



Producing the care of tomorrow on buildings

06/24/2021

# XTU : THE GREEN CITY LABORATORY

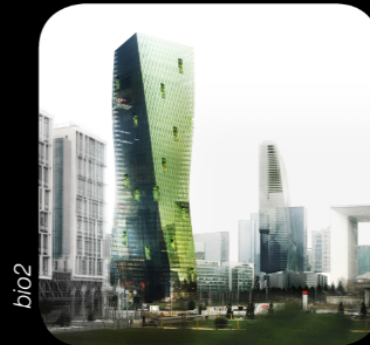


XTU

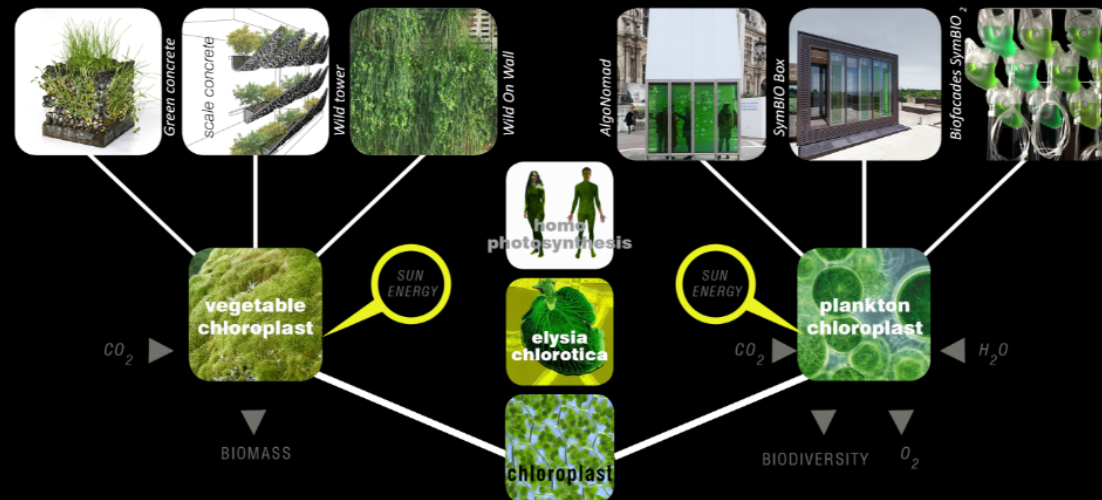
# LAB\_X : GREEN SOLUTIONS LABORATORY FOR SUSTAINABLE CITIES



vegetales facades

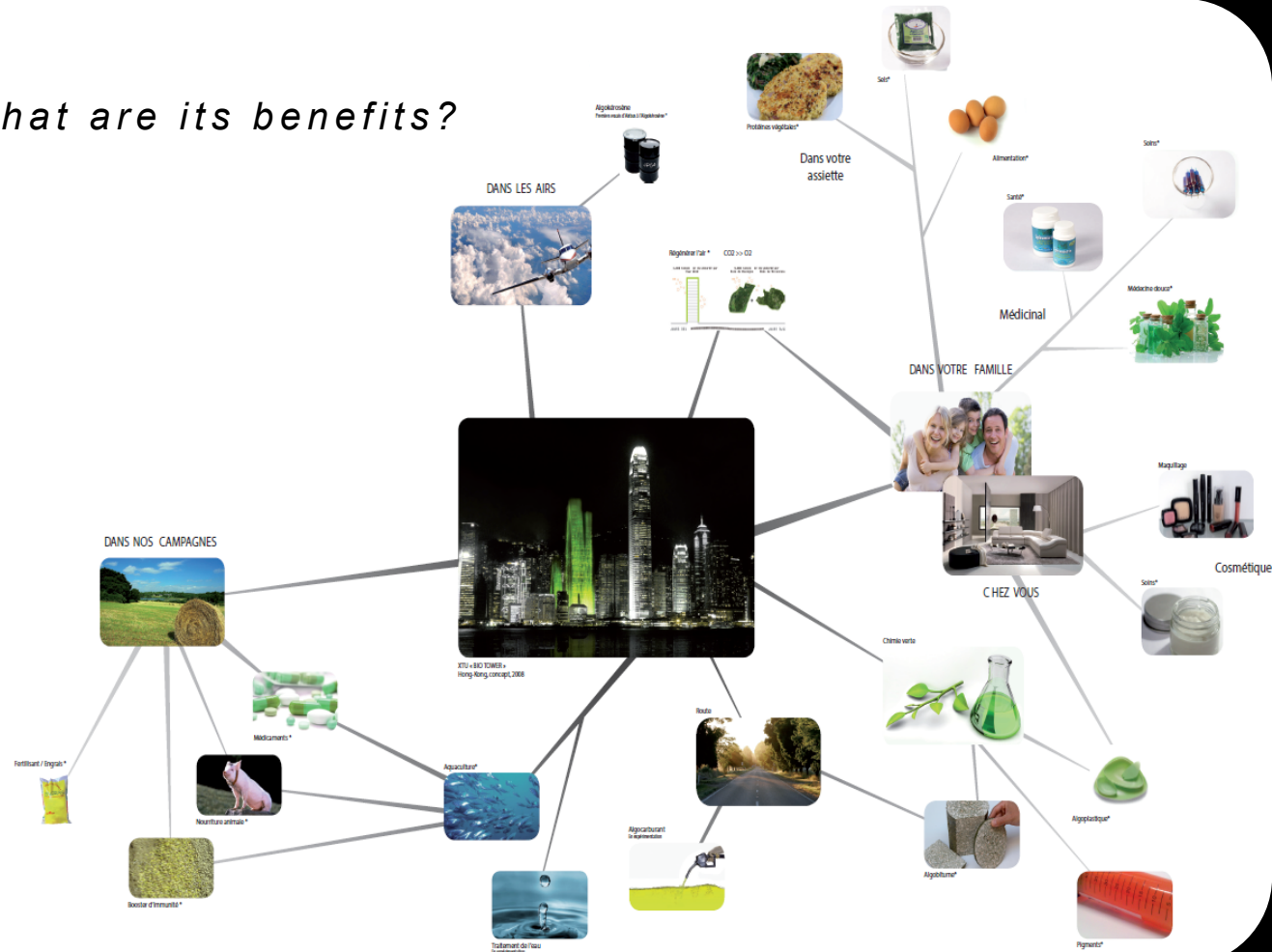


algae biofacades



# WHY MICROALGAE?

*What are its benefits?*





# A BIOINSPIRED MODEL

*Elysia chlorotica*

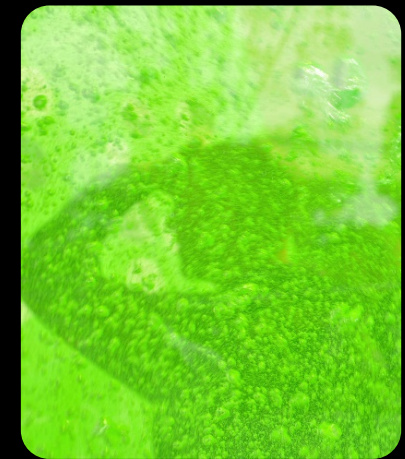
- > food symbiosis with a microalgae
- > photosynthetic units transfer



# EMERGENCE OF A BREAKTHROUGH TECHNOLOGY ...

## Biofacade

- > a symbiosis between the building and a microalgae productive unit
- > 3rd generation solar panel
- > carbon sink



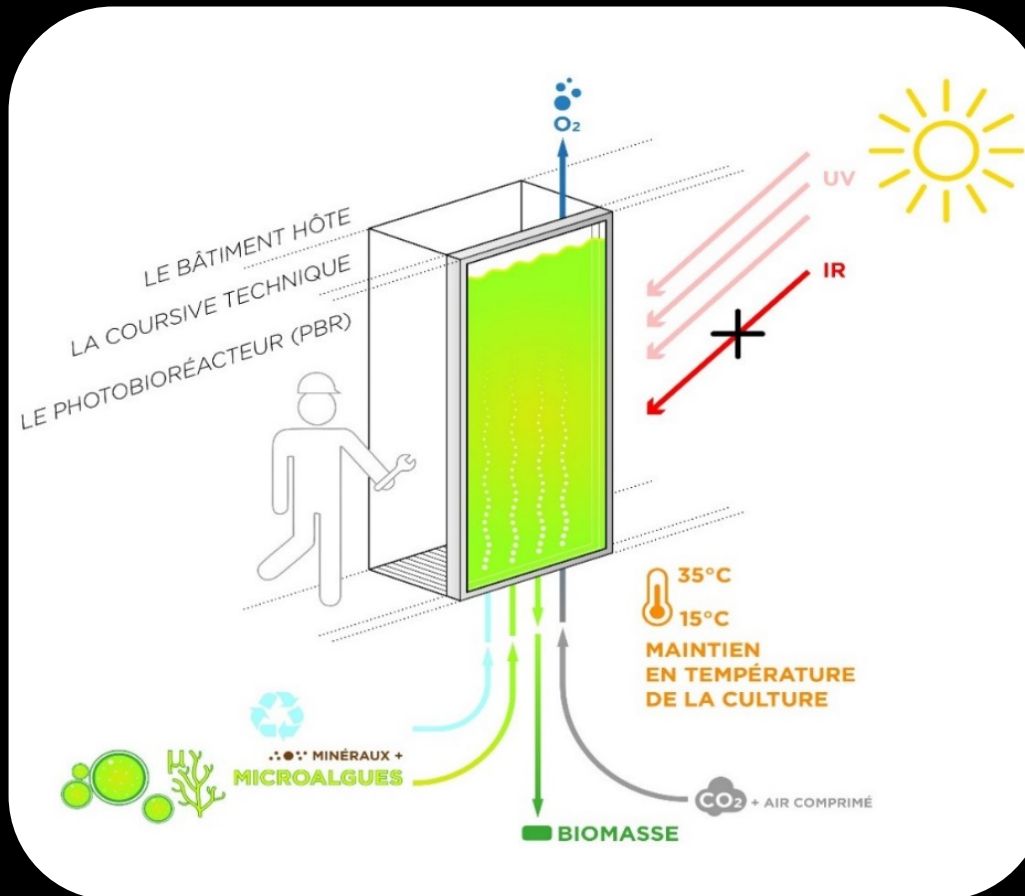
- > Space saving: vertical culture
- > short circuit
- > local and urban algoculture

# ...WHICH MUTUALIZES THE EXTERNALITIES OF THE BUILDING-CULTURE OF MICROALGAE

## Biofacade

> valuation of thermal externalities of microalgae cultivation units

> valuation of thermal externalities of buildings

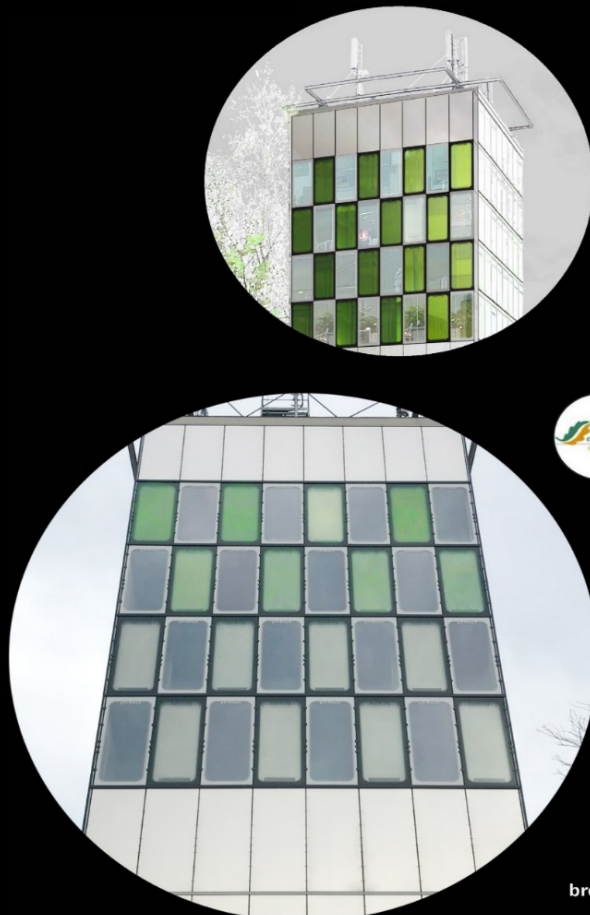


> 33% saving for heating hot waters

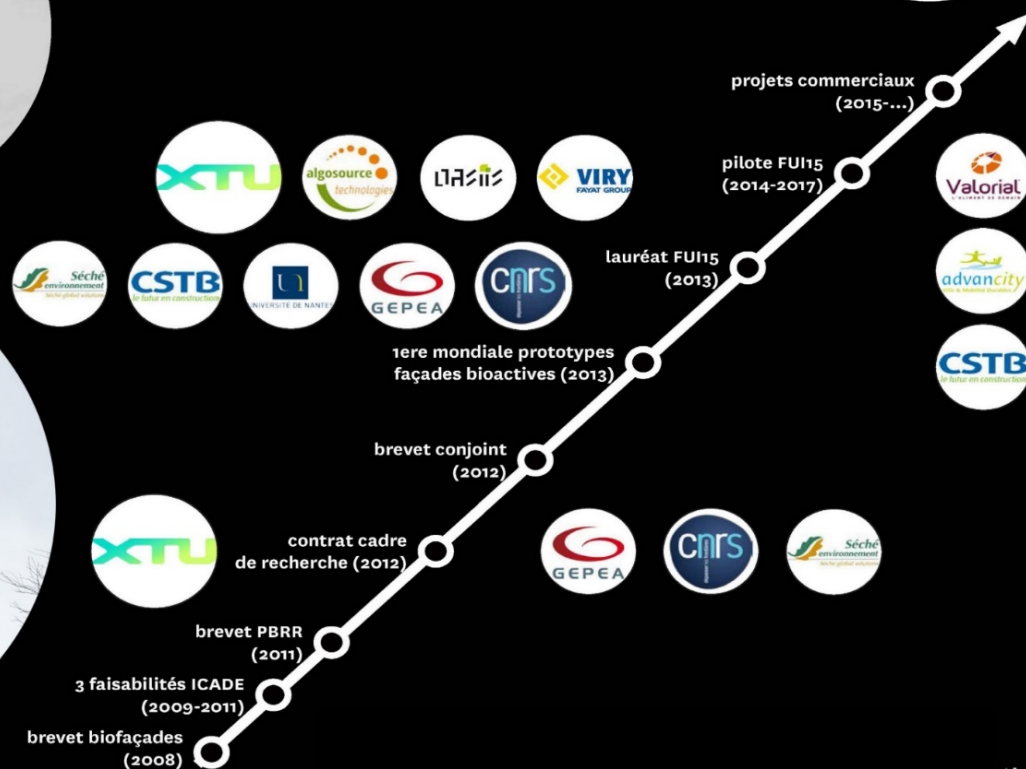
> 75 to 90 % water saving compare to raceway cultivation

# A PROGRAM MANAGED BY MANY EXPERTS

*des façades à microalgues  
une technologie de rupture*

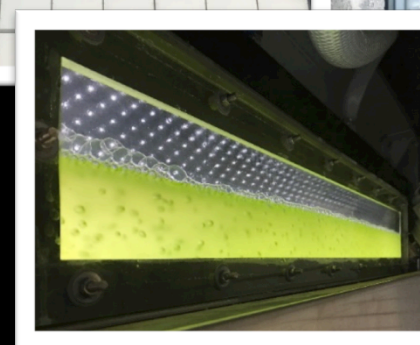
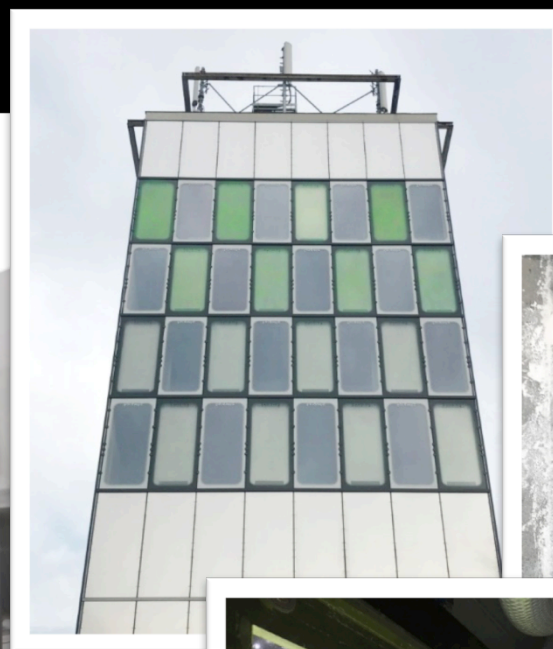


reinventer.paris





# TECHNOLOGY PROVEN BY MANY FUNCTIONAL PROTOTYPES



XTU

# THE FIRST BUILDING WITH A BIOFACADE IN PARIS

## AlgoHouse

- > first biofacade worldwide
- > showcase of environmental programming
- > delivery 2023
- > 273 m<sup>2</sup> of vertical biofacade
- > 160 m<sup>2</sup> of raceways onto the roof
- > underground laboratory for culture valuation
- > production of 750 kg of DBM / year



# UNE SOCIÉTÉ D'EXPLOITATION POUR VALORISER LA BIOMASSE

ParisBloom

- > urban algoculture
- > architectural expertise of XTU
- > thermal expertise of Oasiis
- > microalgae production expertise of Algosource
- > scientific support of GEPEA (CNRS)

PARIS  
BLOOM

XTU

OASIIS  
OASIIS EXPERT EN PERFORMANCE  
ENVIRONNEMENTALE

algosource  
technologies

XTU



# BIOFACADES AT THE SERVICE OF HUMAN NEEDS

## Urban algoculture

- > food : super food production
- > cosmetics : production of bio-based active ingredients
- > health : production of bio-based active ingredients for drugs





# AN AMBITIOUS BUSINESS MODEL

## Cosmetics

- > production of bio-based active ingredients
- > R&D program in partnership with a cosmetics company



# R&D METHODOLOGY SUPERVISED BY XTU

## Project settings

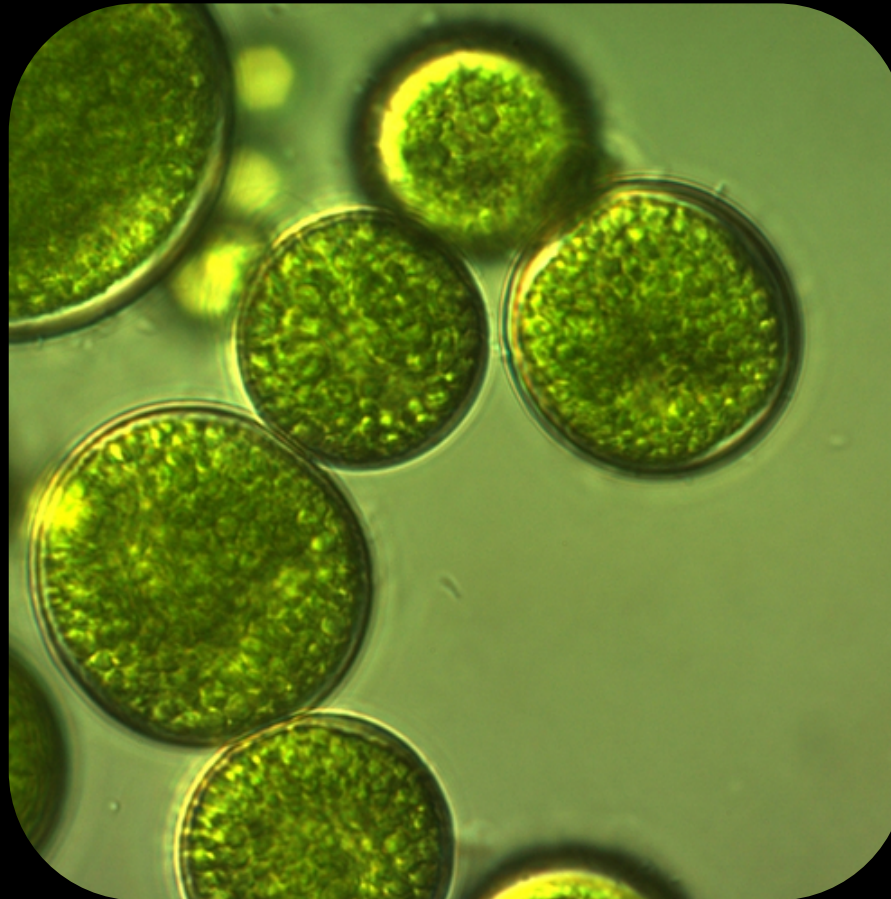
- > identify HAV molecules and strains of interest

## Development

- > production
- > extraction
- > cosmetic formulation

## Deployment

- > product integration into the ParisBloom product portfolio





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