

Rethinking Traditional Ways De-Risking Healthcare Construction Through Integrated Project Approaches

By Paul Sabal, HFA Architecture + Engineering



The healthcare industry faces growing challenges in the realm of design and construction. Challenges include higher construction costs, the scarcity of skilled labor and supply-chain stresses, new regulations, expanding schedules and the need to integrate more sophisticated technologies into new medical projects.

The way forward is to achieve cost-savings and innovation through an integrated approach to de-risking the entire design and construction process, but achieving this will require rethinking basic, decades-old workflows.

Re-Thinking Traditional Ways

Rather than relying solely on preconstruction and estimating services from contractors, craft knowledge from the trades should be embedded into the design phase itself. By forming an advanced coordination team—where tradespeople collaborate directly with architects and engineers before construction begins—the construction industry can reduce waste and deliver higher-quality outcomes by replacing the traditional design-intent model with shop-level precision.

In the traditional model, architecture and engineering firms' drawings represent intentions rather than fully realized structures. A vertical line may indicate a wall, but its internal components remain undefined. Likewise, a line symbolizing a three-inch pipe on its critical details, such as flange valves and fittings, which are only added later by subcontractors during fabrication.

Therein lies the rub. The lack of specificity in preliminary design intent models often leads to costly requests for information and change orders. Once the design intent is handed off to contractors, they make crucial decisions—either trimming scope to control costs or optimizing designs to benefit their bottom line. The industry, in other words, remains

locked in a flawed model, incentivized to maintain this disconnect between design and fabrication. A true paradigm shift is needed—one that eliminates this gap by integrating subcontractor expertise earlier in the process.



Leveraging Advanced Coordination

Relying on design for manufacturing and assembly methodologies, advanced coordination firms collaborate with the design team to produce far-more-granular and accurate designs for accelerated work-in-place. Advanced coordination runs parallel with early design processes with continual review and crosscheck of the emerging work product. With this focus on ferreting out costly RFIs, change orders, and redundancies of effort, construction partners then take advantage of constructible information from the

Re-Thinking Traditional Ways

design team. Simply put, innovation driven by advanced coordination turns uncertainty into cost savings.

With expertise in prevailing fabrication and install methodologies during design, as well as trade-specific costs, advanced coordination can dramatically improve the efficiency of off-site fabrication—a major potential cost-saver on healthcare projects. With traditional project-delivery, MEP prefabrication opportunities might average 30%. In an integrated de-risked approach, they can reach 80% or more.

This allows contractors and subcontractors to be engaged at 50% construction document phase where they review de-risked constructable documents. Associated pricing, sign-offs, and submittals are then initiated for accelerated work-in-place that challenges the rising cost trend of the industry. Additionally, advanced coordination teams can provide a second opinion to proposed contractor change orders, deducts or diagnosis of recurrent problems with associated schedule delays.

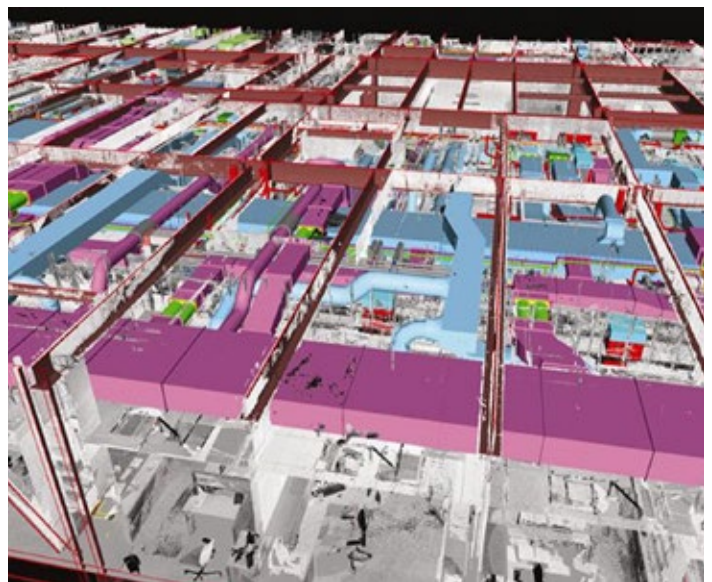
Further savings can be achieved when the advanced coordination team aligns with fabricators and serves as a resource during assembly and construction. In our experience, the accelerated schedule,

improved design, and construction accuracy can reduce overall project cost by 5-10%.

Unsnarling Supply Chains

A more efficient strategic approach to procurement can yield additional cost savings. Here again, the healthcare industry can benefit from the emergence of potential partners with nontraditional business models—in particular, global supply-chain companies focused specifically on construction materials and equipment.

Supply-chain partners collaborate with the design and advanced coordination teams to initiate procurement as early as possible, proactively locking in prices of long-lead time items to reduce the risk of escalation. These firms also can



evaluate pieces of large equipment and store materials to make them readily available to contractors as needed. From boilers and chillers to Sheetrock, doors and frames, this streamlined process reduces delays and enhances overall project efficiency.

Holistic Project Health

Taking advantage of advanced AEC technology is fundamental to improving project efficiency. Reality-capture technologies, for example, are invaluable for remodels, renovations, and expansions, providing highly accurate scans that enhance design precision and reduce errors. While data integration and a single source of truth are critical, the true force multiplier in a de-risked process is multidisciplinary collaboration.

The goal should be a holistic approach to bolstering the efficiency of the entire project delivery process, with its deeply interconnected components. Moving forward, the industry needs to continue to examine and overcome cost drivers by leveraging multidisciplinary expertise and process-sequencing to increase productivity. The implementation of technologies is mission-critical, but only where there is a return on investment. The real innovation comes from a mindset that challenges the traditional approach.

By de-risking design and construction, the healthcare industry can enhance quality, shorten project schedules, and most importantly save capital costs that can be redirected toward improving patient care and outcomes.



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