



Job Creation: USGE Hybrid Roof Manufacturing

Early Engagement

Rhoads Industries is a manufacturer of machined parts for large ships, a provider of industrial services and possesses heavy fabrication abilities. Rhoads has had a presence at The Navy Yard since 2003, and they are now headquartered there, employing 125 people. In the summer of 2011, they purchased several additional Navy Yard buildings near the waterfront. Rhoads is also a long-standing client of the Delaware Valley Industrial Resource Center (DVIRC).

The EEB Hub engaged with Rhoads soon after the Hub was established. Bill Annechini, Business Director at Rhoads, attended a DVIRC workshop held at the Navy Yard called “Introduction to the EEB Hub for Manufacturers and Technology Developers in Greater Philadelphia.” Additionally, Tim Wagner and Rich Sweetser of the Integrated Technologies and Systems task team toured the newly purchased Rhoads Navy Yard buildings to explore the possibility of metering the building as a Hub demonstration project. They concluded that the buildings were industrial and not commercial, therefore not good candidates for Hub demonstration.



Enter US Green Energy

In the fall of 2011, William Lauer, Director of Business Development at DVIRC received a call from Bob Ferrucci, CEO of Principle Strategies. Ferrucci had been a DVIRC client when he was Vice President of Keystone Helicopters (now Sikorsky Global Helicopters, a UTC company) in Coatesville, PA. Ferrucci wanted to share information regarding a new business with which he was assisting in new product development.

The company, US Green Energy (USGE), is a Virginia-based start-up company manufacturing a new kind of solar roof. According to USGE President George Peterson, USGE’s solar roof is unique in that the product is integral to the actual roof and does not involve adding solar technology to existing roofs. The USGE Hybrid Roof is Class A- Fire rated and certified to Underwriters Laboratories (UL) standards. The Hybrid roof eliminates roofing materials usually associated with solar roofs and reduces costs. Installation is not complex and is similar to that for a traditional flat or sloped roof.

At the same time, Bill Annechini of Rhoads contacted DVIRC to inquire whether the EEB Hub could assist Rhoads in the retrofit of its buildings at the Navy Yard. Specifically Bill mentions their need for a new roof. A meeting is set up between USGE, DVIRC, and Penn State’s Greg Dobbs and Finley Shapiro at the Navy Yard to discuss USGE’s Hybrid Roof, and potential participation in the DOE Northern Mid Atlantic Solar Training Center and the DOE GridStar Smart Grid Training Center at the Navy Yard. Bob Ferrucci

mentioned that USGE is seeking to do a beta-site installation in a northern climate, and discussed the difficulty of finding a suitable beta-site. During the meeting DVIRC highlighted the potential roof replacement opportunity at the Rhoads Building 22 at the Navy Yard.

A Marriage is Arranged

Recognizing the potential for collaboration, DVIRC set up a meeting with Rhoads and USGE at Rhoads' Navy Yard offices. Meeting participants included Bill Annechini and Dan Rhoads of Rhoads Industries, Bob Ferrucci and George Peterson of USGE, and Bill Lauer and Sharon Ross, EEB Hub Project Lead for DVIRC.

In addition to exploring the technology and possible use of the Rhoads roof, USGE also discussed their need for manufacturing space. Rhoads indicated that they had excess capacity in one of their Navy Yard buildings. The preliminary agreement discussed between USGE and Rhoads would allow USGE to put a new roof on one of Rhoads' buildings, and manufacture solar roofs in Rhoads' building. USGE estimates that it would create about 20 new manufacturing jobs at the Navy Yard.

USGE also noted that they contracted for further technical work on their product with Dr. Corey Dickens, Assistant Professor Electrical and Computer Engineering at Morgan State University, a EEB Hub performer. The project would examine thermodynamics of the roof and the trial of a new design of fiberglass base material to reduce weight and improve attachment. USGE has completed an MOU with Morgan State to pursue research funding, and assigned Dunston Donzell as project manager to continue thermodynamic design work.

Next Steps

On June 1, 2011, DVIRC met with Rhoads, Penn State, PIDC, Ben Franklin Technology Partners, and Principle Strategies' investors to understand the opportunities available at The Navy Yard and to prepare their request for funding for the new USGE manufacturing facility located at The Navy Yard in Philadelphia.

On June 8th the team from Morgan State, USGE, Principle Strategies, Penn State and DVIRC met to obtain preliminary dimensions and specifications of Rhoads roof to determine the capital expenses necessary to do the project.

This opportunity addresses the EEB Hub mission of moving the advanced energy retrofit market through improved technologies and systems, as well as the streamlining of the construction processes to reduce overall cost and quicken the return on investment.

The project also helps achieve the goals of attracting and growing new manufacturers and jobs in building energy systems to the region, and developing the Navy Yard as a focus for advanced energy retrofit technology development and demonstration. Morgan State will demonstrate its capabilities in solar and thermodynamics, and Penn State will engage its DOE sponsored smart grid and solar training programs developing curriculum for this emerging hybrid solar roof approach.