POP UP ECOSYSTEMS to support positive mental health and wellbeing during and after covid 19. Offer new gardens for ALL individuals and ALL living organisms in OUR cities. They act as 'epiphytes' on existing architectures as opposed to 'parasite architectures' these pop up gardens are autonomous in energy.

'Epiphyte', also called air plant, any plant that grows upon another plant or object merely for physical support. (Wikipedia)

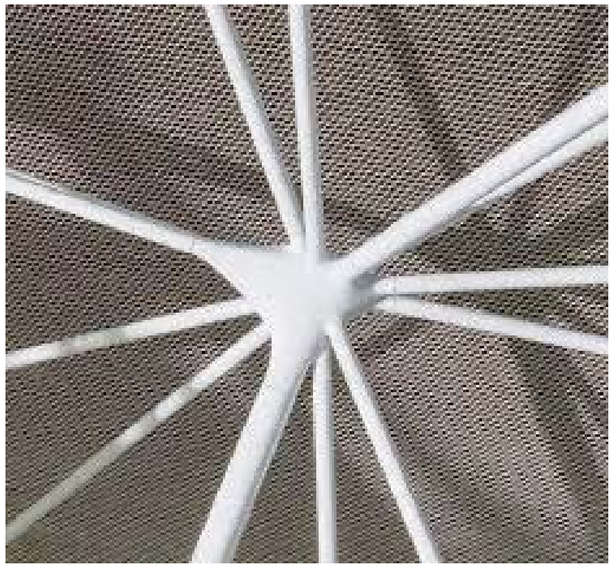
AirLab and MuDD have joined forces together with some young designers to propose some new ultra-light spaces with innovative techniques and local materials to offer pop-up gardens. The techniques have been already experimented by both teams in key public pavilions and installations such as the Aimesh at Garden by the Bay in Singapore by Airlab or the Mud Shell project by MuDD architects on Southbank London furing the London Design Festival.

While Airmesh offers bespoke 3d printed joints optimized for the resulting geometry of the spaces and paired with locally sourced poles such as bamboos, MuDD has put in place with expert manufacturers some 3d knitted fabric that come out of the machines ready to cover the whole space without further laborious manufacturing.

In these Pop up ecosystems, the team will also use small drones to spray different seeds onto the 3d knitted fabric to create but as well manicure over time the pop up ecosystems.
Manicuring this suspended city gardens by automated drones equipped with onboard AI allows a fine work with our partner gardener 'Un jardin sur le toit' to feed the species exactly what they need. The drone detects the specie, detects its health state and sprays what it needs.

We are designing a process where dwellers are highly involved in cultivating their own garden whether it's an individual garden clamped on their windows or weather it's a larger collective gardens on the roof top where all the residents can participate.
We also aim at working with colours and how they can be married with the plants hues to create joy for the inhabitants. Thev 3d knitted technologies can knit an architectural fabric with more than 10 different colours threads at a time which gives a huge freedom for designers.

Top: AirLab AirMesh Garden by The bay
Bottom: Mud shell by MuDD Architects London Southbank and domaine du Boisbuchet



Furthermore

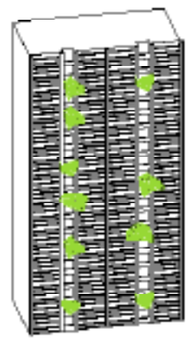
These quick gardens can be fixed onto windows to offer small gardens to any kind of flats from the richest to the poorer equally. The quick gardens can as well be built in between buildings or on roof tops.

Our aim by injecting all the technologies we have developed over the years into that one project is to tackle in great part mental health issues linked with covid 19 in dense cities where all sorts of populations where deprived from enough nature.
Its been scientifically proven that the contact with the vegetation makes people happier and in addition the structures we are offering is made of inclined vertical gardens which people can touch.
Vertical gardens experts like Jean Bernard Wasselin highlights that people usually don't sit on the floor to touch the plants which they can do with vertical gardens which can help tackling mental health issues and even more in difficult times like pandemics.
We hope this competition could shed light on these new technologies developed in academic environments to be used by a large public and for the first permanent built to be eased by the politics and decision makers involved in this competition.

ROOFS

INFILL

BALCONIES



Replicability
The systems used by both MuDD and AirLab are light and can be produced by online files exchange.
The 3d nodes calculated to structural performances by Airlab can be 3d printed in local fablabs, the 3d knit fabric's specific programming put in place by MuDD can be sent online to local 3d knit manufacturers.

London

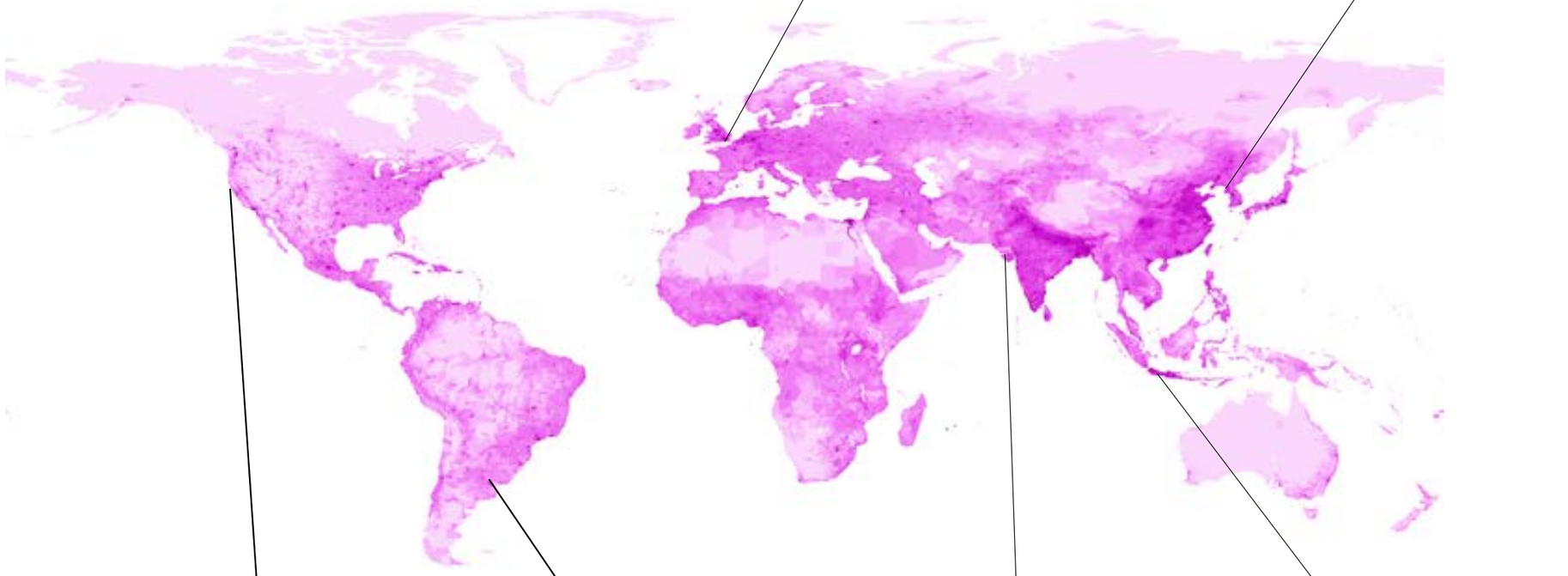
Density:
GDP per capita:
COVID Cases:
Lockdown time:

Urgent matter: housing

Seoul

Density:
GDP per capita:
COVID Cases:
Lockdown time:

Urgent matter: housing



San Francisco

Density:
GDP per capita:
COVID Cases:
Lockdown time:

Urgent matter: housing

Buenos Aires

Density:
GDP per capita:
COVID Cases:
Lockdown time:

Urgent matter: housing

Mumbai

Density:
GDP per capita:
COVID Cases:
Lockdown time:

Urgent matter: housing

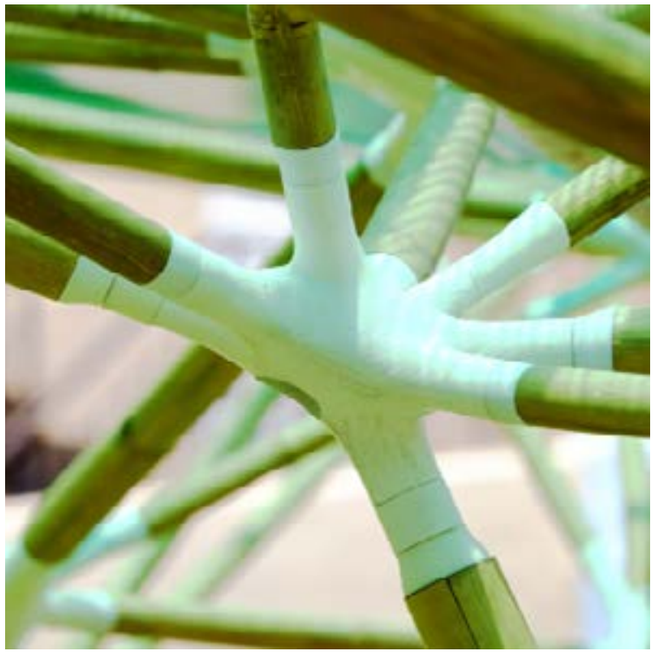
Jakarta

Density:
GDP per capita:
COVID Cases:
Lockdown time:

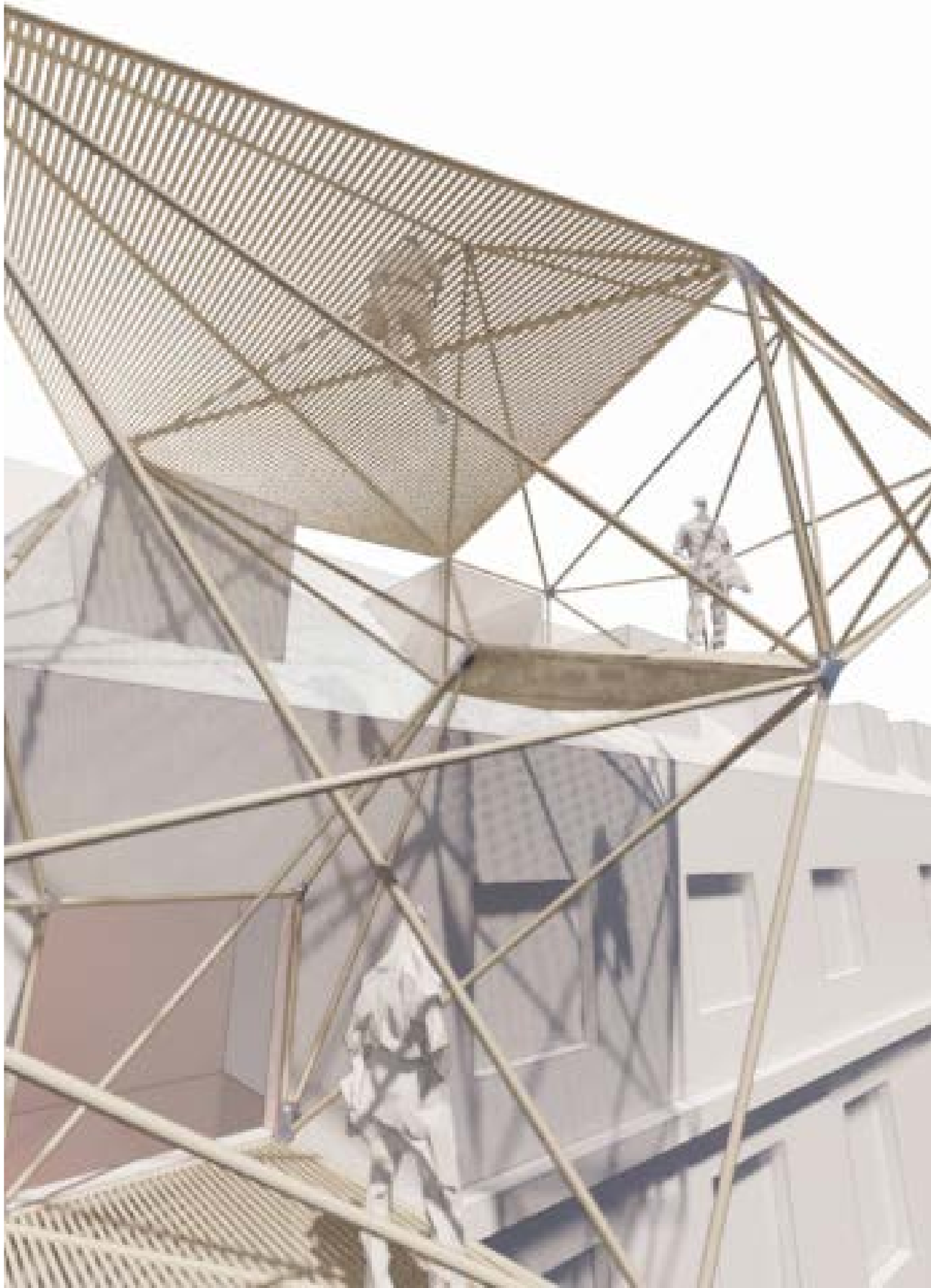
Urgent matter: housing

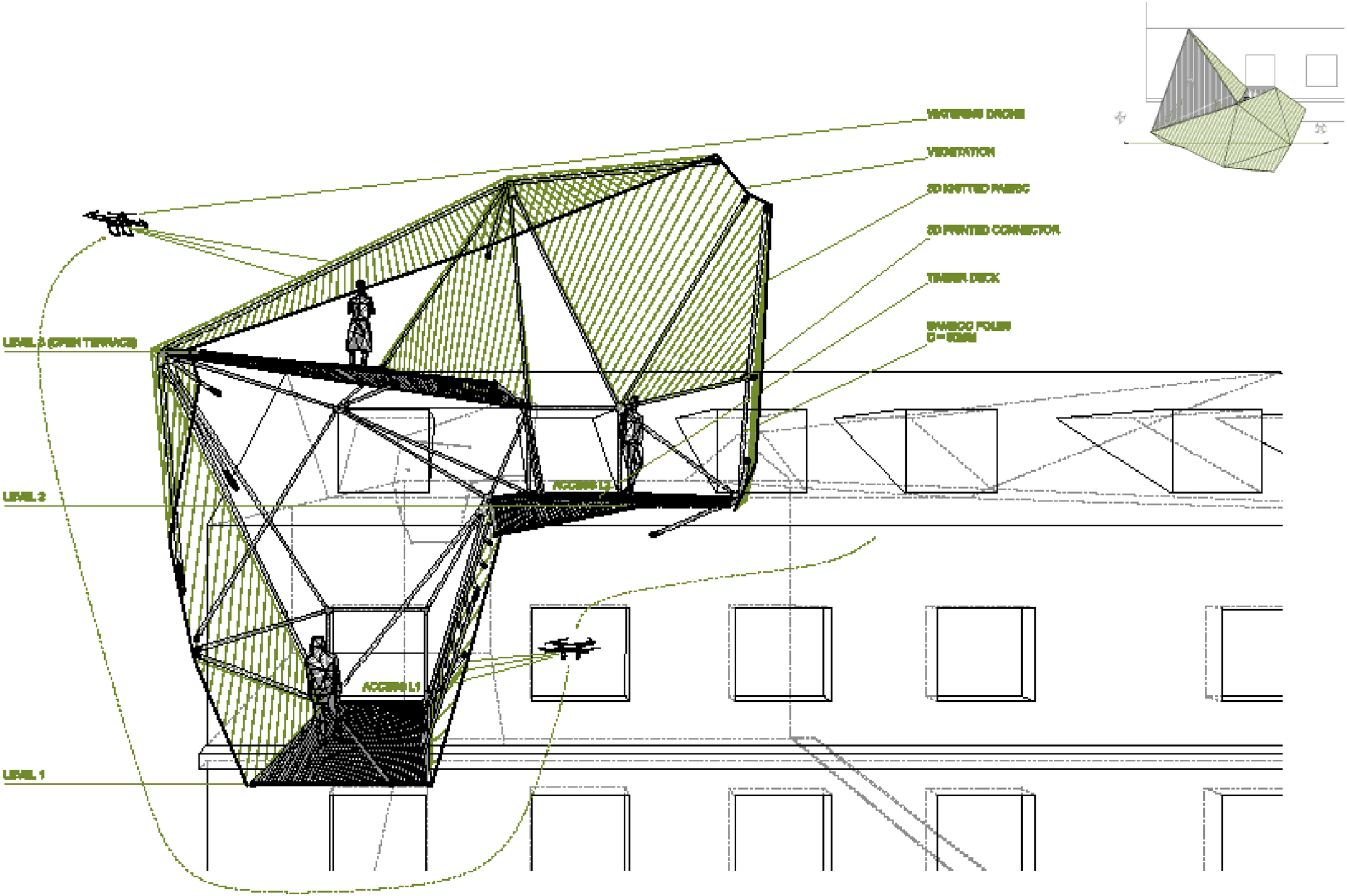
Detail of the 3d knit mesh that can be adapted to any patterns

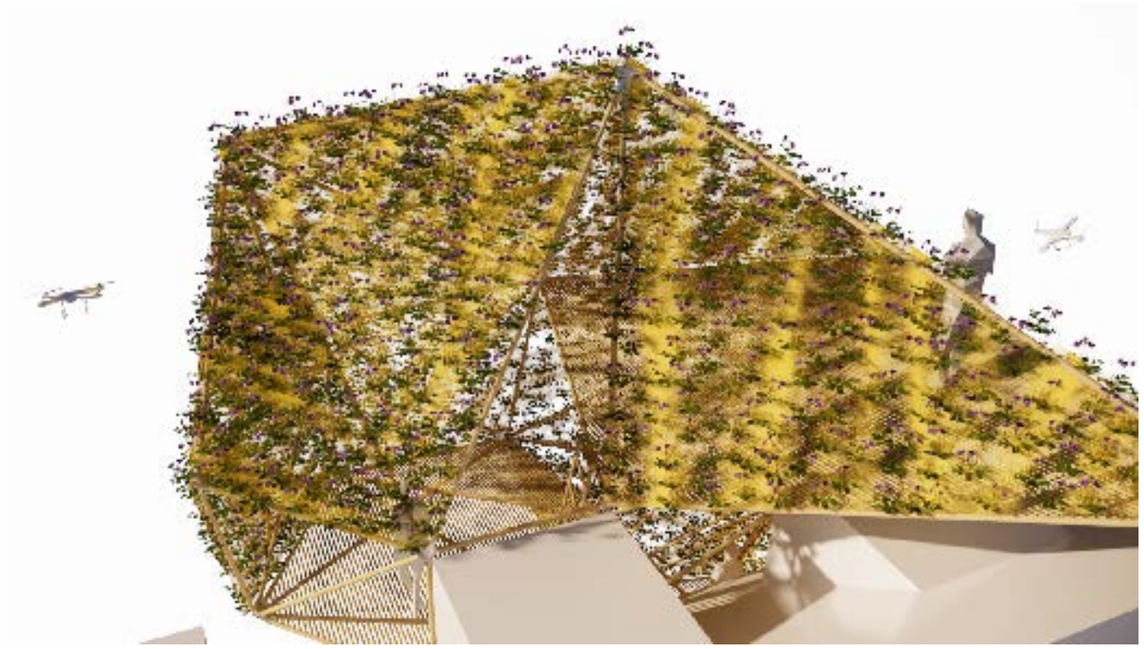
Finally the small drones working collectively for the seedlings and the manicuring of the pop up gardens have their trajectory set by all members of our team and can be flown remotely by expert drone pilots.
Bamboos is also a pole material we privilege for the pop up eco-systems as bamboos can grow very fast and could even be grown in the future in the pop up ecosystems themselves to be used in more epiphyte architectures in cities.

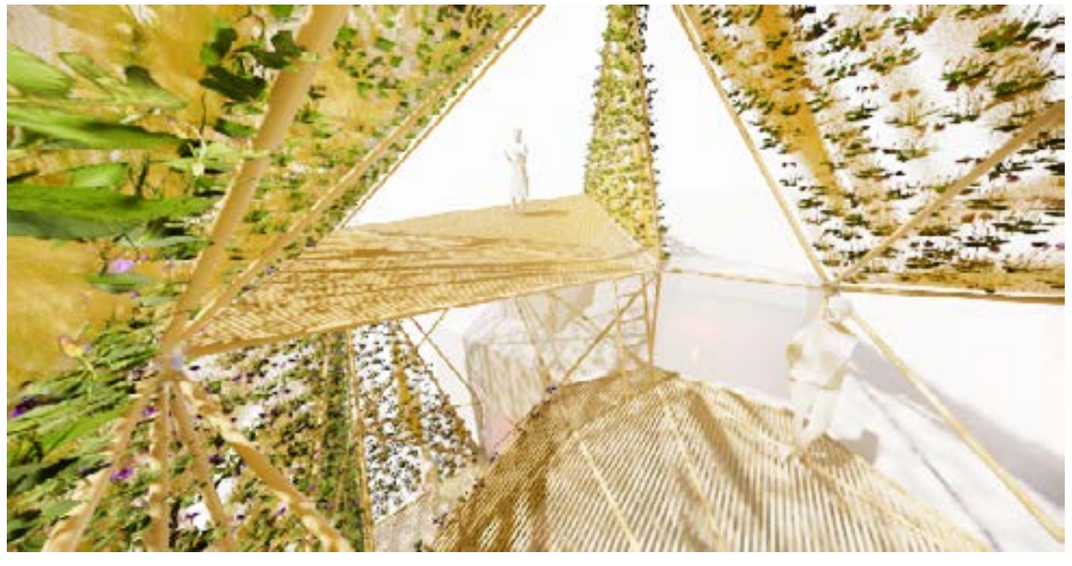


Detail of the Bamboo connection system




WATERPROOF CANOPY
VEGETATION
3D KNITTED FABRIC
3D PRINTED CONNECTOR
TIMBER DECK
BAMBOO POLES
D= 60MM
LEVEL 3 (OPEN TERRACE)
LEVEL 2
ACCESS L2
ACCESS L1
LEVEL 1





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POP UP ECOSYSTEMS

Some vegetal species able to grow on vertical surfaces

Maximum leaf size

Growth Speed

red color

Air Purifying level

IVY

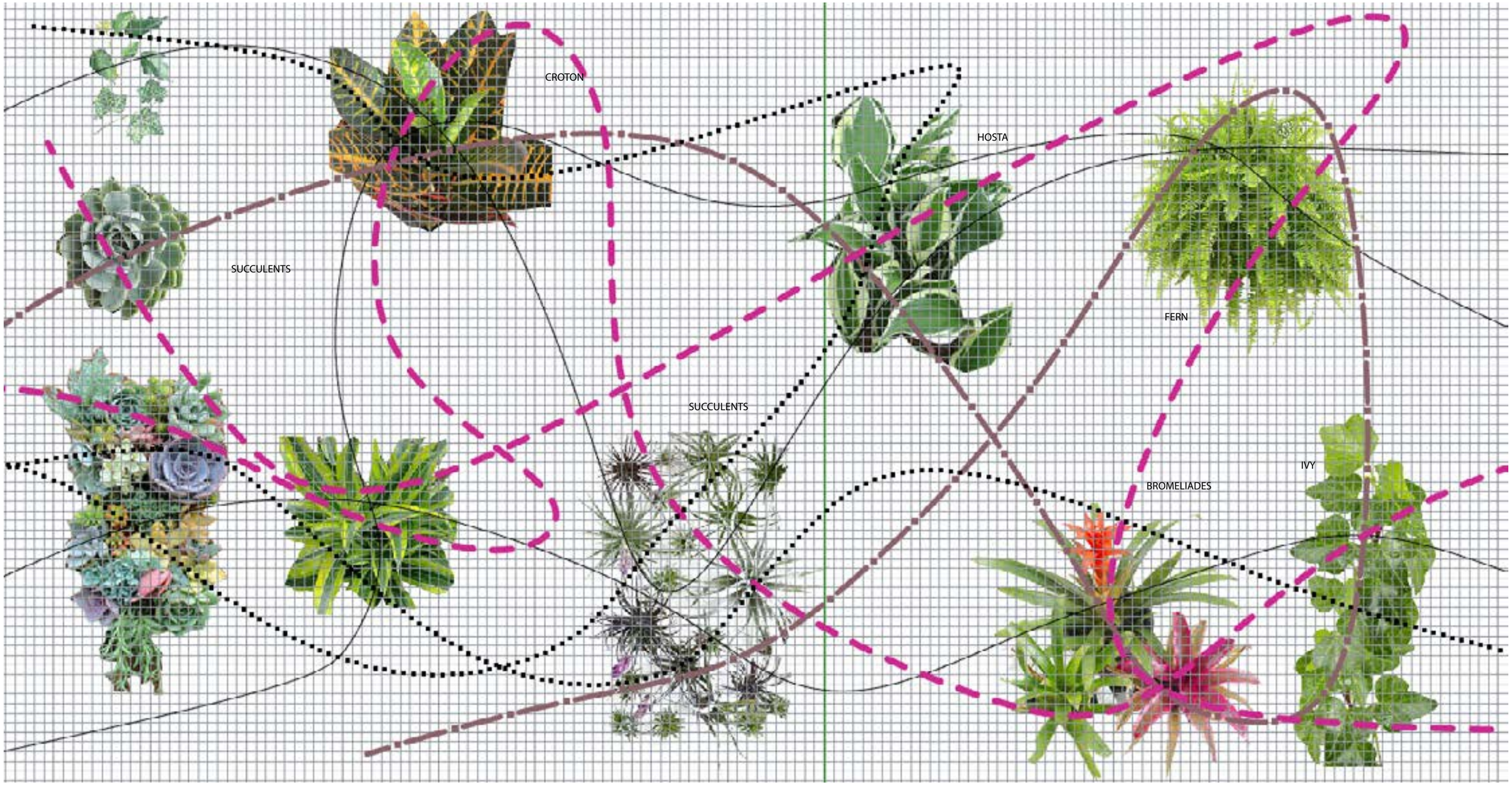
SUCCULENTS

CROTON

FERN

HOSTA

BROMELIADES



More than just structures

As Voltaire would write in Candide, 'il faut cultivar son jardin', which meant already at the time to keep mentally strong and even when everything else is not going well to keep cultivating your garden. We feel that this concept is still present but not applicable in the way apartments buildings are built which we hope to change with the epiphyte gardens architectures.

To design these urban suspended gardens, we are deeply inspired as well by Gilles Clement and his notion of Jardin planetaire, where different gardens are connected in different parts of the world.

In our Pop up ecosystems we are using plant species that grip directly onto the fabric which allow them to intertwine they roots overtime as they grow, making them strong and healthy, which in turn are supporting a community of intertwining individuals that are healthy, empowered and happy.