



Environment, Health, and Safety

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Custodial Ergonomic Design Guidelines For New Construction and Existing Buildings

1. General:

- There shall be accessible service elevators in every building large enough for custodial equipment, such as trash carts, floor scrubbers and large no-touch cleaning systems
- There shall be sufficient dedicated storage space for custodial equipment, such as floor scrubbers and large cleaning systems. Consult with custodial management to determine specific space requirements.
- There shall be a minimum of one dedicated custodial closet on each floor¹
 - Shall be a minimum of 100 square feet (10' x 10')
 - Door shall swing into corridor to maximize useable space
 - Elevator controls, electrical panels, telephone equipment, etc., shall NOT be located in custodial closet²
- Each custodial closet shall have one floor drain sufficient in size for dumping 5-gallon buckets of liquid
- There shall be dedicated space for tools to be hung on the wall
- Each custodial closet and storage space shall have a floor sink with a 12- or 13-inch wide drop front³

2. Indoor/Outdoor Trash/Recycle/Linen Enclosures:

- There shall be trash and recycle chutes to the bottom level from each floor in high rise buildings
- The door to the collection room shall be large enough to accommodate collection equipment and accessible to the road to allow for automated collection
- Mechanically-assisted or automated systems which eliminate the need for manual lifting, pushing, and pulling are preferred
- The height of trash bin access shall not exceed 36 inches⁴⁻⁶
 - Provide loading dock with bins at or below the height of the dock. If there is a guard rail around the dock, a section should be removable for access.
 - Design a platform in the enclosure such that the distance from the top of the platform to the top lip of the bin is not greater than 36 inches for all bins in the enclosure. This platform shall allow access to all bins at all times without the need to move bins.
 - If this is not possible, provide dumpster bins that have been modified so the front height is no more than 36 inches⁷
- The distance from the service elevator to the indoor enclosure shall be a maximum linear distance of 50 feet within the building. The path from the service elevator to the indoor enclosure shall be within the

building. No impediments shall exist in this path of travel. Impediments include: stairs, textured surfaces, bumps, drains, slopes/grades greater than 2%.⁴

- Outside Lighting⁴
 - Provide adequate night lighting in and around the enclosure and to the pathway from the building to the enclosure.

3. Bathroom Cleaning and Mopping/Floor Care

- Water and sustainability issues are very important to consider; however, certain types of low water, high-efficiency, dual flush toilets may require additional cleaning and may be more difficult to clean than standard toilets. Install toilet systems that have a high Waste Removal Performance Measure (MaP³) rating to the amount of daily cleaning required. To see ratings, consult http://www.bewaterwise.com/pdf_rebates_toilets_01.pdf or <http://www.map-testing.com/about/maximum-performance/map-search.html>
- Provide a designated area for commercial washer and dryer (30 – 50 lb) to clean shower curtains, mop heads, rags, etc. Provide a concrete raised pad 5' x 5' with proper utility hook ups, drains and vents.
- Hard water issues shall be addressed in the design process. Reducing water hardness results in less mineral buildup, thus less physical force to clean. Where water is considered “hard,” avoid installing grouted tile on shower walls.
- Select paint with higher sheen because it is easier to clean and maintain
- In the residence hall private bathrooms, install non-glass shower doors rather than shower curtains
- Ensure that materials used for walls and sub-floors support the moisture of no-touch cleaning systems. Provide water proof, seamless, non-grout, epoxy flooring where appropriate.
- Design plumbing to support wall-mount toilets instead of floor-mount toilets
- Bathroom electrical outlets shall be easily accessible for regular cleaning and maintenance
- For bathrooms with multiple sinks along a counter top, install under-mount sinks, which are easier to clean and have less water build-up around the perimeter

References: (1) Northern Arizona University, “Division 13: Special Construction,” *Technical Standards*, pp. 2, 7/2010, <https://www4.nau.edu/cas/Plan-Dev/Documents/TechStandards/Division13.pdf> (2) NC State University Construction Guidelines, http://www.ncsu.edu/facilities/con_guidelines/index.htm (3) Cal/OSHA Consultation Service, Department of Industrial Relations, *Working Safer and Easier for Janitors, Custodians, and Housekeepers*, pg. 25, 2005; (4) “UC Berkeley Indoor/Outdoor Enclosure Design Criteria,” September 2010. Contact mlynch@uhs.berkeley.edu, (5) Porter, B., “Ergonomic Interventions to Reduce Risk Exposure for Lift Induced Occupational Shoulder Impingement and Rotator Cuff Tears,” Dissertation, 2009, contact bfporter@ucdavis.edu, (6) Eastman Kodak Company, “Ergonomic Design for People at Work,” Vol. 2, pp. 448-52, 1986; (7) Consolidated Fabricators Corporation 901 Simmerhorn Rd, Galt, Ca 95632

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