



9th New England Hospital, Outpatient Facilities & Medical Office Buildings Summit  
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# Piloting Healthcare's Road to Recovery

Planning, Real Estate, Design, Construction, and Operation of  
Hospitals | Clinics | ASCs | MOBs | Retail | Telehealth  
Home Health | Non-Clinical | Research Facilities

This Education and Networking Event is Presented by  
Corporate Realty, Design & Management Institute  
Association of Medical Facility Professionals – Boston Chapter  
National, Regional & Local Sponsors

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## Executive Summary:

- Home Health: A “Capital-Light” Alternative to Building More Facilities
- The Art of Big Projects: Managing Scope, Schedule, Cost, Execution, Expectations & Ghosts
- Money-Saving Solutions
- Utilizing Advanced Technology Solutions to Achieve Adaptability and Resiliency
- Using Cleanroom Technology to Improve Critical Environments in Healthcare
- Integration of Strategy, Operations, and Finance into Facility Master Planning
- The Power and Peril of Integrated Project Delivery
- Designing for Security in an Era of Increased Violence
- Solving the Parking Puzzle
- Revolutionizing Healthcare Investments: Bridging Today's Capital Planning with Tomorrow's Digitally Enabled Care Landscape
- The Future of Healthcare Construction: Leveraging AI for Enhanced Efficiency and Compliance

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This executive summary was prepared by Mike Hoban.

Mike has worked as a Boston-based writer for over two decades, specializing in commercial real estate and construction. He is also the owner and principal of Hoban Communications, which produces content for CRE and A/E/C firms. He is a regular contributor to the various publications of the Urban Land Institute, including *Urban Land*, and a regular contributor to the SIOR Report, the quarterly magazine of the Society of Industrial and Office Realtors.



## Home Health: A “Capital-Light” Alternative to Building More Facilities

Panelists discussed why delivering care in a patient's home through their individual 'Hospital At Home' programs can be convenient, less costly, and more effective than a hospital or skilled nursing facility.

Tilar Martin-Asirifi, Director of Inpatient Operations, Boston Medical Center

Andres Solorza, M.D., Medical Director, Beth Israel Lahey Hospital At Home Program

Candra Szymanski, AVP Hospital at Home, UMass Memorial Medical Center

Moderator: Anastasia Barnes, Publisher, High-Profile Media Group

### *Tilar Martin-Asirifi*

- *Providers say it elevates patient involvement, and patients, especially elderly patients, prefer to be cared for in their own homes because it reduces disorientation. “Patients absolutely love it.”*
- *Patient beds at brick-and-mortar hospitals in Boston are finite. With the Hospital at Home model, remote patient care space is limitless.*
- *Every patient cared for in their home increases the capacity of the traditional hospital. In the last two months, the program has saved over 200 “bed days” in the hospital.*
- *Hospital At Home is here to stay. The rate of medical technology has accelerated exponentially in the last decade and will play a large role in expanding and improving the model.*

### *Andres Solorza*

- *Modern medicine had centralized care in hospitals, but the pandemic changed everything.*
- *Acute inpatient home health care is not a new concept and should not be confused with traditional home health. It is an acute setting for sick patients, not VNA.*
- *The model has been very successful since its inception, and patient outcomes are excellent.*
- *The model has challenges, but adopting a new model requires a long learning curve and a wholesale change in thinking about how healthcare is delivered.*
- *The virtual model frees up beds for the “very sick,” meaning that as the Hospital At Home model continues to expand, future hospitals can focus more on ICUs and step-down units, so patients no longer have to linger in ERs.*
- *The program delivers a significant positive impact on the patients and the healthcare providers.*

### *Candra Szymanski*

- *UMass Medical was an early adopter of the program, which started during the pandemic in 2021.*
- *“We are not VNAs; we are not home health.” Hospital At Home offers acute, inpatient care at home, essentially a virtual med-surg unit.*
- *Providers must be within a 30-minute drive of patients' homes. All staff are RNs, although other models use paramedics as caregivers.*
- *“It is the absolute coolest way to take care of patients.” Caregivers can monitor medications and patient compliance more effectively because they are in the patient's homes and can literally inspect the medicine cabinet. Patient satisfaction is extraordinarily high.*
- *Because it is still 24-7 patient care, the logistics of bringing equipment (oxygen, backup generators in case of power, dressings, and other supplies) into the home can be incredibly challenging logistically.*

## The Art of Big Projects: Managing Scope, Schedule, Cost, Execution, Expectations & Ghosts

Panelists examined the intricacies of planning, designing, approvals, building, and meeting community needs for mega projects.

Susan Cronin-Jenkins, Director Massachusetts General Hospital Planning & Construction Department, Mass General Brigham

Brian Hamilton, Project Executive, Vice President of Healthcare & Life Science, Consigli

Nancy Hanright, Senior Director, Real Estate and Capital Planning, Boston Medical Center

Sarah Markovitz, AIA, Principal, Healthcare Market Leader, NBBJ

Moderator: Michael Lorimer, Associate Principal, Americas East Healthcare Leader, Arup

### Susan Cronin-Jenkins

- *Early community engagement is critical when developing projects. MGH holds monthly meetings with the community and employs a full-time community outreach director because the community is not only neighbors; they're patients.*
- *On projects, owners need to control costs by asking end users what they really need rather than what is on their wish lists.*
- *MGH also has a very structured change form process that requires a detailed explanation of why stakeholders request a change.*
- *MGH also avoids constructing buildings that are service line-specific. Instead of allowing for flexibility in uses, given the accelerated pace at which medical technology is changing and how it will impact future space uses.*

### Nancy Hanright

- *Because the BMC location is home to a large population of IV drug users, emphasizing safety for patients and staff while providing access for all is a primary concern.*
- *BMC has a patient advisory council comprised of neighbors who are also patients and provide access.*
- *While projects are a "team sport," owners need to maintain a level of control to ensure that the original project goals are met.*
- *BMC is now using Integrated Project Delivery (IPD) on large projects because it allows them to better align with the architects and contracts and control costs.*

### Sarah Markovitz

- *Establishing a set of priorities and guiding principles at the outset of a project alleviates conflicts as the project progresses because stakeholders can refer back to the original statements of intent.*
- *"Listening with curiosity" to the primary stakeholders – in this case, the clinicians – allows the design team to understand the meaning behind each stakeholder's decision-making process so that they can design the optimal space.*

### Brian Hamilton

- *When dealing with various stakeholders, it is critical to understand your particular audience (community, clinicians, development team) and convey the specific information about the project that each party needs to understand. The community's informational needs differ from those of clinicians and hospital management.*
- *Accurate estimates during preconstruction are crucial for cost control, and team members must have faith in the numbers.*
- *As the project evolves, the team can adjust the project scope or schedule to deliver the final product within the original budget.*

## Money-Saving Solutions

Gene Jones, Allegion

Chris MacPhee, STARC Systems

David Harris, Camfil USA

### *Gene Jones, Sliding Doors*

- *AD Systems Door Visualization allows you to see all the potential doors needed, including procedure and OR rooms, exam rooms, administrative areas, imaging rooms, medication rooms, utility rooms, and restrooms.*
- *Interior sliding doors can satisfy safety requirements and security needs while being aesthetically pleasing. They take up less space.*
- *Some areas need to limit contamination and seepage of airborne particles to increase security or maximize usable space. Sliding doors can be the answer.*
- *Sliding doors can be automated and touchless, providing access control through automatic or manual locking.*

### *David Harris: Clean Air Solutions*

- *MERV rating is important. According to ASHRAE 170-2022... "Where listed, MERV rating is assumed to be non-degrading." Meaning the filter has a MERV-A rating.*
- *In practical terms, the MERV-A rating remains the same over the filter's useful life. Think of it as "A" stands for "actual" or "always."*
- *Fine fiber vs. electrostatically charged coarse fiber: Electrocharged fiber draws particles in, but the charge can degrade over time, and its performance declines (MERV rating), whereas a filter with MERV-A rating does not.*
- *We build products not for price points but for solutions.*
- *The total cost of ownership is 2% disposal, 8% labor, 20% filter cost, and 70% energy cost.*

### *Chris MacPhee, Hard Barriers*

- *Speed of installation*
- *Built for hundreds of uses.*
- *Peace of mind during renovations; protects patients from dust and noise.*
- *100-foot hard barrier space can be set up or knocked down in an hour.*
- *Every use saves one ton of waste.*
- *Blends in with existing aesthetics. Doesn't look or feel like a construction project.*

## Utilizing Advanced Technology Solutions to Achieve Adaptability and Resiliency

Panelists discussed how advanced technology and digitization have helped healthcare organizations adapt to unforeseen circumstances.

Allan Ames, PE, LEED AP BD+C, CEO, BR+A Consulting Engineers

Vito La Francesca, Director of Engineering, Dana-Farber Cancer Institute

Braheem Santos, Healthcare Strategic Account Executive, Schneider Electric; Former Major Projects Engineering Manager, Penn Medicine Pavilion Project and Associate Director Physical Plant

Jekaterina Shelley, Senior Director, Facilities and Planning, Massachusetts Eye and Ear

Moderator: Nate Soucy, Account Executive, Digital Buildings, North America Operations, Schneider Electric

### Vito La Francesca

- *Dana Farber is constructing a project designed specifically for oncology patients. The new facility will combine the new energy codes with the existing ASHRAE-170 codes (which provide guidance on ventilation requirements for healthcare industry facilities).*
- *Existing codes can sometimes create barriers to optimum patient care. The hospital turned to BR+A to create a design for patient rooms that will supersede the existing codes and also anticipate changes to codes in the future.*
- *Dana Farber's goal is to reduce or eliminate the time spent in occupied patient rooms doing routine maintenance. "We want to make the magic happen behind the curtain without the patient knowing." Room maintenance is done when patients undergo testing at other locations (such as radiology).*
- *The challenge going forward will be how flexible the facility can be given the finite space on the campus. Technology allows for outside-the-box thinking, and incorporating the right technology can help facilities accomplish their goals.*

### Allan Ames

- *BR+A determined that a recirculating air system (with heat wheels) would be the best solution for air filtration for Dana Farber's project, as opposed to the 100% outside air system originally proposed for patient care areas. The winning solution provides a protective environment for the patients in the facility while reducing energy use.*
- *Using technology, hospital facilities are now designed to inform facility management when routine maintenance is needed.*
- *New systems are also being designed with N+1 redundant units, so if the engineering needs to shut down, the principal generator for maintenance (or in the case of a natural disaster), a backup unit provides up to 96 hours of power.*

### Braheem Santos

- *Technology allows facilities to reduce costs while maintaining the highest standards of patient care.*
- *Stressed the importance of being proactive in maintaining systems rather than being reactive and waiting for systems to fail because failure impacts patient care and is expensive to remedy.*
- *Being more energy efficient does not mean adding costs or sacrificing quality; it just requires conversations early in the design process and effectively leveraging technology to mitigate risk and discover cost savings.*
- *Communication between the various technologies is becoming increasingly viable.*
- *It is now possible for the building automation system to communicate with the electronic medical record system (which connects to bed management) and the facilities management system. With the systems "talking" to each other, the room temperature can be automatically adjusted to*

*increase energy efficiency, and facilities management can also be alerted that the room is available for routine maintenance.*

### *Jekaterina Shelley*

- *With newer construction projects, firms understand how to incorporate newer technologies, but retrofitting or renovating existing facilities' infrastructure and systems presents a unique set of challenges.*
- *Massachusetts Eye and Ear's new building advisory system (smart building) delivers real-time data for preventative maintenance and provides insights that can lead to potential energy savings.*
- *The systems save on costs and minimize downtime for systems, which is crucial for 24-7 hospital operations.*
- *Mass Eye and Ear also employ space utilization software to determine whether space is being used efficiently. This helps them understand how they can repurpose unused or inefficiently used space within the existing campus.*

## Using Cleanroom Technology to Improve Critical Environments in Healthcare

What is the role of the environment in healthcare-acquired infections (HAIs), and how can we use cleanroom technology to improve those environments?

Cliff Yahnke, PhD, Chief Science Officer, SLD Technologies

- *With legislation enacted through Obamacare, healthcare providers are being asked to be better and more efficient and “do more with less,” so the need to reduce healthcare harm is paramount.*
- *Five to 10% of patients contract at least one healthcare-acquired infection (HAI) during their stay in a hospital. Not only is this a problem for patients recovering from surgery or illness, but it also costs the U.S. healthcare system an estimated \$3.5 to \$5 billion annually.*
- *The human cost is far higher.*
- *The portals of entry are mucosal, respiratory, gastrointestinal, genitourinary, and cutaneous, but many come from surgical site infections.*
- *The cost of surgical site infections can be \$50,000 to \$100,000 per procedure, and hospitals where they occur frequently can be labeled as “underperforming.” This affects a hospital's ability to access Medicare's value-based purchasing programs fully.*
- *Recent studies indicate that environmental contamination plays a significant role in the transmission of pathogens, and patients are three times more likely to acquire an infection in a previously occupied patient room.*
- *Surgical-site infections due to intraoperative contamination are chiefly ascribable to airborne particles carrying microorganisms.*
- *Using a single large diffuser (SLD) in an operating room provides a mechanism to control and remove airborne particles from the sterile field.*
- *The AirFrame modular ceiling system represents a leap forward in meeting current OR ceiling system design requirements and simplifying future adaptability. The system integrates all OR ceiling-mounted components – including ventilation, filtration, integral lighting, and other electrical components.*



## Integration of Strategy, Operations, and Finance into Facility Master Planning

Health systems are paying more attention than ever to the strategic, operational, and financial inputs, constraints, and opportunities during the facilities planning process. Panelists presented a case study of how Cambridge Health Alliance and consultant Innova Group met those challenges.

Bonnie Martin, Sr. Director, Strategy & Brand Development, Cambridge Health Alliance  
Wendy Weitzner, FACHE, Partner, The Innova Group

### Bonnie Martin

- *There are numerous challenges in the healthcare industry, particularly for providers in the safety net system.*
- *Technology offers many opportunities for healthcare systems but comes with several pitfalls and challenges. For instance, electronic healthcare records are a vast improvement, but many systems do not “talk to each other,” and it can be challenging to extract needed information. AI also offers possibilities but comes with dangers if not managed correctly.*
- *Cybersecurity has been an issue for healthcare providers. Institutions have become targets for scammers.*
- *Healthcare providers' costs are escalating, and much of that has to do with staffing. Cambridge Health Alliance (CHA) has been using temporary staffing to provide adequate levels of care. This more costly option has also impeded CHA's ability to grow, keeping its margins low.*
- *Inflation has also hit the system hard, with drug and surgical supply costs surging. CHA has also had to defer building upkeep because of cost and a lack of maintenance staff.*
- *The consolidation of major hospitals is squeezing Independent healthcare systems like CHA. National healthcare companies like Optum are acquiring independent providers (\$31 billion on acquisitions in the last two years).*
- *Costs are rising, but reimbursement rates remain flat.*
- *External disrupters: The proliferation of urgent care centers and home health services increases competition, and Amazon is preparing to enter healthcare.*
- *The strategic plan: CHA began developing its five-year strategic plan in 2022 and took a bottom-up rather than a top-down approach. The stakeholders included frontline staff, facilities management, architects, and IT personnel. Having frontline staff input was extremely valuable.*
- *The plan is based on the foundation of CHA's mission, which is to improve the health of the patients and community. As a safety net institution, there is a strong emphasis on primary care, behavioral health, and emergency services.*
- *The mission of CHA is “equity and excellence, every time,” which means that the facilities need to be equal to healthcare systems that rely on private insurance.*

### Wendy Weitzner

- *Strategy, operations, and financial considerations need to be evaluated before beginning the design process of a new project.*
- *Cost savings can be achieved by carefully considering what services you want to include upfront – the number of beds, exam rooms, operating rooms, etc. – and by ensuring that the project scope is consistent with market demand.*
- *Financing options must also be carefully evaluated.*
- *Delivery System Strategy: In a healthcare system with multiple locations, how do you match your facilities with the demand for a given service? Should new buildings be purchased or leased? How can we provide high-quality facilities in the neediest areas?*

- *Sometimes, reality and opportunity get in the way of the plan. State grant opportunities for Behavioral Health serendipitously led to funding for inpatient child & adolescent units and the Community Behavioral Health Center*

### *Additional Take Aways*

- *“What and where” are big drivers of project and operation costs.*
- *Thoughtful, fact-based, population-based planning is essential.*
- *Present analyses and options to help executives make decisions. The plan should address the health system's current and forecasted constraints, not just growth and ambition.*
- *The plan is the framework for decision-making and should be flexible enough to adapt to strategic, operational, and financial changes.*

## The Power and Peril of Integrated Project Delivery

Integrated project delivery can minimize risks, return remarkable results, and create substantial value for a healthcare institution and the community it serves. This session was based on a project for Boston Medical Center and featured these speakers:

Jay Jacoby, AIA, RA, Senior Project Manager, Tsoi Kobus Design

Rick Kobus, FAIA, FACHA, Founding Partner & Senior Principal, Tsoi Kobus Design

Brendan Whalen, Senior Director of Design & Construction, Boston Medical Center

Joshua Bilotta, Director, Operations and Preconstruction, Walsh Brothers

### *Rick Kobus*

- What is Integrated Project Delivery? It's the process by which, rather than using the conventional design-build process, the team works together from the very outset of the project.
- The most important feature of IPD is the sharing of a common agreement on the project goals, with all parties sharing the risk, including the owner.
- The team identifies their profit upfront and agrees to put it at risk because if successful, all parties capture all of the profits, "and if we're really successful and the owner is really satisfied, we could be rewarded with additional bonuses."
- IPD is not very prevalent in New England, so the BMC project was one of the first in the region. The goal is to figure out how to complete a project as quickly as possible, with the highest quality and lowest cost.
- "It's just an entirely different way of doing business."

### *Brendan Whalen*

- In 2013, an analysis of the BMC facilities revealed approximately 600,000 square feet of unused space on campus.
- By its nature, "Construction is one of the last industries that does reward inefficiency," while IPD rewards efficiency.
- The shared responsibility of the stakeholders right from the beginning meant that the stakeholders all shared the same goal as the hospital. "This is not the hospital looking for a cheaper way of doing things – what they're looking for is cost certainty at the beginning and a job that will come in under budget."
- During the process, the stakeholders can discover efficiencies that drive down costs while improving the overall plan. This allows the hospital to plan for programming and staffing with a higher level of confidence.
- "IPD is a totally different way of thinking. But if you have the right team members with the same mindset, it can work."

### *Josh Bilotta*

- BMC was Walsh Bros' first IPD project.
- The company model is built on long-term client relationships and repeat business, with a strong emphasis on preconstruction.
- IPD allows the GC to communicate with the hospital and the design team to address and solve problems early on.
- All team members have the same risk and reward, so it's a shared decision-making process. "They're not just giving us feedback – they own it too."
- This is in contrast to the typical design-bid-build process, where the separate trades operate in their own best interests, not the team's.

### *Jay Jacoby*

- Has worked with some version of IPD for the past 20 years.
- As the design team leader, there are four main takeaways:
  - 1) The design team needs to interact more with other stakeholders, not less
  - 2) Learn to listen to ALL of the stakeholders equally, and then start drawing

- 3) The project needs to be viewed as a whole, not as pieces of paper or pixels on a screen
  - 4) The stakeholders need to work holistically, not sequentially.
- When teams interact more, there are more opportunities to streamline the design process by increasing the number of early design decisions that include a larger group of stakeholders – contractors, subcontractors, and operational staff.
  - IPD allows all voices to be heard, and the tradespeople often provide some of the greatest value in innovation and design.



## Designing for Security in an Era of Increased Violence

The safety of staff and patients is a top priority for healthcare facilities. Panelists discussed how to integrate design, people, procedures, hardware, technology, and even landscaping to create cost-effective security.

Ashley Ditta, MS, CHPA, CPP, Director of Public Safety, Newton Wellesley Hospital; IAHS Foundation Board

William Gibbons, Senior Director, Chief of Public Safety, Boston Medical Center

Terrance Lassiter, Director of Police, Security, Safety and Parking, Brigham and Women's Faulkner Hospital

Melanie Wright, Business Development Manager-Healthcare, Assa Abloy

### *Terrance Lassiter*

- *The prevalence of active shooters in healthcare settings is very low.*
- *The perception that metal detectors and armed security personnel make for a safer environment is more of an emotional response to the situation. It does not take into account the reality of implementation.*
- *Such measures impede healthcare delivery and create its own set of issues.*
- *Faulkner is constantly trying to incorporate technology into security systems.*
- *Selling the idea of technology to the various stakeholder groups requires a multifaceted strategy, such as stressing safety for clinical staff and financial benefits for the CFO.*
- *Security needs to have a seat at the table during the design phase of any new projects.*

### *Ashley Ditta*

- *Has limited security staff and does not favor metal detectors or armed security in the suburban setting of Newton Wellesley for the same reasons stated by Lassiter.*
- *There needs to be accurate risk assessment and multiple layers of security.*
- *Effective de-escalation begins with hospital staff, and training is a key component.*
- *Staff is hyper-focused on patient care, so awareness of potential security issues within the clinical setting needs to be emphasized.*

### *William Gibbons*

- *Urban hospital BMC has implemented a metal detector screening process for its ER. The screening is mostly concerned with "edge" weapons, like knives, rather than firearms.*
- *All healthcare facilities must have this conversation to determine the best policies for their facilities. If weapons screening is not implemented, there needs to be other layers of security.*
- *The labor shortage is an issue for security forces at BMC and most hospitals. High turnover increases the time spent training new personnel. The four security fundamentals are people, technology, design, and training.*
- *Adopting design guidelines for the facility must include input from the security team to keep clinical areas safe.*
- *Technology will create a safer environment. BMC is currently investigating video analytics and other video applications.*
- *While effective, technological advancements in security can be costly.*

### *Melanie Wright*

- *Staffing is an issue with most facilities, so creating a culture of security where everyone participates in the hospital's safety is essential.*
- *Healthcare institutions are often reactive rather than proactive.*
- *Addressing security infrastructure issues upfront and upgrading access controls can deter incidents.*

- *Planning for potential situations, such as active shooter lockdowns, and having protocols in place can improve outcomes. It is very important to include all stakeholders in the conversation.*
- *Security considerations are one of the first items to be cut when hospitals begin value engineering a facility project, so the design team should always consider future uses and how they relate to security protocols.*

## Solving The Parking Puzzle

Parking for healthcare facilities is a complex issue, particularly in a city like Boston, where space is at a premium. Panelists discussed the latest tech, design, construction, and maintenance options for surface and structure parking.

Stephanie Barnes, Vice President, Healthcare Services, LAZ Parking

James Smith, Director of Parking & Commuter Services, Boston Children's Hospital

Marc Stonier, PE, Principal, Director of Design, Walker Consultants

### Stephanie Barnes

- *Parking is a complex and challenging problem for hospitals to navigate, but the bottom line is that patients need convenient access to care.*
- *Healthcare providers need to take a holistic approach to parking, working with architects, consultants, and master planners.*
- *Much of the hospital campus' prime real estate will be dedicated to clinical space, not garages, so planners need to consider other options, such as offsite parking for patients and employees, which is far less expensive to build and operate.*
- *Offsite parking with high-quality micro-transit systems (shuttles) can be superior to on-site parking, as patients and employees can be dropped off directly at the front door.*
- *"White glove" valet parking has proven to be cost-effective while improving the patient experience.*
- *Additional revenue can be realized from on-site parking garages by adding solar panels to the roof or by adding retail space on the ground floors.*

### James Smith

- *Parking is often a secondary consideration for facility builds as the focus is primarily on healthcare, but it needs to be integrated into the entire patient experience.*
- *Parking accommodations at most healthcare facilities are typically viewed negatively by both patients and employees, especially from a cost perspective. For employees, it affects recruitment and retention. For patients, negative parking impressions contribute to a negative patient experience and parking fees.*
- *Parking fees are not reimbursable by insurance and can deter patients from seeking healthcare, particularly low-income patients.*
- *Combining structured parking with micro-transit and valet options and incorporating other uses into the structured parking can be effective. During COVID, the first floors of garages were used for COVID testing. Can the space be used for annual vaccinations or other applications that would not require long-term parking?*

### Marc Stonier

- *Patients and visitors consider all aspects of their journey during hospital visits, and negative parking and wayfinding contribute to a negative overall patient experience. First and last impressions of that experience leave a lasting impression of the facility.*
- *Any successful parking program begins during the planning stages with all stakeholders at the table.*
- *Planners need to anticipate what the future of parking may look like. Can the structure be adapted for other uses, such as office or clinical space?*

## Revolutionizing Healthcare Investments: Bridging Today's Capital Planning with Tomorrow's Digitally Enabled Care Landscape

Carl Fleming National Healthcare Strategist, Technology Innovation & Digital Transformation, DPR Construction

- *If healthcare providers do not provide frictionless patient experiences, those consumers will turn elsewhere for care.*
- *One study found that 65% of consumers said that they would cut ties with a brand over a single poor experience.*
- *Industries are increasingly relying on digital solutions to augment their physical environments. Physical + Digital = Phygital, defined as “the concept of using technology to bridge the digital world with the physical world to provide a unique interactive experience for the user. A phygital experience bridges gaps between channels and reduces customer friction, frustration, and churn.”*
- *Healthcare systems that do not embrace some form of phygital strategy are the organizations that will be left behind in the marketplace.*
- *There is a wide range between age groups' reliance on technology, with the baby boomers and older people being less reliant and Gen Z and younger consumers being more digitally fluent and technology-reliant.*
- *Technology allows healthcare providers to remain top-of-mind for consumers/patients even when they are not actively seeking treatment*
- *Patients and the providers hoping to engage them have entered a new world of healthcare, which may change faster over the next decade than the previous century.*
- *Healthcare providers who effectively engage with patients via phygital solutions will be the ones who succeed.*
- *To successfully construct the next generation of hospitals that enable new patient-centric and clinician-optimized care models, technologies must be woven into the fabric of the built environment just as they are in the digital environment.*
- *Human, physical, and digital all work together to deliver better, more efficient, cost-effective care. This provides patients, caregivers, and staff with a frictionless experience and ultimately contributes to better health outcomes within and beyond the walls of the hospital.*



## The Future of Healthcare Construction: Leveraging AI for Enhanced Efficiency and Compliance

Advancements in AI are rapidly transforming how every industry operates. Panelists explored how AI can improve efficiency, compliance, and overall project outcomes.

Aleksey Chuprov, Vice President, Data Analytics, Suffolk Construction

Jordan Cram, CEO, Enstoa

Ann Monks, Director, Facilities Data and Technology Analytics, Yale New Haven Health

Moderator: Connor O'Keefe, Design Manager, Harvard Medical School; President AMFP Boston Chapter

### Jordan Cram

- *Generative AI becomes truly powerful when it is augmented with proprietary data.*
- *There are two types of data: structured (which forms most of a hospital system's database) and unstructured (contracts, invoices, operating manuals), which Generative AI has unlocked.*
- *Generative AI can analyze the information and "reason" with it.*
- *AI usage by hospitals should begin by incorporating it into an organization's HR strategy.*
- *Productivity will soar, "The likelihood that you will be hiring a bunch of people (in the future) is pretty much nil." Prediction: Many current jobs will go unfilled as employees leave/retire.*
- *Organizations will soon be expected to do more with a reduced headcount.*
- *AI is especially good for automating repetitive tasks.*
- *Implementing a model that integrates human and AI agents for tasks will take time, so begin the process earlier rather than later.*
- *Interacting with AI can be dangerous because communication requires a precise presentation of intent. AI cannot consider things like values or culture.*

### Ann Monks

- *Yale New Haven Health used manual methods (spreadsheets) for project management before undergoing a digital transformation in 2015.*
- *Enstoa analyzed their existing system, interviewed all stakeholders (IT, finance, supply chain), and helped develop a new fully integrated system architecture. The project management system now "talks" to the ERP, and the upgrade essentially eliminated much of the manual work.*
- *Yale chose to implement "best in class" systems.*
- *It is essential to include all stakeholders when undertaking digital transformation.*
- *Yale is not yet using bots but is using AI to complement human resources. Looking at more ways to integrate it within the facilities department.*
- *Yale is ready to begin using AI for unstructured data analysis.*

### Aleksey Chuprov

- *Suffolk began its digital transformation in 2017.*
- *Suffolk's most important concern is safety, followed by performance and reliability – the ability to complete a project on time and on budget.*
- *AI can produce predictive models that help improve safety protocols on a given job site. It can also help monitor in real-time whether a project is on time and on budget by accessing multiple years' worth of data from past projects.*
- *Suffolk is also using Generative AI to increase efficiencies with back office operations.*
- *As AI evolves and users become more proficient, AI's impact will increase exponentially.*
- *Brick-and-mortar construction is one industry that will be least impacted by AI from a labor standpoint.*
- *Implementing AI presents a unique set of challenges, the foremost being confidentiality. Data cannot be shared.*

- *The second challenge is integration. It isn't easy to seamlessly integrate the ERP, HR, and project management systems.*
- *In the construction industry, where precision is vital, AI data cannot always be trusted.*

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