Design:
Dina Battisto, PhD, Clemson University & Birdtree Design LLC   and   David Ruthven, Birdtree Design Studio

PATIENT ROOM // 2020+

virtual · prototype
noun - [vur-choo-uhl] [proh-tuh-tahyp]
one of the first units conceptualized using digital technology to create a virtual model that can be studied and changed if necessary before the product is built full scale ultimately leading to a commercially manufactured product

THE PATIENT ROOM // 2020 PROJECT IS A DESIGN PROPOSAL FOR AN INPATIENT HOSPITAL ROOM THAT ILLUSTRATES WHAT COULD BE POSSIBLE IN THE NEXT TEN YEARS. THE BIG IDEA WAS TO ENVISION THE ENTIRE ROOM AS ONE LARGE MEDICAL DEVICE, WHICH HOLISTICALLY INTEGRATES A SERIES OF TECHNOLOGY TOUCH POINTS INTO THE FABRIC OF THE SURROUNDING ARCHITECTURE. THIS SMART ENVIRONMENT WOULD BE MORE ABLE TO ASSIST IN THE CARE OF PATIENTS BY STREAMLINING STAFF WORKFLOW, IMPROVING PATIENT EXPERIENCES, AND PROMOTING SAFETY.

PATIENT ROOM AREA // 350 SQ FT
PATIENT ROOM VOLUME // 3130 CU FT

FEATURED COMPONENTS:

Staff Resource Station:
The entry threshold to the space features sliding doors made from smart glass technology and includes digital alerts for patient allergies, food restrictions or special conditions. An entry workstation for staff and respite bench for visitors provide dedicated space for non-patient functions.

Respite Spa:
Designed to provide patients and visitors with a safe, rehabilitative environment for elimination and bathing activities, the bathroom features ambient heart grab bars, wall mounted bariatric toilets, waterproof spa interface, water conservation, and more.

Patient Ribbon:
A digital, silent, flat screen headboard that captures patient vitals, houses gases and other institutional elements, and integrates all forms of lighting for the room. A patient media center is located at the footboard to facilitate collaboration between caregivers, patents and visitors, and well as to provide connection to multimedia entertainment and hospital information.

Staff Digital Center:
To optimize the digital systems in the patient room, hospital staff is outfitted with several mobile devises to assist with care giving, including a VDR headset that allows staff to receive information wirelessly and transmit alerts to other staff members real-time.

Family Care Pod:
To create a proper space for visitors without expanding the depth of the structural bay, the space is cantilevered beyond the edge of the building. Elements include a flip down bed, guest workstation, drink chiller and wardrobe closet.

Constructability:
The space is conceptualized as three prefabricated, customizable architectural pods that are delivered fully assembled to the site during the construction phase.
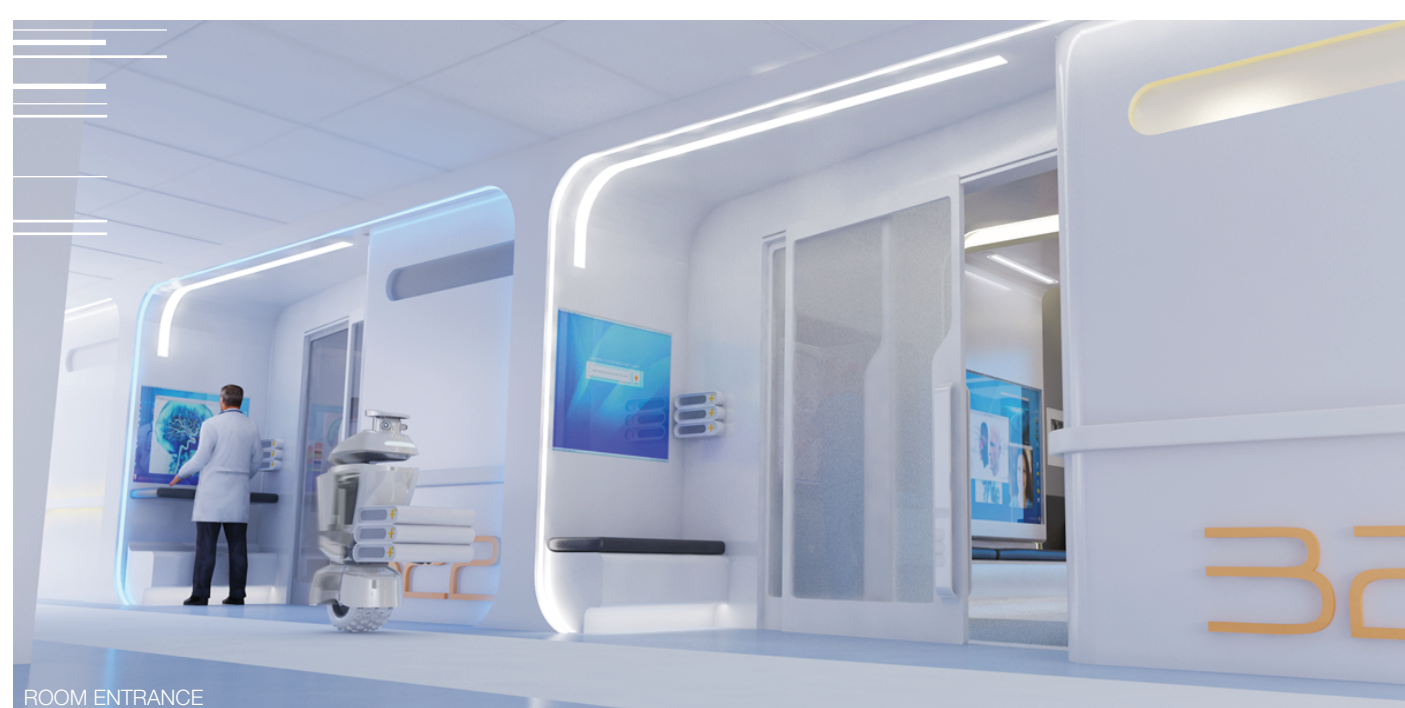
humanize // simplify environment + improve control

restore // enhance therapeutic experience

streamline // promote efficient processes

empower // inclusionary healing process

adapt // customizable architectural systems

PATIENT BATH

ROOM ENTRANCE

STAFF DIGITAL CENTER

PATIENT RIBBON

PUBLICATIONS & AWARDS

The Hospital Room Of The Future: Flexible, Media Rich, Very Shiny

"Patient Room 2020" is designed to heal patients, and make it easy for family and doctors to care for them. What will the future of in-patient health care look like? Perhaps something like the "Patient Room 2020," a project that NXT, Clemson University, and Birdtree Design are trying to bring to market in the next 10 years.

The virtual prototype reveals a sleek multi-function space filled with light and fully loaded with such technology touch points as the "Patient Ribbon," an all-in-one device that monitors vital signs, administers medical gases, and contains light controls and a digital media center. Though it's easy to get lost in the possibilities of the technology, Tom Jennings, founder and principal of NXT, the nonprofit innovation firm funding the project, says it's less about Hollywood-style futuristic bells and whistles and more about fostering more personal and proactive care for patients and their families.

According to Jennings, Patient Room 2020 has been in the works for a while. It's the latest iteration of the Patient Room of the Future project originally commissioned by the Department of Defense in 2006. But Dina Battisto, associate professor of Clemson's School of Architecture, said the health care industry needs this kind of innovation, effective immediately.

The room is constructed as a plug-and-play environment.

Battisto asserts that faculty and students from Clemson University's Architecture + Health have been designing, building, and evaluating multiple patient room iterations for the last eight years. Now, she says, they are beginning to build working prototypes and test them to see if their designs can perform in real-life applications. "When you look at a typical hospital room, the technology and instrumentation is very chaotic and not designed to integrate," adds David Ruthven of Birdtree Design. Patient Room 2020 turned that idea on its head. "We wanted to approach the room holistically," he says.

As such, the room is constructed as a plug-and-play environment in which customizable, prefabricated components integrate all aspects of care. The Patient Ribbon, for example, is a digital, silent, flat screen headboard that captures vital signs, houses gases, and holds the controls for all forms of lighting in the room. Ruthven says it's possible that it will be the first component to be integrated in existing hospitals in the next five years. A media center at the foot of the bed facilitates collaboration between caregivers, patients, and visitors, and provides connections to multimedia entertainment and hospital information...

While most of the medical care is conducted within the patient room, several key functions for patients, staff, and visitors occur at the entry to the space. Namely, the Staff Resource Station features sliding doors made from smart glass technology and includes digital alerts for patient allergies, food restrictions, or special conditions.

The orientation and location of digital elements in the room is intended to ergonomically empower a patient to make decisions and control nearly every aspect of their environment without much physical exertion. The bathroom is designed to provide patients and visitors with a safe, restorative environment with digital shower controls, ambient heart grab bars, a waterproof spa interface, and water conservation features. And in order to create a proper space for visitors without expanding the depth of the structural bay, the space is cantilevered out beyond the edge of the building.

Lydia Dishman
http://www.fastcodesign.com/1663980/the-hospital-room-of-the-future-flexible-media-rich-very-shiny-slideshow#1

Healthcare Environments Award, First Place in Professional Conceptual Design
Category: Patient Room 2020. Collaborative team – Dina Battisto, Dave Ruthven, Lin Zhang, Salley Whitman, and Tom Jennings, November 2010.

NXT   DEPARTMENT OF DEFENSE   CLEMSON UNIVERSITY