
SWEETSPARKMAN
ARCHITECTURE & INTERIORS

CASE STUDY

**Project:**
Longboat Key Fire Station #92

**Location:**
Longboat Key, Florida

**Architect:**
Todd Sweet, AIA, LEED AP

Sweet Sparkman Architecture and Interiors

**Builder:**
Jon F. Swift Construction

**Project Manager:**
Jenna Albers, AIA, NCARB

Sweet Sparkman Architecture and Interiors

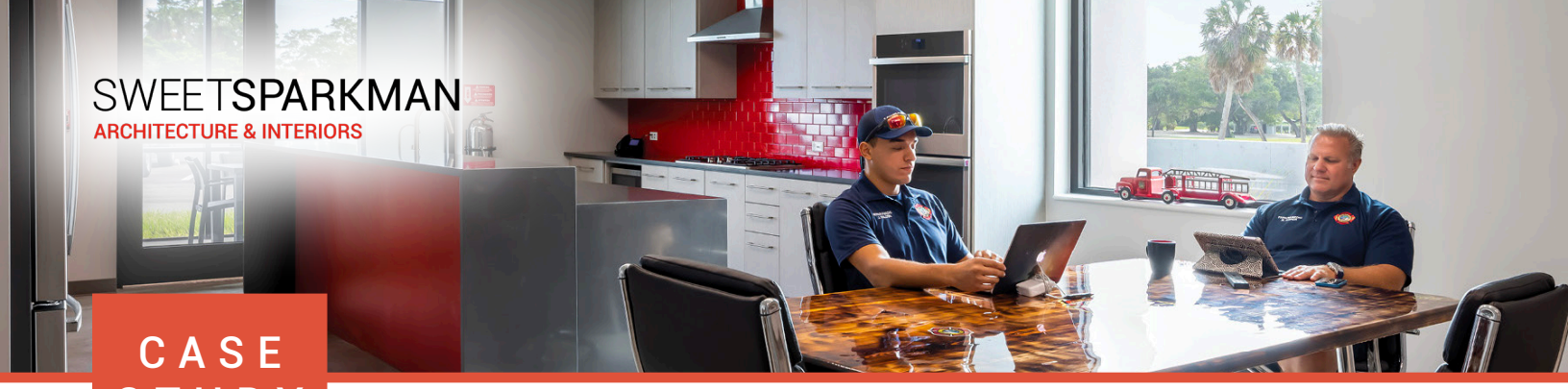
# WHEN RESILIENCY MEETS AESTHETICS

## NAVIGATING A PATH TO PUBLIC SAFETY AND DELIGHT ON A BARRIER ISLAND

Located off the coast of Southwest Florida, Longboat Key is a low-lying barrier island characterized by picturesque views and its seclusion from the mainland. These same characteristics also make the island more susceptible to flood and wind damage during storms, and pose unique challenges for first responders charged with ensuring the island's public safety. When the Town of Longboat Key was ready to update its aging fire station, they needed a design that took into account the island's geographical challenges, the expectations of its residents, and the needs of its first responders. This case study explores how Sweet Sparkman Architecture and Interiors navigated a path towards the redevelopment of Longboat Key Fire Station No. 92, an award-winning design that maximized function, resiliency, and aesthetics.

### SITE AND CONTEXT

Like most barrier islands off the coast of Florida, Longboat Key has a low elevation of approximately three feet. In addition, the island is subject to cyclical erosional patterns that necessitate frequent dredging, seawall construction, and



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consideration of storm drainage when only a small amount of rain and wind can submerge important infrastructure. Recently, all of these elements became pressing challenges during Hurricane Ian, a Category 4 hurricane that tore through Southwest Florida in September of 2022 and caused severe flooding, power outages, and property damage along the coast.

Compounding the challenges of the barrier island are its remote accessibility from the mainland, with its middle stretches taking as long as 45 minutes to reach from the mainland even in perfect conditions.

Aesthetically, the Town of Longboat Key prides itself on maintaining a high level in terms of design. Many of the waterfront homes incorporate architecturally significant aesthetics, and its municipal structures must invariably match its stylistic ideals. "Because of Sweet Sparkman's public safety portfolio, we asked them to come in and assess the site and tell us if they thought we should remodel the existing station or build new," says Paul Dezzi, Fire Chief of Longboat Key. "They brought in engineers and construction experts and then gave us a very thorough, compelling presentation that ultimately convinced the committee to remodel our North station but build a new South station," Dezzi says.

## RESILIENCY

When considering the remote location of the South fire station, the island's susceptibility to severe storm damage, and the station's use as the base of operations for relief efforts, resiliency became a key goal in its design.

Designing for coastal resiliency begins with an analysis of flooding and elevation. The Federal Emergency Management Administration (FEMA) outlines very specific requirements for coastal construction, regulating everything from building elevation and materials to a structure's proximity to a body of water. With Fire Station No. 92, it meant raising the elevation of the site with fill to safeguard the structure from all but the most catastrophic flood waters, which can themselves be drastically affected by tidal cycles.

"And it's not just elevation that's important," says Todd Sweet, AIA, LEED AP, co-founder and partner of Sweet Sparkman. "Salt water is highly corrosive, so you have to consider materials as well to make sure flood waters don't cause long-term damage to the foundation and structure."

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In terms of mitigating wind damage from severe storms, Sweet Sparkman designed the fire station to withstand winds up to 166 mph. The ability to endure those powerful winds played a big role in the structure's ability to remain fully operable in the wake of Hurricane Ian's 150+ mph winds.

"Anytime we have a storm of that magnitude, we evacuate the island," says Dezzi, "and that includes public safety personnel." That leaves the fire station unattended during the worst of a storm, with first responders returning afterwards to assess the damage and begin relief efforts. Notably, Fire Station No. 92 didn't just survive the storm, but was fully operable when first responders returned at 2 a.m. on September 29th. "When we came back, we could hear the generator going and there wasn't a dent on the building," says Dezzi.

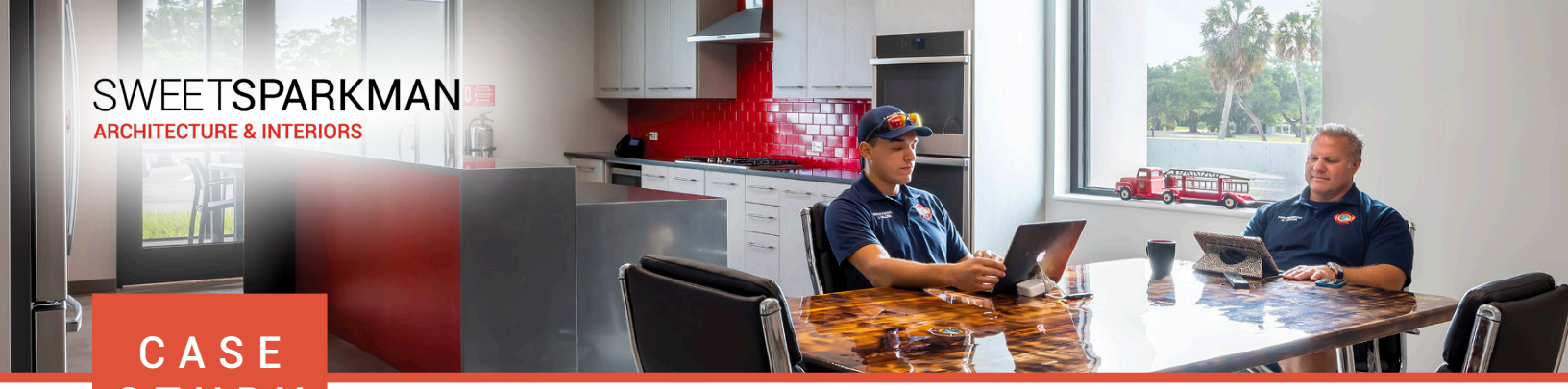
The structure's resiliency is doubly important since the design incorporates an advanced weather tracking system and a robust communications infrastructure that allows it to serve as a command center for relief efforts. In addition to search and rescue, the design also features a public clinic where first responders can provide wound care and treatment of other minor injuries. "Resiliency can be the difference between life and death in cases like this," says Sweet, "so, we take the responsibility of design very seriously."

## PROTECTING OUR PROTECTORS

Modern fire station design solves problems associated with dangers faced by firefighters in their daily duties. While many fire retardants used in construction today go a long way towards preserving property, these chemicals produce dangerous levels of carcinogens that can be absorbed through a firefighter's lungs and skin. In addition, apparatus bays often see high levels of carcinogenic diesel exhaust fumes from idling engines.

"The latest protocols for cancer prevention in fire stations can be prohibitively expensive," says Sweet, "and that's a unique challenge when you're designing a project that's taxpayer funded." During the exhaustive design phase, the Sweet Sparkman team was able to apply its creativity towards finding cost-effective solutions. The savings accrued during this phase were instrumental in retaining the cancer prevention features that were a top priority for Dezzi and his department.

Those features include an advanced exhaust capture system inside the apparatus bay to filter the diesel exhaust, as well as a complex decontamination scheme for when firefighters return from fire runs. The scheme divides the station into progressively less contaminated sections, including Red (the highest



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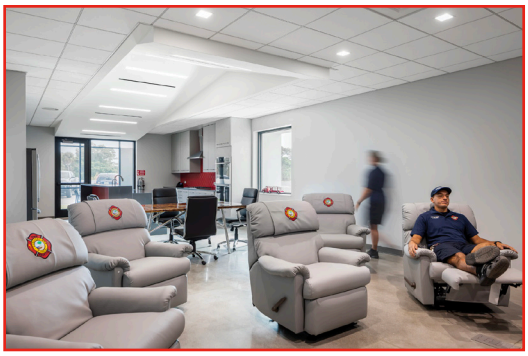


level of contamination), Yellow (medium contamination), and Green (no contamination). The Red zone includes areas where firefighters can wash and store their gear, Yellow includes hand washing stations and showers, while Green includes all the living quarters and administrative spaces.

“With all the air scrubbers, rooms, and layout requirements, you can see why it’s difficult for fire departments to check all the boxes,” says Sweet, “but as a designer you have an opportunity to reflect the values of the client and give them what they need.”

## DESIGN THAT DELIGHTS

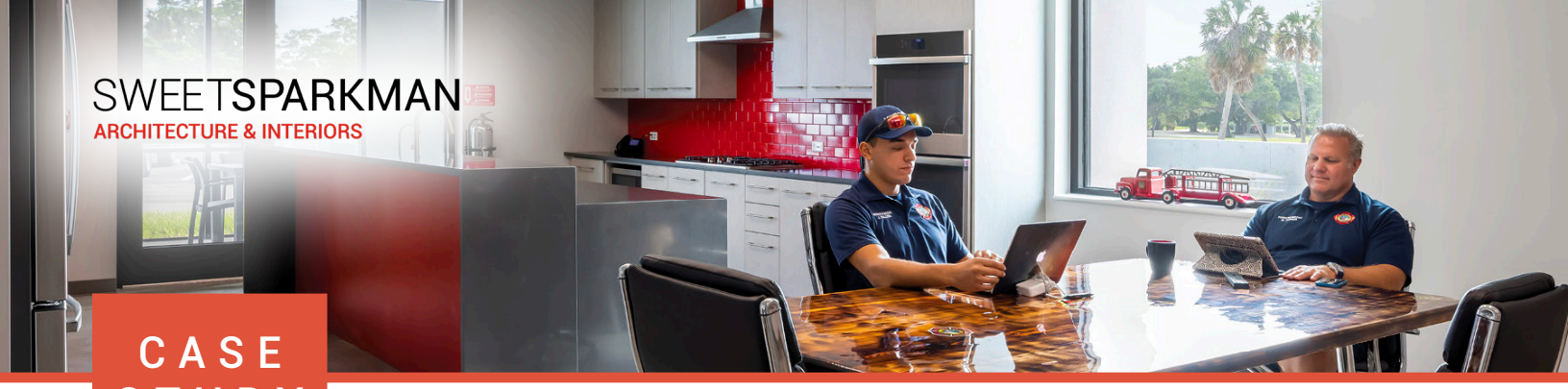
In addition to Sweet Sparkman’s success in retaining the expensive health and safety features of the station, it also remained committed to delighting the Longboat Key community with a landmark design. To that end, the design team focused on creating a striking façade on the front of the structure comprised of staggered white aluminum cladding.

The façade slopes gently towards a high point at its southwest corner, giving the station a sense of scale. In addition, the cladding helps reflect heat and provides an additional measure of protection from windborne projectiles. Red accents add contrast and depth while referencing the bright red of fire apparatuses. “It’s a beautiful building that blends into a lot of the Longboat Key architecture,” says Dezzi.

Inside, Sweet Sparkman’s interior design capabilities helped it create a stylistically integrated collection of spaces. The station’s kitchen features more clean lines and red accents, with a striking red subway tile backsplash. Smooth, polished surfaces throughout ensure easy clean-up and mitigate the excessive build-up of dirt, bacteria, and any trace chemicals that might make their way into the Green zone spaces.

The station’s aesthetics were deemed delightful enough to warrant several awards. The first came from Firehouse Magazine, a respected publication that publishes articles, news, products, blogs, and videos about fire stations and firefighters. The magazine awarded Longboat Key Fire Station No. 92 with its Career Stations 2 Bronze Award. The Architect’s Newspaper, a design publication with a readership and coverage area that spans the globe, tagged the station with its Editor’s Pick award for the design of Civic Buildings.

“While our priority on a project like this was more focused on function, resiliency, and firefighter safety, it’s always an honor to be recognized for creating something beautiful and noteworthy,” says Sweet.



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## SWEET SPARKMAN ARCHITECTURE & INTERIORS

Sweet Sparkman Architecture and Interiors is a multi-disciplinary architecture, planning, and interiors firm specializing in community-oriented projects and high-end residential. Established in 2002, the award-winning firm has based its success on actively listening to clients' goals and careful analysis of every parameter of the project, including financial, physical, social, and environmental. Based in Sarasota, Florida, Sweet Sparkman's international team of bold, inventive, and curious designers propels collective creativity and inspires big ideas.

**For more information, visit sweetsparkman.com or call 941.952.0084.**