translational architecture

The new breed of healthcare design

By Sho-Ping Chin, AIA, LEED® AP

Translational medicine and translational research are two topical terms that not only are influencing the nature of grant applications, departmental arrangements, and the dispersing of research dollars, but they also are directly driving a new building typology: translational architecture.What constitutes its design attributes? Is it a 21st century deconstruction of Dr. Frankenstein's laboratory or more of a socio/work cultural or marketing approach to the practice of academic medicine?

Ostensibly a term to describe the intersection of basic science with clinical application, translational medicine brings about a revolution of architectural ideas focused on maximizing interactions between the medical and research communities. While collaborative, interdisciplinary buildings long have been the goal for medical research institutions, the promise of breakthroughs via translational activity directly has led to translational architecture: a new breed of buildings to promote a form of hyper-interactivity between clinicians and researchers.Concurrently, education also has become a crucial component in this symbiotic approach to medicine.

Recently, the most prevalent application of translational medicine has been in the field of oncology. For a program to receive National Cancer Institute designation, proactive cross-pollination of clinical, research, and educational activities is a prerequisite to promote collaboration, exchange of intelligence, and seminal discoveries. To manifest this premise into spatial expressions, there can be many different ways to establish the design criteria.

A fundamental step is to collocate clinical and research programs. Usually these programs are stacked vertically rather than distributed horizontally. To enhance integration, visually linking clinical and research entities is effective. When patients have views to the research laboratories, it conveys a sense of confidence in the institution; they are aware that researchers and oncologists are working together to find breakthroughs. As an added enhancement, an open stairway within the atrium fosters communication and connectivity. For example, at the Pennsylvania State University Hershey Medical Center Cancer Institute, currently under construction, the keynote space is a five-story "beehive" atrium that visually links the research and clinical floors into a focused unity. Also both the Yale New Haven Cancer Hospital and the Dana-Farber Cancer Institute's Yawkey Center for Cancer Care are designed around this anchoring feature.

Other design elements that encourage discourse between clinicians and researchers include:

• Dedicated multi-levels of medical education spaces intermingled throughout clinical and research floors.

• Provision for multiple scaled, soft spaces such as breakout alcoves, cafeterias, consult rooms, and open lounges that encourage spontaneous exchanges.

• Opportunities to collocate clinical and research staff via contiguous offices, work rooms and touch down stations for oncologists, patient coordinators and nurses to confer.

• Open generic lab layouts with a support core that enhances teamwork with a seamless flow of information between different research groups.

• An environment supportive of all end users: patients, accompanying family/friends, nurses, and oncologists and researchers, who work collaboratively to find the next cure.

Evidence suggests that a well-crafted environment reduces stressors and has a positive effect. Design features to support this therapeutic atmosphere include:

• Convenient and quick access for patients

• Amenities such as a resource center, café, or healing garden to provide views, tranquility, and visual distractions. Access to outdoors provide patients a change of scenery during long treatments.

• A sustainable building agenda, including abundant access to natural light and views and green building materials that reduce VOC emissions.

The goal is to manifest and sustain translational medicine interactivities that significantly improve the process of undergoing comprehensive cancer care by consolidating clinical and research functions. The outcome of this built environment will instill confidence in quality of care, promote opportunities to translate and expedite state-of-the-art research to the clinical environment, and provide a healing environment with inspiration for the future.

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