

## Cancer Center Expansion Home for Newest Radiation Therapy

### Mary Bird Perkins Cancer Center at TGMC

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The foundation is complete and steel is live on an 85,000 square-foot addition to the Mary Bird Perkins Cancer Center at Terrebonne General Medical Center (TGMC) in Houma, Louisiana. The McDonnell Group began construction January 18, 2010 on the three-story building, which is attached to the existing medical office building. The space is split roughly in half to accommodate a new cancer treatment center and medical office/retail space. Unique features of the building include a specially-built vault to safely contain the high-energy linear accelerator with its associated treatment rooms, skyway connections to other parts of the hospital and buildings, and LEED Silver (Leadership in Energy and Environmental Design) certification.

The cancer center features leading-edge technology that includes an image-guided, high-energy, linear accelerator; advanced intensity modulated radiation therapy (IMRT) treatment capability; image-guided radiation therapy (IGRT) treatment capability; positron emission tomography and computed tomography capabilities (PET/CT); sophisticated planning stations; and physics and dosimetry quality assurance instrumentation and software.

The accelerator and two treatment rooms are surrounded by 4-foot-thick, cast-in-place concrete walls and ceiling. A steel door weighing over 1,000 pounds secures the treatment area. Project Manager Grayson Bultman, The McDonnell Group, said 90-foot pre-stressed concrete pilings support this portion of the building instead of the usual concrete/composite pilings used elsewhere. A maze of hallways leads patients to the specialized treatment area where there'll be no suggestion of thick concrete walls or anything less than warm, inviting décor.

#### People-Friendly Features

Chenevert Architects designed the project to include three pedestrian skyway bridges connecting the new facility to the existing one. This makes it a weather-friendly, faster, safer way for everyone to move around.

To achieve LEED Silver certification, several environmentally- and energy-friendly choices were made. Reusing the existing site is an important first step. A beautiful rooftop garden filled with native plants will cover the concrete treatment center and be viewable from the lobbies. A storm drainage retention system will minimize runoff and capture rainwater to reuse for irrigation.

A high efficiency HVAC system will be tied to the building's existing chill water system. Low VOC (volatile organic compound) products were selected for wall-covering primers and adhesives to reduce VOC de-gassing and improve air quality. The building's steel, concrete, carpet, paint, paneling, and other materials will contain regionally-recycled content wherever possible.

This is The McDonnell Group's second LEED-certified project. The company has six staff members accredited to design LEED projects and several who are in the process of becoming accredited. Bultman believes LEED certified designs are an industry trend and the company is prepared to tackle those projects.

"The McDonnell Group wants to be a regional force in the healthcare industry. We have the experience, staff, and systems in place to do it," Bultman said.

#### Watertight Attention To Detail

The addition's skin presents a complex application of materials that must appear seamless with the existing building. One curtain wall may have a combination of aluminum and glass, or metal panels with windows or brick veneer with a combination of all three. Regardless of how many complicated intersections there are and what combination of materials is needed, one continuous waterproofing membrane is required to eliminate the opportunity for water leaks.

After talking with the building owners about existing concerns, and evaluating the architectural mockup, Bultman wasn't satisfied the flashing and waterproofing mechanisms were watertight. He brought in a waterproofing



expert and the subcontractors involved to evaluate the design documentation. As a team, they decided to erect three, full-scale test panels in the parking lot across from The McDonnell Group's offices. Using ASTM field test standards, Bultman said they exploited the design and field conditions to create the highest potential for leakage.

"We got a very good understanding of what is going to work," Bultman said. "The field craft were able to see problems and recommend changes in real time. The men on the scaffolding understand the complexity in the wall now; they get the big picture. When we build the real panels, the risk of leaks should be virtually eliminated. That will make everyone happy."

On a day-to-day basis, Project Superintendent, Gary McCann works with the TGMC Facilities Manager, Mark Hebert, to coordinate tricky construction schedules and minimize inconveniences. "Pulling the roof off without upsetting normal hospital operations and working in tight spaces are daily challenges. Good communication, patience, and thorough planning get us through with few difficulties," he said.

Steel erection continued into mid-September. Exterior skins will be finished by mid-November and the interior build-out will wrap up in May 2011. Getting the treatment rooms built is a top priority since the Mary Bird Perkins Cancer Center staff must install and certify all the necessary equipment prior to use.