

Professor Carole Collet



Strawberry Noir

Part of the Biolace series

Photography by Carole Collet

2012

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01 Why making / building with biology?

Natural ecosystems have evolved a co-operative model of existence where species co-exists as a means to sustain future generations. The human species is the only one that pollutes and threatens its own livelihood to a point of no return. Today, human activities are responsible for the 6th extinction of species in the history of the planet, and this biodiversity loss will have a dramatic impact on our future survival. It is therefore urgent to rethink our energy-hungry and polluting manufacturing systems and move towards natural biofabrication processes which are more respectful of their environment. In short, building with biology can lead us to better sustainable models of production.

02 How do we best make and build with biology?

First of all, by questioning what we want to build and why, but also by gaining a thorough understanding of the natural organisms we want to ‘build’ with. The best scenario is to create multidisciplinary teams of biologists and designers, which combine scientific biological knowledge together with design thinking tools. But if biofabrication is a positive step forward in terms of sustainability, we also need to address the mindset of overconsumption which remains a driver for current global economic models.

03 What could we or should we make with biology, what is the blue-sky scenario?

For me, the blue-sky scenario is one where we have managed to retro-engineer our polluting production systems with biological sustainable processes. Transitioning to a bioeconomy will allow many new design opportunities, and I am particularly interested in two different possible futures:

Bio-engineering smart responsive materials, such as a chameleon skin.

Revisiting traditional living craft and horticultural techniques to ‘grow’ products of our everyday.

04 How does making and building with biology change the design protocols – and how do we best learn and teach biodesign in art, architecture, design, craft as well as in biology courses?

Building with biology means working with living matter. Unlike a traditional factory, a biological cell can die. So biofacturing means learning to maintain living technologies and is by default closer to agricultural and horticultural models than to manufacturing. If designers are to conceive new materials and products to be grown, they need to understand how biofacturing works, and will need to be able to engage in informed conversations with biologists. Reuniting the teaching of science and the arts is more crucial than ever.

05 In your opinion, what questions should we ask / address about biodesign?

How can we ensure that more sustainable biofabrication models of production do not simply endorse the current over-consumption mindset?

How do we integrate thorough ethical principles into the biodesign curriculum?

What becomes of IP when working with the living?