



Case Study: EXTREN® Pultruded Stairs Eliminate Corrosion Cycle for Oceanfront Lodging

The Isle of Palms is a small barrier island located 20 miles from Charleston, South Carolina. Within the island resides Seaside Inn, a small oceanfront lodge with prime beach access.

The lodge's main lobby area is located on the first floor, which is 12 ft. above ground level. For years, the access stairs to the lobby were concrete and metal, which continually rusted. Eventually, the stairs deteriorated beyond repair. The management company reported that it spent over \$2,500 annually to have the stairs sandblasted, rust treated, and repainted. The overall annual process would create inaccessibility of almost two weeks with no significant improvement to aesthetics. Rust began to quickly reappear within sixty days of treatment. To further complicate accessibility, the front stair case measured 54" wide and shared the same corrosion cycle as the 8' wide access stairs to the service elevators adjacent to the front of the facility.

The associated ongoing corrosion costs began to worry the lodge's HOA board. The intuitive board began to look at ownership costs over a 15-year period. They calculated that almost \$20,000 of maintenance expenses (\$12,100 for 11 years of painting and \$7,500 for three years of sand blasting treatment/repaint) had been spent on the stairs.

Under the advisement of a structural engineer and several general contractors, the board was presented with three viable options for replacement. Below is a summary of those three options.

OPTION 1: STEEL

STEEL OPTION 2: CONCRETE OPTION 3: EXTREN®

Timeline	3-4 weeks	8-10 weeks	3 days
Installed Cost	\$15,800	\$45,000 - \$50,000	\$18,200
Maintenance	\$1,100 + 3% annually	\$0 - Marginal	\$1,300 once per 10 years
10 Year Cost	\$28,800	\$45,000 - \$50,000	\$19,500
Service Life	15 Years	Varies	75+ Years



As the stairs remain one of two access points for check-ins, option 3 also provided a significant reduction in downtime compared to steel (88%) and cast-in-place concrete (98%) without the need for special permits or traffic rerouting.

After eleven years of continuous use, engineers and guests still have to be persuaded that the steps are pultruded fiberglass. Based on the success of this project, the HOA voted to replace the property's 8' wide elevator access stairs with EXTREN[®] as well.



As the HOA examined option 3, they realized that preserving aesthetics was key to the facility. They were surprised by EXTREN®'s ability to provide 75 years or more of life expectancy. This option also provided the lowest 10-year overall ownership costs compared to steel (32% less) and cast-in-place concrete (57% less). Additionally, the location of the inn is adjacent to a busy two-lane street which is the only access point for deliveries and tourists.



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General Case Study: EXTREN[®], DURADEK[®], & SAFRAIL[™] Filter Press Platforms Utilize Structural Fiberglass

A customer in Louisville, Kentucky, recently approached Advantic, LLC with the need to design, fabricate, and kit an industrial support platform to house an 8,000 lb. process vessel. Additionally, the platform needed to house piping, provide walking surfaces, and offer edge protection for maintenance crews alike.

As with all its structural designs, Advantic considered the concerns of Allowable Strength Design and the Load and Resistance Factor Design methods through simulations. These simulations illustrated how the structural system would respond to dynamic and static loads and how the structure would interface with steel and concrete bearing surfaces. Upon completion, the platform structure was outfitted with EXTREN[®] wide flanged beams, plate, angles, DURADEK[®], SAFRAIL[™] handrail and ladder components.

The end user had concerns regarding how mandated downtime would potentially disrupt operations. Advantic provided a one-day installation solution with a three-person crew without hot works permits, compared to a multi-day painted steel solution with a five-man crew and hot works permits. Handling costs were also minimal due to the heaviest FRP structural component weighing less than 100lbs. and with each component designed to be assembled with a level and standard wrenches. Future maintenance costs associated with painting and coating were also virtually eliminated due to an overall life cost analysis presented by Advantic.



Case Study: EXTREN[®], DURAGRID[®], & SAFRAIL[™] Composites Support Open Mines and Quarries

Floating pontoons are becoming widely used structures to support large-scale civil projects, entertainment activities, and even temporary access to permanent installations.

Recently, a quarry operator needed a floating pump platform for dewatering, a necessary process resulting from excavations which occur below natural groundwater levels. Dewatering allows excavations to occur in workably dry and stable conditions. Through the removal of water, mining and extraction crews gain improvements in transportation, digging conditions, and blasting conditions. The reduction of moisture within stone or ore products also lessens the production of waste by-products.

In this application, Pipex px[®] fabricated and supplied a 20' by 30' fiber reinforced polymer quarry pump platform. Weight and rigidity were key issues in this design since the end user requested an ample area to mount pump equipment, personnel, and support equipment.

In floating applications, steel's strength to weight ratio creates deflection and buoyancy issues. The weight, stability, and corrosion resistance of FRP provided designers with an opportunity to improve on traditional metallic quarry pump pontoons. The end-user in this instance specified its own buoyancy limits. A lightweight structure allowed for more equipment weight on the platform to yield better capacity gains.

To create a floor for the structure, DURAGRID[®] I-6000 was chosen. EXTREN[®] profiles were used within the support structure and were prefabricated in 10' x 20' sections. SAFRAIL[™] Industrial Railing system was prefabricated, flat packed, and attached on-site to streamline installation at the quarry.

Upon completion, both the contractor and quarry users were pleased with the design, installation, and operational functions of the pontoon.



Summer 2018



Spotlight on Strongwell Talent



Gene Smith Sales Director for the Northwest Territory (Region O) - Chatfield

Gene Smith has accepted the position of Sales Director for the Northwest Territory (Region O). He will have sales responsibility for the states

of Wisconsin, Minnesota, Iowa, North and South Dakota, Montana, Wyoming, Idaho, Washington, Oregon, and Alaska, as well as the provinces of Manitoba, Saskatchewan, Alberta, and British Columbia in Canada. Gene began his career with Strongwell in 1979 and has held several different key leadership positions within the company. He was most recently Custom Products Manager in the Chatfield, Minnesota, location. Gene is very familiar with Strongwell capabilities, locations, products, personnel and has been a valued inside sales resource for the sales force for many years.



John Wade Corporate IT Director

John Wade has joined Strongwell as Corporate IT Director. John graduated from Wake

Forest University with a Bachelor of Science degree in Business. He started his career in the manufacturing sector and gained experience in production management, industrial engineering, and project management. This experience led to his transition into information technology. John has been responsible for developing and maintaining corporate systems supporting multiple production plants. He has also worked in information technology leadership roles in the fields of clinical research, as well as technology solutions providers.



Victor García Production Supervisor - Mexico

Victor Garcia has joined Strongwell as Production Supervisor for STRONGWELL S. de R.L. de C.V. Victor will report to Antonio

Garza and will be in charge of a production shift for the Mexico facility. A native of Monterrey, Victor received his Bachelor's Degree as Mechanical Administrator Engineer from Universidad Metropolitana in 2013. Victor has extensive experience in maintenance processes and leading personnel in the steel industry.



Bambi Bruce Sales Director for the Central Territory (Region F) - Bristol

Bambi Bruce has joined Strongwell as the Sales Director for the Central Territory (Region F). She will have sales responsibility for the

States of Illinois, Missouri, Nebraska, Kansas, Colorado, Utah, Nevada, California, and Hawaii. She earned her degree from East Tennessee State University, and comes to Strongwell with a proven track record of sales, with over 15 years of experience in a variety of markets. Bambi was most recently a territory manager for a hose and belting company, where she was recognized for top sales performance.



Lydia Sinemus Corporate Director, Human Resources and Environmental, Health and Safety

Lydia Sinemus has been promoted to the position of Corporate Director, Human Resources

and Environmental, Health and Safety. Lydia will be responsible for directing all aspects of Strongwell's corporate environmental, health and safety functions. She will report to the President and CEO. Lydia graduated with highest honors from East Tennessee State University earning a Bachelor's of Science degree in Geology, and minoring in Environmental Health. She then expanded her education, earning a Master's Degree in Environmental Health. Lydia has a wide range of experience. She has previous experience in the private, government, and education sectors.



Gene Chumley
Engineering Services Manager
- VA Operations

Gene Chumley has accepted the position of Virginia Operations Engineering Services Manager. Gene comes to Strongwell with many

Gene comes to Strongwell with many years of valuable manufacturing experience. Most recently, he was Manager of Engineering Services for a large compressor manufacturer. Gene currently serves on the board of the Southwest Virginia Alliance for Manufacturing. He earned his Bachelor of Science degree in Mechanical Engineering and his Master of Science degree in Engineering Management from the University of Tennessee.



Andy Waadevig Custom Products Manager - Chatfield

Andy Waadevig has accepted the position of Custom Products

Manager in Chatfield. Andy will report directly to the Vice President of Minnesota and Mexico Operations. Andy began his career with Strongwell as a Draftsman after graduating from the Mechanical Drafting program from Rochester Community and Technical College. He was promoted to Estimator in 2003

and then promoted to Chief Estimator in 2008.



Tim Lee Manager, Quality Assurance for VA Operations

Tim Lee has accepted the position of Manager, Quality Assurance for Virginia Operations. Tim comes to Strongwell with many years of

experience in quality assurance in a manufacturing environment. Most recently, he was a Quality Engineer. Tim has completed training in Lean Flow Systems, Kaizen Fundamentals, Six Sigma, and Toyota Kata Improvement Methodologies.

Bruce Reiland

Desktop Support Technician

Bruce Reiland has accepted the position of Desktop Support Technician at the Chatfield locaon. Bruce's primary role will be

tion. Bruce's primary role will be supporting the Chatfield and Mexico locations, but he will also work with the entire IT team supporting Strongwell. Bruce has considerable experience in Information Technology having worked as a server and storage administrator, as well as desktop support.



Amaira Zamora

Human Resources / Payroll Analyst - Mexico

Amaira Zamora has been promoted to the position of Human Resources/Payroll Analyst. Amaira will report to Diana Moreno, HR Manager,

Will report to Diana Moreno, HR Manager, Mexico. Amaira joined Strongwell in 2016 as Bilingual Assistant/Receptionist. She graduated with highest honors from Universidad Humanista de las Americas earning a Bachelor's degree in Communication.



Literature Updates:

- HS Armor Panel Brochure
- Availability List (I&M)
- DURAGRID® Phenolic vs. Aluminum Flyer
- STRONGRAIL[®] Brochure

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What's in this Issue:



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Filter Press Platforms Utilize Structural Fiberglass

Composites Support Open Mines and Quarries



Spotlight on Strongwell Talent



Made in Virginia

Literature Updates



Radius Screen Wall Hidden in Plain "Site"



Case Study: EXTREN[®] Radius Screen Wall Hidden in Plain "Site"

Smartphones have become the standard for on-the-go communication – in just about every form. As a result, the demands for infrastructure which supports mobile devices has grown immensely. Sprawling webs of cables, fiber optics, and antennas adorn rooftops and towers alike to make sure users can remain connected.

Balancing cellular through radio frequency coverage, while maintaining aesthetics, has become a creative endeavor for both building owners and service providers. For over a decade, Porter FRP, located in Perris, California, has been fabricating with pultruded fiberglass and structural composites. With its vast experience, Porter FRP has been able to demonstrate and showcase the practicality of using fiberglass in high profile locations with both structural and aesthetic requirements.

In this application, one of the largest cellular providers in the U.S. needed to replace a metallic radius screen wall. One issue with this particular cell site is its prominent location in an office building near LAX in West Los Angeles. In addition, the concealed structure possesses a radial curve.

For the unique needs of this project, Porter FRP presented a lightweight fiberglass solution which completely concealed the cellular system while adding architectural flair. The owner of the building requested limited use of heavy machinery so as to minimize disruption to building occupants. The products used were EXTREN® 4" x 1/4" tube, 4" x 1/4" angle, and 1/6" plate. All of which are LARR (Los Angeles Research Report) approved.

Although Strongwell was not specified on this project, Porter's previous experience with Strongwell's quality and customer service made it an easy choice for selection and installation. Within a month, the structure was erected and both fabricator and end-user were pleased with the overall outcome.





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