Story One: The Eye of the Storm
(From Washington Post, 10 September 1992)

Especially in the southern parts of the United States year by year a lot of houses are getting lost due to hurricanes. One of the worst hurricanes in the 20th century has been Hurricane Andrew. Also a group of houses made of prefabricated polystyrene and wire panels sprayed with concrete were exposed to this thunderstorm.

In the aftermath of Hurricane Andrew, the debate is intensifying why so many houses were lost in South Florida, despite Dade County's strict building code requiring structures to endure winds of 190 kilometers per hour. Preliminary analysis indicates that many older cinderblock houses erected during the building boom of the 1980s suffered because of shoddy workmanship or shortcuts.

One group of new houses that came through the storm virtually unscathed was built in 1991 by Habitat for Humanity, the international volunteer organization whose best-known house builder is former president Jimmy Carter. The habitat dwellings were all constructed using a new process involving prefabricated polystyrene and wire panels sprayed with concrete. All 14 houses built in Liberty City in North Miami were structurally intact. And so was the house of Irma Cordero of Homestead, the site of the worst destruction.

Cordero's one-story house was fashioned from welded wire sandwich panels instead of wood frame construction. The lightweight panels, which require minimal labor to install, consist of two parallel sheets of wire mesh connected by diagonal truss wires that pierce an insulating core of polystyrene 40 to 200mm thick. The panels are attached to a concrete foundation and connected to one another with a special fastening tool.

Story Two: Granite Mountain Reserve

In January of 1992, a System of prefabricated polystyrene and wire panels sprayed with concrete was selected for use in the construction of all exterior load bearing walls in four buildings to be erected in the Mojave Desert at Granite Mountain Reserve, California.

The unique complex was to house the University of California arid-zone research facility and was designed using Three Dee panels to meet exacting thermo-insulating specifications to achieve 96% energy independence. The project was funded jointly by the National Science Foundation, Southern California Edison, Inc, and the University or California.

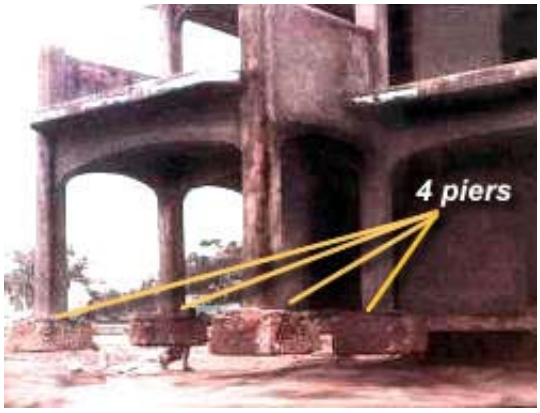
On June 28, 1992, this area of California was struck twice by earthquakes measuring 6.5 and 6.9 on the Richter scale (the second quake was the worst recorded in over forty years). The epicenter of these quakes was located only 80-110 kilometers from the research facility site. According to Dr. Philippe Cohen who resides at the site, the facility was subject to continuous shaking at one point for over one full minute.

Incredibly, the four buildings in the facility, some with walls over 7.3 meters in height, showed no signs of any damage despite the existence of large areas of glass. A full structural analysis of the building was ordered and the findings, testimony to the remarkable strength and integrity of The EPS? Steel mesh concrete panels, are summarized in the letter issued by structural engineers. Of particular significance is the sentence, which reads, "There was no sign of any crack or damage of any kind to the superstructures and foundations."

Story Three: Three Dee - A Synonym for Strength

In October 1996 a dam near the Country Club and Golf Course of Cabot San Lucas, Mexico broke during a heavy thunderstorm. The force of the water washed out the ground below some foundations in this area.
The below article was published in a local newspaper:
The dam holding back the lake near the 15th hole broke and the rest is history as the mass of water flowed and continued to flow toward the ocean. Without the breaking dam, little damage would have occurred.

Across the paved roadway, a builder was putting the final touches on a two-storey monolithic home. The flooding waters decided to course under the fairway view of that structure.



The building, left high and (not so) dry, with no support from below, lost none of its tensile integrity. The builder needed only to pour concrete footings under the existing columns, backfill with dirt, and the owners of the structure can rest assured that their homes will stand safely throughout whatever nature may have planned for the future.

Monolithic concrete home construction, proves once again that they will withstand not only the winds in excess of 250 kilometers per hour, but, as is apparent, torrential flooding, as well. In this case, the prefabricated polystyrene and wire panels sprayed with concrete were stronger even than hurricane Fausto.

Throughout the storm, the Monolithic Panel building sustained no cracks or fissures interiorly or exteriorly - quite remarkable since the second floor patio is a 4.3-meter-overhang. It appears that the monolithic construction is so strong that the roof of the structure supported the foundation.

Story Four: - A 6-Storey Model

To ensure earthquake resistance, some tests in renowned research centers have been carried out. One of these tests was a model of a Monolithic prefabricated polystyrene and wire panel building, sprayed with concrete; it was built on a scale of 1:6 at the Tongji University in Shanghai, China.

The model consists of panels with a size of 400x200x30mm. The cover mesh has yield strength of 210 N/mm2. Cube strength of micro concrete was measured to be 10 N/mm2.

The model was subject to El-Centro-earthquakes of different intensity starting with a 7-degree earthquake. According to the test report the model lost structural integrity when it came to a 9-

degree earthquake. After this earthquake the model was unable to bear the lateral loads. Nevertheless the building did not collapse. In a real building the inhabitants will not get injured by collapsing walls or slabs.

- During the frequently occurred 7-degree earthquakes no fissures appeared on the structure. The structure worked elastically.

- During the 8-degree earthquakes cracks on the top of the ring beam of the first storey propagated little. During the other earthquakes, the crack propagated gradually, though growth was not very intensive.

- During the 9-degree earthquakes the model lost its capability of standing the lateral loads. However, the structure did not collapse.