
**Grow your floors,
walls & façades**
Reduce your CO₂
footprint with
BioBasedTiles®.

**Go bespoke: co-create
your own colour,
texture, shape & size.**
Because no one-size
fits all.

#01 2023

WHAT

IF...



**STONE
CYCLING®**

WHAT IF...

What if we use more waste? What if structures become reusable? What if we let nature infuse our architecture?

In 2025, we will celebrate StoneCycling's tenth anniversary. We've come a long way. Looking to the future, it is clear that we need to sharpen our focus to increase our positive impact on construction and architecture. Tweaking our mission statement to 'advancing the development, use and reuse of planet-friendly aesthetic building materials', we also started asking more questions.

What if... we use more waste?

We are revising manufacturing processes to significantly boost the utilisation of waste materials well beyond 60% in our WasteBasedBricks®, allowing us to fire the bricks shorter and at lower temperatures. With our production partner, we are also experimenting with changing the fuel source from natural gas to hydrogen - an essential step in eliminating carbon emissions.

What if... we ramp up production?

BioBasedTiles® use Biomason's revolutionary Biocement®, which employs the same bacteria that form natural coral reefs to bind materials into a tile or brick slip for interior wall cladding, flooring, and façades. After last year's successful launch, Biomason and StoneCycling have committed to quickly scaling up production to make this low-carbon product available to early adopters throughout Europe.

What if... we put design at the forefront?

Aesthetically pleasing materials, well-designed façades and interiors using high-quality products are valued more and have a longer lifespan. We collaborate with designers like Daria from Studio Mixtura to develop visually stunning products, such as the WasteBasedSlip® Mint with a colourful glaze made from waste materials.

What if... we make structures reusable?

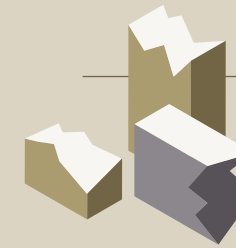
Even sustainable and aesthetic materials become impossible to reuse when fixed on a surface with glue or mortar. Building for disassembly can significantly extend the lifespan of a product, reducing its environmental impact. In partnership with Fassat, we developed the Beyond Wall System. This easy-to-use system allows for creating façades, walls and floors without permanently affixing the products.

We call on all advocates for a better planet to join our mission. To ask more questions, to challenge yourself and others. By doing so, we not only build a dedicated community that leads the way towards beautiful and sustainable architecture, but we will get there faster.

Team StoneCycling

Advancing the development, use and reuse of planet-friendly aesthetic building materials.

See our products up close?
Request a sample at stonecycling.com



The Problem

Planet earth is running out of raw materials

Waste

Construction and demolition waste accounts for an estimated third of the overall waste generation in the EU. More than 850 million tonnes each year.

Raw materials

Each year, we dig up tonnes of raw materials to turn into the building products that make up our cities and infrastructure. Research shows that with the current pace of construction, about 50 billion (!) tonnes of raw materials such as sand and gravel, are extracted from our planet each year. We're not only running out of these materials but the extraction harms nature, destroys ecosystems and leads to coastal erosion.

Carbon emissions

11% of world wide carbon emissions are related to the construction industry. Of those total emissions, the production of building materials is responsible for 90%.

The need for alternative resources and production methods is an ever more pressing necessity that creates huge opportunities for all stakeholders in the value chain.



The Solution

Use cutting-edge new technologies to create new types of building materials

Use waste as a resource

At StoneCycling, we're on a path to creating building materials made from 100% waste. By utilising waste as the primary ingredient for our products, we clean up some of the mess we are making.

Leave raw materials on the Earth

By using waste as a primary resource, we also require less or no raw materials. These can stay on Earth.

Eliminate carbon emissions

Together with our partners, we're developing products in such a way that carbon emissions are increasingly reduced over time and eventually eliminated. But we will not stop here. Once we've eliminated carbon emissions during production, we aim to create materials that absorb CO₂.

Amsterdam,
The Netherlands

Connected circularity at Crossover Amsterdam

Product

**WasteBasedSlips®
Nougat Raw and Sliced**

Design

Team V Architecture

Client

AM

Construction

**Koninklijke BAM
LEEBO**

Application

Façade

Impact

177.643 KG

Crossover is a multifunctional concept facilitating local and international residents' new personal and professional lifestyles of local and international residents in a surprising mixed-use, energy-neutral building combining living, working, learning and sharing.

Team V Architecture took the sustainability challenge to heart and approached StoneCycling in the design stage to collaborate on realising the façade. After a public selection procedure, area and real estate developer AM gave the best interpretation of the municipality requirement with its tender.

The façade consists of 635.000 brick slips in 90 different shapes and sizes. To not produce any waste in the production process, we created different sizes of WasteBasedBricks® Nougat Raw, carefully cut into multiple brick slips. Using both the outside of the brick (Raw texture) and the inside (Sliced texture), the façade of Crossover gets a nuanced and warm look and feel. The sustainability ambitions have been rigidly adhered to during the process. Crossover meets the highest sustainable standards and scores 'Outstanding', the highest possible sustainable score within BREEAM in The Netherlands.

The WasteBasedSlips® are glued to an aluminium sub-construction hung from the steel frame. Prefabricated building elements are used where possible to minimise the loss of raw materials and to shorten the construction time on site.

Photos: © Marcel Steinbach



Introducing WasteBasedSlips® Mint

A stunning blend of green, blue, and silver glaze made from waste materials. The Shine finish adds an extra layer to the WasteBasedSlips®, creating a beautiful vibrant surface.

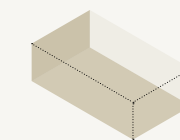


Order your sample at
stonecycling.com/mint

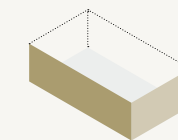


© Ape to Zebra

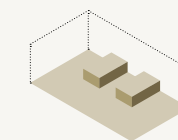
Applications



Interior walls



Façades



Furniture

Sizes

210 × 50 mm

215 × 65 mm

240 × 52 mm

290 × 50 mm

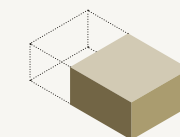
490 × 40 mm



As with all WasteBasedSlips®, Mint also comes with a lively natural variety. The thickness of the WasteBasedSlips® Mint is approximately 25 mm. For projects exceeding 1.000m2 brick slip surface, we can also create custom shapes and sizes.

No Cutting Loss

WasteBasedSlips® Mint are directly produced as brick slip, resulting in a waste-free production process.



Made from at
least 60% waste



22 kg waste
per m² upcycled



CO₂ compensated
production

Meet Daria, Alchemist at Studio Mixtura

Quarrying for raw materials is a destructive industry to the environment. It has an immediate impact on the landscape by leaving tons of unused waste material. Together with industry experts, we aim to find aesthetic, colourful applications for these types of waste streams. Fascinated with experimenting with waste and secondary materials, Daria Biryukova founded Studio Mixtura in 2015. She searches for clever, sustainable and beautiful solutions for everyday life.

Her glazes shined at several design expos, including Dutch Design Week, the Tallinn Design Festival and Il Salone Del Mobile Milan. Within this project, Daria provides the knowledge of an alchemist to develop extensive research for large-scale application of the glazes on our sustainable WasteBasedSlips®. The WasteBasedSlip® Mint is the first product that has come to life in various interior projects.



© Natalie Duin

Amsterdam,
The Netherlands

Striking Landmark for Strandeiland IJburg

Product

**WasteBasedBricks®
Orange Punched**

Design

Powerhouse Company

Client

Qirion

Construction

K_Dekker

Application

Façade

Impact

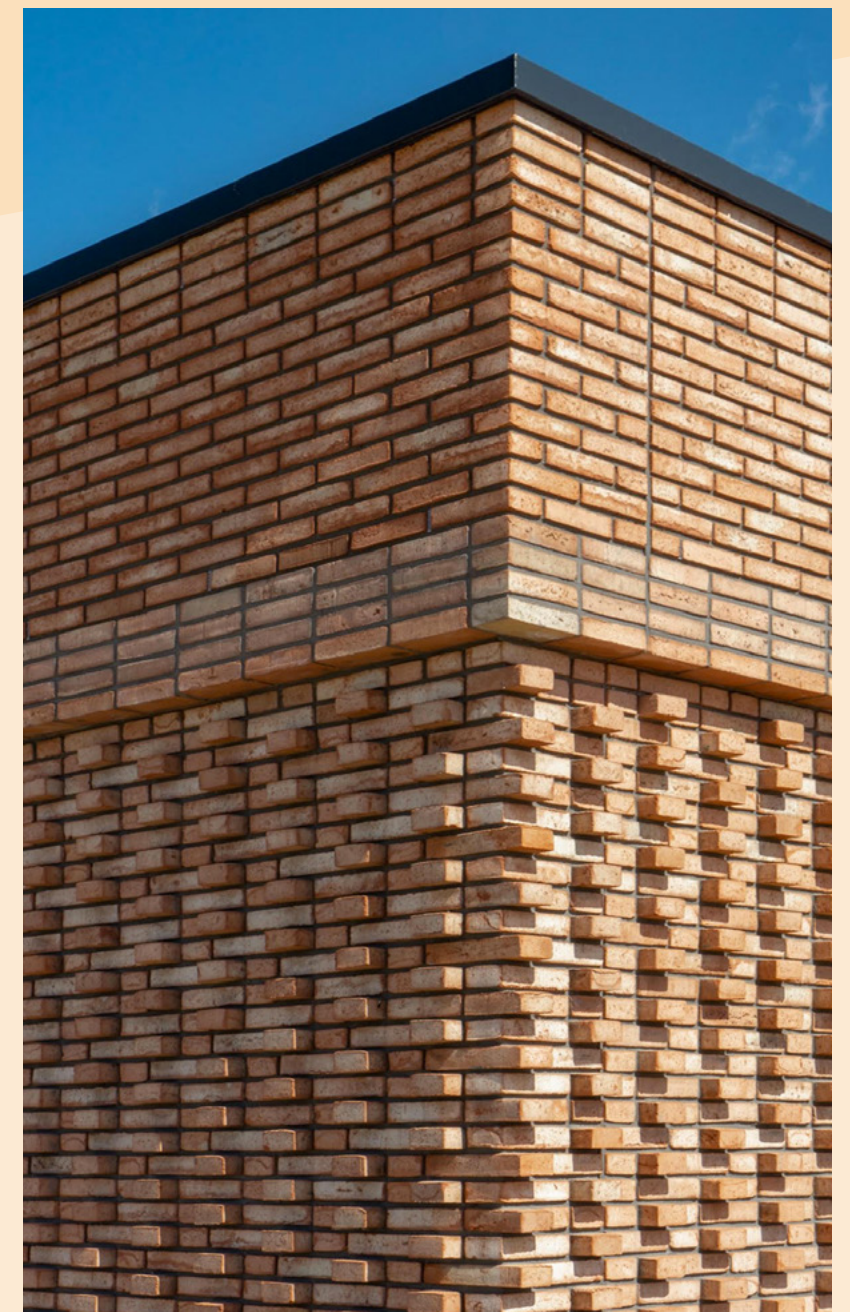
121.920 KG

With 8,000 homes planned over the next twenty years, Strandeiland is one of Amsterdam's largest future city districts. One with strong circular ambitions. To supply all buildings in the area with energy, Qirion realised an electricity distribution station. Here, 150 kV high voltage converts into electricity with a lower voltage that transports to the various districts in the area. Such electricity distribution stations are necessary to facilitate the growth and sustainability of the city of Amsterdam.

Powerhouse Company approached StoneCycling requesting a durable and aesthetically-pleasing orange brick. That became the WasteBasedBrick® Orange

Punched, applied in a detailed façade. Powerhouse Company about their choice: "We wanted to create a striking landmark for the new Strandeiland residents. Our design includes an elaborate brick façade: long-lasting and an eye-catcher within its context. We believe choosing sustainable materialisation with a long lifespan will contribute to the industrial heritage of IJburg's future."

K_Dekker built the substation. They combined full bricks, protruding ends and brick slips (at ventilation areas) into a pronounced façade. The distribution station is a true landmark in the new district.



Grow your floors, walls & façades with BioBasedTiles®



Cutting out the root cause of carbon emissions.

Traditional cement production accounts for 8% of global carbon dioxide emissions. Without radical change, building our world's infrastructure destroys our chance at a healthy and safe future.

Growing Tiles. Like nature.

We learned how nature grows through one of its most robust and enduring structures: coral. With the help of the similar bacteria, this tile grew in less than 3 days.

And the best thing?

It does not require any kiln firing.

Powered by
BIOMASON
Technology



© Biomason

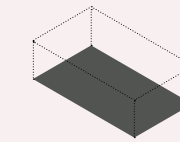
Meet Ginger Krieg Dosier - Co-Founder and CEO of Biomason

The inspiration for starting the work and eventually the company Biomason in 2012 came from a book and a simple question. Ginger Krieg Dosier had recently graduated from her Master's program in Architecture when she re-read the book 'Biomimicry'. She was fascinated by how many different technologies and innovations emerged through studying how and why the natural world works, in efforts to innovate new materials.

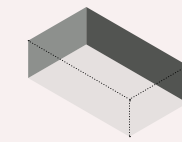
Long drawn to cement and concrete "There was something that started clicking in my mind about, how nature can grow strong and durable cementitious materials (e.g. coral) underwater. Today, to make the 199 year old Portland cement, subtractive mining operations and high heat are used to create a product that by processing default, releases CO2 and doesn't perform as well as some natural cement formations which are biologically driven.

If nature can grow cement, why can't we?" says Ginger Krieg Dosier, today leading Biomason Inc. with 87 coworkers and a recent Series C of 65 million investment to accomplish a big mission: incrementally solving cement in the built environment. In partnership with StoneCycling, In partnership with StoneCycling, Biomason is introducing the world's first commercially produced BioBasedTile, made with the help of bacteria. This is what a Milestone looks like

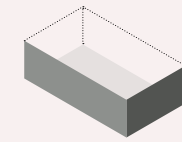
Applications



Flooring



Interior walls



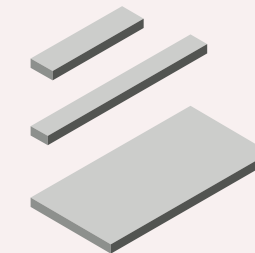
Façades

Sizes

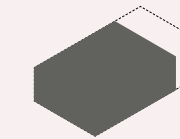
228 × 54 × 19 mm

400 × 40 × 19 mm

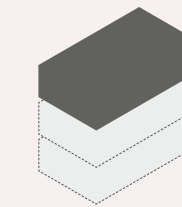
400 × 200 × 19 mm



Features



20% Lighter than a concrete block.



3x Stronger than a concrete block.



CO₂ compensated production

Order your sample online at
stonecycling.com/milestone

Leiden, The Netherlands

Nature inclusive pavilion for Leiden University

Product

Bespoke WasteBasedBricks®

Design

Hoek & de Wit Architecten

Client

Leiden University

Construction

Hegeman Bouwgroep

Application

Façade

Impact

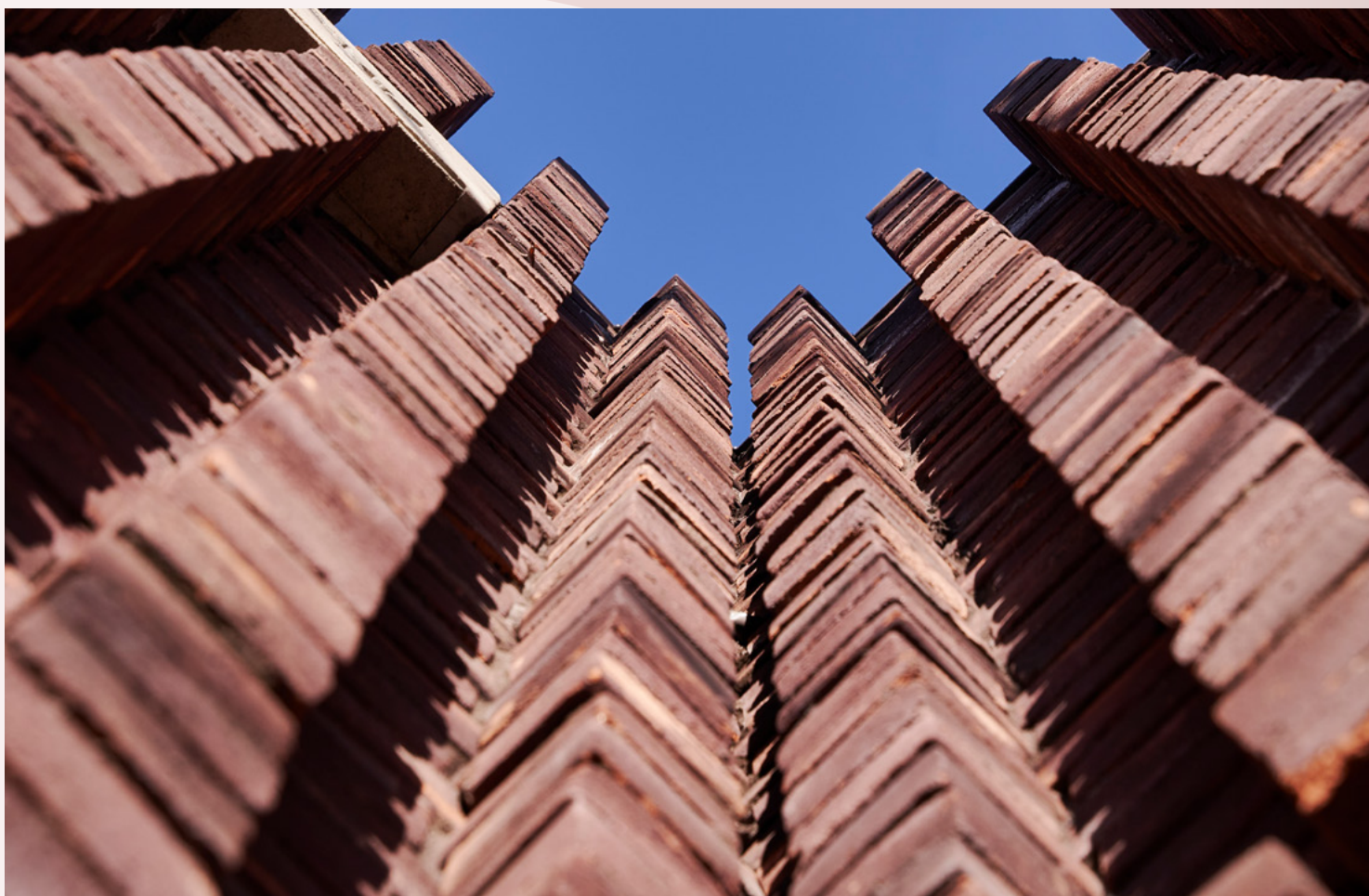
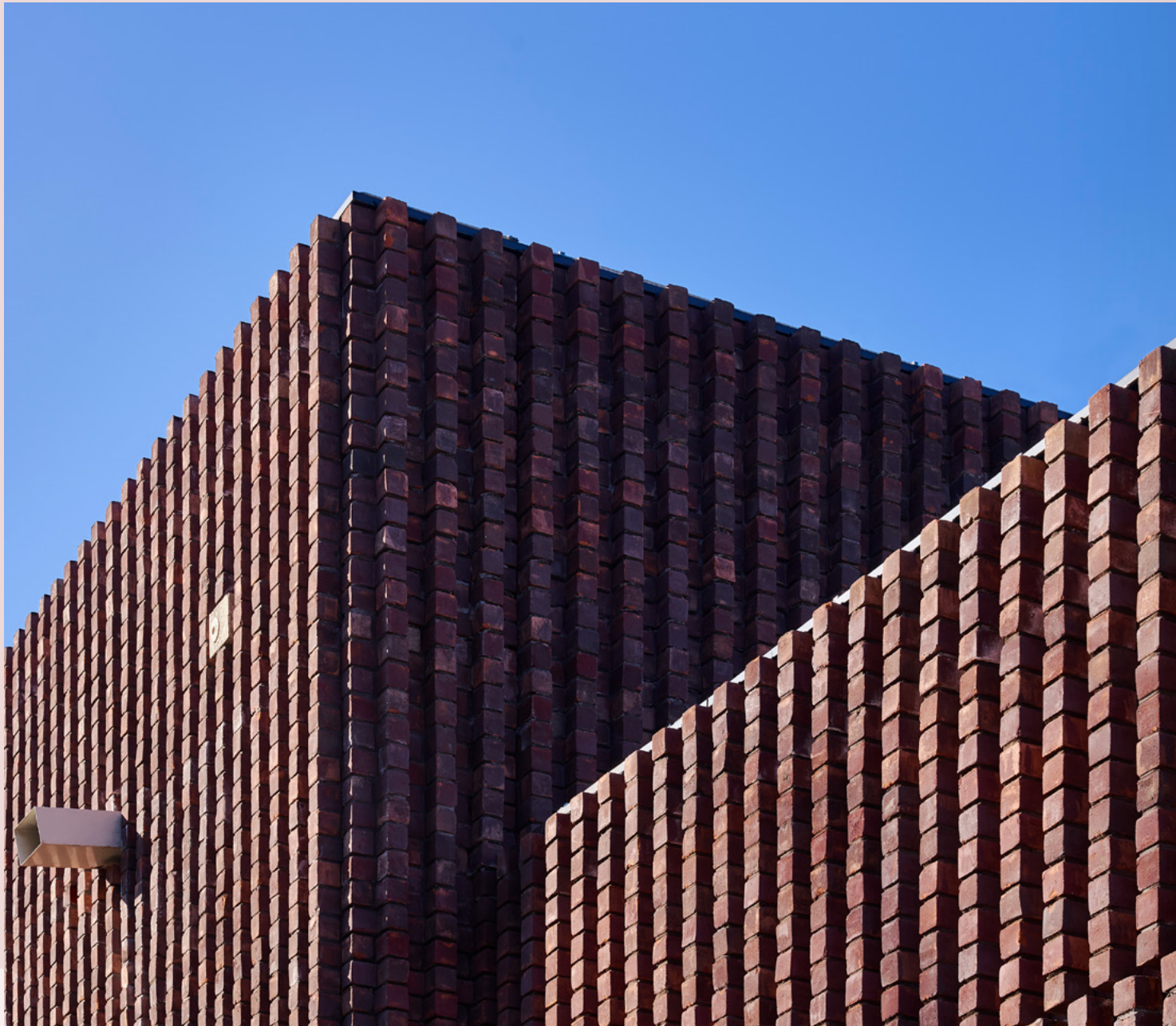
111.950 KG

Leiden University is fully committed to the circular development, renovation and management of all its buildings. In partnership with architect Ernst Hoek, we developed a bespoke WasteBasedBrick® in a unique format (190×90×90mm) for a new installation building at the university campus.

This striking pavilion had to have a robust façade where flora and fauna could easily nestle. The colour nuance, rustic texture, and masonry bond bring the building to life.

The shadow effect ensures that the building looks different at each time of the day. We created custom cornerstones to ensure the viability of this intrinsic masonry bond.

“This technical building got a unique look with the specially sized and laid bricks, creating vertical creases in the façade that resemble the natural shell of a petrified treebark”, according to Ernst Hoek.



From Attaching to Detaching Introducing Beyond Wall System

Towards Circular Construction

Detachability or disassembly is a precondition for making construction fully circular, because it makes it possible to reuse products and materials from a building and pass them on to subsequent cycles. Especially in the retail industry, interiors are often constructed and demolished within a lifespan of 1-5 years.

Building for Disassembly

The Beyond Wall System by StoneCycling and Fassat creates demountable façades, interior walls and floors without using mortar or glue. The WasteBasedSlips® and BioBasedTiles® can be mechanically attached to the wooden substructure using a modified PVC or stainless steel profile. This mechanical assembly also makes the brick slips easy to dismantle. The profile colour also determines the colour of the joint.

Easy to Fix

We have developed the system so that all carpenters and tilers can work with it. This is important because (retail) clients that operate globally often struggle with work quality across countries. The Beyond Wall System has a straightforward instruction manual that is easy to understand.

Preventing Waste

With the Beyond Wall System, reassembly is possible without the need for jointing. Being able to reuse a product in its entirety, disassembly prevents us from creating demolition waste in the future.

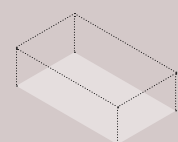
In the retail industry, interiors are often constructed and demolished within a lifespan of 1-5 years.

Committed Partners

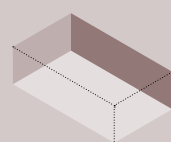
Speeding up the transition to a circular construction industry requires companies and individuals across the value chain to act. In Fassat, we found a partner that is just as committed as us.

The Beyond Wall System received recognition at the Dutch Construction Expo in early 2023. The new solution by StoneCycling and Fassat Façade Systems won in the Circularity category.

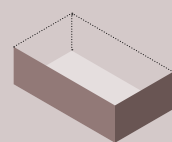
Suitable for exterior and interior applications



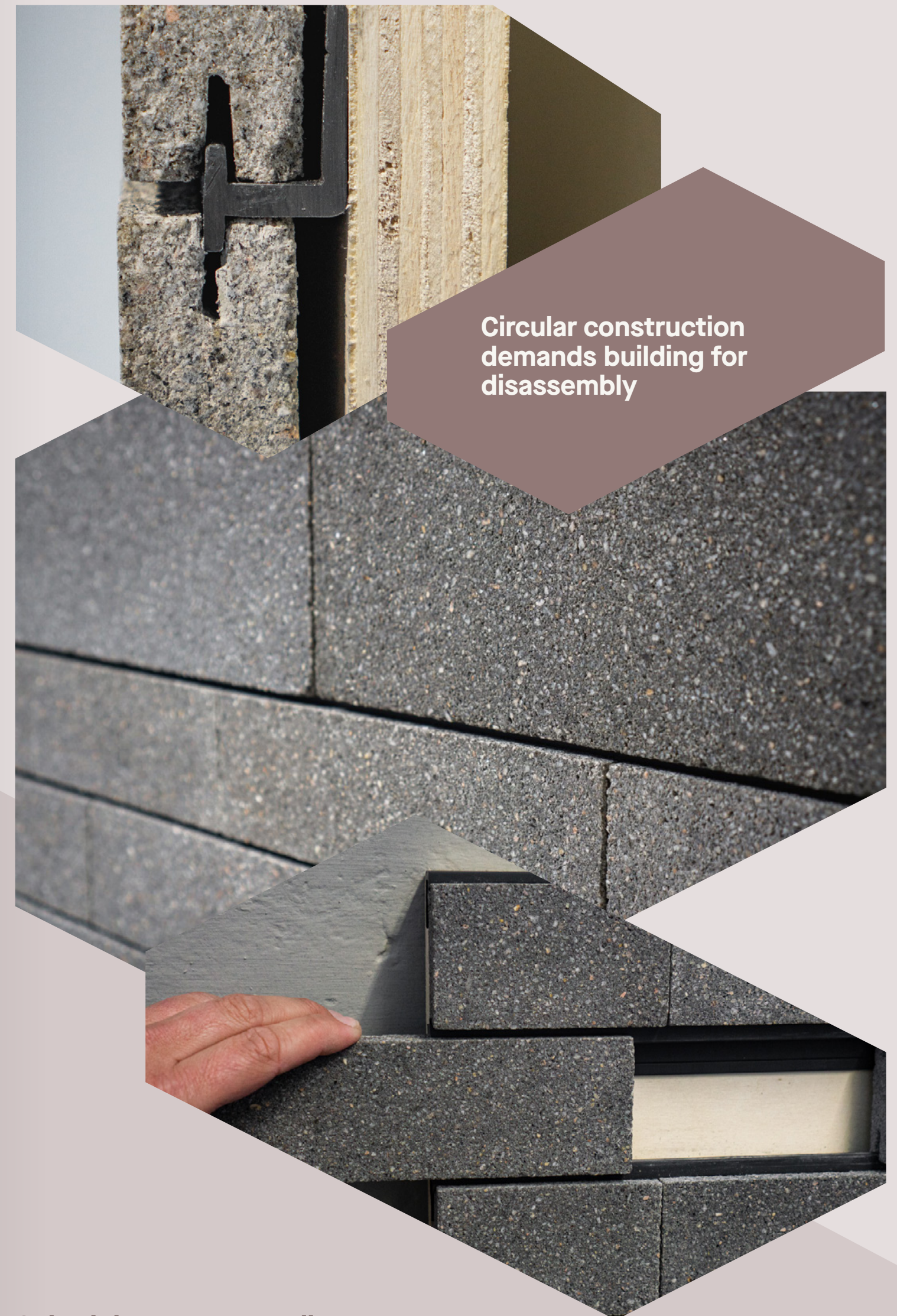
Flooring



Interior walls



Façades



Schedule an expert call at
stonecycling.com/beyond

We have changed what bricks are made of.

There is a reason bricks have been around for centuries: their superior technical and aesthetic qualities don't easily match with other cladding materials. Look at all the remarkable brick buildings still standing proudly in historic cities like Amsterdam, New York or London!

Yet, there's a big problem with the typical production process. Traditional bricks were (and still are in some factories) fired with coal as fuel. Modern factories use natural gas to fuel the kilns. Both methods see carbon dioxide released into the air when burning these fossil fuels.

At the same time, the global waste pile is growing. Planet Earth is running out of raw materials, yet we keep sourcing them. Over the years, we focused heavily on upcycling as much waste as possible and decreasing the need for scarce raw materials with our

WasteBasedBricks®. We have improved our recipes, pushing the limits of what's possible.

Using a ceramic production method, we fire the WasteBasedBricks® to relatively high temperatures to sinter the ingredients together. This process makes them durable, with a unique, warm and nuanced look and feel.

We aim to have a fully functional brick factory that can produce 25 million+ bricks made from at least 80% waste, fired carbon neutral by using hydrogen as fuel in 2026.

We see it as our mission to preserve brick as an iconic building material for the future. But only when produced without further depleting scarce raw materials and emitting tons of CO₂ into the air.

Since 2018 we exclusively work with our production partner Zilverschoon Randwijk, a highly specialised brick factory with extensive knowledge of brickmaking.



Our collaboration has evolved into a committed partnership with an exceptionally ambitious plan: we aim to have a fully functional brick factory that can produce 25 million+ bricks made from at least 80% waste, fired carbon neutral by using hydrogen as fuel in 2026.

Preparations are in full swing. We have developed a range of 80% waste-based recipes that meet industry standards. We're currently running active experiments with firing bricks using hydrogen as fuel. The plan for upscaling this technology is ready.

We are committed to this. And we are not the only ones. Every day we work with leading architects, real estate developers, and construction companies that want change. All the projects that we are involved with are proof of this. These projects are helping us take this next step. The more successful we all become, the more eager others will get to follow us. And that's how change happens.

Meet Derck, owner of production partner Zilverschoon Randwijk

Derck basically grew up in the yards of his father's brick factory. In 2012 he took over the company, steering it in a new direction. His heart goes out to architectural heritage. One of Randwijk's focus areas is renovation and restoration. Re-creating bricks used in a historical building 200 years ago is his speciality. It means re-creating recipes, production techniques and firing curves to create the perfect matching brick. This approach is surprisingly similar when developing WasteBasedBricks®. Here is where the old and the new match. Derck on our partnership: "Mixing the craftsmanship of traditional brick making with new recipes and cutting edge technologies is my professional mission."



Derck Zilverschoon (left) at the factory

What if we now change how bricks are made?

Subscribe to our monthly newsletter for updates
stonecycling.com/newsletter





© Rory Gardiner

London, United Kingdom

Award-Winning Façade at Sands End Arts & Community Centre

Product

WasteBasedBricks®
Almond Raw and Sliced

Design

Mæ Architects

Client

LB Hammersmith & Fulham Council

Construction

Neilcott Construction

Application

Façade

Impact

28.000 KG



© Rory Gardiner



© Juli Richter

Mæ Architects have designed a new Arts and Community Centre in Fulham, West London, on the current site of Clancarty Lodge in the North West corner of South Park. This multiple award-winning project got shortlisted for the RIBA Stirling Prize in 2022.

The RIBA Stirling Prize is the UK's most prestigious architecture award, awarded to the architect of the building thought to be most significant for the evolution of architecture and the built environment of that year.

The centre suits a wide range of users in design, providing a café, spaces for social and educational functions, clubs, events, and dedicated nursery facilities. With this level of accessibility and provision, it is an environment that will promote social integration within the community, thereby combating social isolation.

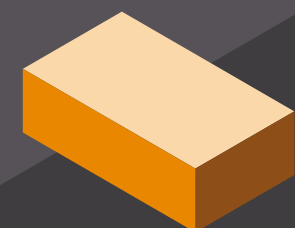
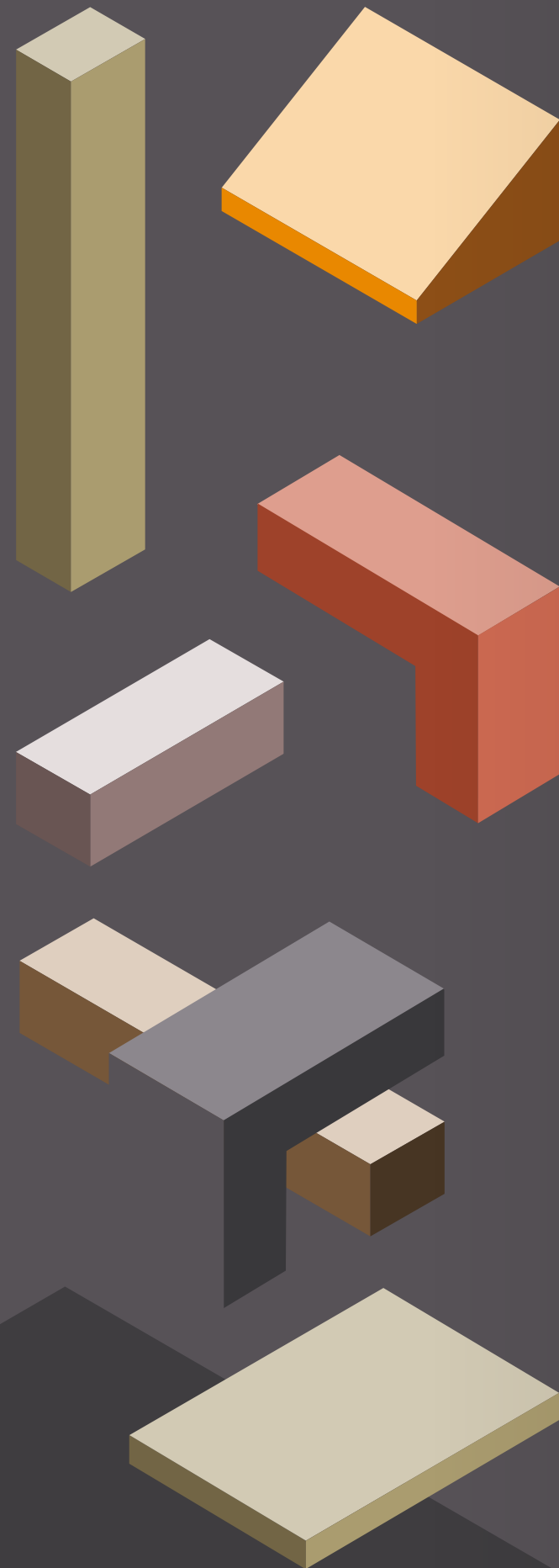
From the outset, Hammersmith and Fulham council sought to design a sustainable Arts and Community Centre both in terms of construction and its potential to generate revenue in the future. To satisfy the ambitious brief, Mæ designed the building so that over 35% of the building material is composed of recycled matter, with a responsibly sourced CLT timber structure with an inherently low embodied energy.

Looking beyond the building's useful life, Mæ have also considered detachability, choosing bolts over glue as a structural fixing to ensure the reclamation of some materials.

Co-create your own colour, texture, shape & size.

Looking for something that can make a difference in your project? Choose a bespoke product that completes your specific design.

Co-create the right colour, texture, shape & size. Use recipes with a minimum of 60% waste and end up with a unique product, never used in any other project.



Get inspired.
See our bespoke showcases at
stonecycling.com/bespoke

Bespoke.
Because no
one-size fits all.



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At StoneCycling, we work hard on developing the next generation of aesthetic, sustainable materials.

We have currently upcycled over 2.379.542 kg of waste into our award-winning building materials.

What if you supported our mission to clean up the world?

Reach out to explore the possibilities for collaboration

General Enquiries	info@stonecycling.com
Sales	sales@stonecycling.com

+31(0)88 777 4200 weekdays, 9 am - 5 pm CEST

stonecycling.com

