

CREO

COMPUTATIONAL GROWTH™



Nature, Indoors, Autonomously™

Tenants are prioritizing well being and healthy living. Indoor plants are one of the most popular solutions.

The buildings of the future seamlessly incorporate nature to increase appeal and value to tenants.

More buildings seek Green Certifications because of:

- Higher perceived property value
- Higher sales prices
- Higher rental prices
- Tenants stay longer



But current solutions for indoor growing are expensive, hard to maintain, and lack design flexibility



Living Walls



Potted Plants



Long installation time



Significant costs:

- Initial Capital Cost
- Maintenance Cost



Lack of design flexibility & monocultures

=

Overall Higher Costs
+
Limited "Wow"
factor to attract
tenants

BioBulb™ TECHNOLOGY | An all-in-one Autonomous Solution

CR
EO

Delivering a premium and elegantly designed indoor plant experience. Powered by technology.

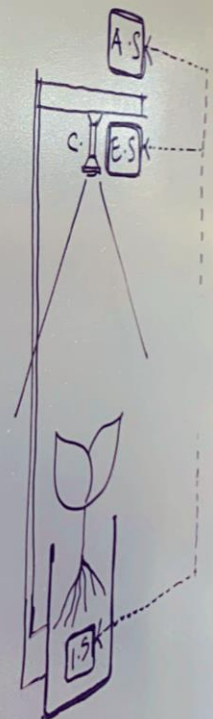
BioBulb™ compared to leading living wall vendors:

- 1) Lower installation costs**
- 2) Shorter installation times**
- 3) Lower maintenance costs**
- 4) A polyculture experience previously impossible**
- 5) Maximum flexibility and design integration**
- 6) Expandable, and reusable**
- 7) Hassle-free and autonomous maintenance**

BioBulb™ Technology, a Plug and Play System

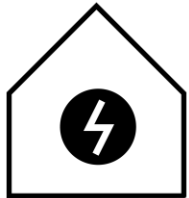
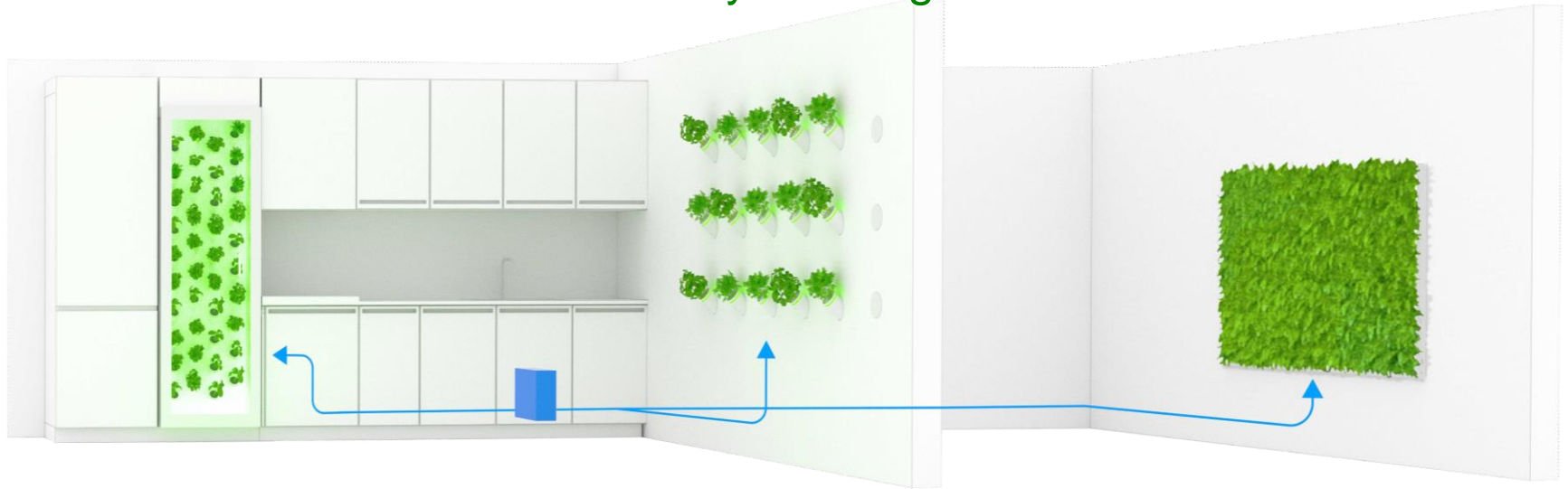


Plug BioBulb™ Chip on a Wall and Grow Plants

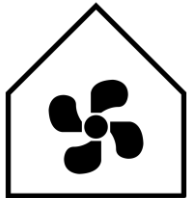


BioBulb™ TECHNOLOGY | A BioNetwork of Integrated Nature

A Solution for the Future of Healthy Buildings



**Electrical/Energy
Systems**



HVAC & Mechanical



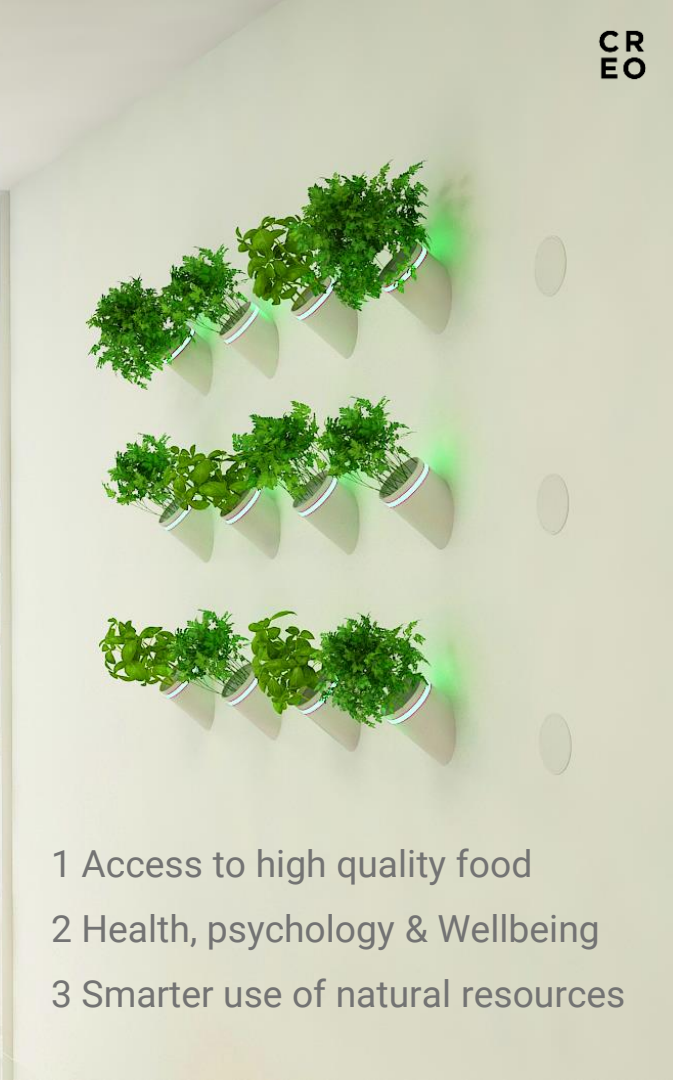
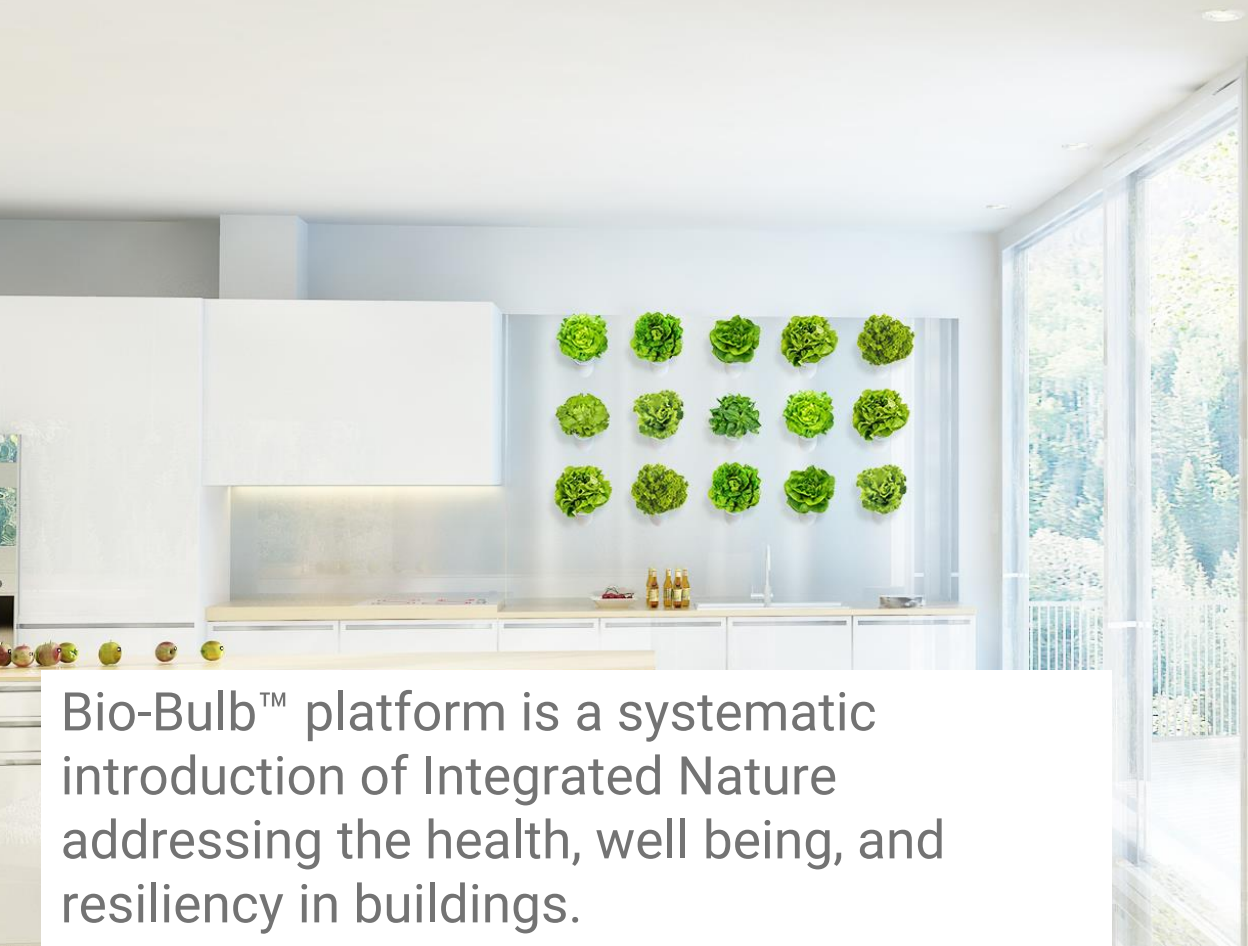
Integrated Nature

We learn from nature

Create an index of growth

Then we replicate nature in buildings.

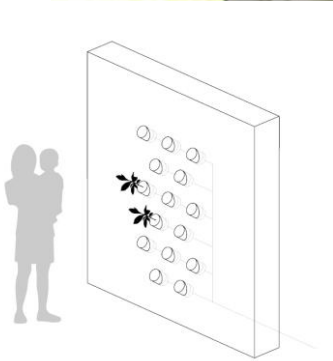
BUILDING TECHNOLOGY | Integrated Nature



Bio-Bulb™ platform is a systematic introduction of Integrated Nature addressing the health, well being, and resiliency in buildings.

- 1 Access to high quality food
- 2 Health, psychology & Wellbeing
- 3 Smarter use of natural resources

BUILDING INTEGRATION | As easy as a Light-Bulb
Wall-Mount BioBulb™ can be easily integrated into existing buildings or
new construction, hassle-free



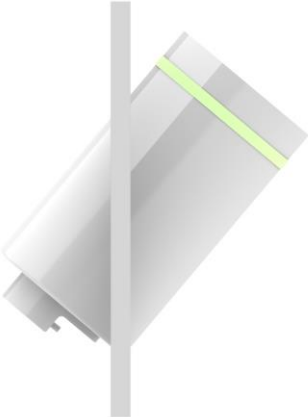
The Bio-bulb growing units are housed in beautifully designed shells and integrated into the overall interior design scheme

DATA-DRIVEN SOLUTION | Presicion Per-Plant Interface System

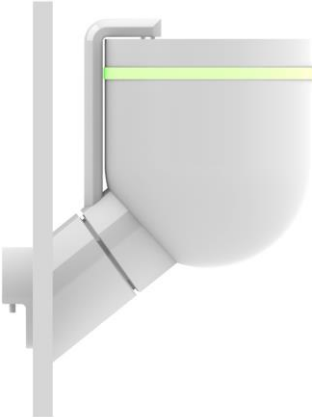




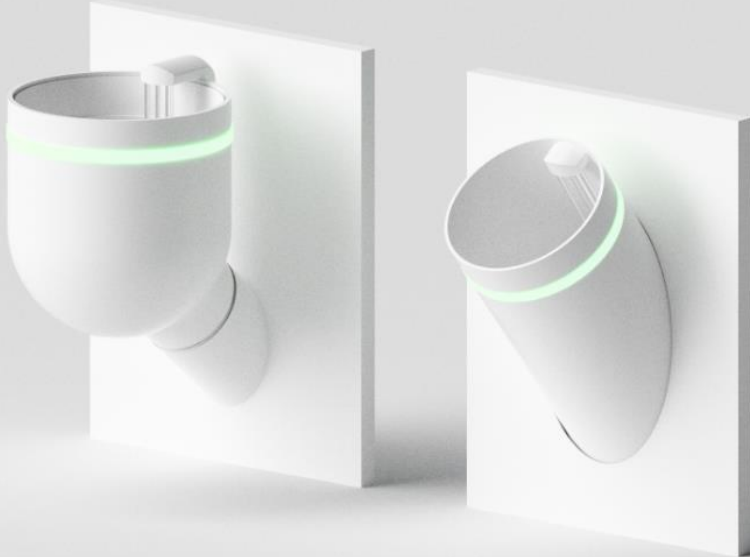
BioBulb™ Design Choices



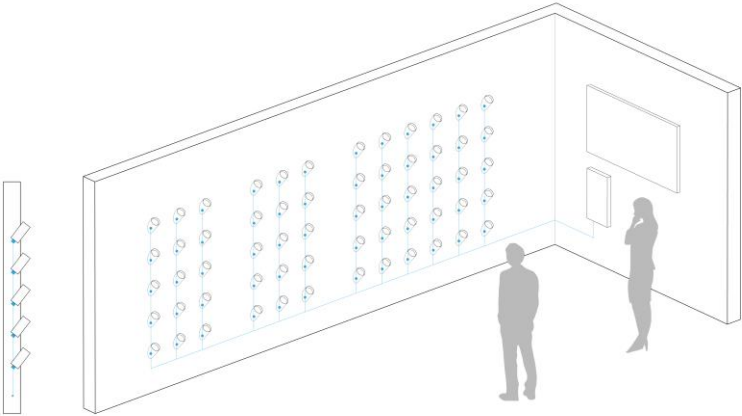
Cylinder Model



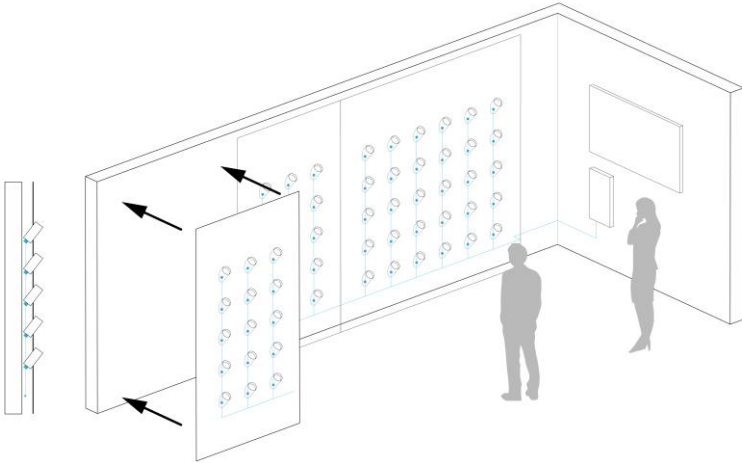
Cup Model



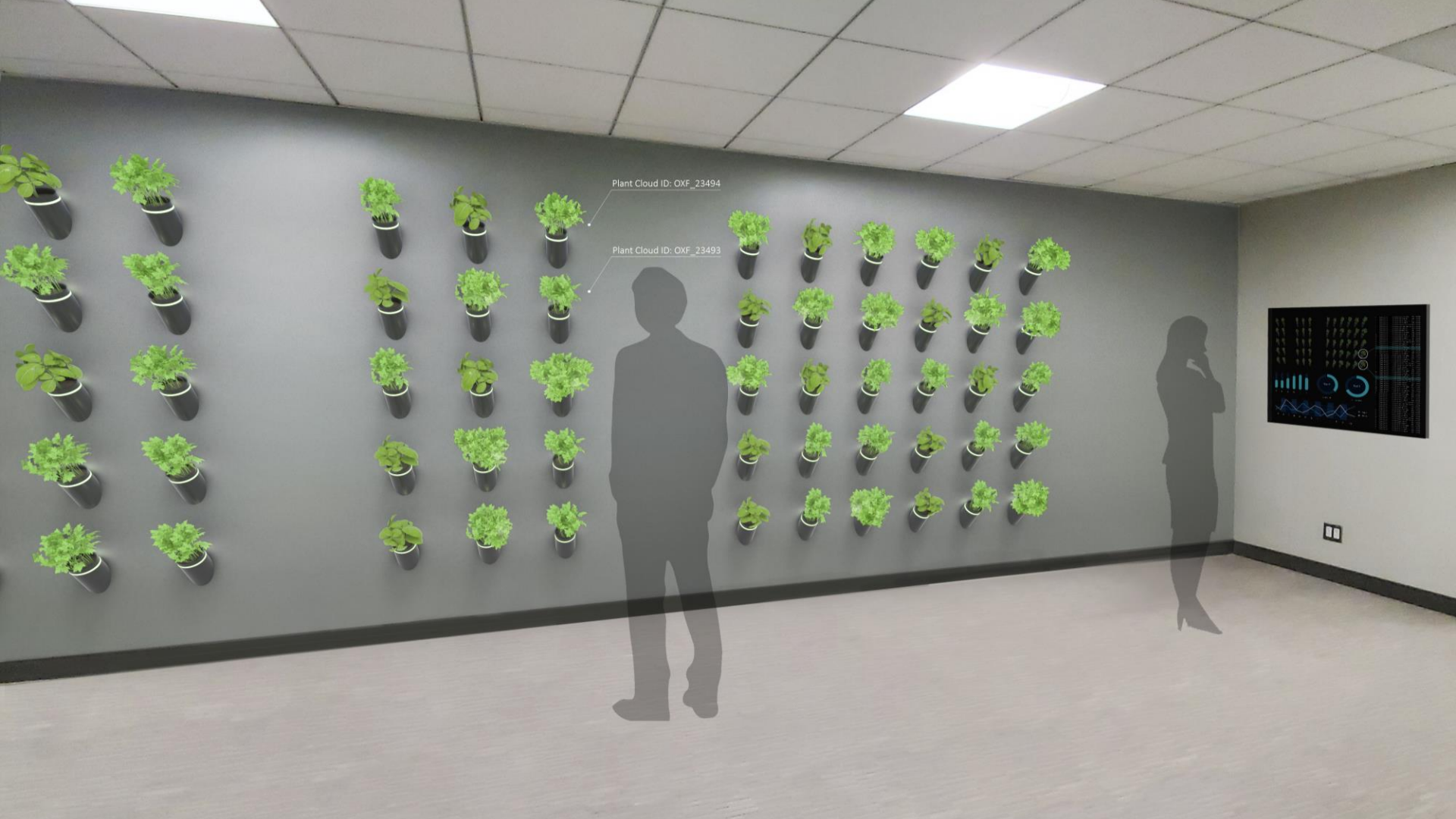
BioBulb™ Installation Options



Option1:
During Construction



Option2:
Post Construction



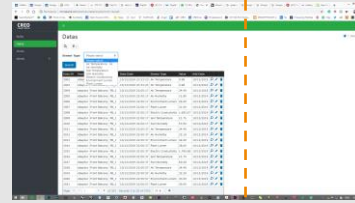
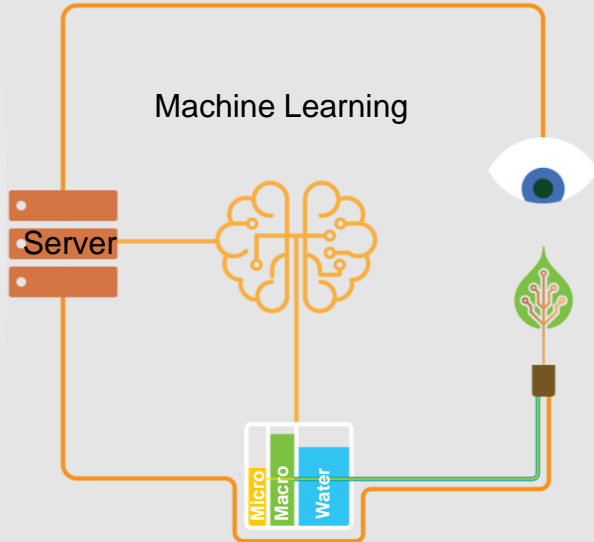
Plant Cloud ID: OXF_23494

Plant Cloud ID: OXF_23493



COMPUTATIONAL GROWTH Powered by Artificial Intelligence

BioBulb™ Machine Learning Device & System



- Environmental Sensors
- Computer Vision
- Plant Sensors
- Light



- Direct Sensing
- Direct Infusion



VALUE PROPOSITION | BioBulb™ Value to Property Managers

During Construction

Easy to integrate and scalable

Simple modular parts

- Easy Installation
- Full Spec BIM

Post-Construction

Maintenance and risk free

Fully autonomous and centrally controlled.

- No water tank
- Dry tubes
- Expandable
- Reusable

Experience

Healthy Buildings

Health and wellbeing

- Improved quality of life
- Custom indoor ecosystems
- Low cost indoor food growth
- Value added to buildings

VALUE PROPOSITION | BioBulb™ Technology Facilitates Pathway towards Certification



RMWATER RUNOFF FROM
BUILDING'S ECOROOF AND
OSCAPED COURTYARD IS
D TO THIS CHAMBER. AS
WATER LEVEL RISES DURING
NSTORM IT IS DIRECTED
HE HORIZONTAL CHANNELS.
ATES CURTAIN
THE BOLD
WITH



+ Credits
+ Associated Points

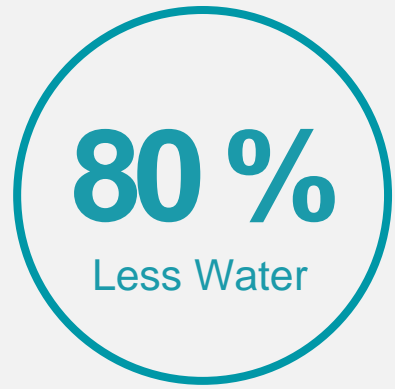
VALUE PROPOSITION | BioBulb™ Technology Facilitates Pathway towards Certification



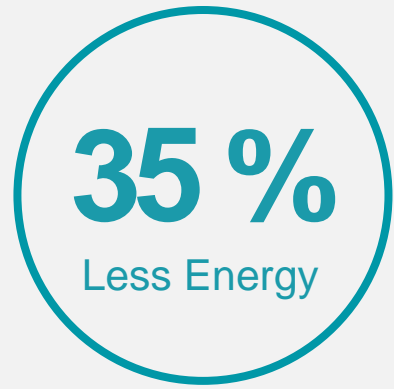
+ WELL Certifications
+ COVID19 Response

VALUE PROPOSITIO | SUSTAINABILITY

Water Consumption



Energy Consumption



Environmental Impact



Zero Water Waste
Zero Nutrient Waste
Zero Nutrient-Rich Water Waste

PRICE COMPARISON | Living Wall Experience 10' (H) * 30' (W)

BioBulb™ Technology

Installation
\$30,000*

Maintenance (annually)
\$6,500
\$4500 (after 18 months)

Total 5 Year Estimated Cost
\$62,500

Other Leading Brands

Installation
\$70,000

Maintenance (annually)
\$10,000

Total 5 Year Estimated Cost
\$120,000

**This is sample pricing for a basic installation. Please speak with us for a detailed estimate for your project*

PERFORMANCE COMPARISON

BioBulb™ Technology

Precision

Data-Driven & Autonomous
Hi-Tech Precision System

Maintenance

Live Monitor & Control Dashboard

Operation

Flexible
Ever Improving
Growth Optimization
Poly-Culture Plant System

Other Leading Brands

Precision

Technician Supervision

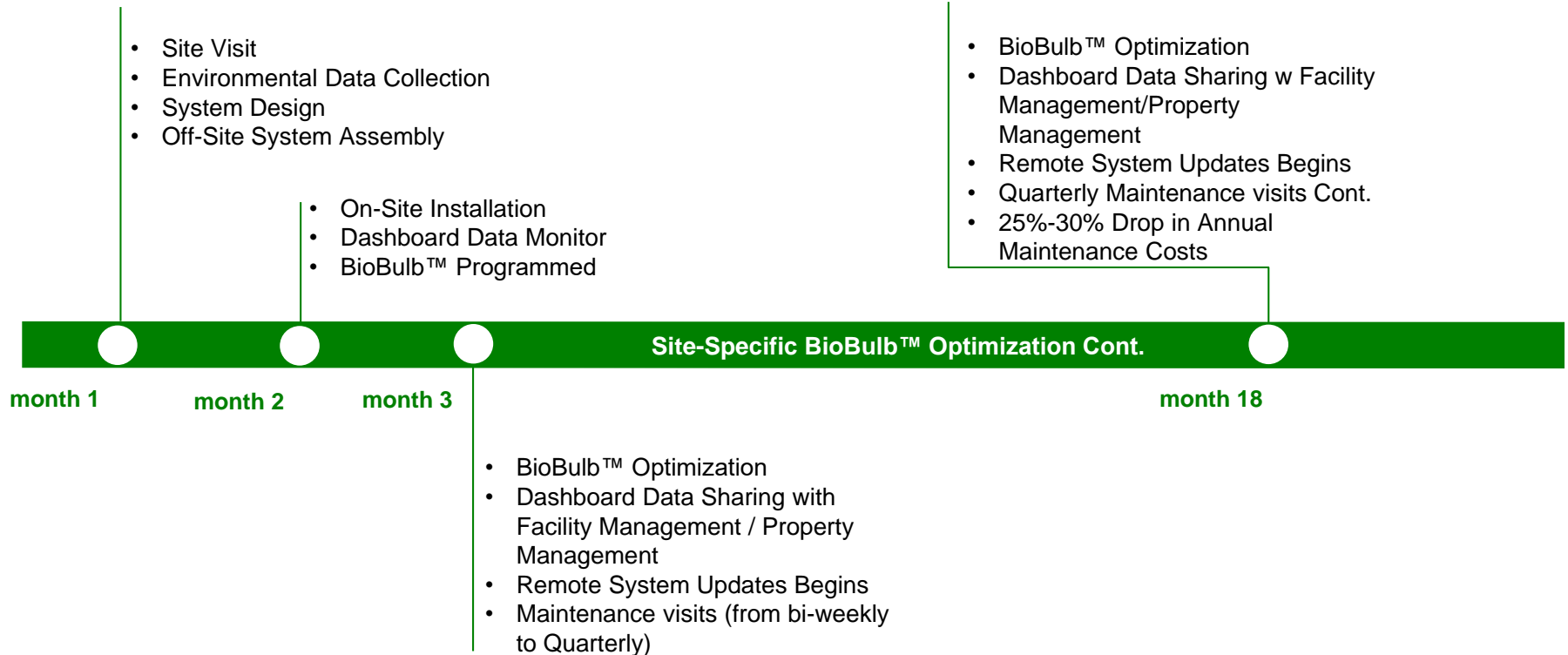
Maintenance

Regular in-person visits

Operation

Pre-Defined
Limited Plant Pallet

PROJECT DEPLOYMENT | Example Timeline



RESIDENTIAL USE CASE | The Kitchen-Garden



**Total Estimated
Customer Lifetime Value
CLTV: \$2,200**

International Recognition

AUTODESK UNIVERSITY



<https://www.autodesk.com/autodesk-university/content/Transforming-Construction-with-Manufacturing-Technology>

Autodesk University USA – Las Vegas 2019
Negar Kalantar PhD

OUR TECHNOLOGY



In environments that have scarce resources, we can build a circuit that connects growth, to sensors, to switches, to lights, to water and nutrients – a network of growth.

AUTODESK TECHNOLOGY CENTERS

Brick | A Smart Growing Network to Detect Plant Health
NEGAR KALANTAR

CR
EO

AUTODESK
UNIVERSITY

International Recognition



Autodesk University Middle East – DUBAI UAE 2019
Ramtin Attar

TEAM

Deep Experience in Environmental Technologies, Technology Integration, and Living Systems

CR
EO



Hooman Koliji, PhD

Founder and CEO

15+ years environmental design
8+ years ecological design



Yildirim Yazganarkian

CTO

7 years Industrial Design
5 years Software Design



Negar Kalantar, PhD

Technology and Fabrication
Engineer



Al Borhani

CPO



David Tilley, PhD

Environmental Technology
Scientist



Mo Rastgaar, PhD

Mechatronics Engineer



Matt Lagomarsino

Ecological Designer

Partners / Affiliates



OUR ADVISORS



Garth Rockcastle, FAIA
Built Environment

Founding Partner at MSR & Former Dean



Marc Shillum, FRSA, MA(RCA)
Product Innovation & Product Market Fit

Former Global Brand Director



Michael Cooper, MBA
Business Analysis & Business Development

Founder
Innovators + Influencers



Ramtin Attar
Technology Integration

Head of Technology Pathfinding &
Strategic Relations



Robinson Piramuthu
Computer Vision & Machine
Learning

Chief Data Scientist Computer Vision



Michael Kehoe
Growth & Operation

Vice President of Business Operation



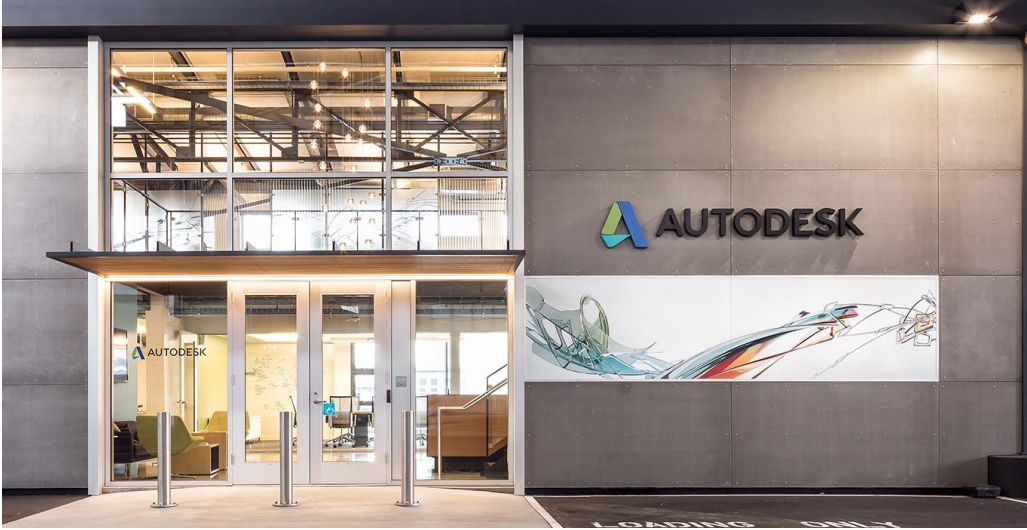
Locations | Main Office – Sausalito CA

2302 Bridgeway, Suite B
Sausalito, CA, 94965



Locations | Autodesk Technology Center San Francisco

Hardware-Integration R&D



COMPANY MILESTONES | INNOVATION



National Innovation Award Winner
U.S. Department of Energy
Solar Decathlon 2017

Market Introduction 2019



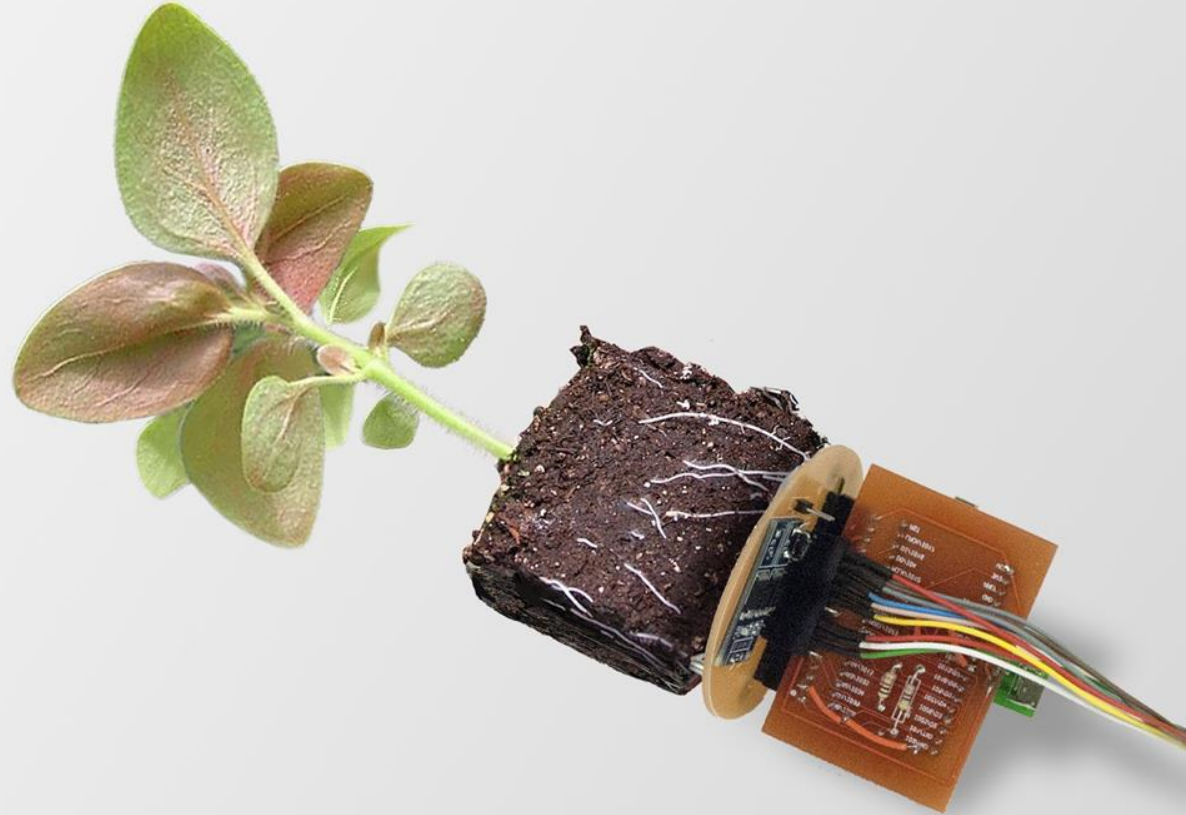
Smart Living Wall
Plant IoT, Smart Hydroponics



Bio-Bulb™
Per-plant microchip
(Learning & Feeding)

Thank You

CR
EO



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