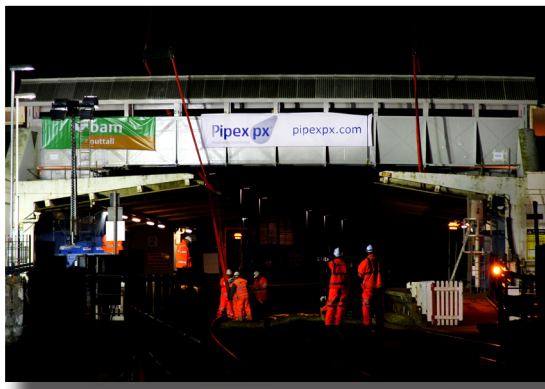


Case Study: EXTREN®, COMPOSOLITE®, and SAFPLATE®

Strongwell FRP: First in an Elite Class

The composites world celebrated a historic milestone during the weekend of October 13, 2012, in Dawlish, United Kingdom. After seventy-five years of service the Grade II listed Dawlish footbridge in the coastal scenic county of Devon was replaced with the world's first Grade II listed FRP Bridge. The original structure was built in 1937 and had deteriorated beyond repair due to salt spray-induced corrosion, combined with the region's harsh marine environment. Replacing this bridge was a challenge due to it being one of the 500,000 man-made structures which are protected by the United Kingdom's historic and architectural listing (tiered grading) system.

Alternative solutions were presented by Network Rail engineers in an attempt to refurbish the corroding girders, roof, protective paintwork and rotting timber decking, but replacement by Pipex px® FRP fabrication was concluded to be the ideal solution. The Dawlish footbridge was designed and engineered by Tony Gee and Partners and Optima Projects, with installation completed by Bam Nutall. Pipex px® prefabricated portions of the bridge offsite to ensure fast installation and accurate testing performance while confirming the correct replication in design of the original 1930's Grade II listed steel bridge. Strongwell's



EXTREN® plate was utilized for heat deflection and light fixture points, SAFPLATE® to cover flooring, COMPOSOLITE® as a main floor structure, showcasing its state-of-the art toggle system, and kick plates as fascia panels on the side of the roof. Upon completion, the 60-foot bridge length weighed in at only one-third of its 15-ton steel counterpart, while being more than capable of withstanding a 13-ton load.

This is the first composite bridge at a mainline station in the UK, the second FRP footbridge to ever be installed on the Network Rails Western Route and the world's first Grade II listed FRP bridge! It has been designed with a life expectancy of 120 years with virtually no maintenance requirements. ●



INSIDE:

- *Strongwell Helps Build Part of the (Almost) All-American Dream*
- *COMPOSOLITE a Strong Choice for Wastewater Applications*
- *FRP Inserted into the Heart of Downtown Cincinnati*
- *Design Manual Updates*
- *Literature Updates*
- *New Faces at Strongwell*

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STRONGWELL
FRP/Fiberglass
Structures and Systems

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Case Study: FABRICATION

Strongwell Helps Build Part of the (Almost) All-American Dream

In 2010, Karen Lantz, AIA, of Enter Architecture, decided to build and design her home in Houston, Texas, with a goal to use “Made in America” products. Her “Lantz Full Circle Design Concept” has received multiple accolades as a prominent architecture design/build practice in the Houston, Texas area.

The economic climate at the time, combined with her life experiences watching her father fall victim to market globalization in the American steel industry, inspired the idea to build her home and show support for American manufacturing. Karen admits the task of finding and using only “Made in America” materials was easy in some ways and difficult in others. Throughout her quest, she learned “Made in America” does not always mean the same thing as she expected – at times only referring to companies that maintain a U.S. office or perform final assembly in the U.S.

One of her American-made discoveries came when she was looking for T-bar pultruded grating for some of her custom stairwells and walkways. After learning that the local manufacturer she initially selected began outsourcing production to Mexico, she searched for another supplier. In concert with Vince Pena of Diamond Services, Strongwell designed and created a slightly-modified version of its commercial T-bar grating for her custom residential needs. The final product met her design specifications while maintaining her conviction to support American manufacturing jobs.



Photo Images courtesy of Hester + Hardaway

When asked of the home’s value she responded with, “I built it to be here 100+ years and lead by example for architects, builders, and owners who want American manufactured goods. It can be done with quality and beauty within budget.” ●

For More Information

To read more about the almost All-American house, check out the *New York Times* article:

[http://www.nytimes.com/2012/10/14/magazine/the-almost-all-american-home.](http://www.nytimes.com/2012/10/14/magazine/the-almost-all-american-home.html?ref=magazine&_r=1&)

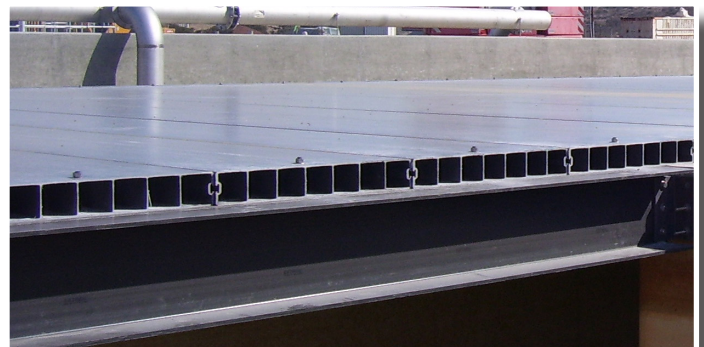
[html?ref=magazine&_r=1&](http://www.nytimes.com/2012/10/14/magazine/the-almost-all-american-home.html?ref=magazine&_r=1&)

www.lantzfullcircle.com

Case Study: COMPOSOLITE®

COMPOSOLITE® a Strong Choice for Wastewater Applications

A group of tertiary treatment plants with open reclaimed water contact basins in Southern California needed a solution which minimized chlorine loss while preventing potential algal blooming due to prolonged exposure to sunlight. CDM Smith invited Strongwell to submit a bid for covers to resolve this issue. Strongwell provided an alternative to the traditional thin-walled fiberglass and aluminum covers, as those have span and stiffness issues. Strongwell’s design utilized COMPOSOLITE®, partially because it offers a state of the art internal core structure which can handle more weight and could cover the reservoirs without needing extra structural support. Unlike aluminum, COMPOSOLITE® (FRP) does not corrode, was less expensive than aluminum and is safer in this application to touch and walk on. The lightweight, high-strength FRP panels were delivered on one truck with minimal effort to off-load and store. Greg Thomas, owner of Alliance Utilities & Construction Inc., in Temecula, CA stated they were able to install the panel system on site with minimal field trimming and reduced labor costs.



Eric Romero and Sean Sullivan, CDM Smith Site Construction Managers, both felt the COMPOSOLITE® reservoir covers exceeded their expectations and will continue to bid for COMPOSOLITE® in upcoming wastewater projects. ●

Case Study: DURAGRATE®

FRP Inserted into the Heart of Downtown Cincinnati







In 2012, the City of Cincinnati needed a permanent, low-maintenance and lightweight support system for the Walnut Street Fountain. The interactive fountain is one of the multiple outdoor attractions which make up Cincinnati's Riverfront Park. The forty-five acre park is located next to Great American Ball Park, home of the Cincinnati Reds. Due to the fountain's location in a highly-congested area, the support system, which protects the hoses, pumps and lighting cables while supporting the square's flag stones, had to be transported, handled and installed with minimal effort and disruption to traffic. These factors, along with the need for exceptional corrosion-resistant properties made FRP the clear choice.

The chosen solution by Monarch Construction incorporated DURAGRATE® 1 1/2" square mesh by 1 1/2" thick molded grating coupled with EXTREN® Series 525 wide flange beams as support. The high resin content (65%) of DURAGRATE® ensures that this support system will provide years of extended maintenance-free performance. ●



Photo Image courtesy of Cincinnati Park Board

Literature Update: Updated Strongwell Literature

LITERATURE	UPDATE
 Strongwell Product Availability List	Updated Information
 EXTREN® Availability List (Metric)	Updated Information
 Corrosion Resistance Guide	Updated Information
 Corporate Profile Flyer	Updated Information
 SAFRAIL™ Fiberglass Ladder and Cage Systems Brochure	Updated Information
 Strongwell Specifications Document	Updated Information

Design Manual Updates:

www.strongwell.com/designmanual

The Strongwell Design Manual is made available online specifically for customers and engineers who wish to use it to design structures using Strongwell products. This manual SHOULD NOT be used to design structures using pultruded products from sources other than Strongwell as the properties and quality standards may be different from Strongwell products.

Look for a blue line in the left margin of the Design Manual documents. This line shows you where the latest update has been made.

Imperial Version

- Section 3 - Properties of EXTREN®
- Section 6 - Elements of Sections
- Section 8 - Flexural Members
- Section 20 - Strongwell Specifications
- Section 22 - Corrosion Resistance Guide

Metric Version

- Section 3 - Properties of EXTREN®
- Section 4 - Strongwell Availability List
- Section 6 - Elements of Sections
- Section 8 - Flexural Members
- Section 9 - Compression Members
- Section 13 - SAFRAIL™
- Section 14 - DURASHIELD®
- Section 15 - COMPOSOLITE®
- Section 16 - Flooring and Decking Systems
- Section 20 - Strongwell Specifications
- Section 22 - Corrosion Resistance Guide

STRONGWELL PEOPLE

Andy Carter

Process Engineer II



Andy Carter has been promoted to Process Engineer II. In this position, Andy will report to the Director, Virginia Manufacturing Operations. He will be responsible for assisting all Process Engineers with Research and Development programs, necessary tooling revisions and non-conformance issues in the production processes. Andy began his career with Strongwell as a Pultrusion operator in 1992 and has steadily progressed into leadership positions.

Charlie Evans

Support Group Supervisor



Charlie Evans has been named Support Group Supervisor. Charlie will report to the Bristol Manufacturing Manager. His responsibilities will include the supervision of all personnel in the machine set ups, glass room and resin room operations. Charlie has 35 years of experience with Strongwell in the Pultrusion Department where he served as an Operator, Lead, ISO startup and implementation, training coordinator, and Supervisor.

Mark Haynes

Special Projects Account Manager



Mark Haynes has been promoted to Special Projects Account Manager in the Customer Service department. In his new role, Mark will report to the Customer Service Manager, and will be responsible for overseeing and servicing the cooling tower accounts, the new CTR warehouses, as well as Account Manager duties. Mark began his career with Strongwell in 1995 and has held several different positions within the company.

Jeff Roberts

Custom Products Manager - Bristol



Jeff Roberts has been named Custom Products Manager in Bristol. His responsibilities will include providing quotes for custom parts and tooling, as well as technical assistance. Jeff began his employment with Strongwell in September, 2008 as an Account Specialist. He quickly moved into an Account Manager role assuming responsibility for McNichols and machinery sales. In May, 2011 Jeff was promoted to Fabrication Estimator.

Judy Rutherford

Coordinator - Highlands



Judy Rutherford has been named Coordinator, Highlands Operations and will report to the Highlands Manager, Production. Her responsibilities will include the coordination of the receiving, shipping and manufacturing functions. Judy began her career with Strongwell in 1999 in the Pultrusion department where she advanced to a skilled Pultrusion Technician. She is knowledgeable of all aspects of The Highlands Operations and has been a key player in inventory/material management and production planning.

Rebecca Sharrett

Supply Chain Agent



Rebecca Sharrett has been named Supply Chain Agent. She will report to the Materials Control Manager and will be responsible for evaluating and procuring raw material requirements, maintaining and developing supplier relationships, and purchasing various other parts, tools and consumables as required. Rebecca has over 29 years of experience with Strongwell and has been a key player in the purchasing and accounting departments. She began her career with Strongwell in 1983 as a Pultrusion Operator.

Rusty Short

Manager, Production - Highlands



Rusty Short has been named Manager, Production for Highlands Operations. In this position, Rusty will report to the Director, VA Manufacturing Operations and will assume responsibility for all production, manufacturing and shipping activities. He began his career with Strongwell in 2005 and has held several progressively responsible positions and recently served as interim Production Manager of the Highlands facility.

Liz Thornburg

Supply Chain Agent



Liz Thornburg has been promoted to Supply Chain Agent. In her new role, Liz will be responsible for evaluating and procuring raw material requirements, maintaining and developing supplier relationships, and purchasing various other parts, tools and consumables as required. Liz came to Strongwell as a temporary employee in 2011, bringing 22 years of accounting and customer service experience. Since arriving, she has shown considerable capability in learning new skills and growing with the company.

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