FACILITIES MANAGEMENT

How we are working differently in response to COVID-19

We have completely reinvented how we do business and have adopted a new philosophical approach to cleaning for the Fall 2021 semester and beyond.

- **Health and Wellness:** Daily health screenings for all essential employees working on campus
- **Shift Workload:** Reduce office space cleaning in order to clean high-traffic areas more frequently
- **Centers for Disease Control and Prevention:** Confirm we are using EPA-registered disinfectants
- **Technology:** Adapt the use of new cleaning technology including electrostatic sprayers
- **Faculty Collaboration:** "Kaizen" culture of continuous improvement to clean more efficiently
- **Air:** Increased airflow through buildings and upgraded to MERV-13 filtration
- **Water:** Flushing all plumbing systems frequently even while campus buildings have been less populated

All Facilities Management staff are screened in accordance with guidelines published by the Centers for Disease Control and Prevention (CDC), the State of California, and the County of San Diego, summarized as follows:

- Get vaccinated.
- Mask or face covering is required to be worn in accordance with current university policy.
- Maintain physical distance from one another.
- Cough or sneeze into a handkerchief or sleeve.
- Wash your hands vigorously with soap and water (minimum 20 seconds) often throughout the day.
- Do not report to work if you have a temperature > 100º Fahrenheit.
- Do not report to work if you are sick.
- Do not shake hands or engage in any unnecessary physical contact.
- Daily health screenings for all Facilities Management staff prior to reporting to work each day.

Follow the Centers for Disease Control and Prevention (CDC) guideline that we use EPA-registered disinfectants. Our primary cleaning product is Pine Guard Detergent Disinfectant:

- Pine Guard is a sanitizer, deodorizer, cleaner, fungicide, mildewstat and virucide.
- For use in hospitals, nursing homes, schools, colleges, medical and dental offices, etc.
- Virucidal performance: effective against Human Coronavirus as well as numerous other pathogens.
- All products on this list meet the EPA's criteria for use against SARS-CoV-2, the virus that causes COVID-19.

Priority and Focus: **The assistant vice president for Facilities Management meets weekly with Housekeeping and Custodial supervisors specifically to review and discuss (and update, if necessary) all cleaning and disinfecting operations and protocols.**

Quality Control: **Centers for Disease Control and Prevention (CDC) Guidance for Cleaning and Disinfection states, "Clean and disinfect frequently touched areas at least daily or between use as much as possible." Our cleaning and disinfecting protocols strive to exceed CDC guidelines.**

Readjusted Staffing and Schedules: **Facilities Management includes 63 Housekeeping and Custodial staff who regularly maintain 67 campus buildings (approximately 2.5 million GSF) and supports other campus buildings on an as-needed basis. On a typical day, this translates into a maximum of 28 custodians covering approximately 160 classrooms and 180 labs, plus public restrooms and other high-traffic areas.**

- Adjust schedules so that Housekeeping and Custodial staff are on campus 21-of-24 hours a day, Monday through Friday, with supplemental staff on weekends as needed, summarized as follows:
- **28 Custodians (dayshift):** coverage for approximately 23 campus buildings (1M+ GSF)
- **16 Custodians (nightshift):** coverage for approximately 12 campus buildings (574,000 GSF)
- **19 Housekeepers:** devoted exclusively to supporting Residence Life: 32 buildings (926,000 GSF)
- Custodial teams are supplemented with other staff as needed and other workloads permitting

Operation Super Clean: **Created Custodial "Strike Teams" to methodically deep-clean all campus buildings and residence halls — this has included a highly-detailed cleaning, sanitizing and disinfecting - and all buildings have continued to receive ongoing cleaning without interruption.**

- High-traffic areas (building lobbies, public restrooms, etc.) in prominent buildings across campus and frequently touched surfaces (door handles, push bars, elevator buttons, drinking fountains, faucet handles, etc.) are cleaned and disinfected with much greater frequency.
- Public restrooms are maintained continuously throughout the day including focused cleanings minimum 3x/day, i.e. minimum twice daily during daytime hours and another focused cleaning, including applying a misting disinfectant with an electrostatic sprayer, again each evening. These focused cleanings are in addition to ongoing cleaning that takes place continuously throughout the day.

Focus on Classrooms: We intend to provide portable hand-sanitizing stations at all high-traffic buildings (if limited supply, classroom buildings will be top priority); it is also our intention to provide disinfecting wipes for students to clean and disinfect their desks or work surfaces at the start and conclusion of each class. We have ordered significant quantities (more than ever before) all of which are subject to availability as supply-chain logistics are significantly disrupted.

- If disinfecting wipes are not available, we may provide spray-bottles and paper towels for faculty and students to utilize in the classrooms; again, these are pending availability and supply-chain dependent, but be assured we are proactively brainstorming solutions for faculty and students to disinfect their individual spaces.
- Custodial staff are committed to clean classrooms in between classes as frequently as is reasonably possible, especially when there are gaps in the day when a classroom(s) may be empty.
- We recommend discouraging food or drink in the classroom to the extent it is practical; this will enable our Custodial staff to work more productively and efficiently whenever they are able to access classrooms during breaks throughout the day.
- Similarly, we recommend against rearranging classroom furniture; this will help allow our Custodial staff to devote more of their time to cleaning rather than resetting classroom furniture at the start of each day.

Adopting New Technology: We adopted the use of electrostatic sprayers to apply a misting disinfectant as we have methodically deep-cleaned all campus buildings and residence halls. Electrostatic sprayers will also be used throughout the day for additional classroom cleaning and disinfecting as classrooms are accessible and as frequently as is reasonably possible.

Building Plumbing Systems: Our building plumbing systems are sealed or closed-loop systems with treated water provided by the City of San Diego, whose tap water supply meets all State and Federal health standards.

- While many employees have been working remotely the past few months, it is not the case that our buildings have been completely vacant or that building systems have been unattended. Facilities Management's Building Maintenance technicians have been working (and running systems) in every building across the entire campus.
- As a further precaution to ensure against the possibility of stagnant or standing water inside any building system, Facilities Management's Housekeeping and Custodial staff have been continually running water through the buildings by flushing every toilet and opening the faucets every time they are working in restrooms.

Building Ventilation Systems (HVAC): It is important to remind everyone that the protocols of washing hands vigorously with soap and water (and doing so frequently), combined with wearing a mask or face covering, maintaining appropriate physical distancing, coughing or sneezing into a handkerchief or sleeve, etc. are by far the most effective measures to lessen the likelihood of any airborne transference of infection or illness.

- Facilities Management's HVAC technicians have performed extensive predictive and preventative maintenance to ensure our building ventilation systems are not only well maintained and running properly but are also operating per the American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) recommendations and Centers for Disease Control and Prevention (CDC) guidelines.
- The American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) is universally recognized as the authority in building ventilation systems. ASHRAE leadership has stated the following regarding transmission of SARS-CoV-2 and the operation of HVAC systems during the COVID-19 pandemic:
  - *"Changes to building operations, including the operation of heating, ventilation, and air-conditioning systems, can reduce airborne exposures."*
  - *"Ventilation and filtration provided by heating, ventilating, and air-conditioning systems can reduce the airborne concentration of SARS-CoV-2 and thus the risk of transmission through the air. In general, disabling of heating, ventilating, and air-conditioning systems is not a recommended measure to reduce the transmission of the virus."*
- Building ventilation systems are the primary means by which fresh air is introduced into a building and continuously exchanged throughout the day. Automated building control systems have been programmed to provide maximum airflow per Centers for Disease Control and Prevention (CDC) guidelines recommending increasing the fresh air brought into buildings through air handlers.
- Rooftop air-handlers, indoor air-handlers, variable air volume (VAV) units, fan coils, exhaust fans, chilled-water actuators and heating-water actuators have been inspected and serviced and all filters have been and will continue to be replaced as scheduled.
  - **Rooftop Air-Handlers:** Remove and replace pleated air filters. Power-wash chilled water coils, heating coils, supply plenums, air return plenum and complete air-handler enclosure. Align belt and pulleys for each supply and return fan assembly. Replace belts and pulleys in several air handlers. Perform electrical safety check on all motors and controls including wiring rotation and amperage. Clean and service all strainers. Clean and calibrate all chilled-water actuators and heating-water actuators. Test fresh outside air damper and clean bird screens. Clean grease inserts and grease bearings on motors and blower wheels. Check, test and calibrate airflow to match automated graphics.
  - **Indoor Air-Handlers:** Remove and replace pleated air filters. Clean all return and supply registers throughout hallways and classrooms. Align belt and pulleys for each supply and return fan assembly. Replace all belts and pulleys in air handlers as needed. Perform electrical safety check on all motors and controls including wiring rotation and amperage. Clean and service all strainers. Clean and calibrate all chilled-water actuators and heating-water actuators. Test fresh outside air damper and clean bird screens. Clean grease inserts and grease bearings on motors and blower wheels. Check, test and calibrate airflow to match automated graphics.

- **Indoor Variable Air Volume (VAV) Units:** Clean air supply registers. Clean air supply return registers. Check outside air dampers. Test CFM to match airflow. Remove, test and clean actuators for proper airflow. Test CFM to match automated controls. Test and seal air leakage on each VAV. Inspect clean, flush and calibrate heating valve and actuators. Perform electrical safety check on controls and automation. Replace heating valve actuators as needed. Replace air volume damper actuators as needed.

- **Exhaust Fans:** Align pulleys, replace belts, grease bearings, replace bearings and motors as needed. Clean air supply exhaust registers. Clean electrical motor enclosure. Test automation controls and wall switches. Perform in-depth electrical safety check. Test all large motors for grounding issues.

- Facilities Management has consulted with an independent third-party engineering firm (MA Engineers) to implement industry recommended practices with regard to our building ventilation systems. Across campus, we have extended HVAC operating hours and maximized the introduction of fresh, outside air into the HVAC systems. More significantly, all university buildings with mechanical ventilation systems have been upgraded with MERV-13 filtration, in accordance with recommendations by the Centers for Disease Control and Prevention (CDC) and the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE). As result of these upgrades, 98% of classrooms across the entire campus have MERV-13 filtration. Common areas without mechanical ventilation systems have been equipped with portable, stand-alone air purifiers with HEPA filtration. While there are no independent studies completed at this time on impacts of the COVID-19 Delta variant, our recent classroom indoor air quality test results meet or exceed OSHA and ASHRAE air-quality standards.

- The California Energy Commission “Building Energy Efficiency Standards - Title 24” requirements for preoccupancy ventilation states “three complete air changes shall be supplied to the entire building during the 1-hour period immediately before the building is normally occupied.” This mean that building air is exchanged a minimum 3 times per hour (approximately every 20 minutes).

Faculty Collaboration: Facilities Management is working with Leonard Perry, associate professor, Industrial and Systems Engineering, in the Shiley-Marcos School of Engineering.

- Introducing the concept of “Kaizen” and fostering a culture of continuous improvement within our Housekeeping and Custodial operations so our staff can work more effectively as they are being challenged to clean certain areas more frequently and with greater intensity in response to COVID-19.