



# The Fyfe Company Newsletter

## The TYFO Tribune

## 2011 Volume 1

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Dear Reader,

The Tyfo® Tribune 2011, Volume 1, takes an in-depth look at the work being done in the Force Protection Division. A significant increase in projects are being presented for retrofit of buildings for anti-terrorist and force protection concerns. Government, military, private and industrial property owners are all facing unique challenges when retrofitting existing structures to meet blast loads. Tyfo® Fibrwrap® Systems offer unique solutions that increase the performance of structural elements while avoiding challenges associated with concrete and steel placement. This issue will provide details on how Fyfe Company materials are meeting the growing need for blast protection.

The Editor



### Federal Courthouse Blast Protection

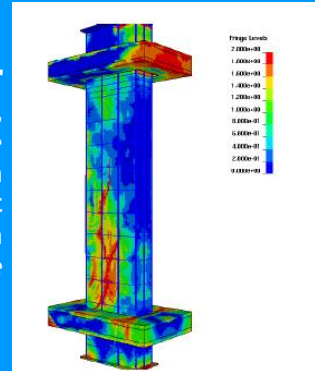
A blast mitigation retrofit was recently completed on the federal courthouse in Hawaii. The courthouse has a large mezzanine level that cantilevers over a vehicular parkway. The owner and blast consultant had concerns about a potential vehicle borne explosive improvised device (VBEID) causing an explosion from below.

Fyfe Co. engineers helped design the Tyfo® SCH System on the topside of the slab for reverse bending moments and uplift forces. This lightweight, low profile design allowed the structure to be protected without invasive construction materials and methods. For more information, please contact Force Protection Division Leader Zach Smith at 858.642.0694 x 20 or by clicking [here](#).

## RESEARCH & DEVELOPMENT: CORNERSTONE OF FORCE PROTECTION

### "Close-in" Column Blast Testing

Fyfe Company recently completed industry-changing testing for "close-in" blast threats on columns strengthened with FRP composites. Project driven, Fyfe Company developed a design and then proof tested a large explosive charge with a 2-foot standoff. Similar design base threats had been considered unfit for FRP composite retrofits. This testing and subsequent installations on multiple projects demonstrate that Tyfo® Composites can now be utilized for applications with very close standoff distance requirements.



### *Tyfo® Blast Flex*

Tyfo® Blast Flex, a spray-applied high elongation material, has been rigorously tested over the past fifteen years. Recently Fyfe Company was contacted by US Army of Engineers and the National Institute of Building Sciences to participate in a research effort. The objective is to build the testing database of polyurea systems so they may be better quantified for single degree of freedom (SDOF) software programs. The inclusion of Blast Flex in this effort will give designers on government projects access to this material as a potential solution for force protection applications.



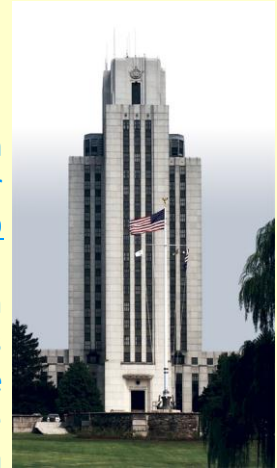
### *Tyfo® Fibrwrap® Blast Panel*

In collaboration with the Fyfe Technology Center (FTC), Fyfe Company is now producing Tyfo® Fibrwrap® Blast Panels. These are prefabricated composite walls comprised of various Tyfo® Fibrwrap® Composite Systems. Typical panel dimensions are 10' x 12' and can be custom designed to meet large range of blast regimes. The panels are engineered to typically resist over pressures of 10-30 psi, while providing designers and contractors a much lower profile wall panel than if traditional concrete is used.

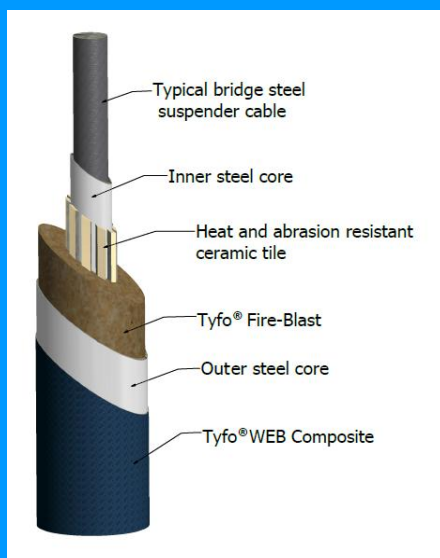


## Case Study: National Navy Medical Center

In 2008, construction began at the National Navy Medical Center (NNMC) in Bethesda, Maryland as part Base Closure Realignment Commission (BRAC). By September 2011, construction will be completed merging Walter Reed facilities with the NNMC. To that end Fyfe Company and [Fibrwrap Construction](#) are in the process of completing four large projects on the hospital campus. All such projects have been anti-terrorist / force protection (AT/FP) retrofits of new and existing structures to meet UFC criteria as described in UFC 4-023-03 and UFC 4-010-01. Fyfe Company materials are becoming much more prevalent for use on AT/FP and progressive collapse applications. For more information on these applications [click here](#) to send a request.



## Product Spotlight: Tyfo® Cable Shields



Suspension and cable-stayed bridge cables are currently vulnerable to multiple threats that can jeopardize the integrity of the bridge. These can include accidental truck fires and more recently, terrorist attacks. The inherent nature of suspension and cable-stay bridges leaves little redundancy in their structural loads paths. For this reason they are more susceptible to terrorist attacks than possibly any other structure. Fyfe Co. has recently developed and tested the new Tyfo® Cable Shields in conjunction with the US Army Corps of Engineers. Multiple threat scenarios were simulated by plastic explosives, extreme heat differentials, and various cutting mechanisms. Utilizing several advanced composite materials the cable shields provide a widespread umbrella of protection

for potential threats.

### No Cost/ No Obligation - Service

Fyfe Company provides design support, feasibility assessments and budget pricing at no cost or obligation for any potential Tyfo® Fibrwrap® application.



**Design**

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**Luncheon**

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Please contact us today to set up a luncheon presentation for your group by [clicking here](#) or at 858.642.0694 x20.