Urban Algae Canopy

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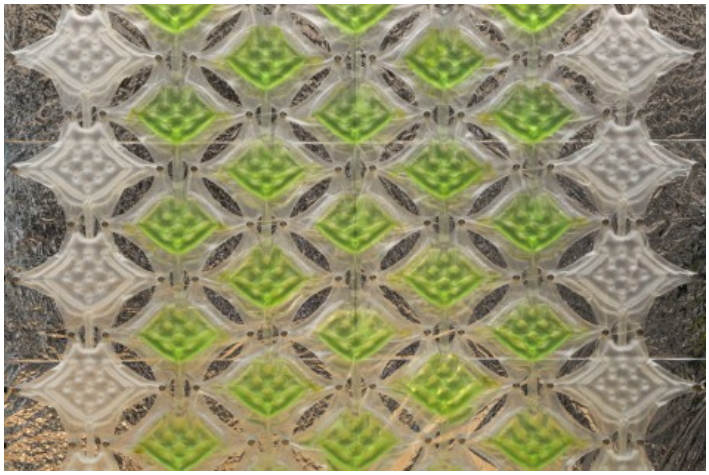
The Urban Algae Canopy – based on ecoLogicStudio's 'HORTUS' system, is presented here with a 1:1 scale prototype of the world's first bio-digital canopy integrating micro-algal cultures and real time digital cultivation protocols on a unique architectural system.

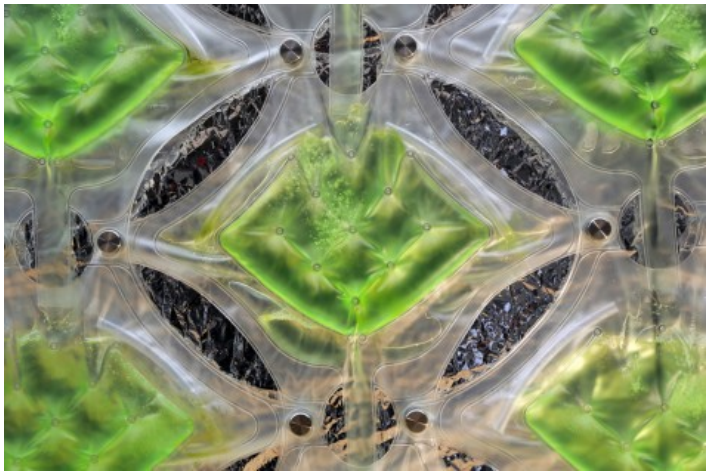
The potential of micro-algae have been integrated within a custom designed four-layered ETFE cladding system, whilst the flows of energy, water and CO2 are controlled and regulated in real-time and made to respond and adjust to weather patterns and visitors' movements.

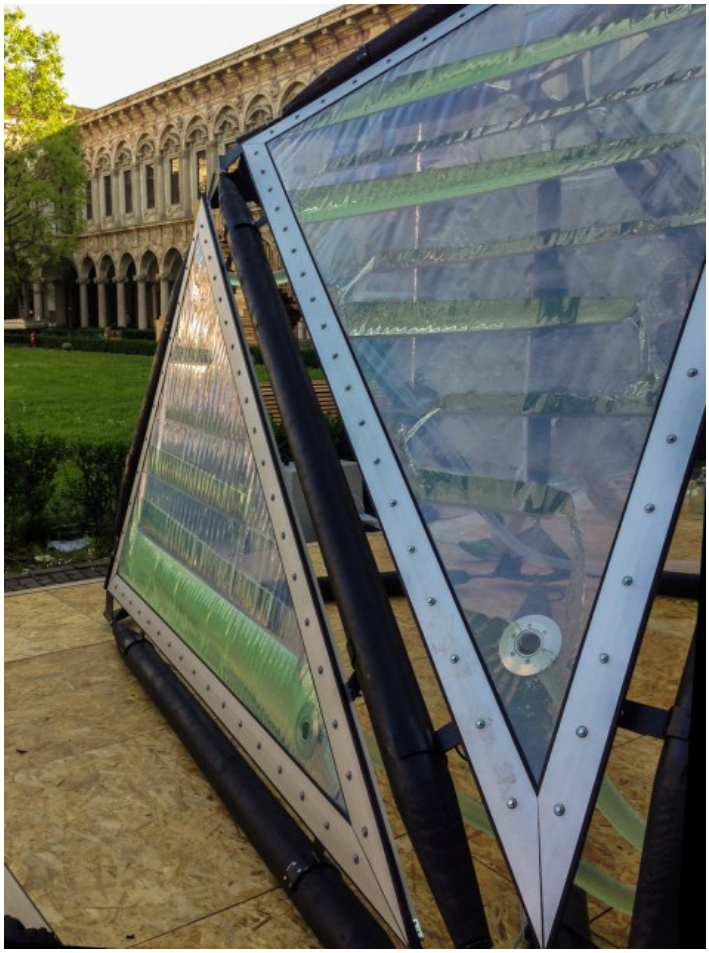
Once completed, as part of the EXPO Milano 2015 Future Food District, this special edition of the Urban Algae Canopy will produce the equivalent amount of oxygen as four hectares of woodland, and up to 150kg of biomass per day – 60% of which are natural vegetal proteins.

The Urban Algae Façade – based on Cesare Griffa's 'WaterLilly 2.0' system – is the prototype of a micro-algae façade, being developed in a special edition for EXPO Milano 2015. 'WaterLilly 2.0' is a project for a micro-algae vertical farm to be implemented as an architectural skin.

The intention here is that, integrated into the green system of the cities, micro-algae can help in absorbing carbon dioxide and producing oxygen, while acting as a second skin of buildings, boosting passive cooling and increasing shading of the façade.







Urban Algae Canopy prototype by ecoLogicStudio (Marco Poletto & Claudia Pasquero) & Carlo Ratti Associati; prototyping team -Taiyo Europe GmbH, Sullalbero Srl; consulting team – Nick Puckett, Paolo Scoglio, Catherine Legrand, Mario Tredici; lighting by: iGuzzini

Urban Algae Façade prototype by Cesare Griffa and Carlo Ratti Associati; prototyping team – Matteo Amela, Federico Borello, Marco Caprani; technical support by Environment Park Spa, Fotosintetica & Microbiologica Srl; lighting by iGuzzini

Photography: Filippo Ferraris.

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