



Floating dams could provide protection in the 20,000 U.S. communities prone to flooding.

## WATER GATE

Rising waters from a flash flood threaten to engulf a house before its residents can evacuate, but then a wall pops out of the ground, protecting the structure from harm. It's not magic, it's an automatic dam created

by Johann van den Noort, a civil engineering consultant in the Netherlands. He builds walls from lightweight foam-core polyester, encloses them in a casing, and buries them in the ground around a building. If flooding occurs,

water flows into a pipe that fills the casing. The walls float up out of the ground, forming a self-closing barrier. When the waters recede, a pump empties the casing and the walls sink back into the ground. "I use the water itself to protect the land

against the water," Van den Noort says. He has successfully tested the dam around a factory in the Netherlands. It could also shield homes, businesses, or even whole towns.

In emergencies, however, there's no time to install floating dams. So civil engineer Sten-Magnus Kullberg of Geodesign in Sweden created a simple barrier that can be set up 50 times faster than sandbags, using far less material and manpower. He adapted common wooden shipping pallets, setting them on triangular steel stands and covering them with plastic sheeting. "The metal support takes up the forces of the water pressure and redirects them, anchoring the system," says Kullberg. His barrier has already protected cities in Sweden and Germany. —*Fenella Saunders*