SLAM
HEALTHCARE
We are specialists in a client-centric, integrated planning and design process that help institutions visualize their future. The SLAM team envisions healthcare environments that will accommodate future growth and change, while fulfilling goals and aspirations.

As Charter Members of the Planetree Visionary Design Network, SLAM’s healthcare practice is based on the principles of person-centered care. Person-sensitive design can help professionals and institutions identify best practices and continually improve the quality and efficiency of healthcare. A renewed focus on patients and families can strengthen an institution’s sense of mission, community identity, and economic viability.

Our team is inspired by ongoing research and industry trends that document how healing environments affect patient outcomes as well as staff satisfaction and organizational behavior. This research, combined with our successful client relationships and design expertise, has become the platform for this brochure as we look to the future practice of healthcare—planning for the medical enterprise, creating flexible transitional facilities, emphasizing innovation and the patient experience, and forming strong academic medical partnerships.
The healthcare industry is in a process of realignment. Providers must make targeted facility investments in programs, service lines and technology to most effectively engage populations while matching service capacity with patient demand.

Average inpatient bed utilization nationwide suggests a demand for almost 200,000 fewer beds. Bed tower recapitalization will continue to focus on shifting towards private patient rooms to adjust to demand levels and better serve patients.

**Next Generation Planning**

Danbury Hospital recreated its brand and positioned for the next generation of healthcare as part of the Western Connecticut Health Network. Danbury Hospital shelled bed floors for expansion as money becomes available to reach a master plan goal of all private inpatient rooms. The shelled Interventional platform provided an area for procedure rooms with infrastructure that could support a range of future technologies with the right adjacencies within the hospital.
ENTERPRISE PLANNING
From 2012–2022, the healthcare industry is projected to experience 26.5 percent growth. Recapitalization has emerged as a necessary strategy for health systems to remain viable in an ever-changing marketplace. Creative, achievable road maps for re-investment in core facilities are crucial as evolving technology and service models drive demand for modern, efficient acute care platforms to serve an aging population more cost-effectively.

“All of our private patient rooms are designed as flexible rooms—we’re not building a PA room, orthopedic room, or isolation room, but rather rooms that can be used at any given time for any type of patient, and in turn, allowing for staff to be run accordingly.” — Martha Boyd, UMass Memorial Health Care

31% of healthcare executives plan to launch new segments or business lines to drive growth, up from 17 percent.

Outpatient
Women’s Services, Musculoskeletal, Cancer Care

D/T
Women’s Imaging, Angiography, CT, Nuclear Medicine

Support Services
Central Sterile, Lobby, Gift Shop, Intake, Staff

Inpatient
Post Partum, NICU expansion, Refresh and Branding of 153 M/S Beds

Investing in the Future
Over the past 12 years, UMass Memorial Health Care has invested in the incremental upgrade of its diagnostic, treatment, outpatient, and inpatient platforms. The recent “MC 2020” Project, also referred to as the “Bed Tower Refresh” is a $200+ million phased renovation of the inpatient units at both the University and Memorial Campuses. Recognizing the need to invest in both of its facilities and programs, UMass made a strategic investment focused on improving the patient experience, as well as clinical/operational efficiency and the ability for students and staff to better collaborate.
FLEXIBLE / TRANSITIONAL FACILITIES

Comprehensive care requires comprehensive design solutions, providing inpatient facilities the ability to quickly adapt to changing models of care. By the end of 2017, there will be more than 3,000 retail health clinics in the U.S. and over 9,300 walk-in, stand-alone urgent care centers, with 50 to 100 new clinics opening every year.

“...We’re looking at how we can design the most efficient floor plans and buildings and determine their operating models [so] that as we invest in new facilities, we can operate them as efficiently as possible... Back office operations will continue to be centralized and patient throughput will utilize modern, clean, efficient, and safe methodologies while providing the best possible patient experience.” — Stephen J. Carbery, Yale-New Haven Health

Providing Care Conveniently Close to Home

As its practice grew, SLAM helped longtime client Yale-New Haven Health deliver its plan to provide convenient, accessible ambulatory care to its patient population.
Today’s outpatient healthcare facility must find the sweet spot between operational efficiency, service offerings, and access to care.

The Best of Both Models
A hybrid model of care was created for Stamford Hospital’s Ambulatory Services Center which included features from both a linear organizational model and an “on-stage/off-stage” organizational model. The “on-stage/off-stage” model enhances patient privacy, staff productivity, efficiency, and team-based collaboration amongst practitioners. The “off-stage” aspect provides physicians with private spaces for staff meetings and collaboration, as well as shared clinical “touch down” areas to input and receive electronic patient care information. The new hybrid model also introduces a semi-private collaboration area between exam rooms where patients can effectively communicate and partner in their care with their clinicians.

Isn’t it nicer to be in a room... where the environment supports a collaborative interaction, where the patient and the physician can be partners in the patient’s health journey? That is a design feature we incorporated to reflect our commitment to the patient experience.
— Dr. Mary O’Connor, YNHH Long Ridge Medical Center

BREAKING DOWN BARRIERS
Collaborative Spaces for Collaborative Treatment
Universal adjoined exam and consult rooms provide flexibility based on patient demand for specialties and break down the barriers between the patient and their physician to provide a more equal partnership emphasizing face-to-face communication and increased patient engagement.

Co-locating provider offices and flexible examination spaces to encourage spontaneous interactions helps to break down the silos of the profession. Encouraging dialogue enhances treatment planning and ultimately affords access to a coordinated medical outcome for each patient.

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INNOVATION

Innovation is more than just technology; it is the holistic fusion of design, process, and technology to create a fully comprehensive, state-of-the-art practice.

Design Features Included to Improve Efficiency

<table>
<thead>
<tr>
<th>Feature</th>
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<tbody>
<tr>
<td>Standardization throughout the facility</td>
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<tr>
<td>Ambient environment controls</td>
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<td>Team work spaces to support collaboration</td>
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<td>Flexible, adaptable patient rooms</td>
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<td>Areas designed for staff collaboration</td>
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<tr>
<td>Decentralized nature</td>
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</tr>
</tbody>
</table>

Source: Health Facilities Management & ASHE 2017 Hospital Construction Survey

ACTIVATING UNDERUTILIZED SPACE

Design Methods Drive Healing Benefits

Biophilic Design continues to evolve with technology such as circadian lighting simulating natural color shifts in nature and diurnal rhythms to support a natural sleep/wake cycle – a benefit to both patients and staff. Circadian lighting and simulated daylight has proven to be an innovative design method allowing for the maximization of space in healthcare facilities by taking advantage of windowless spaces and transforming them into more pleasant environments. At Danbury Hospital’s Cardiac Rehab, garage spaces under the first level were reconfigured into programmable space using LED “light wells” and perimeter “cove” light fixtures to simulate skylights allowing patients and staff to have a sense of exterior daylight.
Steps added during facility planning and design to help improve staff workflow

<table>
<thead>
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<th>Method</th>
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<td>Mockups</td>
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<td>Direct observation studies</td>
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<tr>
<td>3-D models</td>
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HUMANIZE INTIMIDATING ENVIRONMENTS

Evidence-based design
Mock-ups
Interviews
Focus groups
Staff surveys
Direct observation studies
3-D models

INNOVATION

While technology is constantly evolving, methodologies such as LEAN, sustainable design, person-centered design, patient safety metrics and evidence-based design can ensure facilities align healing environments with the latest technology, set objectives and measure end results.

Merging Holistic Design with Technology

Griffin Hospital’s new Interventional Radiology (IR) Suite features both the latest in surgical equipment and Planetree Design, humanizing a technologically advanced and traditionally intimidating space for patients.

A biplane angiography unit adds approximately $1M onto the cost of a hybrid OR, which averages $3.6M with a single-plane system. Neuro and pediatric interventions require a biplane angiography system, which can be used in complex CV cases.

For complex EP procedures, such as catheter ablation, research indicates that biplane angiography use can reduce procedure time by 15-20 percent on average, creating significant operational savings.

Utilizing Technology in Design and Delivery

3-D Visualization and cutting-edge technologies such as Virtual/Augmented Reality are presenting not only additional fundraising mechanisms by allowing clients and donors to better understand their projects before construction begins, but also helping accelerate decision making, reducing project costs, and creating higher productivity during design.

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Griffin’s facility and care model have set a new standard for hospitals and architects. Griffin has won numerous industry awards for innovative, patient-centered design. Groups from more than 500 hospitals, both domestic and foreign, have visited Griffin since 1994.
— Pat Charmel, CEO - Griffin Hospital

PATIENT EXPERIENCE
Customer service and patient satisfaction have become the main differentiators among healthcare facilities, driving institutions to think about the interactions that occur throughout the continuum of care and the impact of their health care environments.

BRINGING THE OUTDOORS IN
Hospital executives are influenced by patient demand for privacy and comfort. 66% of administrators noting conversion of semi-private rooms to private rooms. 83% of U.S. hospitals have a formal structure for addressing the patient experience.

Setting a New Standard for Patient Satisfaction
As the pioneering institution of the Planetree model of person-centered care, when it came time for Griffin Hospital to develop its new Community Cancer Center, the patient was at the forefront of the discussion. The facility maximizes the diversity of experience using flexible and layered environments, both indoors and outdoors with a landscaped healing garden as a central organizational element. Supporting the delivery of coordinated care with combined modality, the facility includes radiation and medical oncology, as well as laboratory services.

The Chief Patient Experience Officer
The patient experience has come front and center in the design process, with firms even calling on patient experience studies as they develop plans. Some executives say their organizations have created new Chief Patient Experience Officer positions.
Being cognizant of the power and reach of patient experience and then acting with intent and purpose may be the greatest commitment to be made in healthcare today. — The Beryl Institute

The patient experience is defined not only by the aesthetics of an environment, but by innovative solutions to increasing efficiency, productivity, wayfinding, patient choice and wellness.

Building Hope for Patients, Families and Staff
Samaritan Medical Center’s new 22,000-SF Walker Center of Cancer Care brings Medical Oncology Infusion and Radiation Oncology together consolidating all practices in one comprehensive cancer facility for both local and regional patients. With a central theme of “hope”, the design for the Cancer Center invokes a strong feeling of hope for patients, family members, and staff. The facility’s modern design features abundant natural light, easy and convenient accessibility to staff and support services, and a calm, healing environment.

The Patient and Staff Experience
A focused endeavor to improve patient and staff experience can result in a reduction in employee turnover of nearly 5%. A superior customer experience doesn’t just strengthen patient engagement — it also correlates to 50% higher hospital margins.

THE PATIENT AND STAFF EXPERIENCE
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Simulation Becoming a Shared Platform for Student and Staff Training

Simulation centers, featuring virtual and augmented reality technology as well as collaborative and quiet learning/study spaces offer the perfect setting for partnerships between health practitioners and doctoral students alike within the academic medical center.

Simulation provides opportunities for students from various academic programs to work as part of a team prior to their clinical experiences providing the benefit of producing health care professionals that understand not only their unique role, but also the significance of each other individual’s role.

Creating an environment for students and doctors to team, collaborate, and connect is critical in advancing an institution’s mission to teach, heal, and discover.

A SAFE PLACE TO TAKE RISKS

Bridging Relationships

The Center for Innovation at Saint Francis Hospital and Medical Center provides a new destination where teams of medical practitioners, students, and administrators can gather and collaborate on medical research and training. The facility includes a large, flexible, high-bay Simulation Studio where an infinite number of environments can be mocked up and explored for training, research and development focusing on building team and communication skills. This high-tech space is devoted to conducting groundbreaking research on the best ways to deliver primary care to patients, improving education and increasing retention of primary care trainees and providers.
ACADEMIC MEDICAL PARTNERSHIPS
As medical and health sciences education becomes interprofessional, academic medical centers (AMC’s) have been forming clinically integrated value-based networks forming partnerships with other entities along the continuum of care while reducing costs. These facilities encourage clinical interaction, cross-disciplinary collaboration, and teaching opportunities to advance the healthcare industry and improve the patient care experience.

Building Collaborative Healthcare Relationships Through Shared Facilities
Johns Hopkins Hospital’s current re-purposing of its former 13-story, 370,000-SF Children’s Medical and Surgical Center (CMSC) originally constructed in 1963, includes a new Simulation Center on two floors for the School of Medicine students and Hospital staff. The remainder of the facility is being designed with flexibility in mind, encompassing environments inclusive of research, clinical care, and potential living space. Leveraging a key location on the campus, the renovations are designed to facilitate greater collaboration between the Hospital and the School of Medicine.

Technology as a Driving Force in Academic Medical Center Design
“Dark fiber” is becoming just as important as medical gases and fixtures. The ability to broadcast surgical procedures in real-time to learning centers has helped train students without necessitating additional OR space.

The development of haptic feedback technology and virtual reality technology in recent years has led many hospitals to invest in providing space and equipment for “Just-In-Time” training. These surgical and task trainers provide students and physicians with the opportunity to practice procedures through prepared modules that provide objective feedback.
SLAM design promotes healing, spontaneity, innovation and collaboration; encourages interdisciplinary efforts and problem-solving; accommodates changing technology; and reflects the vision of owners, staff, patients, family, and community. While the methods, means, and technology in healthcare design constantly evolves, SLAM’s commitment to our core principles, valued clients, and the patients they serve will never change.