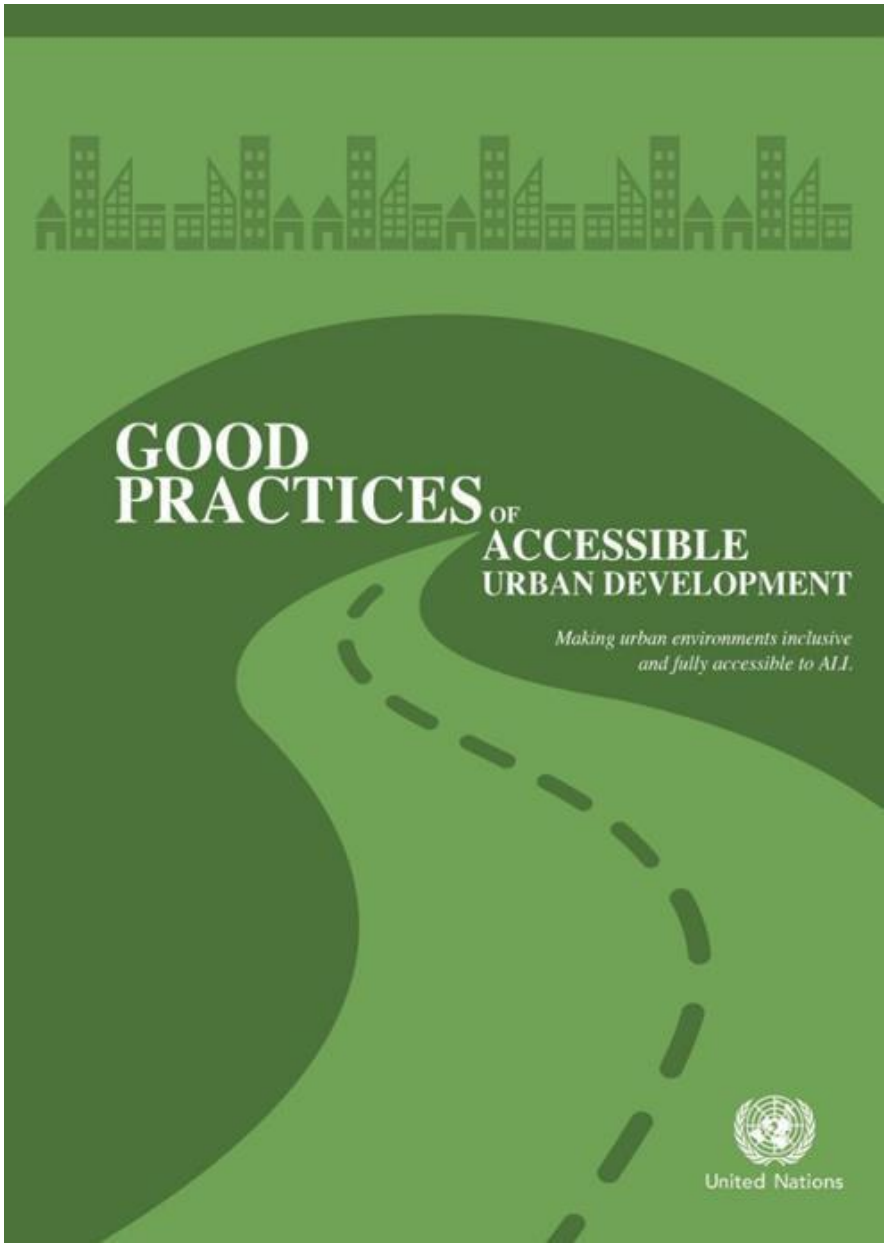


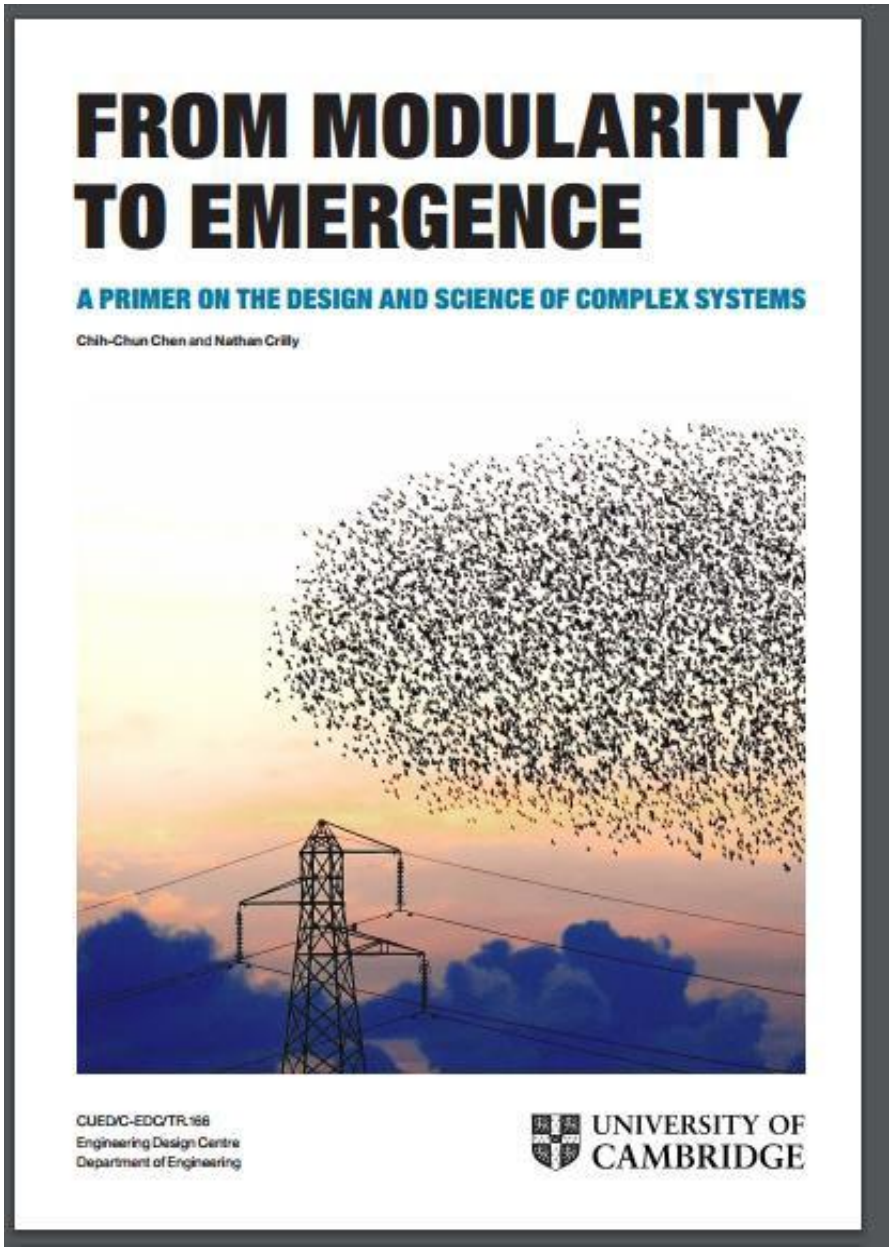
In light of the forthcoming United Nations Conference on Housing and Sustainable Urban Development (HABITAT III) and the imminent launch of the New Urban Agenda, DESA in collaboration with the Essl Foundation (Zero Project) and others have prepared a new publication entitled: "Good practices of accessible urban development".

The publication provides case studies of innovative practices and policies in housing and built environments, as well as transportation, public spaces and public services, including information and communication technology (ICT) based services.

The publication concludes with strategies and innovations for promoting accessible urban development.

The advance unedited text is available at:

http://www.un.org/disabilities/documents/desa/good_practices_urban_dev.pdf



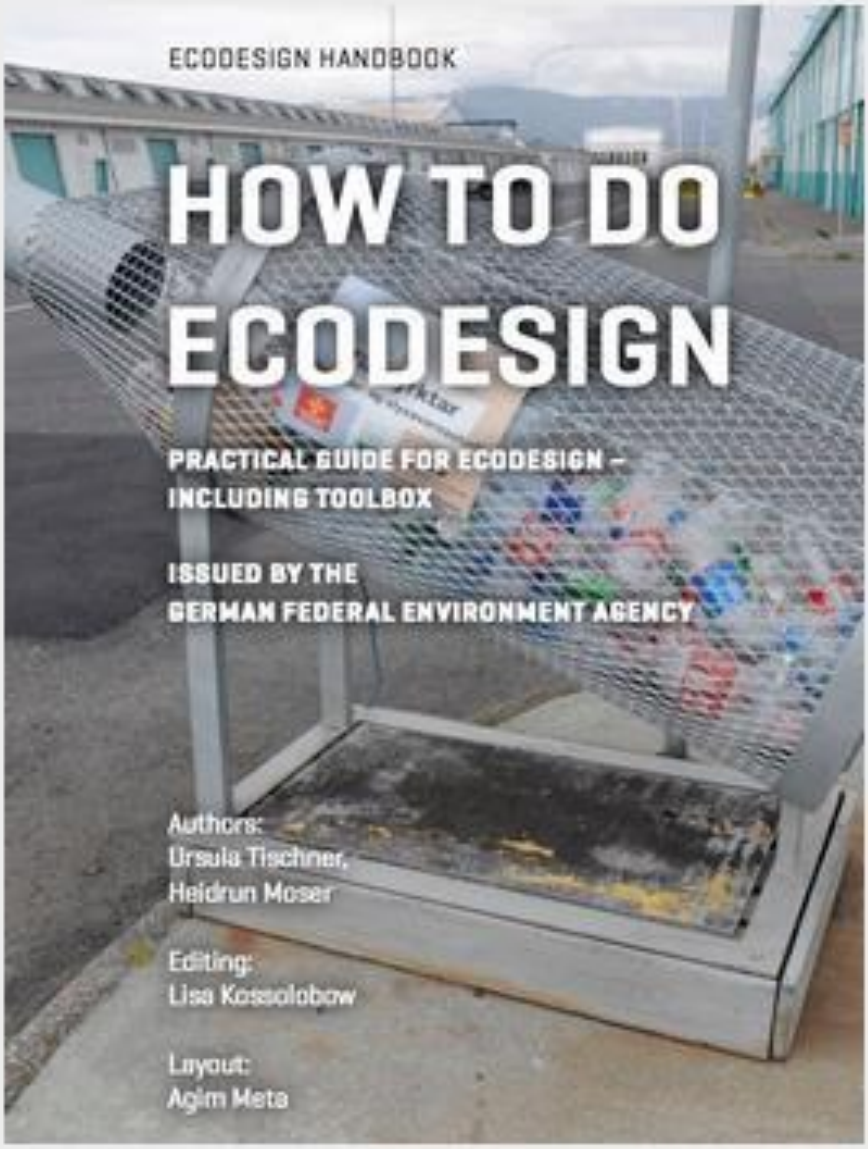
Dr Chih-Chun Chen and Dr Nathan Crilly of the Cambridge University Engineering Design Centre Design Practice Group have released a free, downloadable book, _A Primer on the Design and Science of Complex Systems.

This project is funded by the UK Engineering and Physical Sciences Research Council (EP/K008196/1).
The book is available at URL: http://complexityprimer.eng.cam.ac.uk

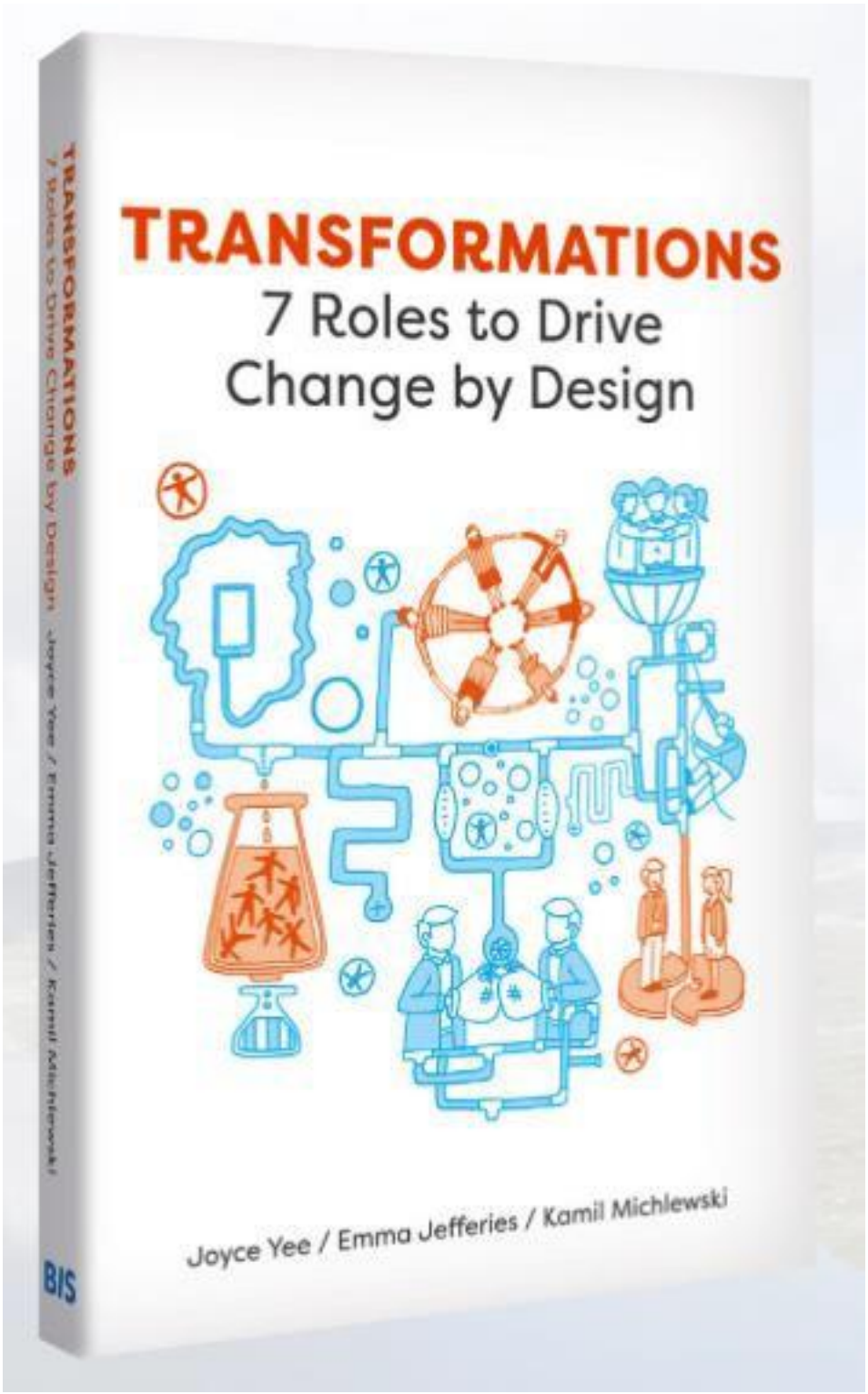
Changing Paradigms: Designing for a Sustainable Future

 ISSN 2582-8304

New iBook / ebook: HOW TO DO ECODESIGN



Practical Guide for Ecodesign – Including a Toolbox
Author: Ursula Tischner


TRANSFORMATIONS
7 Roles to Drive Change by Design
Joyce Yee / Emma Jefferies / Kamil Michlewski
BIS

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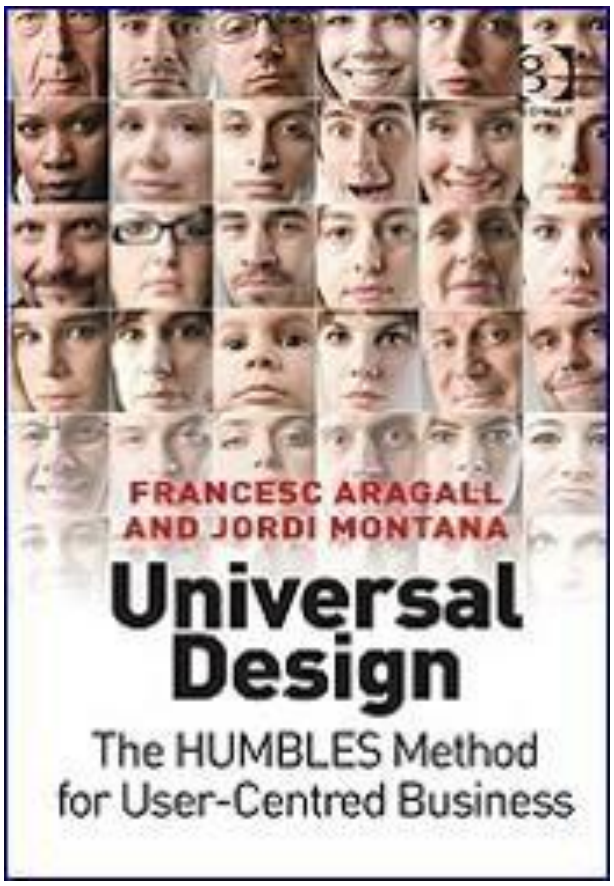
Universal Design: The HUMBLES Method for User-Centred Business

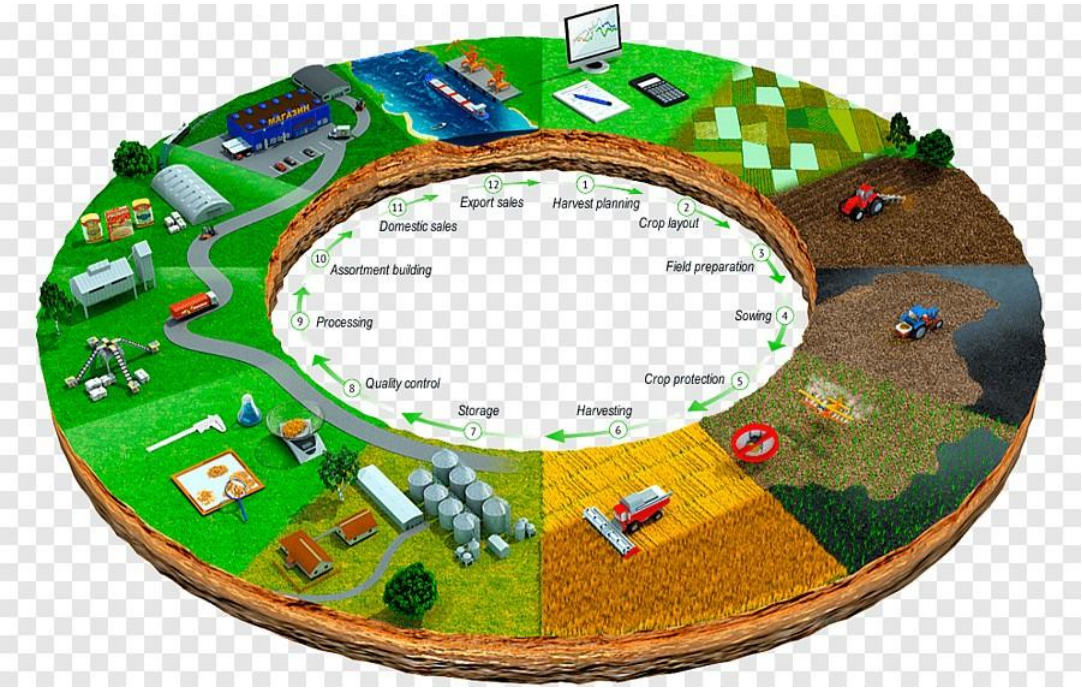


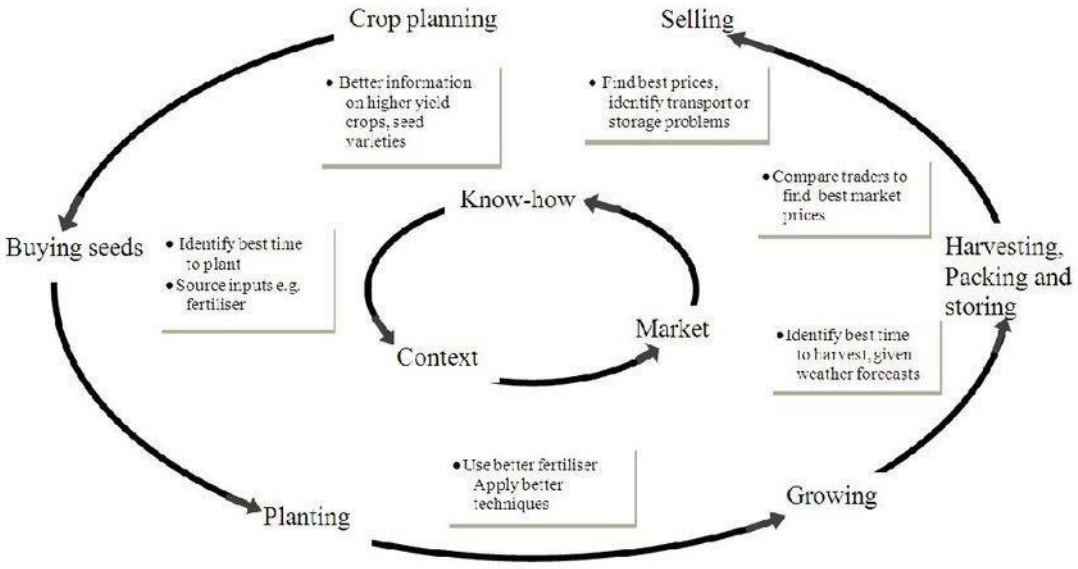
"Universal Design: The HUMBLES Method for User-Centred Business", written by Francesc Aragall and Jordi Montaña and published by Gower, provides an innovative method to support businesses wishing to increase the number of satisfied users and clients and enhance their reputation by adapting their products and services to the diversity of their actual and potential customers, taking into account their needs, wishes and expectations.

The HUMBLES method (© Aragall) consists of a progressive, seven-phase approach for implementing Design for All within a business. By incorporating the user's point of view, it enables companies to evaluate their business strategies in order to improve provide an improved, more customer-oriented experience, and there by gain a competitive advantage in the marketplace. As well as a comprehensive guide to the method, the book provides case studies of multinational business which have successfully incorporated Design for All into their working practices.

According to Sandro Rossell, President of FC Barcelona, who in company with other leading business professionals endorsed the publication, it is "required reading for those who wish to understand how universal design is the only way to connect a brand to the widest possible public, increasing client loyalty and enhancing company prestige". To purchase the book, visit either the Design for All Foundation website

Appeal





National Agro-Design Hackathon 2020-21

Background

The farmers profession is most uncertain. They have to cope again the vagaries of nature. Sunshine and rainfall are essential to a good harvest, but it must come at the right time. They have to cope against drought. Then there are the uncertainties of the market. The harvest cannot be held back long. It has to be sold; money is required for the next crop. Field has to be prepared for the next planting. Inability to hold back the produce and the necessity to prepare for the next crop forces the farmer to resort to distress sale. The farmer is economically exploited & abused. The laws, principles and practices which have evolved around free market economy of inanimate goods cannot be applied to the farming sector.

We have to think afresh. It is the responsibility of society to provide safety and security to all its constituents. The Indian culture has to evolve and bring changes in itself so that farmer, farming, farm land, food produce, its quality, it marketing, food preparation & preservation is protected. Without no culture can be viable.

There is no god or goddess that protects the farmer & assures their wellbeing.

We invite you to think for the farmer, the farmland, agriculture, orchard, vegetable gardens, life stock and is the source of sustenance of human beings.

We need a new synergy between the rural and the urban. The too can intermingle. The production of the material and the organic can intermingle. The too are vastly different and the two cultures can respectfully coexist & cocreate for a harmonious and happy India.

Theme: Designing for the farmer with the farmer. Harvesting the seedling. Cooking the sprout. And all thinks in between. All thinks before & after. All organic things we eat& life on. Intervention at any point of the organic production consumption & disposal cycle.

Eligibility

The farmer's love for modernity ushered the green revolution. Farmers ushered the white revolution. We are sitting on the cusp of the third agricultural revolution. You are invited to visualize the third revolution. You may be an agricultural engineer, an architect, a designer, a social scientist, a management graduate, a marketing expert, a journalist or a law student. We are looking for solutions from empathetic & creative students and professionals above the age 18 years who think holistically for a circular sustainable economy.

Challenge

- Increase income of farmer manyfold, where farmer continues to be a guardian of his land & profession
- Improve productivity in a sustainable
- Improve storage
- Improve distribution
- Improve mandi. Could multistorey, underground or sprawl like a stadium. Temperature controlled. For the big or small farmer. Your imagination is limit.
- Fresh, palatable & healthy food from farm to home.
- More with less. More to more
- Sustainable & healthy

- MSME / Cooperatives for the Agricultural Sector
- Procurement systems
- Grievance redressal
- Loans, debts, insurance & assurance
- Synthesis & synergy of urban & rural

Any other intervention you feel has been overlooked or underestimated and needs solution.

Submission

All are invited to work with the farmers, identify problems, opportunities and solutions. You must submit your entry both as a digital file & as a hard copy. The style of submission submit may be as prevalent in your profession. It could be drawing, a film, slide show, report, etc. Drawings should be in A-3 size.

Registration

Last Date of Registration

25th January 2021. Please register online at www.designforall.in

Last Date of Submission of Entry

15th February 2021

Jury

Editorial Board of Design for All India & others. (Jury composition will be updated)

Announcement of Results

28th February 2021

Prizes: Rs. 10,000/= each for ten best entries plus a farmer's hamper with love & best wishes from farmer's associations. The number of prizes may increase if more sponsorship become available.

Contact

Dr. Sunil Bhatia

Email:

Phone:

Prof. Lalit Kumar Das

E. Mail: designissues@gmail.com

Phone: 9891941433

Sponsor

Design for All India www.designforall.in

More sponsors are welcome

Disclaimer

This open-source design competition. It has no political affiliation. All members associated are working in their personal capacity. All intellectual property emerging from this competition will governed by GNU Public Licence ("GPL") guidelines.

National Agro-Design Hackathon 2020-21

REGISTRATION FORM

Name & Specialization of the Participants (up to a maximum of four in a group)

1. Name Specialization

2. Name Specialization

3. Name Specialization

4. Name Specialization

Contact Information

Email:

Mobile:

Address:

I / we understand that evaluation / organization of such real life competion can be complex, subjective and impossible to quantify.

I / we shall adhere to the decisions of the organizers / jury and their decisions will be final in all respects. I shall not raise any disputes.

My filling this registration form is an agreement to the above and other terms laid down in the brochure of the competition.

News

1.

Sightsavers, European Union, & European Disability Forum Release Paper on Women with Disabilities in India

Global development organisation Sightsavers along with European Disability Forum (EDF) is implementing a project for empowering people with disabilities. This project is being supported by the European Union.

Disabled women around the globe are more marginalised economically than disabled men or non-disabled women. This is based on both their gender and disability but not much is known about the significance or scale of this double discrimination.

Rising Voices: A Paper on women with disabilities, a joint paper released by global development organisation **Sightsavers** and **European Disability Forum (EDF)** brings the voices of women with disabilities to the fore. It also details how supporting women with disabilities to know their rights has helped them to stand up for themselves, gain independence and support others.

Study Across Three States

The paper was released as part of a joint project by Sightsavers and EDF. *Called Building Partnerships for Sustainable development Goals – Empowering Disabled People's Organisations*'. The project is supported by the **European Union (EU)**. The project supports people with disabilities to engage in, shape and monitor the implementation of the 2030 Agenda.

The paper clearly highlights the untapped potential of women with disabilities and their critical role in the implementation of the Sustainable Development Goals and in international cooperation. – F**anny Nylander – First Secretary, Political Affairs, EU Delegation to India**

The paper highlights specific struggles that women with disabilities face.

"It also celebrates their strength, abilities, resilience and victories", adds **RN Mohanty, CEO Sightsavers India**. "By sharing the stories of women with disabilities, it intends to convey the transformational impact that engagement in the SDG processes can have on these women's lives."

The paper includes case studies from three states in Indi – Jharkhand, Odisha, and Rajasthan. These were developed through one-to-one interviews and focus group discussions.

"My dreams have wings now", said **Meena**. This 23-year-old has cerebral palsy and works with a disabled person's organisation in Odisha. "When I was nominated group leader of Parents and DPO group and undertook the rating for the S*DG Disability Inclusive Score Card* recently in Behrampur, I found 'myself'. I want to get exposure on national and international disability rights frame-works and if given a chance, I want to be part of wider women rights network".

The key findings of the paper focus on violence and access to justice, education, employment, and health. Also developed is a robust section on best practices which will be useful for future programming.

(Courtesy: NewzHook)

2.

Canada to Develop a New Accessible Homes Standard

CANADA: The federal government, through the National Housing Strategy (NHS) delivered by Canada Mortgage and Housing Corporation (CMHC), is providing $190,000 in funding to the CSA Group to support research and develop a national standard for affordable, adaptable, and accessible homes across the country.

"Every Canadian deserves a safe and affordable place to call home. Research is key to finding new, innovative approaches to help address Canada's housing challenges and make it easier for Canadians to find a home that meets their needs and that they can afford," said Ahmed Hussen, the families, children, and social development minister.

Research informing the new proposed standard will use established methodologies to contribute to the development of new knowledge, and the synthesis of existing knowledge, that will have a positive impact on accessibility, affordability, and adaptability.

As a member of the advisory panel, the Rick Hansen Foundation (RHF) will extend their expertise in housing accessibility. RHF intends to use the proposed national standard as the basis of a new Rick Hansen Foundation Accessibility Certification (RHFAC) module enabling RHFAC Professionals to rate the accessibility of homes. Based on CSA B651-18, Accessible design for the built environment, RHFAC is the only national program that rates, certifies, and celebrates the meaningful accessibility of buildings from the perspective of persons with mobility, vision, and hearing disabilities.

The proposed new accessible homes standard will help support:

the development of affordable and adaptable accessible homes across Canada by providing evidence-informed guidance; and

the application of new and existing knowledge related to best practices for the design, construction, and modification of affordable and adaptable accessible homes.

The need for accessible housing

Public polling released by the Angus Reid Institute in January 2019 shows one in three Canadians have issues getting around their own home and a majority are anticipating challenges moving around at home in the future.

“Having the opportunity to age at home is increasingly important to Canadians, and the need for accessible housing in Canada is a huge issue,” said Brad McCannell, vive-president of access and inclusion at RHF. “We are thrilled CSA Group will be developing this new residential standard and to incorporate it into RHFAC to help industry address this critical gap.”

“Consensus-based standards could help give Canadians greater options for accessible housing. Our accredited standards development process aims to create resources combining technical expertise and knowledge with meaningful and achievable targets that are in the public interest,” said Nancy Bestic, director of health and safety standards, CSA Group.

The proposed new accessible homes standard is scheduled to be published in May 2022.

(Courtesy: Construction Canada)

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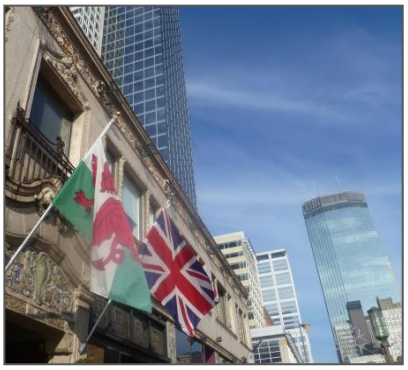
Programme and Events



International conference on ‘Designing for children' with focus on 'Play and Learn'


DESIGN
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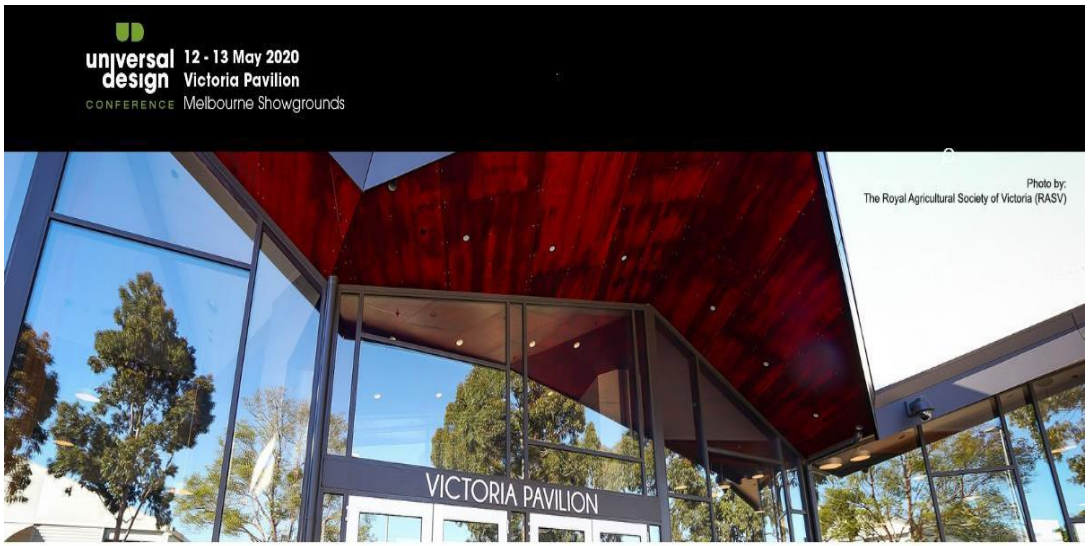
EDUCATES
AWARDS
2020


universal design
CONFERENCE
12 - 13 May 2020
Victoria Pavilion
Melbourne Showgrounds
Photo by:
The Royal Agricultural Society of Victoria (RASV)
VICTORIA PAVILION

CALL FOR PAPERS

The ASSETS conference is the premier forum for presenting research on the design, evaluation, use, and education related to computing for people with disabilities and older adults. We invite high-quality original submissions on topics relevant to computing and accessibility.

Submissions should present significant contributions to design, systems, tools, scientific understanding, methodology, or social issues. Relevant topics include (but are not limited to) new enabling technologies, studies of how technologies are used by people with disabilities, explorations of barriers to access, and evaluations of accessibility education methods. It is expected that, in most cases, a paper's research contributions will be validated through research activities conducted within the target user groups. Papers that include a technical contribution without being validated through research activities with representative users are unlikely to be accepted.

XXVII Compasso d'Oro: the visual project

The selection for the

ADI graphic project invites to present a graphic project proposal for the cycle of publications related to the XXIII Compasso d'Oro ADI: ADI Design Index 2020, ADI Design Index 2021, XXVII Compasso d'Oro.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2020 GOOD DESIGN AWARDS OPEN FOR ENTRY

Good Design Australia is calling for Australian and international entries to the 2020 Good Design Awards. Through the annual Good Design Awards program, we recognise and celebrate excellence in cutting edge design and breakthrough innovation.

Let's reconcile with the future!

Book Object / Book Object
International Biennial of the book of Artist and Design

The call to participate in the new edition of Object Book, the International Biennial of the Artist and Design Book is online .

The competition is open to artists, designers, professionals and students.

Call for entry for 2020 Human city award.

The Spark Awards are "The One For All"
All Design–All Designers–Welcome!

Last date 31 November 2020

TWO WEEK COUNTDOWN TO FINAL DEADLINE

There are just two weeks left to get your entries in for the 2020 Good Design Awards. Give your team something to celebrate this year and get recognised for your best work!

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The 2019-20 coronavirus pandemic disease (COVID-19), appeared for the first time in Wuhan (Hubei Province, China) in late 2019 and rapidly spread in the rest of the world since the early months of 2020, has produced a significant and sadly dramatic impact in the life of all people. To date (April 22th, 2020), over 2.550.000 people have shown symptoms and over 175.000 died for health and respiratory problems[1]. While the entire humanity feels

[1] Source: Johns Hopkins University, Coronavirus Resource Center. (https://coronavirus.jhu.edu/map.html).

Universal Design Summit 7

Universal Design Summit is a preeminent conference in North America, drawing experts in universal design from across the globe. UD Summit has traditionally focused on universal housing and inclusive communities. Event organizers are pleased to announce the expansion of UD Summit to include inclusive design in digital spaces. Our current plan is to offer simultaneous)

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