

# *Hurricane Katrina – U.S. Gulf Coast – September, 2005*

## A photo tour of Hurricane Katrina



### 2001 COMPANY

2001 Co. Wind Vented Roof System survives  
Hurricane Katrina winds and tidal surge.

**The Shoulder, Spanish Fort, Alabama**

## Hurricane Katrina – U.S. Gulf Coast – September, 2005

“**The Shoulder**” - a substance abuse treatment facility in Spanish Fort, AL with a **2001 Wind Vented Roof Assembly**. Built on a causeway, at the Northeast end of Mobile Bay, the building experienced “Hurricane Katrina’s” wind and tidal surge.



# 2001 Wind Vented Roof System Stands up to Hurricane Katrina

**“The Shoulder” – Located on north end of Mobile Bay, Alabama**

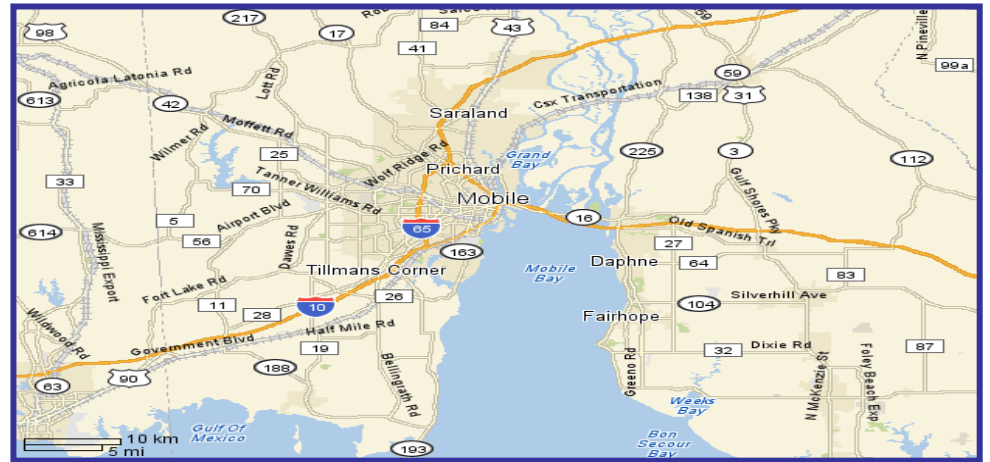


Experienced wind and tidal surge, Aug. 29<sup>th</sup>, 2005, but the 2001 Co. Wind Vented Roof stayed in place.



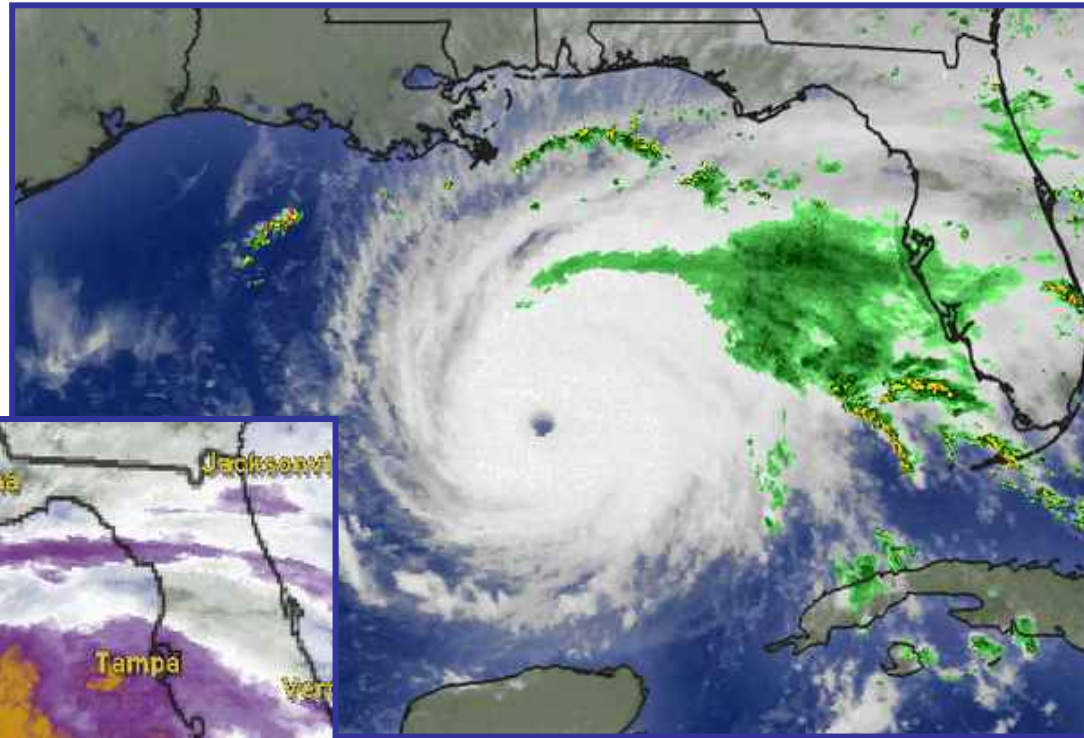
# 2001 Wind Vented Roof System Stands up to Hurricane Katrina Map of Area – Spanish Fort, Mobile Bay, Alabama

**Southeast winds caused an 8 foot tidal surge to hit the North end of Mobile Bay**



# 2001 Wind Vented Roof System Stands up to Hurricane Katrina Satellite Imagery of Hurricane Path

**Satellite Images showing the path and extent of Hurricane Katrina, as well as the Thermal intensity gradients.**



**The intensity of the hurricane engulfs the entire Caribbean.**

# The Shoulder – Spanish Fort, Mobile Bay, Alabama



**The front of the facility overlooks Mobile Bay. The Interstate 10 viaduct across Mobile Bay is seen in the background over the grassy marsh lands. Battleship Parkway is the road seen in the front of the building.**

**The 2001 Co. Wind Vented Roof withstood Hurricane Katrina's Fury. Wind uplift vacuum forces are transferred through the equalizer valves placed on the corners and perimeters to hold the roof membrane in place during periods of high wind activity.**



# The Shoulder – Spanish Fort, Mobile Bay, Alabama

Windblown and tidal debris, spread out over the roof, clogged the drains. The roof's two inch raised gravel stop allowed excess water to flow off the roof.



A combination of hurricane winds and tidal surge damaged the building interior and flushed appliances out of the building.



# The Shoulder – Hurricane Katrina, August 2005, Mobile Bay, AL

The removal of debris and the smell of decaying sea life will require a lot of hard work by those with strong stomachs!



**Notice the seaweed entangled in the electrical wires.**

**Thankfully, everyone got out alive!!**

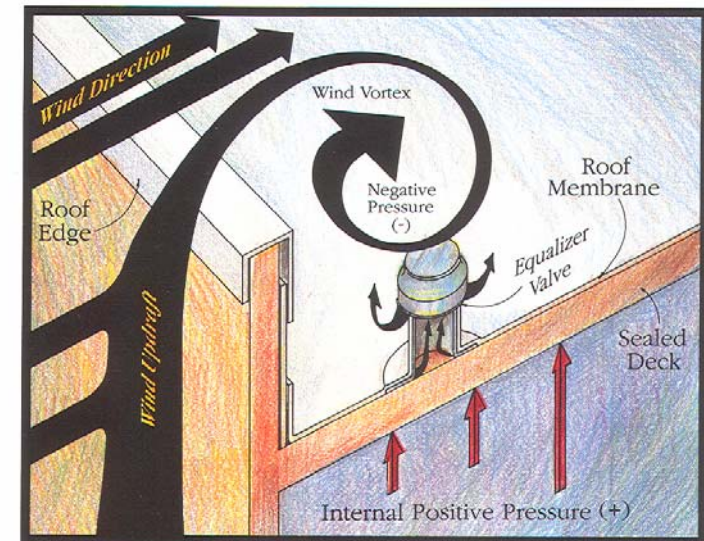
# How the 2001 Wind Vented Technology Resists Hurricane Winds



**Patented Equalizer Valves are strategically placed in wind generated vacuum intensity regions to equalize the pressure over and under the roof membrane**

**When wind flows over a building, it creates a vacuum uplift pressure above the roof. The 2001 Co. patented technology utilizes this vacuum pressure to vacuum pack the roof membrane to the roof deck.**

**The Higher the Wind Blows  
....The Tighter the Roof Holds!**



# 2001 Co. Patented Technology Seals Against Air Infiltration

## Reasons for Wind Uplift Tear Off

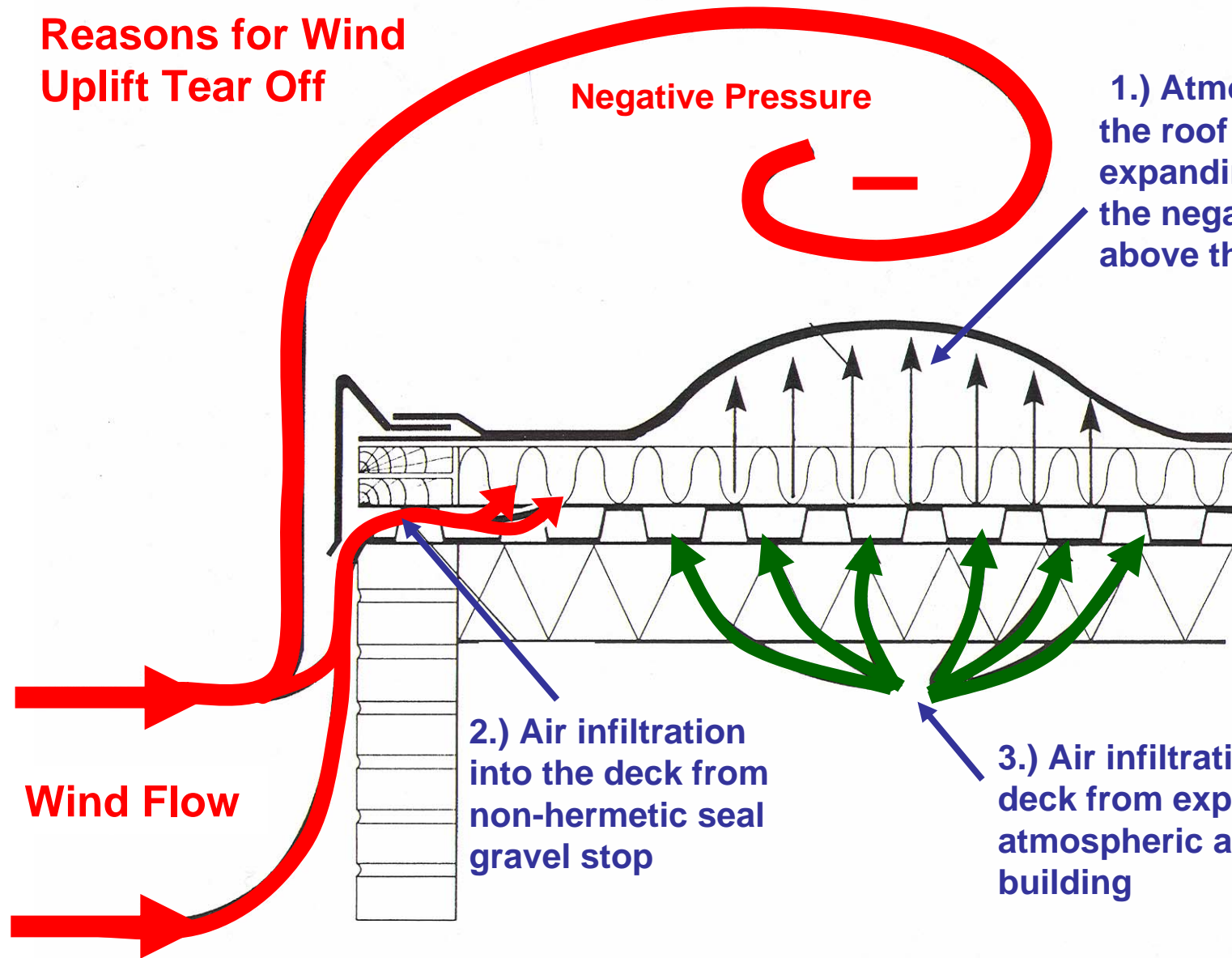
Negative Pressure

1.) Atmospheric air under the roof membrane is expanding to equalize to the negative pressure above the roof membrane

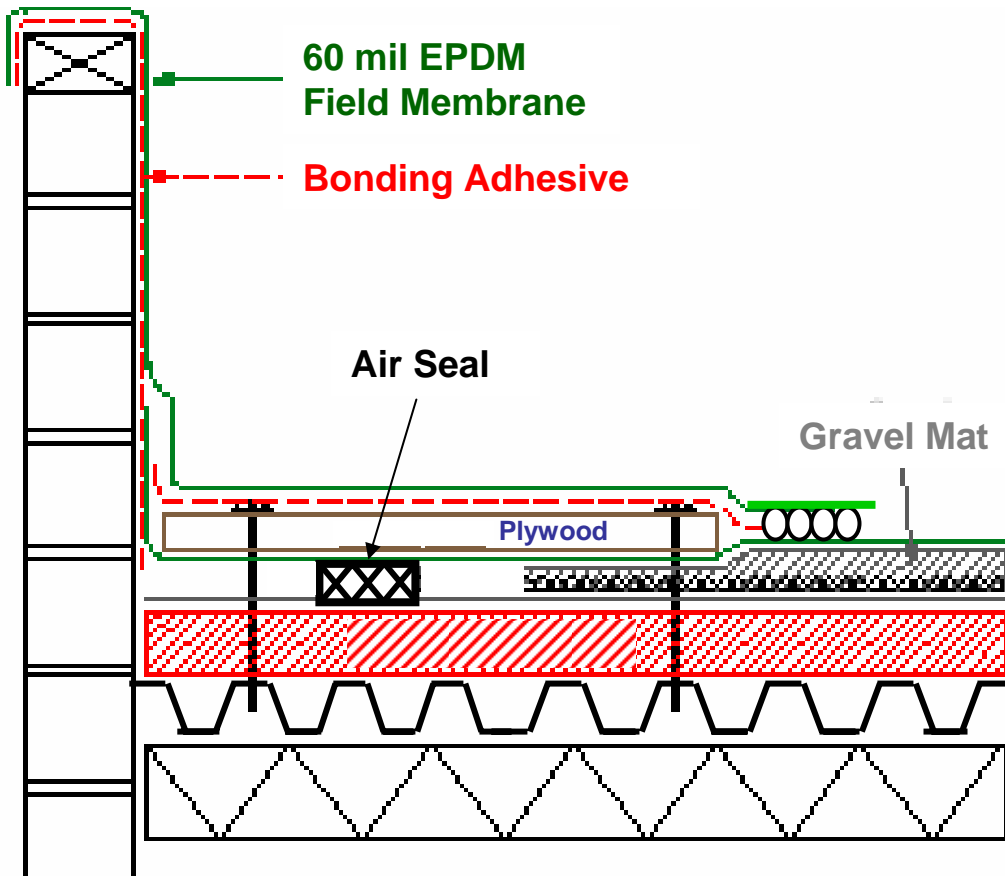
2.) Air infiltration into the deck from non-hermetic seal gravel stop

3.) Air infiltration into the deck from expansion of atmospheric air inside building

Wind Flow



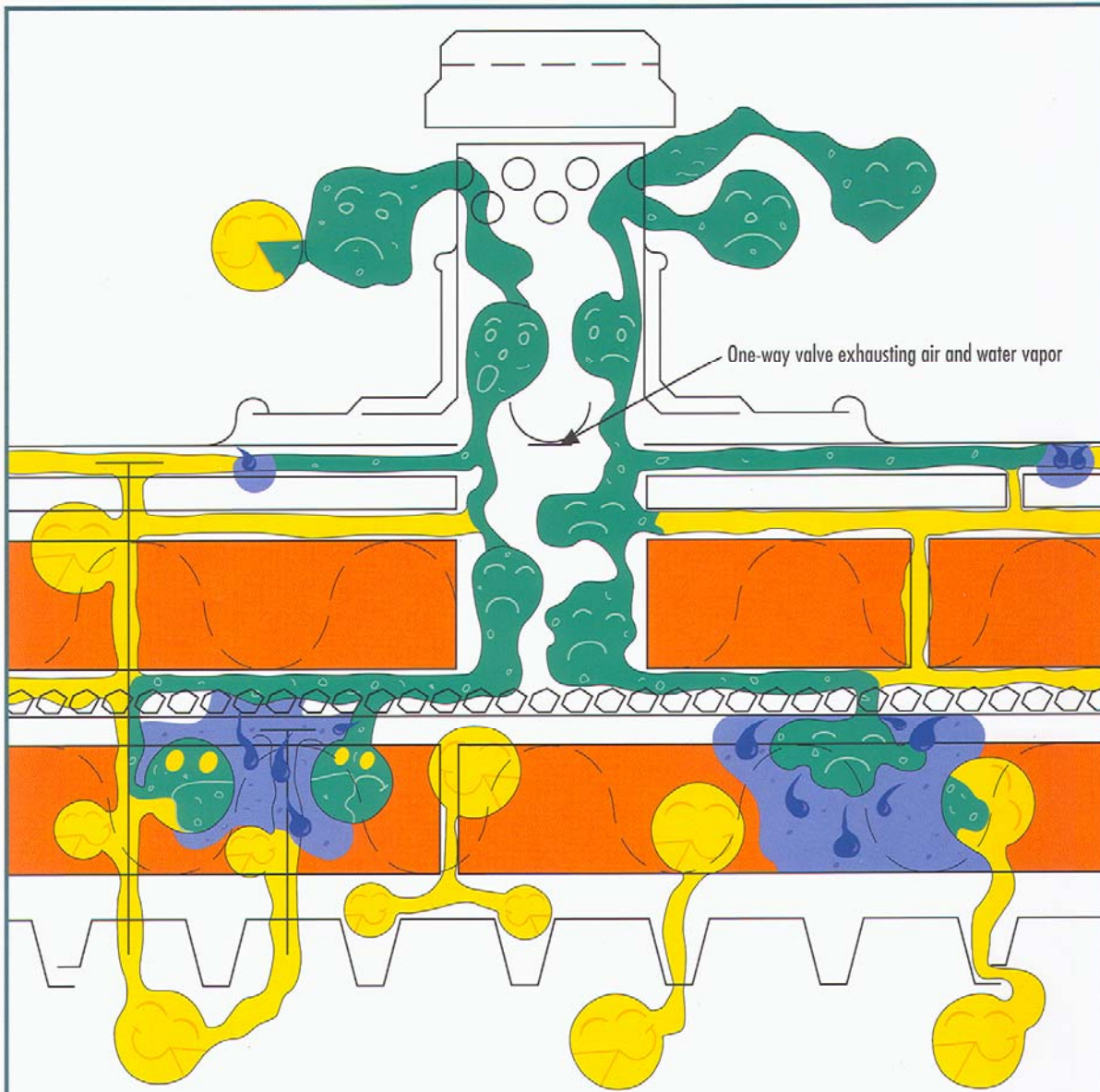
## Hurricane-Resistant Roof Waterproofing Membrane Edge termination technique, encapsulating a plywood board



**First** – Air is sealed at the deck level preventing air flow from beneath the deck and under the membrane.

**Second** – Air is sealed at the roof perimeter edge and at any penetrations with direct membrane termination to the deck

# 2001 Co. Technology of Controlled Venting Promotes Continuous Drying in Roof Assembly



**Equalizer valves on the windward side of the building suck air out from under the roof membrane, while the valves on the leeward side allow a slight intake of air.**

**This patented equalizer valve controlled air exchange keeps a low sloped roof assembly dry, in the same way that air exchange between eave louvers and ridge vents keep residential peaked roofs dry.**

Visit the Shoulder website at : [www.shoulder.org](http://www.shoulder.org)

THE *Shoulder*

Substance Abuse Treatment  
& Rehabilitation Services  
For Men & Women

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New Facility Open House - September 24, 2005

Benefit Barbeque - Serving from 11 am to 1 pm

7400 Roper Lane, Daphne, AL

On August 29, 2005 the Shoulder was totally demolished as a direct result of Hurricane Katrina. [more photos](#)



As a result the Shoulder is currently unable to provide treatment services to the clients that were in the process of receiving our services and forced to turn-away all incoming requests for assistance.

PO Box 7130 Spanish Fort, Alabama 36577-7130 // Tel (251) 626-2199  
email: [info@theshoulder.org](mailto:info@theshoulder.org)

# The Shoulder – Spanish Fort, Mobile Bay, Alabama



**Your Local Representative is:**

**The Shoulder will be rebuilt from the damage caused by Hurricane Katrina under a dry roof thanks to:** 2001 Co. Wind Vented Technology