



Fogponics -
Farming technology to refine the nature of
controlled growth





Fogponics

Instead of sprayed water or flow hydroponics, we use a fine mist to feed the plants. Ultrasound is used to disperse the nutrient solution into tiny droplets with a size below 50 microns and enables it to float in thin air. This greatly enhances the oxygen and nutrient uptake.

The result: plants grow quicker and with more ingredients.

It also allows us to think different, when it comes to farm architectures!

A steady flow of fog delivers nutrients and oxygen



True vertical

Relying on Fogponics, Lite+Fog planters enable an optimised shape for Vertical Farming.

1. Round shapes create more surface
2. High-Tech textiles instead of metal or plastics lower the costs, weight and are sustainable
3. Vertical structures ease the burden for HVAC systems
4. Rotation of the planters cuts energy costs in half and enable permanent weight measurements



Live example from Mache lettuce

The root system of lamb's lettuce (mache) after 2 weeks

Fogponic root development



Fogponic irrigation force the plants to grow a dense hair-root system

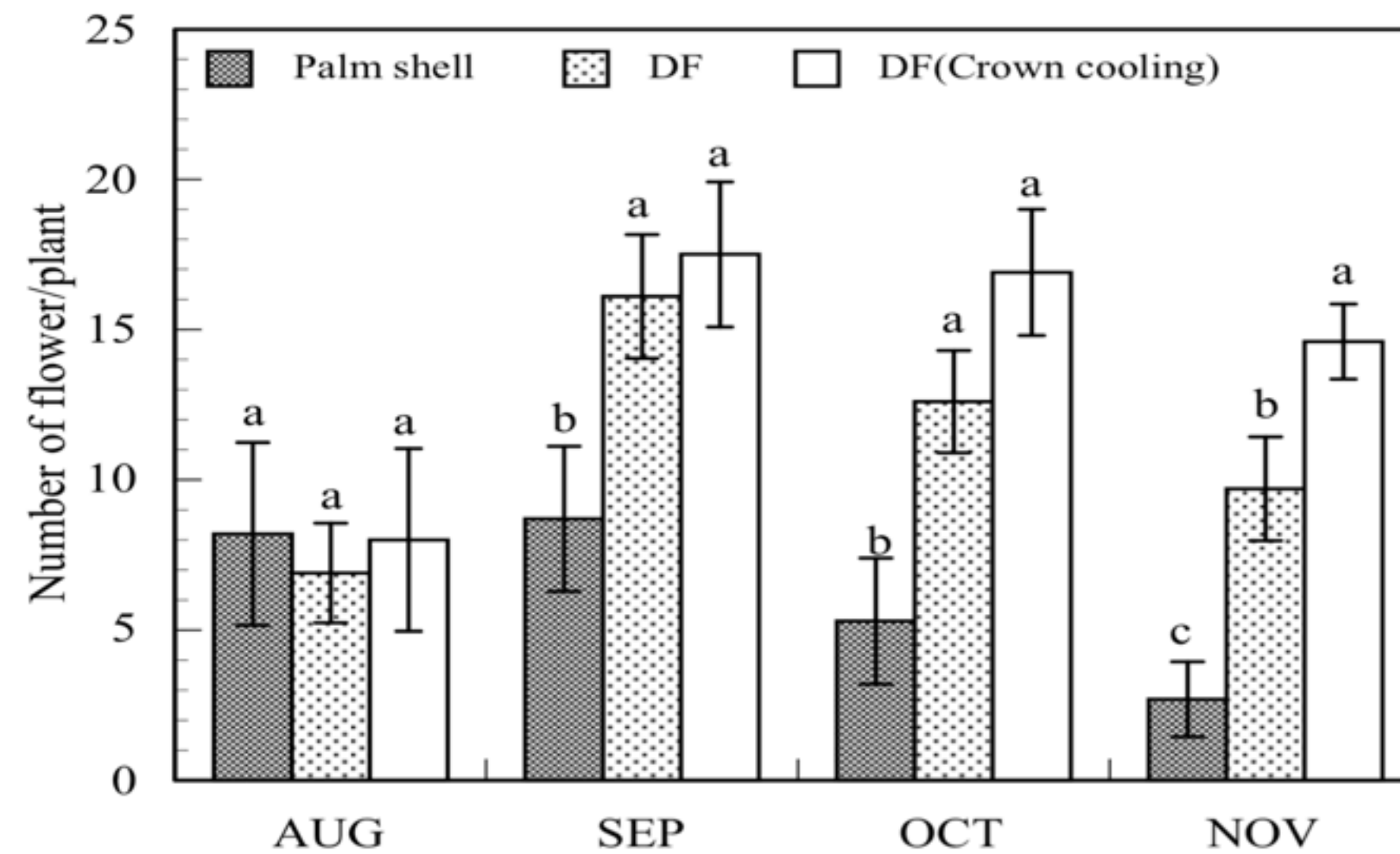


Arugula root system after one month of growth



Harvest time

Fogponic influence on strawberry growth



DF = Dry-Fog

	Leaves ²			Economically harvested fruits ³		
	Total number plant ^{-1,1}	Chl. a+b (mg g ⁻¹ FW)	TSP (mg g ⁻¹ FW)	Total number plant ⁻¹	FW (g fruit ⁻¹)	TSS (°Brix)
DF	15.2±2.1b	2.78±0.22a	3.54±0.21a	18.2±2.8a	10.5±1.2a	10.4±0.15a
Palm shell	21.5±1.8a	2.17±0.14b	2.86±0.23b	6.8±1.6b	9.8±1.8a	8.2±0.31b

Means ± standard deviations. Different lowercase letters in each column denote significant differences by *t*-test ($P \leq 0.05$, $n=12$).

¹All plants were harvested and measured in mid-December.

²Leaf constituents were determined for the leaves measured their photosynthesis in mid-August.

³Mature fruits were harvested from November to December.

Proof of Concept

- 6,5m x 1,5m x 1,5m
- rotating column for even light distribution and energy savings
- 18m² canope surface
- Full spectrum LED
- automated climate control
- see-through walls for visual control





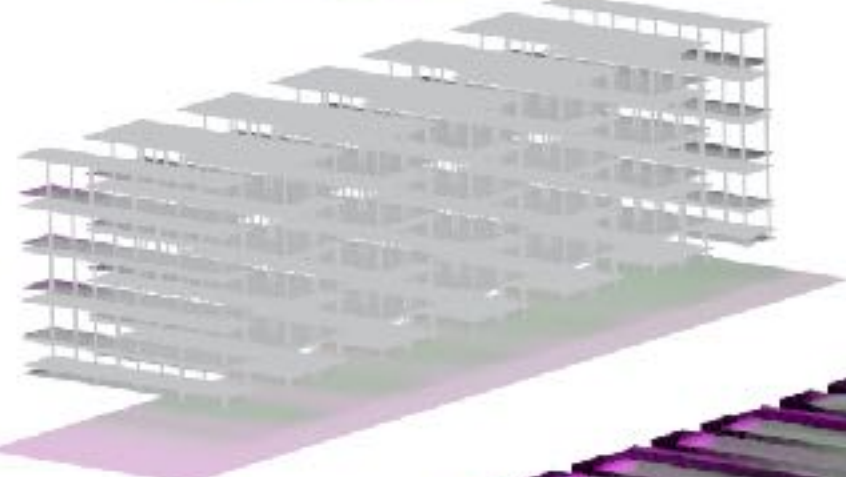
efficiency in architecture

The same growing surface – but a very different footprint. How much 500 square meters of growing surface can look like in three different systems.

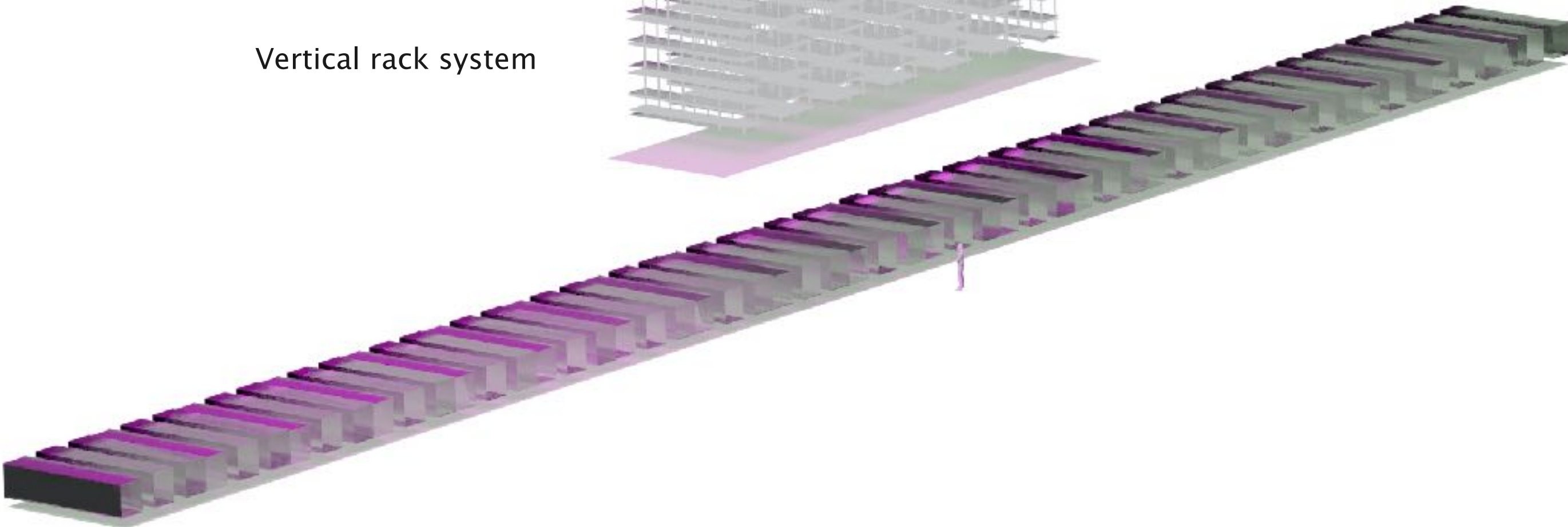
Lite+Fog

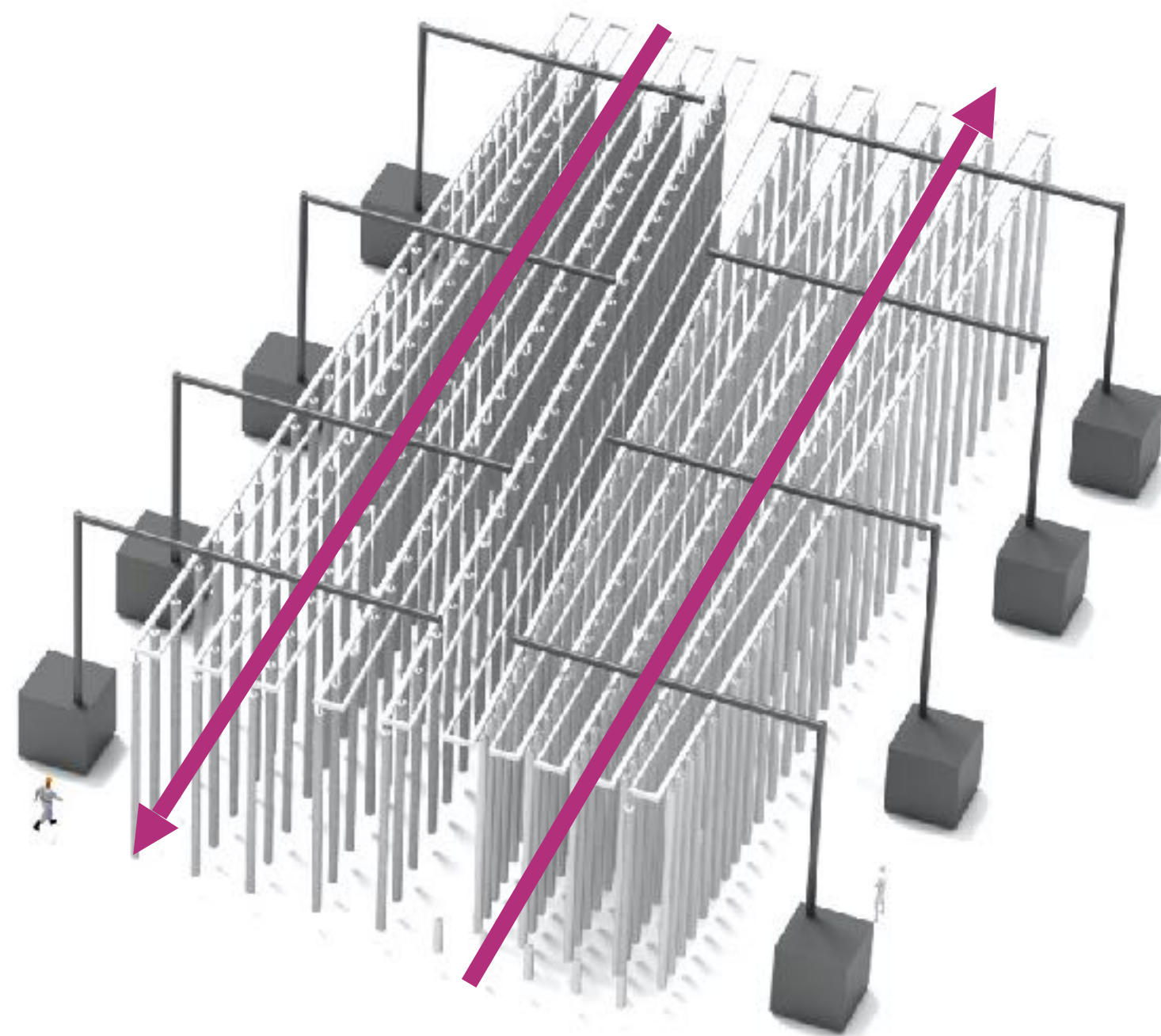


Vertical rack system



Greenhouses

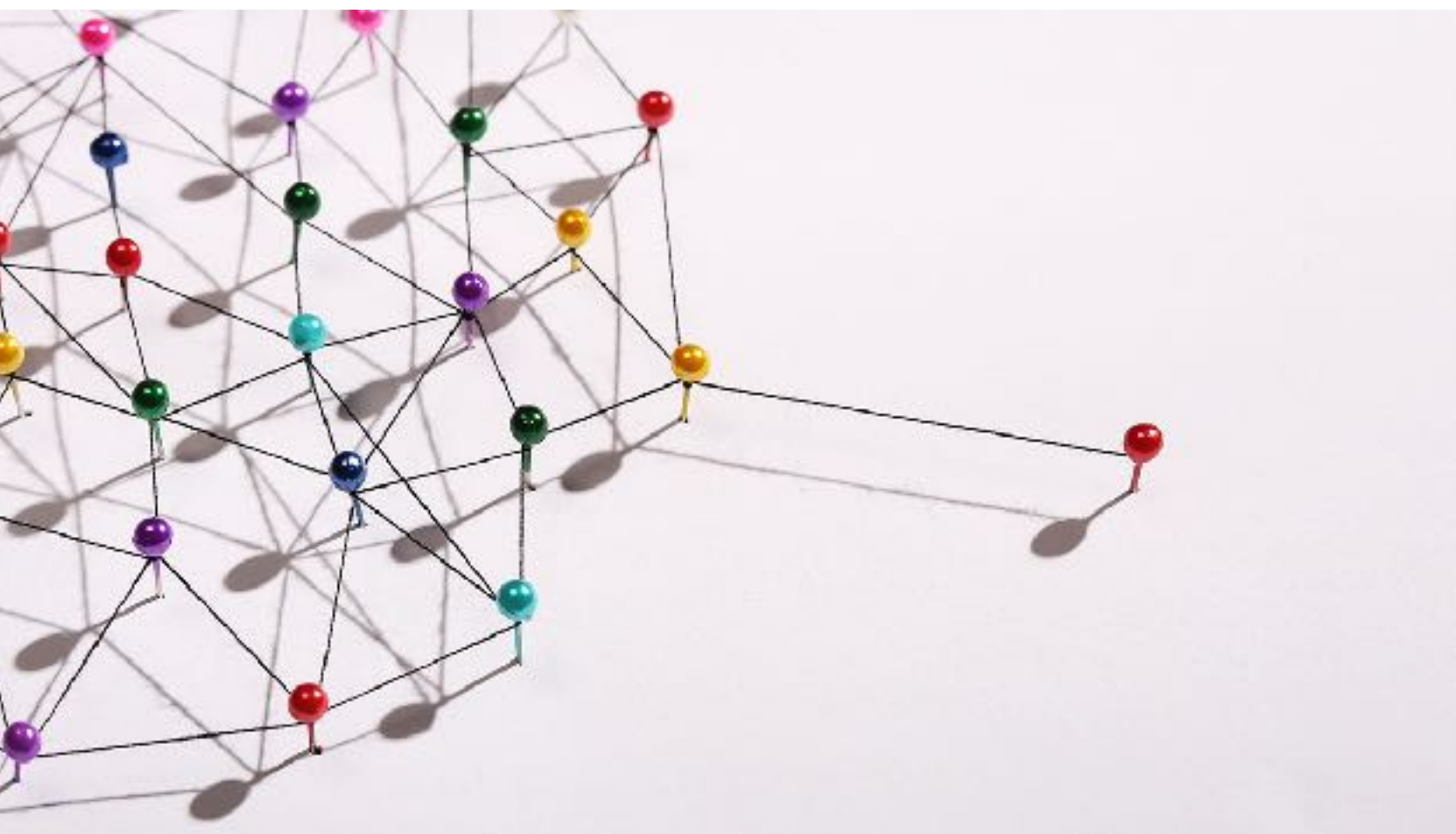




movement+economy

Together with world renowned cleanroom engineers, Lite+Fog is developing a system, where farming happens in a confined, safe, controlled and automated space. Avoiding labour costs and at the same time unnecessary super-automation.

The tubes travel through the grow box during their growth - and get harvested and planted at fixed workstations.



social

Embrace swarm intelligence – Our technology will allow networks to constantly update (or share) the farms growth parametrics to ensure the best harvests possible. Anybody can fill in gaps in his knowledge, and profit from helping others do the same.

Shared intelligence, knowledge and skills are the bedrocks of future success.

We bring growers and breeders together to benefit everyone.



Lighthouse Model M

Our Lighthouse Models come fully automated and AI controlled to deliver fogponic growing systems in all sizes. Here are some specs for our Model M:

- 3 x 2,5 x 1,3m and 3 rotating planters (room for 450 plants and more)
- CO2, temperature, humidity and automated PH and EC control
- Sensors and cameras for remote insights
- And many features more....

Thank you and see you soon!

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