Future Proofing and Speed to Market

Ever conscious of the value of both time and money in construction projects, Cannon Design has developed a number of techniques to bring the traditional planning, design, and construction processes in line with today’s fast-moving and highly competitive environment. We welcome the opportunity to discuss these procedures with you in greater detail and to help determine which might be right for your project.

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<th>WHAT CANNON DESIGN OFFERS</th>
<th>WHAT IT MEANS TO YOU</th>
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<tr>
<td>Correlated Planning</td>
<td>Quickly determining key indicators and using them to guide the process allows the overlap of strategic, operational and design activities. This approach accelerates the delivery schedule to help you begin construction sooner and move in earlier.</td>
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<td>Real-Time BIM</td>
<td>Used as a visualization tool during user group meetings for discussion, consensus building and decision making, Real-Time BIM makes the design process more transparent to users, increasing buy-in and reducing requests for changes.</td>
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<td>Design / Cost Interplay</td>
<td>Cannon Design completely integrates our in-house cost estimators into the team to ensure accurate alignment with the value priorities of our owners. Our frequent reconciliation of estimates throughout design minimizes costly and time-consuming redesigns and budget overruns.</td>
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<td>“Cannon Design focused on building a partnership with us early in the design process. We found them to be good listeners, able to adapt their thinking consistent with our culture and goals. When we were hit with material cost escalations, bringing our project over budget, they worked with us to redesign and eliminate scope to bring us back within budget.”</td>
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|                           | Sue Wozniak, COO  
OSF Saint Francis Medical Center |
| The Universal Grid        | By using an optimum set of vertical and horizontal dimensions for the structural bay of a building, Cannon Design can improve flexibility of your new facility (in effect future proofing it). The universal grid supports a wide range of healthcare facility uses, so your building can be economically adapted as your future needs require. |

Real-Time BIM Case Study: MD Anderson Banner Cancer Center, Phoenix, AZ

Before meeting with user groups, Cannon Design met with Banner’s leadership to review our 3-D standardized template options for the clinical areas within the project. We worked with the client to determine which options were most appropriate for the budget and operational parameters of the project, and made necessary adjustments.

We then took these 3-D templates to user group meetings for discussion, consensus building and decision making. Changes were documented live in the model during meetings. 3-D visualization helped users understand design decisions, and live documentation created a transparent process. This reduced the changes requested later in design and during construction.

“Using the Revit model live and projecting images onto the wall has allowed the design team to present information to large groups with ease. Making changes on the fly and letting users see the effect has helped these large user groups reach consensus quickly and maximized the team’s efficiency to allow them to advance our expectations.”

Mark Barkenbush  
Senior Project Executive  
MD Anderson Banner Project
Once a client commits to the Universal Grid, we are able to move quickly to a definition of the perimeter of the building, and then apply the standardized grid to accelerate foundation design and ground breaking. When Collateral Planning and Design/Cost Interplay are also used, we can reduce the typical time span from planning to ground breaking by as much as 60 to 80%. This has saved our clients millions of dollars in construction cost due to reduced escalation.

“The Cannon Design team accomplished more in less time than any other competing team thought possible. If you seek a dedicated, expert team capable of innovation in all aspects of project planning and design you will be well served to select Cannon Design.”

Ken Pope, Vice President Balfour Concord University of Colorado Hospital Project

Universal Grid Case Study: Gates Vascular Institute, Buffalo, NY

A groundbreaking partnership between the University of Buffalo and Kaleida Health, GVI is an incubator for collaboration and interaction among researchers and physicians in all areas of vascular disease diagnosis and treatment. It offers space not only for patient care and research labs but also a fabrication shop to make and test prototype medical devices, specialists in seeking company-sponsored research funding, and an editorial staff to help researchers publish their findings. To maximize the building’s useful life, the facility is designed to facilitate future expansion, accommodation of future technologies in operating suites, and conversion of building zones to entirely different functions. To support the building’s varied functions - from patient recovery rooms to clinical and surgical spaces to research labs - the design team used the Universal Grid. The Grid ensures that the building will easily accommodate future healthcare needs and technological developments.

“People are blown away when they see this. Leaders from some of the most well-known hospital systems in the country have come to look at the design saying things like ‘This would be incredible, even for New York City!'”

- Dr. Nick Hopkins, Professor and Chairman of Neurosurgery, Kaleida Health

Because we work with world-class healthcare facilities around the globe, Cannon Design has access to trends, practices and theories as they develop. Our research initiative permits us to translate emerging practices into design solutions.

Whether integrated into a design team or as a stand-alone service, Confluence’s team of global experts in clinical innovation, product development, process design and experiential modeling can partner with you for a range of strategic, operational and financial planning initiatives.

“Cannon Design provided excellent leadership, thoughtful and creative design and health care planning solutions which helped further the direction of our strategic mission and operational goals for the facility. Throughout our relationship the team was responsive to the project needs... helped guide our vision of creating a building which will serve the future healthcare needs of our patients, their families and the University of Colorado staff.”

Bruce Schroffel, President & CEO University of Colorado Hospital

You will have access to Cannon Design’s most relevant specialists for your project, no matter where they are based. It’s so important to us that we provide you with the right team that we cover SIFMO-related travel expenses.

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Research in Design Case Study: Infusion Therapy Environment Patient / Family Preferences Study

Cannon Design conducted a multi-year, multi-facility original research study to determine patient and family preferences for outpatient oncology infusion therapy environments, and whether the physical treatment environment affects well being.

The project involved face-to-face interviews with cancer patients, cancer survivors, family members, and cancer center staff; formal surveys of patients and family members undergoing active treatment; and post-occupancy evaluations of several facilities that incorporated the initial research findings into the design.

Among the key findings of the study was patients' desire for more control: over temperature, lighting, noise level, positive distractions, and privacy, including the ability to choose on a daily basis whether to receive treatment in a private or share room. These findings have influenced our design of recent projects, including the inclusion of a variety of treatment spaces.

"Sometimes I like to share treatment space... We become friends with the other patients when you spend a lot of time together." Chemotherapy infusion patient

The project, "From Pre-design Research to Post-Occupancy Evaluation of Cancer Treatment Environments" was Highly Commended by the International Academy for Design & Health, International Research Project Category

Hypertrack Construction Case Study: BJC Institute of Health, St. Louis, MO

Cannon Design designed a new 930,000-sf combination clinical and research facility located in the center of the Washington University School of Medicine / Barnes Jewish Hospital campus. The new facility - divided into a 680,000-sf first phase and a 250,000-sf second phase, aims to convert the knowledge of the human genome into individualized medical treatments by bringing researchers and clinicians into closer partnership.

BJC committed early to the Universal Grid, applying the standardized grid to the entire campus. Cannon Design quickly derived a stacking and blocking plan by using the Collateral Planning process, and defined the perimeter area of the building with the help of the proforma-driven budget developed as part of Design / Cost Interplay. Using this combination of our speed to market tools helped Cannon Design accelerate foundation design and ground breaking. We estimate that this saved BJC Healthcare more than $6 million in construction cost, because of greatly reduced cost escalation.

Confluence by Cannon Design Case Study: Enhancing the Ambulatory Experience

A small rural hospital in California faced a daunting dilemma: how to consolidate outpatient phlebotomy services in the acute care building of a hospital with a well-known reputation for taking two to four times as long to draw a single tube of blood.

Challenged by the hospital to find a workable solution, the Confluence team led an Outcomes Based Visioning process with staff engaged in the phlebotomy playbook. A target was set: decrease patient entry-to-ecit times from the current average of 45 minutes to 22 minutes. No small task.

Using a 22-minute patient entry-to-exit benchmark, the Confluence team worked with the phlebotomy staff to develop an operational model to support the targets. Lessons were applied from Lean technologies, efficiency models from other industries, and a clear understanding of what defines value for both patients and staff.

The final solution was a blending of registration and blood collection roles in phlebotomy.

The result was a drop in average patient entry-to-exit time from 45 to an astonishing 15 minutes. Staff productivity increased by more than 100%. And patient willingness to recommend scores increased measurably.

Confluence by Cannon Design Case Study: Improving Efficiencies

Plans were under way to open a new community hospital in a bedroom community accustomed to dealing with aging infrastructure and nearly constant capacity issues. Faced with a limited design and construction budget, hospital leadership worked with an architecture firm to use a compressed design schedule to reduce costs and speed time to market.

Wading through hundreds of design documents and a growing uncertainty that the new facility would meet performance expectations, the hospital's leadership decided it was time for a fresh perspective. They asked Confluence to assess the situation.

Confluence's team of clinical, operations, and Lean experts spent hours reviewing the functional program, design documents and performance objectives. The analysis yielded multiple opportunities to reduce staff travel distances, improve clinical adjacencies and better segregate visitor, patient, and logistics flows. Of greatest concern were the distances between the ED and key departments as well as the need for ICU patients to travel through public corridors during transfer. The Confluence team predicted declining staff productivity and potential privacy issues.

Adjustments to clinical adjacencies on the diagnostic and treatment levels as well as segregation of patient and visitor flows were accomplished without any increase in building size of construction cost.
Confluence by Cannon Design Case Study: Branding a Destination Center to Drive Growth and Performance

A large, urban, tertiary medical center was facing a difficult challenge: how to tactically grow service lines with a less-than-ideal payer mix, while maintaining and enhancing the organization’s brand to serve as a magnet for both patients and staff. The realities of the local market made the challenge more daunting. Aggressive competitors in the marketplace were recruiting physicians and adding capacity while facilities traditionally seen as weaker were being acquired by for-profit systems that were infusing capital into the once-struggling facilities.

Uncertain how to approach the opportunities and threats in the market, the hospital turned to Confluence.

The Confluence team engaged in a comprehensive assessment of the hospital, the market, and emerging trends in healthcare delivery models. A robust volume, facility, and financial forecast was developed as a baseline for deep-dive visioning sessions that focused on the clinical, operational, and financial realities of the future. From these sessions a clear vision developed: establish a dedicated destination center for advanced cardiovascular services on the main acute care campus.

With the vision established, Confluence partnered with the client to develop an implementation roadmap built on quantifiable metrics.

The market share of Advanced Cardiovascular Services increased by four points in three years, and nearly 5,000 new patients were added to the program.

Correlated Planning Case Study: University of Colorado Hospital

UCH simultaneously selected Cannon Design (design firm), Kurt Salmons Associates (strategic planning and programming) and Balfour Concord (project program manager) to complete a $400 million, 680,000-sf addition with related site work and infrastructure upgrades to their existing campus. Their aggressive schedule called for a presentation of a preliminary cost estimate and schedule to the Board of Directors less than five months after project kick-off - less than half the time typically needed for a project of this size and complexity.

We developed a schedule that allowed us to work simultaneously while each team member compressed their time frame. During the accelerated 14-week process, the team executed strategic planning, volume forecasting, functional/space programming, updated the campus master plan, developed a complete schematic design package, and received approval by the campus Design Review Board.

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Ken Pope, Vice President Balfour Concord University of Colorado Hospital Project

Research in Design Case Study: Peer Colloquium for Northwestern Medicine Outpatient Care Pavilion

At the outset of the planning process for Northwestern Medicine’s new Outpatient Care Pavilion, Cannon Design led a peer colloquium to exchange ideas about how an academic medical center can best address ambulatory care delivery in the post-healthcare reform environment. In addition to key personnel from Northwestern Medicine’s and Cannon Design’s teams, we assembled thought leaders from some of the best academic healthcare institutions in the U.S.: Brigham and Women’s Hospital, Cedars-Sinai Medical Network, Duke University Medical Center, University of Michigan Health System, University of Pennsylvania Healthcare System, University of Texas M.D. Anderson Cancer Center, Washington University Medical Center, and Yale New Haven Health System.

Our design team led the group through a workshop about the organization of a practice based on the disease-based Institute / Center concept; optimal practice models; and programs, services and facilities. Primary topics for discussion centered on how to create a seamless patient experience, how to integrate a variety of clinical and academic services; and of course how the facility can best support these operations.

Real-Time BIM Case Study: UCSD Jacobs Medical Center, San Diego, CA

The new Center for Advanced Surgery at UCSD will be the first fully integrated multimodality intraoperative imaging suite of its kind in the world. The suite will house four ORs with a ceiling-mounted MRI that will run on a rail between two ORs and the world’s first ceiling-mounted intraoperative CT, which will run between the other two ORs. Both pieces of imaging equipment will be operated from a central control room and housed in garages when not in use.

The design team worked closely with the physicians in neurosurgery and imaging as well as with both BrainLAB and IMRIS to develop the suite. BIM was an invaluable tool for enabling the team to ensure that the suite meets OR and MRI patient safety standards for floor, ceilings, and walls to envision equipment placement for flexibility and adaptability, to determine how new technology not even on the market yet will work within the suite.

“The intraoperative suite and its numerous innovations is one of many examples within this project of UCSD’s goal to be on the leading edge of healthcare delivery. As a major academic medical center, it is part of our core mission to be developing new practices and advancing both the science and delivery of medicine.”

Jim Cleaton, AIA Project Director UCSD