

# BEYOND THE FOLLY

ecoLogicStudio: a nostalgia-free harvest





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We are so deeply in the so-called Anthropocene, with human action causing an overwhelming impact on climate and the environment, it's difficult to even fathom another way of thinking, being and designing. Drawing on advanced computing and harvesting intelligences from multiple species, ecoLogicStudio is pioneering a multispecies-centric redefinition of architecture and design. The London-based studio recasts purported problems in the environment as opportunities for interaction, opportunities that transcend modernist binaries of what is considered natural or artificial in our cities and attitudes. Co-founder Claudia Pasquero tells DAMN° why we can't clean nature, how biotic cities differ from smart cities, and what the biggest challenge of working with algae and spiders is.

TEXT NADINE BOTHA

Spirogyra by Synthetic Landscape Lab, Innsbruck University, Prof. Claudia Pasquero with Terezia Greskova, Maria Kupsova and Simon Posh



**DAMN°:** Yours and Marco Poletto's work spans a consortium that includes the professional practice ecoLogicStudio and then more academic initiatives in the Urban Morphogenesis Lab at The Bartlett School of Architecture, University College London, and the Synthetic Landscape Lab at Innsbruck University. How does it all come together in your distinctive methodology?



Claudia Pasquero  
Photo: Luka Lu Bošković

**Claudia Pasquero:** We have a hybrid background that spans drama school, engineering and architecture, and with ecoLogicStudio we have a deep interest in trying to understand how certain aspects of ecology and climate change can be reinterpreted through an aesthetic, ethical and scientific approach, and how these cannot be picked apart. Rather than the idea of 'fixing' or 'cleaning' the environment, we explore an urban ecology that is not based on control but as a paradigm of interaction. In order to do this, we need a tight relationship with academia, which is why we started working at the Architectural Association from 2006-2016 to investigate how the relationship between individual and multiple forms of intelligence can affect the city. We see the ecoLogicStudio practice, the Urban Morphogenesis Lab - where we research new materials, synthetic biology, reprogramming organisms and the affect this can have on materiality and interactions between multiple forms of intelligence - and the Synthetic Landscape Lab - a large-scale prototyping facility - as multiple nuclei that each retain their identity and individuality while working together on projects.



Anthropocene Island  
Satellite view, summer, Ground, urban bio-digestive terrain (3x3km @1m/res), 2017  
Courtesy of ecoLogicStudio

**DAMN°:** Most of the world's environmental efforts seem in complete denial of your strikingly candid, and difficult to dispute, perspective that we can't 'clean' nature to go back to a nostalgic pre-climate change past. It is difficult to envisage an unknown alternative, however. How did you do this with Anthropocene Island at the Tallinn Architecture Biennale, which you curated in 2017?

**CP:** What we propose is to develop a mode of interacting with change - for instance, instead of removing the CO2 in the air, what are the opportunities that are emerging from a surplus? One is that algae is blooming in many of our water bodies, so ecoLogicStudio asks how this can be seen as a non-human intelligence that can be interfaced with human intelligence. In Anthropocene Island, we worked on a specific site where there was a wastewater treatment plant on one side, and a protected ornithological park on the other. From the human perspective, a fence separates the two. From the non-human perspective of the bacteria or birds, for instance, there is no separation - the bacteria from the waste plant effects the water of the Baltic Sea, and the birds end up getting warmer and purer water from the waste plant itself instead of the sea. Using the water content

and bird movement as data, we redesigned the site as a hybrid for water purification, birds nesting and human inhabitation, who would eventually be able to utilise the energy produced by the bacteria.

**DAMN°:** You are now developing the project into a blue-green master plan for Tallinn, and have also been invited by the UN to work on a similar project across five cities. What does this entail and how is it a counterpoint to the other drive for so-called 'smart cities'?

**CP:** Traditionally, in this type of master plan a green corridor is individuated, but we propose a data-informed branching model of biotic infrastructure that can connect abiotic (like buildings and man-made infrastructure) and biotic (like microalgae, bacteria, trees, and other types of biomes) systems in the city. Although I don't like the name 'smart city' per se, it is an interesting infrastructure that works with distributed data harvested from human intelligence. Our proposal is to also work with non-human intelligence. The challenges of the Anthropocene age have highlighted that an entirely human-centric city is unsustainable; we need to collaborate with other organisms that communicate intelligence through their data patterns.



Anthropocene Island  
Sludge of waste material from the wastewater treatment plant, 2017  
Courtesy of ecoLogicStudio.



Anthropocene Island  
Microscopic view of Paljassaare's algae, 2017  
Courtesy of Estonian Academy of Arts, bio-computational seminar



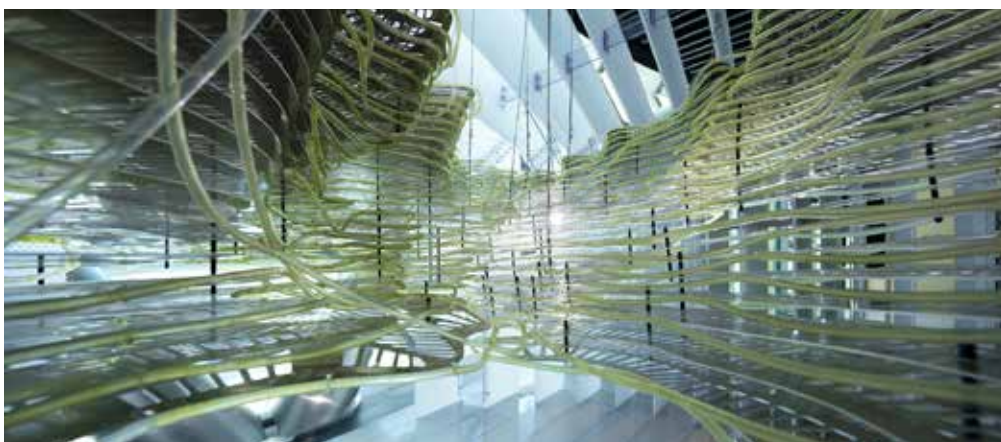
Urban Algae Folly, Aarhus  
Photo: ©NAARO



Urban Algae Folly, Aarhus  
Photo: ©NAARO

**DAMN°:** This is a radically different function for architecture as a historically human-centric discipline, as well as for how humans understand our own and other species' intelligences. Is this why it was important for Urban Algae Folly – the world's first algae canopy, shown in Milan and Praça da República, Braga, in 2015 – to have public participation?

**CP:** Urban Algae Folly was dealing with a new vision for public space in particular, which required that we rethink public participation. Traditionally public participation is very human centric, and based mainly on questions and intelligible information. Instead, we asked ourselves how the architectural system and material participation could expose processes, enabling public creativity rather than participation. The algae's photosynthesis is affected by weather patterns and visitor movement, [growing and creating] more or less shading accordingly. This means that visitors can experience and read the pattern of the process, developing a creative idea of what they can do with algae and what can come out of the system.



BIOTech HUT  
Photo: ©NAARO

**DAMN°:** Although you talk about multiple intelligences besides human, why is it that most of your work is about algae?

**CP:** There are different reasons. Some are coincidental – there is a lot of interest at the moment but when we started working with microalgae in 2006 it was impossible to harvest locally for architecture because, besides a few biologists researching them, everybody considered it a problem to be eradicated. Now that there is more interest in microalgae, it makes it much easier to integrate working prototypes in the built environment. This gives us the opportunity to expand our algae research into two key strands: firstly, scaling up systems to develop entire building facades – like the new Photo.Synth.Etica urban curtain that covers two storeys of the Printworks building at Dublin Castle. And secondly, improving the medium on which we grow algae. For this we are working on a biogel that is lighter than water and can be 3D printed. For now we can 3D-print a substratum with inoculated biogel, as can be seen in the most recent H.O.R.T.U.S. XL Astaxanthin.g installation, currently showing at the Centre Pompidou. There are still cultural limitations however, for instance, modernity’s clean white surface aesthetic that can be traced back to the urban segregation of our infrastructural systems. There was a hygienic reason for this, but it also created a disconnection between what we see and what we can understand, and a sanitised view of the city and nature.

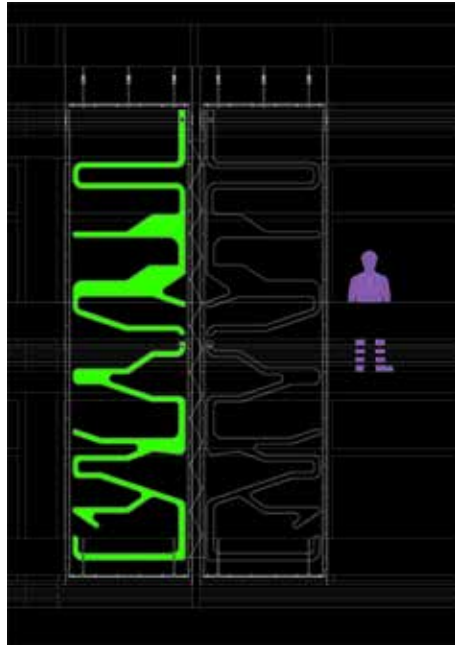


Photo.Synth.Etica, photobioreactor  
Image: © ecologicStudio

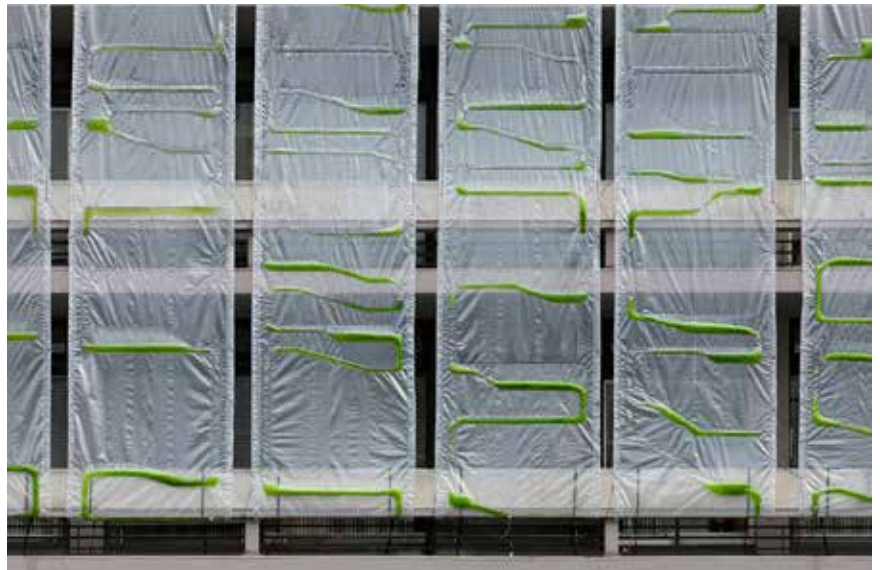
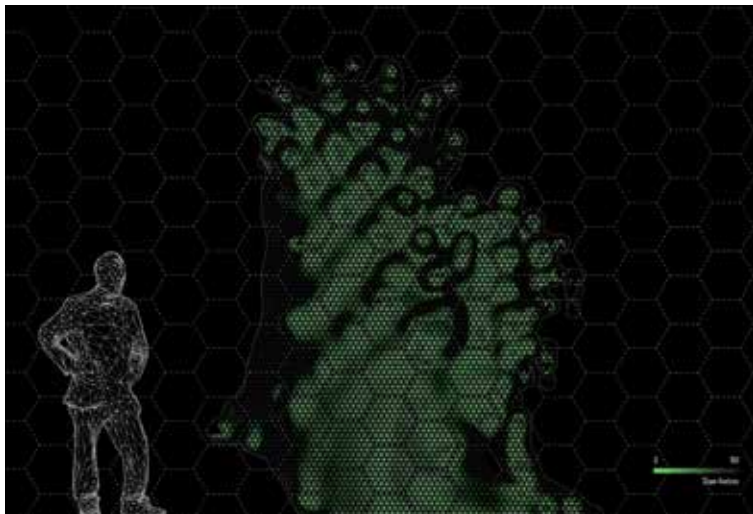


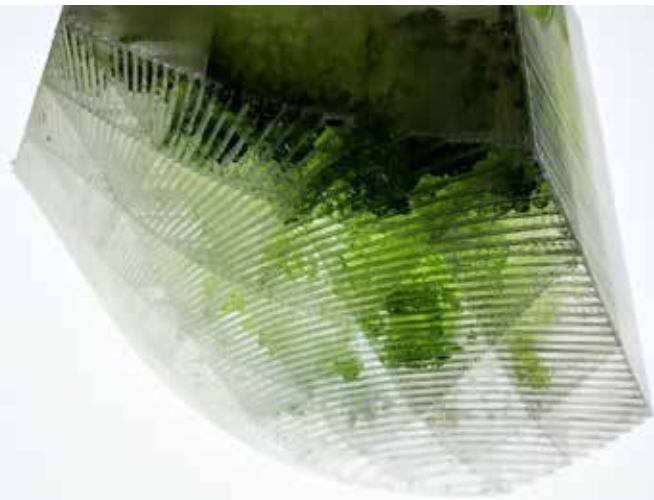
Photo.Synth.Etica  
Bio-digital urban curtain  
Photo: ©NAARO



Claudia Pasquero and Marco Poletto working on their Photo.Synth.Etica  
Photo: ©NAARO



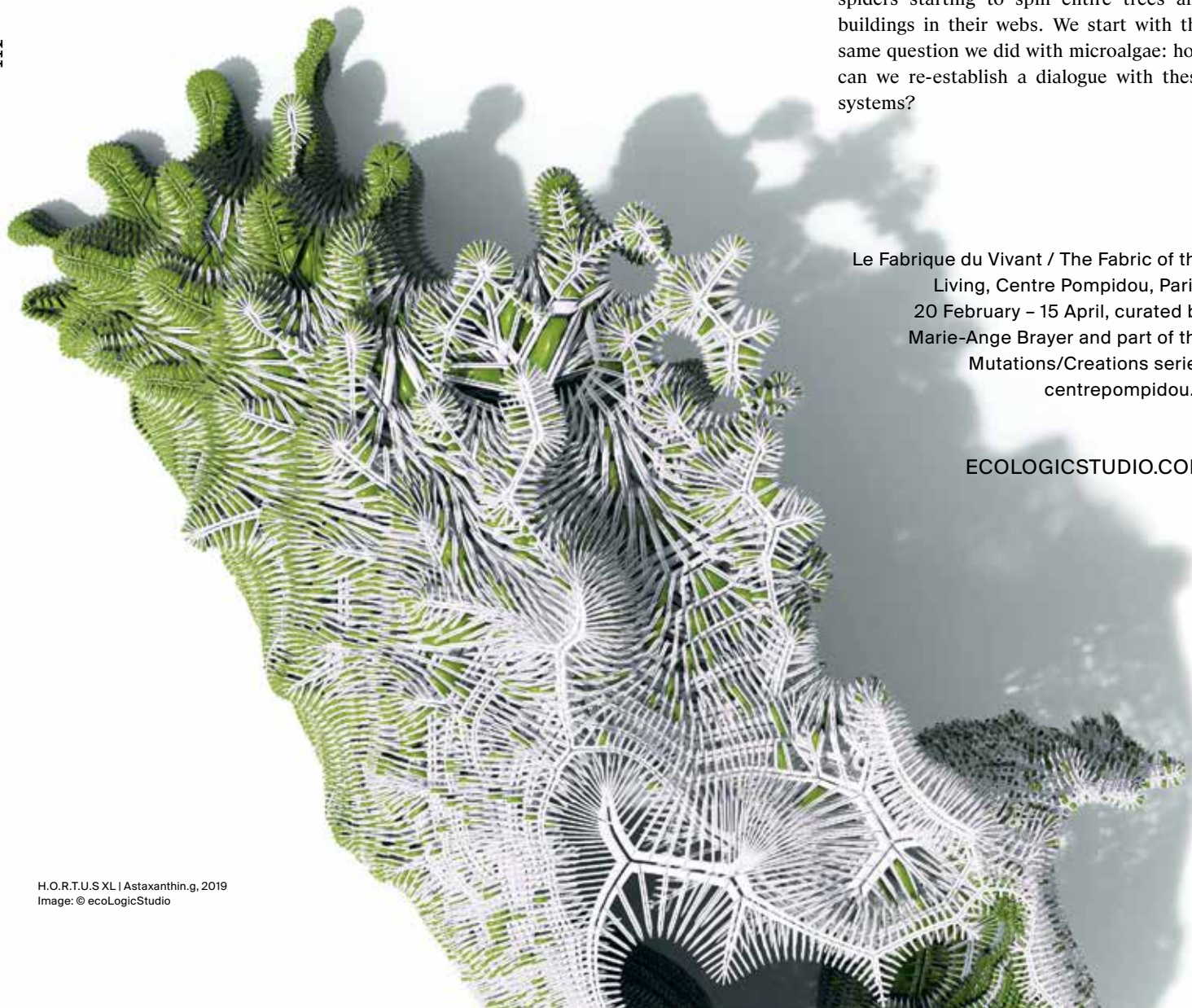
H.O.R.T.U.S.XL | Astaxanthin.g, 2019  
Images: © ecoLogicStudio



**DAMN°:** It's still a big cultural shift since 2006, and if they can shift about algae they can shift about other organisms and preconceptions about nature. Also at the Centre Pompidou, you are showing a first prototype (XenoDerma) of your new research direction into spiders. What is your interest in spiders?

**CP:** Spider silk is, in comparative density, stronger than materials such as Kevlar and stainless steel, and is biocompatible to humans, meaning that it could be used to print parts of a human body. At the Urban Morphogenesis Lab, we are researching how the protein can be reprogrammed or synthetically modified into a bioplastic that can be integrated into 3D-printed architectural systems. In recent years, as a consequence of climate change and flooding, we've seen spiders starting to spin entire trees and buildings in their webs. We start with the same question we did with microalgae: how can we re-establish a dialogue with these systems?

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Le Fabrique du Vivant / The Fabric of the Living, Centre Pompidou, Paris, 20 February – 15 April, curated by Marie-Ange Brayer and part of the Mutations/Creations series [centrepompidou.fr](http://centrepompidou.fr)

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