



FUTURE-FORWARD

10 Ways to Prepare a New Healthcare Facility for Future Renovations

By Timothy Hurvitz & Brett Paloutzian

When opening a new hospital building, it's a safe bet that you are going to be initiating your first renovation to that building very soon. Continual improvements to best practices, technology and regulatory changes in the medical industry, coupled with lengthy construction periods, often combine to require these renovations to newly opened healthcare facilities. While setting up this inevitable architectural game of chess, you need to be thinking two moves ahead, all while accepting random new pieces added midstream to the proverbial chess board.

Through projects for private healthcare providers, university medical centers and government entities, we have sometimes learned these lessons the hard way or on the heels of another design predecessor's mistakes. In preparation for this eventuality, we suggest the following 10 strategies for future-proofing the design of your a new healthcare building and to help launch these inevitable future renovation endeavors off on the right foot.

1 BUILD WITH SEVERAL POTENTIAL FUTURES IN MIND. When designing the facility presently needed, conduct enough forward-thinking research to identify several future renovation or expansion alternatives, as well as the potential risks associated with each. Don't put monuments where you might regret them later and think about big-picture campus planning at all times (e.g. utility infrastructure, elevators and circulation, transportation, etc.). This approach will build in flexibility.

One notable example of future-forward thinking is in the area of patient room or bed count. While some units may be moving toward downsizing, others, depending on the region, might be moving toward expansion. For instance, we know that patient rooms are required to have windows in them. So, while it might be tempting to place other uses against window walls like lobbies or lounges, we should also be conservative with giving away that window-facing space to critical uses that are not patient rooms. When the need for bed count expansion arises, those sites need to be accessible in order to accommodate growth.



(L) This corridor-style nursing and administration station allows for flexible workspace and staff seating. It also provides another circulation option for future renovations that might arise at the Palos Health South Campus just outside of Chicago, Illinois.

(R) This new cancer center at the St. Joseph Mercy Health Ann Arbor Hospital in Michigan prioritized both patient and staff access to natural light through the use of fabric partitions. This helps the staff not only benefit from the facility's large glass walls, but also places them in the visible line of sight for patients who might be looking for assistance.

2 PLAN FOR LIFE CYCLE REPLACEMENTS AND UNEXPECTED FAILURES. Establishing up front how long individual spaces or units will likely operate will allow planning for the sequencing of future renovation needs in those areas with turnover. This principal applies particularly to those areas featuring imaging equipment with lifetimes much shorter than that of the building. Consider a fully planned equipment dock with utilities for portable, temporary truck-mounted solutions that can be brought in during these inevitable equipment replacements.

3 DON'T TRY TO OUTSMART THE CODE. By squeezing a project in under an expiring code cycle, with an intent to save money, it may potentially end up costing a great deal more money. This strategy will only set up the facility for yet another renovation project down the road that could have been avoided. Instead, stay two steps ahead of the code and make sure your design team knows not only your market's current code, but also the national code trends for the facility type to ensure designing according to the latest nationwide standards. This point is especially applicable in certain spaces where code changes are more regularly adjusted, such as toilet rooms, pharmacies, dietary units and radiology labs. In radiology labs, for instance, the primary concern from regulators is about clearances around the equipment. If the next generation of equipment grows slightly, but you don't have clearance space built around it, then the only way to meet the code would be to move a wall.

4 DON'T OVERDO IT. Bigger and higher is not necessarily better – find the “goldilocks zone” when sizing buildings. A great example of this problem was the double-height volume trend, with elevated catwalks, that was a popular approach

in the last century for creating more “flexible” buildings. Ultimately these spaces have not proven to be as useful as desired, and cause issues with rated walls and equipment anchorage that are expensive to overcome. Reasonable floor-to-floor heights, and regionally common construction practices will cost less, be easier to build, and much easier to renovate. In regard to adding a little “extra” space, remember to study what the actual delta would be for upsizing certain types of rooms. If a 10% increase in space is not going to actually increase costs by 10%, then it may be worth building in that small additional cushion to protect your future.

5 CREATE ACCESSIBLE SHAFTS. One thing a project team can often forget is the inevitable change to utilities and building systems running within the building's shafts. By building plentiful shaft space, which by comparison is inexpensive per square foot, and providing access points to it on every floor, you can keep a minor utility upgrade from spiraling into a major project.

6 PLAN FOR ENVIRONMENTAL RESILIENCY. Chances are, most all of us have seen facilities undergo massive renovations as a result of natural disasters in recent years. While it may seem obvious, make sure you understand your emergency plans and processes by the time you build the new building so they can be built into the design. From wildfires to tornadoes to hurricanes, it's clear that these events know no boundaries and the facility should help protect staff and patients from harm.

7 BUILD IN REDUNDANCY FOR CRITICAL SERVICES. There are some functions in a hospital that are simply not optional. Not are aware that backup generators and stairways are not optional in the case of systems going down,



This new dietary unit, built within the confines of an existing building at the Alta Bates Summit Medical Center in Oakland, California, adapted to not only current dietary and food service code expectations, but also provided significant flexibility for emerging trends in dietary service.



For this registration and lobby space at the new Palos Health South Campus in suburban Chicago, Illinois, the project team left ceiling heights lower around the perimeter, allowing for more two-level flexibility for growth in the space, while still providing the wow factor via elevated skylights in the central portion of the space.

but what about having a backup pharmacy or secondary sterilizing equipment? Equipment outages paralyze a hospital and put patients at risk, and downtime for one space can impact the operations for an entire facility.

Plan for additional alternative spaces in case critical service areas are put out of commission due to localized flooding, power failures, unplanned maintenance, or otherwise. HED's data center designers shared their redundancy rule of "2n+1." So, we asked ourselves, are human lives not much more important than data? This brought up the clear point that redundancies should perhaps be much more heightened than current healthcare design industry norms. In one university medical center project, we encountered years ago, this lack of redundancy accounted for in the original building resulted in a massive and urgent impact on the existing operations.

As designers and planners, we have the privileged role of setting up healthcare operations for success from the day they open to 100+ years onward. No design scope should end at the individual contract's deliverables, but instead show our value opportunities extend for many decades and renovations to come.

8 DON'T SHORTCHANGE CIRCULATION OPTIONS. Build flexibility into circulation pathways like elevators, stairs and corridors that can provide alternative entrance and egress within individual floors or units and design these circulation paths to reach all floors at all times, even if that path is not presently needed. This is a great way to ensure future unit relocations or expansions are more feasible.

9 AVOID SLAB DESIGN THAT PRECLUDES FUTURE PENETRATIONS. Structural designs are typically selected based on first cost, but even minor renovations are nearly impossible if new floor penetrations cannot be easily located. Therefore, either build in additional penetrations into the original design for unknown future needs, or choose alternative structural systems that can accommodate changes.

10 BUILD IN A FACILITIES' KNOWLEDGE MANAGEMENT PROCESS. The best time to establish facility information management protocols is when a new building is being crafted. From building models and documentation, to reasoning for or against certain design decisions, use this moment in time to set your future building renovators up for success with well-organized and documented building information.



Timothy Hurvitz AIA, LEED AP BD+C (left) and Brett Paloutzian AIA, MBA, LEED GA (right) are Healthcare Studio Leaders with HED, based out of the firm's San Francisco office. They can be reached at thurvitz@hed.design and bpaloutzian@hed.design.