Design Guidelines-Laboratories-General Considerations

Laboratory Associated Personal and Office Spaces

Space should be provided which is separate from laboratory work areas for students, staff and faculty to perform their non-laboratory duties. Break areas for eating and drinking shall be provided in each facility and shall always be located outside of laboratories or other chemical storage areas.

Accessibility

Teaching laboratories and other research spaces that are not used strictly as employee work areas shall be fully compliant with the Accessibility section of the Florida Building Code.

FSU considers research laboratories and spaces, which are not designated for general academic coursework or public assembly, to be work spaces. Beyond the basic requirement to provide accessibility for approach, entry and exit in these spaces, it is desirable to provide accessible laboratory work areas wherever this can reasonably be accomplished. Five percent, and at least one, of the laboratories within each building shall have a fully accessible laboratory work area including desks, benches, countertops, fume hoods, sinks, eyewash stations, safety showers and other equipment necessary equipment, all collocated within the same vicinity. For teaching laboratories, this applies to each individual laboratory work area.

ADA fume hoods shall have 34” working surface heights, horizontal sliding sashes, adequate knee space and controls designed to allow for forward reach access by users. Specify base cabinets for chemical storage that are designed for this purpose, such as those with sliding drawers that are easy to move out of the knee space area.

Do not attempt to globally apply ADA design elements that might negatively impact all users. For instance, non-ADA fume hoods generally have standard 36” working surface heights and permanent base cabinets installed below them. Simply specifying 34” heights for these fume hoods with traditional vertical sliding sashes can require standing users to expose at least 2” more of their bodies or stoop, placing their faces closer to the opening, in order to reach into the fume hood. Assuming they meet the ADA side reach access requirements is also impractical because it necessitates awkward ergonomic body positioning. It is safer and more ideal to have a designated and fully functional ADA hood and work area available within a laboratory or building while ensuring other equipment remains ergonomic and equally functional for more typical users.

Do not use adjustable height tables to reposition fume hoods that would require flexible ducting to be utilized in lieu of welded stainless steel ductwork. This arrangement is more prone to flow perturbations that could cause loss of containment, is less resistant to chemical degradation and more susceptible to internal contaminant deposition.

A code compliant barrier free eyewash station must be provided near enough to accessible work areas that it can be reached in 10 seconds or less travel time. Avoid locating barrier free devices where they may be more prone to damage or may interfere with egress pathways due to their longer length profiles.

Laboratory Furnishing and Flooring

All laboratory work surfaces, including stools and chairs, must be non-porous and easy to clean and decontaminate. Permanent casework, countertops, and flooring must be rugged and chemically resistant to the products that will be used. The flooring shall be a non-pervious type to allow for spill containment and cleanup, such as seamless heat welded vinyl flooring, durable epoxy coatings, etc.

Temporary flooring such as anti-fatigue should have similar properties with an emphasis placed on non-slip characteristics.

Ergonomics must be taken into consideration for all laboratory work stations. Countertop and fume hood depths should be limited, with equipment such as lattices (monkey-bars) installed and positioned such that personnel do not have to contact potentially contaminated surfaces or breathe hazardous emissions in order to adjust instruments or conduct their experiments. Knee space should be provided under bench tops so that chairs and stools can be used comfortably. All seated bench top work areas shall have marine edges (raised edges) or similar features to minimize the likelihood of accidental spills onto laboratory personnel. ADA compliant surfaces shall be recessed sufficiently and/or have sills or collection troughs that are able to contain at least two liters of liquids, more if there is a greater potential for larger size spills.

Noise Levels

Ensure that ambient laboratory noise levels emanating from installed systems and associated equipment will not preclude effective communication at normal voice levels. Generally, this means that 55 dBA throughout the area, or 60 dBA immediately adjacent to noisy equipment such as fume hoods, should not be exceeded. Simple measures such as the installation of flexible ducting to fans, the use of duct silencers, sound isolation of duct and motor mount attachments, proper location of HVAC equipment and the operation of systems within efficient load ranges can help alleviate this concern.