

# BUILDING® BRIEFS

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information  
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build on.**

WINTER, 2009

## LIFE STAR Receives A Transplant

Connecticut residents are fortunate to have access to critical medical helicopter service provided by the LIFE STAR Helicopter Emergency Medical Response Team. The LIFE STAR helipad, located on the roof of the Bliss Wing at Hartford Hospital in Hartford, Connecticut, is home base for their operations. They have been serving critically ill patients around the clock since 1985, averaging 1,200 patient transports annually.

The harsh New England winters have not been kind to the 20-year-old helipad, perched atop the 13th floor. The 75 foot x 120 foot concrete pad was originally built for landing up to four medical helicopters. The roof also supports a hangar used for equipment storage and to provide routine helicopter maintenance. The landing deck is surrounded by eight-foot-wide safety net outriggers, constructed of structural steel to support safety nets for personnel protection.

Hartford Hospital selected George Torello Engineers to evaluate the deterioration of the deck and outriggers and to recommend a game plan for repairing and upgrading the helipad. Torello Engineers previously solved several structural engineering challenges for other clients in collaboration with Petra Construction Corporation, and once again enlisted Petra as their partner. Petra's Vice President and Senior Project Manager, Barry Zorzanello, and his team mobilized to work with the project team on several critical issues,



*Petra recently completed renovations to the helipad on the roof of Hartford Hospital.*

including scheduling, budgeting, constructability and construction logistics.

The investigation revealed that years of exposure to the elements and deicing chemicals had corroded the steel outriggers that support the safety netting around the perimeter of the deck. Severe deterioration of the concrete landing surface was producing loose debris, which posed a risk to the safe operation of the aircraft. It was necessary to correct the structural issues and replace the concrete landing pad. These solutions were phased, to ensure continued helicopter operations as the rehabilitation work was performed. The helicopters were relocated to a temporary ground landing site for only one brief period during the project.

Petra Senior Project Manager Michael O'Hare began the careful planning necessary to protect the hospital, workers, guests and patients during the renovation. Scaffolding was

erected around the perimeter of the flight deck for the full 13 stories, to provide access for the work on the steel outriggers. The scaffolding also provided the opportunity to repair the brick façade on the Bliss Wing, as well as the installation of new aluminum panels below the outriggers. A large crane was staged on the ground to hoist construction materials to the roof. A temporary plywood containment system was constructed around the outriggers, to provide safety for the workers while LIFE STAR's helicopters continued to take off and land during the restoration process. The steel outriggers were structurally upgraded with stainless steel supports, additional welds and stainless steel hardware. The metal was sandblasted, primed and coated with a durable epoxy coating system to minimize future maintenance. New safety netting was installed on

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the outriggers to complete the process. Throughout these steps, hospital patients on the floors below were protected from airborne products and odors. Frequently during the restoration, workers were given emergency notice to vacate the landing pad within two minutes, to allow LIFE STAR's helicopters to take off or land in support of medical emergencies.

Reconstruction of the landing pad and supporting infrastructure proved a little more complicated than simply pouring new concrete. New drainage systems were designed and constructed under the slab to displace surface water and potential aviation fuel spillage. During the project, the scope of work changed to accommodate the full weight of the United States' Presidential helicopter, if such a landing is ever necessary. This required structural upgrades to be completed under the landing pad,

once the existing deck was removed. The existing roof was selectively x-rayed, to avoid damaging the steel rebar in the concrete while completing the structural upgrades. The overall project schedule remained unchanged, despite the additional scope of work. The old concrete deck was saw cut and removed in three-foot square sections, to accommodate the removal and replacement of the existing roof membrane, structural upgrades, new drainage system and placement of new concrete to create the finished landing pad.

Additional upgrades were requested by the hospital, including replacement of the existing manual bi-fold hangar doors with a new 8,000 pound motorized bi-fold door strong enough to resist hurricane force winds on the 13th floor helipad. New landing beacons, landing lights and paint striping were completed to outline five individual landing pads

on the new deck.

Throughout the project, the team worked closely with Hartford Hospital Associate Director of Engineering John Wrobel to review the critical path schedule, establish and update the budgets and coordinate the construction process with a variety of hospital personnel, including the LIFE STAR pilots.

The successful repair and upgrade of Hartford Hospital's helipad was the result of a great deal of investigative work, outstanding collaboration by the project team and excellent communication. Petra is proud to have been selected as a valued team member on this project, which will serve the healthcare needs of Connecticut residents for many years to come.

To discuss construction management services, please call Guido Petra, President or Terry Wooding, Executive Vice President at 203-865-6043.

## Project Profile

### Owner:

Hartford Hospital, Hartford, CT

### Project:

Helipad Repairs

### Project Delivery System:

Construction Manager

## Project Team

### Hartford Hospital

Richard McAloon, VP Human Resources

John Wrobel, Associate Director of Engineering

Kerry Kerr, Interim Director of Engineering and Facilities Development

Chris Burney, Director of Engineering

Michael Garrahy, Fire Chief; Manager, Environment & Life Safety

Ed Phillips, Aviation Service Manager, LIFE STAR Senior Pilot

John Spencer, Team Leader, Security/

LIFE STAR Communications

Stefanie Kniep, Administrative Assistant

### Petra Construction Corporation

Barry Zorzanello, Vice President and Senior Project Manager

Michael O'Hare, Senior Project Manager

Blake Robbins, Assistant Project Manager

Mike Mertz, Project Superintendent

Rick Wollman, Project Superintendent

Sam McClendon, General Superintendent

Walter Tucker, Director of Safety

Yvonne Bruton, Administrative Assistant

### Engineering

#### George Torello Engineers, PC

Glenn Neri, Project Manager

Atul Dalal, Structural Engineer

George Torello, Structural Engineer

Howard Epstein, Structural Engineer

### Marion Testing & Inspection

Albert Moore, Jr., Inspector

Special thanks to all of Petra's subcontractors and material suppliers

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