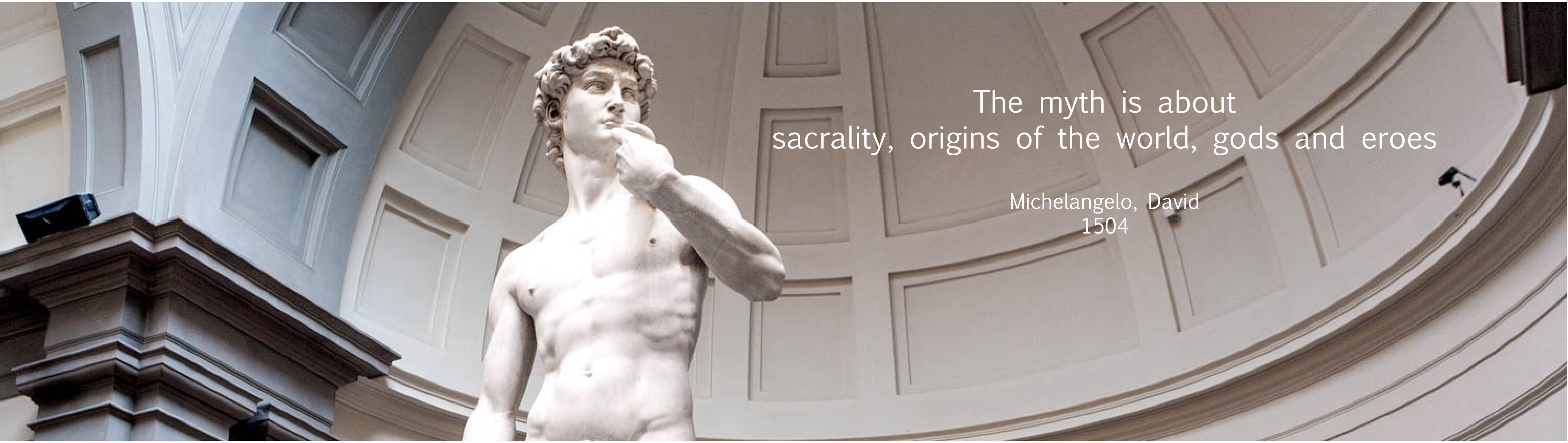
cesare griffa

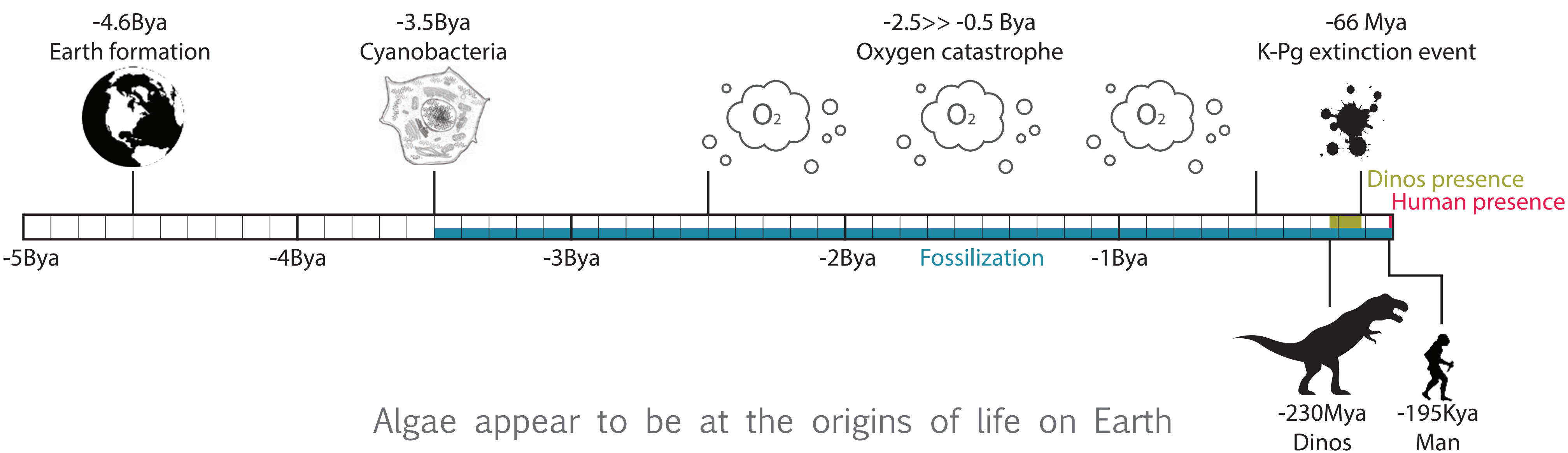
Alghe e architettura tra mitologia e realtà

17.01.27

AQUAFARM

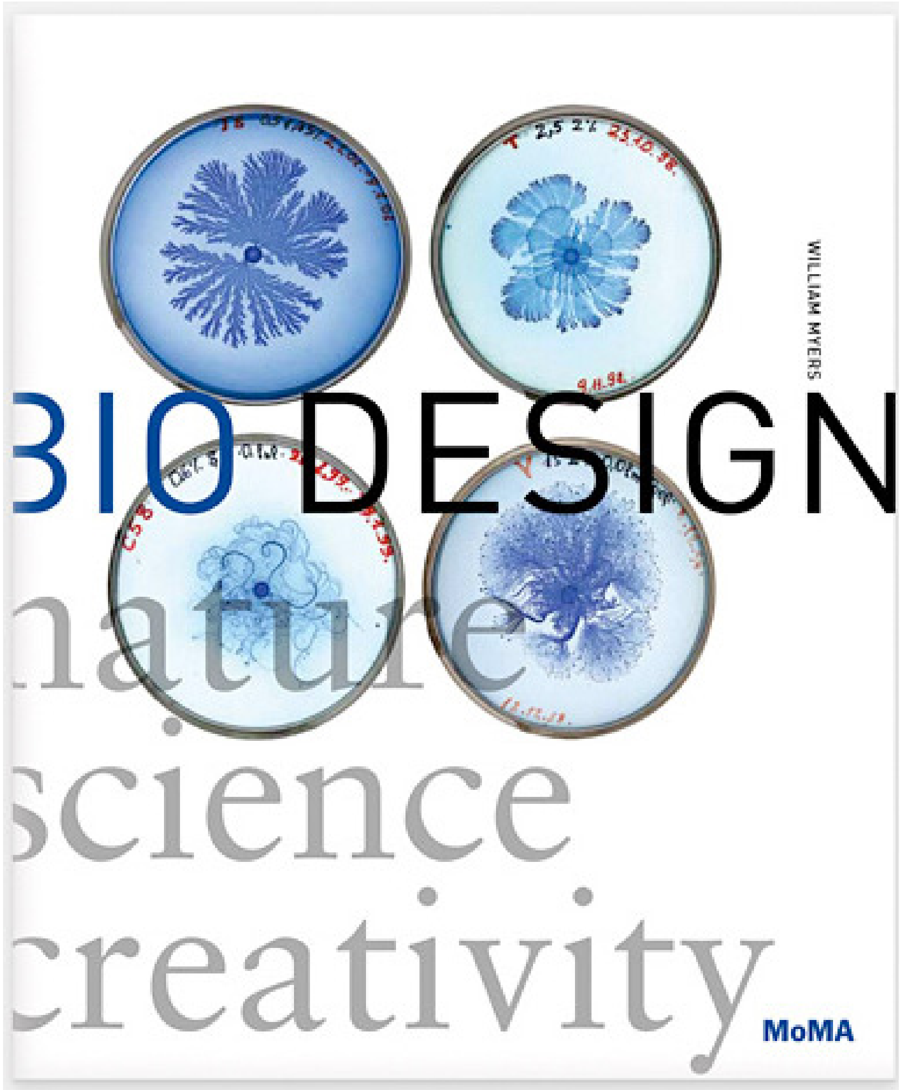
1. The myth of algal architecture





Algae appear to be at the origins of life on Earth

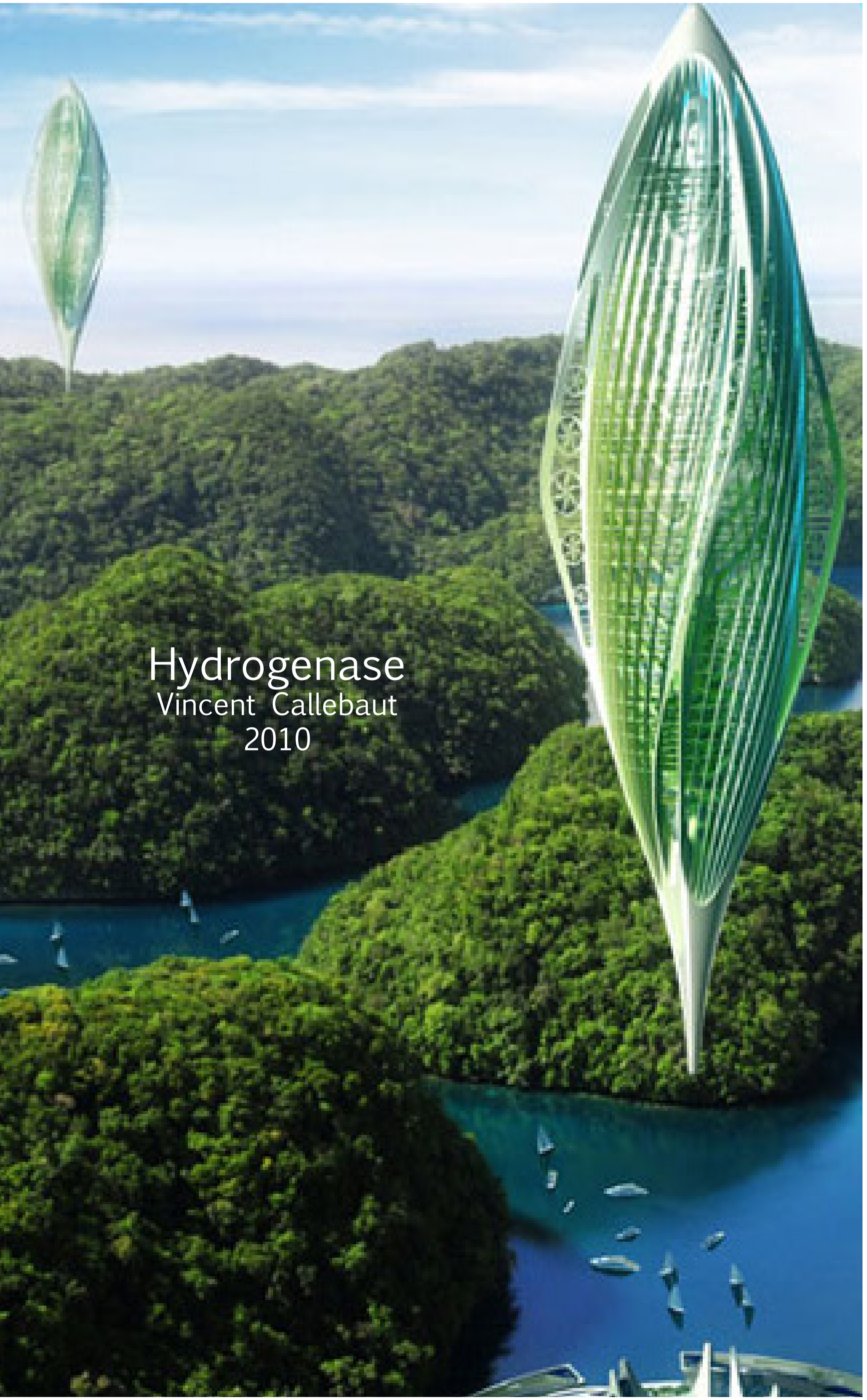
The Myth of cleanliness
Roland Barthes, Mythologies, 1957



The Myth of Bacteria
MoMA, Biodesign, 2012


Local River
Mathieu Lehanneur
2008

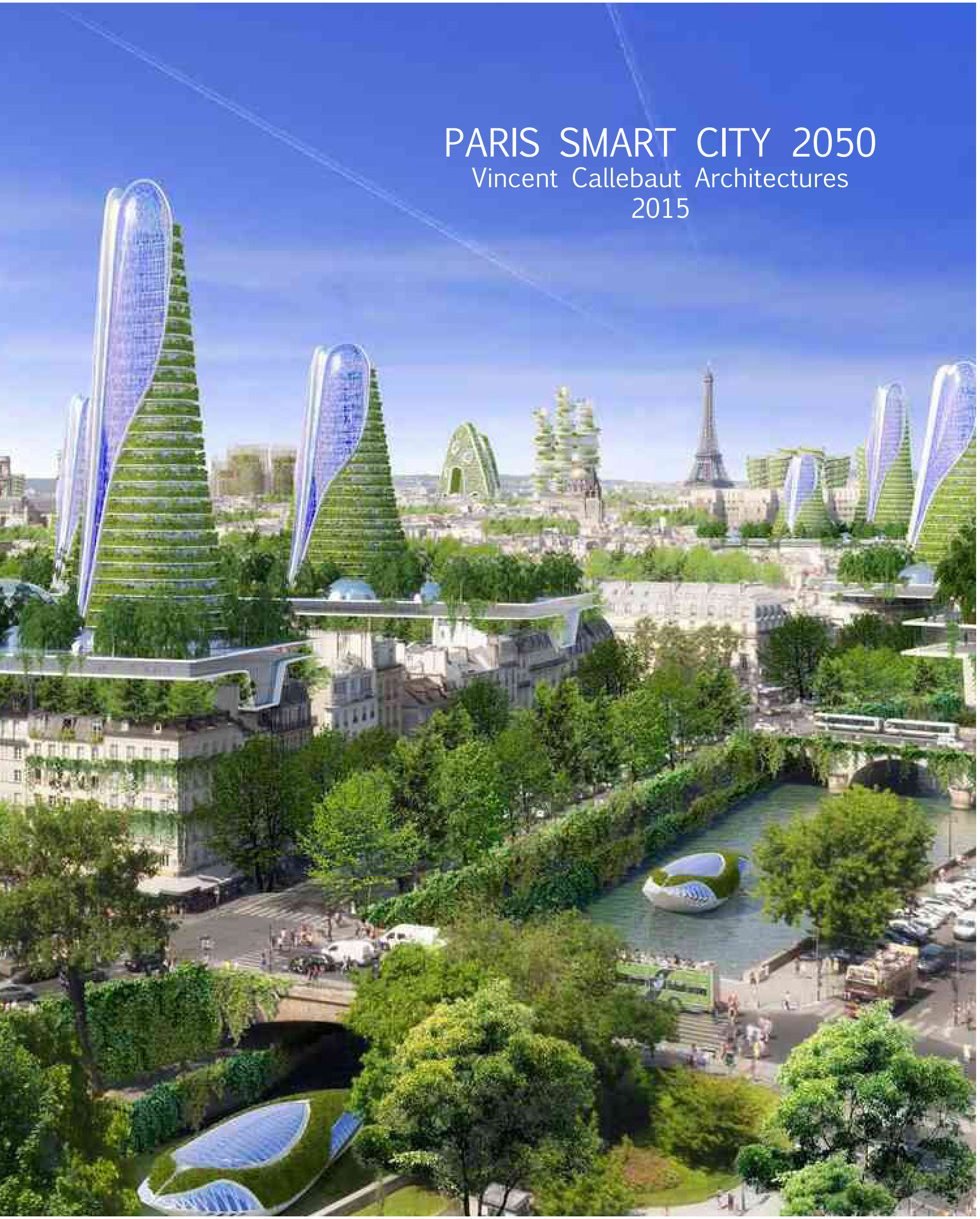

Algae Curtain
Loop.ph
2012


Hydrogenase
Vincent Callebaut
2010

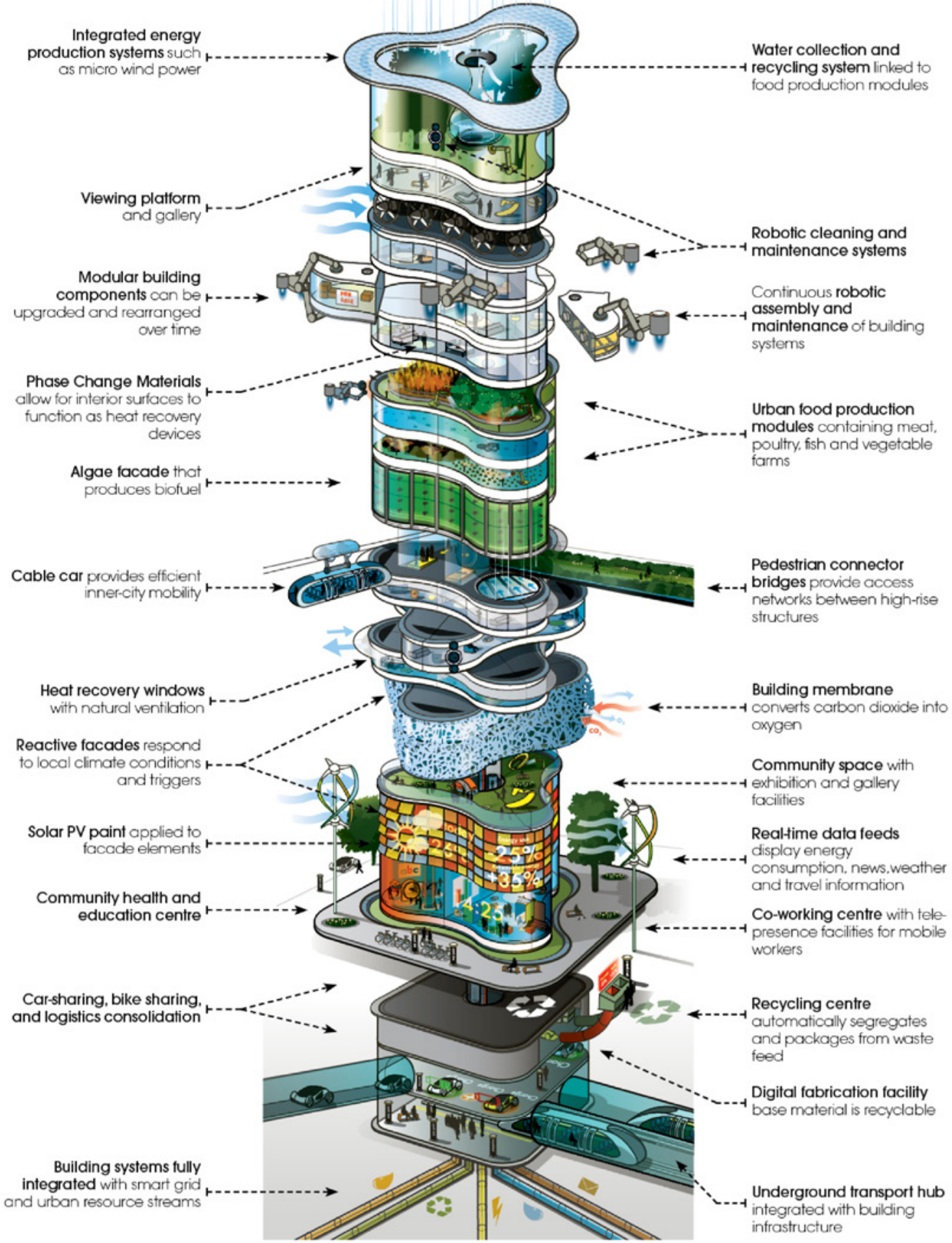

algaeBRA
EcoLogicStudio
2011


FSMA Tower London
Dave-Edwards
2012


Process zero
GSA Federal Building L.A.
Hok/Vanderweil, Sean Quinn
2012



It's Alive
ARUP
2013



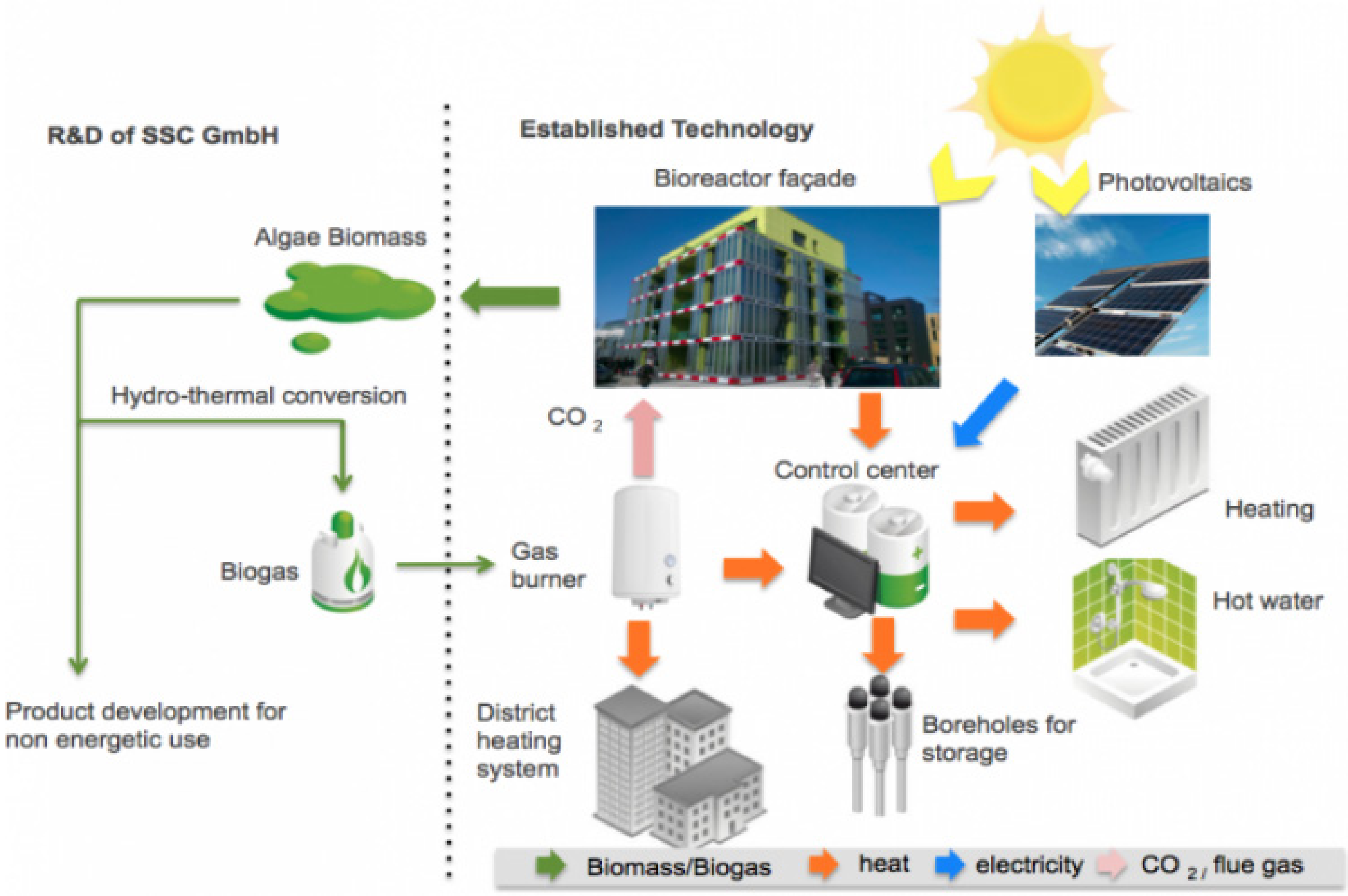

WaterLilly 1.1
Cesare Griffa
2012
you triggered a
biomass increase


Sammy P.
IED
2016

2. Real algal architecture

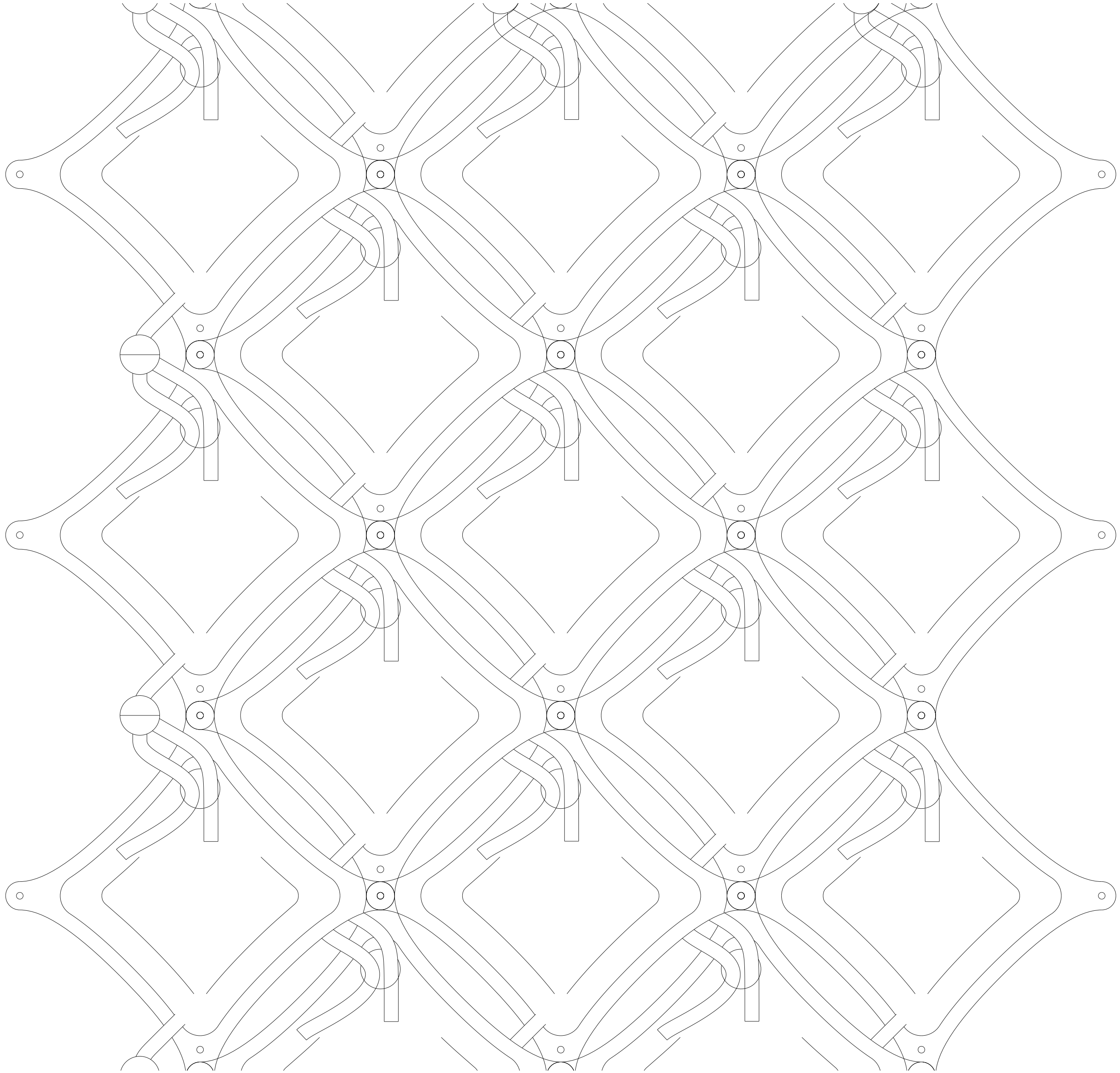

BIQ House Hamburg
Arup + Splittewerk Architects
2013

BIQ House Hamburg
Arup + Splittewerk Architects
2013

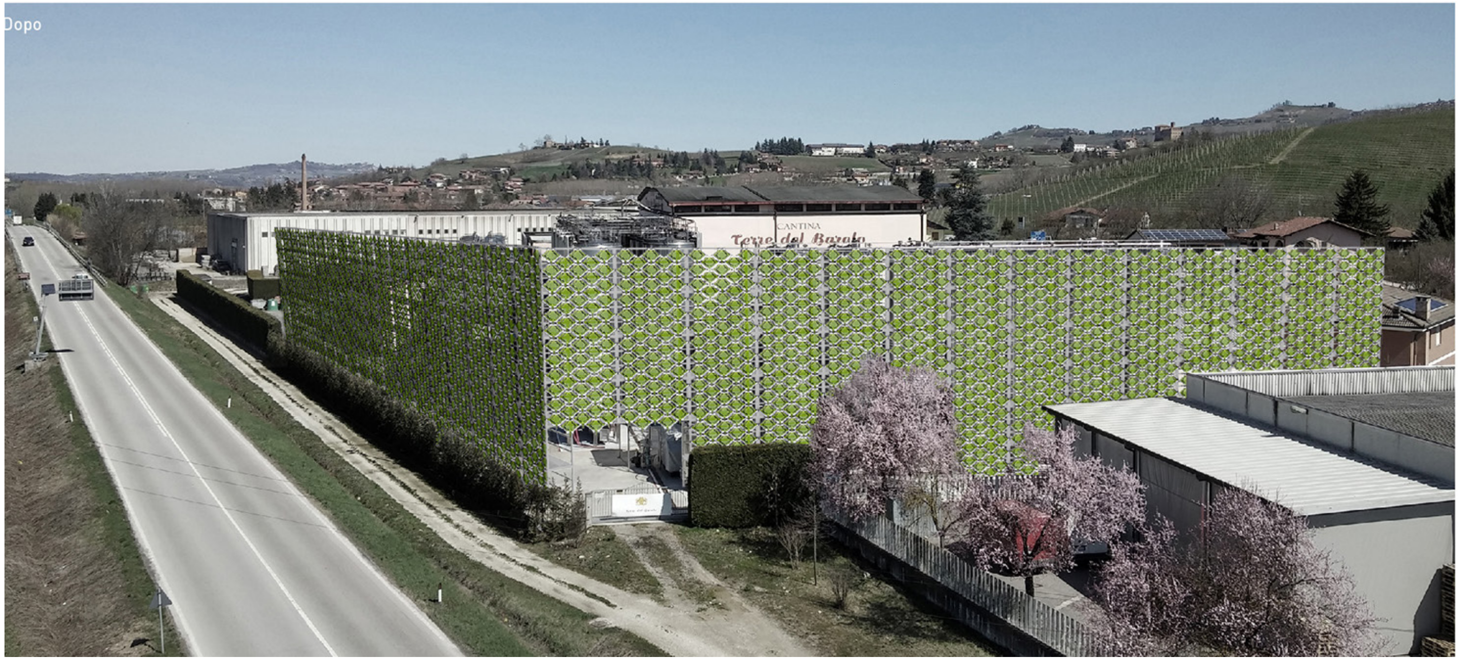


WaterLilly 2.0
Cesare Griffa
2014

WaterLilly 2.0
Cesare Griffa
2014



WaterLilly 2.0
Cesare Griffa
2014



Bioskin

Cesare Griffa

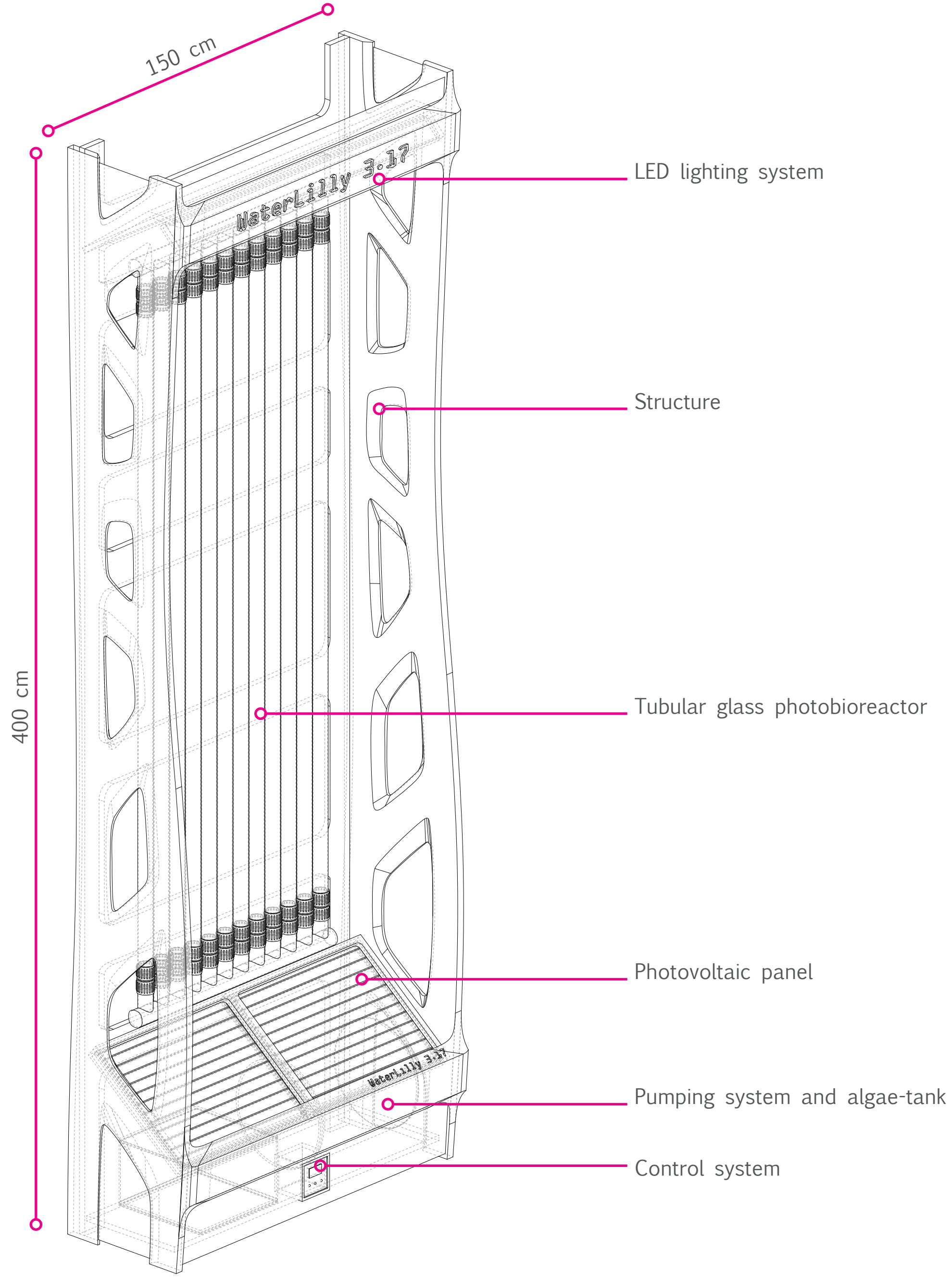
2015

Bioskin
Cesare Griffa
2014

Productivity and Profitability Scenarios

Biomass productivity:	0.5 g/l/day
Prodution days:	300days/year
Photoactive facade vol:	35 l/sqm
Facade productivity:	5.25 kg/sqm/year
Spirulina selling price:	50-100 EU/kg (reseller) 100-300 (retail)
O&M cost:	15 EU/kg (cultivation+harvetsing) 15 EU/kg (product packaging)+
Profitability:	35-270 EU/kg 183.75-607 EU/sqm
Construction costs:	1,000-2,000EU/sqm
Payback time:	1.6 years (best scenario) 10 years (worst scenario)

WaterLilly 3.17
Cesare Griffa
2017



Components

Structure
Tubular PBR
Pumping system, degasser, etc.
Temperature control system.
Automated harvesting system
Lighting system
Photovoltaic panels and inverter

WaterLilly 3.17
Cesare Griffa
2017

“These products have been in the last few years the object of
such massive advertising
that they now belong to a region of French daily life
which the various types of psycho-analysis would do well to
pay some attention to”
(Roland Barthes)