



# Intelligent Buildings and COVID-19

## Smart & Healthy Buildings Summit

Sydney, Australia

March 24-25, 2021

Ron Zimmer, CABA President & CEO

Connect to what's next<sup>TM</sup>

[www.caba.org](http://www.caba.org)



# CABA Vision, Mission, Goals

## Vision

Empowers connectivity among people, spaces and technology for a better tomorrow.

## Mission

CABA fosters informed thought leadership and collaboration within intelligent built environments to deliver a more livable, sustainable and efficient connected world.

## Goals

- ✓ Develop actionable, quality content that is relevant to members.
- ✓ Maintain an effective content management system that enhances the user experience.
- ✓ Increase awareness of CABA and intelligent built environments.
- ✓ Foster collaboration among industry thought leaders and organizations.

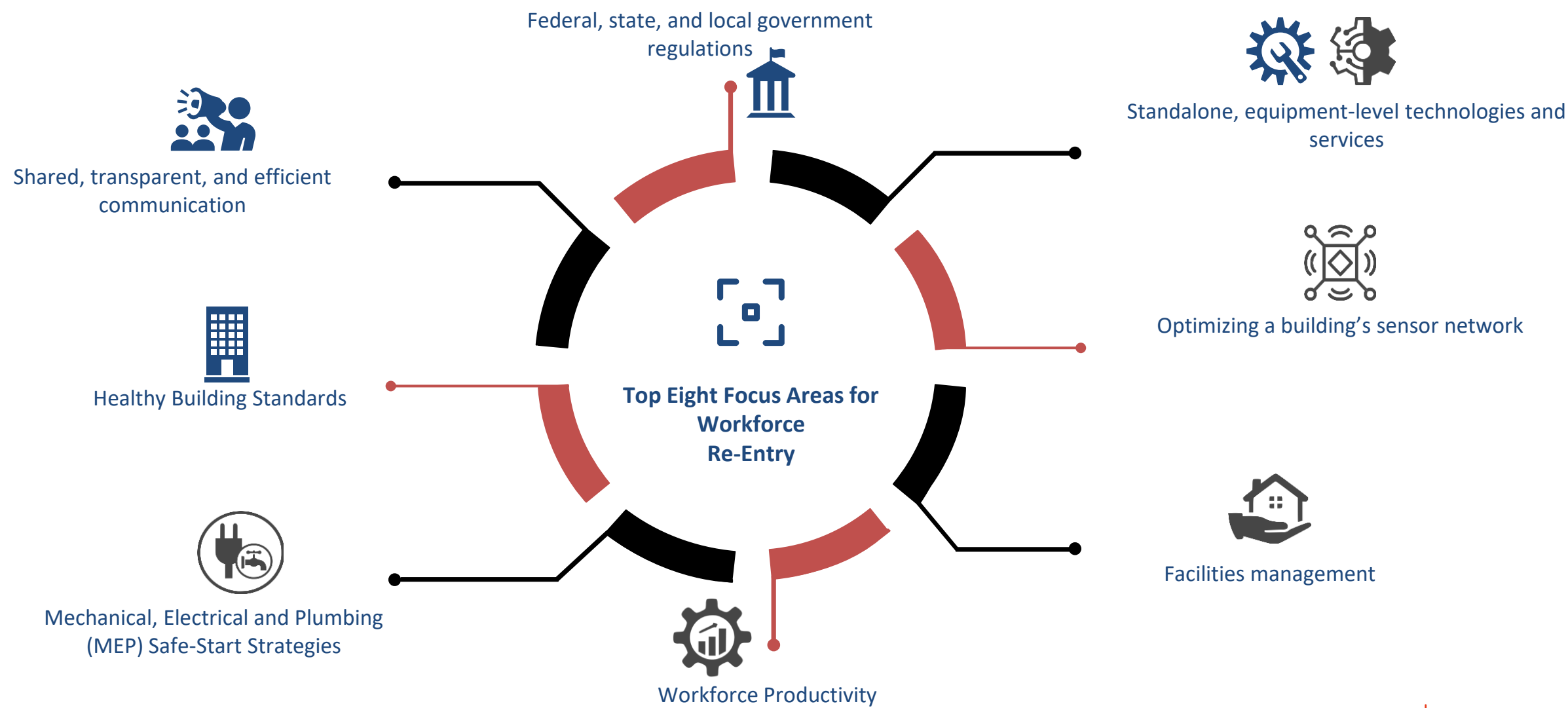


# CABA Intelligent Buildings and COVID-19: Leverage Technology for Safer and Healthier Environments Research Report

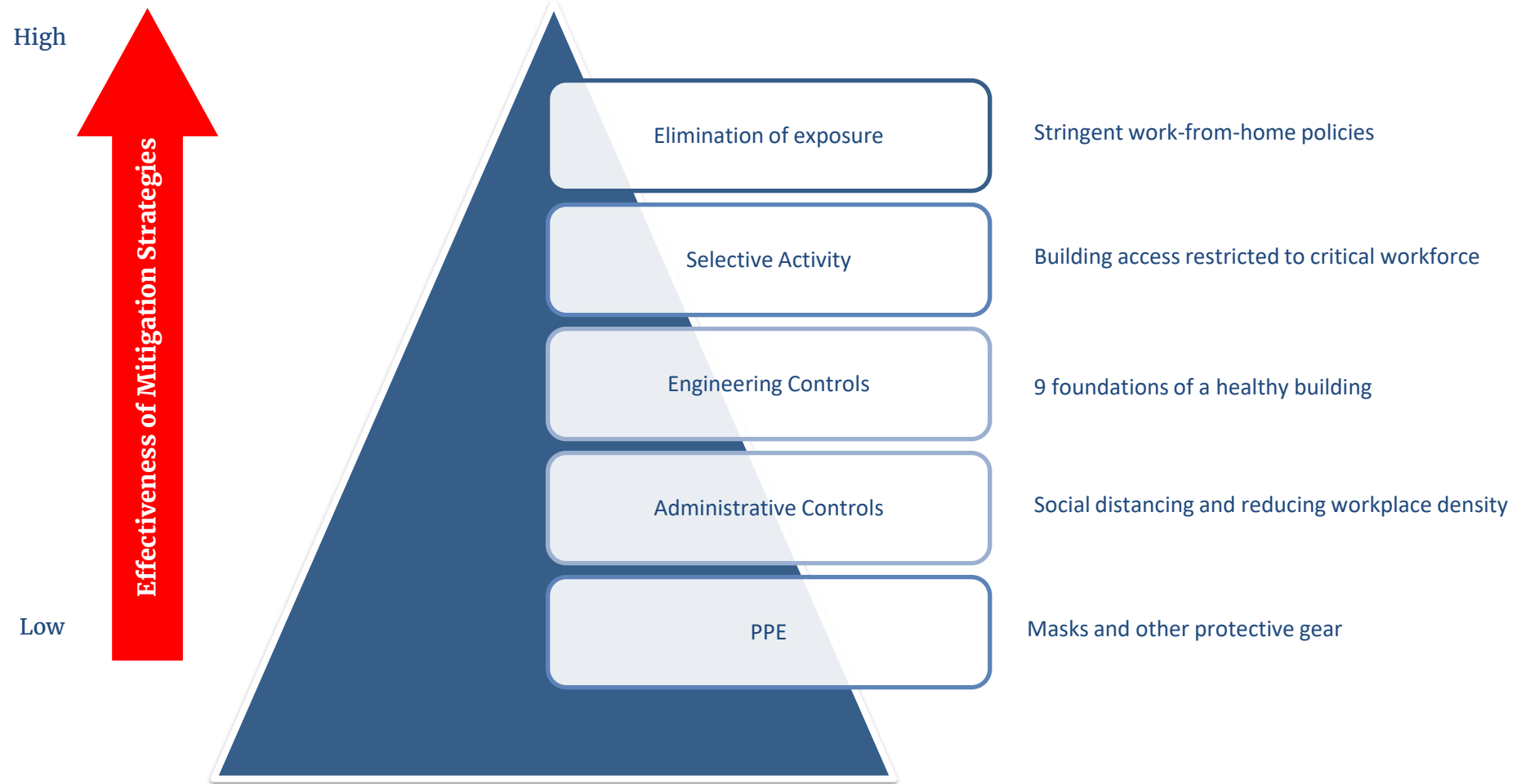




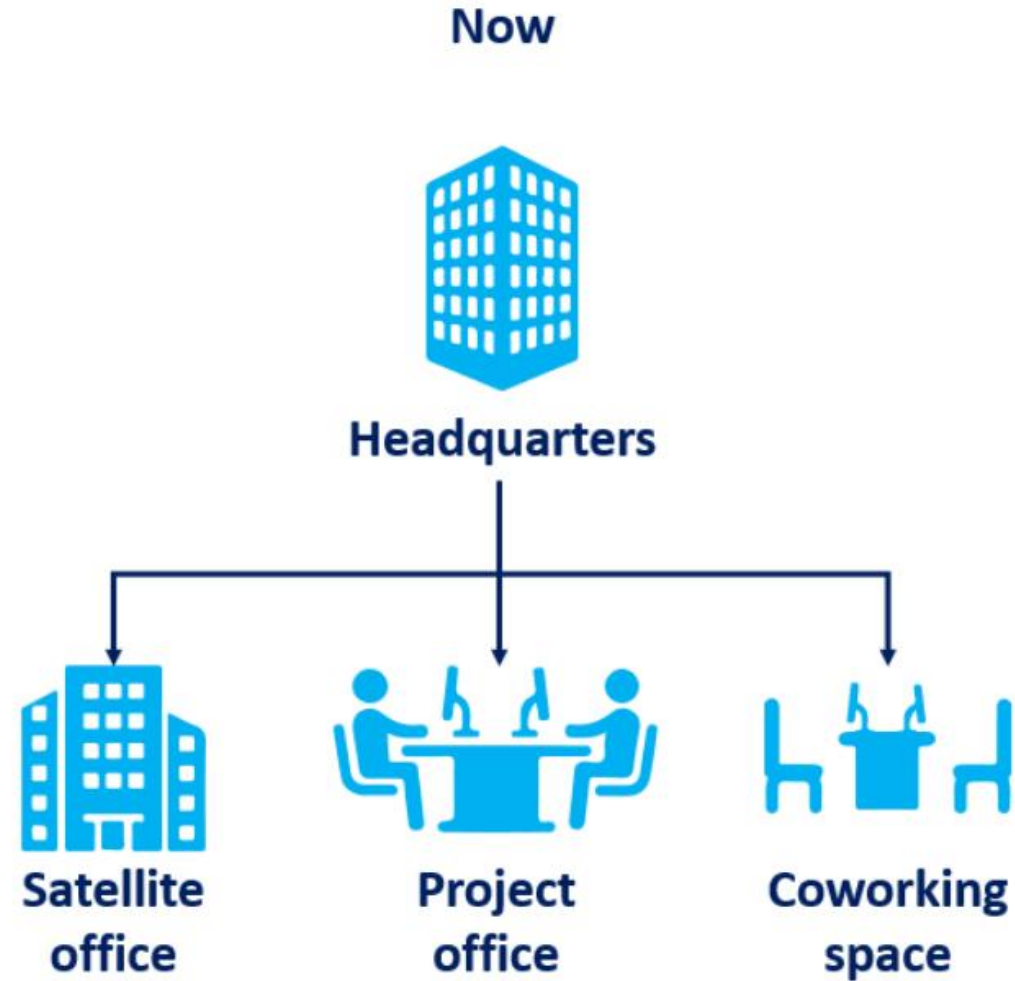
# Areas to Focus on to Mitigate COVID-19 Spread in Buildings



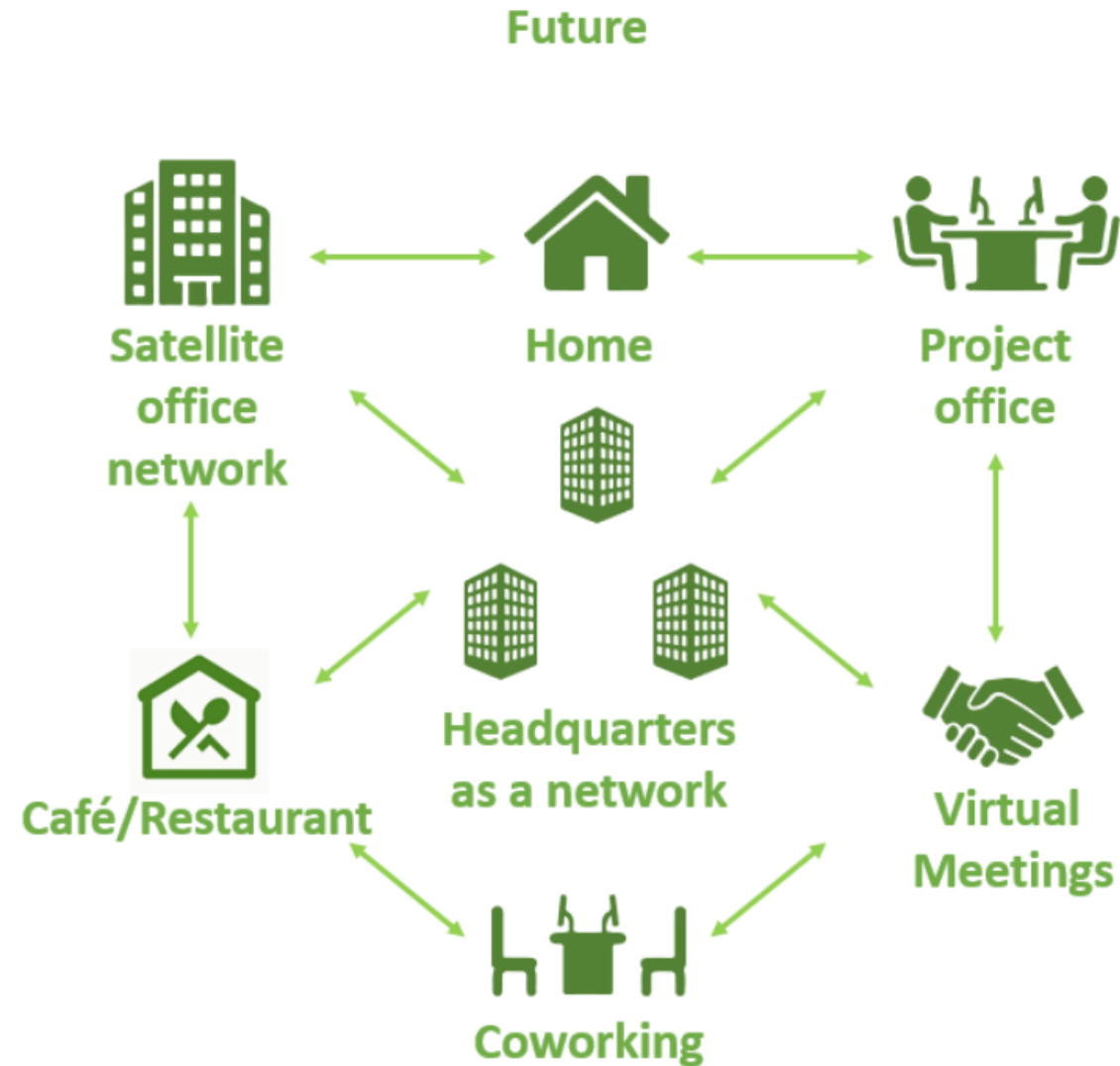
# Mitigation Strategies for COVID-19 in Workplaces



# Future of Workplaces



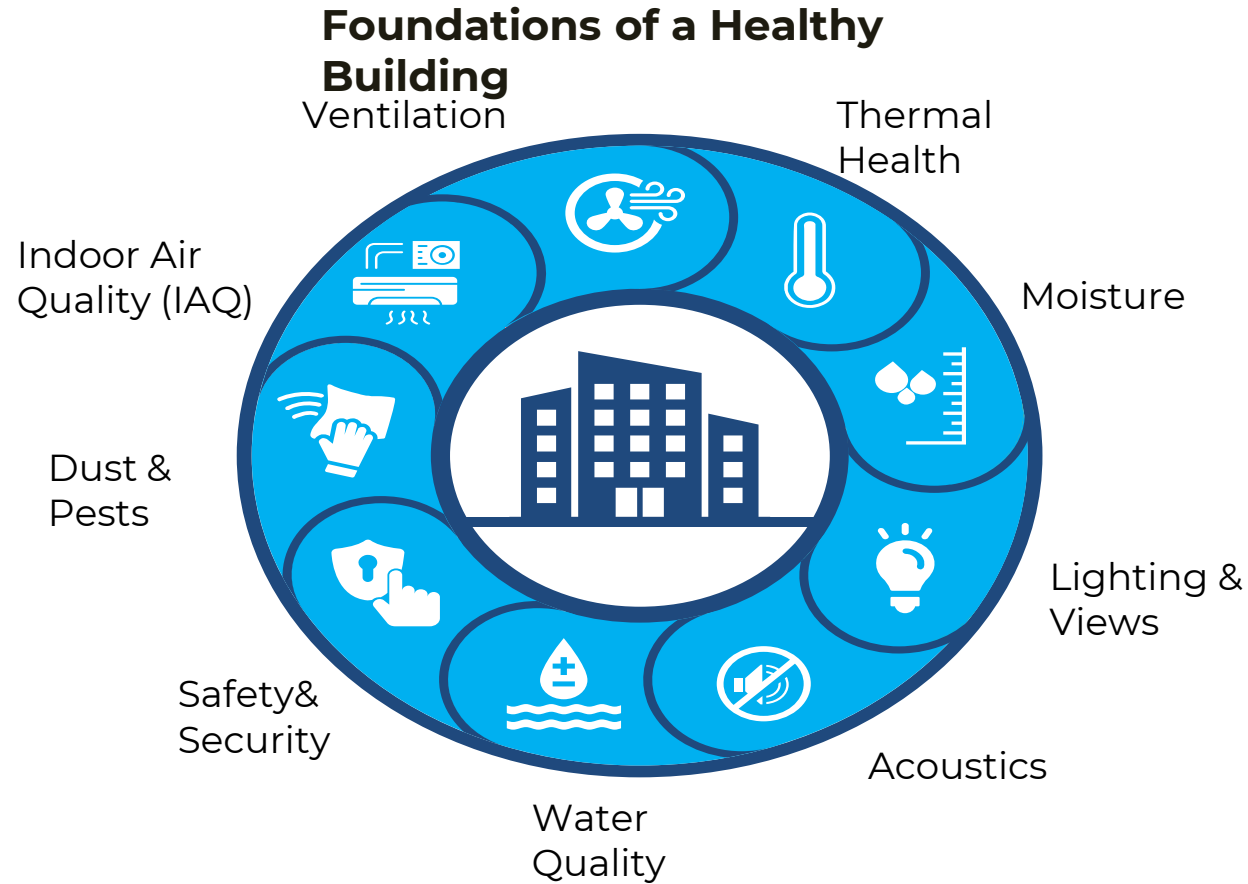
# Future of Workplaces





# Implications for Technology and Resource Planning

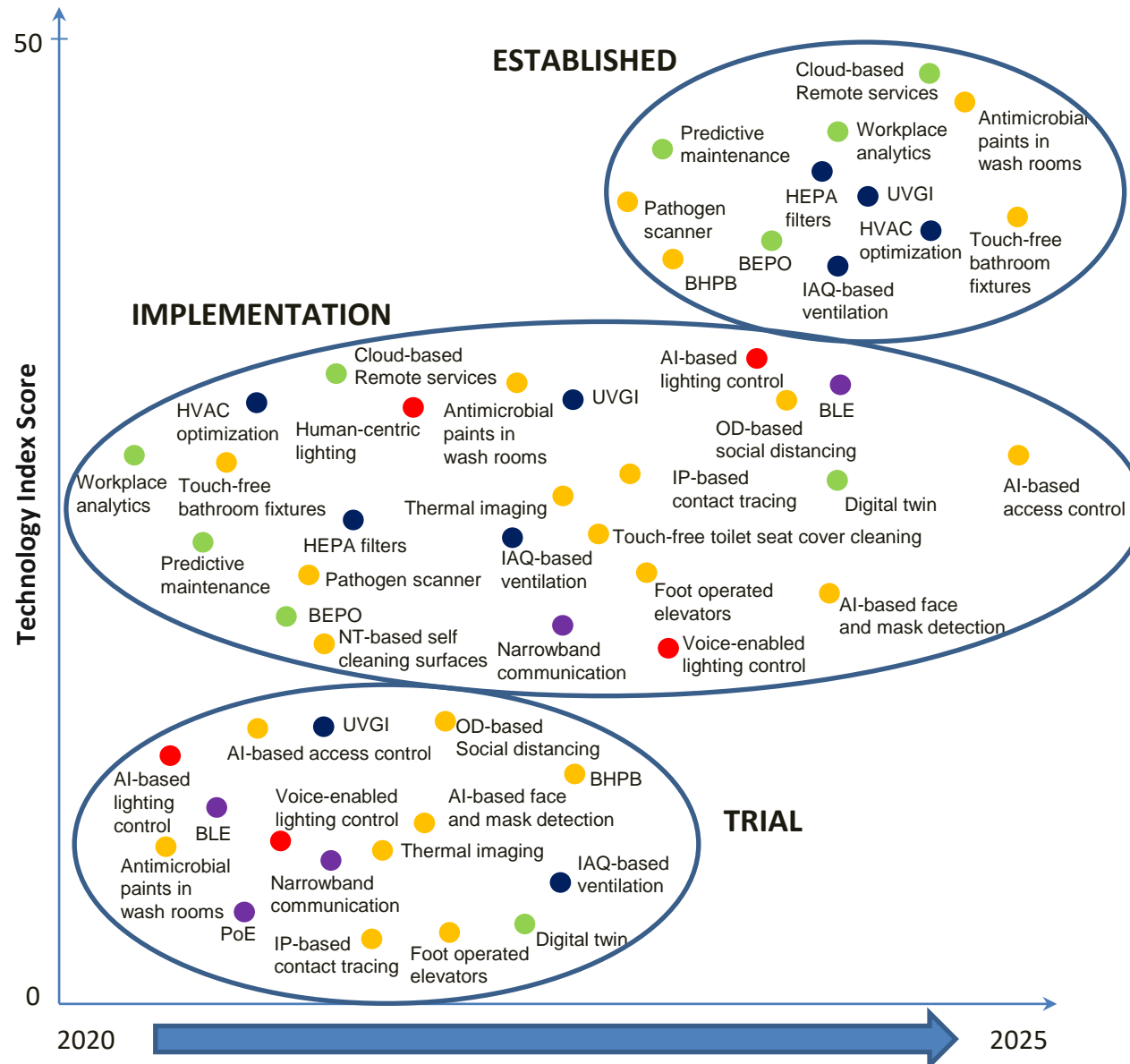
Along with basic mitigation measures it is critical for building owners to adopt and develop technology-based MEP safe-start strategies prioritizing nice foundations of healthy buildings.



- The American Industrial Hygiene Association (AIHA) emphasize the importance of relative humidity control.
- AIHA advises building managers to hire a certified industrial hygienist and other occupational health and safety professionals to review and assess the risks.
- Building owners must adopt technology-based building controls involving AI-driven buildings, cloud-based remote services and IoT-enabled sensor networks to develop MEP safe-start strategies



# Technology Radar 2020-2025



## Lighting & Control

- AI-based lighting control
- Voice enabled Lighting Control
- Human-centric Lighting

## Automation & Energy Optimization

- Building energy performance optimization (BEPO)
- Cloud-based remote services
- Predictive maintenance
- Digital twin
- Workplace analytics

## HVAC & IAQ

- HVAC optimization
- Indoor air quality (IAQ)-based ventilation
- Ultraviolet germicidal irradiation (UVGI)
- High efficiency particulate air (HEPA) filters

## Post-COVID Applications

- Occupancy detection (OD) based social distancing
- Indoor positioning (IP) based contact tracing
- AI-based face and mask detection
- Antimicrobial paints in wash rooms
- Foot operated elevator
- Touch-free bathroom fixtures
- Thermal imaging
- AI-based access control
- Building health performance benchmarking (BHPB)
- Pathogen scanner
- Nano technology (NT)-based self cleaning surfaces
- Touch-free toilet seat cover cleaning

## Communication

- Power over Ethernet (PoE)
- Narrowband communication
- Bluetooth Low Energy (BLE)

# Optimizing HVAC Systems to Reduce COVID-19 Transmission and Improve Effectiveness



# Facility Managers' Technology and Service Requirements During the Pandemic

- Building health assessment
- Indoor air quality (IAQ) solutions
- Data driven services
- Health and wellness standards



# Intelligent Buildings Dictated by the “New Normal”

## Reversing Open Offices



Redesigning with adequate occupant distancing  
Refurbishing office setups  
Supporting hybrid workforce, WFH

## Touch-free & Contact-free Infrastructure



Retrofitting to no-touch systems, including entry and access  
Foot activated elevators (Toe-to-Go)<sup>®</sup>  
Touch less fixtures and controls, faucets

## Deep cleaning and sanitation of facilities



Frequent cleaning with enhanced standards  
Space usage measurement technology for occupant management and optimizing cleaning with pathogen detection capability offsite

## Air Management, Health and IEQ



Non-thermal, plasma technology to reduce cross-contaminant risks (AirPHX)<sup>®</sup>  
Quality ventilation to reduce pathogens  
Anti-microbial paints  
Non-contact infrared sensors with integration on mobile platforms

## Buildings & Systems Recalibration



Retuning, recalibration and augmentation of systems for reentry  
Incremental checks, including re-certs

## Working Capital Shortage



Clients delaying payments, projects, with wage liabilities  
Existing pool of FM workers under-prepared  
Impeded supplies against greater demand

# Key Takeaways

Negative growth impact witnessed in lighting and controls , heating, ventilation and air conditioning equipment and controls, building automation systems controls, and facilities management markets.

Positive growth software service segments such as digital lighting services, building energy management systems, artificial intelligence (AI)-driven building solutions, building information modeling, and digital twins are set to play a critical role in providing data-driven insights to facility managers.

Facility managers to follow occupational safety and health administration COVID-19 planning guidance for effective control measures as well as American society for heating, refrigeration and air conditioning engineers guided mechanical, electrical and plumbing (MEP) safe-start strategies for in-depth engineering controls in workplaces.

Facility managers need to adapt to some of the key changes that are required in the comprehensive building health assessment, prioritizing indoor air quality, adoption of data-driven services and compliance with building health standards to evaluate the right balance between maintaining health and wellbeing as well as maximize productivity of occupants

WELL and RESET healthy building standards will have a crucial role to play in creating a framework for healthy building performance index to assess the health performance of buildings. Accredited professionals of those standards will assess and certify health performance of buildings.





# Creating Resilient Smart Buildings: An Illustration



Fulton East, a 12-story, 90,000-square-foot office and retail building in Chicago's Fulton Market district, is the first commercial building to be designed, constructed, and commissioned for a post-COVID-19 environment.

- A Toe-To-Go elevator system provided by MAD Elevator Inc. with foot-operated call buttons to reduce the spread of virus.
- An airPHX purification system that uses atmospheric cold plasma technology to convert some oxygen molecules into oxidizing molecules to kill pathogens in the air and on surfaces.
- Touch-free thermal scanning in the lobby to measure body temperature.
- A touch-free access control system with mobile access.
- Paint Shield, a microbicidal interior latex paint from Sherwin-Williams, on washroom walls to kill pathogens such as Staphylococcus aureus, methicillin-resistant Staphylococcus aureus (MRSA), Escherichia coli (E. coli), vancomycin-resistant Enterococcus faecalis (VRE), and Enterobacter aerogens.
- Sloan touch-free faucets, soap dispensers, and flush valves, and SloanTec hydrophobic glaze on washroom fixtures.

# Contact CABA

## Continental Automated Buildings Association (CABA)

**T: 613.686.1814**

**TF: 888.798.CABA |2222|**

**Email: [caba@caba.org](mailto:caba@caba.org) | Website: [www.caba.org](http://www.caba.org)**

**Twitter: [http://www.twitter.com/caba\\_news](http://www.twitter.com/caba_news)**

**LinkedIn: <https://www.linkedin.com/groups/2121884/>**

**Connect to what's next™**

