PAULEY PAVILION:
ANOTHER LEGENDARY EFFORT ON THE "HALLOWED HARDWOOD"

HOUMA-FREEPORT BRIDGE:
TEACHING AN OLD BRIDGE NEW TRICKS

HUMBER RIVER REGIONAL HOSPITAL:
LEAN, GREEN, AND DIGITAL
THE PROJECT

Pauley Pavilion is a UCLA landmark with a storied past. Constructed in the 1960s, the Los Angeles arena is a former home to legendary basketball coach John Wooden, who led the UCLA Bruins to ten national titles between 1964 and 1975. It has served as a venue for presidential debates, Olympic gymnastics, and music video awards. A groundbreaking ceremony on May 11, 2010, signaled the start of the transformation of one of the nation’s most famous athletic facilities. At the event, Dan Guerrero, director of athletics, said, “Our entire UCLA team is excited to begin this project with PCL, who will work with us to create a showcase facility for our student-athletes and the entire University.”

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A PHASED APPROACH

The first year of construction concentrated on a north-side addition and structural work on the exterior of the facility. During this time daily intramurals, team practices, and facility office use continued, and eighty major sporting events took place. Four entrances and exits remained open, a number that increased to twelve for major events. Construction was scheduled around the events, and reconfigurable fences and temporary walk platforms provided access to entrances when needed. At the end of the 2011 basketball season, the focus shifted to interior renovations. All programs that were to be held in the venue during the building closure in 2011-12 moved to alternative sites until project completion.

A phased approach to construction kept the facility in operation until interior renovations began.
Virtual Construction Pinpoints Variances

Once the construction team was able to take over the entire arena, further investigation showed that certain elements of the existing building were in conflict with the as-built documents—creating an additional challenge. UCLA and PCL together decided to do a laser scan of the arena to ensure uniformity of the building to the plans. The scan took four weeks to complete and produced a precise “point cloud” image of the structure made up of 3D coordinates. Importing the point cloud into Building Information Modeling and identifying differences between the as-built design and the new design allowed the team to identify and resolve many potential problems even before construction began.

Careful planning and attention to detail, combined with virtual construction methods, kept the project on schedule. The transformed Pauley Pavilion is scheduled to reopen in fall 2012.
THE CHALLENGE

Just three miles from the deep water of the Gulf of Mexico, Freeport is one of the most accessible ports on the Gulf Coast. Its location in Southeast Texas offers efficient transportation via highway, railroad, or intercoastal waterway. The 100-year-old rail-line swing bridge that crossed Freeport’s Old Brazos River, however, was in very bad shape and required continual maintenance by its operator, the Union Pacific Railroad Co.

Over in Louisiana, Union Pacific had purchased a rail line that included a 258-foot, vertical lift-span bridge over the Houma River. Union Pacific never developed this line, and the bridge had sat unused since the mid-1980s. The Freeport and Houma bridges were similar in size, so Union Pacific decided to move the lift-span bridge structure to Texas, where it could be used.

That’s when they contacted PCL.
Teams worked in Texas and Louisiana simultaneously.

The lift bridge in Houma was made operational and tested, and the bridge span and its towers dismantled and transported 650 miles, using seven barges and two tug boats. “At departure, we had nothing but clear skies and a friendly forecast,” said Brett Kermode, PCL’s project manager. A little while later, though, the fog banks rolled in, and the intercoastal waterway was shut down several times and most nights.”

In Freeport, meanwhile, tower piers were going up. The existing swing bridge was altered so that a train could continue to cross two days a week (and boats could pass the rest of the time). After placing the 700-ton counter weights, the team finally switched out the swing span for the lift span.

A moveable bridge relocation is, in many ways, a leading-edge green project. Nearly everything from Houma—machinery, air buffers, drive shafts, motors, and structural steel components—was reused at Freeport. Before installing the refurbished bridge, the team removed the old swing bridge and recycled its structural steel. Broken concrete foundations and rubble now serve as rip rap, which protects the shoreline from erosion, lowered emissions on hauling, and has kept much material out of landfill.

Everything was in place, with time to spare, when the regular Tuesday train passed through. PHOTO: The Union Pacific Railroad Co. operates widely in the western two-thirds of the United States.
As North America’s first fully digital hospital, Humber River Regional Hospital (HRRH) in Toronto will be a pioneer in healthcare, driving process improvements and efficiency by changing the application of technology to healthcare service delivery.

What does “fully digital” mean? Twenty-first-century hospitals use digital technology for such things as patient admissions and record keeping. But, until now, system interruptions prevented complete integration and interoperability, two of the necessary elements for creating a fully digital workplace. Complete integration will create a better experience for patients, families, and medical staff. Self-serve kiosks, for example, will enable patients to check in and receive information and instructions in many different languages, and “smart bed” technology can automatically record and transmit a patient’s vital signs into secure e-Health records.
A NEW PATH TO FINANCING INFRASTRUCTURE

The project is being delivered under Infrastructure Ontario’s Alternative Finance and Procurement program, where the public and private sectors join forces to provide needed infrastructure for communities. PCL is part of a consortium of partners, including Plenary Group, HCP Social Infrastructure, Innisfree, and Johnson Controls, that will finance, design, and build the new hospital, and will then maintain the facility for 30 years.

MODULAR CONSTRUCTION

Certain areas of the hospital, such as patients’ washrooms, lend themselves to modular construction, a building practice that is in increasing use throughout the industry. Modular construction can save time and money because components are prepared offshore simultaneously with work being done onsite. It is also a safe and standardized method of building because construction is done in a controlled environment, independent of weather or other variables, and thus ensures a finished product of the highest quality.

SAVING ENERGY

In line with HRRH’s Green Vision, the project has set an aggressive target for energy reduction. The team developed a building design that will use 40 per cent less energy than the standard set out in the Model National Energy Code for Buildings. One of the cornerstones of the development is a goal to achieve a rating of LEED® Silver, meaning the building will realize annual utility savings of at least a dollar per square foot.

... AND SAVING SNEAKER TIME

Energy is a significant cost for hospitals, but it is not the only one: a digitally integrated workplace saves what is known in the medical world as “sneaker time.” In this environment, information is shared between appropriate users throughout a hospital in real time. This prevents duplication of work, helps avoid errors, and improves safety and efficiency.
The PCL family of companies is a group of independent construction companies which carry out diverse operations in the civil infrastructure, heavy industrial, and buildings markets.