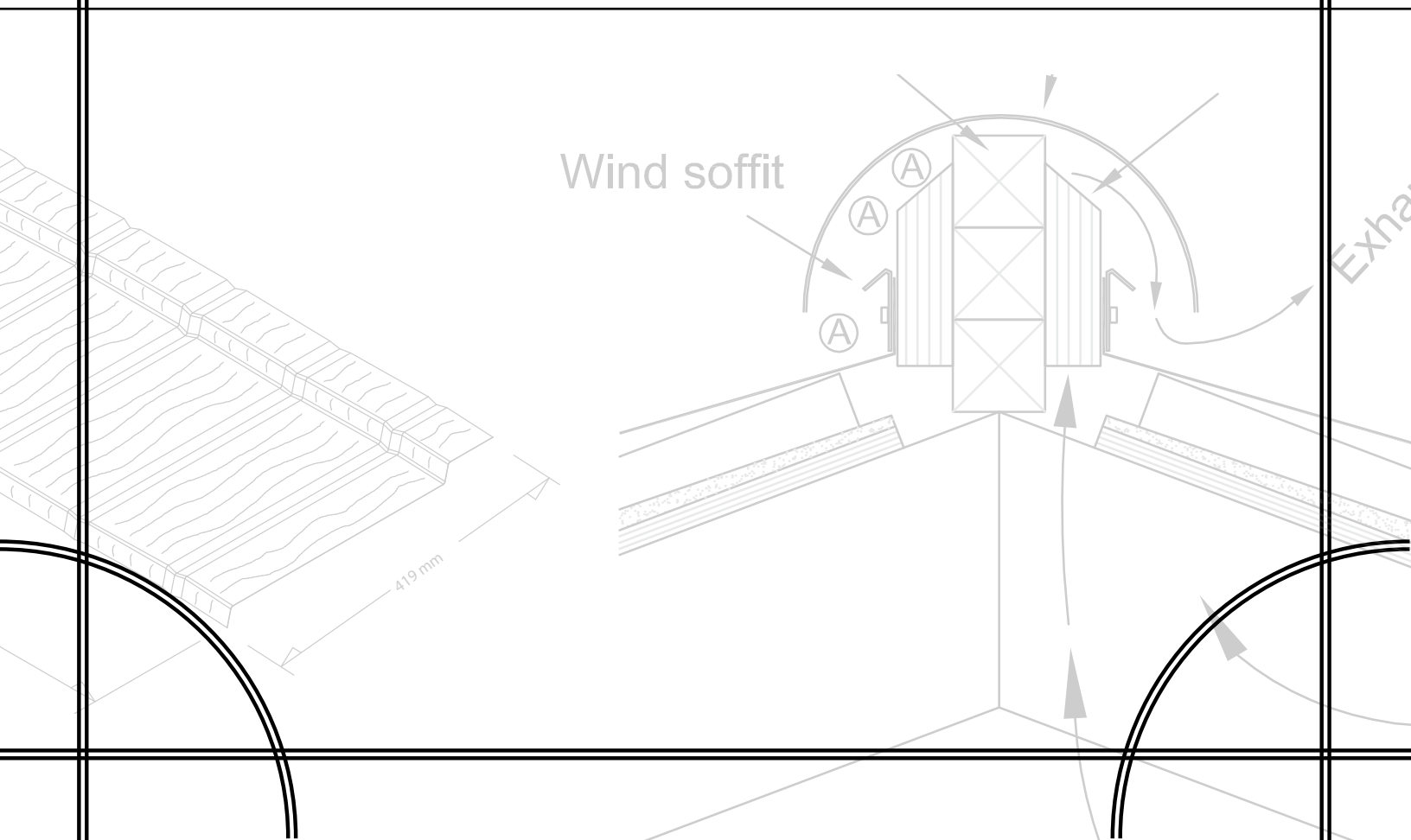


Case Studies



California Wildfire 2003 & 2007



Stone coated steel is non-combustible and safe from exposure to airborne embers. The patented interlocking fastening method prevents the panels from lifting and allowing blowing embers to ignite the roof deck.

Along with clearing brush and debris away from a home, installing a stone coated steel roof is one of the most proactive steps that can be taken to reduce the chance of a house being destroyed by fire as well as reduce the fire's ability to spread.

"I've seen too many homes burned to the ground that could've been prevented," said Jim McMullen, former California State Fire Marshall. "A metal roof is one of - if not the - best preventative steps a homeowner can take to prevent the spread of residential fires and save their own homes."

In 2003 and 2007, Los Angeles and San Diego Counties experience severe wildfires. Even though this may not have been preventable, had there been more stone coated steel roofs on residential housing, it might have been more easily contained. As residents look ahead to rebuilding their homes, stone coated steel roofing should be considered as a strong preventative measure.

Most forest fires decimate residential communities through burning pine needles and windblown embers from roof to roof. More conventional roofs, such as asphalt, catch fire relatively easily and the home subsequently burns to the ground. With a stone coated steel roof, however, those same homes could be saved.



Hurricane Ivan 2004



September 2004, Hurricane Ivan, a category three storm, made land fall on the far eastern coast of Alabama with sustaining winds of 120 mph. Pensacola and other surrounding communities took the brunt of the storm. Hurricane Ivan was one of the most costly storms in United States history.



“A total of 686,700 claims were filed and the American Insurance Services Group estimates (14 December 2004 re-survey) that insured losses in the United States from Hurricane Ivan totaled \$7.11 billion, of which more than \$4 billion occurred in Florida alone. Using a two-to-one ratio of insured damages yields an estimated U.S. loss of approximately \$14.2 billion and was responsible for 92 deaths.”¹



The storm proved to be a true testament to Gerard’s Stone Coated Steel Roof Systems. There were several homes and other structures that had considerable damage, but structures with stone coated steel roofs were able to minimize the amount of damage. The benefits of the interlocking designed proved effective. The fastener is applied at the nose and allows the roofing panels to anchor down to the neck giving it additional strength and allows for better protection against wind uplift.



Gerard roofs are backed by a 120 mph wind warranty. Additional performance analysis was performed on Gerard’s roofs at the Hurricane Testing Center in Miami, Florida. As a result, these roofs withstood wind gusts of 170 mph without any damage.

¹Tropical Cyclone Report - Hurricane Ivan, September 2004

Stacy R. Stewart
National Hurricane Center

December, 16 2004

Commercial Re-Roof



Consumers and businesses alike are turning to energy efficient and more durable building materials to prolong the life of their investments. Recently, a local dental office in the historic section of downtown Rochester, NY decided to make that investment.

Owners and tenants of historical buildings are concerned with the preservation and the effects of time on the buildings structures. The roof is a very critical component for protecting a home or building from the elements and the selection of an Allmet stone coated steel roof was an easy decision for Rosen/Pitcher Dental of Rochester.

The installation was performed by Pro Nailer Roofing. The Allmet Granite Ridge Shingle was the clear choice for this job because it matched the existing roof, was able to be installed directly over the existing roof eliminating the need for removal of the old roof.

The ability to re-roof over an existing roof without removal of the old roof has many benefits. First, installation costs are lower because of not having to pay for old roof removal; second, the old roof will provide an additional layer of protection to your home or building; and finally, you help protect the environment by not having to discard old materials into landfills.



Consumers and businesses alike are turning to energy efficient and more durable building materials to prolong the life of their investments. This was certainly the case with the Charlotte Harbor Event & Conference Center in Punta Gorda, Florida. This area was hit hard by hurricane Charley in 2004 which destroyed The Charlotte County Auditorium creating the need to develop a replacement facility which is now the Charlotte Harbor Event & Conference Center. Located within the jurisdiction of the city of Punta Gorda, Florida, there are some fairly specific design guidelines that are part of their land development regulations. One of the guidelines relates to the architectural style of buildings. Many of the city's acceptable styles are more geared towards the historical residential or commercial architecture that prevails around the downtown area. These styles are characterized by terms like folk Victorian, Craftsman, Queen Anne revival, commercial vernacular, and the like. These styles are not particularly suited to a large civic building like the Event Center. With the help of the city and their Urban Design Staff, Matthew/Taylor Construction's design architect, Harvard Jolly focused on a mission style architecture for the building. This style is one of the preferred styles within the City's design guidelines, there are several notable examples of mission style architecture around the City (e.g. the Historic Train Depot, The Punta Gorda Historical Society Building, and the City's Public Safety Building) and this style is appropriate for a large scale building such as The Charlotte County Event Center.



The county department that operates and maintains the building had long ago standardized their roofing material for use on pitched roofs. Their standard was a galvanized finished metal roof panel in either standing seam or 5-v crimp depending on the size and type of facility. Some of the reasons behind this initial choice were related to maintenance and life-cycle benefits associated with metal roofs. In the wake of hurricane Charley it quickly became evident that the majority of metal roofs fared much better than traditional tile or shin-



gles, so the county had additional motivation to use metal roofs on post-Charley buildings. This created a slight problem as mission style buildings almost exclusively have barrel tile roofs as one of their strongest features. Matthews/Taylor Construction and Harvard Jolly ran into the issue of creating a mission style building but with the benefits and survivability of a metal roof.

The solution was simple, utilize a metal roof product that mimics the appearance of a barrel tile roof. There are numerous systems available from a variety of manufactures. While they all have a barrel tile profile of one form or another some of the systems look very different than a true tile roof or look like metal roofs in the shape of tile, but bear very little resemblance to a clay barrel tile that you might expect on a mission style building. After further consultation with the city recommended Matthews/Taylor Construction and Harvard Jolly look at the Gerard Stone Coated Steel Roofing products by Metals USA. The city had recently modified their architectural building codes that mandated tile roofs in certain areas of the city to allow products like the Gerard Stone Coated Steel Roof system to be installed. This code modification was a direct result of the poor performance of the clay and cement tile roofs during Charley and was an attempt to keep the look of tile in these areas, while giving options for a system that they hoped would offer better performance in a future storm, and result in less wind-borne projectiles.

The Gerard Stone Coated Steel Roof products were reviewed and ultimately selected as the roofing product of choice that met all the city's requirements as well as maintain the goal of creating a mission style building. The Gerard Barrel Vault profile with the Cyrus color now completes The Charlotte County Event & Conference Center.



Batten & Counter Batten Study



Oak Ridge National Laboratory conducted a study, commissioned by the Department of Energy's (DOE) Building Technologies Program, on infrared (IR) blocking color pigments. The DOE was interested in the possible benefits of using "cool" pigment in roofing material, especially stone coated steel roofs since IR-blocking granules are highly emissive and reflective. Ten decks were tested for one year to include both summer and winter conditions.

- The control deck was covered in dark gray asphalt shingles applied direct to deck.
- One deck was painted metal and fastened direct to deck.
- Two decks were stone coated steel with dark gray conventional (no IR-blocking granules) on batten and/or counter batten systems
- Six decks were stone coated steel with light gray IR-Pigment granules and applied on batten or counter batten systems. Venting was achieved with mesh-covered opening at the eave and at the ridge.

Results from the Study:

- IR-Pigments returned expected results. Heat transfer was reduced by approximately 45 percent when compared to the control deck or asphalt shingles. However, only 15 percent could be attributed to batten/counter batten installations, or over the deck venting.
- When the decks coated with conventional dark gray granules (similar in reflectance and emittance to the asphalt shingles) were compared to the control deck (asphalt shingles) heat transfer was still reduced by the venting created with the batten/counter batten installation
- When the light gray IR-Pigment stone coated panels were compared to the dark gray conventional stone coated panels (both installed on a batten and counter batten system), it was noted that the panels with the dark gray conventional granules swept away more than twice the amount of heat flow than the IR-pigment granular coated panels: the heat produced by the darker pigment granules increased the amount of hot air swept away from the deck, preventing it from entering the attic.

