

Case Study: **STRONGRAIL®**

STRONGRAIL® Replaces Wrought Iron in Coastal Environment

In 2009, 120 homes near the Oxnard/Ventura area of California were fitted with STRONGRAIL®, Strongwell's architectural handrail and fencing system. The homes originally used wrought iron for balcony and pool perimeter fencing, which all succumbed to the salt air and water. This caused pitting, oxidation and discoloration. Gold Coast Association Management, the property's homeowners association, requested an easy-to-maintain, long-term solution for their large property. They also pointed out the challenge of installing railing on several 4th floor balconies. In addition to meeting these requirements, STRONGRAIL® also provided the value-added benefits of engineered wind-load strength, durability of finish, and an incorporated architectural design attractive to homeowners, designers and contractors.

Saddleback Fence and Vinyl Products outfitted the 120 homes with 42" balcony rails and installed 72" perimeter fencing around the property overlooking the marina area. Minimalistic square pickets and handrails were used to reduce the aesthetic disturbance for those gazing at the majestic view of the Channel Islands National Park.

When asked of STRONGRAIL®'s performance four years after the original installation Sarah Taylor, Manager of Gold Coast Association Management, said they would like to add more STRONGRAIL® to their other properties as it is a long-term, cost-effective current and future solution for coastal properties.



STRONGRAIL® handrail and fencing is cost competitive with traditional railing materials while generally offering a much longer lifespan. PVC offers no comparable strength or durability to fiberglass and degrades rapidly in coastal environments. Wood splinters, stains, warps, and requires constant repainting. Aluminum and steel oxidize, discolor and rust in coastal applications, increasing maintenance costs and risking safety. In a coastal environment, FRP architectural handrail and fencing is the clear material of choice. ●



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STRONGWELL
FRP/Fiberglass
Structures and Systems

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Case Study: DURAGRID®

FRP Outperforms Stainless Steel in the Kitchen

The Hong Kong Convention & Exhibition Center (HKCEC), which sits in the backdrop of the stunning skyline in Victoria Harbor, houses seven restaurants with seating for almost 1,900 people. After prolonged exposure to moisture and intensive kitchen demands, the 316 stainless steel channel covers within the BBQ kitchen required replacement.

HKCEC sought the expertise of Hong Kong-based Strongwell distributor, Bumatech, to provide the best solution for its problem. Bumatech understood the benefits of fiberglass grating and recommended Strongwell's DURAGRID® T-1800 1" pultruded grating.

By selecting DURAGRID® as a replacement over traditional materials, HKCEC solved the maintenance and safety issues caused by its previous stainless steel channel. FRP also provided the advantages of ease of installation and corrosion resistance of FRP, as well as the aesthetic and structural benefits.

Strongwell manufactured the DURAGRID® T-1800 with a special teardrop design, resulting in a high strength standing surface with 0.375" of open space. This design created a hygienic solution in the kitchen as wastewater and food particles would drop directly into the channel without sitting on top of the grating. In addition, the round silica grit that is bonded to the surface of DURAGRID® gave the channel a safe, non-skid surface. ●



Case Study: COMPOSOLITE®

Strongwell FRP Solves Baffling Wastewater Problems

The Lima Ohio Waste Water Treatment Plant (WWTP) is a municipally owned and operated wastewater treatment facility located south of Toledo, Ohio. It operates at 33 million gallons per day, providing primary, secondary and tertiary treatment, as well as biosolids and digester gas recycling. The WWTP needed to expand its wastewater processing capacity. One solution was to utilize a baffle wall system which would allow the water to move more slowly, resulting in better primary sedimentation.

A unique demand for this project was that the installation was completely underground. Baffle wall panels had to be transported to their underground installation locations through 36" diameter manholes to reach the clarifiers. Harrington Industrial Plastics recommended Strongwell's FRP due to its baffle panel size, high corrosion resistance against wastewater, competitive pricing, shipment flexibility and a strong emphasis on customer relationships.

Due to Strongwell's unique baffle wall design, light weight (6 1/2 lbs. per foot) and 24" width, the panels were easily transported through the manholes to the final destination. Peterson Construction, the contractor hired to build the project, noted this installation was done with relative ease and without the use of cranes or any other lifting

equipment. EXTREN® Series 500 beams and equal leg angles were also used as baffle supports. ●



Launch: STRONGWELL WEBSITE

All New and Multi-Device Ready

Strongwell is excited to announce the launch of the all-new strongwell.com! The new website was developed to better meet the needs of customers and to be compatible with mobile and desktop devices.

From first glance, visitors to the new strongwell.com will experience a variety of user-friendly tools. The wide array of products has been enhanced to include updated descriptions and high-quality photography. The company will continually add photos and videos throughout the website to give visitors a first-hand look at the potential uses for fiber reinforced polymer composites (FRP).

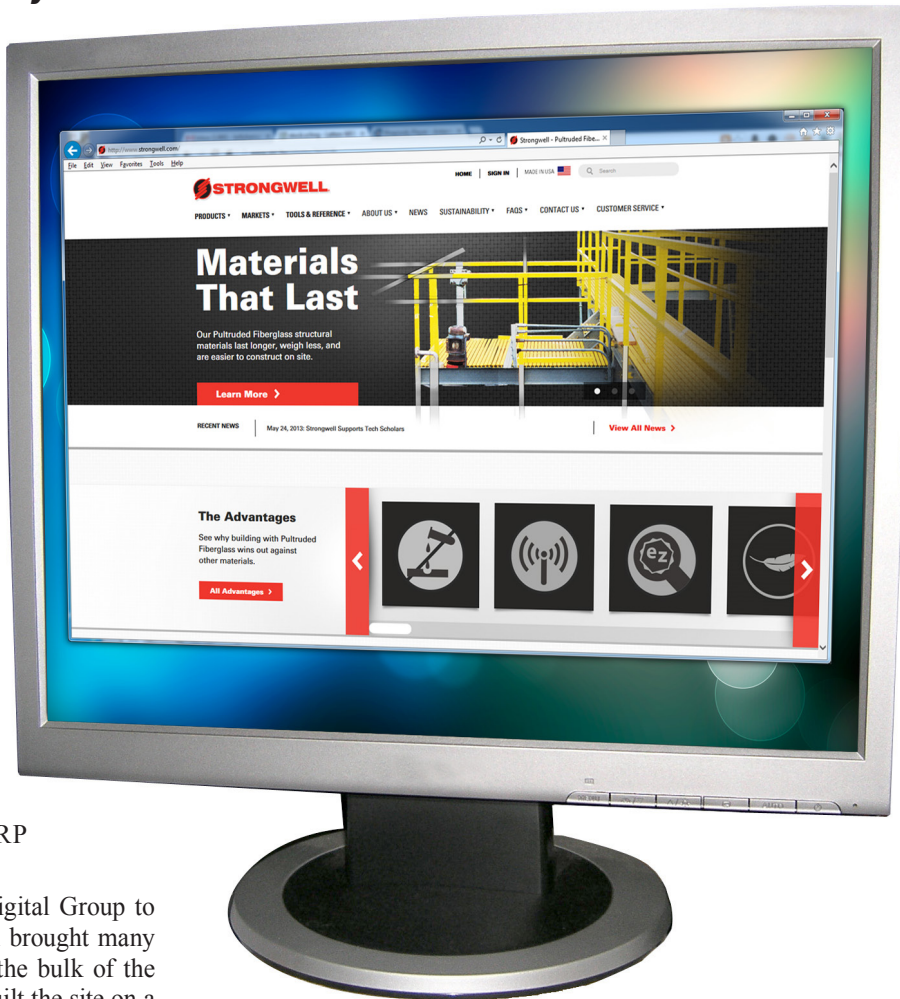
Within each product and market category are series of linked assets (case studies, literature, etc.) in a downloadable, print-ready .pdf format. This organization of content promotes a user-friendly experience. More technical information is also available through a login portal.

The website offers visitors the ability to order printed literature, as well as contact Regional Sales Managers and/or Customer Service.




Visitors can share content through integrated social media buttons to further continue the FRP conversation.

Strongwell hired the design team at Times Digital Group to assist with this large-scale project. Times Digital brought many forward-thinking design ideas and has handled the bulk of the development work. Additionally, Times Digital built the site on a Content Management System to allow for more stable performance and easier ongoing maintenance.

Users familiar with the previous version of the Strongwell website, developed in 2006, will appreciate how much of the content remained consistent, while adding new features which make the site more interactive and easier to use. ●



Literature Update: Updated Strongwell Literature

LITERATURE	UPDATE
 Strongwell Product Availability List	Updated Information
 DURAGRID® Phenolic Grating Flyer	New Literature
 Offshore Handrail Solutions Flyer	New Literature

About STRONGWELL

Headquartered in Bristol, Virginia, Strongwell is the world's leading and largest pultruder of fiber reinforced polymer composites. The company has pultrusion manufacturing facilities in Bristol, VA, Washington County, VA and Chatfield, MN. Strongwell is a financially strong, privately-held company, producing products including structural shapes, grating, handrail, structural building panels, decking systems, composite armor, ladder rail, and many OEM products for its diverse customer base.

About Times Digital Group

Located in Kingsport, Tennessee, Times Digital Group layers experience, passion and understanding into their client's business goals. Their small creative team combines a focused, responsive and attentive approach to each project and deliver a full range of solutions for a variety of applications and creative, distinct marketing strategies. Learn more at www.timesdigitalgroup.com.

STRONGWELL PEOPLE

Doug Edwards

Manager, Shipping and Receiving



Doug Edwards has been promoted to Manager, Shipping and Receiving. Doug will report to the Director of Virginia Manufacturing Operations and will be responsible for managing all shipping and receiving personnel and functions. He began his career in Shipping and Receiving and has shown considerable knowledge and leadership skills. He graduated from the University of Tennessee with a Bachelor of Science degree in Timber Resource Management.

Bill Harlow

Supervisor, Molded Grating



Bill Harlow has been named Supervisor, Molded Grating. Bill will report to the Manufacturing Manager, Bristol Operations. Bill has been with Strongwell for 34 years and began his career as a hand lay-up operator at the Bristol Facility where he has progressed into many roles over the years including resin mixing, sucker rod lead, as well as several supervisory roles including his current position as Fabrication supervisor.

Bill Harlow, Jr.

Supervisor, Pultrusion - Bristol



Billy Harlow, Jr. has been named Supervisor, Pultrusion in Bristol. Billy will report to the Manager, Manufacturing Operations and will be responsible for supervision of Crew #2. Billy began his career with Strongwell in 1997 as a Pultrusion operator at The Highlands Facility. He was promoted to Supervisor, Pultrusion in January, 2012.

Rudy Hess

Supervisor, Pultrusion Team II



Rudy Hess has been named Supervisor, Pultrusion Team II. Rudy will report to the Manager, Production at the Highlands Facility. He began his career with Strongwell in 2007 as a Pultrusion operator at the Highlands Facility where he quickly progressed from being a machine operator to Utility then Lead. Prior to Strongwell, Rudy led teams in steel erection and concrete businesses.

Ronda Holt

Fabrication Estimator



Ronda Holt has been promoted to Fabrication Estimator. In her new role, she will assist in providing quotes to potential customers for projects where there is to be product fabrication by Strongwell. She will report to the Industrial Products Manager-Bristol. Ronda has been with Strongwell for fifteen years and has a Bachelor of Science degree from Radford University.

Josh Maggert

Engineering Manager - Chatfield



Josh Maggert has been named Engineering Manager – Chatfield. All process engineers in Chatfield will report to Josh, who will report to the General Manager of Chatfield Operations. In his new role Josh will coordinate and manage all functions related to process and R & D engineering at the Chatfield location. Josh began his career with Strongwell in 2007 as a Process Engineer at the Chatfield Facility after receiving a BS Degree from Winona State University in Composite Engineering.

Randy Montgomery

Industrial Products Manager - Bristol



Randy Montgomery has been promoted to Industrial Products Manager - Bristol. He will be responsible for leading Bristol fabrication sales and estimating, drafting, detailing, and project management. Randy has been with Strongwell for 20 years, starting as a detailer/coordinator. He was promoted to Chief Draftsman and later to Manager, Structural Detailing and Projects.

Stephen Powers

Business Process Analyst - Bristol



Stephen Powers has joined the Bristol Information Technology Department as a Business Process Analyst, reporting to the Corporate IT Manager. The position includes analysis and solution definition of business process improvements. Stephen is a graduate of Appalachian State University with a degree in Information Technology and has over 25 years of experience in the information technology field.

Stacy Moore

Credit Manager - Chatfield



Stacy Moore has joined Strongwell as Credit Manager for Chatfield. Stacy will report to the Chatfield Controller. Stacy started in a contract associate capacity while she cross-trained with Margaret Perkins, who retired in April. Stacy has a Bachelor of Science Degree in Accounting from the Minnesota School of Business. She has background in a number of accounting and customer relationship areas.

Miles Brown

Research and Development Engineer - Bristol



Miles Brown has joined the Bristol Research and Development Department as an R&D Engineer reporting to the R&D Manager. In his new role, Miles will be conducting research and development activities and also focus on mechanical design activities. Miles graduated in May from Tennessee Technological University with a Bachelor of Science Degree in Mechanical Engineering.

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