Evaluating Covid Pandemic Effects on IAQ

Erinç Çelik

25 October 2022

Antalya

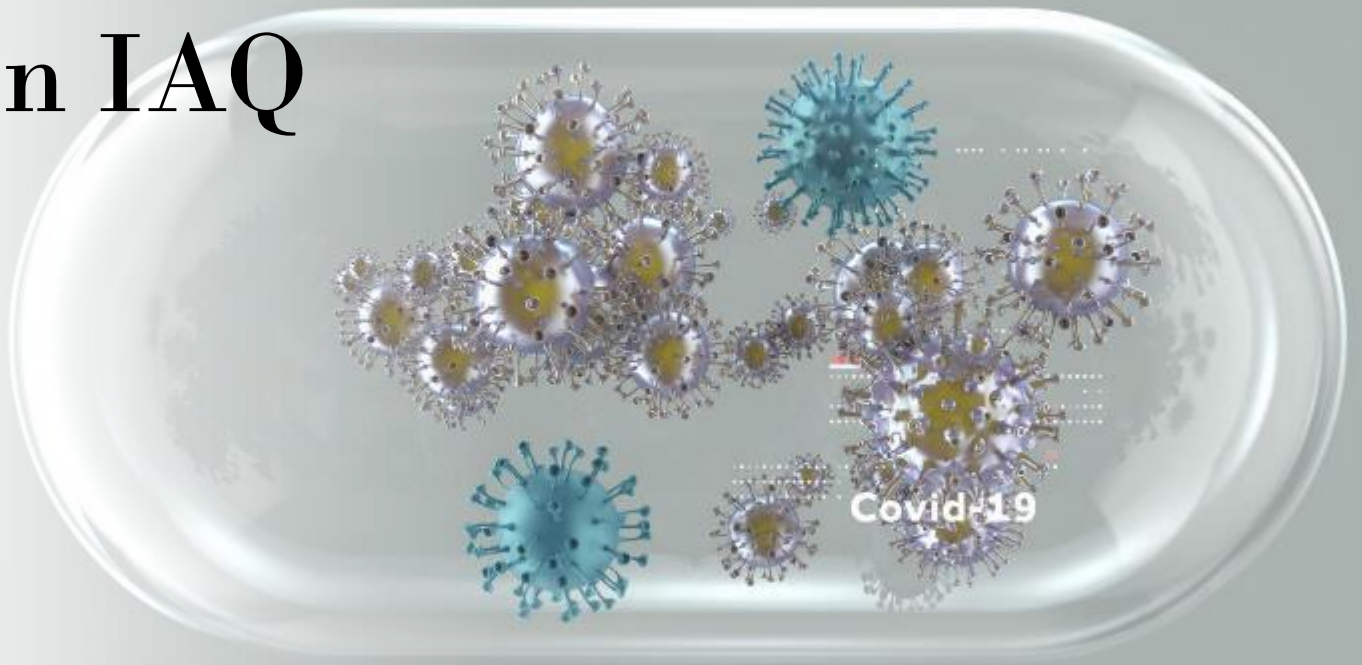
EUROVENT SUMMIT ANTALYA
25-28 OCT 2022
#BuildingBridges

İSKİD 30 YIL YEARS

Evaluating Covid Pandemic Effects on IAQ

- When the Covid-19 pandemic hit, there were lots of confusion and panic around the globe.
- We started to navigate the novel coronavirus and tried to learn how to minimize the spread to keep people safe.
- As the health authorities share new information, it was easy to feel overwhelmed and confused.

Evaluating Covid Pandemic Effects on IAQ



However this is not the first time that a major disease outbreak has required our built environment to evolve and adapt;

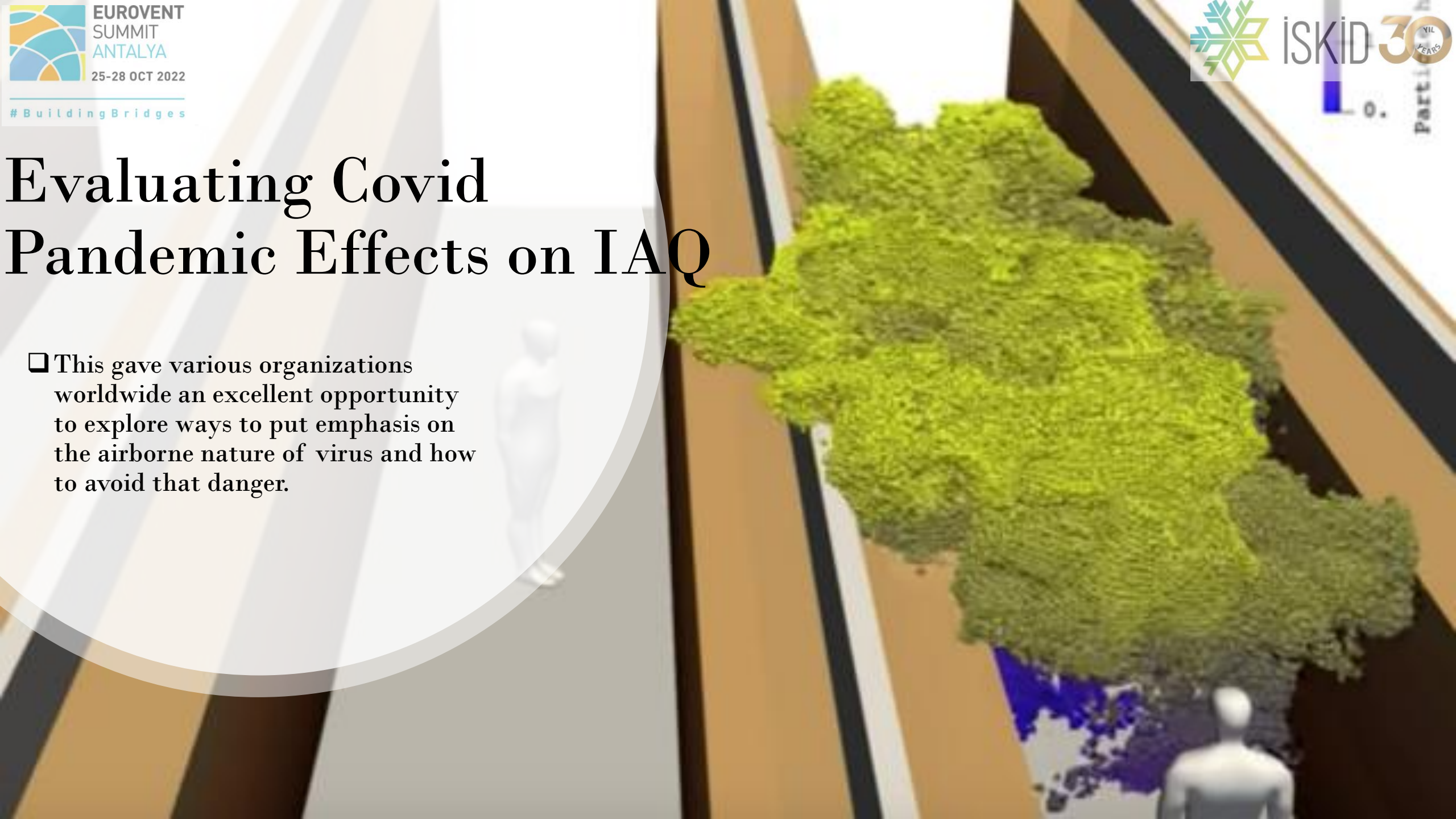
- Cholera epidemics in the early 19th century drove the development of effective sewage systems,
- Ttuberculosis led to changes in building design to allow for more sunlight and air
- Major outbreaks of legionella and E. coli resulted in regulatory reform on water treatment and food standards.

Evaluating Covid Pandemic Effects on IAQ

- During the beginning of the COVID-19 pandemic, regulations in various countries concerned washing hands, wearing masks, and taking care of social distancing.
- Regardless, the rules did not consider the effect of indoor air quality on the transmission of the virus.

Evaluating Covid Pandemic Effects on IAQ

- This gave various organizations worldwide an excellent opportunity to explore ways to put emphasis on the airborne nature of virus and how to avoid that danger.



EUROVENT SUMMIT ANTALYA
25-28 OCT 2022
#BuildingBridges

İSKİD 30 YIL YEARS

Evaluating Covid Pandemic Effects on IAQ

WHO acknowledges 'emerging evidence' of airborne spread of COVID-19 on 09.07.2020

https://www.who.int/news-room/commentaries/detail/transmission-of-sars-cov-2-implications-for-infection-prevention-precautions

EUROVENT SUMMIT ANTALYA
25-28 OCT 2022
#BuildingBridges

İSKİD 30 YIL YEARS

Evaluating Covid Pandemic Effects on IAQ

- According to WHO, coronavirus is airborne in crowded and inadequately ventilated indoor spaces, where the short-range aerosol transmission cannot be disregarded
- As a reaction, questions arise on how architects and planners possibly will put in new ideas or upgrade existing spaces to the growing indoor requirements.

EUROVENT SUMMIT ANTALYA
25-28 OCT 2022
#BuildingBridges

İSKİD 30 YIL YEARS

Evaluating Covid Pandemic Effects on IAQ

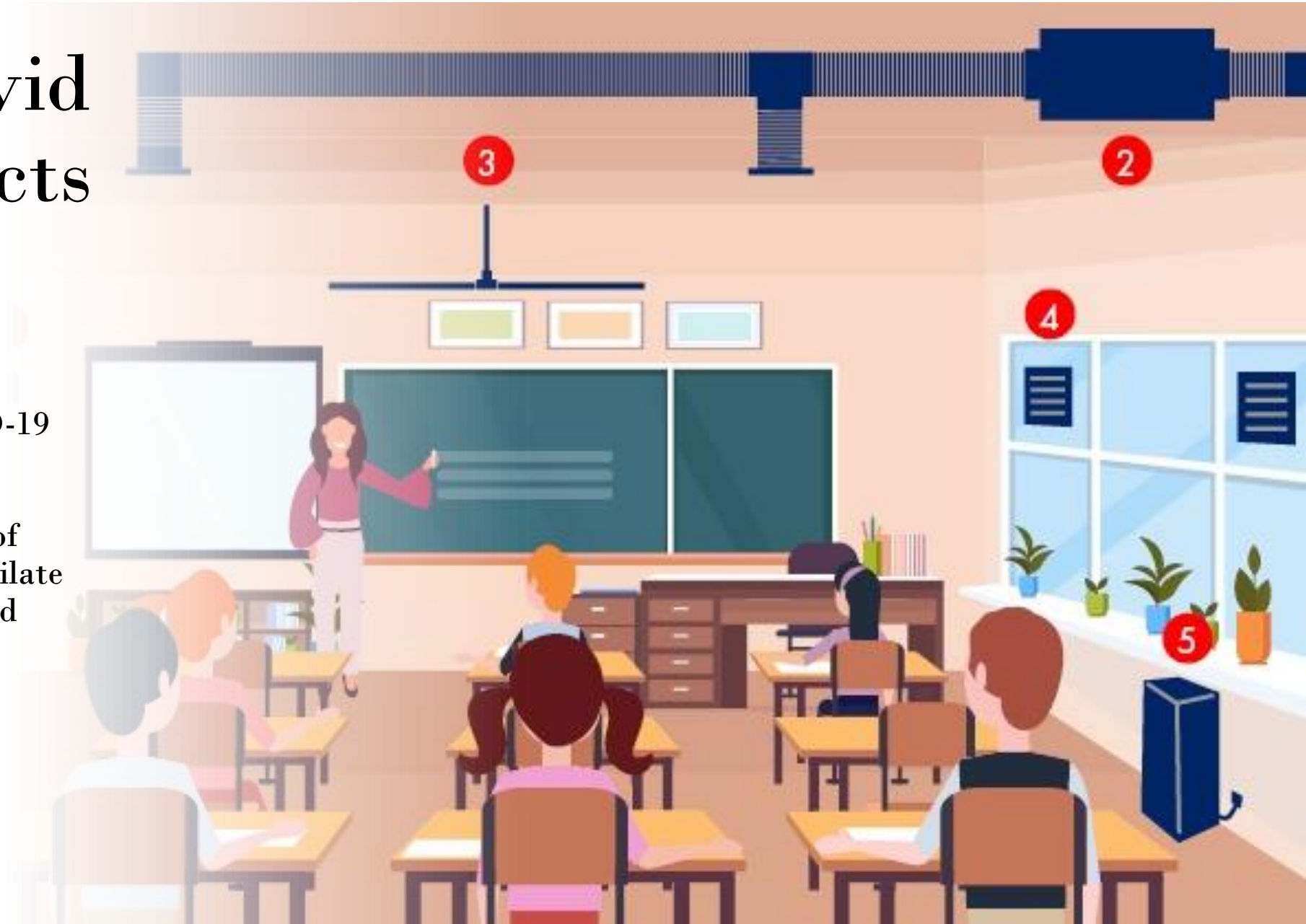
The solution to the problem is twofold: one is by adopting measures such as maintaining social distance in indoor spaces, hand washing, regular surface sanitization, implementing lockdown, wearing a facemask in a crowded place; second is to provide a proper ventilation rate to reduce exposure to aerosols in confined areas either by natural, mechanical ventilation or by portable, wall-mounted or in-duct air cleaners.

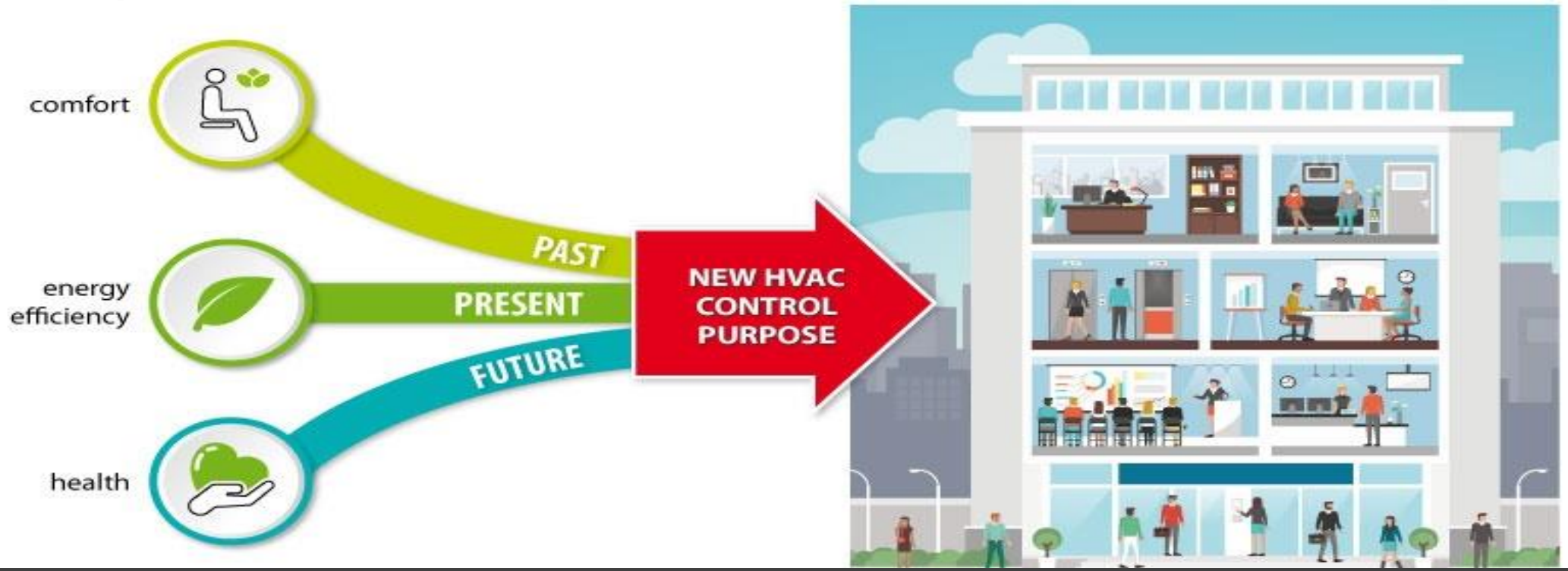
EUROVENT SUMMIT ANTALYA
25-28 OCT 2022
#BuildingBridges

İSKİD 30 YIL YEARS

Evaluating Covid Pandemic Effects on IAQ

As it became clear that the COVID-19 virus spreads through aerosols and droplets in the air as well as close contact, the design and operation of buildings and the potential to ventilate them well became public health and policy priorities.





Evaluating Covid Pandemic Effects on IAQ

Based on the studies, many organizations worldwide prepared guidelines for improving indoor air quality in public buildings, commercials, retail, and public transport to enhance people's health and prevent the spread of coronavirus

Evaluating Covid Pandemic Effects on IAQ

In fact, a recent study suggested that enhancing indoor air quality (IAQ) could be as effective in reducing aerosol transmission of viruses as vaccinating 50-60% of the population*

Evaluating Covid Pandemic Effects on IAQ

Achieving a target condition for IAQ means to ensure that the concentrations of the airborne contaminants are maintained lower than the reference values laid down by legal authorities, taking into account the state-of-the-art knowledge about the health risks associated to exposure or the caused annoyance.

EUROVENT SUMMIT ANTALYA
25-28 OCT 2022
#BuildingBridges

İSKİD 30 YIL YEARS

Evaluating Covid Pandemic Effects on IAQ

Possible action strategies to ensure a good IAQ inside buildings are:

- ❑ Removal of polluting sources
- ❑ Localized extraction

- ❑ Dilution of pollutants in fresh air
- ❑ Air cleaning /air filtration

EUROVENT SUMMIT ANTALYA
25-28 OCT 2022
#BuildingBridges

Evaluating Covid Pandemic Effects on IAQ

COVID-19: an accelerator for indoor air quality

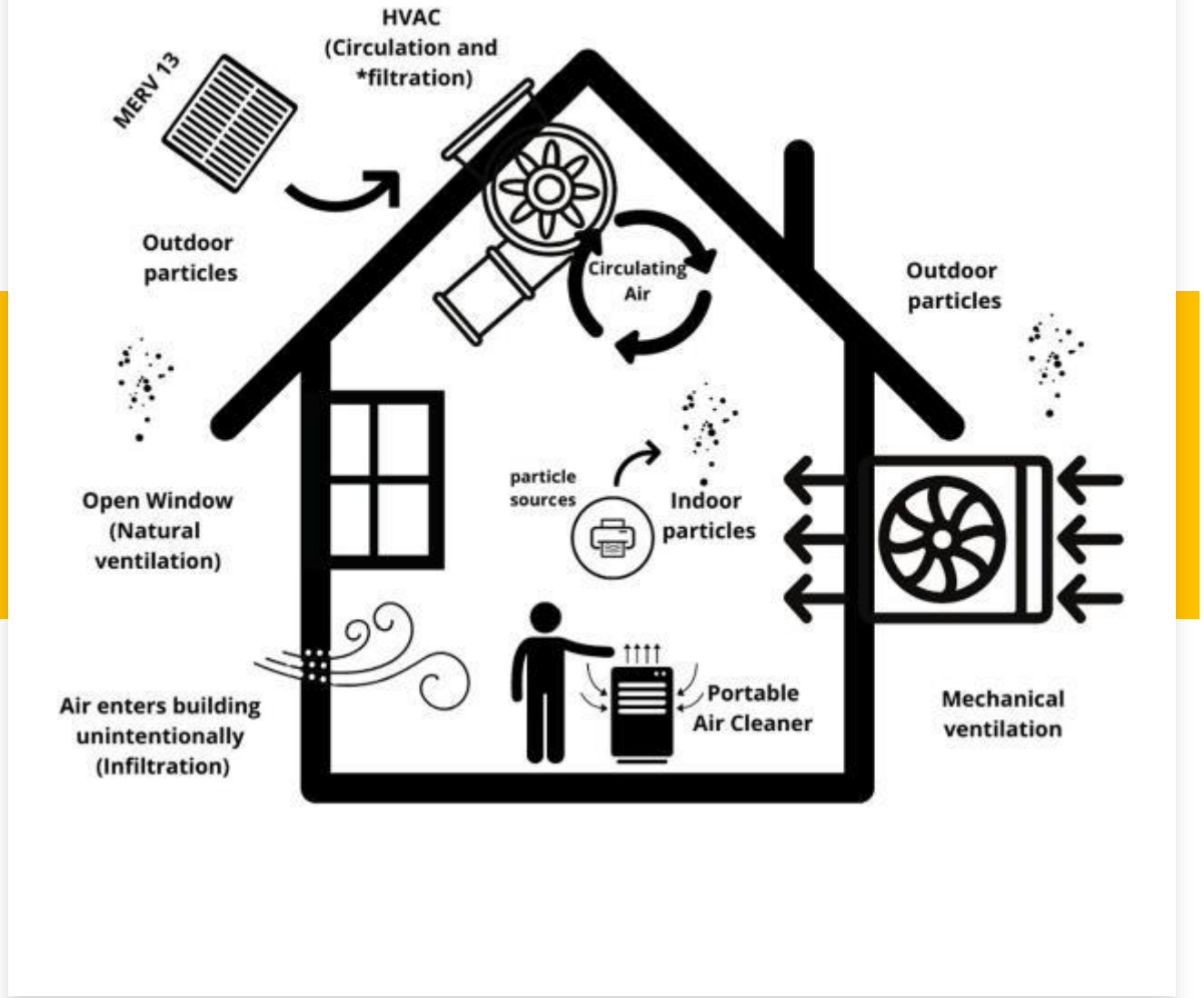
- Formerly a regulatory issue, it has now become a priority for property professionals.
- Indoor air quality (IAQ) is a question not only of comfort for building users but also of health requirements that have become central since the COVID-19 pandemic began.

İSKİD 30 YIL YEARS

Evaluating Covid Pandemic Effects on IAQ

COVID-19 Brings Indoor Air Quality Monitoring Upfront

- Some affordable indoor environmental quality monitoring systems, capable of measuring the levels of multiple parameters such as temperature, humidity, particulate matter and carbon dioxide (CO2) using low-cost sensors.These kinds of solutions have been considered reliable tools for a simplified but highly informative investigation of IAQ.
- Although low-cost sensors have several limitations, they can at least provide a reliable qualitative assessment of the indoor environment and detect inadequate ventilation systems.



Evaluating Covid Pandemic Effects on IAQ

In particular, in closed spaces presenting a high density of occupancy (such as schools, transports, restaurants, shared offices etc.), the indoor air quality (IAQ) should be systematically monitored, in order to identify and implement the most effective measures(ventilation, filtration and air disinfection) to ensure healthy air for all.

EUROVENT SUMMIT ANTALYA
25-28 OCT 2022
#BuildingBridges

İSKİD 30 YIL YEARS

Evaluating Covid Pandemic Effects on IAQ

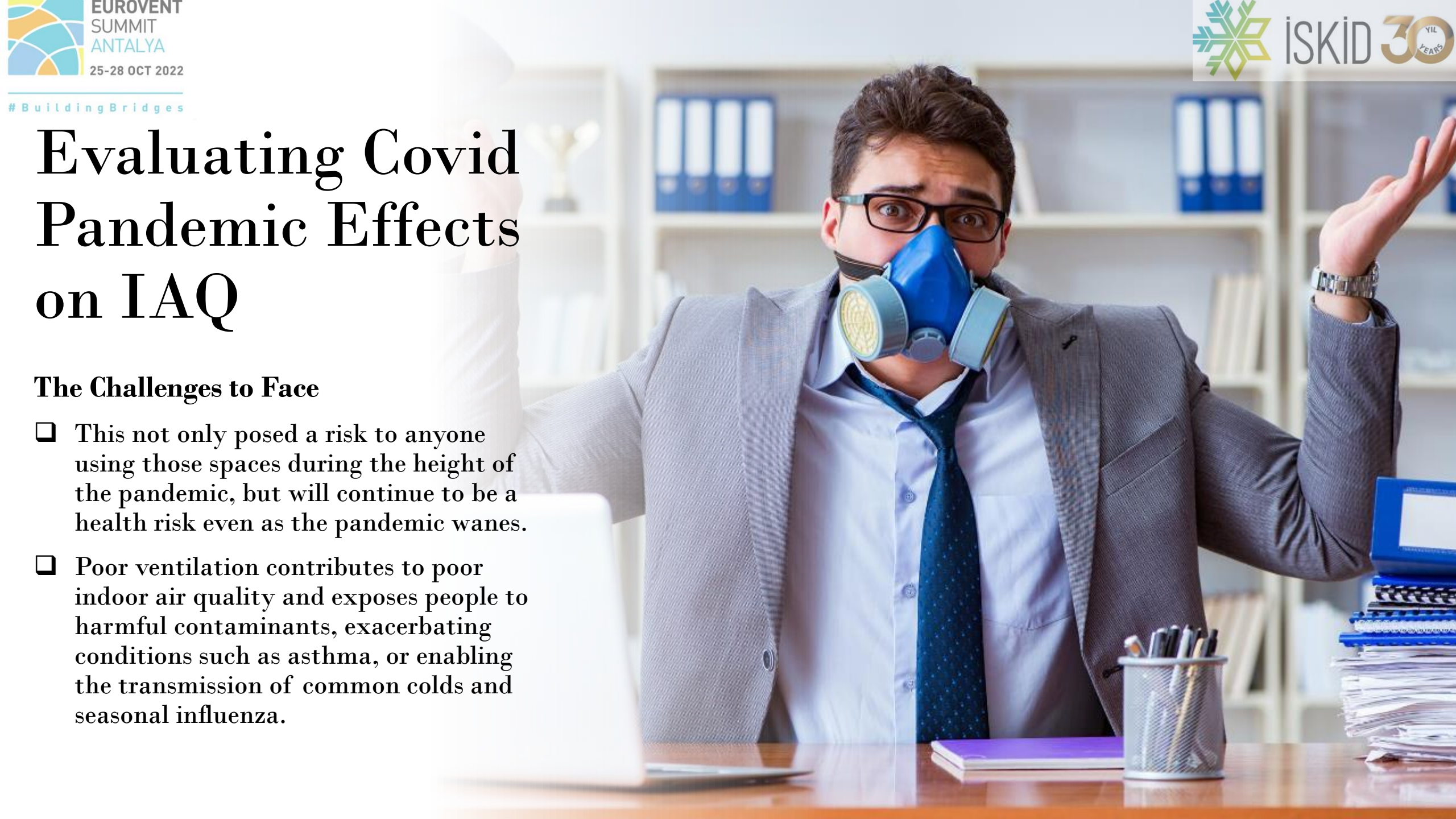
The Challenges to Face

While many buildings mobilised quickly to provide hand sanitiser, encourage the use of face coverings, and implement social-distancing measures, it was not always easy to provide clean and safe air for people to breathe.

EUROVENT SUMMIT ANTALYA
25-28 OCT 2022
#BuildingBridges

İSKİD 30 YIL YEARS

Evaluating Covid Pandemic Effects on IAQ



The Challenges to Face

- This not only posed a risk to anyone using those spaces during the height of the pandemic, but will continue to be a health risk even as the pandemic wanes.
- Poor ventilation contributes to poor indoor air quality and exposes people to harmful contaminants, exacerbating conditions such as asthma, or enabling the transmission of common colds and seasonal influenza.

Evaluating Covid Pandemic Effects on IAQ

The Challenges to Face

- Most of the indoor enviroments lack the use of a controlled ventilation and filtration system
- The ones that have a ventilation system are all outdated and needs to be renovated

EUROVENT SUMMIT ANTALYA
25-28 OCT 2022
#BuildingBridges

İSKİD 30 YIL YEARS

Evaluating Covid Pandemic Effects on IAQ

The Challenges to Face

- Outdoor air pollution leaves us no choice but to filter the so called «Fresh Air» before it's introduced to the indoors
- Maintaining energy efficiency while providing safe air to indoors

EUROVENT SUMMIT ANTALYA
25-28 OCT 2022
#BuildingBridges

İSKİD 30 YIL YEARS

Evaluating Covid Pandemic Effects on IAQ

Conclusion

- While we expect our buildings to have water that is safe to drink, we may not consciously have that same expectation for clean air.
- The quality of indoor air is not monitored or reported like energy performance or food hygiene, and many buildings have no formal management in place to monitor this.

EUROVENT SUMMIT ANTALYA
25-28 OCT 2022
#BuildingBridges

İSKİD 30 YIL YEARS

Evaluating Covid Pandemic Effects on IAQ

Conclusion

The quality of the air we breathe in the multiple microenvironments should also be protected by a similar approach!

You wouldn't drink dirty water.

So why are you still breathing dirty air?

150 years ago Greater Manchester got clean water.
Isn't it time we got clean air?

Evaluating Covid Pandemic Effects on IAQ

Conclusion

- COVID-19 has been a wake-up call about the importance of good ventilation and now is an opportune moment to take steps to improve indoor air quality more broadly.
- It is vital that we raise awareness of good practice, making buildings that manage clean air well stand out.
- This will encourage action from others, allow individuals to assess their own risk, and help to ensure we can all play a role in maintaining healthy environments, from our homes to our workplaces.


#THANKYOU
RAKIDAIK
RAKIDAIK
We Can Do It!
FOTO
GANA
DORA
SINCRO
NIZADOS
Life
MS