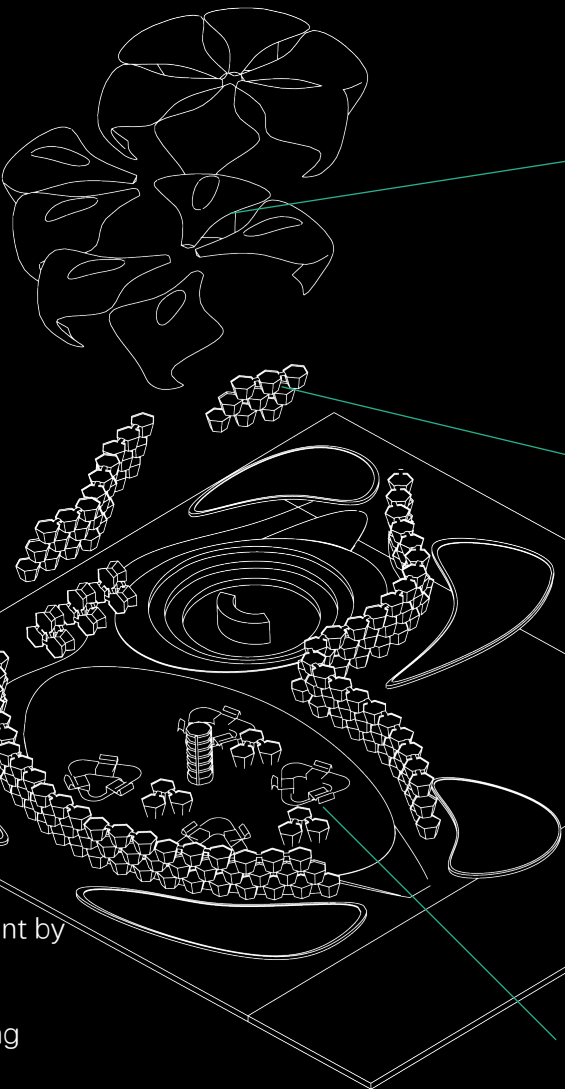


THE UROVA

Living Building Challenge

- 1 Car free living, TOD oriented
- 2 Net positive energy
- 3 Recycled material
- 4 Repurposed construction
- 5 Modular System construction
- 6 Locally produced material
- 7 Store rain water & local soil

- 8 Minimize food carbon footprint by providing local vegetables.
- 9 Pushing social justice by giving quality food to all community.



Aloe Canopy
Made from locally produced lumber. Able to collect and store rain water into its cell structure inside.

Planter façade
Made from bio plastic, which is formed by paper and food package waste, and plastic & utensil waste.

Fully modular system, after its life cycle, the UROVA can be disassembled and repurposed to community farm.

Solar study



July 9AM

Optimized natural light for canopy and the community space



July 12PM

Ample sunlight for planters, cooling under the aloe canopy



July 6PM

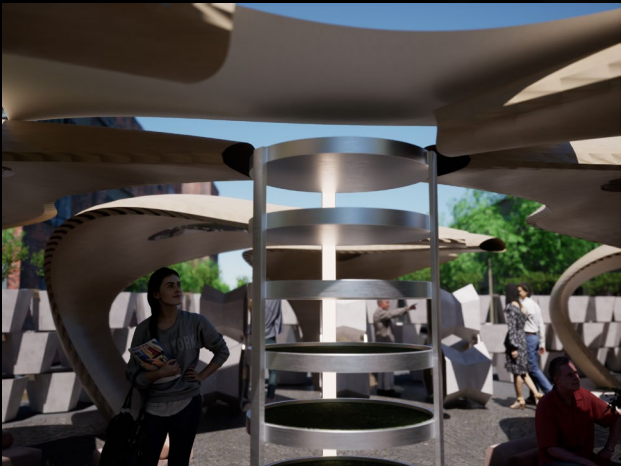
Additional sunlight for planter façade.



Saving water by collecting rain water and recycle use of waste water for watering plants :
Total 200 m² farm space
Approx:
1.2m³ / m²/year
Traditional farm:
4.5m³ / m²/year

Saving: 3.3 m³ / m²/year
Ten years total saving:
200 x 3.3 x 10 = 6600
Carbon emission saved:
6600 x 0.344 = 2270kg co₂

The planter façade, made from bio plastic board (from food package waste, utensil wastes, food wastes)



The Aloe canopy, creating a passive cooling and water saving system without additional electricity

300 planters Saving food transportation emission by providing organic vegetables to local neighborhood.

Replacing 30% household vegetables
5kg vegetables produced annually, total of 1500 kg

Cost of transportation :
1.47kg/10km/kg

Saved: 1500 x 1.47 x 0.3 x 10=
6615 kg co₂

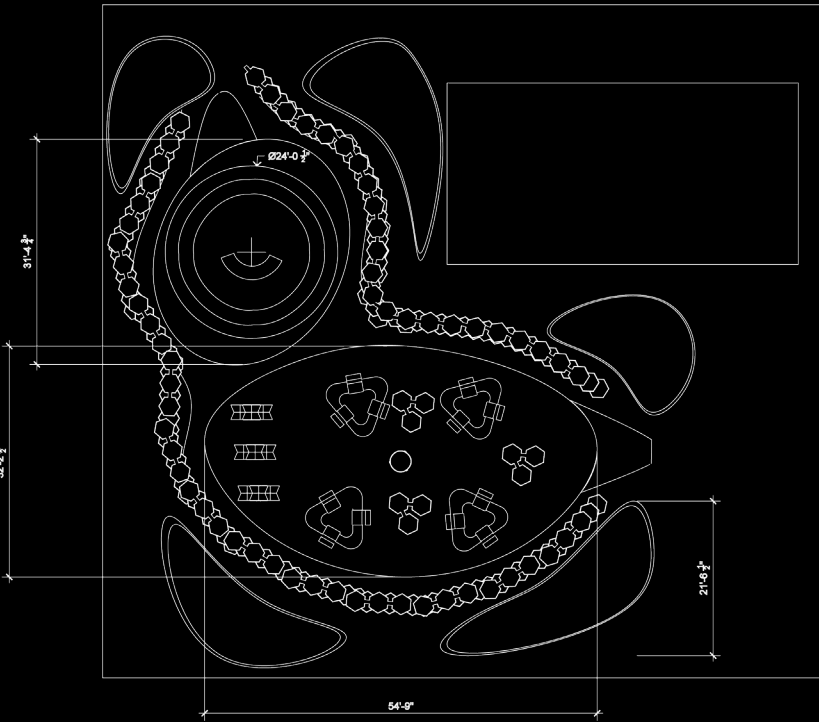


The community space, an alternative way to acquire organic food source with sustainability

THE LCA DETAILS

1.The Material production

Material type :		
Planter façade	300sq meters	630kg co2 emission
Aloe canopy	150sq meters	645kg co2 emission
Pavements	200sq meters	360kg co2 emission
Planter and canopy tech parts	300 parts	240kg co2 emission
Total carbon emission:	1875kg co2	



THE CARBON POSITIVE SPACE

The total co2 emission for the space : 2110 kg co2

The carbon saved from active water reuse system:
2270 kg co2

The carbon saved from transportation of vegetables
6615 kg co2

$2110 - 2270 - 6615 = -6775 \text{ kg co2}$

The entire life cycle of UROVA will save 6775 kg co2 emission from its community farm, water saving aspect. Making UROVA a **carbon positive community park**.

2.Transportation

All materials are fabricated within the 5 miles range of UROVA site.

Overall volume of material : 20 cubic meters

Transportation cost : Approx 1 gallon gasoline

Co2 emission : Approx 35kg co2

3. Construction

Modular system, fabricated by human assembly, no large lifting machine required.

Approx time to complete : 10 days

Approx emission : 100 kg co2

4. Use phase

Approx total emission for ten years : 50kg co2

5. Demolish

Approx 50 kg co2 emission.

Total carbon emission for entire life cycle:
 $1875 + 35 + 100 + 50 + 50 = 2110 \text{ kg co2}$



After the life cycle ended, the UROVA's planter façade is able to repurposed into community farm for local LA community.

