

Eggshell Ceramic

SURFACE COLLECTION



COLLABORATION BETWEEN

ATELIER LVDW & SARA BENDANDI

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INTRO

10 billion eggs a year are produced in the Netherlands, which makes the country the largest egg exporter in the world. An egg contains a valuable material which is often seen as waste; its shell. Due to its high amount of calcium carbonate eggshell can be used as soil improver. Eggshell Ceramic is a circular material derived from the food industry to show more possibilities with this material. To stimulate more re-use of this food waste, Atelier LVDW investigates how we can use the material one more time before it is given back to nature. The design studio developed a biodegradable but strong material out of the eggshells. The versatile material has the look of ceramics but the benefits of a bio-material. The material can be composted at the end of its lifespan, which will add valuable nutrients to the soil. Atelier LVDW is exploring the craft of the developed bio-material by translating it into a variety of decorative interior objects. Eggshell Ceramic received a Gold Award in the BeyondPlastic competition 2021. Within the Worth Partnership project Atelier LVDW & Sara Bendandi have been working on new product development with the material.

Atelier LVDW is the material design studio of Laura van de Wijdeven, based in Rotterdam and Eindhoven area in The Netherlands. She researches the future of sustainable and circular materials with a Biophilic point of view. Her goal is to enrich interiors by the use of organic waste streams and bio-based matter. Subconsciously connecting its user with nature by implementing these new materials. The social connection between material, human and nature is intertwined in all her projects. Her research finds its purpose in a variety of interior surfaces and objects. The work is an interplay of reproducible design, craft, experimental and unique art works. All products and materials are completely made in The Netherlands. For the development of this new product Atelier LVDW has been working together with Italian designer Sara Bendandi.

Sara Bendandi is a product and interior designer who graduated from IED Firenze. Her practice aims to overcome a purely aesthetic and consumer outcome design. The purpose is to enhance the whole process through research and experimentation through analogical methods. By combining a scientific approach, research, and a deep understanding of the context in which her work is located, she tries to investigate how design can ethically and effectively meet people's needs. This brings her closer to local resources and how they influenced the history and customs of the area.



Process

MATERIAL RESEARCH

In recent years Atelier LVDW has been exploring the possibilities of discarded consumer eggshells. Within this research the afterlife of the end-product has been a key element. Eggshells contain out of 95% calcium carbonate, a beneficial nutrient for human, animals, plants and the soil. Because of this nutrient the design studio want to keep the final product fully compostable. In this way the calcium will enrich the soil and benefit biodiversity.

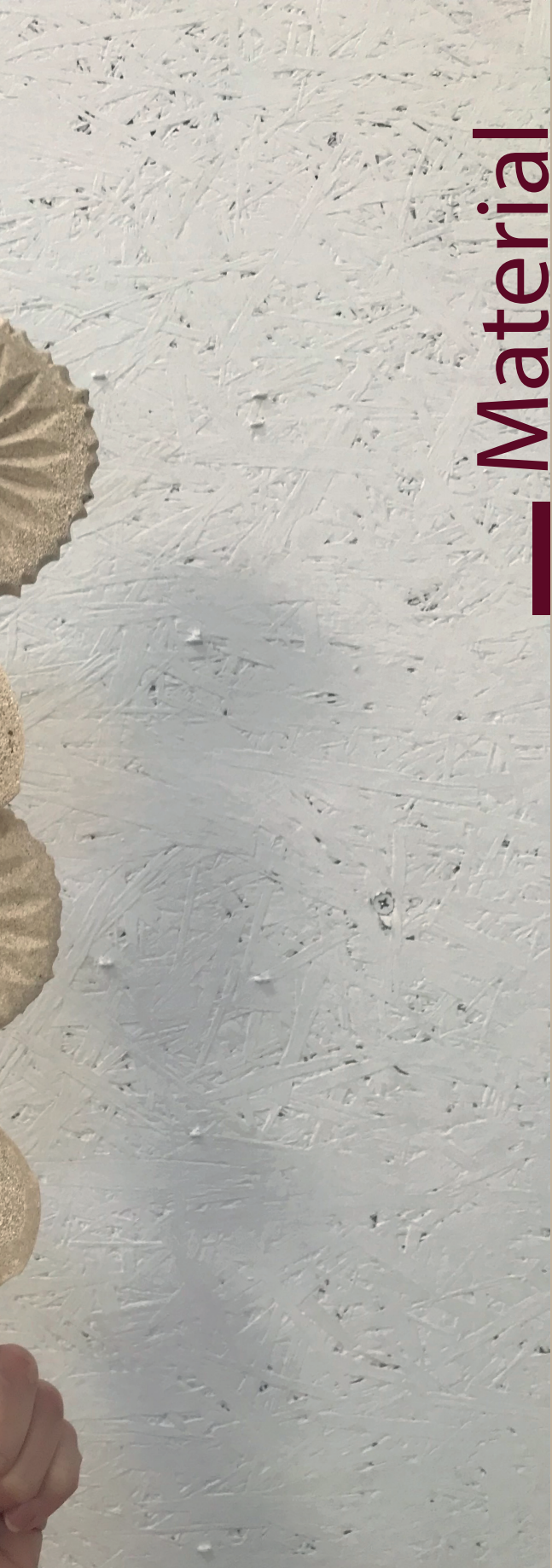
With the guidance of Worth Partnership Project, improvements are made in strength and water repellence of the material. Another focus has been to explore the possible production methods with the material. This has resulted in a first surface collection in which Atelier LVDW has designed new shapes and structures. In the manufacturing process, the studio has tested new machinery to speed up the making process. The material and the final product is completely produced in The Netherlands. With their small production facility, the studio can work on bespoke items with the material. By diving into this new craft, the design studio has a great understanding of its future product applications.





“Eggshell Ceramic explores the potential of beneficial nutrients for the soil, derived from discarded consumer eggs. Translated into compostable art, revaluing our relationship with objects, materials and nature. ”





Material Qualities

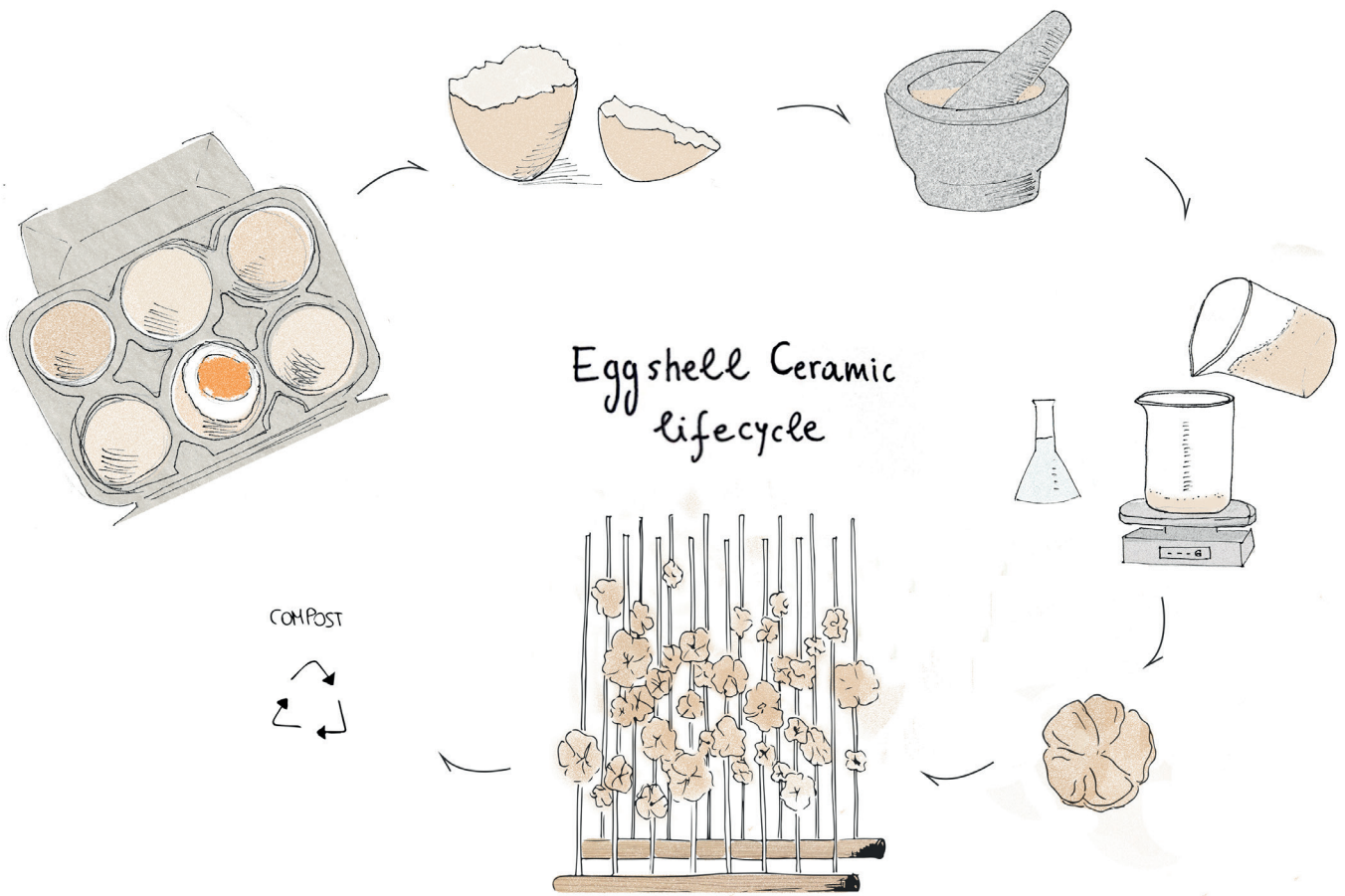
IMPROVED RECIPE

Over the last 10 months Atelier LVDW and its partners have been fully focused on improving their Eggshell Ceramic material. An overview of the material qualities and research results:

- Increased strength
- Increased water repellence
- Nutrient for the soil
- No VOC's
- Fully biodegradable
- Fully compostable
- Zero-waste production method
- New biodegradable color options

In the future Atelier LVDW will explore the acoustic qualities of the material.

Lifecycle



Surface Design



The design philosophy of Atelier LVDW can be traced back to Biophilic design principles. Within Biophilic Design, natural elements, materials or objects are placed in the interior to create a calming atmosphere. The calming effect of nature has been researched for decades. Being in green or natural environments would calm the mind and body, also when these elements are placed into the interior or when its artificial.

These principles are translated into Atelier LVDW's surface collection. The room divider is made of wood and Eggshell Ceramic elements, it can be produced in a variety of sizes and shapes. The product is for indoor use. The Inspiration for the design comes from fungus growing on old wood. This natural process is showing the circle of life which has been a guideline in the development of the Eggshell Ceramic material.

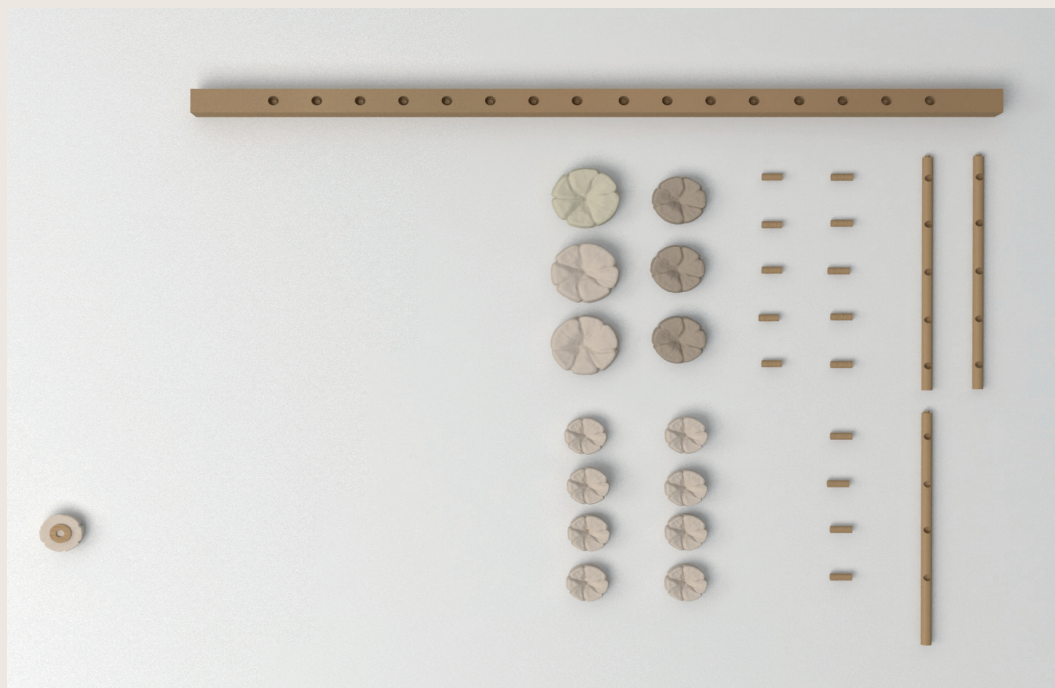






Assembling & Recycle

VISUAL & ILLUSTRATION BY
SARA BENDANDI



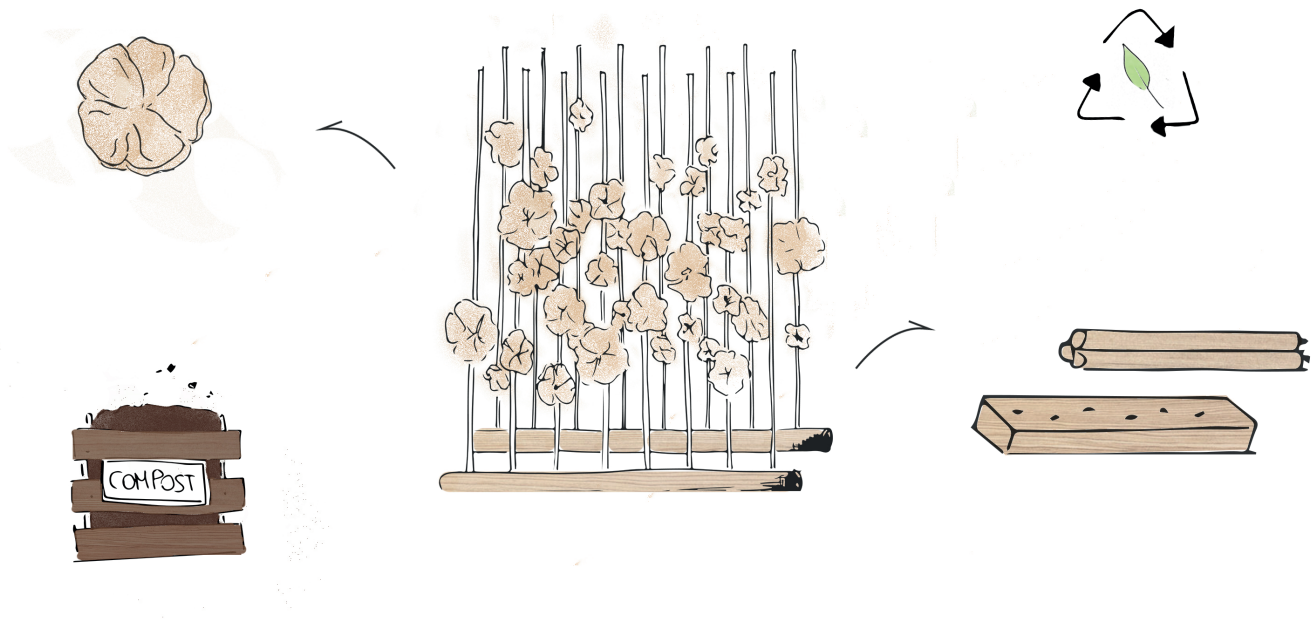
The room divider is completely modular and can easily be assembled or disassembled. In this way the product has a lower environmental impact as it can be shipped in a smaller box. Nevertheless, when the product isn't used anymore all elements can be placed within the correct recycle method. The Eggshell Ceramic elements can be added to a compost bin. This will be beneficial for the soil as it then returns its calcium back to nature. The designed frame is made from European Douglas Fir and coloured with Satin Wood Oil from

Linolie & Pigment. This traditional company from Denmark produces linseed oil paint and colored linseed oil based on old techniques and pure raw materials. The colours can be adjusted based on the clients wishes. For this first design Atelier LVDW has chosen for a dark colour which gives a strong contrast to the Eggshell Ceramic material. Its inspired on old fallen branches which naturally darkens over time in its natural environment. The chosen colourant of the wood is fully biodegradable.

With this new product Atelier LVDW is offering a fully compostable art object for indoor use. The product is highly durable when used in dry indoor environments. The object can be used as a room divider to create shelter spots. All elements can be placed on different places on the wooden base and can be turned to left or right, up or down. This playful product is easy to disassemble.

Atelier LVDW understands not all products will be used for a lifetime, for this reason the studio is making a lot of effort on informing the correct re-use of the materials. Sara Bendandi has translated the story of this project into visuals and sketches to make an easy understanding of the product use, its afterlife and future interior applications.

How to dispose
Eggshell Ceramic
room divider ?





WORTH — PARTNERSHIP PROJECT