



CoxHealth Clinical Laboratory

Case Study



Project Details

CoxHealth Core Lab & Pathology Lab Renovation



End User

CoxHealth — Hospital & Health System



Project Type

Healthcare / Wet Lab Renovation



Location

3801 S National Ave, Springfield, MO 65807



Completed

December 2025



Products

RGX Modular Casework System, FLX Workstations, Custom & Modified Bench Assemblies



Dealer

Grooms Inc. (Amy Henson)

Project Architect

Torgerson Design Partners

(Cathy King)



TORGERSON
Design Partners



Background

A Hospital Lab Built to Grow

CoxHealth's clinical laboratory provides the analytical testing that helps doctors and nurses diagnose and treat patients every day. Pathologists, medical lab scientists, technicians, phlebotomists, and specimen processors rely on this space to do work that directly impacts patient outcomes. When the lab's infrastructure stopped keeping pace with the hospital's growth, a renovation became necessary.

The laboratory operates as two distinct environments within the hospital. The Pathology Lab supports diagnostic analysis of tissue and specimens, functioning in a tightly sequenced diagnostic workflow where station order directly impacts throughput and accuracy. The Core Lab performs high-volume analytical testing on blood and body fluids. It runs continuously, 24 hours a day, utilizing large fixed diagnostic equipment that cannot be relocated.

In order to modernize the two labs, the Pathology Lab had to be relocated first before the Core Lab could expand into the space it needed. This physical constraint defined the sequencing of every phase of the project. Each environment also carried its own design requirements, material specifications, and workflow demands. Formaspace was engaged to deliver both.

The renovation increased the Pathology Lab footprint from 2,535 to 3,343 square feet, a 32% expansion, while the Core Lab grew from 7,256 to 11,442 square feet, an increase of nearly 58%. Pathology office space also expanded significantly, allowing departments that had previously been compressed to operate with clear separation and dedicated zones.



Problem

A Lab That Could No Longer Keep Pace

Rising test volumes gradually exceeded the lab's physical capacity. Additional and increasingly sophisticated diagnostic equipment required more bench space and stronger infrastructure, yet the existing footprint offered limited flexibility. Storage was constrained and poorly configured, forcing staff to work around the limitations of the environment rather than within a system designed to support evolving clinical demands.

Much of the lab relied on traditional millwork cabinetry that was not engineered for sustained healthcare use. Daily chemical exposure degraded surfaces over time. Heavy analyzers placed continuous stress on casework not designed for that load. And as equipment footprints changed, the fixed nature of the millwork offered no practical path for reconfiguration. The space could not adapt as the work evolved.

The project was further complicated by sequencing requirements. The Pathology Lab needed to relocate to the tunnel level of the hospital to free up space for the Core Lab's expansion. At the same time, the Pathology team's tightly sequenced diagnostic workflow had to be preserved in full. That structure, refined over years of clinical practice, needed to be rebuilt precisely within an entirely new layout.

Meanwhile, the Core Lab remained on the first floor, surrounded by mechanical, electrical, plumbing, and structural systems that could not be disturbed. Any expansion required careful coordination within those fixed constraints.

"The lab did not have adequate space to add the necessary equipment and workbenches to support the growing test volumes of the hospital. Most of the lab benches were made from traditional millwork and not made to withstand chemicals or high usage."

— Amanda Ritter, Director of Lab Services, CoxHealth



Solution

Two Labs. One Coordinated Plan. No Disruption to Operations.

Formaspace delivered a phased, dual-environment solution. Each laboratory was engineered to its specific clinical demands while maintaining alignment under a single coordinated project strategy.

Casework and workstation layout planning was supported through CET-based modeling and close collaboration with the architect and dealer, ensuring that sequencing, utility coordination, and installation logistics were fully integrated before work began.

Pathology Lab - Relocated & Rebuilt

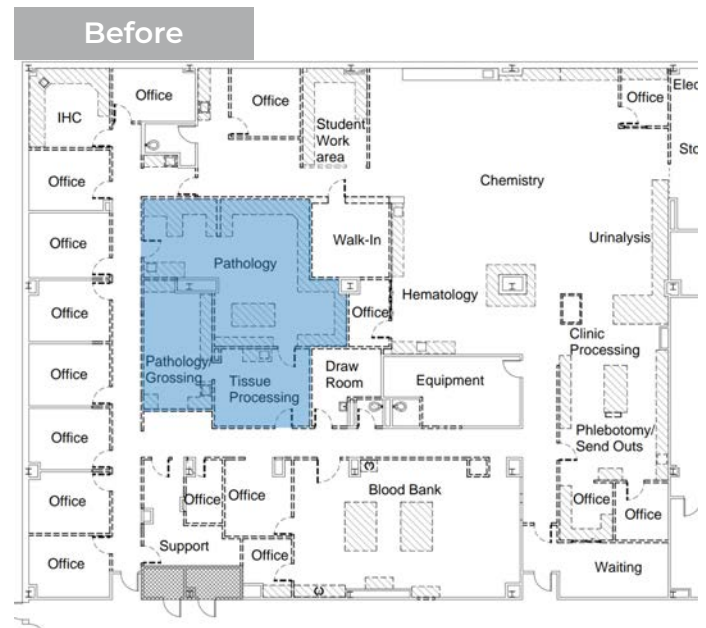
Relocation · Diagnostic Workflow Continuity · Chemical Resistance

Relocated While Preserving Workflow

The Pathology Lab was relocated to the tunnel level of the hospital to create room for the Core Lab's expansion. This was not simply a move. It required reconstructing a tightly sequenced diagnostic workflow within an entirely new footprint.

Every station, adjacency, and utility connection was rebuilt to mirror the team's working sequence. Bench runs, sink placements, and storage zones were positioned to maintain the order of operations that pathologists and technicians rely on daily.

Grossing capacity doubled from two stations to four, relieving a key bottleneck in the diagnostic process. Microtome bench space was also expanded, and each discipline within the Pathology Lab gained additional functional workspace. Formaspace supported the transition through detailed pre-installation planning and phased delivery. Shipments were organized by zone and elevation, allowing installation crews to work methodically within an active healthcare environment. Utility connections were verified in coordination with the general contractor to ensure alignment between plumbing rough-ins and final casework placement.



After



New Pathology Lab Floorplan

Stain & Case Assembly



Cytology / Intake Area



Microtomes



Embedding



Grossing



Specified for Chemical Resistance

Material selection was driven by operational reality. The Pathology environment requires frequent chemical cleaning and exposure to reagents that degrade conventional surfaces over time. Each workstation was built with powder-coated steel cabinetry and epoxy resin countertops. These materials were specified for durability under sustained clinical use. The upgrade addressed the limitations of the previous millwork installation, which had struggled under chemical exposure and long-term equipment loads. Nine epoxy and ADA-compliant sinks were integrated throughout the space, requiring careful coordination of plumbing infrastructure within the new casework layout. The result was a performance upgrade designed to meet clinical standards and support long-term durability.

“Due to the chemicals used and durability needed, we wanted to use powder coated steel on the cabinets and epoxy resin countertops.

Formaspace met that challenge.”

— Cathy King, Lead Designer,
Torgerson Design Partners

Custom-Built for Ergonomic Continuity

Standard laboratory casework is typically built to a 34-inch counter height. The Pathology team required 38 inches. This four-inch departure affects cabinet construction, support framing, and integration with wall systems. Maintaining this dimension was critical for ergonomic consistency during long shifts. Through its custom manufacturing capabilities, Formaspace fabricated the entire RGX casework system to this specification without compromising modular performance. Custom drawer base configurations were also developed to support specific storage and workflow needs identified by the clinical team. Overall, the Pathology Lab expanded by more than 800 square feet, providing departments that had previously been compressed into shared zones with defined workspace and improved circulation.

Pathology Lab: Before and After Cytology / Intake Area

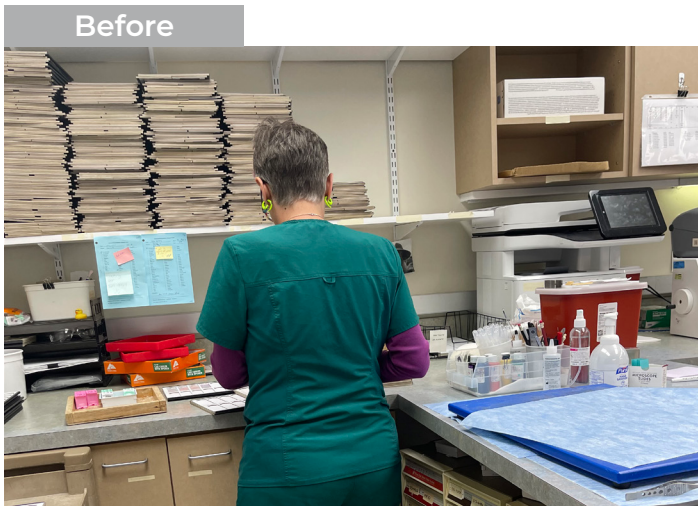


Legacy millwork limited durability, storage, and workflow efficiency.



Modular casework and chemical-resistant surfaces create a clean, organized workspace built for long-term performance.

Pathology Lab: Before and After Embedding



Crowded workstations and fixed cabinetry constrained workflow and flexibility.



Reconfigured layouts improve efficiency, visibility, and adaptability for evolving lab processes.

Grossing



Inadequate infrastructure struggled to support equipment demands and daily use.



Durable, purpose-built stations support heavy equipment, improve ergonomics, and streamline workflow.

Pathology Lab: Before and After

Microtomes

Before



Limited space and inefficient layouts restricted productivity and organization.

After



Expanded benching and modular configurations provide room to grow and adapt to changing needs.

Stain & Case Assembly

Before



Outdated casework and constrained layouts created inefficiencies in daily operations.

After



Clean, flexible workstations support organized workflows and long-term adaptability.

Core Lab - Expanded & Reimagined

Equipment-First Planning · Open Layout · Always Operational

Equipment-First Planning

With the Pathology Lab relocated, the Core Lab could expand. It expanded around the existing large-scale equipment that stayed in place.

Together with the architects, Formaspace developed a full equipment plan first, mapping every counter-mounted and floor-mounted unit before positioning a single workstation. Clearances were verified. Workflow was optimized. Only then was the furniture placed.

The expanded footprint enabled the addition of a third chemistry analyzer, increasing chemistry capacity from two units to three.

A new automation line was also integrated, equipment that would not have fit within the previous configuration

80% of Walls Demolished. Fully Reimagined

The Core Lab's first-floor position required careful preservation of mechanical, electrical, plumbing, and structural systems.

After a thorough review, approximately 80% of existing interior walls were removed, transforming a compartmentalized layout into an open plan designed for equipment flexibility and future growth. The reconfiguration created clear zones while allowing bench systems and analyzers to shift as operational needs evolve.

The RGX modular casework system provided a durable, integrated backbone for the new layout. Phenolic resin countertops met the Core Lab's specific durability requirements.



Five Phases. Continuous Operations

With expansion constrained by fixed infrastructure, execution required precise sequencing. The Core Lab operates around the clock. Diagnostic testing could not pause for construction. Installation therefore had to be sequenced around active clinical operations.

Formaspace executed the build across five coordinated phases, allowing defined portions of the lab to be renovated while adjacent zones remained operational. Work within sensitive areas was scheduled during early morning hours to reduce disruption to peak testing periods.

Logistics were structured to support that sequencing. Shipments were organized by room and then by elevation, enabling crews to install in order without staging congestion or resorting through mixed materials on an active hospital floor. Every phase required coordination between the architect, general contractor, facilities team, and Formaspace to align utilities, access, and timing.

When field conditions revealed a wall framing discrepancy that affected countertop placement, the team adjusted on-site, reallocating surfaces between zones without impacting the overall schedule. The lab remained operational throughout the transition.

The sequencing was deliberate, allowing diagnostic operations to continue without interruption.

Power & Data, Organized

Integrated power and data raceways were incorporated into multiple freestanding workstations, routing cables off the floor and within the furniture system. The result is a cleaner, safer workspace with better organization and reduced contamination risk.

“The Formaspace furniture is designed to be used in a busy clinical laboratory. It is both chemical resistant and durable. Modular furniture also allows for movement with changing equipment needs.”

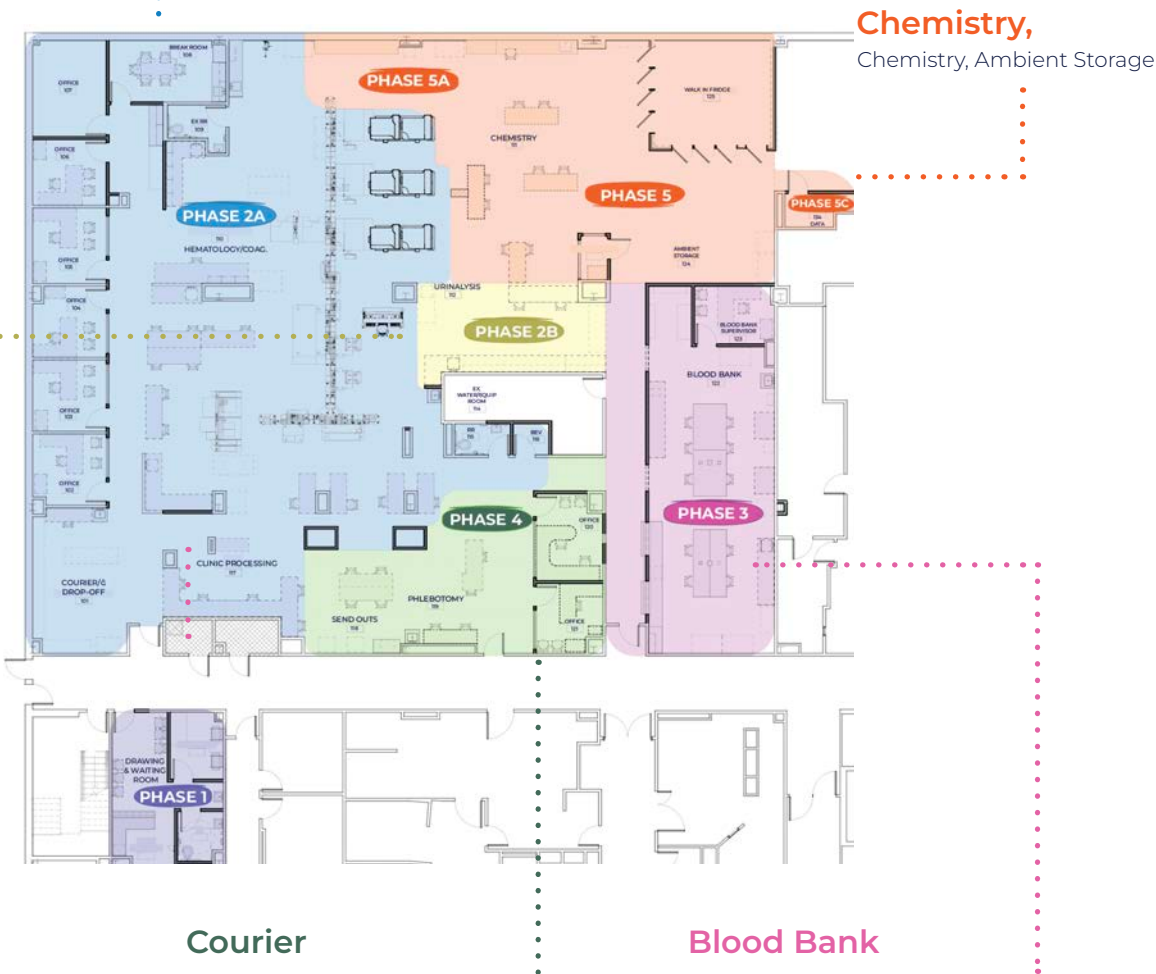
— Amanda Ritter, Director of Lab Services, CoxHealth



New Core Lab Floorplan

Core Lab Renovation Sequenced Across 5 Phases with Continuous Operations

Hematology,
Hematology & Coagulation, Courier/
Drop-Off, Clinical Processing



Urinalysis



Courier



Blood Bank



Core Lab: Before and After

Hematology

Before



Outdated casework and tight layouts restricted productivity and limited organization.

After



Modern, durable casework and open layouts support efficient workflows and long-term adaptability.

Hematology / Coagulation

Before



Crowded workstations and outdated casework limited visibility and workflow efficiency.

After



Open layouts and updated casework improve visibility, organization, and overall workflow performance.

Core Lab: Before and After

Blood Bank

Before



Limited workspace and inefficient layouts created challenges for staff and workflow.

After



Reconfigured stations and durable surfaces support reliable performance and organized workflows.

Urinalysis

Before



Constrained layouts and equipment limitations reduced workflow efficiency.

After

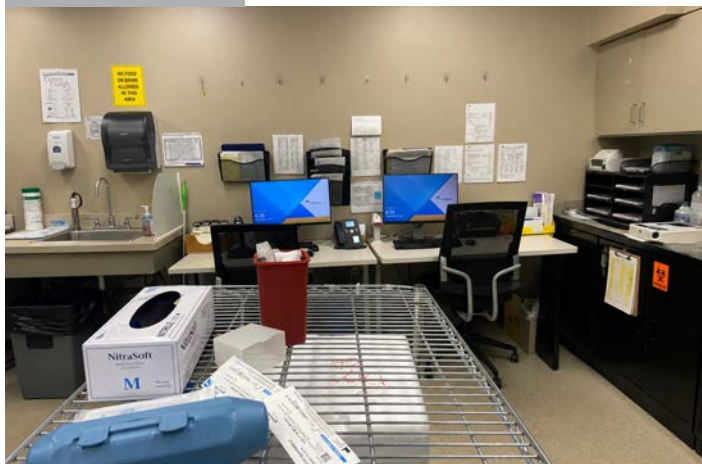


Organized workstations and improved layout support consistent, efficient daily operations.

Core Lab: Before and After

Courier

Before



The intake area was not designed to support efficient sample handling and processing.

After



A dedicated courier drop-off improves intake flow, reduces congestion, and supports efficient sample processing.

Clinical Processing

Before



Limited workspace and crowded stations constrained daily operations and flexibility.

After



Expanded work surfaces and modular casework increase efficiency and allow the space to adapt as needs evolve.

Results

A Space That Works as Hard as the People in It

The renovated laboratory is a significant improvement over what it replaced. It is brighter, cleaner, more open, and designed to support growth rather than constrain it. While patient volume has remained consistent, the infrastructure now supports expanded equipment capacity, increased departmental square footage, and long-term operational flexibility without requiring additional structural renovation.

Durability & Flexibility

The installation was designed as a system, not a fixed build-out. Modular RGX casework and FLX workstations provide structural durability while maintaining the ability to adapt as equipment footprints evolve. Workstations can be repositioned or reconfigured without demolition. Storage configurations can shift with operational needs. The infrastructure now anticipates change rather than resisting it. For CoxHealth, that flexibility protects the investment made today while supporting the hospital's continued growth.

Safety & Cleanliness

Infrastructure is integrated rather than improvised. Power and data are routed through internal raceways, removing cables from the floor and improving housekeeping conditions within the lab.

All primary work surfaces are constructed from chemical-resistant materials specified for sustained clinical use. Powder-coated steel cabinetry and resin countertops withstand rigorous cleaning protocols without delamination, chipping, or surface degradation. The result is a workspace that supports both safety standards and long-term performance.

Workflow & Efficiency

The renovated environment now supports the scale and pace of daily testing. Bench capacity aligns with current equipment demands, and the layout accommodates future growth without requiring structural rework. Overhead storage brings frequently used supplies within reach while preserving clear work surfaces. In Pathology, the tightly sequenced diagnostic workflow was rebuilt intact within its new footprint, maintaining operational familiarity for staff. In the Core Lab, additional capacity allows for the integration of new instrumentation as testing volumes continue to rise. The space now supports the work, rather than constraining it.

It completely met my design vision for this space and functions as intended. I am very happy with the result."

— Cathy King, Lead Designer,
Torgerson Design Partners



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August 10, 2026 4:01 PM