





## **The Opportunity**

The field of applications is vast. While the US company Pittsburgh Corning, using a similar technique decided to focus on the market of building materials, with their first glass recycling factory in Belgium and a second in the Czech Republic, Ungerleider and Dillingham went on to discover a broad portfolio of applications. Today, Earthstone has eleven applications for recycled glass on the market. The latest opportunity is to provide hydroponic agriculture a growth medium, made from glass foam, that can be permanently recycled eliminating a waste stream that strained this argo-industry.

The Swedish building entrepreneur Åke Mård, located in Sundsvall, Sweden took blocks of glass foam and converted these into pre-fabricated foundations, walls and even roofs for homes. He discovered that glass - filled with tiny air bubbles - serves as a fire proof structural building material, not just as an insulation. This innovative construction technique has been approved by the European Union. No water permeates these blocks, no vermin eats its way through the walls, no fungi grow in the basement and the insulation factor outpaces known alternatives in price and performance. Mård realized that recycled glass performs four functions while serving as a physical structure.

The critical mass required to operate a commercially viable oven is estimated at 5 million bottles annually. By 2009, Earthstone processed 5.3 million bottles annually and is profitable. Considering the consumption of 200 glass bottles per family per year, then approximately 25,000 families are needed to make this business viable. The barrier to entry is relatively low. The main cost is energy, which could be supplied by a company with excess heat clustering activities like natural systems do, or it could be derived from the methane gas from organic waste that usually comes along with glass. The creation of these factories generate jobs, while improving the quality of building materials at competitive prices, unleashing entrepreneurship everywhere, reducing the need for transport and mined material.

Gunter Pauli is the author of the Report to the Club of Rome: "Blue Economy: 100 Innovations - 10 years - 100 million jobs" published in 35 languages worldwide.

For further background on the 100 cases: [www.TheBlueEconomy.org](http://www.TheBlueEconomy.org)



A prefabricated house with foundations, walls and roof made from recycled glass. Designed and constructed by Åke Mård in Sundsvall, Sweden. Photo courtesy of Åke Mård of MRD (Sweden)



Grill cleaning with recycled glass produced by Earthstone. Photo courtesy of Earthstone (USA)