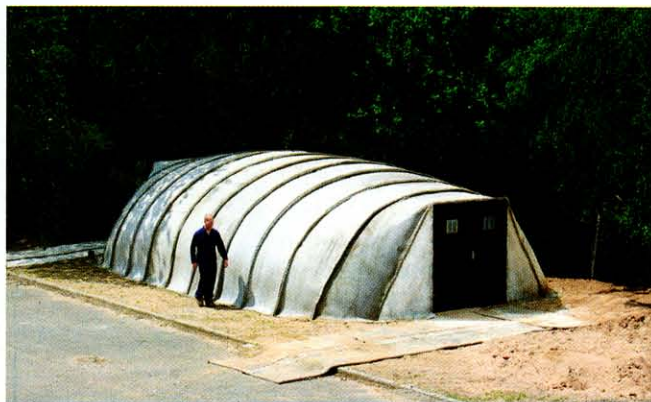




Folded strips of Concrete Cloth (left, rolled up) can be inflated into a shelter (below) in one hour.



HOW DO YOU make a refugee shelter that's as strong as a house but requires only one hour and two people to assemble? Invent your own superhero material. British engineers Peter Brewin and William Crawford, founders of the design company Concrete Canvas, did just that by taking a basic building component (concrete), rethinking its properties, and turning it into a new material (cloth).

Concrete Cloth is a fiber matrix impregnated with a specially formulated dry concrete mix. While it promises a variety of applications—from erosion control to building cladding—the duo invented it for their Concrete Canvas Shelter, which starts out as folded fabric, then inflates into an oval structure when hydrated, and dries to form a lightweight, water- and fireproof shell.

Brewin and Crawford got the idea as graduate students at London's Royal College of Art when they entered a competition held by the British Cement Association calling for new ways to use cement. Their aim was to make a resilient and durable disaster-relief shelter. "You think of a refugee camp as temporary housing, but people have to live in them for years," says Brewin. Their brainstorming process took them to some unexpected places: chicken coops and hospitals. "We were inspired by eggshells," says Brewin. "It's a very thin ceramic shell that gets its strength from the support of its structure." The idea of a wet fabric that hardens into a strong, protective shield came from plaster bandages.

The shelters have been in production for a year, but so far they have only been employed for military use. "The production is still too small to make them affordable for NGOs," says Brewin. The company just received a boost, however, when Concrete Cloth won Material ConneXion's Medium Award for Material of the Year. "That's the kind of validation that helps us get our product out there so we can lower production costs," says Brewin. "It's a huge help." —JOHANNA LENANDER

Concrete Canvas Shelters

Concrete Canvas

www.concretecanvas.co.uk