

Healthcare Design: Today and in the Future
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The United States is experiencing an extraordinary boom in hospital construction and there is good reason to think that it will continue, especially in Florida. In a survey conducted by Hospitals and Health Networks magazine in 2004, 60 percent of the hospitals and 68 percent of the health systems surveyed reported that they needed to replace facilities that were aging. In addition, the Census Bureau is projecting that 28 million people will be living in Florida by 2030, trailing only California and Texas. More than a quarter of the population, 27.1 percent will be older than 65, which will only increase the demand for hospital services, and consequently architectural services.

Hospitals are a very challenging and constantly evolving building type, and architects, who specialize in them, have to continually educate themselves to remain abreast of trends in healthcare facility design, which are often driven by technological and clinical advances in medicine and healthcare delivery systems. Recognizing that in order to provide the very best designs for our clients, we would have to create a knowledge community, a group of healthcare architects, including the author, and allied professionals gathered in November, 2004 to form the AIA/Orlando Healthcare Committee. Our goal is to advance the state of healthcare architecture by initiating a continuing education program. To date, we have hosted a lecture on Integrated Operating Rooms, by Scott Smythe of Stryker, a tour of the Winnie Palmer Hospital for Women and Babies, while it was under construction, and a lecture about the Hospital by Nestor Infanzon, FAIA, Vice President and Design Director of Design for Jonathan Bailey Associates, the firm that designed the Hospital.

Patient safety is one of the most important issues that hospitals have to address. A major study in 1999 estimated that 44,000 people in the United States hospital were killed by medical errors. Another study doubled that number. Architects need to work closely with healthcare organizations to create socio-physical environments where the likelihood of medical errors can be minimized. A critical component in the system to help reduce medical errors is the nursing staff.

By 2010 40% of nurses will be 50 years old or older according to a prediction in a study published in the July, 2000 issue of the Journal of the American Medical Association. Architects have to understand the implications of an aging nurse workforce with regards to the interrelated systems of information technology, facility layout, and human factors. As an example, Jonathan Bailey Associates designed the nursing units at Winnie Palmer as semi-circular pods with the nursing desk in the center. Another approach is to place charting stations outside the patients' rooms. These solutions not only reduce the numbers of steps that nurses have to take during a shift, they also place nurses in close proximity to the patient rooms- a strategy that can help reduce patient falls.

Consumer-driven or focused healthcare has become increasingly important, with many hospitals taking their cues from the hospitality sector. Valet parking, pleasant lobbies and atriums, such as the large glass-enclosed sphere at Winnie Palmer, retail shops, improved dining facilities, internet service in patient rooms, and a less institutional appearance are just some of the ways hospitals have become more consumer oriented.

Working hand-in-hand with the hospitality model, many hospitals are advocating supportive or healing environments designed according to principles developed by Roger Ulrich, a behavioral scientist and professor at the Texas A&M Departments of Architecture and Landscape Architecture and Urban Planning. Healthcare environments based upon these principles attempt to reduce or eliminate environmental stressors, provide positive distractions, enable social support, and give a sense of control. Ulrich hypothesizes that using these principles can measurably improve patient outcomes. Designs based upon these principles, therefore, are similar to experiments in the field of medicine where results are predicted and measured. Consequently, there is a great deal of interest in evidence-based design, the architectural equivalent of evidence-based medicine.

Designing hospitals that are healthy for people and the environment is another major challenge for healthcare architects and engineers. Hospitals use tremendous amounts of natural resources and produce large amounts of waste including toxic pollutants. This has become such an issue that the American Hospital Association and the US Environmental Protection Agency are working together to promote efforts in our nation's health care facilities to prevent pollution. Fortunately there is now Green Guide for Health Care™, modeled after the U.S. Green Building Council's Leadership in Energy and Environmental Design Green Building Rating System® (LEED®). This is, according to the organization that publishes it, the "first quantifiable sustainable design toolkit integrating enhanced environmental and health principles and practices into the planning, design, construction, operations and maintenance of their facilities".

It is a very challenging time for healthcare architects. Our buildings have to be safe for patients and staff, ecologically sensitive, efficient, and according to Mr. Infanzon, operationally based. They also have to be flexible enough to support patient-care practices and technology today and in the future.