



STRONG ENOUGH FOR A **STORM**

MedBuild builds veterans outpatient clinic for New Orleans residents

BY DAVID BRANDT

Photograph by Petty Officer 2nd Class NyxoLyno Cangemi

strong enough for a storm

MONTHS AFTER HURRICANE KATRINA DEVASTATED THE United States' Gulf Coast, emergency reconstruction was necessary for more than just homes. Public services and utilities were ravaged, reducing or completely halting commerce, schools and health care. In the metropolitan area of New Orleans, approximately 240,000 military veterans were displaced from their regular health system operated by the U.S. Department of Veterans Affairs (VA) because of the storm. Temporary facilities, which included a wing of a veteran's retirement home and a Wal-Mart parking lot, were unable to provide comprehensive services to visitors who couldn't travel beyond their community for necessary health care.

But the return of a regularly functioning health system wasn't planned too hastily given that facility reconstruction of the New Orleans area required more than temporary fixes. Through the U.S. General Services Administration (GSA), the VA sought reconstruction aid from high quality commercial suppliers through many of its long-term contracts. One of those contracts is with Modular Space Corp., or ModSpace, a Berwyn, Pa.-based provider of modular building, storage and services for temporary or permanent space needs, and its specialized health care division, MedBuild. The company provides modules for a wide range of customers and markets including construction, education, hospitality, retail and government throughout the United States and Canada.

A primary facility that the VA needed to have fully operating as quickly as possible was its St. John Outpatient Clinic, located in the city of Reserve, La., in St. John Parish just west of New Orleans. The clinic, originally built on a flood plain, was destroyed by the 2005 hurricane, so low land, inclement weather

and structural stability were immediate issues that MedBuild had to consider as they designed a new outpatient clinic.

"One key element is that everything we do has to meet the same codes as conventional construction," said Jim Gabriel, director of business development for MedBuild. "Post-Katrina, there were some requirements obviously regarding floodplain. We had to be able to accommodate that, so the foundation was designed in a way to meet the new 100-year floodplain benchmark."

According to an October 2007 report to Congress by the U.S. Army Corps of Engineers, methods of analysis used to determine if 100-year elevations have changed significantly over time. Factors that influenced this change include advances in tropical event forecasting, new hurricane surge and wave modeling techniques and new design criteria for wave run-up and overtopping.

MedBuild strongly modeled its new design of the St. John clinic against the previous structure's with only a few modifications. The overall goal, however, is geared toward possibly future scenarios. More specifically, MedBuild didn't want to build a new outpatient clinic only to have veterans rattled again if Mother Nature strikes with more storms that match the strength of Katrina. The intent was to build a concrete alternative to conventional construction that can withstand storm surges and remain in operation with full staff before, during and after such events.

"In terms of making sure we weren't just providing a facility that needed to take patients on a political basis, we wanted to make certain that this facility could essentially withstand another event like Katrina and not have to go through the same [reconstruction] process," Gabriel said.



Trenches are dug to supply power to the St. John Outpatient Clinic site.



Concrete cures as the plotting of the module-aided site begins to take shape.

First responders

The GSA tapped MedBuild to assist in construction projects left in the wake of Hurricane Katrina. Before beginning construction on the St. John Outpatient Clinic in the summer of 2007, the company completed the rebuilding of another VA clinic in Hammond, La., located north of St. John Parish. MedBuild constructed a 10,000-square-foot facility complete with high-tech medical and clinical space as well as incorporation of high-grade glass and siding for cost and energy effectiveness.

“Generally, we’re not storm chasers,” Gabriel said. “We do support the government in a large way. So when these events happen, we’re in a position to support the government and not just the VA. ...We position ourselves to assist first responders and what we consider the first and second wave of need.”

In initial response, Gabriel said the company supports organizations like the Red Cross and local municipalities (specifically, command and control centers) among state and local governments. The second wave of need is to provide temporary support to the function of government and health care, providing separate facilities like clinics and outpatient facilities so that hospitals, health care organizations and state and local governments are allowed to provide a sufficiency of care. This stage is where MedBuild exclusively comes into play, Gabriel said. “Then, we like to be able to position ourselves to help [the community] with the next phase, which is the rebuilding.”

For the St. John clinic, the new facility was ready for use within one year of the start of its construction. The 9,195-square-foot clinic comprises 19 permanently assembled modular units that together hold nine exam rooms, three counseling offices, a waiting room, administrative offices and training space.



Each module is carefully fitted to adjoining modules.

“We made sure we had our details covered, made some changes as we went along and had a couple of revisions before we started the manufacturing process in an effort to really coordinate and make sure we had our site activities and our manufacturing activities well-coordinated,” said Kevin Walsh, director of construction services for ModSpace’s south central region. “That’s always key on a project of this size and magnitude.”

He added that site construction and building construction essentially began simultaneously, buying materials and building the modular units while the construction crew advanced site improvements, utilities, foundations and driving piles. But such moves weren’t accomplished without a fair share of challenges, both legal and natural.

“This site was a low-level site that would flood, so we raised the site about 4 feet and drove piles 50 feet because it’s basically swampland. So that took some time. And, of course, the fill was difficult because the weather wasn’t cooperating with us. The fill took a lot longer than it normally would because in Louisiana they get most of their fill from the river. So it’s river sand. There has to be a certain break between weather when they can get to it and put it down.”

New and improved

Though the design for the new VA St. John Outpatient Clinic was largely based on the plans of the previous facility, MedBuild was still able to build new features. The clinic sits on a five-acre lot donated by St. John Parish and includes a 78,200-square-foot concrete parking lot which, like the clinic, sits four feet higher from the ground so as to prevent flooding and other



A crane sets the final module in the clinic’s construction.



Andreas Hoffman, executive director of Green Light New Orleans, explains the energy cost benefits to a resident of New Orleans.



Hoffman installs CFL bulbs into a light fixture inside a New Orleans home.



Photos courtesy Green Light New Orleans

BETTER LIGHTING FOR THE BIG EASY

Following the destructive Hurricane Katrina in 2005, New Orleans-based musician Andreas Hoffman seemed to be caught in a perfect storm of crises. Propelled by a belief that a storm that devastated his city was caused by extreme climate change, he began to consider the carbon emissions produced by his band's international travels, primarily by airplanes and tour vans. Later, he considered the energy efficiency within his own home.

"After Katrina, I realized that I had to make lifestyle changes," Hoffman said. "We are only a few minutes shy of 12 o'clock in regards to global warming, so we really have to act."

His advocacy of home energy efficiency began when he replaced light bulbs in his home with compact fluorescent light (CFL) bulbs. Hoffman soon realized a dramatic reduction in energy usage following the exchange. From there came the idea of how to encourage others to help offset pollution.

"When I'm on tour, I ask participants and the audience at each show to donate money. I take that money back to New Orleans and buy CFL bulbs and put them in for free in people's homes."

By October 2006, Hoffman's fan request developed into Green Light New Orleans, a nonprofit environmental organization focused on helping low- and middle-income families and individuals make the switch from incandescent bulbs to energy-efficient CFLs, one house at a time. It's a simple premise with long-lasting effects. In its first two years, the group has installed nearly 120,000 CFL bulbs in and around New Orleans, offsetting nearly 60 million pounds of carbon, according to the group's Web site. The cost savings for these residents is estimated to be about \$5.5 million for the community.

Hoffman said that operating the effort largely depends on personnel and inventory management, of which he had no professional training when the group formed. "It's been developed more and more into perfection. We track everything, every light bulb we put in. One-third of the program is financed by a carbon trading [agreement]. After the installation is done, the volunteers count the light bulbs, count them by bulb wattage and bring that report back to us. We enter it into the computer so we know exactly what we've done – which house, which neighborhood, everything."

Hoffman admits that it is difficult to complete an overhaul of energy-efficient lights and other appliances in the home. "There are several reasons. One reason is that changing your whole home to CFL bulbs is quite an expense. It was hard for me to come up with the money, and it was even harder for other people."

Hoffman said more than 3,000 homes in the New Orleans area are on a waiting list to receive volunteers with CFL bulbs and installation. He expects volunteers to soon be able to install 30,000 CFL bulbs per month, but that goal largely depends on donations given by CFL manufacturers, corporate and individual funding and volunteers, which Hoffman said have been growing in number.

More information about Green Light New Orleans can be found at the group's Web site at www.greenlightneworleans.org.



Current and former military personnel as well as ModSpace officials gathered for a ribbon-cutting ceremony in July.



The new welcome area is large and comfortable in the hot Gulf Coast summertime, thanks to a new HVAC unit installed by MedBuild.

damage from future storms. Another change was comfort control thanks to a new HVAC system that includes both a thermostat and humidistat.

“A lot of times people will try to save money and put in reduced air conditioning,” Walsh said. “To reduce AC costs, they’ll put in basic units. We put in what was essentially a gas reheat system. We wanted to control the humidity better, so we can provide better comfort in the rooms. What we found in a lot of our coastal areas was that people just run the air conditioner all the time in order to control humidity, and it really just ends up being really cold.

“So we went through and did an analysis on some of the comfort issues they can improve on if they go to a gas reheat system. We did that in this particular case. And the thermostats are also humidistats, essentially allowing them to run these systems without freezing everyone. That’s a really nice feature.”

MedBuild also installed an automatic transfer switch for the incoming electrical service so that the clinic could go to standby power and use a generator. Walsh said that the feature enables the St. John clinic to act as an emergency response facility, if needed.

Gabriel added that despite the copy design of the structure, additions and alterations can still be carried out if required by the clinic. New projects might include adding modules to [adjusting] the patient care areas or adding parking space.

“Modular lends itself to that sort of expansion very, very well. Even more so than conventional construction, there is no site disruption. ...We like to work with clients on the basis of what they see in two years time, in five years time, whether they see

the need to possibly expand their facility, and then we’ll help to build that in if, in fact, that ability does come to pass.”

The clinic opened its doors again in July with a 27-person staff and state-of-the-art equipment and workspace. Soon after, the clinic dealt with its first major weather test when Hurricane Gustav made landfall almost three years exactly following the storm that destroyed its former self. Gustav wasn’t as treacherous as Katrina, but nonetheless powerful. As all parties expected, the new building stood defiant of repeating history.

“We’ve had some calls for some minor maintenance, but nothing in terms of destruction,” Gabriel said. “Modular buildings have more structural components because we’ve got to be able to transport them, so they have more components whether it’s steel, wood or another material. They tend to fair well under the circumstances because of what I would consider to be increased structural stability.” ❖

On the Web

DAMAGE BUSTERS

Systems for handling massive disasters have been in place for decades. They’re fine-tuned by forensic anthropologists and government officials with every mine cave-in, hurricane, earthquake, fire and airplane crash. Often, the consultants or the confidential workers on the scene are industrial engineers.

www.iienet.org/magazine/nov08/recovery