

# PROFILE

FALL  
2006

## Case History: Fabrication

### COMPOSOLITE® Bridge “Draws” Attention!



An all-composite double leaf bascule bridge recently installed in Bridgetown, Barbados, was built using Strongwell's COMPOSOLITE® building panel system, EXTREN® structural shapes and a custom heavy-duty building panel. The bridge superstructure itself is made entirely of COMPOSOLITE® system components and custom building panels, while various sizes of EXTREN® square tubes were used to create an attractive architectural railing system.

The Chamberlain Bridge measures 29 feet (8.86m) wide, 38.5 feet (11.7m) long and about 3 feet (1m) deep. The bridge was fabricated by Strongwell and shipped in four sections that were assembled on-site using adhesive and COMPOSOLITE® toggles and 3-way connectors.

The drawbridge is mainly used by pedestrians in this tourist destination, but it is designed to support vehicular traffic. Strongwell's pultruded composite materials were selected to replace a dangerously obsolete steel structure mainly because of the excellent strength-



to-weight ratio of the pultruded parts. Heavier materials would have required the city to rebuild the lifting mechanism and other materials were not strong enough. The composite materials also offered the benefits of corrosion resistance, low maintenance and high aesthetic appeal.

The Chamberlain Bridge is an excellent example of how composites can be used to replace steel in vehicular superstructures, especially in corrosive saltwater environments. ●



## INSIDE:

- **Historic Truss Bridge Gets Modern Makeover**
- **Strongwell's New Website Unveiled**
- **Strongwell Receives Top Honors from ACMA**
- **SXEW Platforms Installed in Mexico**
- **Strongwell Helps a California Pier Avoid Corrosion Difficulties**
- **Strongwell People**
- **An Award-winning Cheese Manufacturer Chooses FRP**

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## Case History: EXTREN® & SAFPLATE®

### Historic Bridge Gets Modern Deck Upgrade

Strongwell has partnered with Virginia Tech and the Virginia Department of Transportation to install a new composite bridge decking system on a severely deteriorating historic bridge.

The 106-year old Hawthorne Street Bridge in Covington, Virginia, consists of a concrete deck that has been periodically replaced due to severe deterioration. The truss bridge was built in the early 1900's and is on the National Historic Bridge Register. This type of bridge was specially constructed by the Phoenix Foundry, which cleverly developed tubular chord bridge systems with pin and strap strut interior members. Although hundreds of these bridges were constructed at the turn of the 20th century, very few are still in existence. Hence, special care was taken to restore the Hawthorne Street Bridge.

Current highway codes require load capacities to meet AASHTO HS 20 city requirements. Unfortunately, replacing the concrete deck on the antique bridge would still not meet the requirements. In order to reconstruct this delicate bridge structure, project engineers agreed that refurbishing the steel truss system with a

fiberglass composite system was the most economical means of increasing the bridge capacity and extending its life. Strongwell's corrosion resistant, light weight deck system required minimal construction time and was ideal for the project.

EXTREN® square tubes and plate, adhesives and galvanized steel connection hardware were used to create the tube decking system. The existing concrete deck was removed and replaced with eleven 22'-10 x 7'6" EXTREN® deck sections of 6" x 6" x 3/8" square tube and 3/8" plate. A removable sidewalk was also added using 1" SAFPLATE® panels.

Transportation officials agree that the FRP renovation will improve the life expectancy of the bridge deck, even when exposed to salt and ice in the winter. The



composite deck not only exceeds the life expectancy of the previous concrete deck but is also 70% lighter weight than a concrete deck. The deck allows the service load capacity of the bridge to be increased as well. The historic bridge will be completed by November 2006. ●

## Newsmaker:

### Strongwell Introduces its New & Improved Website

Strongwell has just unveiled a major update of its website at [www.strongwell.com](http://www.strongwell.com), and it's packed with new features including:

- An improved structure and navigation menus
- A search function
- Photo galleries on most product pages
- New pages focusing on "Selected Markets"
- An animation of the pultrusion process on the Pultrusion page
- Online submission of a custom pultrusion checklist
- An updated News section
- A Frequently Asked Questions (FAQ) page
- Driving directions to each Strongwell facility
- Site map



Strongwell's more user-friendly site can be found at [www.strongwell.com](http://www.strongwell.com).

We hope you find the site more informative and user-friendly than ever before. Our goal is to constantly strive for improvement and we welcome your comments and suggestions. Check out the site today and let us know what you think! ●

## Newsmaker:

### Strongwell Receives Top Honors from ACMA!

Strongwell took home two ACE Awards given by the American Composites Manufacturers Association (ACMA) at the Composites & Polycon 2006 Show in St. Louis, MO. The awards are given in recognition of superior work in the composites industry.



Strongwell's COMPOSOLITE® bascule bridge project, which is featured on the cover of this issue, took home the Best of Show Award. Strongwell also won the Infinite Possibility award for the GRIDFORM® FRP Bridge Deck System.

In addition to these awards, ACMA's magazine, *Composites Manufacturing*, awarded Strongwell with the Excellence in Community Stewardship Award for outstanding community involvement. ●

## Case History: Fabrication

### FRP Platforms Withstand Corrosive Environment

More than 10,000 square feet of Strongwell's fiberglass operating platforms and walkways were recently installed at a copper refinery in Piedras Verdes, Mexico.

The refinery uses a process called solvent extraction electrowinning (SXEW) to extract copper from the ore. An electrolyte liquid used in the process is highly corrosive to aluminum and steel, so corrosion resistant FRP grating, handrails and structural platforms were a natural choice for the project.

The FRP platforms are much more durable than aluminum or steel and the low electrical conductivity of FRP makes the operating platforms much safer for workers. Additionally, the lightweight FRP shapes, grating and handrail made the installation easier and faster.

FRP platforms are a much better solution for corrosive operating environments like those found in SXEW copper refineries. As a result, fiberglass has become the material of choice for such operations. ●



## Case History: EXTREN® & SAFRAIL™

### FRP Guards California Pier From Corrosion



The Avila Beach Pier in California has been reconstructed using Strongwell's pultruded fiberglass structural materials. The 1,685-foot public pier was in need of a large stairwell at the end that would allow public access for landing boats and unloading guests.

The pier is constantly exposed to a harsh saltwater environment and is always under attack from the corrosive elements. In fact, parts of the new stairwell are entirely submerged in saltwater at all times. Strongwell's fiberglass materials were chosen over traditional building

materials because of the superior corrosion resistance and strength that FRP offers.

The pier now features a walkway that was constructed using EXTREN® I-beams and channels at the base of the pier for extra support. In addition, DURADEK® pultruded grating, stair treads and SAFRAIL™ handrail were installed. Pat Dalton Construction was pleased with the project and reported the FRP solution is far superior in performance to wood and steel materials previously used.



The pier reconstruction project is part of a local initiative responsible for growing tourism at Avila Beach after an oil spill in the 1990's destroyed much of the land in that area. Strongwell is pleased that its FRP materials helped to restore the pier and will help it last for many years to come! ●

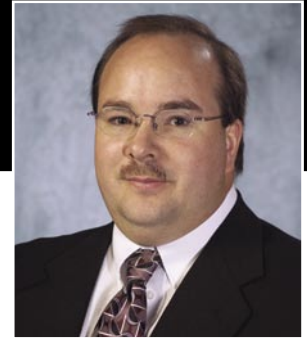
# Strongwell People

## Tracy Barry Quality Assurance Engineer



Strongwell's Bristol Division welcomes Tracy Barry as its new Quality Assurance Engineer. Tracy holds a BS degree in Engineering Operations from North Carolina State University. She has prior experience as a Quality Engineer for Duke Power Company. Tracy also has customer service and production control experience. ●

## Frank Ramsey Pultrusion Operations Manager



Frank Ramsey has assumed the role of Manager of Pultrusion Operations for Strongwell's Highlands Division. He received his BA from East Tennessee State University and his MBA from King College. Most recently Frank served as the Polymer Concrete Operations Manager for the division. ●

## Rusty Short Assembly & Fabrication Manager



Rusty Short has accepted the position of Manager of Assembly and Fabrication at Strongwell's Highlands Division.

Rusty has held management, supervisory and other positions at Highlands. He holds an associates degree from Southwest Virginia Community College. He began as a Pultrusion Crew Facilitator at the division. ●

## Brenda Delp Customer Account Specialist



Brenda Delp has accepted the position of Customer Account Specialist at Strongwell's Bristol Division. In addition to interacting with customers daily, Brenda is responsible for providing top-notch customer service, primarily regarding custom pultrusions.

Brenda comes to Strongwell from Whirlpool Headquarters in St. Joseph, MI, where she was a Production Support Analyst. ●

## Case History: DURASHIELD®

### A Cheese Factory Finds FRP to Be the Answer!

Strongwell's DURASHIELD® foam-core structural panels were recently used to help a cheese-making factory comply with USDA sanitation standards. Switzerland-based Roth-Käse, an award-winning cheese manufacturer, used DURASHIELD® panels for walls in its U.S. location in Southern Wisconsin. As part of a renovation project at the factory, 1" DURASHIELD® panels were used to create interior walls and a ceiling. Three-inch panels were used for the exterior walls.

The foam-core panels were chosen because they are lightweight and can easily be removed for cleaning and moving equipment within the factory. The panels were also quick and easy to install, eliminating the need for insulation, paneling or painting.

The result of the building project allowed the factory to quickly and easily comply with USDA's sanitation standards. Mark Bechen, project manager for Roth-Käse, USA, commented that he was "very satisfied" with the "nice and clean" fiberglass solution. ●



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