FOCUS on FACILITIES
Diocese of Cleveland Facilities Services Corporation

Commissioning Infection Control

The full impact of COVID-19 really hit home in the first half of 2020 when buildings were shut down and people were required to work from home and kids began learning how to participate in school through virtual learning. In sync with all this happening, ASHRAE (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) became very proactive by establishing their ASHRAE Epidemic Task Force, their email covid-19@ashrae.org, their web site resource https://www.ashrae.org/technical-resources/commercial#general, and 3-links for facility managers to access from their web site:

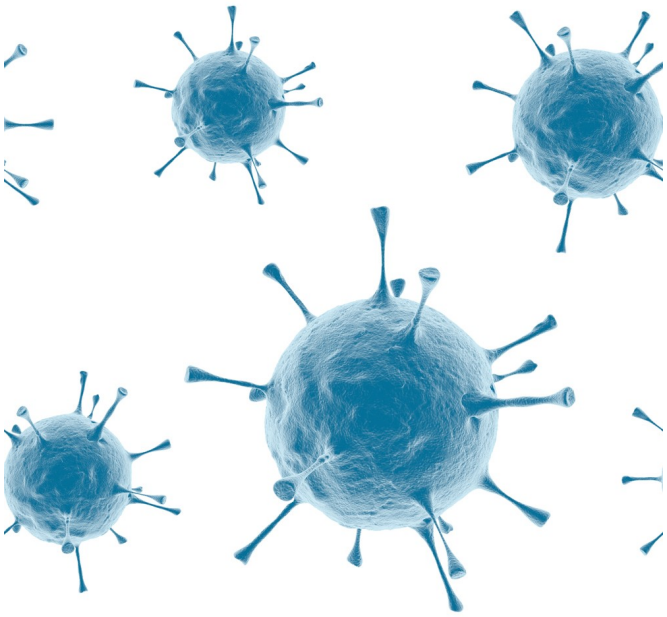
⇒ Pre Re-Opening Facility Closed, Essential Only
⇒ Re-Opening Facility Open, Limited Occupancy
⇒ New Normal Business as Usual, Full Occupancy

But what about "before there was COVID-19?" Well – there was and still is an overall concern about infection control but often these concerns were overlooked partly because building owners didn't want to know they might have an infection problem, especially in hospitals. Today this discussion goes well beyond healthcare facilities as noted in ASHRAE's web page, "**Communities of Faith**".

Dr. Stephanie Taylor, MD an ASHRAE Distinguished Lecturer was the first to tag the phrase, "Commissioning of Infection Control" almost a decade ago. Several years later the National Library of Medicine's NCBI (National Center for Biotechnology Information) published a paper titled, "Commissioning for Infection Prevention". Both initiatives were very progressive but owners and operators of facilities were concerned with the potential for liability and bad press and less about commissioning their building to avoid occupants acquiring an infection.

Today, infections within buildings have become an everyday event as the world works hard to come up with infection prevention solutions and so this problem is OK to discuss as there is, "Safety in Numbers."

That said, and when we return to "the new normal", facility managers and asset managers will still need to be on guard for infections occupants acquire in their buildings. Dr. Taylor, now President of Building4Health, Inc. (www.b4hinc.com) uses a scalable approach to commissioning indoor infection



control (IC) that is worth sharing herein. Her standardized quality control provides a process for those looking for a physician's approach that could lead to "Physician Endorsed" healthy buildings by following these recommended steps:

Phase 1-Assessment of Existing Conditions:

- Introduction and review with building management decision-makers, as well as the marketing plan to advocate the building being a healthy environment.
- Review existing IC within Policy & Procedure (P&P) manual from the facility's Environmental Health and Safety (EH&S) department or the individual assigned to monitor the building's occupant health and safety criteria.
- Survey the facility with prescriptive checklists for P&P compliance.
- Review building layout, identify and document key circulation patterns, surface materials, and sites for indoor monitoring.
- Survey existing conditions of building materials for evaluation of cleaning protocols.
- Establish an "Occupancy Behavior" protocol, review employee ability to comply with social distancing and

mask protocols (while still in COVID-19 routine), identify heavily trafficked areas, and high touch objects.
- Review HVAC mechanical systems and available O&M records with the facility management team.
- Survey heating, ventilating, and air-conditioning (HVAC) system compliance; "Design Intent" versus actual operating conditions, e.g., temperature and humidity control trending, air filter MERV (Minimum Efficiency Reporting Value) compliance*, etc.
- Set up data loggers to measure key indoor environmental conditions.
- Submit report with recommendations to implement a process that will establish and retain a healthy building. Report to include site-visit checklist observation notes, EH&S P&P review comments, photographs, interviews, information obtained via data loggers, and building automation trending information, lab tests, and conceptual budget estimates.
- **Note: Refer back to Facility Management Focus On Facilities July 2019 r—"What Filter Best Suits Your Building" regarding air filter MERV rating.*

Phase 2-Recommendation Agreements:

- Update EH&S P&P Manual based on survey findings.
- Update and/or establish Cleaning and Disinfection protocol based on assessment findings.
- Establish Circulation Monitoring procedure based on continuous monitoring and documentation of circulation routes.
- Establish an "Occupancy Behavior" protocol with continuous monitoring documentation.
- Update/enhance HVAC operation and maintenance.
- Prioritize collection and reporting of data from indoor loggers.
- Introduce a marketing plan which raises awareness of ongoing building commissioning for occupant health through visualizations of real-time building data outputs on a flat screen computer monitor in the lobby.

Phase 3-Implementation:

- Introduce the updated EH&S P&P Manual, providing training to personnel influenced by these requirements.
- Post new EH&S guideline signage where applicable throughout the facility beginning with the front lobby.
- Post "Cleaning and Disinfection" protocol signage where applicable throughout the facility beginning with the front lobby.
- Provide "Circulation Monitoring" criteria feedback to housekeeping to maintain cleanliness compliance.
- Provide "Occupancy Behavior" monitoring feedback to building management to maintain a healthy environment.
- Improve HVAC system air filters with agreed upon MERV rated filters.
- Implement "continuous monitoring" and reporting protocol for key indoor air metrics.
- Furnish and install a flat screen computer monitor in the lobby to raise awareness of the building being continuously commissioned for a healthy environment.

Now at first glance the suggestion of commissioning one's building for infection control may appear to be costly and excessive but facility managers should think about the added operating expenses incurred when buildings were shut-down because of acquired infection and/or virus. Then also consider the cost to open this building up again along with the regular "deep-cleaning" and hygiene products purchased and inventoried going forward.

The lessons-learned from this should have been documented and added to the building's EH&S P&P manual even if for simply a few pages of criteria. Also, in this digital age of ours there are relatively inexpensive wireless loggers which monitor key indoor factors such as temperature, humidity, etc., when compared to years back these recording and controlling devices would have been "hardwired" and considered a costly premium. That said, why not purchase an inexpensive flat screen monitor and locate it in the building lobby. Depending on the size of the building and its application, e.g., church, office building, etc. the commissioning information on the screen will be proportional to the building's use.

Going forward it appears a cost-effective means to continuously monitor occupant health will become a standard rather than an option so that occupants will know the facility management of the buildings they visit. For management of the building(s) it will be beneficial to market their building health conditions rather than be concerned with the potential for liability and bad press.

For the latest requirements to slow the spread of covid-19 or other diseases, visit the Center for Disease Control and Prevention website at www.cdc.gov.

For more information:
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