

SPACE TYPE: LABORATORY – (WET) FOR CHEMISTRY AND BIOLOGY

Construction Criteria

The unit costs for Laboratory (Wet) space types are based on the construction quality and design features in the following table. This information has been generally organized under Uniformat headings. Items marked with a have a space-related cost impact on the building shell and core.

Category	
Interior Construction	
<i>Partitions</i>	
<i>General</i>	<ul style="list-style-type: none"> ■ ½" GWB on metal studs at 16" OC ■ Floor-to-ceiling grid
<i>Suite Perimeter and Public Corridor</i>	<ul style="list-style-type: none"> ■ Structural slab-to-slab ■ Two layers ½" GWB both sides on metal studs at 16" OC ■ Acoustical insulation ■ 45 STC
<i>Enclosed Lab Module</i>	<ul style="list-style-type: none"> ■ Floor-to-structural slab with under-floor plenum divider ■ One layer 5/8" GWB both sides on metal studs at 24" OC ■ Acoustical insulation ■ 40 STC
<i>Utility Shafts</i>	<ul style="list-style-type: none"> ■ 2 hr 50 STC Type X rated GWB shaft wall system with 1 layer 1" channel-mounted GWB and one layer ½" GWB outside face
<i>Telephone Closets, Communications Closets</i>	<ul style="list-style-type: none"> ■ 5/8" GWB on metal studs at 24" OC ■ Structural slab-to-slab
<i>Doors</i>	
<i>General</i>	<ul style="list-style-type: none"> ■ Solid core 1¾" hardwood veneer doors 3'-0" (w) by 7'-0" (h) ■ Door frames will be a minimum 14 gauge metal frame construction ■ Hardware to be latch sets with levers
<i>Main Suite Public Entrance</i>	<ul style="list-style-type: none"> ■ Solid core 1¾" hardwood veneer double doors 6'-0" (w) by 7'-0" (h) ■ Door frames will be a minimum 14 gauge metal frame construction ■ Hardware to be locksets with levers ■ Key locks ■ Automatic closers

Category	
<i>Suite Perimeter Exits</i>	<ul style="list-style-type: none"> ■ Solid core 1¾" hardwood veneer doors 3' - 0" (w) by 7' - 0" (h) ■ Door frames will be a minimum 14 gauge metal frame construction ■ Frame and threshold sound gasketing ■ Hardware to be locksets with levers ■ Key locks
	<ul style="list-style-type: none"> ■ Automatic closers ■ Brushed stainless steel kick plate room side
<i>Laboratory</i>	<ul style="list-style-type: none"> ■ Service door to be solid core 1¾" hardwood veneer door 3' - 0" (w) by 7' - 0" (h) with matching leaf 1' - 6" (w) by 7' - 0" (h) with head and threshold bolts ■ Public door to be solid core 1¾" hardwood veneer door 3' - 0" (w) by 7' - 0" (h) ■ Door frames will be a minimum 14 gauge metal frame construction ■ Hardware to be locksets with levers ■ Key locks ■ Brushed stainless steel kick plate room side
<i>Signage</i>	
<i>Suite Entrance</i>	<ul style="list-style-type: none"> ■ Room identification signage to be raised plastic letters mounted beside the door with ADAAG compliant tactile Braille signage
<i>Room Signage System</i>	<ul style="list-style-type: none"> ■ Signage for life safety and public convenience within the functional areas of the tenant will be included in the unit costs and will be modular vinyl lettering on plastic laminate signage frame system with ADAAG compliant tactile Braille vinyl signage modules
Interior Finishes	
<i>Walls</i>	
<i>General</i>	<ul style="list-style-type: none"> ■ Low VOC semi-gloss paint with vinyl cove base
<i>Laboratory</i>	<ul style="list-style-type: none"> ■ Epoxy paint ■ Base integral with floor material ■ Steel corner guards
<i>Floors</i>	
<i>Laboratory</i>	<ul style="list-style-type: none"> ■ Monolithic seamless chemical resistant vinyl flooring with integral covered based
<i>Storage, Service Corridor</i>	<ul style="list-style-type: none"> ■ Resilient vinyl tile with vinyl cove base
<i>Ceiling</i>	
<i>Laboratory</i>	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Mylar finish 24" (w) by 48" (l) ceiling tile in suspended ceiling grid
<i>Storage, Service Corridor</i>	<ul style="list-style-type: none"> ■ Exposed structure

Category	
Plumbing and Piping	
<i>General</i>	<ul style="list-style-type: none"> ■ An allowance for fittings and connections to the building distribution system for six nominal piping systems is included in the Laboratory (Wet) space type Tenant Improvements unit costs
	<ul style="list-style-type: none"> ■ Fittings and connections to distilled water system with high purity dual bed deionized water feed, with polypropylene piping ■ Fittings and connections to central natural gas supply with medical grade copper tubing ■ Fittings and connections to special gas supply systems including O₂, N₂, He, CO₂ with medical grade copper tubing ■ Fittings and connections to central vacuum of 18" to 22" of mercury in medical grade copper tubing ■ Fixtures, fittings, and connections to acid waste and vent, with polypropylene piping ■ Fixtures, fittings, and connections to solvent waste and vent with glass piping
<i>Service Corridor</i>	<ul style="list-style-type: none"> ■ Floor drain with automatic primer
<i>Laboratory</i>	<ul style="list-style-type: none"> ■ Sink with hot and cold water supply and clinical solvent drain; sinks to be acid resistant self-rimming sinks; faucets to have wrist lever and hands free operation, goose neck spout, and serrated hose connection; sinks to have high purity distilled water faucet ■ Eye wash ■ Deluge shower at each module quad ■ Utility connections including vacuum, pneumatic supply, natural gas, O₂, CO₂ ■ Floor drain with automatic primer
HVAC	
<i>Air Distribution System</i>	
<i>General</i>	<ul style="list-style-type: none"> ■ Fan coil variable air volume provided as part of building shell and core provisions <input checked="" type="checkbox"/> Pre-filters and after-filters for 90% efficiency <input checked="" type="checkbox"/> Terminal humidifier
<i>Air Handling Unit</i>	<ul style="list-style-type: none"> ■ AHUs are part of the building shell and core provisions
<i>VAV System</i>	<ul style="list-style-type: none"> ■ VAV system is part of the building shell and core provisions <input checked="" type="checkbox"/> Separate zones for individual lab modules ■ See building shell and core provisions for other zoning requirements
<i>Air Supply</i>	<ul style="list-style-type: none"> ■ Ducted ceiling supply ■ Sound baffles at all acoustically rated partitions <input checked="" type="checkbox"/> Lab modules to have negative pressure relative to other spaces; no return air from lab to other spaces

Category	
<i>Exhaust Air</i>	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Provide 100% exhaust for all lab areas; ducted ceiling exhaust ducts with economizer exhaust and connections to individual fume hoods <input checked="" type="checkbox"/> Fume hoods to be 6'-0" chemical fume hood; provide one fume hood for each laboratory modules; provide direct 100% exhaust <input checked="" type="checkbox"/> Flexible exhaust duct connection one per laboratory module
<i>Thermostat Controls</i>	<ul style="list-style-type: none"> ■ Provide individual room thermostats ■ Provide setback thermostat even in areas of 24 hr operation with override by building shell and core BAS
Fire Protection	
<i>Fire Suppression</i>	<ul style="list-style-type: none"> ■ Sprinkler system is part of the building shell and core provisions ■ Fire and smoke dampers to be provided in rated walls
<i>Laboratory Module</i>	<ul style="list-style-type: none"> ■ Hand-held chemical emergency fire extinguisher in emergency equipment cabinet
<i>Fire and Smoke Detection</i>	<ul style="list-style-type: none"> ■ One fire alarm pull station by each egress point
<i>Fire Alarms</i>	<ul style="list-style-type: none"> ■ Audible and visible (strobe) alarm in each occupiable space
<i>Toxic Gas</i>	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Toxic gas monitors in each lab module and gas storage area with audio and visual (strobe) alarms both inside and outside the lab
Electrical	
<i>Electrical Outlets</i>	
<i>General</i>	<ul style="list-style-type: none"> ■ Wall mounted duplex outlets every 50'-0" OC
<i>Lab Module</i>	<ul style="list-style-type: none"> ■ Provide 2-120v, 3 wire polarized grounding duplex outlets per 2 LF at counters with 20 amp capacity, and 2-208 single and 2-208 three phase; and 1-120v 1500w emergency power outlet per module
<i>Service Core and Storage Area</i>	<ul style="list-style-type: none"> ■ Provide electrical connections for tenant equipment located in the core, such as fan units, system regulators, monitors and similar devices ■ Provide special NEMA types as required for equipment
<i>Telephone Closet, Communications Closet</i>	<ul style="list-style-type: none"> ■ Two dedicated duplex outlets on emergency power, plus additional outlets for every 5'-0" of wall space ■ Provide a separate 120-volt panel with master switch, and five 20-amp circuits
<i>Lighting</i>	
<i>General</i>	<ul style="list-style-type: none"> ■ General lighting provided as part of the building standard shell and core provisions with a minimum of one 24" (w) by 48" (l) recessed parabolic fluorescent fixture with two T-8 lamps and electronic ballasts per room and additional fixtures per every 80 SF (or T-5 equivalent) ■ Automated lighting controls with programmable systems and room occupancy sensors ■ Independent switch control for each module with 3 way switches at each entrance
<i>Laboratory</i>	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Sealed acrylic lens fluorescent 24" (w) by 48" (l) recessed ceiling fixtures located every 80 SF

Category	
<i>Telephone and Communication Outlets</i>	
<i>General</i>	<ul style="list-style-type: none"> ■ Conduit and pathways for services from the core to the tenant demised space provided as part of the building shell and core provisions; conduit and boxes within the tenant suite are part of the Tenant Improvement unit costs ■ Conduit and telephone outlet boxes are part of the Tenant Improvement unit costs; telephone systems and data LAN systems are provided by tenant
<i>Laboratory</i>	<ul style="list-style-type: none"> ■ Conduit and boxes for one telephone outlet for each laboratory module; wiring and equipment provided by tenant ■ Conduit and boxes for four LAN connections for each laboratory module (288 SF); cabling and equipment provided by tenant ■ Conduit and boxes for one ceiling mounted PA speaker for each module; wiring and equipment provided by tenant
Equipment	
<i>Laboratory Equipment</i>	<ul style="list-style-type: none"> ■ Provide one 6' - 0" chemical fume hood for each module ■ Safety cabinet, Class II, Type B2, 100% Exhaust ■ Acid and corrosive vented storage cabinet located under fume hood ■ Storage for emergency equipment
Furnishings	
<i>Casework</i>	
<i>General</i>	<ul style="list-style-type: none"> ■ All casework to be pre-manufactured laboratory metal casework system, with cantilever support off of central service chase system to include upper cabinets and adjustable shelving system with dust cap ■ Counter to be epoxy resin with integral splash ■ Chase system to have metal channel support, with horizontal distribution of utilities
<i>Laboratory Module</i>	<ul style="list-style-type: none"> ■ 16 LF of 36" (h) cabinets ■ 16 LF of 24" (h) cabinets