

Rapid Deployment Flood Wall Featured in New York Times

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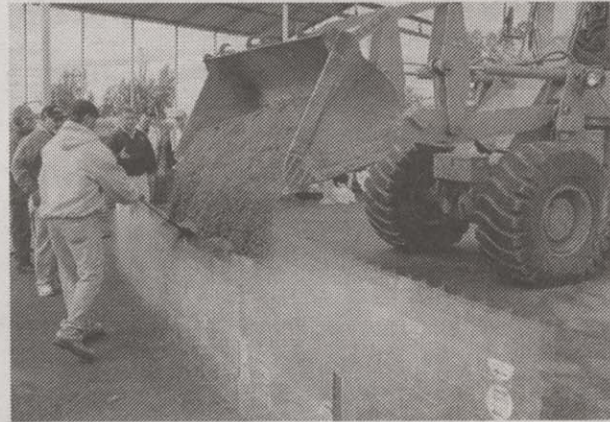
AL ARELLANES

Building a Better Sandbag

PEOPLE have been filling sacks with sand to build walls against floodwaters for so long that no one is sure when the practice began. "We know they did it as far back as the Revolutionary War," said Les Miller, chief of the Army Corps of Engineers Readiness Branch in Portland, Ore.

There have been improvements along the way, most recently the development of polypropylene bags that are about half the cost of traditional burlap sacks and are less likely to attract rats. But when it comes to the backbreaking work of filling and placing them, sandbags are all pretty much the same.

No wonder Mr. Miller and other flood-control experts are so interested in the Rapid Deployment Flood Wall, an easily assembled plastic grid that can be filled with sand by earth-moving equipment. A work crew using the new system can put up a four-foot wall that is five and a half miles long in the same time it takes a similar number of sandbaggers to build one the length of a



Al Arellanes invented the Rapid Deployment Flood Wall, being filled above.

single football field.

The father of the new system is Al Arellanes, 53, an engineering contractor, who has set up a company called **Geocell Systems** in San Francisco to market it. Geocell's wall is based on an idea the Corps of Engineers originally developed as a foundation for roads and airfields in muddy and swampy conditions.

Mr. Arellanes began tinkering with the idea in the mid-1980's but had to put the project aside when he joined the Federal Emergency Management Agency in 1990. "I kind of dropped the ball for a while," he said. He did not return to it until 1997, when heavy flooding in the Central Valley of California rekindled his interest.

A turning point came in 2000, when he showed a prototype at a federal research center in Vicksburg, Miss. That attracted the interest of **Eastman Chemical**,

which provided a raw material that proved more effective than the original.

Now comes another hurdle. A footlong chunk of a four-foot-high Geocell wall costs about \$165, roughly 12 times more than sandbags that do the same work, though Geocell says its wall pays for itself in saved labor the first time it is used. Because it is easily cleaned and stored, savings mount with each use. But local governments, which must buy the system before the Corps of Engineers is authorized to stockpile a backup supply, have yet to invest.

Mr. Miller said the key to acceptance might be in finding ways for the walls to be used between floods — for stabilizing mudslide zones, for example, or protecting buildings that could be terrorist targets.

Mr. Arellanes agreed. "People don't budget for devastation," he said.

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