PROFILE
Strongwell News & Applications
Fall 2012

Case Study: EXTREN® and DURASHIELD®

Stone Mountain 16+ Years Later, Still "Tops" Expectations

Over sixteen years ago EXTREN® fiberglass structural shapes, DURASHIELD® building panels and FIBREBOLT® fiberglass studs and nuts were installed as part of a 53' square roof atop the Aerial Tram Station on Stone Mountain, Georgia. The structure also houses and conceals twenty antennae. Today, the structure continues to show the excellent return on investment for its current owners. It continues to meet structural requirements, remains invisible to radio frequencies and maintains its aesthetic beauty to complement the park atmosphere.

The fiber reinforced polymer (FRP) structure was created for the 1996 Olympics and was designed by Diedrich Architects, with Heery International doing the engineering work. Today, it also continues to serve as a visitor center and mountaintop station for the park's 2,500-foot sky lift tram ride, which specified a roof of this size.

The FRP hip roof, 16'9" at its peak, used EXTREN® 24" I-beams in 40' lengths for ridge members and has 64 rafters and 17 columns (10" and 12" EXTREN® FRP wide flange beams), and 130 hand lay-up, ½" thick connection plates. The fiberglass structure was covered with 3,400 lineal feet of 1" DURASHIELD® FRP building panels. FIBREBOLT® FRP fasteners were used to bolt through the DURASHIELD® panels through top and bottom flanges of the rafters. Strongwell was able to prefabricate and partially assemble the project before shipping to the site.

FRP has always been known for excellent durability and the 16+ years of exposure on Stone Mountain has had little to no effect on the product.

When asked recently about the lifespan of the Strongwell products used on the facility, property managers were pleased to report the products still look to be in excellent shape and the structure shows very little wear and tear. Too often, the industry concentrates on short-term costs. Now, years later, the decision to go with FRP has proven to be a value-added long term investment.

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STRONGWELL
FRP/Fiberglass Structures and Systems

Newsletter from Strongwell Corporation

Case Study: DURAGRID®

FRP Wins Against High Commodity Prices

In 2011, a national retailer became a theft target due to the high commodity scrap prices for steel. The issue was theft of steel grating from the drainage systems in the loading zones of the large retail chain. The long fabrication times and high steel prices led to expensive replacement costs and aesthetic deterioration due to water runoff and the varying age of the steel grating. Wood was used as a temporary measure; however the nature of wood eventually led to rot. The retailer's goal was to use as much non-metallic structural products as possible in the drainage system to prevent water and trash buildup while thwarting thieves.

Strongwell's DURAGRID® 1.5" HD-5000 pultruded grating was specified in eight installations to ensure prolonged years of maintenance-free service. FRP's high strength, light weight and easy-to-install characteristics ensured the retailer had operational access to its loading docks during installation with minimal downtime.

As steel prices remain high, the HD grating will remain a permanent, corrosion-free fixture in this retailer's loading zone while ensuring full drainage capabilities for years to come. ●

Case Study: EXTREN®, DURADEK® and SAFRAIL™

Strength to Weight Ratio Leads to Savings on Installation, Maintenance and Operation Costs

Fiberglass ladders, handrails, beams and walkways were used in the solids separator platform at the North Putnam Wastewater Treatment Facility. The wastewater treatment facility is located in the city of Hometown, West Virginia and services over 11,000 business and residential customers. The fiberglass materials were cost effective and require little maintenance compared to traditional materials.

The Putnam Facility chose fiberglass versus galvanized metal because of the corrosive environment, reduction of labor, ease of installation, and low maintenance life cycle costs. GEF Incorporated fabricated the structure using EXTREN® fiberglass structural shapes, DURADEK® fiberglass grating, SAFRAIL™ Handrail, and SAFRAIL™ Ladder and Cage products.

Ryan Wallenberg, spokesman for the project, stated that it took about three and half days for two individuals to install this platform. If they had used galvanized steel it would have required three people to install it over a week and a half time period. Due to the lightweight nature of fiberglass, skilled installers were able to physically handle the individual pieces during assembly, eliminating the need for heavy tools. This factor and speed of erection were beneficial and cost effective for the community owned and operated facility. ●

Case Study: EXTREN® and SAFDECK®

Pultruded FRP Offers a Low Maintenance Alternative to Metals in Pool Environments

The Family YMCA in Bristol, Tennessee needed a pool ramp to provide handicap access in their outdoor pool center. Specifically, they needed a lightweight, high-strength product able to withstand constant exposure to UV light, chlorinated water, and constant use.

Strongwell's SAFDECK® pultruded fiberglass decking, EXTREN® tubes and angles were selected by the pool's property manager based upon previous applications. SAFDECK® was installed to serve as flooring and EXTREN® 500 series tubes and angles served as posts and railings. Strongwell's pultruded fiberglass products met the pool's needs perfectly due to its corrosion-resistant qualities which maintain an attractive appearance while reducing maintenance costs.

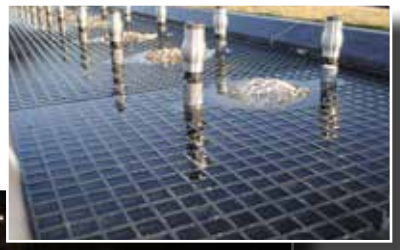
In addition to corrosion resistance, Strongwell's materials also provided valuable skid resistance. SAFDECK®'s fine grit surface provides a safe, skid-resistant walking surface in wet conditions.

"The pool environment is highly corrosive and the aluminum ramp in the indoor pool required excessive maintenance after only seven years of use." said Gary McGeough, Property Manager of Bristol's Family YMCA. "FRP is the right solution for this type of application." ●

Case Study: DURAGRATE®

FRP Inserted into Award Winning Art Deco Museum Entrance

In 2011, the Virginia Museum of Fine Arts in Richmond, Virginia needed to install a low-maintenance, non-conductive walking surface at a water feature at the new James W. and Frances G. McGlothlin Wing entrance. The walking surface was necessary for maintenance and safety reasons. The 500,000+ square foot museum houses over 22,000 pieces of art ranging from ancient to modern contemporary. This state of the art museum was the recipient of the 2011 Royal Institute of British Architects (RIBA) award.



The aquatic feature houses intricate water hoses, pumps and supportive lighting. Therefore, the product they required had to maintain a sleek low profile.

The chosen solution for the project was sold by Harrington Industrial Plastics, whose design incorporated the 1.5" DURAGRATE® square mesh molded grating. In addition to the excellent strength and non-corrosive properties, Strongwell's lightweight DURAGRATE® panels are easy to fabricate on site and also have a high resin content (65%), providing the fountain with extended maintenance-free performance. ●

Product Alert:

New SAFRAIL™ Components:

Strongwell is in the process of integrating tooling to convert all SAFRAIL™ components to reinforced fiberglass composite material from an Acrylonitrile butadiene styrene (ABS) product. The change affects 90˚ (round and square) connectors, round cope connectors and adjustable connectors (round and square) as they were previously molded out of ABS. This change will allow SAFRAIL™ to remain competitive and stronger than most FRP Handrails, while opening up additional markets for Strongwell's FRP handrail line where we were traditionally unable to compete.

Literature Update:

Updated Strongwell Literature

LITERATURE	UPDATE
 DURAGRID® Phenolic Brochure	Updated Information
 Fiberglass Grating Brochure (Metric)	Updated Information
 EXTREN® Brochure	Updated Information
 Architectural FRP Building Solutions Flyer	Updated Information

STRONGWELL PEOPLE

David Gibbs *Vice President, Sales and Engineering*

David Gibbs has been named Vice President, Sales and Engineering. David's areas of responsibility will include corporate domestic and international sales, structural engineering, quality and R&D. David has been in the composites industry over 17 years and possesses a broad range of experience in chemical engineering, process engineering, manufacturing, operations management, strategic planning, market development and product development.

Mike Carr *Director of Sales*

Mike Carr has been named Director of Sales reporting to the Vice President, Sales and Engineering. In his new position, Mike will have direct responsibility for Strongwell corporate domestic and international sales, providing leadership and guidance for all regional sales managers. Mike has been with Strongwell since 1998 when he began his career as a Regional Sales Manager.

Tracy Wright *Director, Virginia Manufacturing Operations*

Tracy Wright recently came to Strongwell as Director, Virginia Manufacturing Operations. Tracy will be responsible for leading all manufacturing and shipping operations in Bristol and Highlands. Tracy comes to Strongwell with over 23 years of experience in manufacturing operations, including production processes and planning, quality, manufacturing and industrial engineering, strategic planning, and all facets of operations management.

Carrie White *Manager, Quality Assurance*

Carrie White joined the Strongwell team as Manager, Quality Assurance. Carrie will have direct responsibility for Bristol and Highlands quality assurance and inspection functions. Carrie is a graduate of Virginia Tech with a bachelor's degree in Electrical Engineering. She has extensive experience with ISO 9001 and automotive quality system in addition to the unique perspective of also having production management experience.

Joe Spanovich *Manager, Research and Development*

Joe Spanovich has been named Manager, Research and Development as part of Strongwell's 2012 strategic reorganization initiative providing a more dedicated focus to research and development.

Jane Taylor has been named Research and Development Materials Engineer and will report to Joe Spanovich.

Barry Myers *Marketing Manager*

Barry Myers has joined Strongwell as Marketing Manager. His responsibilities focus on advertising, technical literature, mass media production, press releases and maintenance of the company's website, and will report to the Vice President of Marketing and Business Development. He earned a master's in business from Milligan College and an undergraduate degree in business and accounting from Lee University.

Aaron Ragan *Customer Service Manager*

Aaron Ragan recently joined Strongwell as Customer Service Manager. Aaron's responsibility is to oversee all Customer Service functions, including Account Managers. Aaron received his M.B.A. from East Tennessee State University. He received his undergraduate degree with a B.A. in Business Administration and Economics from King College. He has over 19 years of customer service, purchasing and lean discipline experience.

Te-kai Shu *Social and Print Media Specialist*

Te-kai Shu has been named Social and Print Media Specialist. In addition to his oversight of the Media Center and trade show logistics, Te-kai will hold responsibilities for promoting Strongwell and the composites industry through social media. Te-kai will also provide content for newsletters, flyers and other marketing literature. Te-kai is a graduate of Emory & Henry College where he earned a B.S. in Political Science.

Meghan Carty
Pricing Manager, Standard Products

Meghan Carty will coordinate all CRM (Customer Relationship Management) leads and all incoming requests for quotation and pricing for standard domestic products not related to fab sales, custom sales, or international sales.

Alice Zhang
Business Process Analyst

Alice Zhang has joined the Bristol Information Technology department as Business Process Analyst reporting to Dave Manahan. Alice is a graduate of the University of Kansas with a master's degree in Computer Science.

Jenni Ernster
Customer Service Account Manager

Jenni Ernster has joined Strongwell in the position of Customer Service Account Manager in March, 2012. Jenni has been with Strongwell since June 2011 in a temporary position.

The Profile Newsletter is published by the Strongwell Corporate Marketing Department. To receive a free subscription to this newsletter, or to subscribe to the e-newsletter, please visit **www.strongwell.com/profile** or call our Corporate Offices. Previous editions of *The Profile Newsletter* may also be found online at www.strongwell.com.

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