

Road to Recovery

Planning for Reopening by Re-evaluating and Responding

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Greener by Design 

Some Recent Headlines...

Empty Hotels. Idled Tour Buses. The Pandemic Is Devastating Tourism.

Hotels sit vacant during the pandemic. But some locals don't want homeless people moving in.

Hilton closes 1,000 hotels, experiences 56% decline in revenue per room resulting from coronavirus

Hotels take hit during COVID-19 outbreak

Planning for Reopening

Steps to getting there

Coordinate, Communicate – Cleaning, Food, Security, Workers, Vendors all must be made aware of the plan. ID issues and resources that are unique to your industry

Take Steps – assess/upgrade HVAC, UV, Filters, Negative Pressure, Advanced Cleaning, Temperature Reading, Humidity Control

Capture and Control – ID what measures you will need to take to bring your facility(s) back on line. Capture all costs for reimbursement. Control the restart by communicating what steps you will be taking

Set Standards – Identify Indoor Environmental Quality priorities. Set indoor air quality standards for your facility(s). Borrow existing standards from LEED or other sources that are available. Have a plan for cleansing and/or flushing out your building pre-opening.

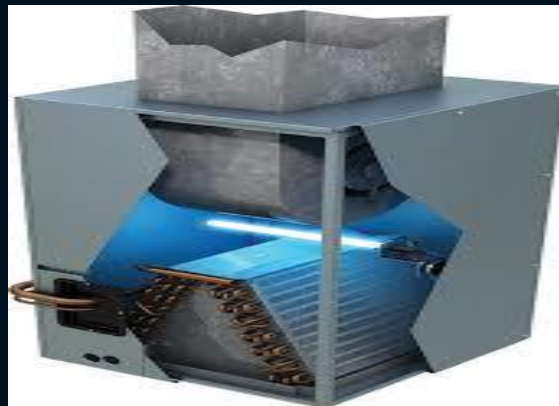
Yes

No

Wayfinding and Entrance Control – How are we directing our stakeholders to enter and navigate our building? What entrances are open? What steps are we taking when people enter the building?

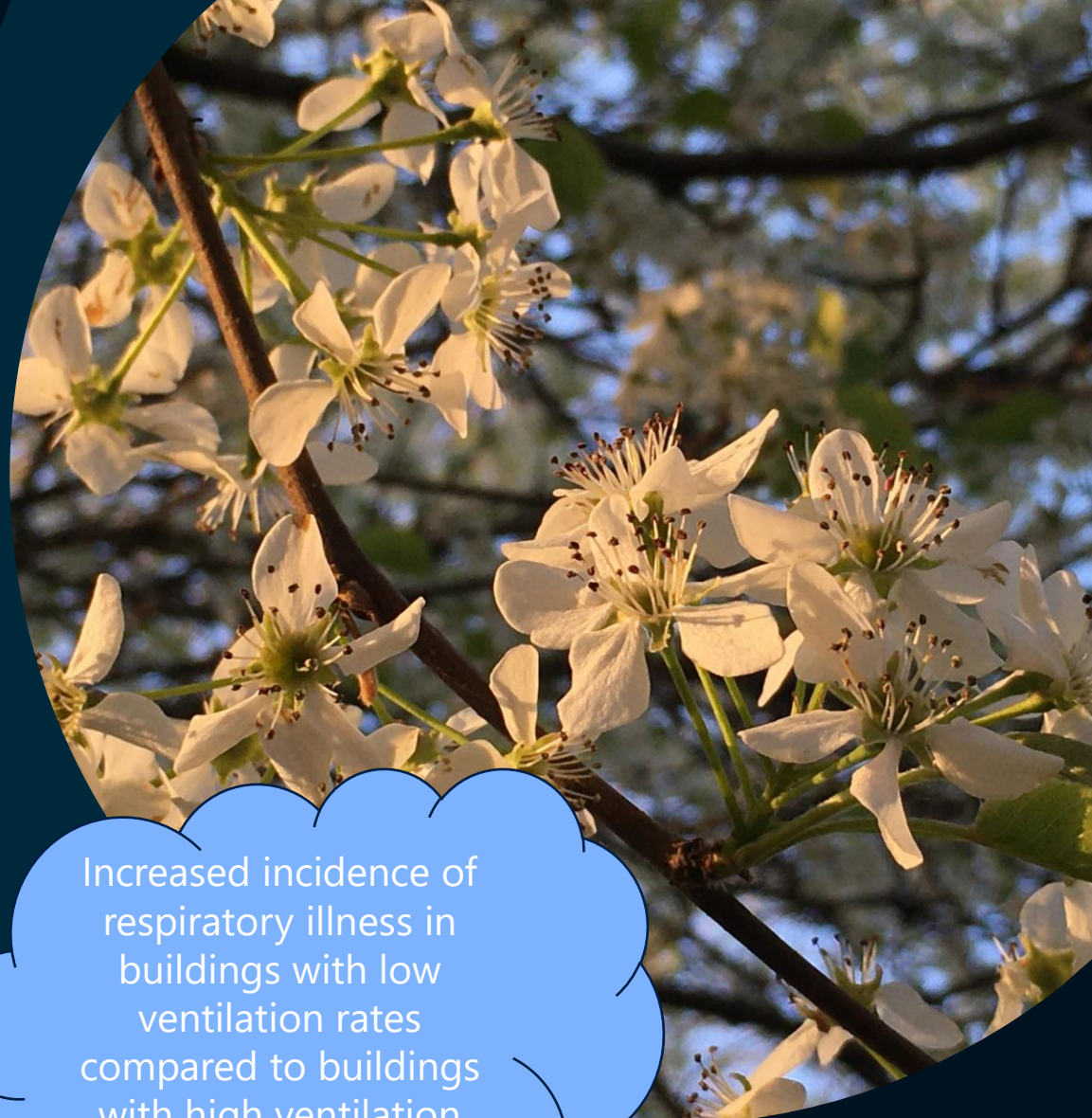
Temperature Reading – How do we monitor people entering the building or facility? Can we use existing security measures that already exist? How can we prevent sick people from getting beyond the 'gate'.

Air Quality and UV – Assess / upgrade HVAC system, replace filters, add ultraviolet light to kill germs, examine humidity and outside air control to keep healthy building environment.



Navigating Steps to a Healthy Building

1. Evaluate and assess where you are starting from
 - Age & condition of building and systems?
 - Built with green building standards and /or a focus on Indoor Environmental Quality (IEQ)?
2. Proactive IEQ - What steps can you take to optimize IEQ?
3. Indoor Air Quality (IAQ) - Prioritize Ventilation system design, maintenance and monitoring
4. What resources (standards, guidelines, rating systems) apply and how can they help?



Increased incidence of respiratory illness in buildings with low ventilation rates compared to buildings with high ventilation rates.

Source: <https://iaqscience.lbl.gov/vent-illness>

Standards, Guidelines, Rating Systems

- Whole Building Design Guide
- ASHRAE
currently available for free:
IAQ Design Guide and Reference Materials
COVID-19 Preparedness Resources
- US EPA –Indoor Air Quality



Standards, Guidelines, Rating Systems



- **Leadership in Energy & Environmental Design (LEED)**

- Enhanced Indoor Air Quality Strategies
- Construction IAQ Management Plan
- Indoor Air Quality Assessment (flush out)



- **Facilities Guidelines Institute (FGI)**

Healthcare Planning, Design, and Construction

- Infection Control Risk Assessment (ICRA) Standard, published by the American Society of Healthcare Engineering and the U.S. Centers for Disease Control and Prevention (Ventilation, filtration, water systems management, finishes surfaces)



- **Fitwel**- maximize health & safety [Center for Active Design COVID-19 Resources](#)



- **Well Building**



- **Living Building Challenge**

Facility Considerations



How will the facility be evaluated and confirmed as ready for occupancy?



How will access be controlled (and enforced) during occupied hours?



How will areas be designated as "accessible" or "not accessible"?



How will building area access be controlled, monitored and enforced?

Primary Facility Considerations:

Occupancy Management & Control

- **Space planning and circulation control** – Building managers should identify and document methods to control access by occupants, visitors and vendors.
- Building managers are encouraged to **manage the flow of occupants** wherever possible and practical from arrival and parking, to departure.
- Evaluate building spaces, mechanical systems and maintenance resources
- Develop **practical maximum occupancy limits**
- Establish and document open access and restricted access areas
- Prepare access control measures i.e. wayfinding, signage, barricades, security etc.
- Implement **compliance verification and management plan**
- Identify **resource requirements** for compliance monitoring and control

Primary Facility Considerations:

Building Systems

- Most commercial HVAC systems operate on a “daytime” or “normal working hours” schedule.
- HVAC systems and controls should be evaluated and modified to accommodate changes to occupancy scheduling and loading requirements.
- Equipment should be maintained and repaired as necessary to perform to design capacities. Equipment should be calibrated to operate outside air and exhaust consistent with building pressurization requirements, cleaning and sanitizing dwell times and air purging during unoccupied hours.
- **Pre-filters and final filters should be changed** frequently to minimize air system pressure drops and flow reductions. Ultra-violet (UV) technologies may be added where applicable.
- **Humidification control** should be added and managed wherever practical.

Secondary Facility Considerations:

Logistics

- Building managers are encouraged to develop facility “turn over” plans for cleaning spaces during staggered occupied hours and/or unoccupied hours.
- Cleaning and disinfection with high VOC levels should be planned and executed with a coordinated operation of the HVAC system serving those areas. Duct, diffuser, plenum and coil cleaning should be considered and prioritized based on historic and future loading estimates.
- Local resources should be identified and purchasing plans should be developed for essential supply chain times. Contractors and supplies should be quickly engaged and secured for services and supplies during the transition period.
- Each facility should undergo a regular third-party or peer-level review and evaluation to document compliance, share lessons learned and prioritize deficiencies in real time.

NEXT STEPS



1. Manage and preserve internal resources by engaging an outside, trusted advisor to assist with the evaluation and planning tasks.
2. Procure materials and services to correct deficiencies or implement new recommendations identified in the plan.
3. Coordinate with the trusted advisor to prepare an **auditing protocol** to measure performance, document compliance and capture direct costs and other resource requirements to apply for stimulus reimbursements and financial assistance.
4. Perform a **routine review of practices and efficacy of measures**, modify and update planning as required.
5. Coordinate with local and partnering agencies/facilities to **share resources** and compliment separate but similar efforts in other buildings.

Continuity

- Continuation of Business/Operations
- Create Contingency Team
- Expect Disruptions
 - Power/Data/Internet
 - Other Basic Services
 - Employee Availability
 - Travel Issue
 - Access to Facilities
- Fulfilling Ongoing Obligations
 - Meeting Legal Requirements
 - Providing Basic Services
 - Retaining/Supporting Employees
 - Maintaining External Relationships
 - Sustainable Finances/Cash Flow
- Human Factors (Perhaps Most Important)



Reopening

- Leadership is Essential
- Charting Course Back to Normal
- Dedicate Resources to Address Likely Issues
 - Assigned Personnel
 - Outside Expertise
- Create Your Strategy for Restart
 - Assign Tasks Now
 - Internal
 - Phased Reopening
 - Prioritize Return
 - Anticipate Legal/Personnel Issues
 - Facilities Operations
 - External
 - Expect Disruptions in Supply Chain/Partners
 - Plan How to Interact with Outside World
- Prepare to Respond
- Survive to Thrive



THANK YOU!

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