



Administration and Finance
Operations Detail: **#20-01**

FACILITIES PLANNING AND MANAGEMENT | ENVIRONMENTAL HEALTH AND SAFETY
Campus Guidelines on Deploying Portable Air Cleaners/Scrubbers (PACs)
January 10, 2022

1.0 PURPOSE

This document provides parameters for obtaining and deploying portable air cleaners/scrubbers (PACs) on campus during the COVID-19 pandemic.

2.0 BACKGROUND

During the COVID-19 pandemic, the campus employed P2S Engineering to survey existing air handling systems serving 91% of the square footage on campus. The purpose of the survey was to assess the existing condition of air handler systems and air filtration, and to offer recommendations to minimize the potential spread of SARS-CoV-2 the virus causing COVID-19 disease within building HVAC systems.

Overall, approximately 64% of Cal Poly Pomona air handling and packaged units have been fitted with Minimum Efficiency Reporting Value (MERV)-13 filters. Due to the potential risk of aerosol transmission of SARS-CoV-2, any system serving multiple zones should be operated with a minimum recommendation of MERV-13 filters or highest feasible filtration level supported by the mechanical systems. For spaces with multiple occupants and is served by a system that cannot accommodate MERV-13 filters, portable in room air cleaners were recommended as a risk reduction strategy.

3.0 OVERVIEW

As a result of the campus-wide survey conducted by P2S Inc. Engineering, recommendations to utilize CARB approved portable air cleaners^{1,2} in areas that have multiple occupants or mechanical systems which cannot accommodate MERV-13 filter upgrades or increased ventilation due to physical limitations of

existing equipment to reduce the overall transmission risk were noted. These areas have had portable air cleaners deployed.

It is important to note, utilizing portable air cleaners present one of several methods of reducing indoor air contaminants, which also include source control/removal and ventilation modifications. Based on state³ and local⁴ guidance and what is known through supporting epidemiological literature and data on airborne transmissions^{5,6,7,8}, Facilities Planning and Management and Environmental Health & Safety have established the following criteria for campus allocation of portable air cleaners.

01-10-2022 Update:

The January 2022 surges in the COVID-19 Delta and highly transmissible Omicron variant, resulted in over 20% positivity rate affecting the Greater Los Angeles County region. This has caused Public Health officials and CPP to add another layer of risk reduction to safer return COVID precautions. In areas of concern identified through workplace assessments EH&S will use CO₂ monitors to log data⁸. This data will inform any additional precautions to increase ventilation and/or filtration such as the deployment of additional air scrubbers.

4.0 CITATIONS

¹ California Air Resources Board, List of CARB Certified Air Cleaning Devices

² EPA Air Cleaners, HVAC Filters, and Coronavirus (COVID-19)

³ <https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/COVID-19/Interim-Guidance-for-Ventilation-Filtration-and-Air-Quality-in-Indoor-Environments.aspx>

⁴ <http://publichealth.lacounty.gov/acd/ncorona2019/BestPractices/>

⁵ Goyal, Sagar M., et al. "Detection of viruses in used ventilation filters from two large public buildings." American journal of infection control 39.7 (2011): e30-e38.

⁶ Xu, Pengcheng, et al. "Transmission routes of Covid-19 virus in the Diamond Princess Cruise ship." medRxiv (2020).

⁷ Taylor Engineering Covid-19 White Paper, Oct. 17, 2020, <https://taylorengeers.com/taylor-engineering-covid-19-whitepaper> (July 21, 2021)

⁸ Exhaled CO₂ as a COVID-19 Infection Risk Proxy for Different Indoor Environments and Activities Zhe Peng and Jose L. Jimenez, Environmental Science & Technology Letters 2021 8 (5), 392-397, DOI: 10.1021/acs.estlett.1c00183

5.0 PROCEDURES

Criteria for Requesting and Receiving Portable Air Cleaning (PAC) Units

The following methods are used to determine the purchase and deployment of an appropriate portable air cleaner in specific locations on campus:

1. Within areas of concern where ventilation may be improved by EH&S assessment. Environmental measurements for exhaled CO₂ as a COVID-19 infection risk mitigation proxy for different indoor environments will be assessed. Deployment of additional units will be granted as long as it does not pose a safety hazard (i.e., trip, slips, falls, electrical overload, fire, etc.) in the workspace.
2. As approved through the [EH&S Workspace Readiness Assessments](#) with consideration on high-traffic, multi-occupancy areas where filtration deficiency cannot be supported by other ventilation modifications, and/or source control cannot be implemented, and will not pose a safety hazard (i.e., trip, slips, falls, electrical overload, fire, etc.) in the workspace.
3. As recommended by P2S Engineering based on a campus-wide HVAC assessment where systems are not able to accommodate MERV-13 filters due to building/mechanical limitations and only in rooms with multiple occupants.
4. Through Employee Labor Relations, ADA reasonable accommodations process, (contact Manuel Montilla, ADA Coordinator, at (909) 869-4095 or via e-mail at adacoordinator@cpp.edu)

NOTE:

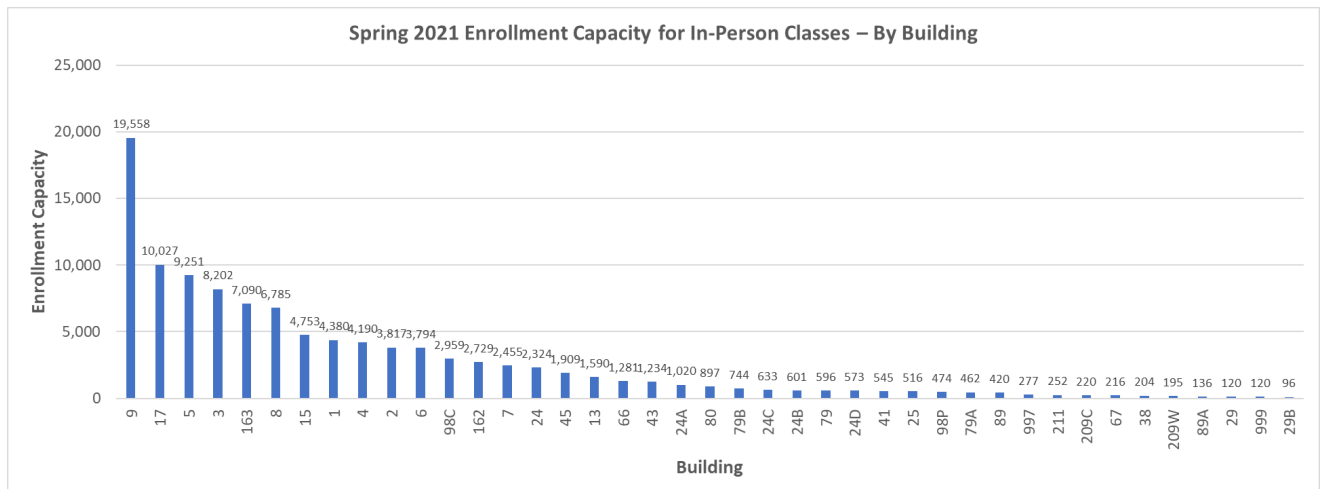
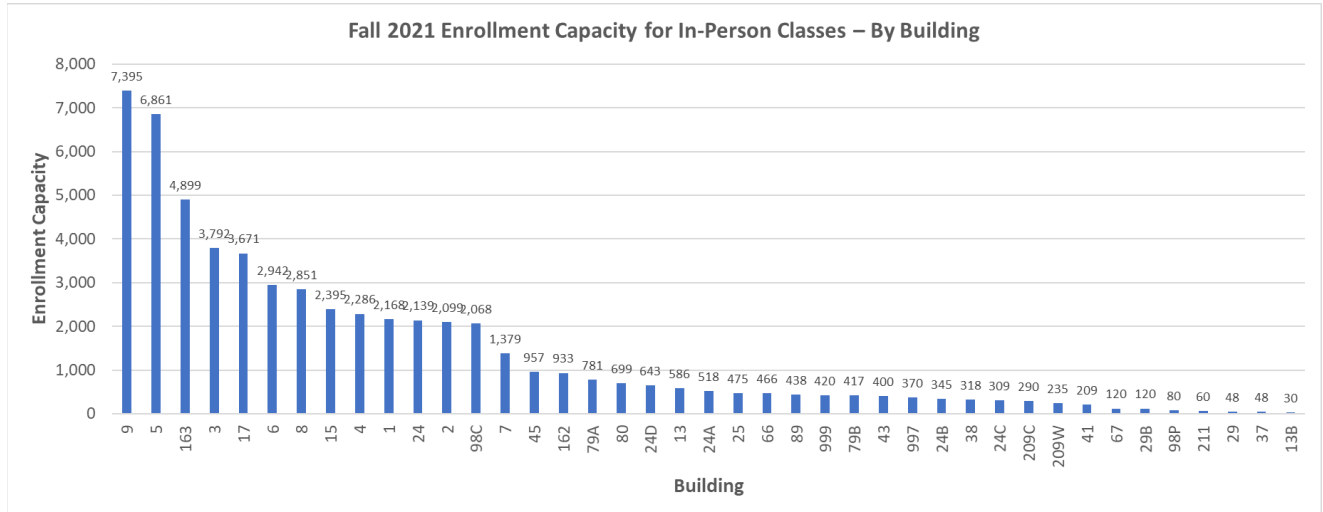
It is the responsibility of the department to maintain the security of the Cal Poly Pomona provided asset. The department is responsible for notifying Facilities Planning and Management Customer Service (fmcustomer@cpp.edu or (909) 869-3030) for any replacement of filters based on manufacturer recommendations.

Deviation from criteria:

- Personally purchased portable air cleaners are **not** permitted due to the safety hazard risks of trips, slips, falls, electrical overload and fire.
- If the campus elects to permit independent purchases from departmental funding an EH&S Workplace Readiness Assessment will be required to ensure safety from the hazards of the proliferation of portable air scrubbers.

Portable Air Cleaning Unit Deployment Plan:

The campus deployed two types of certified⁵ air scrubber units based on their square footage of coverage and clean air delivery rates (i.e., 700 cfm, 900 cfm) in. As seen below, data provided by the Division of Academic Affairs, academic buildings were prioritized based on the building enrollment capacity and activities with higher respiratory risks (i.e., music performance, theater and arts, kinesiology, etc.).



Facilities with campus operations and business services are assessed through the Workspace Readiness Assessment where reduction in occupancy limits could not be achieved in order to determine additional support and resource needs.

6.0 DEFINITIONS

Portable Air Cleaners/Scrubbers: Portable air cleaners/scrubbers (PACs) are transportable air cleaning units equipped with high efficiency particulate (HEPA) air filters typically used in multi-occupied spaces to reduce the concentration of airborne particles.

7.0 CONTACTS

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8.0 REVISION TRACKING

Revision History

Revision Date	Revised by	Summary of Revision	Section(s) Revised
07-22-2021	Kennedy Vu	Initial Operational Detail	All
01-10-2022	Kennedy Vu	Updated procedures section to include parameters to assessing a request for a portable air cleaner. Spring 2022 enrollment data provided to indicate academic buildings with highest occupancy.	Background, Overview, Procedures

Review/Approval History

Revision Date	Revised by	Summary of Revision	Section(s) Revised