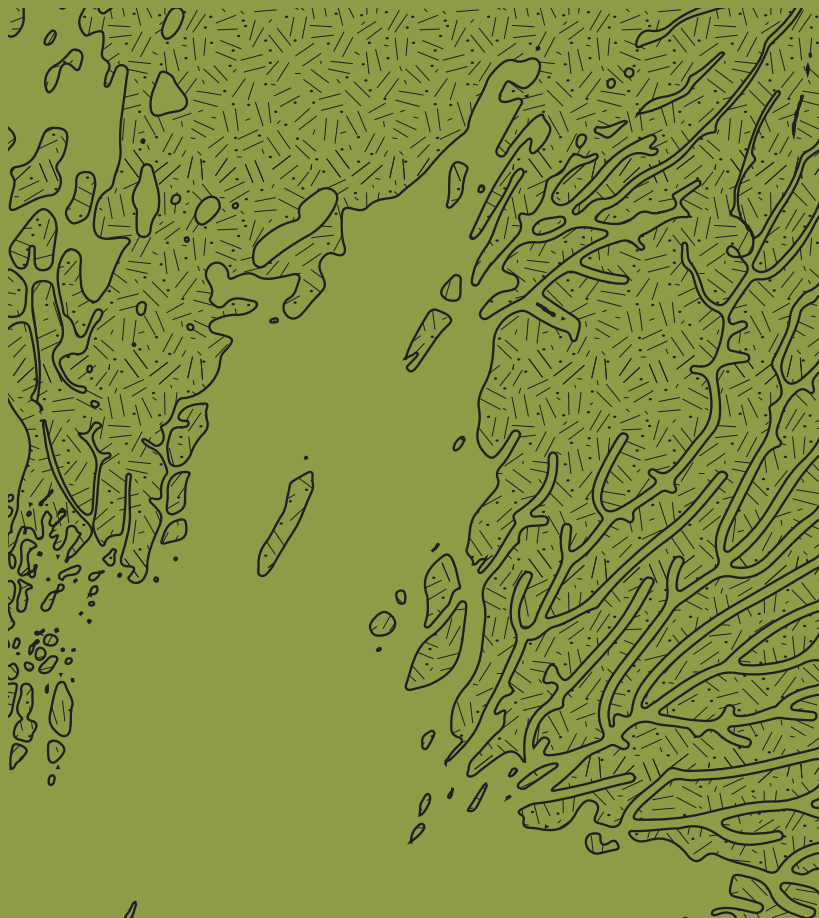




There's something you
should know about...

FUNGI

MYCELIUM BOOKLET //
DESIGN GUIDE

VOL. 01 //
Promising Prospects
Reminders & Warnings

'Mycelium is ecological connective tissue, the living seam by which much of the world is stitched into relation.'

– Merlin Sheldrake

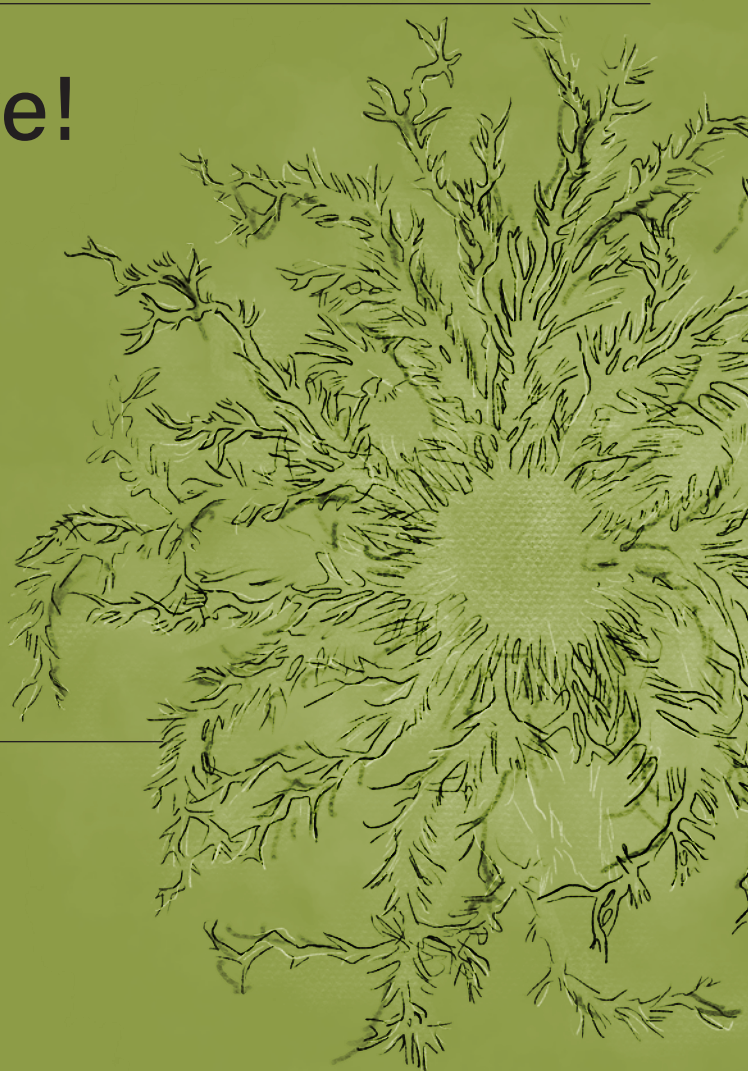
Fungi are everywhere, yet hard to see. They're in and around us; in the soil, in the air, in our bodies. Most fungi live out of sight, yet they make up a whole kingdom that sustains nearly all living systems.

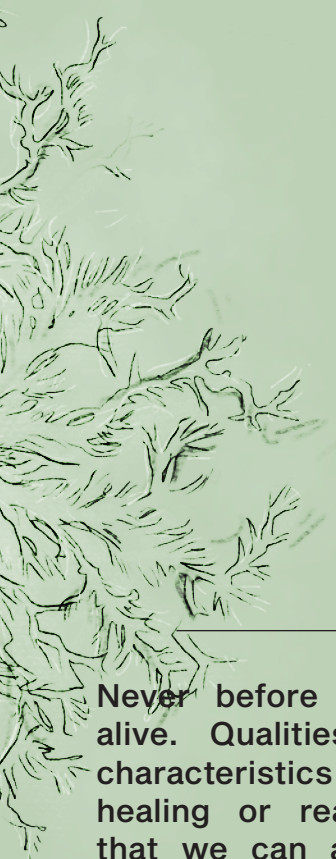
When we think of fungi, probably the first thing that comes to mind is mushrooms. But mushrooms are only the fruiting bodies of fungi, like apples on a tree. Below this single mushroom, there unfolds a hidden, entangled network of threads, better known as mycelium. Mycelium is of vital importance to the soil. Its natural function as a high-powered degrader and distributor of nutrients serves as the backbone of almost all ecosystems.

By growing mycelium on natural fibres or other feedstock, we can compose a regenerative material that is degradable and renewable. This booklet identifies the promising prospects of working with this living material, as well as the challenges that face those who are eager to embark on it.

Ready to dive into the opportunities of this promising material?

It's alive!



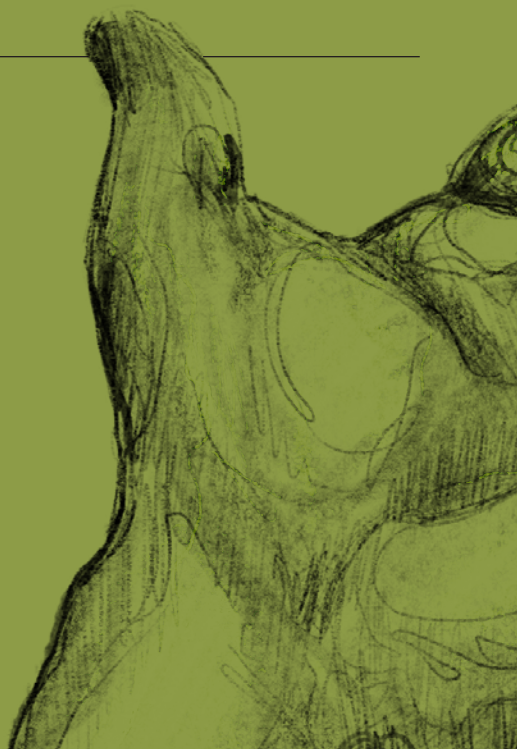


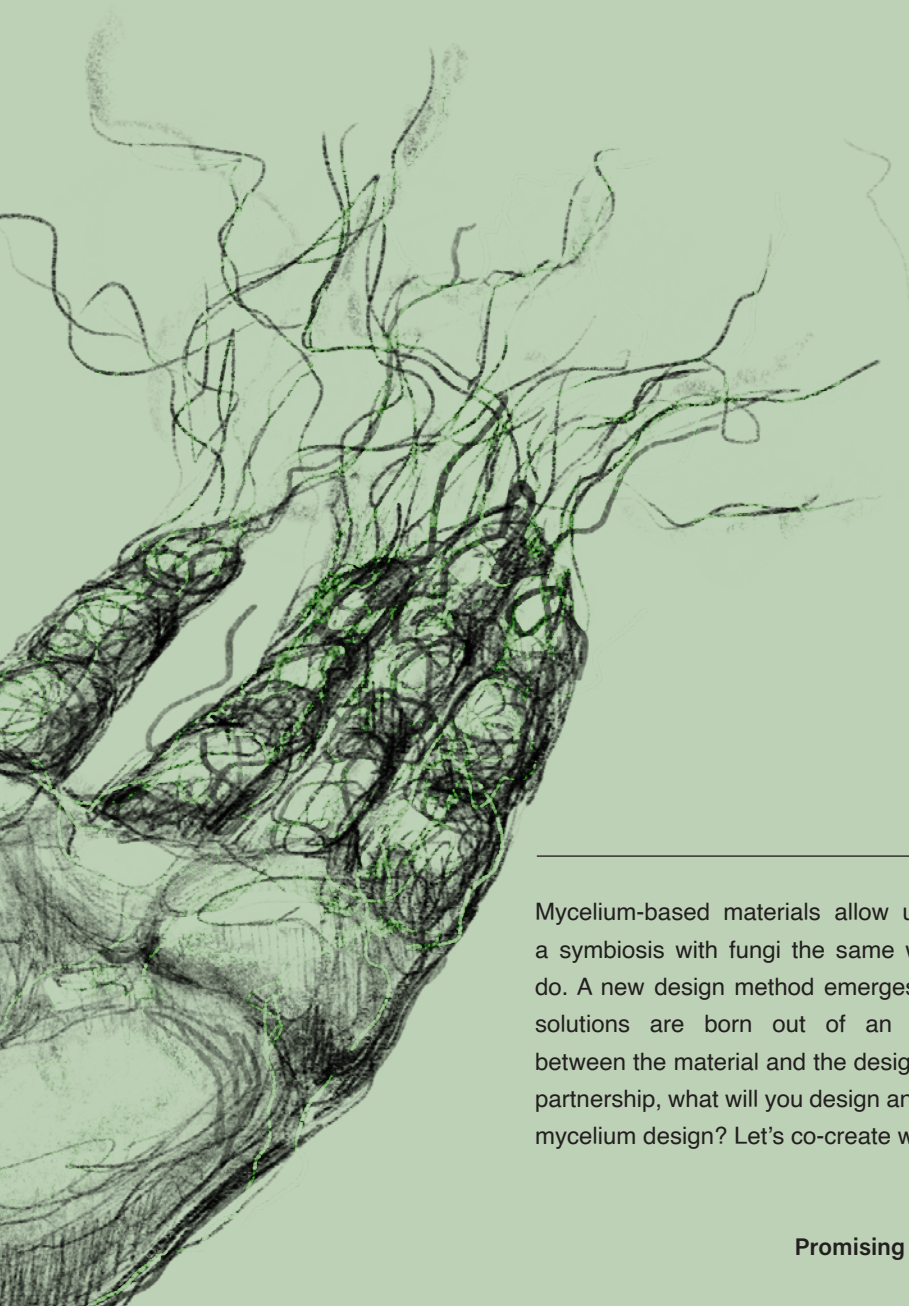
Never before we have dealt with a material that is alive. Qualities that are known to us as ordinary characteristics of an organism, such as growing, healing or reacting to its environment are qualities that we can ascribe for the first time to a material.

Which characteristics of mycelium as an organism inspire you? A material that can build itself up, can self-assemble, can repair itself, can communicate with its surroundings... How will you make use of this in your design?

Let's Co

About 80 percent of plants establish a symbiotic relationship with fungi. Through their network, fungi supply plants with nutrients far from their location. In turn, fungi get sugars from plants. This is called 'mycorrhiza'.

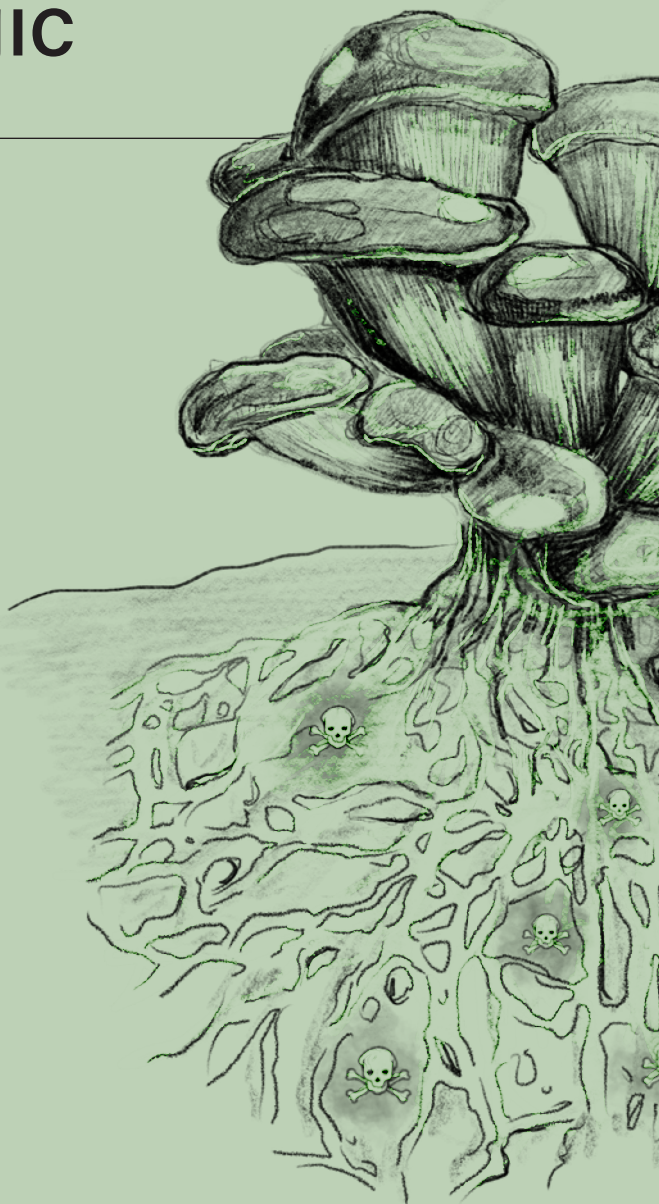


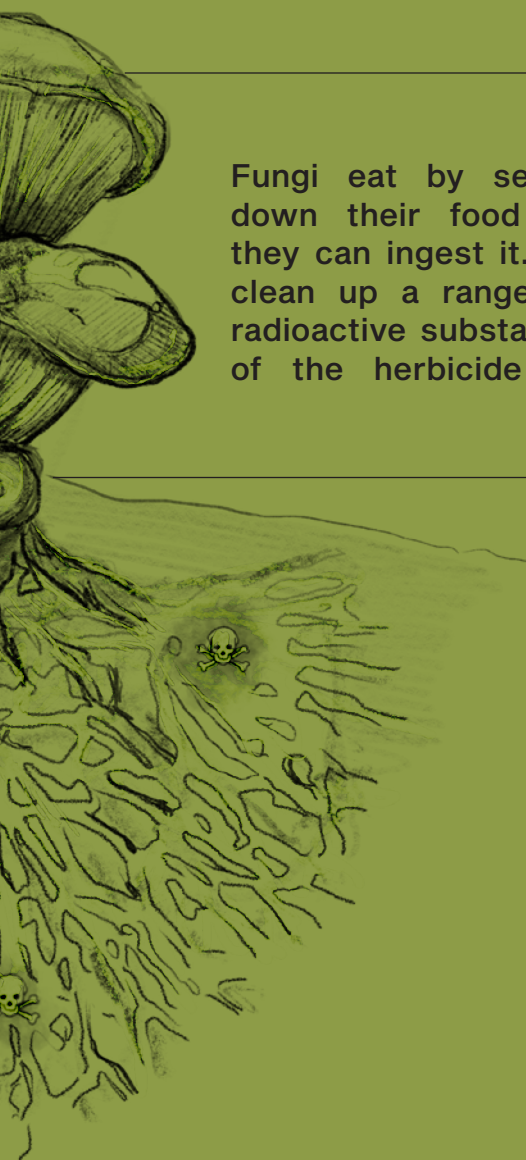


Mycelium-based materials allow us to form a symbiosis with fungi the same way plants do. A new design method emerges, in which solutions are born out of an interaction between the material and the designer. In this partnership, what will you design and what will mycelium design? Let's co-create with nature.

Promising Prospects

Enzymagic





Fungi eat by secreting enzymes that break down their food into smaller molecules, so they can ingest it. In this way, fungi are able to clean up a range of toxic pollution, including radioactive substances in Tsjernobyl or residues of the herbicide Agent Orange in Vietnam.

Using fungi as a method to sanitise the environment is called **mycoremediation**. Heavy metals, petroleum waste, dyes, pesticides... can be filtered out of the environment by fungi. We can harness this billion-year-old healing power of mycelium to rework our man-made waste into non-harmful and even useful substances. Where would you deploy this 'enzymagic'?

Embracing Fungi

Fungi are the earth's original waste recyclers. Largely hidden in the background of life, they unnoticeably take on an immense role by breaking down substances and transforming them into building blocks for new life to emerge.





Fungi can be repulsive. Most people associate them with fear and decay because of their role at the end of the cycle of life. But fungi are also at the beginning of life. The degrading capabilities of fungi should be seen as a unique talent that helps us solve major environmental problems.

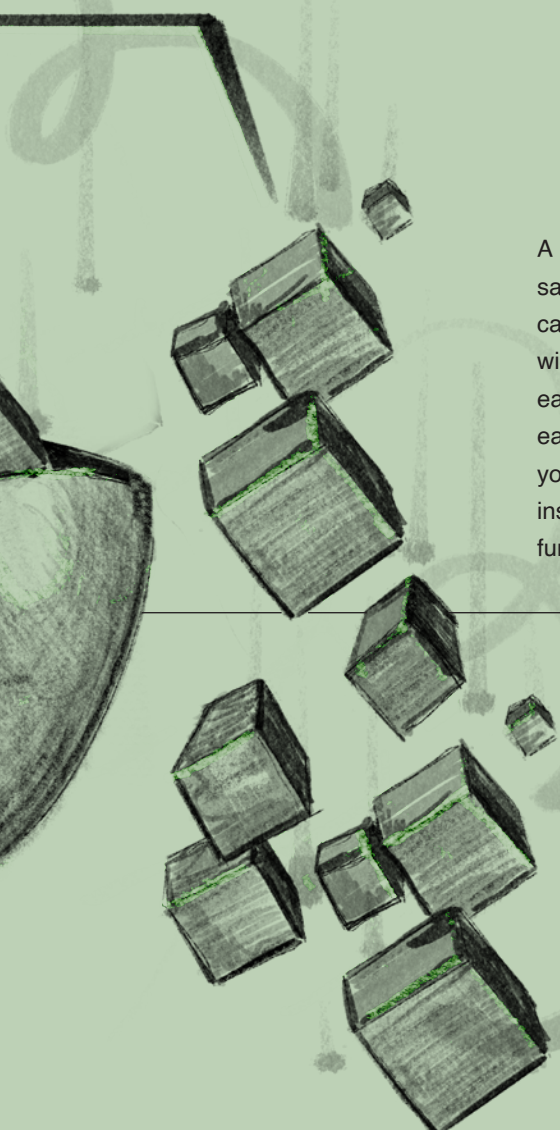
Let us show fungi's true colours to the world. White is only the colour it reflects, not the colour it consists of. How can certain applications and developments in mycelium material enhance the status of fungi and pave the way toward acceptance? What will you design that represents mycelium's true nature?

Lost In Translation

Important Information

Insignificant Trivia



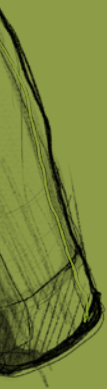


A scientist and a designer do not speak the same language. Complicated scientific terms can sometimes be overwhelming, but so can wild creative ideas. Learning to understand each other requires effort and immersion in each other's discipline. Do this! Who knows, you might learn something that goes beyond insignificant trivia such as glow-in-the-dark fungi.

Wearing A Lab Coat...

Unfortunately does not
make you a scientist.





In this new emerging practice, a designer will have to trade his usual approach of ideation, exploration and prototyping in a messy workshop for a sterile laboratory environment where research is conducted on a micro-scale. This requires precision, preparation and time on a level a designer is not used to. Therefore, it is to be expected that not all experiments will succeed and samples will often contain undesired contamination. Holding on to 'practice makes perfect' is necessary.

A scientist, too, must adapt. The scientific method needs to make way for a highly conceptual, idealistic and exploratory approach to research. An approach that has never taken place in a laboratory before. Experiments will be set up on the basis of a few 'what if' questions, without any hypothesis on how things will turn out. This requires some effort of imagination.

A designer is used to obtain his intended result by creating different prototypes until he reaches what was drawn 'on paper'. In the context of materials, it is very well defined which ones are suitable when and which ones have their limitations.

Since we are now facing a living material, it has its own say. In some cases, it will take on the desired texture, colour or suchlike, and sometimes it won't. So don't fixate on your design on paper.

Try also not to delineate the properties of mycelium since they all overlap with each other. Growing parts together or healing damaged parts is in fact the same regenerative process. Defining the properties of mycelium can provide clarity in the ideation process, but don't get too bogged down in it.

Embrace the share of mycelium in your design and in your result. Think like fungi. Adapt to your situation, range out widely in ideas, and branch back when necessary.



Think Like Fungi

Fungi are intelligent in the sense that they respond to their environment, they can remember the location of a food source and they're able to correspond with plants and other neighbouring on how to defend themselves against diseases. Fungi can learn, memorise, solve problems and make decisions. That's intelligence.



