



HEALTHCARE FACILITY DESIGN

Designing for Maintenance

How Early Decisions Impact Facility Operations for Decades

YOUR PRESENTERS

Who's Speaking Today



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Every Decision Echoes for Decades

Every design decision made during the planning of a healthcare facility carries consequences that can last decades. When maintenance is considered early, a facility stays easier, safer, and more cost effective to operate throughout its entire lifecycle.



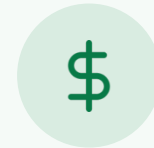
Consequences last decades

Material, system, and layout choices define the future health of a community.



Care never stops

Facilities stay functional and safe around the clock, every day of the year.



Lifecycle cost starts here

Early choices shape maintenance, energy, and replacement costs for the life of the building.



THE RIGHT CONVERSATION

Communication is Everything

If your design team is not asking the questions, make sure the conversation comes up.



Questions Worth Asking in Design



How will this be maintained?

Walk through upkeep for every major system before it is specified.



Can it be repaired fast?

Favor standard plumbing, door hardware, and parts owners keep in stock.



How do you reach it in use?

Plan access to fix a sink or valve while a busy department keeps running.



Who holds the knowledge?

Document specified brands and models so institutional knowledge stays with the building.



Design for Maintenance at Every Phase

1

Pre-design & planning

Set the budget, talk with facilities, and map who maintains what and where parts come from.

2

Schematic design

Choose systems and layouts that match the region, workforce, and service reach.

3

Design development

Lock in standard materials, service access, and details built for long-term upkeep.

4

Construction & handover

Capture brands, models, and operating knowledge so the owner keeps it for good.



Who Belongs in the Conversation



Facilities & engineering

The team that keeps building systems running every day.



Housekeeping & EVS

The people who clean, access, and maintain finishes and rooms.



Manufacturers & reps

Confirm who services the equipment and how close they are.



Local workforce

Design to the trades and skills available in the region.



Design Out the Maintenance Traps



Rethink high upkeep features

Fountains, aquariums, and water features add daily work for a small crew.



Reach every fixture

Plan how crews reach high lights and devices, with a lift and a place to power it.



Easy care finishes

Choose finishes and details a small crew can clean and repair.



Design to The Budget They Have

Rural owners often lack a robust maintenance budget after opening. The reliable move is to invest in durable systems during design, so the building carries itself for years before any major service is due.



Invest up front

Put the dollars into robust systems now, since the maintenance budget may not come later.



Choose the workhorse

Favor proven, low fuss systems with a long service life over showpieces that need constant tuning.



Let design carry it

Good design pushes the first major service years down the road.



THE LONG GAME

Maintenance Thinking: Designing for Change

How can we design with the future in mind?



Plan Equipment for What is Coming



Leave room to grow

Hold space and structure for robotics, media integrators, and hybrid rooms you will add later.



Coordinate early

Tie equipment to utilities, structure, and rough-ins during design, not after.



Plan the lifecycle

Equipment has its own service and replacement cycle. Plan access and downtime for it.



Bring in the equipment planner

An equipment planner maps today's needs and tomorrow's technology to the building.



Prefabrication Where it Fits



Need to raise a receptacle or add med gas to a headwall? Order a new prefabricated panel, cut the opening, and swap it in. Rooms return to service quickly with minimal infection control disruption.

Prefabricated headwalls swap in without a crew arriving to replace parts piece by piece. Keep it sized to what the owner can benefit from.

1 hour

or less to turn over a prefabricated headwall room



Master Plan for the Next Thirty Years



Ask early

Start with demographics, census, and where the community will be in ten to twenty years.



Plan the whole site

Site, utilities, and rough-ins decide what future expansion is even possible.



Build in flexibility

Design spaces that can flex to behavioral health, children's care, and new treatment.



Plan the energy

Secure long term power and water, especially where new neighbors compete for both.



CASE STUDY

Renewal that Keeps Care Running



On a hospital replacement, the team kept the emergency department that still had strong life left and rebuilt the rest around it. They gutted and replaced the aging structures and updated the electrical gear while the emergency department stayed open. Care never left the community during construction.

TAKEAWAY

Keep what has real life left, take the long view, and keep care running through every phase.



Mercy Hospital, Rogers, AR | October 2, 2026

Rural and Critical Access Facilities

Rural and Critical Access

- The usual challenges are amplified in rural facilities
- Help and/or parts can be hours away, so one failed unit can stop care.
- The services most at risk are wound care, infusions, and dialysis.
- Many rural facilities run with little maintenance budget or staff.
- Dig into communication for available services and creative solutions.

Larger systems

- In-house trained technical teams
- Nearby service coverage.
- Room for advanced, tightly controlled systems.

Match systems and parts to the crew who will service them.



Lessons From a Rural Mechanical Redesign



On a rural clinic and pharmacy, the engineer specified a sophisticated, highly controllable HVAC system. It looked strong on paper. The crew who could service it was hours away. The team caught it during design conversations and reworked it to a system the local workforce could maintain.

TAKEAWAY

Design to the people and resources that will keep the system running.



CASE STUDY

Built to Last, And to Draw People in



A remote critical access hospital sits hours from the nearest help, so the design had to last. Durable, thoughtful design did more than lower maintenance risk. It earned trust, drew patients, and let the hospital grow into services the community once traveled far to reach.

TAKEAWAY

In remote settings, durable design lowers maintenance risk and builds market share at the same time.



Mercy Hospital, Rogers, AR | October 2, 2026

What to Carry Forward

- ✓ Communication! Communication!! Communication!!!
- ✓ Ask the maintenance questions early, and master plan the long game.
- ✓ Plan equipment and utilities for what is coming, not only for opening day.
- ✓ Invest in workhorse systems; the maintenance budget may not come later.
- ✓ Pay special attention to solutions in rural and critical access settings
- ✓ Specify durable, locally serviceable and available materials.



The payoff

**Lower lifecycle cost, better uptime,
and safer, steadier patient care for
decades.**



QUESTIONS & DISCUSSION

Let's talk

A healthcare focused team asks these questions from the start. If yours is not, make sure the conversation comes up.

Thank you. Josh Danish • Bob Dotson

