

NOVA
INNOVA

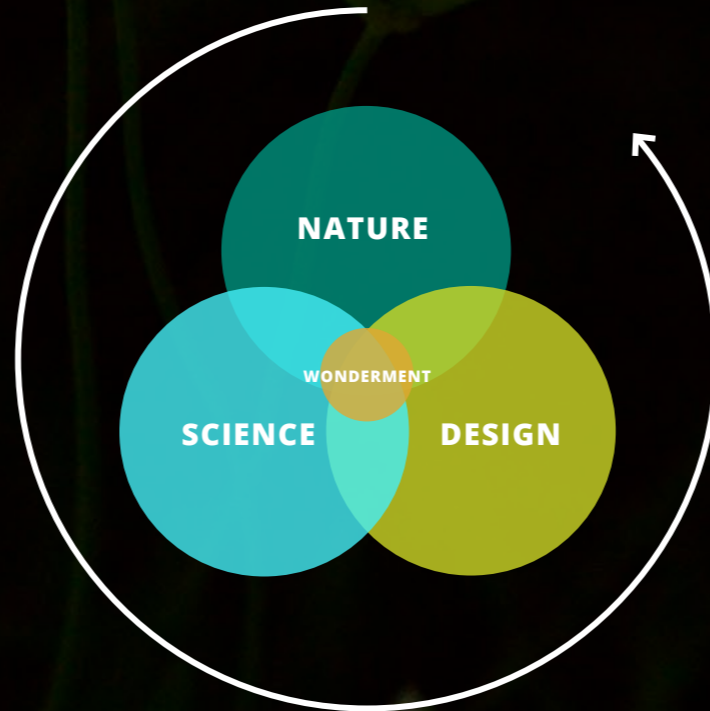


Nova Innova, a creative startup that combines nature, science and design to create sustainable innovations for clean air, water and energy.

www.novainnova.com

WHAT DO WE DO?

We as Nova Innova provide new ways to collaborate with nature, by combining nature science and design to start up the positive feedback loop.



DESIGN AND WONDERMENT

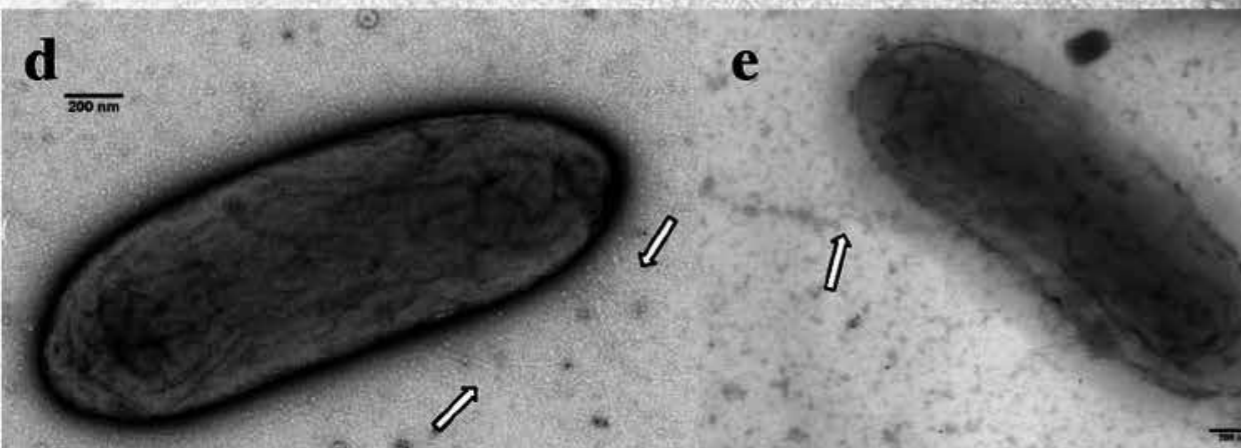
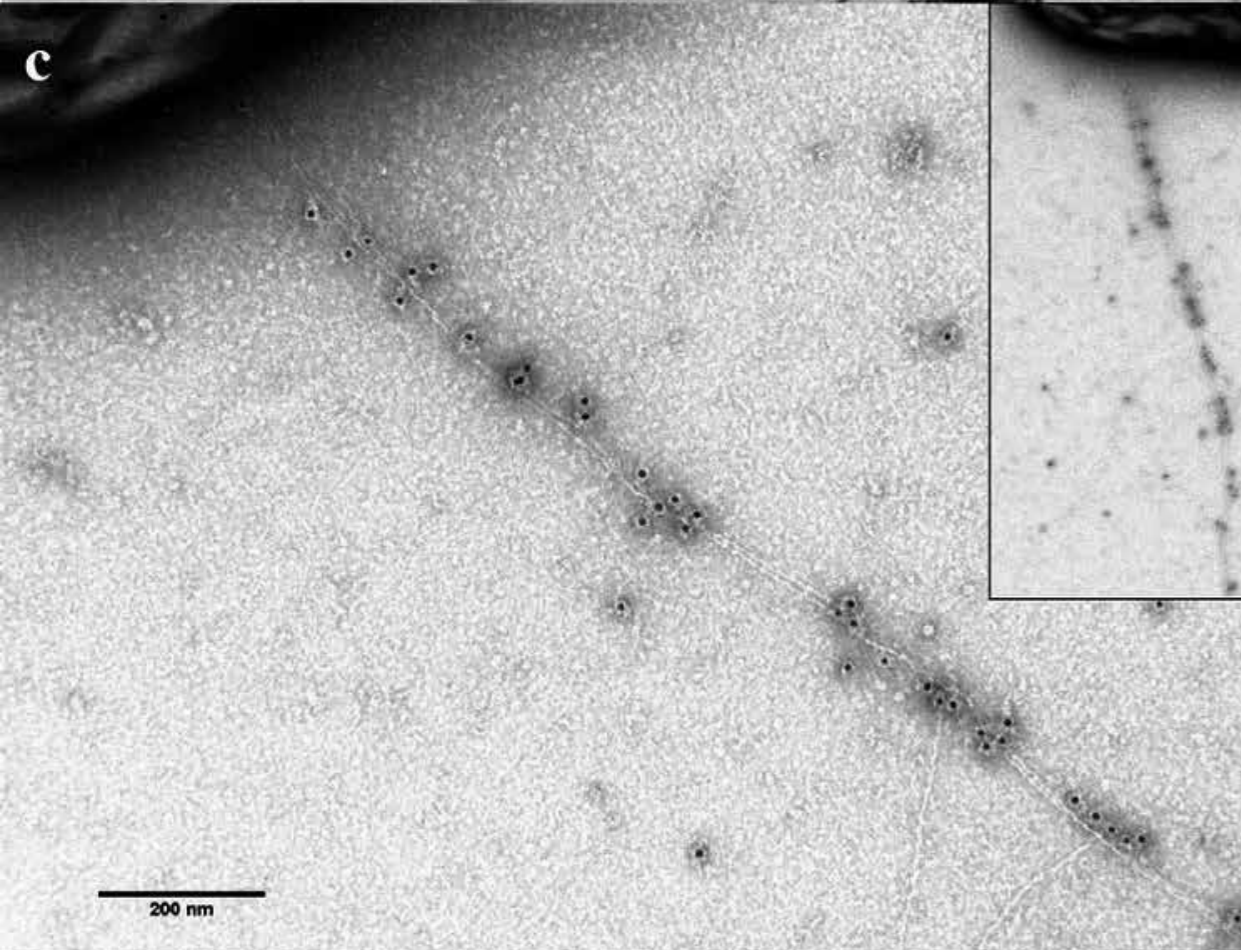
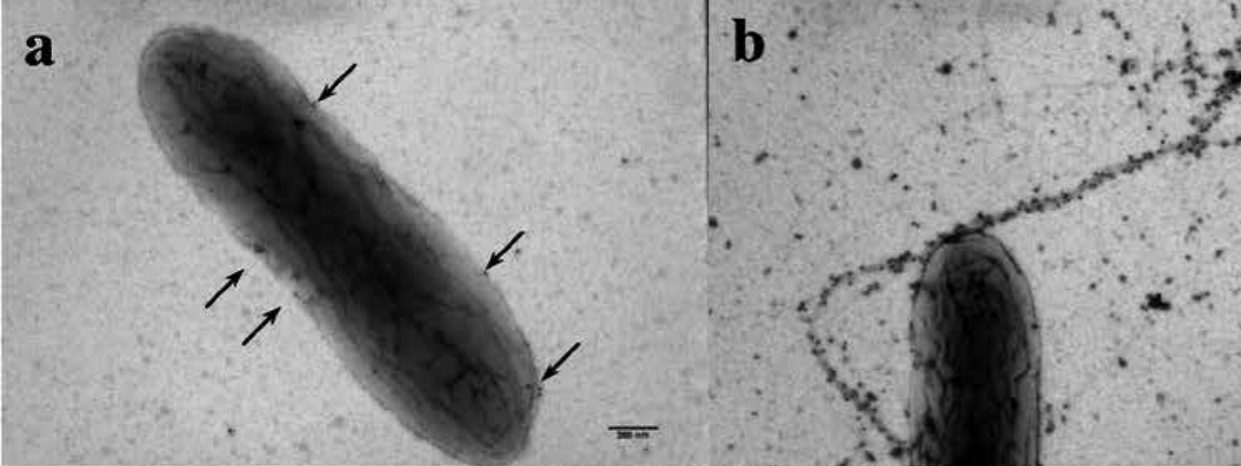
Creating a higher value to sustainable technologies by developing applications in the form of a powerful design. Let us look again from the amazement of nature.

SYMBIOTIC SYSTEM

One of Nova Innova key targets, is to bring back the connection between man and nature. This by creating new ways to communicate with each other.

ECO SYSTEM AS A VALUE

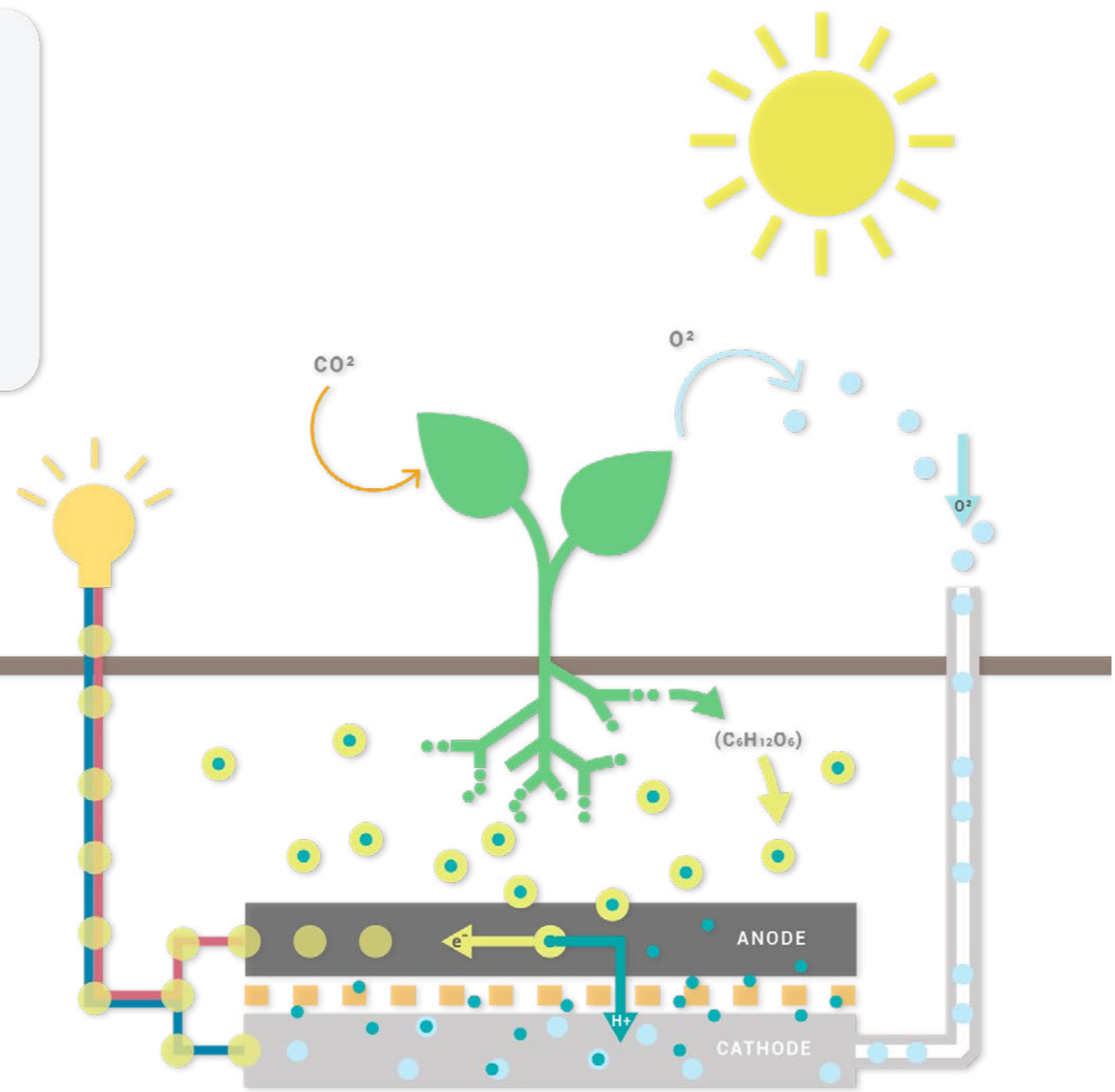
It is our target to create a new story that is not based on financial growth, but on the value of being part of our ecosystem.



MICROBIAL ENERGY

Nature is full of unknown magic. One of her hidden treasures is energy producing microbes. Microbial energy, a renewable energy source, generates electricity through the breakdown of organic matter to produce electrons. This organic matter can be found in many places. For instance in domestic wastewater, lakes and even in the soil where plants and trees grow. What could be more beautiful than receiving electricity from living organisms without harming them?

- Organic matter ($C_6H_{12}O_6$)
- Exoelectrogenic bacteria
- Protons (H^+)
- Electrons (e^-)
- Oxygen (O^2)
- Water (H_2O)
- Wires
- 💡 Electricity
- ⋯ Spacer



A CO₂ NEGATIVE ENERGY SOURCE

Plant microbial fuel cell technology

Plants use sunlight for the process of photosynthesis, thus producing organic compounds. A part of these compounds is passively released via the roots into the soil. Naturally occurring bacteria break down this organic matter and release electrons and protons while doing so.

The Plant Microbial Fuel Cell consists of an anode compartment that captures the electrons. The electrons are transferred via a wire to the cathode. The flow of electrons from anode to cathode can be used as electricity.



[View the technology in action](#)

A hand is holding a green fern frond in front of a glowing, curved lamp. The lamp has a warm, yellowish light emanating from it. The background is a dark, textured wall. A large black circle is overlaid on the center of the image, containing the text.

LIVING LIGHT
LAMP





LIVING LIGHT LAMP

Living Light is the very first lamp in the world which harvests its energy from the plant itself. By using an existing ecosystem as energy source, the lamp is 24/7 off-grid. It is not only an easy to use designer piece, but also serves as a storytelling object. On top of that the lamp doesn't have a normal light switch; light only appears once you have given the leaves a loving stroke. Because when you give the plant the attention it deserves, it will give you something back: its energy.



[Video Living Light Lamp](#)

IN COLLABORATION WITH



A dark, atmospheric photograph of a park at night. The background is filled with soft, out-of-focus bokeh lights in warm yellow and orange tones, suggesting string lights or distant lamps. In the foreground, there are dark, vertical shapes that appear to be trees or tall grasses. A large, solid black circle is centered in the image, containing the text 'LIVING LIGHT PARKS' in white, bold, sans-serif font. The overall mood is serene and artistic.

LIVING LIGHT
PARKS

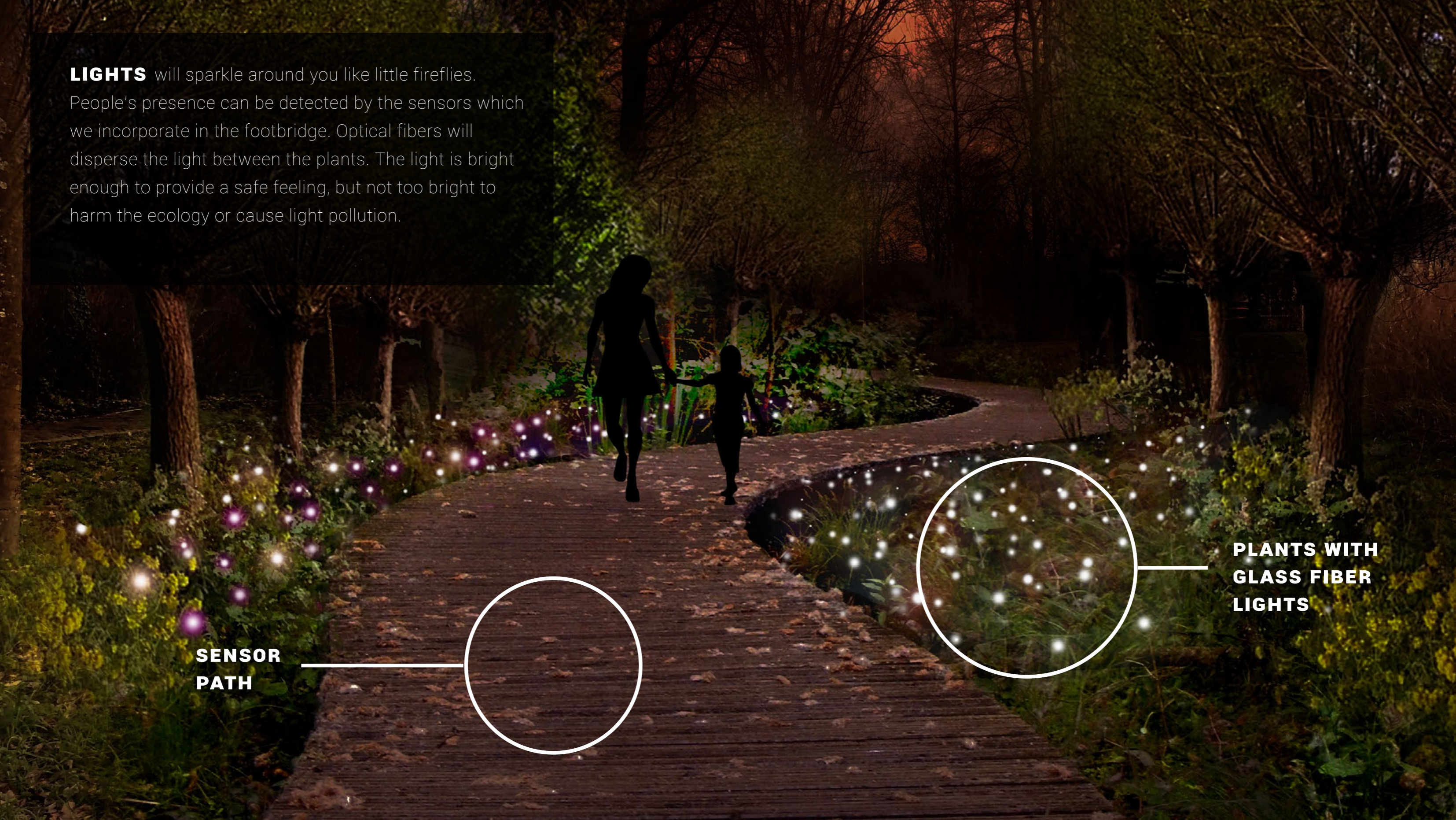
LIVING LIGHT PARKS

Can a city park's lighting be powered by plants? Yes! We can transform an everyday urban green into a magical, interactive experience. Together with Plant-e we developed an interactive system, where electricity-generating plants will react to people's presence. Little lights, powered by electricity-generating-plants, will lead your way as you walk along.

IN COLLABORATION WITH



LIGHTS will sparkle around you like little fireflies. People's presence can be detected by the sensors which we incorporate in the footbridge. Optical fibers will disperse the light between the plants. The light is bright enough to provide a safe feeling, but not too bright to harm the ecology or cause light pollution.



**SENSOR
PATH**

**PLANTS WITH
GLASS FIBER
LIGHTS**

REFERENCE PROJECT

Rotterdam is the first city worldwide to realize a park with interactive lighting powered by plants: 'Het Park van Morgen'. This park became reality in Rotterdam on the 18th of November 2019 in one of Rotterdam's neighbourhoods: Reyeroord. A 35-meter path will lead you through the electricity-producing plants that respond toward your presence.



[Video Het Park van Morgen](#)



FOREST AS A POWER PLANT

Where green and social needs embrace each other instead of thinking that nature should be forced to work for us.

Nature will get a higher economical value, we will start making more place for green, so biodiversity can flourish while lowering greenhouse gas emissions at the same time.

Nature as a 'power plant'; working towards a symbiotic relationship with nature: the better we take care of it, the more energy it will give us.

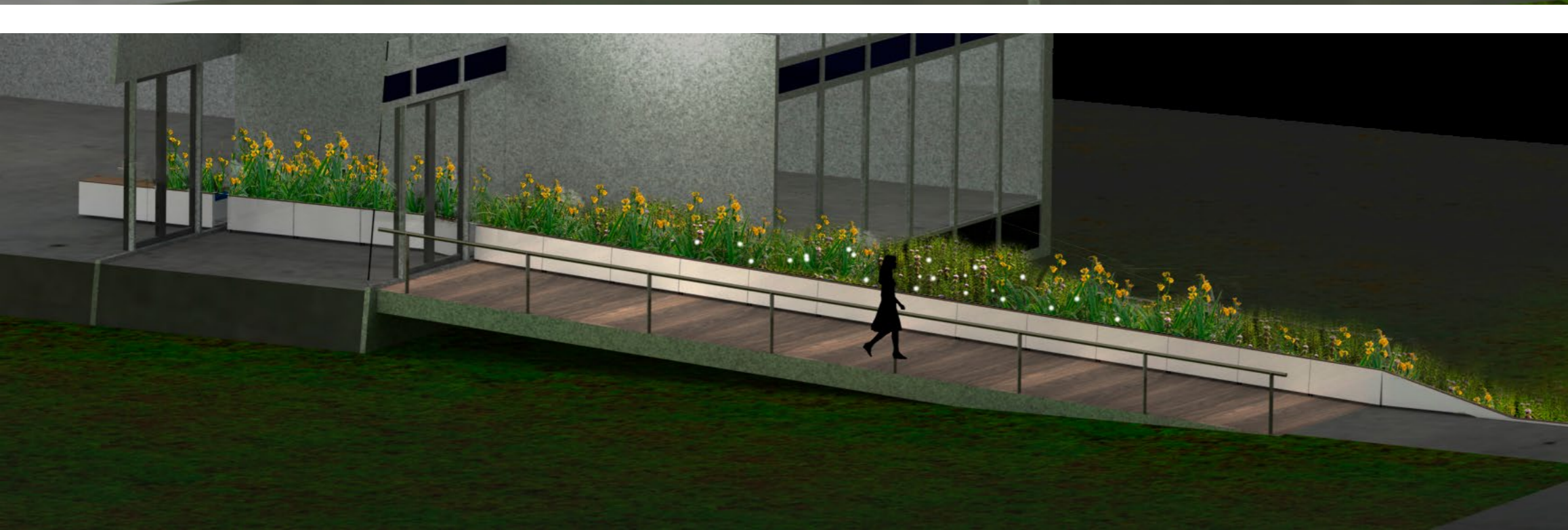
You feel connected and co-owner. And that feels magical.



LIVING LIGHT PLANTERS

Modular planters where the greenery from outside blends in to the building and sparkles to give a warm welcome and an unforgettable experience with the use of environmental technology.

How do you inspire people to look beyond existing techniques and daily challenges? We believe in the power of wonderment; by showing what the world of the day after tomorrow may look like, and that it is closer than you think.



VALUE OF DELIVARABLES

CO₂ negative
energy source

**Investment in
a sustainable
world**

Future proof

**One step
beyond**

Astonishing
experience

**Creates stronger
connection
between people and
their surroundings**

Greenery
get an extra
economical
value

World wide Pr
and exposure

**Place to
educate**

TEAM

There are many interesting things happening in laboratories all over the world, which remain invisible to the general public. The team of Nova Innova has the aim to bridge the gap between science and everyday life, by developing sustainable applications in the shape of a powerful design. We hope to inspire others and redesign our future in a positive way.



Ermi van Oers | Designer & Founder

The source of creative ideas with a focus on nature.



Karlijn Arts | Communication & Operations

Handles PR, storytelling and other communication challenges.



Frank Fondse | Business & Finance

Converts valuable ideas into valuable businesses.



Marco van Noord | Embedded developer

Deals with the most diverse technical challenges, from low power energy harvesting to datalogging systems.



Nick de Ronde | Interaction & Software developer

Simplifies complex technologies into understandable systems.



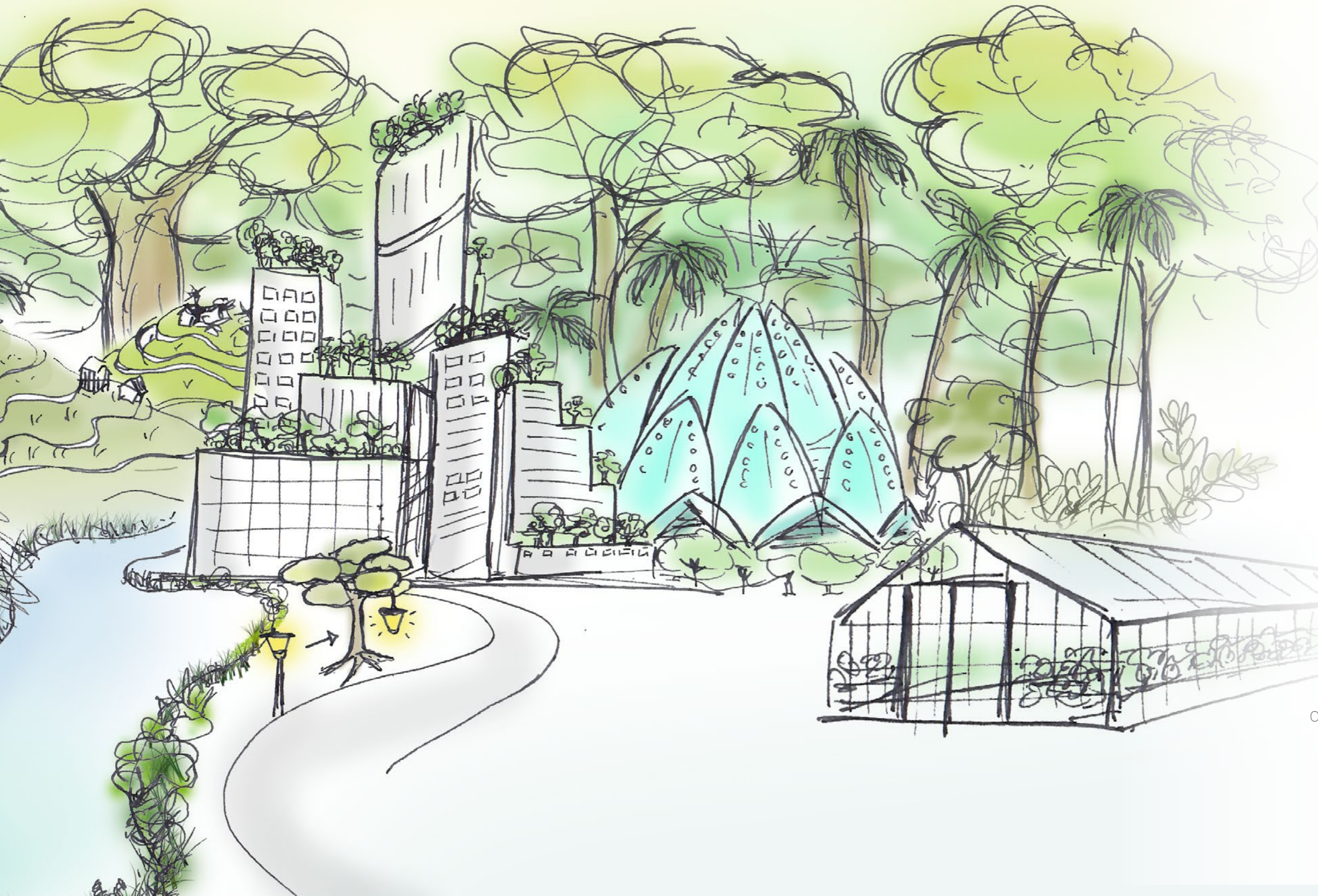
Desh Ramnath | Strategy, Sales & Marketing

Translates our dream into a tangible roadmap and validates our end-products with customers.



Remi-David Koster | Electronics developer

Designs the most complex electronics, from the circuit board to the light interaction.



ROADMAP

Our projects are all part of a bigger dream. We see a future city, where the industrial metabolism connects with the natural world. Trees provide energy to the street lanterns, green rooftops produce energy for their own buildings. Food in greenhouses can produce their own energy to grow. If we broaden our perspective, the Amazon will not be destroyed as it will serve as a power plant. Instead of using, let's collaborate with nature and build on a symbiotic relationship.

*New relationships between
human and nature will arise
and nature will become more
valuable again.*

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