




Biomason creates a cement substitute using a process similar to how coral reefs and shells are formed | Photo source [Biomason](#)

[Innovation](#) > [Property & Construction](#) > [Harnessing microbes to grow cement](#)

## HARNESSING MICROBES TO GROW CEMENT

 PROPERTY & CONSTRUCTION

### A startup has developed a way to use micro-organisms to 'build' concrete, saving energy and carbon emissions

**Spotted:** Cement has a huge carbon footprint – contributing up to 8 per cent of total global emissions. Much of this comes from the process of heating limestone to very high temperatures. This not only uses a tremendous amount of energy but also releases carbon dioxide directly. Now, startup Biomason has developed a way to ‘grow’ a cement substitute using micro-organisms.

The startup uses a process similar to how coral reefs and shells are formed, where organisms lay down layers of calcium carbonate. The company starts with recycled aggregate. This consists of the tiny bits of material that are held together by cement in concrete. Biomason then adds a strain of bacteria, along with the calcium, carbon and nutrients the bacteria needs to grow. As the micro-organisms grow, they produce calcium carbonate, which acts like a glue to secure the aggregate together.

The process operates at room temperature, reducing the need for heating. It also cures more rapidly than cement, and the end product is stronger than traditional concrete. The company is currently making small quantities of a tile called Biolith for industrial clients. Because the process can use existing concrete production facilities, it should be relatively cheap to scale up. Currently, several concrete producers are examining ways to incorporate Biolith production into their plants.

Biomason founder Ginger Krieg Dosier [explains](#) that the product does not need to be disruptive in order to make a big difference. “It didn’t make sense to disrupt everything in the entire concrete value chain. From day one, even before Biomason was named, it was very important for us to develop a technology that was easy to use, especially with existing concrete producers.”

Tackling the high environmental cost of concrete production is very high on the list of green researchers and entrepreneurs. Some of the other ideas we have seen at Springwise include [solar-powered](#) cement production and a [bio-concrete](#) made from weeds and shells.

Written By: Lisa Magloff

7th March 2022

Website: [biomason.com](http://biomason.com)

Contact: [biomason.com/contact](http://biomason.com/contact)

[Download PDF](#)

### **Takeaway:**

Biomason's Series C funding round from investors 2150, Celesta Capital, and others, will enable the development of a biocement-powered ready mix. This is important because around 85 per cent of the cement market involves ready-mix concrete. The company has also designed a 'living marine cement' that can be used underwater. When it develops a crack, the concrete pulls calcium and carbon from the water to 'heal itself'. The company is also working to allow existing concrete producers to license the technology.