Academy of Architecture for Health

AIA Knowledge Community

Webinar Title: A look at the evolution of Hybrid OR design at the Cleveland Clinic Heart and Vascular Institute
Webinar Date: March 9, 2021

Unanswered Attendee Questions with Responses

Q: Where can I download a copy of the presentation?
A: You can download a PDF copy of the presentation at https://bit.ly/AAH21LC02

Q: Is this webinar being recorded?
A: All recent AAH webinars are available to stream on the AAH Vimeo channel. Learn about current issues affecting healthcare architectural practice on your own schedule: www.aia.org/aahwebinarvideos

Q: Areas for related plant - as large or larger than footprint?
A: Depends on context within the surgical suite. Due to the size, it may require more HVAC due to qty of air changes. If control room does not have a door separating it from the OR, it's sf needs to also be considered to be same ACH as the OR.

Q: How do you compensate for equipment technology upgrades during the timeframe from design through construction? If design & construction takes 6 mo + 6 mo, how do you accommodate equipment technology changes in their respective industries?
A: Always difficult. We have lots of conversations with the vendors to try and anticipate any upcoming changes when possible. If we can't predict a change, then we build in extra air/electrical/raceways etc. to easily add them in the future.

Q: Great presentation on equipment intensity in these spaces and the variations of cases equipment, prefab walls, ceiling/MEP etc. Portable shields can take a lot of space; need protection for people to remain in room and be protected near the field. Floor ducts have helped our clients with flexibility.
A: Shields are tough and recently several clients have requested the 'zero gravity' system to be installed. Much more cumbersome than simple shields. We've put shield on single point arms as well as rail systems when needed.

Q: Have you and your design team integrated disaster planning models into the specifics of the hybrid O.R.?
A: Nothing in the past but most recently were asked to include anterooms in response to the pandemic to make it AII compliant.

Q: I noticed a sloped window at the control room. Is there a reason to slope it for glare perhaps.
A: Correct.

Q: Are the large room sizes you show represent a standard Hybrid vs a "super hybrid" that has both the imaging table and surgical table? What that's most practical size for a standard Hybrid?
A: I would say that a room in the 800-1000 SF range is most practical with 700-800 SF as a minimum.

Q: While bigger is better, and no one will likely turn down the opportunity of a larger room, what is the threshold that too big a room might become a problem, even considering the rapid change of imaging technology? When would the room be able to deal with virtual 3D?
A: I believe the 1200 SF room are right on the threshold of being 'too big' both from a management of space issue and support on MEP systems.

Q: Can you talk about the equipment vendor responsibility in the design process? How much of the room configuration is dictated by the vendor and how much is dictated to the vendor?
A: We involve the vendors during SD and push owners to make a commitment during DD. Weights/cable lengths/clearances all come into play during design. In the rooms shown, the design team dictated the layouts/configurations of the room with lots of input with the vendor.

Q: What floor-to-floor heights have you found to be minimal for these OR's?
A: Most ceilings have to be 9'-6' -10'-0" to accommodate the equipment. Depending on structure of building, another 3'-4" above ceiling is required. Our planning start point is 14'-0" as a minimum.

Q: Is UV sterilization used in the OR with portable equipment?
A: In the rooms shown, UV was not used for sterilization.

Q: Can you speak to the measures necessary for appropriate fire protection in the hybrid O.R.
A: We don't approach these any different than a traditional operating room.

Q: What progress are the manufacturers making in designing equipment that is smaller, lighter and less intrusive?
A: LED's have helped in the OR Light realm but as far as imaging equipment, we've seen limited change in the equipment. Mostly it's seen in the cable management approach.

Q: What specifically do you do to plan for the future? do you just install extra outlets of every kind? allow for expansion if the rooms need to grow in the future?
A: Space wise, when possible, we put soft program spaces adjacent to the OR Suite to allow for expansion in the future. MEPT – We try and build in some capacity into both power, gas, and HVAC infrastructure to allow for change with equipment.

Q: What is your preference in using a sliding door into the OR room?
A: Sometimes client driven, sometimes code driven. Some clients perceive the auto swing door as a hazard and ask for the sliding door. When we put the sliding door in, we put hand motion operators in as well as door opening limitations to decrease infection control opportunities for when the surgery is happening. Depending on layout, if the door is in a rated wall, we may need to use a swing door to achieve the appropriate fire rating.

Q: Have you mounted imaging equipment- such as a biplane on a prefabricated integrated ceiling plenum system. We have found that coordinating the vendors integrated ceilings and imaging vendor can be a nightmare considering that neither will commit to final site specifics until they have a purchase order. So, coordinating the laminar flow diffusers is a big challenge. What is your experience?
A: We have mounted a bi-plane to the integrated ceiling and you are correct, it's a coordination challenge...but much easier during design then in the field when it's 'stick built'. We write in our proposal the need for vendors to be on board during design in order for us to complete our documentation.

Q: In your design of a retrofit to a hybrid OR, how have you handled increased ventilation requirements and HVAC costs for replacement?
A: We have a study done up front to validate if infrastructure is enough to accommodate the new design. You may either have to add a unit or replace infrastructure. Either way, we identify it as a cost adder to the project.

Q: How have the rooms addressed bariatric patients?
A: Nothing specific. Limiting factor is what the imaging table is able to accommodate.