

# EnPhytoBox<sup>®</sup>

A smart water treatment system to support the decarbonisation of water



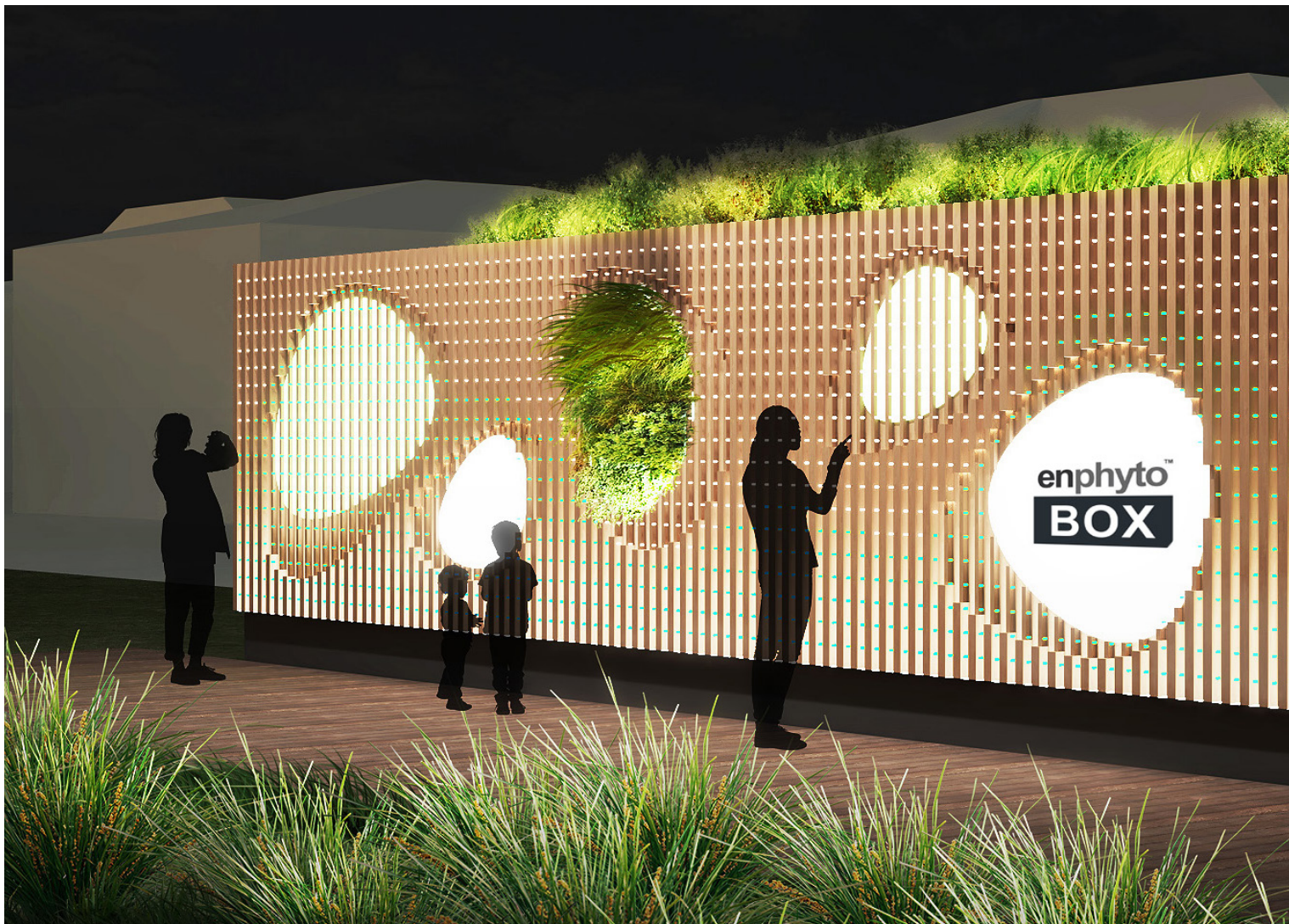


# WHAT IS IT?

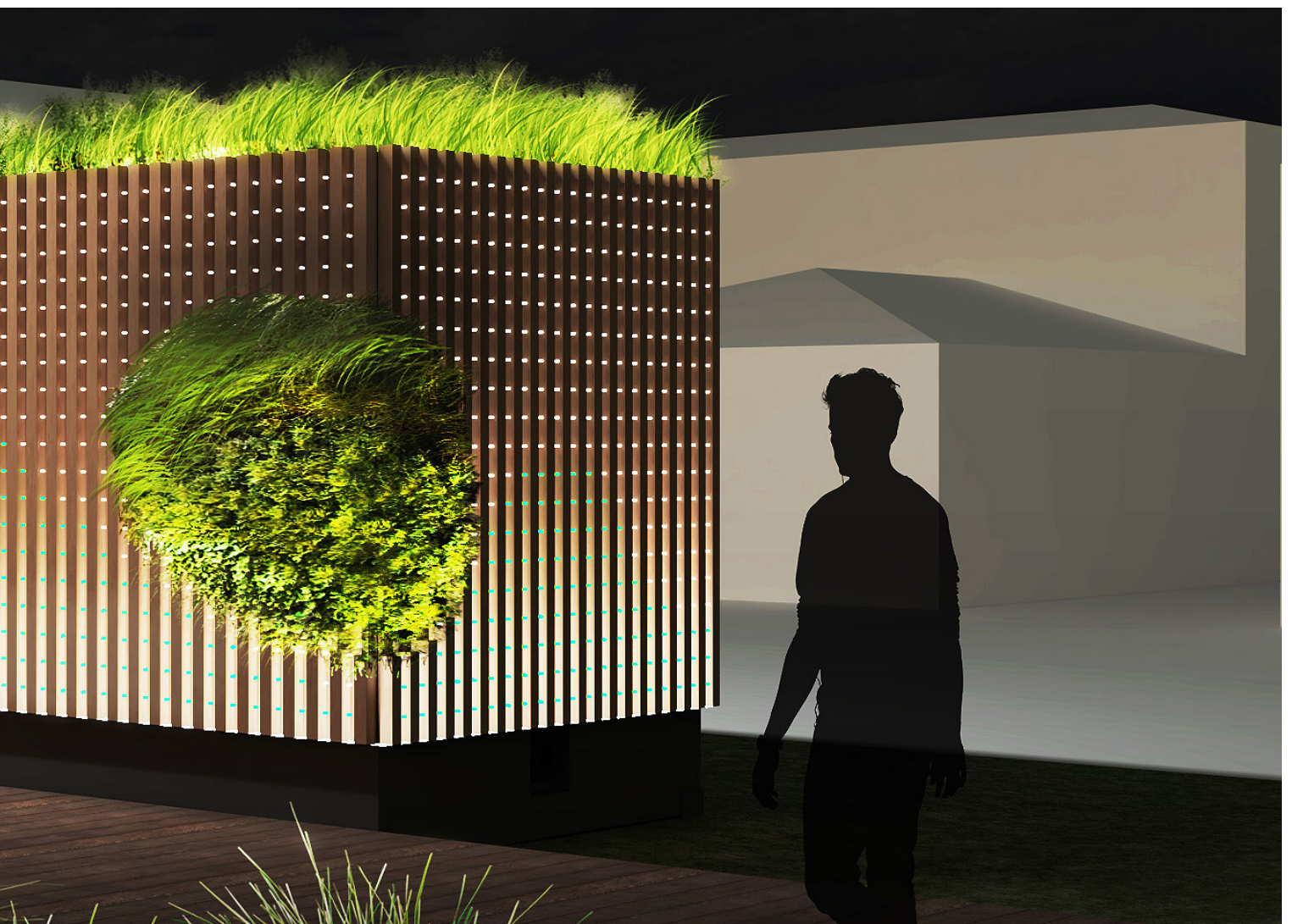
The EnPhytoBox<sup>®</sup> is a mobile, IoT enabled, nature-based water treatment technology. It is:

- **modular, versatile and adaptable** – remotely deployable across various locations and pollutant types.
- **scalable and sustainable** - zero waste, renewable energy powered, uses no hazardous chemicals.
- **resilient and robust** – facilitates climate resilience in remote communities, enables continuous remote control and monitoring.
- **impactful** – provides a source of reuse water to support irrigation for local economies.

This clean tech is a sustainable, impactful, natural, low carbon solution for small farms, remote communities, agricultural operations, mining, heavy industry as well as within urban settings ,for local reuse.







## WHY IS IT NEEDED?

Water insecurity and poor quality has enormous negative impacts, not only to industry, but also to the environment, local economies, jobs and social resilience. Transformative approaches to address these water challenges are needed now. Additionally solutions must overcome barriers of remoteness, communication blind-spots, space constraints, climate challenges and high costs.

The EnPhytoBox® addresses current and predicted global water challenges across multiple sectors and can operate in remote and hostile conditions. It assists to:

- Meet increasingly stringent water treatment discharge standards
- Meet increased water reuse demands and targets
- Provide of clean and reliable water supplies to all
- Provide sustainable management of water resources in every country



## WATER SCARCITY

- **Billions of people** worldwide impacted by lack of water access.
- Water demand is projected to grow by **55% by 2050**.
- **Only 11%** of wastewater is recycled.





## ENVIRONMENTAL & PUBLIC HEALTH DAMAGES

- **50% of wastewater** flows back into the environment without being treated or reused.
- **1.8 billion people** are globally impacted by discharge of untreated sewage, industrial waste, and hazardous chemical into the ecosystem.
- Discharge of untreated sewage is the single biggest factor causing coastal pollution and degradation.

# HOW DOES IT WORK?

The EnPhytoBox® contains a vertical sequence of plants, water, biosorbents and natural filtration media, including zeolites.

It uses processes similar to natural wetlands and combines plant stabilisation, filtration and uptake (phytoremediation), biosorption, microbial transformation and ion exchange.

Our current model uses floating aquatics (duckweeds), which are automatically harvested periodically to maintain high uptake rates. Harvested material is deposited into a compost bin for reuse or value-add processing.

Biosorbent media is contained in removable cages, and these are changed over at intervals to avoid toxic levels of accumulation or enable resource recovery.

Natural filtration media is regenerated as required or reused and replaced where there is a productive demand (e.g. soil improvers).

## Floating Aquatic Series



**phyto-remediation**

floating aquatic plants

emergent plants

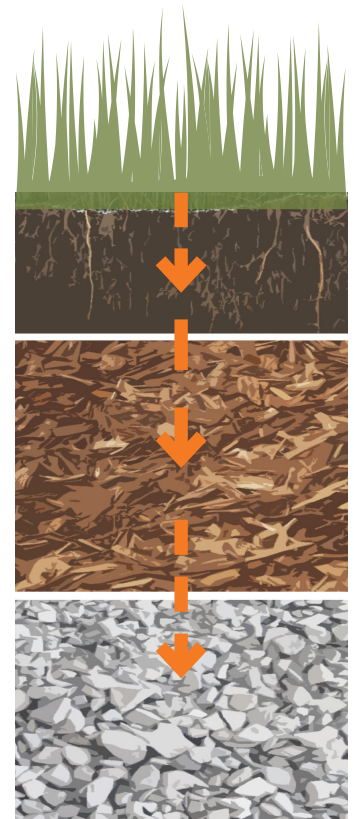
**bio-remediation**

microbes

**bio-sorption**

bio-sorbents

## Cassette Series







*Floating Aquatics within EnPhytoBox*



*Removeable Cage*



*Harvesting of duckweed*



# WHAT CAN IT TREAT?

The EnPhytoBox® can be used to treat a range of pollutants, including:

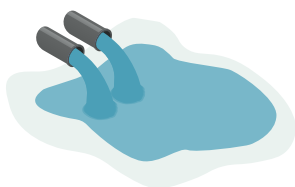
- Nutrients
- Metals and metalloids
- BOD
- TSS
- Organic compounds
- Microplastics
- Pathogens
- Emerging contaminants (pharmaceuticals, pesticides, personal care products)

Each unit can treat up to 100kL/day, depending on composition of leacahte and target treatment standard. Multiple treatment units can be used to increase capacity.

The EnPhytoBox® is suitable for freshwater and brackish wastewater.

Both reuse water and discharge quality water can be produced by customising the number of units, the biosorbents, plants and additional aeration, filtration and other components.

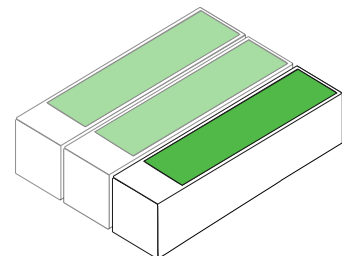
**Wastewater**  
contaminated water



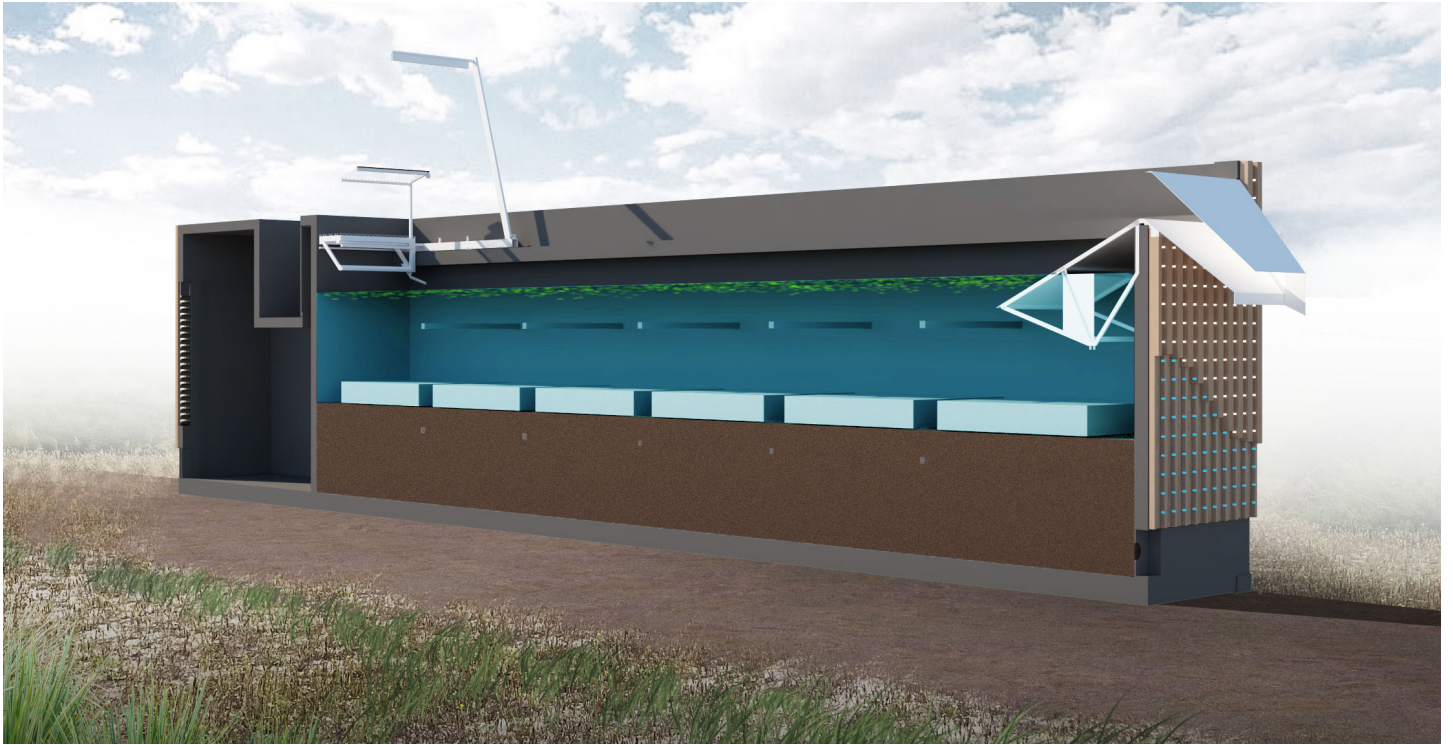
*polluted groundwater / surface run-off / process wastewater / municipal wastewater*



**EnPhytoBox®**  
scalable, decentralised nature  
based water treatment  
technology







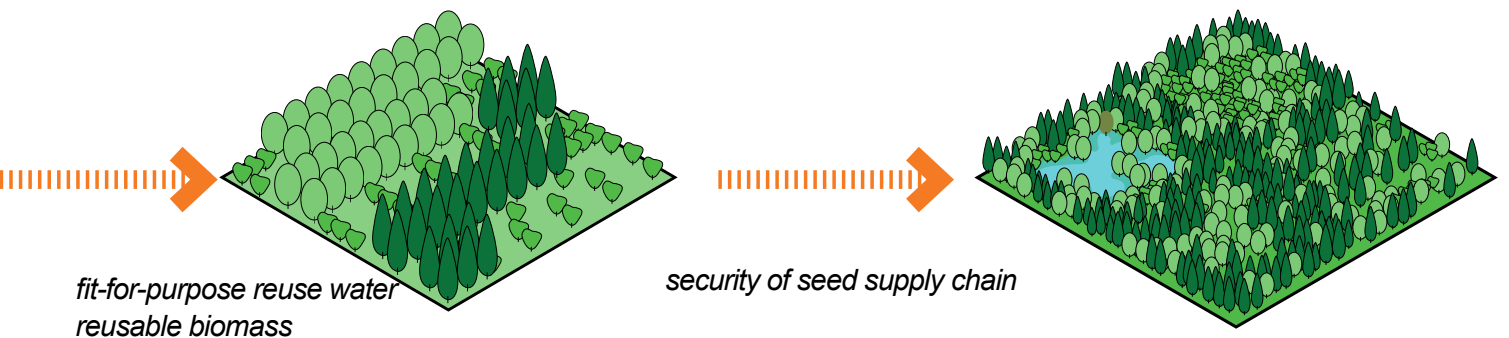
Floating Aquatic Series

**Seed Production / Native Nursery**

local, nature based economies

**Rehabilitation / Carbon Farming**

net positive impact



# SYRINX BIO.

With over 21 years' experience, Syrinx is an Australian privately owned service, product and research company working across many sectors, including mining. Headquartered in Perth Australia, Syrinx integrates cutting edge research with pragmatism and experience, to deliver impactful services and products. As pioneers in nature-based solutions, and with internationally certified sustainability practitioners, Syrinx provides specialist focus on innovation for nature-based biodiversity, water and climate solutions.

- Syrinx works extensively with the agricultural, urban, mining and industrial sectors to deliver nature positive, circular economy solutions.
- Syrinx specialises in sustainable water, infrastructure and nature-based remediation technologies and services.
- Syrinx provides end to end project delivery capability in research, design, construction, operations and maintenance.
- Syrinx has a subsidiary company in Serbia ( NaturaTech d.o.o Beograd) that expands the international reach for our innovative products and services.



*Select nature-based solutions for - mining and industrial sectors*



## COMMERCIAL MODELS

Our business model is an integrated product and service offering

We help customize your units, deploy them, commission them, maintain them and remotely operate them. We can also train and license your own operators if desired.

We offer a lease-to-purchase model, with an ongoing remote monitoring service (access-over-ownership digital share model).

Other models can be discussed if Clients prefer to purchase up-front.



*Transport of EnPhytoBox*

For more information, please contact:

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