10 0520 – Design and Finish Criteria

DESIGN AND FINISH CRITERIA

As a public university, extravagant or high-maintenance finishes are discouraged. Materials, equipment, and specifications shall be written in a non-proprietary manner.

1. INTERIOR DOORS

a. GENERAL

i. Doors shall have a minimum width of 3'-0" and a minimum height of 7’-0". Wood doors shall be five plies, solid core with a minimum thickness of 1¾”, and a lifetime warranty. Metal doorframes shall be of welded construction. Clear-glazed vision panels shall be used on all classroom and stair doors. Doors with a full glass lite shall have a minimum 5½” vertical stile to accept HMS standard operating hardware.

ii. The following door types are not accepted: folding doors, pocket doors, hollow-core wood doors, and plastic-laminated doors. Dutch doors are prohibited in HMS.

iii. Whenever possible, door sizes, frame sizes, and details must conform to stock industry standards.

b. FRAME CONSTRUCTION

i. Steel frame facings must be a standard 2" for such elements as doors, transoms, sidelights, and borrowed lights. Other approved frame sizes must match existing conditions or respond to specific functional requirements.

ii. Interior door frames must be 16 gauge. Exterior door frames must be 14 gauge and galvanized.

iii. Frames must be one-piece, fully welded, with mitered corners and stops. Grind exposed surfaces smooth, with no joints anywhere on the frame.

iv. Removable glazing stops must be located on the secure side of controlled access openings and must be prepared for countersink style, tamperproof screws.

v. Frames must be reinforced as necessary for required hardware.

vi. Exterior door frames shall be thermally broken.

vii. Doors wider than 3'-0" or that have closers shall have ball bearing hinges or full-length, continuous style hinges.

viii. Door closers shall be of the heavy-duty, cast-iron type with a minimum 10-year warranty. Aluminum bodies are prohibited

ix. . Closers shall be mounted to doors with through-bolts. Floor pivot hinges, floor closers, and concealed overhead closers are prohibited.

x. Wall-mounted doorknob bumpers shall be backed by intermediate steel plates or channel reinforcement.

xi. Floor stops are prohibited.

xii. Doors subject to abuse by equipment associated with building function shall have kick plates as well as guards to prevent damage to door or hardware.

c. FRAME MORTISES AND REINFORCEMENT

i. Frames must be mortised, reinforced, drilled, and tapped for all mortise hardware, using templates provided by the hardware supplier.

ii. Dimensions for steel reinforcements welded to frames: Hinge and pivot reinforcements must be 3/16" x 1-1/2" x 9" Closers and holders must be 12 gauge x 14" x frame width Floor clips must be 16 gauge x 3-1/2"

iii. Provide mortar-tight, full enclosure steel cover boxes over all mortises.

d. **FRAME ANCHORS**

i. Provide at least three anchors at each jamb. Use anchor types appropriate for the wall

construction.

e. **DOORS CONSTRUCTION**
   i. Construction standards for interior, non-fire rated steel doors:
      1. 1-3/4" thick
      2. Seamless flush doors
      3. SDI-100 Grade II
      4. Minimum 18-gauge, cold-rolled steel sheet, with honeycomb core material
   ii. The core material for fire rated doors shall be per manufacturer's fire label requirements. Options include and shall be verified with each door manufacturer: Honeycomb (up to 3 hr), Polyurethane (up to 3 hr), Polystyrene or Steel stiffened (up to 3 hr)
   iii. Construction standards for exterior doors:
      1. 1-3/4" thick
      2. Seamless flush doors
      3. SDI-100 Grade III
      4. Minimum 16-gauge, zinc-coated, galvanized steel sheet, with a polystyrene or polyurethane core
      5. Minimum U-value of .24
      6. Top edge closed flush
      7. All doors with glazing shall be factory glazed.

f. **DOOR MORTISES AND REINFORCEMENT**
   i. Doors must be mortised, reinforced, drilled, and tapped for all mortise hardware, using templates provided by the hardware supplier.
   ii. Dimensions for steel reinforcements welded to frames:
      1. Hinge and pivot reinforcements must be 3/16" x 1-1/2" x 9"
      2. Closers and holders must be 12-gauge x 3-1/2" x 14'
      3. Provide reinforcements, as required, to receive surface-mounted hardware.
      4. Removable stops in doors for glazing or louvers must be located on the secure side of the door.

g. **FIRE-RATED DOORS AND FRAMES**
   i. Fire-rated doors and frames must be constructed in accordance with the current edition of Underwriters Laboratories, Inc. They must bear the appropriate permanent labels and may only be modified in the field by certified personnel.

h. **FINISHING**
   i. Doors and frames must be thoroughly cleaned and prepared to receive a baked-on, rust-inhibitive primer. Provide all doors factory finished.

2. **LOCKSETS AND ACCESS CONTROL**

1. The following information is intended to provide guidelines for all door hardware. Cabinetry doors, shelving and folding partition hardware are covered in other parts of these standards. Temporary facilities and controls are covered in other parts of these standards, or are available from the Facilities Management project representative.
2. Selection of materials, colors, finishes, and sizes must be approved by Owner. Unless otherwise approved, the design intent would be to select materials that blend with existing or adjacent campus building features.
3. Require consultation with Owner's Lock shop for selection of locking hardware and other devices requiring a key. A coordination conference shall be initiated and conducted with the finish hardware supplier and Owner's Lock shop to determine security requirements, confirm all locking functions, and verify the final count of Owner-installed key cylinders.
4. Templates shall be provided for all hardware that requires machining or preparation to doors and frames.

5. Require coordination with electrical designers for power and control wiring for devices including automatic door operators, electromagnetic door holders, smoke detector hold open/closers and access control systems. Contractor's hardware supplier shall submit copies of wiring diagrams for all electrified hardware. Indicate voltage and amperage requirements. Provide riser, sequence of operation, point-to-point wiring diagrams, and a description of system operation.
6. Hardware supplier shall be a direct factory contract supplier who employs a certified architectural hardware consultant (AHC) available at all reasonable times during the course of the work for project hardware consultation to Owner, architect, and contractor.
7. Submit copies of the Finish Hardware Schedule. Organize vertical formatted schedule into hardware sets with index of doors and headings. Indicate complete designation of every item required for each door or opening. Schedule shall include the following:
    a. Type, style, function, size, quantity and finish of hardware items.
    b. Name, part number and manufacture of each item.
    c. Fastenings and other pertinent information.
    d. Explanation of abbreviations, symbols and codes contained with the schedule.
    e. Door and frame size, materials, hand and degree of swing.
    f. List any components furnished by other trades so that doors, frames and hardware are fully coordinated and have the proper preparation.
8. Verify project-specific requirements for entry keying, access control system, security system, and automatic door operation.
    a. Require all lockset and exit device key cylinders to be removable and compatible with Owner's proprietary systems.
    b. All permanent cores and keys will be furnished and installed by the Owner's Lock shop ("Owner"). Construction keys and temporary cores shall be furnished by the contractor and remain the contractor's property. Provide two construction keys to the Owner's Lock shop in case of an emergency and after-hours access if required.
    c. Require card-access systems to be integrated with campus-wide Siemens systems.
        i. Coordination of access shall be done through Owner's Security Department.
9. Avoid the following hardware:
    a. Kick-down door holders.
    b. Floor stops.
    c. Flush bolts.
    d. Spring hinges (If replacing in-kind, provide Stanley model with ratcheted hex key tension adjustment.
    e. Floor-mounted closers (prohibited).
10. All levers on hardware at hazardous areas to be knurled.
11. Provide low to medium locking strength fastener adhesive such as Loctite Dri-Loc, 3M Scotch Grip, or Bradley Epoxy at threaded fasteners on door hardware.
12. Owner has approved the following products and/or suppliers:
    a. Hardware locksets: Schlage, no substitutions.
        i. Provide L9000 Series mortise locks, with O3L lever handle trim. Common functions: L9050 Office; L9070 Classroom; L9080 Storeroom, Cylinders provided should be Small Format Interchangeable Core housings.
        ii. Provide ND Series cylinder lock, Tubular (TLR) lever handle trim.

iii. Verify latch retraction type for electrified locks. Prefer low voltage modified locksets which simply unlock electrically to allow manual lever operation in lieu of higher power demand latch retraction. Coordinate power supply distribution and wiring with access control system.
iv. Low power modification available from Architectural Control Systems Incorporated (ACSI) or Command Access Technologies (CAT). Verify any UL listings for the lockset are retained by the modification.
1. Voltage: 24V (Maximum 29V, Minimum 20V)
2. Peak Current: Maximum 1.3 Amps at 5 to 10 second intervals
3. Holding Current: Maximum .135 Amps between peak current intervals
4. Required Operating Temperature: Maximum 151º F, Minimum -31º F

b. Deadbolts: Schlage, no substitutions.
i. Recommend B 660 Series for small format cores.

c. Hinges: Prefer Hager which is basis for product numbering; Other acceptable Stanley; McKinney, Ives.
i. Recommend BB179 full ball bearing, 4-1/2" x 4-1/2" for standard butt hinges.
ii. Provide 3-1/2" x 3-1/2", no ball bearing hinges for 1-3/8" doors.
iii. Provide 4-1/2 x 4-1/2 on doors up to 36" Provide 5 x 4-1/2 on doors over 36"
iv. Provide 3 each per door for doors up to 7'- 0".
v. Provide 4 each per door for doors over 7'-0".
vi. Provide non-removable pin at out swinging doors.
vii. Avoid continuous hinges in new construction. They may be necessary for retrofit situations.
viii. Provide electric power transfer Von Duprin EPT 2 with electric locksets and standard exit devices. Coordinate alternate Von Duprin power transfer with manufacturer's instructions for any other unique devices.

d. Door closers: LCN, Norton.
i. Provide LCN 4040XP or Norton 7500 series, regular arm, parallel arm if needed.
ii. Provide LCN 4040SE Sentronic series for smoke detector hold-open type on exit doors. Avoid combination hold open type closers with smoke detectors at other locations.
iii. Provide through bolting for all closers.
iv. Provide 10-year warranty.
v. Install closers on room side of opening to minimize closer vandalism.

e. Exit device: Von Duprin, no substitutions.
i. Provide Von Duprin XP99 series at exterior doors, no substitutions.
ii. Provide Von Duprin 99 series for standard doors, no substitutions.
iii. Provide Von Duprin 33 series for narrow stile doors, no substitutions.
iv. Provide Von Duprin QEL electronic latch retraction feature for automatic and operator assisted doors, no substitutions.
v. Provide keyed removable mullion at double doors. Avoid vertical rod exit devices.

f. Push plates and pulls: Ives, Rockwood; Trimco.

g. Kick plates: Ives, Rockwood; Trimco.
i. Provide width to be 2" less than door width X 12" vertical.

h. Door stops: Rixon; Trimco; Ives, Glynn Johnson
i. Provide wall mount type Trimco 1270CX single screw mount or equivalent or overhead stops.

i. Thresholds, seals and weather-stripping: Pemko; National Guard; Reese.
i. Provide weather stripping at all exterior doors.

ii. Provide aluminum thresholds with thermal break at exterior doors.
iii. Provide sealant under all thresholds at exterior doors.
iv. Provide retractable type door bottom for sound seal at interior door.
v. Provide sweep type weather seal at exterior door with threshold.

j. Automatic door operators: Prefer LCN.
   i. Require coordination with project representative for system lockdown.
   ii. Provide hydraulic type operator's in lieu of electro-magnetic type.
   iii. Provide Power Supply module for auxiliary power. Include time delay relay function and transformer function. For openings that include access control, see Electronic Safety Systems design standard for integrated sequence of operations.
   iv. Avoid Pneumatic Operators
      1. Electric Latch Retraction and Electrical Power Transfer: Von Duprin, no substitutions.
         a. Recommend electric latch retraction lockset. Verify strike release is compatible with lockset and coordinate with electrical.
         b. Recommend concealed electrical power transfer (EPT) device located midway between middle hinge and top hinge.
   v. Provide ADA approved power assisted operator push pads with stainless steel push plates: BEA Inc.; Larco, LCN.
   vi. 4-3/4" square pad: BEA 10PBS with flush mounting box.
      1. Recommend BEA 10 Box SQ475 SM for surface mounted box.
      2. Recommend BEA 10 Box SQ475 FM for flush mounted box.
   vii. 4-1/2" or 6" square pad: Larco with flush mounting adapter plate and box.

k. Key switch: LCN/Schlage, Camden.
   i. Provide 1-1/8" removable cylinder compatible with SFIC core keying. Coordinate electrical availability and options for project specific application.

l. Padlock: Master.
   i. All padlocks to be supplied by University Lock shop.

m. Coordinator: Ives; Door Control.

n. Flush bolts: Avoid, if possible, if required at paired closet doors, or similar: Ives, McKinney, Rockwood.

o. Door viewer: Ives.
   i. Ives # 174 190-degree view. UL listed, for fire rated doors up to 1 hour.
   ii. Provide 2nd at X'0" height (ADA) at ADA designated rooms.

p. Magnetic door release: LCN or SDC, no substitutions.
   i. Provide wall mounted electromagnetic door holders in lieu of combination holder/closer at office/classrooms.

3. **INTERIOR SPECIALTIES**

a. **FIRE EXTINGUISHERS**

Fire Extinguisher Cabinets in existing HMS buildings shall be identified consistently with existing cabinets. Cabinets in new HMS buildings must meet the current NFPA 10 requirements for identifying fire extinguisher locations.

b. **TOILET AND BATH ACCESSORIES**

The A/E, in consultation with the Project Manager, shall consider the established practices of Facilities Maintenance when placing accessories.

HMS installations shall have infrared controls that are hard-wired, with battery backup, on all hand washing sinks in public areas and paddle blades on sinks in clinical areas.
Ensure all accessories are provided/shown on plans and elevations, including:

I. HMS provides Toilet Paper Dispensers, Paper Towel Dispensers, Soap Dispensers, Sanitary Napkin Disposals, and in some locations, Sanitary Napkin Dispensers. These appliances are to be Owner-Furnished, Contractor-Installed (OFCI). See Owner Supplied Dispensers list below.
II. PM to coordinate with Custodial Services for the number and location of these dispensers and receptacles to ensure timely delivery for installation.
III. Not less than one soap dispenser per two lavatories in each restroom. Countertop-mounted soap dispensers are prohibited.
IV. A 3" minimum width metal shelf above all lavatories not mounted in a countertop. The Shelf shall be finished to match adjacent accessory trim and approximately 18" in length. The shelf may be integral with the mirror.
V. Mirrors shall include a minimum ten-year warranty against silver spoilage.
VI. Free-standing waste receptacles with a minimum capacity of 32 gallons in all toilets having more than one lavatory.
VII. Academic project water closets should be equipped with commercial-grade, solid plastic seats that are resistant to chips, wear, and stains.

Item	Owner Supplied Dispensers
Toilet Seat Cover Dispenser	TORK WP19510 BAY WEST BLACK TOILET SEAT COVER DISPENSER FOR TC0020 10/CASE
Hand Soap Dispenser	PURELL CS8 SOAP DISPENSER BLACK & GRAPHITE 1200ML 1/CS
Toilet Paper Dispenser	TORK 80390.PROLINK PROLINK 80390/ 80300 REVOLUTION 3ROLL TT OPTICORE DISPENSER BLACK/TRAN
Paper Towel Dispenser	TORK H80 Essity. Model: 771828 electronic hand towel black dispenser
Feminine Product Dispenser	Gray alloy steel GG Golden Group INTERNATIONAL 4"D x 10.88"W x 16"H
Sanitary Napkin Receptacle	Rubbermaid 6140 Sanitary Napkin Receptacle with Rigid Liner. Length: 10 3/4 in. Height: 12 1/2 in. Depth: 5 1/4 in

c. **TOILET PARTITIONS**

Powder-coated steel, ASTM A424, Type I, commercial quality overhead-braced toilet partitions are required. Stainless steel finishes are prohibited. Alternative materials (plastic laminate, marble, and high-density polymer resin) must be approved by the Project Manager prior to submitting the Preliminary Design for review. Exposed particleboard or wood toilet partitions are prohibited.

d. **WALL AND CORNER GUARDS**

Wall and corner guards are required in corridors and other areas where service carts, movable equipment, and similar equipment will be used.

e. **DRINKING FOUNTAIN WITH BOTTLE FILL STATION**

In new construction and major renovation projects, provide at least one drinking fountain with an integrated water bottle fill station on each floor. The station shall be located in a public area of the building.

I. Halsey-Taylor, Model HAC-HB_1A (or similar) is the Owner's preferred unit.

f. **PUBLIC ACCESS AUTOMATED EXTERNAL DEFIBRILLATORS (AED)**

All new buildings and major renovation projects shall include AEDs, AED cabinets, and AED signs in locations determined by the Office of Emergency Management. The AEDs, AED cabinets, and AED signs, as well as the vendor and model, are determined by the Office of Emergency Management. AEDs will be installed in semi- or fully recessed cabinets to prevent them from being protruding objects. Coordinate the locations of the AEDs with the Office of Emergency.