Health Care Design Standards for Consultants  
September 2013

The following information is to be used by consultants in the design of Health Care Facilities and is supplemental to the University of Missouri Consultant Procedures and Design Guidelines. Any conflicts between the following direction as compared with the Consultant Procedures and Design Guidelines will be resolved by the Project Manager and MUHC Engineering Services staff.

ADDITIONAL GUIDELINES:


b. Consultants are to use the most stringent of applicable codes.

c. MUPC (Missouri University Psychiatric Care) projects additionally require compliance with the *Design Guide for the Built Environments of Behavioral Health Facilities Edition 3.0* distributed by the National Association of Psychiatric Health Systems ([www.naphs.org](http://www.naphs.org)).

d. All facilities will also be required to meet the requirements set forth in *Code of State Regulations*, CSR chapters 20, 24 and 30 documents.

e. All interior finishes shall be of colors and materials that present good soiling hiding capabilities in addition to ease of cleanability and maintainability. It shall be at the discretion of MUHC Engineering Services and Environmental Services Staff staff to determine if submitted finishes meet these requirements. If testing is requested by MUHC. Vendors will need to submit at no cost to MUHC samples large enough for field testing purposes.

f. MUHC promotes Green initiatives and encourages the use of green products as long as the above criteria are met.

DESIGN: The following SPACE & FINISH RECOMMENDATIONS for typical health care spaces represent minimum levels of performance, quality and/or standards. The design team should evaluate the project needs and when suitable. Propose cost effective and appropriate alternatives.

2. Manager’s Office:  
   Average actual sq ft: 100

a. Walls: Type II vinyl wall covering on one accent wall, semi-gloss paint other walls and trim Level 5 finish is required for Semi-Gloss painted walls

b. Flooring: Standard carpet tile with standard 4” coved vinyl wall base

c. Ceiling: 2x2 acoustical tile, 15/16” grid

d. Lighting: recessed indirect 2x4 fixtures

e. Window treatments: Wood, or Mecho type roller shades depending on building standards. Draperies on occasion if requested.

f. Wall protection: Chair rail or decorative laminate wall panels or decorative wall panels if needed/requested.

g. FFE owner provided
3. **Open Office Areas**  
   Average actual sq ft: 100/person  
   a. Walls and trim work: Standard semi-gloss paint. Level 5 finish is required for Semi-Gloss painted walls  
   b. Flooring: Standard carpet tile with 4” vinyl wall base  
   c. Ceiling: 2x2 acoustical tile, 15/16” grid  
   d. Lighting: recessed indirect 2x4 fixtures  
   e. Window treatments: wood or Mecho type roller shades depending on building standards. Draperies on occasion if requested.  
   f. Systems furniture (provided by Owner)  

4. **Exam & Treatment Rooms**  
   Average actual sq ft: 100  
   a. Walls: Standard Semi-Gloss paint w/accent wall in vinyl or semi-gloss paint all walls and trim. Level 5 finish is required for Semi-Gloss painted walls  
      Flooring: Standard: seamless vinyl, Alternate: vinyl composition tile with high vinyl content with standard 4” coved vinyl wall base  
   b. Ceiling: 2x2 acoustical tile, 15/16” grid  
   c. Lighting: recessed indirect 2x4 fixtures with infection control baffle  
   d. Window treatments: Wood or Mecho type roller shades depending on building standards. Draperies on occasion if requested.  
   e. Built-in casework: plastic laminate base cabinet with 19x17x10 Stainless Steel sink and plastic laminate work surface, plastic laminate upper cabinets. Reveal overlay knuckle hinges on all casework.  
   f. Wall protection: possible chair rail or decorative laminate wall panels if needed/requested.  
   g. On the Right Track Privacy curtain at door – track and hardware by Contractor, cubicle curtain panels owner specified contractor furnished  
   h. Accessories by Owner and installed by Owner: paper towel, soap dispenser, X-ray view box, box sharps box and holder, eye / ear scopes and PACS.  
   i. Furniture/Equipment by Owner: Exam tables, chairs, equipment, exam lights.  

5. **Patient Rooms (single occupancy)**  
   Average actual sq ft: 150/250  
   a. Walls: Standard Semi-Gloss paint for trim and wall vinyl at headwall and side walls. Plastic laminate grid wall panels at footwalls and behind bed. Level 5 finish is required for Semi-Gloss painted walls  
   b. Flooring: Standard seamless vinyl and 4” profiled vinyl base  
   c. Ceiling: 2x2 acoustical tile, 15/16” grid  
   d. Lighting: recessed indirect 2x4 fixtures, LED wall grille night light, overhead bed light, wall sconces  
   e. Window treatments: Wood or Mecho type roller shades depending on building standards. Draperies on occasion if requested.  
   f. Built-in casework: plastic laminate or phenolic base cabinet with solid surface sink and solid surface counter tops, plastic laminate upper cabinets, Phenolic wardrobe / locker unit. Wall protection: bumper guards for head and foot wall, corner guards. Reveal overlay knuckle hinges on all casework. Phenolic supply storage casework with full suspension drawers.  
   g. Cubicle Curtain: On the Right Track Privacy curtain at door – track and hardware by Contractor, cubicle curtain panels owner specified contractor furnished
h. Accessories by Owner and owner installed: paper towel, soap dispenser, X-ray view box and PACS. Clock, white board and calendar.

i. Furniture/Equipment by Owner: Patient beds, bed side table, over bed table, chairs, sofa, TV, equipment, exam lights.

j. Nurse Call system in Hospital areas as required by code. Contractor to install back boxes and cabling

k. Medical Gases Outlets: installed into typical partition wall unit recessed or hidden from view if not being used. Prefabricated unit are acceptable if unit is from a proven manufacturer and is not a custom unit. Depth of wall must take into account back to back installations.

l. Medical Gas Zone Alarm valves and shut offs located and installed per code.

6. **Patient Restrooms**

   Average actual sq ft: 70

   a. Flooring: Seamless skid resistant vinyl heat welded coved up the wall 6” with Schluter radiused top and edge trim and Schluter Reno V at wall base.

   b. Walls: Ceramic tile walls 6x6 minimum to 84” above floor on wet wall and 60” on side walls with vinyl wall covering or semi-gloss paint from top of tile to ceiling

   c. Shower stall: Seamless Acrylic unit with integral seat, provisions for factory installed grab bars and field installed mixing valve

   d. Toilet: Floor mounted with battery flush valve

   e. Sink Unit: solid surface or wall mounted vanity.

   f. Ceiling: 2x2 acoustical tile, 15/16” aluminum grid white color.

   g. Lighting: recessed indirect 2x4 fixtures with infection control baffle

   h. Privacy Partitions: Phenolic

   i. Accessories by Owner: Soap dispenser. Seat protectors

   j. Accessories by Contractor: Partially recessed automatic paper towel dispenser (enMotion), mirror (over sink), grab bars, personal shelf. Toilet paper dispenser napkin disposal.

7. **Conference Rooms**

   Average actual sq ft: 15/person

   a. Walls: Type II vinyl wall covering on all walls, semi-gloss painted trim.

   b. Flooring: Standard carpet tile with standard 4” coved vinyl wall base

   c. Ceiling: 2x2 acoustical tile, 15/16” grid

   d. Lighting: multi-switched recessed indirect 2x4 fixtures with infection control baffle and wall washers

   e. Window treatments: Wood or Mecho type roller shades depending on building standards. Draperies on occasion if requested.

   f. Built-in casework: plastic laminate or wood base cabinet, plastic laminate or solid surface top with sink, plastic laminate or wood wall hung upper cabinets, plastic laminate or wood media center. Reveal overlay knuckle hinges on all casework.

   g. Wall protection: possible chair rail or decorative laminate wall panels if needed/requested.

   h. Accessories by Owner: paper towel dispenser, artwork, clock

   i. Furniture by Owner: Conference table and chairs

8. **General Waiting Rooms**

   Average actual sq ft: 15/person

   a. Walls: Type II vinyl wall covering and or semi-gloss paint on all walls, semi-gloss painted trim. Level 5 finish is required for Semi-Gloss painted walls

   b. Flooring: Standard carpet tile with standard 4” coved vinyl wall base

   c. Ceiling: 2x2 acoustical tile, 15/16” grid

   d. Lighting: recessed indirect 2x4 fixtures
e. Window treatments: Wood or Mecho type roller shades depending on building standards. Draperies on occasion if requested.
f. Built-in casework: plastic laminate or wood base cabinet, plastic laminate or solid surface top with sink, plastic laminate or wood wall hung upper cabinets, plastic laminate or wood media center. Reveal overlay knuckle hinges on all casework

g. Wall protection: chair rail or decorative laminate wall panels or decorative panels

h. Furniture/Equipment by Owner: chairs (2 bariatric per 10), end tables, TV, Children’s area, Literature Rack and Artwork

9. Departmental Waiting Rooms

Average actual sq ft: 15/person

a. Walls: Type II vinyl wall covering and / or semi-gloss paint on all walls, semi-gloss painted trim. Level 5 finish is required for Semi-Gloss painted walls

b. Flooring: Standard carpet tile with standard 4” coved vinyl wall base

c. Ceiling: 2x2 acoustical tile, 15/16” grid

d. Lighting: recessed indirect 2x4 fixtures

e. Window treatments: Wood or Mecho type roller shades depending on building standards. Draperies on occasion if requested.
f. Built-in casework: plastic laminate or wood base cabinet, plastic laminate or solid surface top with sink, plastic laminate or wood wall hung upper cabinets, plastic laminate or wood media center. Reveal overlay knuckle hinges on all casework

g. Wall protection: chair rail or decorative laminate wall panels

h. Furniture/Equipment by Owner: chairs lounge seating, end tables, TV Children’s area, Literature Rack and Artwork

10. Public Restrooms

Average actual sq ft: 70/person

a. Flooring: Seamless skid resistant vinyl heat welded coved up the wall 6” with Schluter radiused top and edge trim and Schluter Reno V. at wall base

b. Walls: Ceramic tile walls 6x6 minimum to 84” above floor on wet wall and 60” on side walls with vinyl wall covering or semi-gloss paint from top of tile to ceiling

c. Toilet, Floor mounted

d. Sink unit: Solid surface with drop in bowl or integral bowl. Auto-Sensor Faucets

e. Ceiling: 2x2 acoustical tile, 15/16” grid

f. Lighting: recessed indirect 2x4 fixtures
g. Privacy Partitions: Phenolic

h. Accessories by Owner: soap dispenser, Seat protector.
i. Accessories by Contractor: Partially recessed automatic paper towel dispenser (enMotion) personal hygiene vendor, mirror (over sink or full height), grab bars, personal shelf, and sanitary napkin disposal.
j. Exhausting shall be designed to minimize odors and if needed may exceed ASHRE standards

11. Call Rooms

Average actual sq ft: 170

a. Walls: Type II vinyl wall covering and / or semi-gloss paint on all walls, semi-gloss painted trim. Level 5 finish is required for Semi-Gloss painted walls

b. Flooring: Standard carpet tile with standard 4” coved vinyl wall base

c. Ceiling: 2x2 acoustical tile, 15/16” grid

d. Lighting: recessed indirect 2x4 fixtures

e. Window treatments: Wood or Mecho type roller shades depending on building standards. Draperies on occasion if requested.
f. Built-in casework: plastic laminate or wood base cabinet, plastic laminate or solid surface top with sink, plastic laminate or wood wall hung upper cabinets, plastic laminate or wood media center. Reveal overlay knuckle hinges on all casework

g. Wall protection: chair rail or decorative laminate wall panels
h. Furniture/Equipment by Owner: bed(s), desk and chair, TV, storage wardrobe, refrigerator, telephone
i. Bathroom: Toilet, shower and solid surface or wall mounted vanity.
j. Accessories by Contractor: mirror (over sink and possibly full height), grab bars, personal shelf, paper towel dispenser
k. Accessories by Owner: soap dispenser, seat protector.

12. Corridors
Average actual sq ft: 8’ wide min 12’ wide max
a. Walls: Type II vinyl or textile wall covering and semi-gloss painted trim.
b. Flooring: Standard carpet tile with standard 4” coved vinyl wall base
c. Ceiling: 2x2 acoustical tile, 15/16” grid
d. Lighting: recessed indirect 2x4 fixtures
e. Window treatments: Wood or Mecho type roller shades depending on building standards. Draperies on occasion if requested.
f. Wall protection: Hand rails if required by functional program, corner guards, and bumper guards. Decorative plastic laminate wall panels or FRL wall panels in pleasing design.
g. Accessories by Owner: Signage for room numbers and way-finding, safety dome mirrors, artwork
h. Fire extinguishers cabinets semi recessed with type ABC extinguishers
i. Electric water cooler - ADA compliant dual height

13. Break Rooms/Doctor’s Charting
Average actual sq ft: 150
a. Walls: Standard semi-gloss semi-gloss paint with semi-gloss painted trim
   Flooring: Standard seamless vinyl. Alternate vinyl composition tile with high vinyl content with standard 4” coved vinyl wall base
b. Ceiling: 2x2 acoustical tile, 15/16” grid
c. Lighting: recessed indirect 2x4 fixtures
d. Window treatments: Wood or Mecho type roller shades depending on building standards. Draperies on occasion if requested.
e. Built-in casework: plastic laminate base cabinet with 19x17xq10 Stainless Steel sink and plastic laminate or solid surface countertop / work surface, plastic laminate upper cabinets. Reveal overlay knuckle hinges on all casework
f. Wall protection: possible chair rail or decorative laminate wall panels if needed/requested.
g. Accessories by Owner: paper towel, soap dispenser,
h. Furniture/Equipment by Owner: table and chairs, Ice maker, kitchen equipment, lockers

14. Clean, Meds & Soiled
Average actual sq ft: 100-200
a. Walls: Standard semi-gloss semi-gloss paint with semi-gloss painted trim
b. Flooring: Standard seamless vinyl or vinyl composition tile with high vinyl content with standard 4” coved vinyl wall base
c. Ceiling: 2x2 acoustical tile, 15/16” grid
d. Lighting: 2x4 prismatic fixtures
e. Window treatments: Wood or Mecho type roller shades depending on building standards. Draperies on occasion if requested.
f. Built-in casework: plastic laminate base cabinet, plastic laminate or solid surface top with 19x17x10 Stainless Steel sink, plastic laminate upper cabinets, Reveal overlay knuckle hinges on all casework
g. Wall protection: chair rail or decorative laminate wall panels
h. Furniture/Equipment by Owner: Ice maker, kitchen equipment, Pyxis machine in Med Room.
i. Accessories by Contractor: recessed automatic paper towel dispenser
j. Accessories by Owner: soap dispenser, paper towel dispenser

15. Janitors, Electrical, Mechanical & Data  Average actual sq ft: as required
   a. Walls: Standard semi-gloss semi-gloss paint with semi-gloss painted trim (Janitor Closet to have FRP panels 60” high in all walls)
b. Flooring: Sealed concrete or vinyl composition tiles with standard 4” vinyl base
c. Ceiling: 2x2 acoustical tile, 15/16” grid
d. Lighting: 2x4 prismatic fixtures or 1x4 suspended fixtures

16. Non-Operating Procedure Rooms where Anesthetizing occurs:
a. General space requirements: Sufficient space to accommodate necessary equipment and personnel and to allow expeditious access to the patient, anesthesia machine (when present) and monitoring equipment.
b. Walls: Standard semi-gloss semi-gloss paint w/accent wall in vinyl or semi-gloss paint all walls and trim. Level 5 finish is required for Semi-Gloss painted walls
c. Flooring: Standard seamless vinyl with integral 4” wall base
d. Ceiling: 2x2 acoustical tile, 15/16” grid
e. Specialty lighting: as appropriate for procedures performed.
f. Window treatments: Wood or Mecho type roller shades depending on building standards.
g. Built-in casework: plastic laminate base cabinet with plastic laminate work surface, plastic laminate upper cabinets Reveal overlay knuckle hinges on all casework
h. Sink Unit: Solid surfacing
i. Cubicle Curtain: Privacy panel at door – track and hardware by Contractor, panel by Owner.
j. Accessories by Owner: paper towel, soap dispenser
k. Furniture/Equipment by Owner: Exam tables, chairs, equipment, exam lights.
l. HVAC shall meet recommended standards and codes.
m. Medical Gas Requirements:
   i. Adequate and reliable source of oxygen adequate for the length of the procedure. There should also be a backup supply. Oxygen piped from a central source, meeting applicable codes, is strongly encouraged.
   ii. Adequate and reliable source of suction.
   iii. If inhalation anesthetics are administered, adequate and reliable system for scavenging waste anesthetic gases.

n. Electrical:
   i. Sufficient electrical outlets to satisfy anesthesia machine and monitoring equipment requirements including emergency power supply.
   ii. Emergency power for an emergency "crash" cart with a defibrillator and other equipment adequate to provide cardiopulmonary resuscitation
   iii. isolated electric power or electric circuits with ground fault circuit interrupters for "wet locations" (e.g., for cystoscopy or arthroscopy or a birthing room in labor and delivery),
   iv. Adequate illumination of the patient, anesthesia machine (when present) and monitoring equipment.
v. A reliable means of two-way communication to request assistance.
The following information may be used to enhance specifications and is listed by CSI division number.

DIVISION 2 - EXISTING CONDITIONS / SITE CONSTRUCTION
17. Demolition – existing conditions
   a. General: New doors must be installed in new frames. Tolerances required by NFPA 80 must be met. Use of existing frames with new doors will not likely produce installation that complies with these tolerances.

DIVISION 3 - CONCRETE
18. Skim coat underlayment…at all areas where walls are removed /plumbing reworked, scheduled for resilient flooring product.

DIVISION 4 – MASONRY

DIVISION 5 – METALS

DIVISION 6 – WOODS, PLASTICS & COMPOSITES
19. Casework:
   a. Base cabinets under sinks can not be used for storage. Cabinet doors under sinks are to have suspension fittings or hinged with locks
   b. Cabinet doors are to have PVC edge banding (no self edging is allowed).
   c. Cabinet door hardware for clinical areas 5 knuckle hinge, non clinical areas may use European flush overlay style hinges
   d. Plastic laminate filler panel between top of upper cabinet and ceiling.
   e. Under cabinet lights: LED hard wired, located only as requested by User/client group.
20. Countertops:
   i. Exam Rooms, Clean/Soiled Utility: Solid Surface with 10” deep sink
   ii. Medicine Room: Solid surface top is to be light colored with little pattern or texture.
   iii. Procedure Room: Solid surface with ten inch deep sink.
   b. Nurses stations:
      i. transaction tops solid surface
      ii. desk height work surface: plastic laminate with t-mold edge
   c. Desk height built-in work surfaces:
      i. No built-in base cabinets or pencil drawers. Mobile file cabinets and pencil drawers will be supplied by Owner.
      ii. Grommet placement and installation will be by Owner after construction is complete.
      iii. Clear space beneath workspace: 27-1/2” minimum to 29” maximum (to accommodate standard Owner furnished file cabinets). Verify FFE height with MUHC Engineering Staff
      iv. Countertop surface mounted supports equal Rakks #EH1824FM (18x24) or #EH1818FM (18x18)
   d. Miscellaneous:
      i. Peg board: only nonporous products - plastic or polypropylene

DIVISION 7 - THERMAL AND MOISTURE PROTECTION:
21. Cable/conduit penetrations at rated walls – EZ-Path by STI
22. For dust partitions, if not feasible/possible to extend partition to deck, between ceiling and deck, as approved by Owner’s Representative, extend and seal tight 6-mil fire retardant
type listed by Underwriter’s Laboratories, Griffolyn #T55R or Star-Tex of Lakeville, MN 55044 with Griffolyn Fire retardant tape, or approved equal from ceiling to deck.

23. Contamination control mats outside of dust enclosures: Tacky Mat 800030 (high tack) by Liberty Industries, 133 Commerce Street, East Berlin, Connecticut, 06023, 1-800-828-5656, or Owner approved equal.

24. Fire Proofing: installer must be a trained, certified fire proofing expert using the proper UL listed assembly for each penetration through each type of rated wall assembly.

DIVISION 8 - OPENINGS

   a. Positive Latching
   b. Not more than 1/8" gap between the face of the door and Jambs (Top and Sides)
   c. Not more than 1/8" between face of door and stop
   d. Self Closing
   e. Maximum of 3/4 " gap at bottom of door to finish floor
   f. Meeting Edges of pair of doors 1/8" or less

Smoke Resistance Doors (Patient Room Doors and other non rated doors)
Same as above except deviation of +/- 1/16" from 1/8"

26. Door Frames:
   a. Welded hollow metal frames are the standard to be used in new wall construction
   b. Knock-down (Timely) frames are to be used when installing new door and frame into existing wall.
   c. Fire rating on jambs shall have the label clearly visible and not painted. Mfg codes are prohibited

27. Doors:
   a. Wood doors – stained – for MUHC clinics (Plain Sliced, Rotary or Rift Cut Vertical Graining. Durable Doors or Rhino Doors for UH, WCH, MOI and MPC hospital spaces
   b. All rated doors shall have the rating label clearly visible and not painted. Mfg codes are prohibited

28. Hardware:
   b. Closers: only LCN is allowed. UL listed and fire rated where required
   c. Locksets and cylinders shall be Best 93K series 626 finish with Preferred core locks ~(1CF72P1) -626 finish
   d. Electric Strikes: Von Duprin or Folger Adams
   e. Panic Devices: Von Duprin

29. Sliding Glass/Aluminum ICU/CCU type doors: at Isolation (negative pressure) and Protective Environment (positive pressure) Rooms require smoke and draft seals.

30. Window replacement:
   a. WCH: Non-operable thermally broken insulated units with Low E coated tinted glass.
   b. University Hospital: EFCO Low ‘E’ double pane

DIVISION 9 - FINISHES

31. Typical partition walls are to extend to deck and be sound insulated to reduce sound transmission between walls. Clinic exam rooms wall shall go to the deck.

32. At wall and window “T” junctions sound transmission shall not exceed STC of wall.
33. Tile: wet walls of Toilet and Shower rooms in WCH and University Hospital are to receive tile from floor to 84” AFF minimum
34. Resilient Base: 4” vinyl coved or 4” Profiled (not rubber)
35. Resilient Flooring 6’ or larger width w/ welding rod to match colors selected
36. Acoustical Panel Ceilings: USG Rockface or equal for all areas except wet areas. Ceiling tiles are not required to be antimicrobial unless specifically requested.
37. Wall Covering: Type II with high tensile and tear strength. Wall vinyl on exterior walls needs to be micro vented.
38. Preferred Vendors:
   a. Lees Commercial Carpets Tiles (Standard)
   b. Armstrong Flooring & Ceilings
   c. Crossville Ceramics
   d. USG Ceilings ((Rock face) standard) Armstrong Ultima
   e. Mannington Flooring Assurance II (Standard)
   f. Azrock Flooring
   g. Corian Solid Surfacing
   h. Sherwin Williams Paints (standard)
   i. Teknofloor Seamless (Standard)
   j. Chicago Faucets
   k. Crane Fixtures
   l. AquaGlas or equal Acrylic Showers
   m. Focal point Indirect Troffer Lighting with infection control baffles
   n. Bobrick accessories. Grab bars and other accessories exposed to frequent cleaning need to be Powder Coated clear or color to prevent chemical rusting.
   o.

DIVISION 10 - SPECIALTIES
39. The following items are typically by Owner but must be accommodated in the design process:
   a. Soap dispensers
   b. Alcohol dispensers.
   c. Sharps boxes
   d. Glove dispensers
   e. Surface mounted towel dispensers
   f. Multi-hook coat hooks
   g. Marker / bulletin boards
40. The following items are typically by Contractor and must be specified:
   a. Partially recessed Automatic Paper Towel Dispensers equal Georgia Pacific enMoton #59466
   b. Grab bars
   c. Toilet paper dispenser
   d. Mirrors
   e. Towel bars
   f. Sanitary napkin disposal (as requested)
   g. Individual robe hooks (as requested)
   h. Specimen pass thru (as requested)

DIVISION 11 - EQUIPMENT
41. Monitor channel mounting system: equal GCX Instrument Mounting System WC-0002 x length.

DIVISION 12 - FURNISHINGS
42. Standard window treatments for each facility as follows:
a. WCH: Wood Blinds & Mecho Shade. Dependent on location
b. University Hospital: Wood Blinds  Mecho Shade Dependent on location
c. Keene Medical Building: Mecho Shade
d. Health Pavilion: Mecho Shade
e. South Pavilion: Mecho Shade

43. Roller Shades – openness factor of greater than 2% will not provide adequate privacy after dark with the lights on in the room and will not prevent glare on computer screens.

44. Cubicle Curtain track: On The Right Track (No Substitutions Allowed)

DIVISION 13 – SPECIAL CONSTRUCTION

DIVISION 14 – CONVEYING EQUIPMENT

DIVISION 21 – FIRE SUPRESSION
45. System is to include fully recessed heads. Quick response and must be an engineered and certified system.

DIVISION 22 - PLUMBING
46. Auto sensor flush valves and lavatory faucets – (at the request of client/user group) shall be battery operated? (or hard wired?)
47. Sinks in countertops – 10" deep stainless steel bowl for Procedure, Soiled/Clean Utility, and Med Room.
48. Medical Gas Outlets are to be specified as follows:
   a. (WCH) - Beacon Medaes Gemini III
   b. (University Hospital) - Oxiequip by Hospital Systems

DIVISION 23 – HEATING VENTILATION AND AIR CONDITIONING
49. Testing and Balancing is by Owner.
50. Testing for current (preconstruction) performance prior to system modification is required and will be performed [by Owner].
51. Fire and/or smoke dampers:
   a. Dampers must have a test switch installed as an assembly by the manufacturer located at damper for testing purposes. This switch will drop the signal from the fire alarm system shutting the damper down.
   b. Dampers require access panels 18” x 18” to access damper for repairs or required testing. All fire/smoke dampers will need to have easy access, above ceiling with no obstructions.
   c. All walls deemed as integral to Life Safety shall be clearly marked on the Mechanical drawings in addition to the Life Safety drawing sheets for clarity and reference for the respective tradesmen.
52. Isolation Room Exhaust:
   a. Grilles are to be located within 6” of the floor and behind the bed.
   b. Power for the exhaust system must be accessible to staff (Key switch, knob).
   c. Monitoring devices are required to verify the pressure differential (Negative/neutral)
   d. Shall meet all ACH requirements and all applicable codes.
53. Ductwork:
   a. Shop or factory fabricated ductwork shall be manufactured to “shop” or “mill” conditions with the mill oil film removed. The shop fabricated ductwork and fittings shall ship to the site completely assembled and both ends sealed with an adhered protective covering (hainnets are not acceptable). Cursory cleaning shall take place when any foreign substance is noted.
b. Ductwork and fittings purchased from other fabricators, i.e. spiral, oval, etc., and delivered directly to the jobsite, shall be cleaned and capped and mill oil removed at the jobsite.

c. Unassembled ductwork: Occasionally ductwork may be shipped unassembled. This duct shall be kept covered and cleaned at the site as it is erected.

d. Duct fabrication labels shall be placed on duct exterior only. No paper identification labels shall be inside the duct.

e. All ductwork, fittings, VAV’s etc. shall be palletized and shrink wrapped for delivery to the jobsite.

f. Shipping: All ductwork and accessories shipped from fabrication shop(s) shall be shipped in an enclosed trailer or enclosed truck to protect the ductwork from damage, dirt, and moisture during transit to the jobsite.

g. Storage: Ductwork that is delivered to the site shall be installed as soon as possible. Care shall be taken to schedule only enough material on site for the immediate workload. Ductwork stored on site must be in enclosed vans or inside the building at least 4” above the floor to avoid damage from weather or spills. Openings shall be covered.

h. Handling: When moving or unloading ductwork, it shall not be placed on the ground. Ductwork shall be placed directly in storage vans or within the building as it is unloaded, no exceptions. Ductwork shall be moved on carts or dollies. Ductwork that is wrapped shall not be dragged across the floor as it can damage the seals.

i. Installation and Final Clean: Ductwork systems shall be installed at the site to maintain “shop” or “mill” (free of mill oil) conditions. The ductwork shall be cleaned as necessary to maintain these conditions. Cleaning shall be performed using a 20% Isopropyl Alcohol to wipe down all interior surfaces upon installation. Interior surfaces must be dust free and exterior surfaces must be free of foreign substances. Cover all ends of installed ductwork at the end of each workday, or when work is suspended for any length of time, i.e. breaks, lunch, etc. At the end of the workday, Contractor is to insure all ends are covered on both stored and installed ductwork. If installed prior to roofing, protect ductwork from water infiltration.

54. Air Outlets Diffusers and Grilles:
   a. Air outlets should be installed with filter media or blanked off (as directed by the Owner’s Representative).
   b. Return air shall not be activated until all dust generating activities are complete. Temporary duct modifications, manual damper settings or overrides on control systems may be required. If return air must be activated prior to completion, upon approval by the Construction Manager, install filter media on return duct openings.

55. Air Handling Units, including their respective mechanical equipment rooms, and rooftop units are to be inspected for dirt/debris prior to any filter installation/start-up and shall be cleaned as necessary. Use 10% Isopropyl Alcohol solution to wipe down the inside surfaces of the air handlers.

56. VAV terminal units shall be equipped from the factory and completely sealed and shall not be opened until they are installed and ductwork connected. Also terminal units are to be protected even if installed.

DIVISION 25 – INTEGRATED AUTOMATION

DIVISION 26 – ELECTRICAL

57. Indirect recessed perforated basket type fixtures must be either Focal Point or Metalux. (Lithonia and Williams perforated baskets tend to be disorienting and nauseating to patients with astigmatism).
58. All walls deemed as integral to Life Safety shall be clearly marked on the Electrical drawings in addition to the Life Safety drawing sheets for clarity and reference for the respective tradesmen.

DIVISION 27 – COMMUNICATIONS
59. CAT 6 cable will be supplied by Owner, installed by Contractor.
   a. Typically include 3 drops per conduit.
   b. Termination will be by Owner.
60. Nurse Call System will be by Owner.
   a. Rauland Responder 5
61. All walls deemed as integral to Life Safety shall be clearly marked on the Communications drawings in addition to the Life Safety drawing sheets for clarity and reference for the respective tradesmen.

DIVISION 28 – ELECTRONIC SAFETY AND SECURITY
62. Security Concerns: To prevent abduction, all access points to infant and pediatric care departments (including the Birthing Center) must be controlled with security devices. Specific examples include:
   a. Elevator vestibules with card access and a push button at the Nurse station to allow visitors to enter and depart. 24 volt system
   b. Stair doors locked down and accessed by either a card/proximity reader or push button at Nurse Station. 24 volt system. All of the system shall meet NFPA 101 19.2.2.2.5
   c. The use of an intercom and/or digital camera remote locations to view potential visitors, doctors, etc.

DIVISION 31 – EARTHWORK

DIVISION 32 – EXTERIOR IMPROVEMENTS

DIVISION 33 – UTILITIES

ADDITIONAL DOCUMENTATION REQUIREMENTS:
63. The Design Consultant is responsible to create and include a LIFE SAFETY PLAN in the drawing set of the Contract Documents along with an ILSM (Interim Life Safety Measures Plan) for the entire project. The LIFE SAFETY PLAN must indicate all fire rated walls and assemblies, structural component ratings, smoke and fire compartments, means of egress travel distances and exits. The LIFE SAFETY PLAN should include the following General Notes:
   a. All penetrations (new or existing) shall be sealed at all times, except when actively working with the penetration. Existing unsealed penetrations, once encountered, shall be sealed immediately with the appropriate fire/smoke stopping material. Coordinate the sealing method, whether temporary or permanent, with the Owner’s Representative.
   b. Existing exits must remain accessible. Clear paths of travel to exits must be maintained within the construction limits. Contractor is to coordinate with Owner's Representative to maintain proper exit signage throughout construction.
   c. Each fire rated wall shall be stenciled with 4 inch letters directly above ceiling tile so as to identify rated construction upon lifting of ceiling tiles. Walls are to have stenciled fire ratings at eight foot increments horizontally.

64. The Design Consultant is responsible to create and include an INFECTION CONTROL PLAN in the drawing set of the Contract Documents. The INFECTION CONTROL PLAN
should indicate locations and configurations of temporary dust and containment partitions, specifying in detail the type of construction for each partition and the path of debris removal to the exterior of the building. The following notes are to appear with the INFECTION CONTROL PLAN:

a. Dust Seal Partitions General Notes:
1. The Contractor is responsible to confine dust and debris to within the dust partition enclosure. There shall be NO visible dust or debris outside of the dust partitioned area. If Contractor is unable to maintain a dust and debris free area outside of dust-partition enclosure, more extensive measures will be required at the Contractor's expense. The following General Notes further indicate required measures.
2. Precut materials for dust partitions in unoccupied areas.
3. Construct dust partitions of non-combustible gypsum board on one side of metal studs. Tape all joints and intersections with existing walls, decks and ceilings to prevent the spread of dust. Extend dust-seal partitions from the floor through the suspended ceiling, to the underside of the floor deck above. At temporary walls that intersect existing finished walls, tape joint at the existing wall to seal the dust partition to the existing wall.
4. Fire-retardant polyethylene may be used only when approved by the Owner's Representative where above-ceiling conditions are confirmed to prelude construction of a gypsum board partition tight to the deck.

[as directed by Project Manager for dust partitions in prominent public view, include the following].
5. Construct dust partition using vinyl covered gypsum board on the public side and install temporary vinyl base to match existing.

[as directed by Project Manager for dust partitions required to be fire rated, include the following].
6. Construct dust partition as a [x hr] fire rated partition with rated door assemblies to maintain integrity of an existing rated partition. As deemed appropriate for each area and supporting PCRA
7. Provide 3'-0" minimum width access door of solid core wood with metal frame and hardware, including closer and gasketed threshold, tightly weather stripped to prevent flow of dust. Swing door into construction area. Keep enclosure locked during working and non-working hours. Key into Hospitals system as indicated by Owner's Representative.
8. Maintain the integrity of dust-partition enclosures throughout the project. Verify penetrations and joints are continuously sealed. Keep all doors and windows closed. In the event of a breach of a dust partition enclosure, make immediately repairs and remEDIATE dust and debris.
9. Periodically HEPA vacuum inside the dust-partition enclosure (or as otherwise directed in the ICRA/IICM), and provide and maintain contamination control mats outside each dust-seal enclosure entry. Continuously monitor and immediately clean up dust tracked from demolition and construction areas into occupied areas of the building. Wipe transport cart wheels clean and cover cart debris each time the cart exits the dust partitioned work zone.
10. Upon construction completion and after final cleaning, remove dust-seal enclosure material from work area and properly dispose of as debris. Minimize the spread of dirt and debris.

65. The Mechanical Engineering Consultant is responsible to include the following additional Infection Control notation on Mechanical Drawings of the Contract Documents:
1. All air duct covers and HVAC equipment seals are to remain intact throughout dust generating construction. Immediately notify Owner's Representative of any observed penetrations in the dust covers or breaks in HVAC equipment seals.
2. Seal all HVAC return inlets in work areas with plastic sheeting and tape to prevent contaminants from entering the building’s air system. Any existing return and exhaust air systems that must be cut and capped shall be capped outside of the construction area.
3. Coordinate with Owner’s Representative before using existing HVAC supply air systems for temporary heating and cooling. In no case shall supply air fans serving occupied areas of the building be shut down without Owner’s written approval. Openings in ductwork remaining within the construction area shall be sealed. All redirected supply air shall be exhausted to outside the building to avoid changes to air pressure relationships in occupied areas of the building.
4. HVAC systems designated with particle filters shall not be operated without filters in place.