



CLIMATE TAKE BACK CASE STUDY

CARBON8 SYSTEMS

Turning today's waste into the building blocks of tomorrow

WHAT IS IT?

A revolutionary process that combines waste CO₂ and thermal waste to create a carbon-negative aggregate that is then used to create the construction materials for the buildings of tomorrow – locking carbon in for good within our built environment.

HOW DID IT DEVELOP?

15 years of research at Imperial College, London and The University of Greenwich yielded a patented process known as Accelerated Carbonation Technology. Since then, the process has been commercialised through Carbon8 Systems and a licence to Carbon8 Aggregates, supported with investment by Grundon Waste Management.

Carbon8 Aggregates have two commercial facilities in Suffolk and Avonmouth in the UK, and have planning permission for one in Leeds, UK.

Meanwhile Carbon8 Systems continues to develop the technology for other wastes streams, internationally, concentrating on using CO₂ directly from point sources, such as cement works.

HOW DOES IT WORK?

Accelerated Carbon Technology (ACT) takes waste carbon dioxide and combines it with thermal waste from cement manufacture, energy from waste plants or steel slags, to create artificial limestone.

The process results in significant amounts of CO₂ being permanently captured as stable carbonates. This material is then mixed with other ingredients such as binders and fillers, before being pelletised for incorporation into building blocks.

Whilst energy is used in the process, the amount of CO₂ captured exceeds the amount generated through manufacture, meaning that this is a genuinely carbon negative process.

HOW EFFECTIVE IS IT?

Using just 20% of the wastes available in Europe, Carbon8 has the potential to permanently capture over 1 million tonnes of CO₂ per year.

In addition, for every tonne of Carbon8 aggregate that is used, 1.4 tonnes of natural aggregate is saved meaning less extraction from nature, and 0.5 tonnes of waste is diverted from landfill.

WHAT ARE THE END PRODUCTS?

It can be used to form blocks, precast concrete forms, ready mixed concrete or flooring screeds – just like any other

aggregate but this time locking in carbon with every block rather than churning out more of it.

WHO BENEFITS?

Virtually everyone.

For waste producers such as Energy from Waste plants this is a great opportunity to deliver a zero waste to landfill ambition – one plant, Lakeside Energy in Colnbrook, has sent no waste to landfill for 18 months since partnering with Carbon8 Aggregates.

For the construction trade this is an opportunity to reduce the embodied carbon contents of their buildings with a carbon capture product that has the capacity to offset emissions from elsewhere in the project.

And for the planet it means CO₂ being actively locked into a solid form for good and a reduced need for extraction of aggregates from the natural environment, as well as removing waste from landfill.

HOW CREDIBLE IS THIS?

The UN think it highly so. In a recent report they stated that the Carbon8 process is making 'a demonstrable contribution to the developing European circular economy'.

The business is one of the few companies in the UK to hold an Environment Agency 'End of Waste' agreement, classifying the finished aggregate as a 'product'. It is also ranked within the top 10 companies in the UK for permanent carbon capture.

In April 2017, Carbon8 Systems was awarded the UK's most prestigious business accolade, the Queen's Award for Enterprise, for their innovative technology.

WHY WE LOVE THIS

Carbon8 have turned a process on its head. Where previously every block, beam or slab that went into the built environment meant more CO₂ being pumped out into the world, now the opposite is true.

Could it be that one day the more buildings we make, the more good we do?

Carbon Capture and Utilisation seems almost too good to be true, but here is a business that has done it. The bigger it gets, the more it produces, the more it helps us to take back control of our climate whilst keeping the economic wheels turning.

 [C8S.CO.UK](https://c8s.co.uk)

CLIMATE TAKE BACK

At Interface, we're convinced a fundamental change needs to happen in our global response to climate change. We need to stop thinking about how to merely limit the damage caused by climate change – and start thinking about how to create a climate fit for life.

Our new mission is called Climate Take Back – and we invite you to join us.

Find out more at our website [here](#)

Interface®

LIVE ZERO

Aim for zero negative impact on the environment

LEAD THE INDUSTRIAL RE-REVOLUTION

Transform industry into a force for the future we want

LOVE CARBON

Stop seeing carbon as the enemy, and start using it as a resource

LET NATURE COOL

Support our biosphere's ability to regulate the climate

