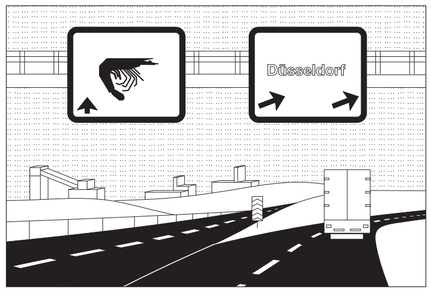
Pink is Not a Color — Ana Herreros Cantis (ES)

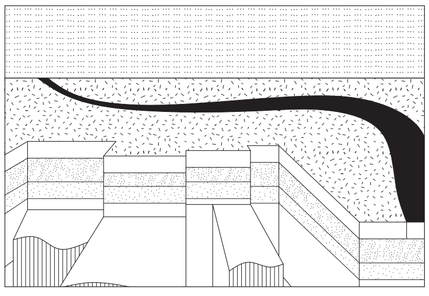
This contribution envisions a new land-based aquaponic shrimp farm that replaces the practice of traditional fishing, reflecting on the planet extinction of marine species. It is sited next to the existing Borth salt mine located in Rheinberg, North Rhine-Westphali, Germany.

3

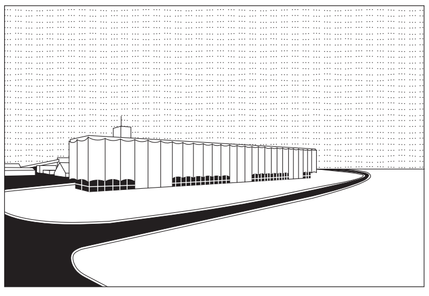
Contribution to *Supermarket*



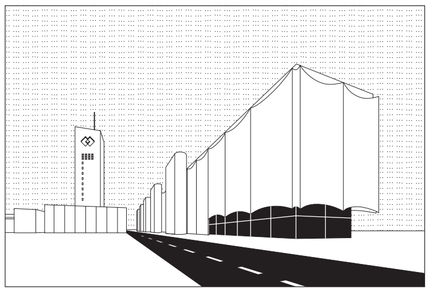
Due to an increasing pescatarian society, per capita consumption of meat is set to drop to the lowest levels. To accommodate the growing demand for shrimps, a new White Pacific Shrimp network connected to the existing North corridor for crustaceans will produce 78.500.000 tons of fresh land-harvested shrimps per year to reduce the bycatch provoked by traditional fishing.



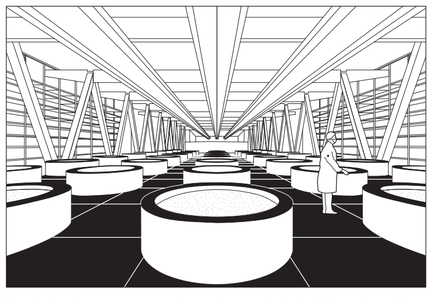
Germany, a country inside the Blue Banana and the biggest producer of salt in Europe perceives the new shrimp network as a system that works in symbiosis with the existing salt factories with the purpose of sharing resources. The three biggest German salt mines incorporate land-based aquaponic farms in a phased strategy that starts with the pilot case of Rheinberg.



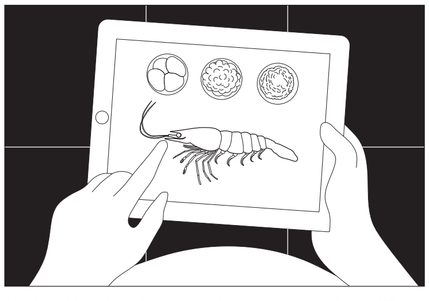
The existing Borth Salt Mine, the soil conditions of the area, and the Rhine River make Rheinberg an ideal location, adjacent to the fundamental resources–water and salt. The monolithic volume of the aquaponic farm works in tune with the existing industrial landscape that is perceived from the highway as part of the actual master plan.



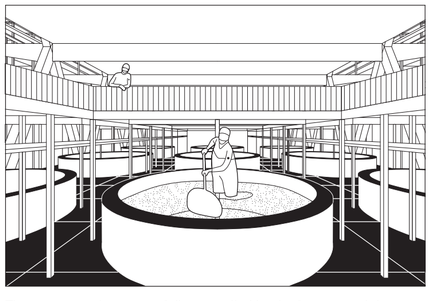
The building consists of three different environments. The dark volume which encloses the controlled ecosystem capable of mimicking the Ecuadorian mangroves, the luminous areas located on the rooftop and the logistical ground floor which is connected to the roads that surround the new shrimp farm.



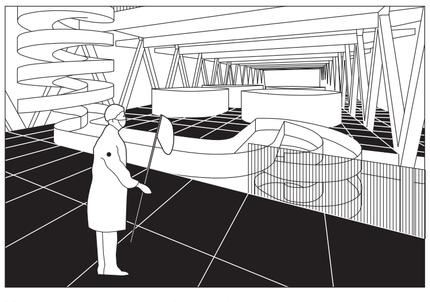
The dark volume composes the main area of the building, where the breeding, growing and harvesting takes place. After the maturation ends, the eggs are poured into the nursery tanks with a water temperature of 30 degrees. Salt tablets provided by the adjacent salt factory are added in the water contained by the recycled concrete tanks perched on the top of a technical floor.



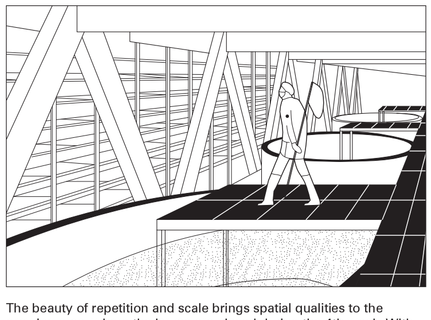
112 days. 16 weeks is the amount of time needed for a farmed White Pacific Shrimp to grow and be distributed. After the first month, the farmer controls the complete cycle of two months for growing thanks to the monitored feeding and health control. Each year, three shrimp crops take place by two mandatory weeks for maintenance.



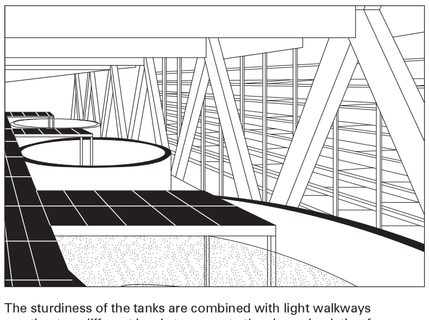
The nursery tanks are carefully controlled by the farmers and the students who combine the theoretical lessons that take place in the pavilions with practical work that take place in the dark and sealed volume.



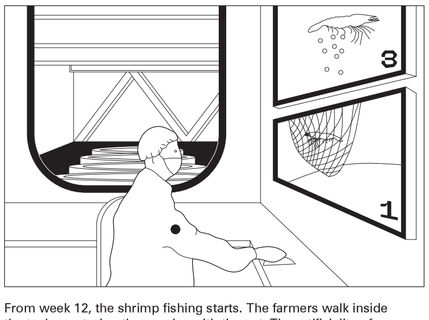
Mimicking natural tides, vertical spiral conveyor belts transport the shrimps from one floor to the next one avoiding animal stress.



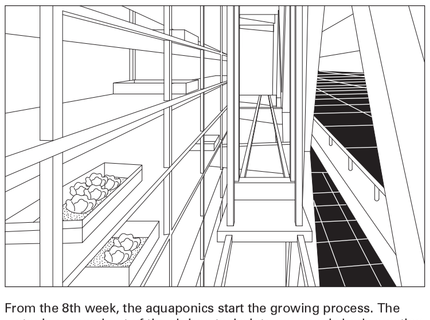
The beauty of repetition and scale brings spatial qualities to the growing area, where the larvae are placed during the 4th week. With a water temperature of 28 degrees, the tanks are accessible for the farmers who develop the act of hatching while walking inside the water.



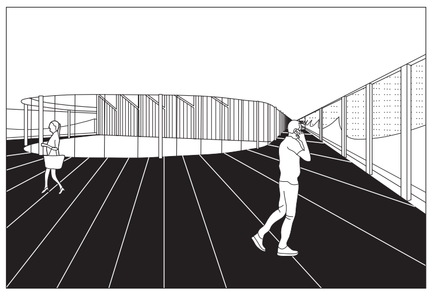
The sturdiness of the tanks are combined with light walkways creating two different levels to separate the clean circulation from the production space. Future farmers use this level in order to have a controlled view of the process observing the harnessing while circulating through the elevated structures.



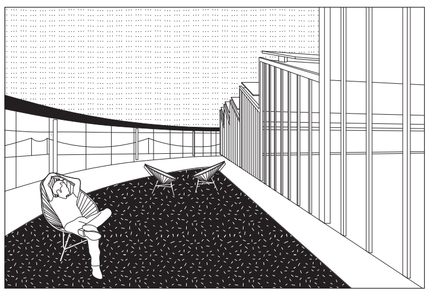
From week 12, the shrimp fishing starts. The farmers walk inside the tanks capturing the species with the net. The artificiality of the environment is controlled from the monitoring room in which the species to be hatched are carefully selected according to the deliveries.



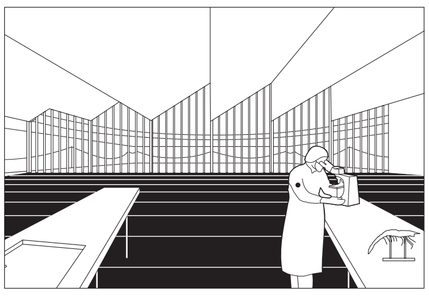
From the 8th week, the aquaponics start the growing process. The water is pumped out of the shrimp tanks into aquaponic beds creating a closed-loop water system through which the shrimp provide nutrients for the plants and the plants clean the water for the shrimps.



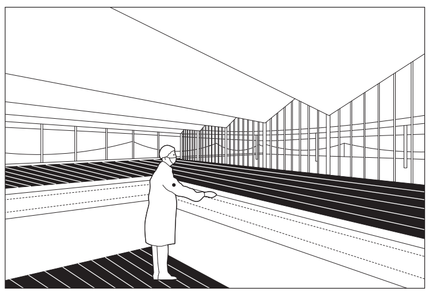
Responding to the working breaks that take place every two hours, facilities are located on the rooftop ensuring a healthy life for the workers and providing spectacular views of the industrial area. From the transitional lobbies, the gardens and pavilions are recognized and surrounded by the presence of the curved façade.



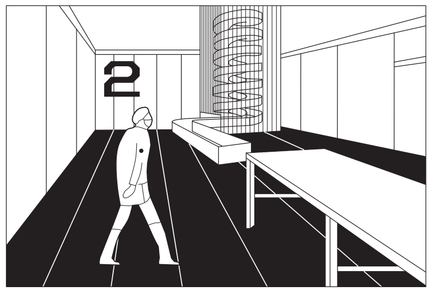
The exterior gardens function as extensions of the specific pavilions bringing nature inside the building. Six different courtyards are attached to the leisure and learning areas working as additional programs for the humans.



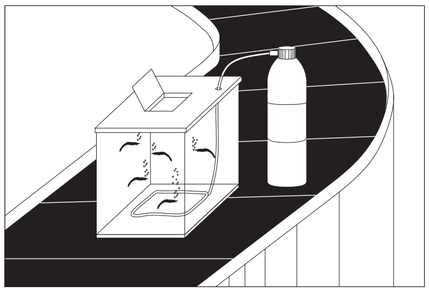
Standing next to the training center, the laboratories function with indirect light provided by the saw tooth rooftop. Long stainless steel tables organize the space and ensure hygiene for the performance of the dissection of the crustaceans.



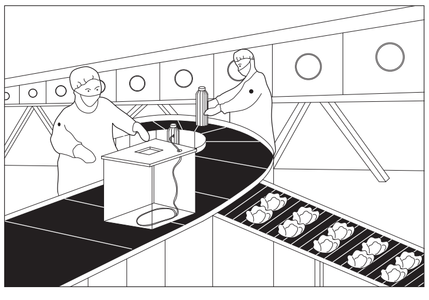
The workers canteen is open to the visitors who come to taste the fresh shrimp farmed in the middle of Germany sharing the space with the workers. The food circulates on the top of conveyor belts that connect the tables enabling a dynamic atmosphere where fresh food moves through the space.



Once the products are grown, they are vertically transported to the ground floor, where the control and the labeling take place. This floor illustrates the dynamic functioning of the trucks, which form a choreography with the control system and the vertical production.

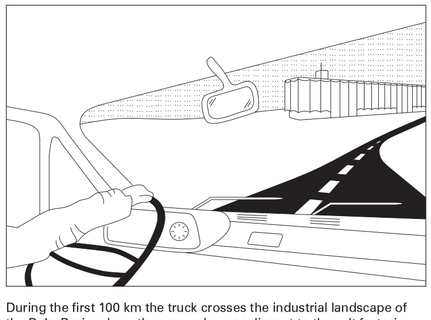


After spending 24 hours in the fasting tanks, clusters of 50 shrimps are located in 1m3 tanks made out of plastic. Accompanied by an oxygen tank, the animals travel without food in their stomach to avoid a high level of nitrogen provoked by the fece

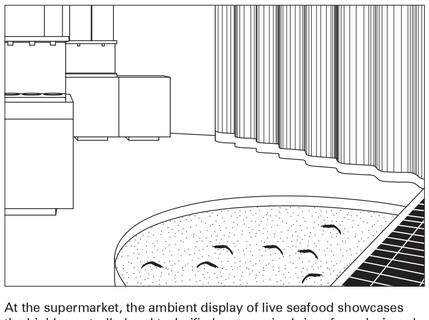


The processing lines combine the green leaves and the animals in the same space. After being placed inside the tanks, the oxygen tanks are checked, and the lettuces are cleaned and placed in pallets. The room has a temperature of 20 degrees for the shrimps to slowly acclimatize to room temperature before they arrive at the supermarket.

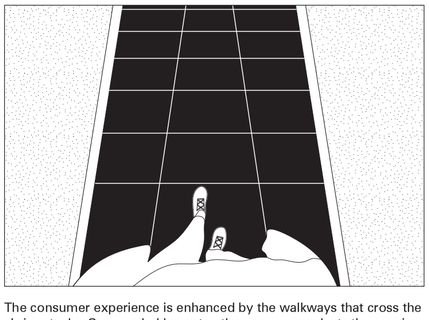
The last control and labeling take place in a space with direct access to the storage area composed by a repetitive interior façade. The label Farmed Responsibly responds to the animal welfare and the zero-waste approach of the factory.



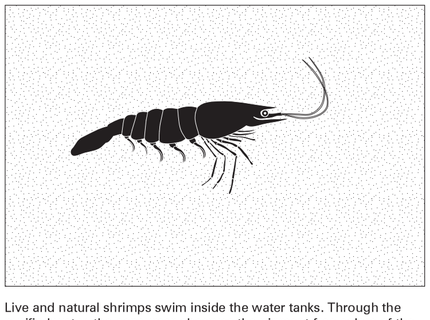
During the first 100 km the truck crosses the industrial landscape of the Ruhr Basin where the new volumes adjacent to the salt factories are perceived. Regularity, infinity, the absence of center and seriality compose the new monolithic constructions that blur the boundaries between artificial and natural, creating a new collective understanding of the ocean and the culture of fishing.



At the supermarket, the ambient display of live seafood showcases the highly controlled and technified aquaponic shrimp farm designed to resolve fish extinction. A new relationship between humans and animals takes place in the supermarket.



The consumer experience is enhanced by the walkways that cross the shrimp tanks. Surrounded by water, the consumer selects the species to buy, understanding a new way of circular farming.



Live and natural shrimps swim inside the water tanks. Through the purified water, the consumer observes the pigment-free colors of the species, which are displayed in their artificial habitats which produce a new collective perception of freshness.

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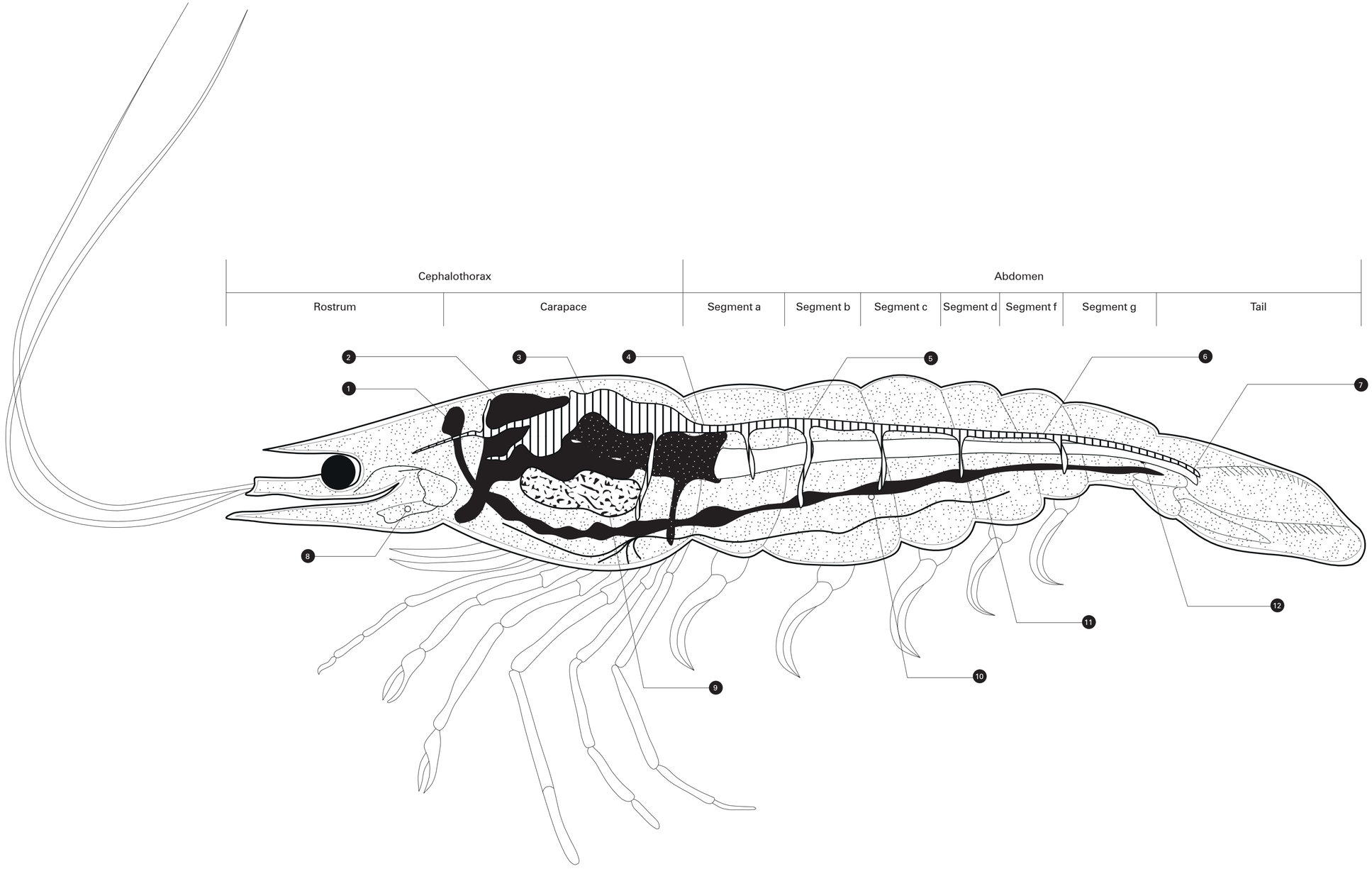
Presented in a set of spatial narratives, the contribution of a land-based aquaponic farm, depicts the modified supply chain of shrimp production which reconfigures the future supermarket—Albèrt—on Martinus Nijhofflaan in Delft.

1/17

Contribution to *Supermarket*



1 Brain
2 Stomach
3 Heart
4 Ovary
5 Posterior Aorta
6 Intestine
7 Anus
8 Mouth
9 Digestive Gland
10 Petasma
11 Nerve Cord
12 Rectum

0 1 2cm

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The anatomical section of the White Pacific Shrimp, relating the healthy growth of the animal with the atmospheric characteristics of the farm, which mimics the tropical climate of the Ecuadorian Mangroves.

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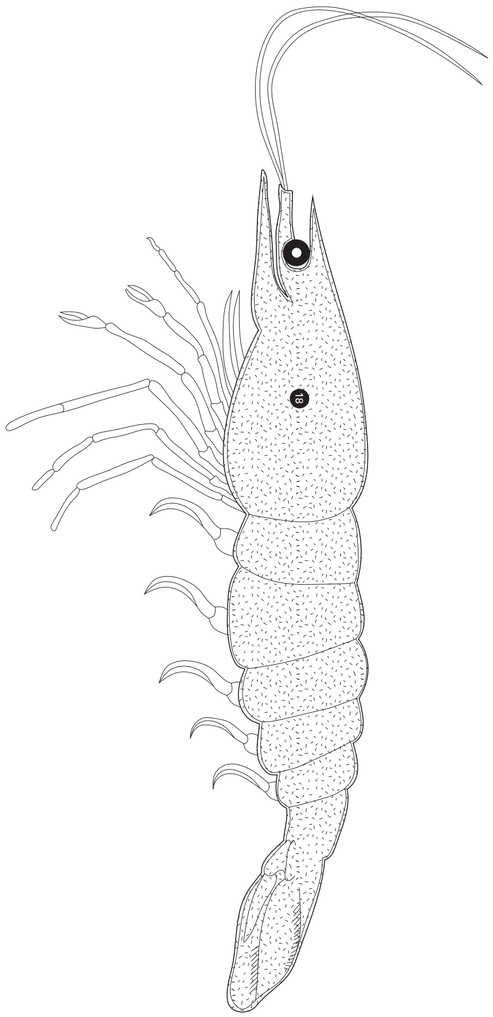
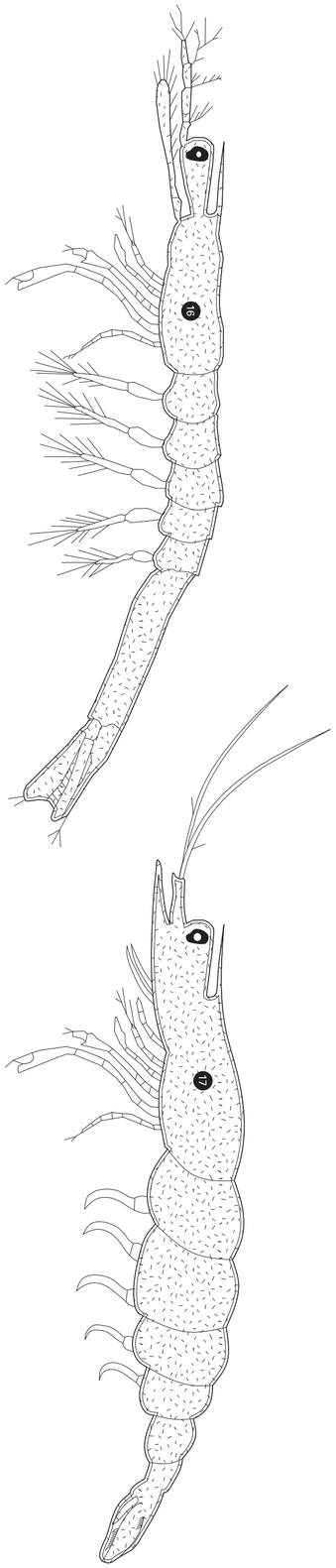
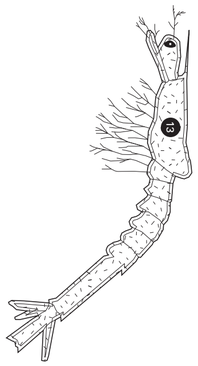
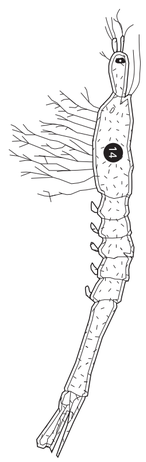
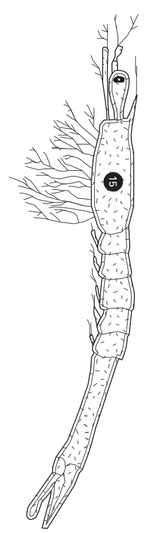
Contribution to *Supermarket*

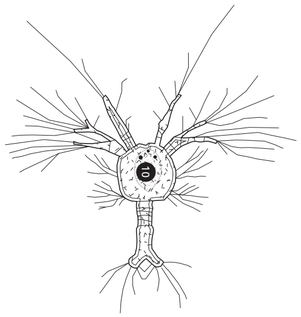


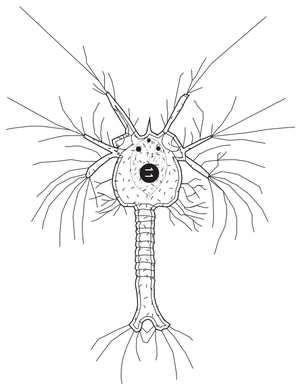


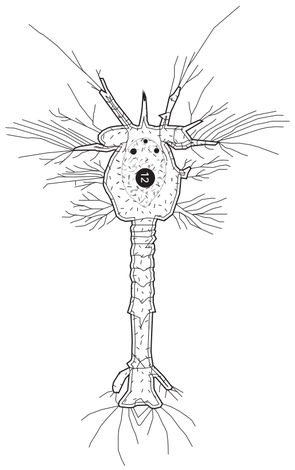


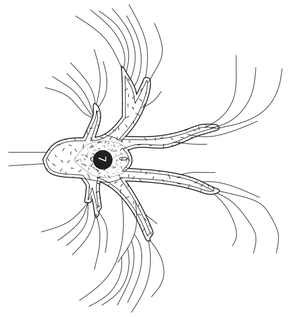


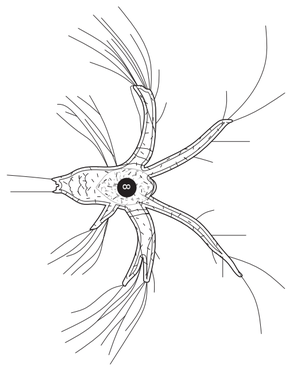


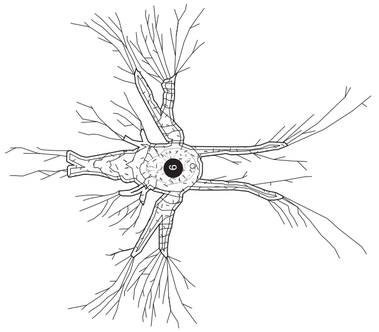


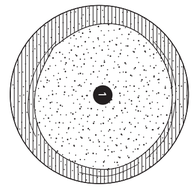


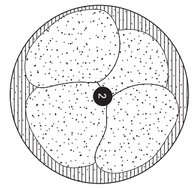


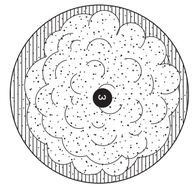


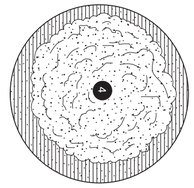


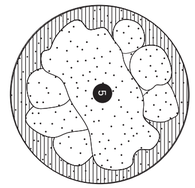


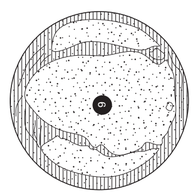












1	Zygote
2	Cell
3	Blastula
4	Gastrula
5	Limb bud Embryo
6	Larva in membrane
7	NI
8	NII
9	NVI
10	ZI
11	ZII
12	ZIII
13	MI
14	MII
15	MIII
16	P1
17	P2
18	P3

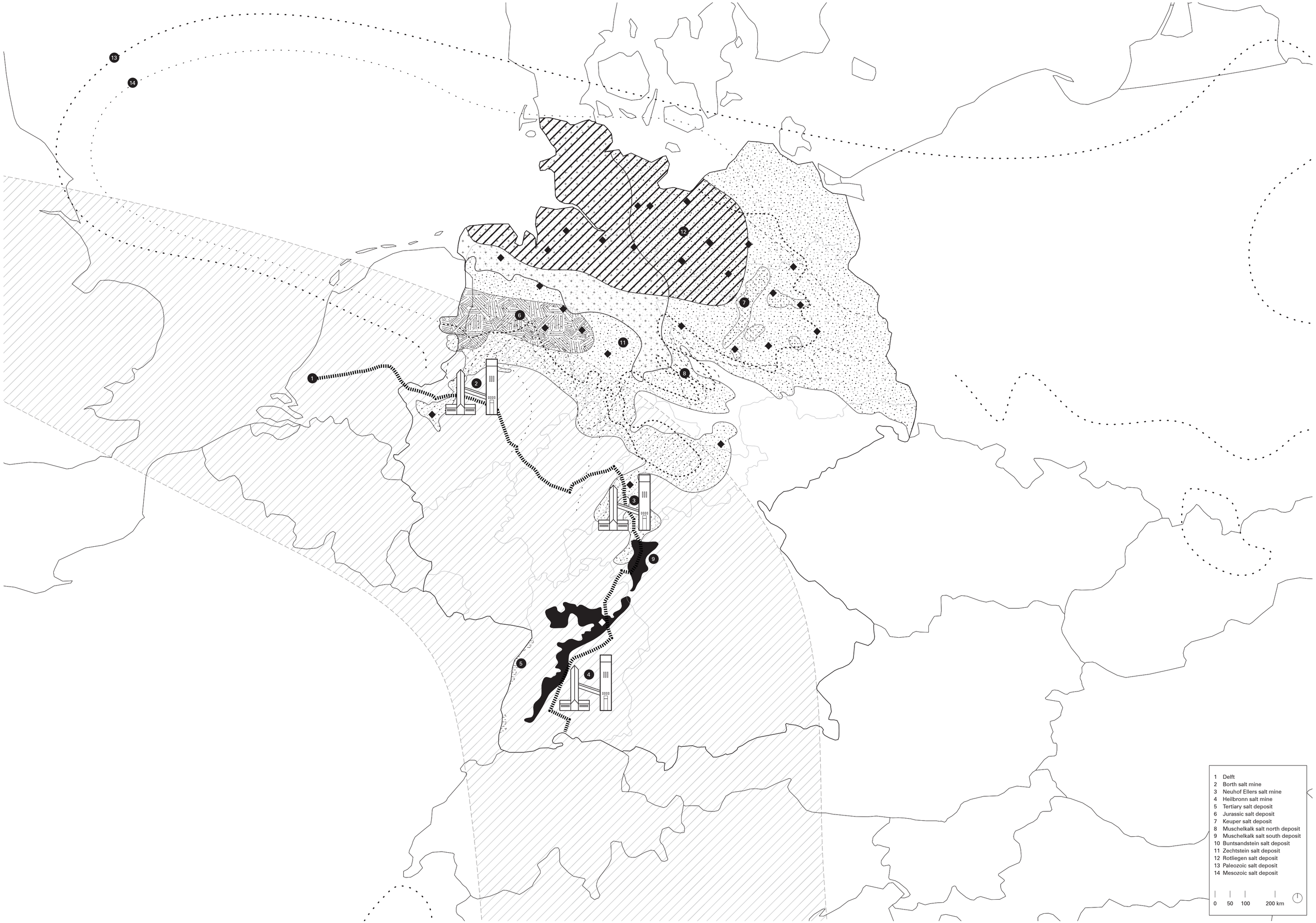
0 1 2 4 cm

Pink is Not a Color — Ana Herreros Cantis (ES)

The 112-day incubation cycle of the White Pacific Shrimp reveals the different stages of development, not only determining the spatial qualities for each phase, but also creating a repetitive rhythm that combines animal welfare with productivity.

3/17

Contribution to *Supermarket*


1 Delft
2 Borth salt mine
3 Neuhof Ellers salt mine
4 Heilbronn salt mine
5 Tertiary salt deposit
6 Jurassic salt deposit
7 Keuper salt deposit
8 Muschelkalk salt north deposit
9 Muschelkalk salt south deposit
10 Buntsandstein salt deposit
11 Zechtstein salt deposit
12 Rotliegen salt deposit
13 Paleozoic salt deposit
14 Mesozoic salt deposit
0 50 100 200 km

Pink is Not a Color — Ana Herreros Cantis (ES)

Germany, a country inside the Blue Banana and the largest salt producer in Europe, anticipates a new prototypical and strategic network that works in symbiosis with the existing salt factories.

4/17

Contribution to *Supermarket*

1 Shaft tower
2 Salt storage
3 Logistic center
4 Parking
5 Old train
6 Shrimp farm

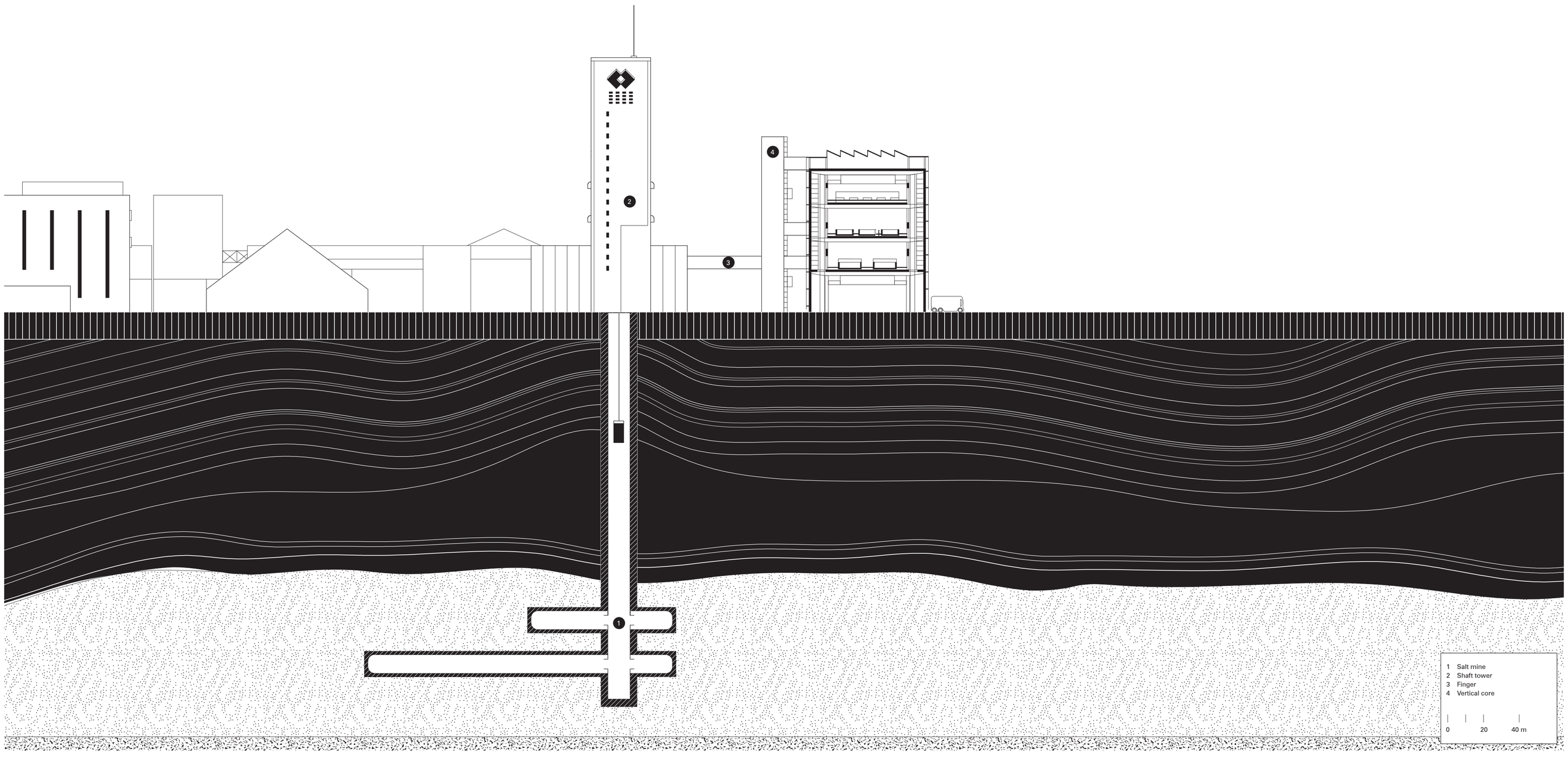
0 35 70 m

Pink is Not a Color — Ana Herreros Cantis (ES)

The site plan illustrates the location of the contribution, which is sited next to the Borth salt mine located in Rheinberg, surrounded by an agricultural landscape and just 200 kilometers away from Delft.

5/17

Contribution to *Supermarket*

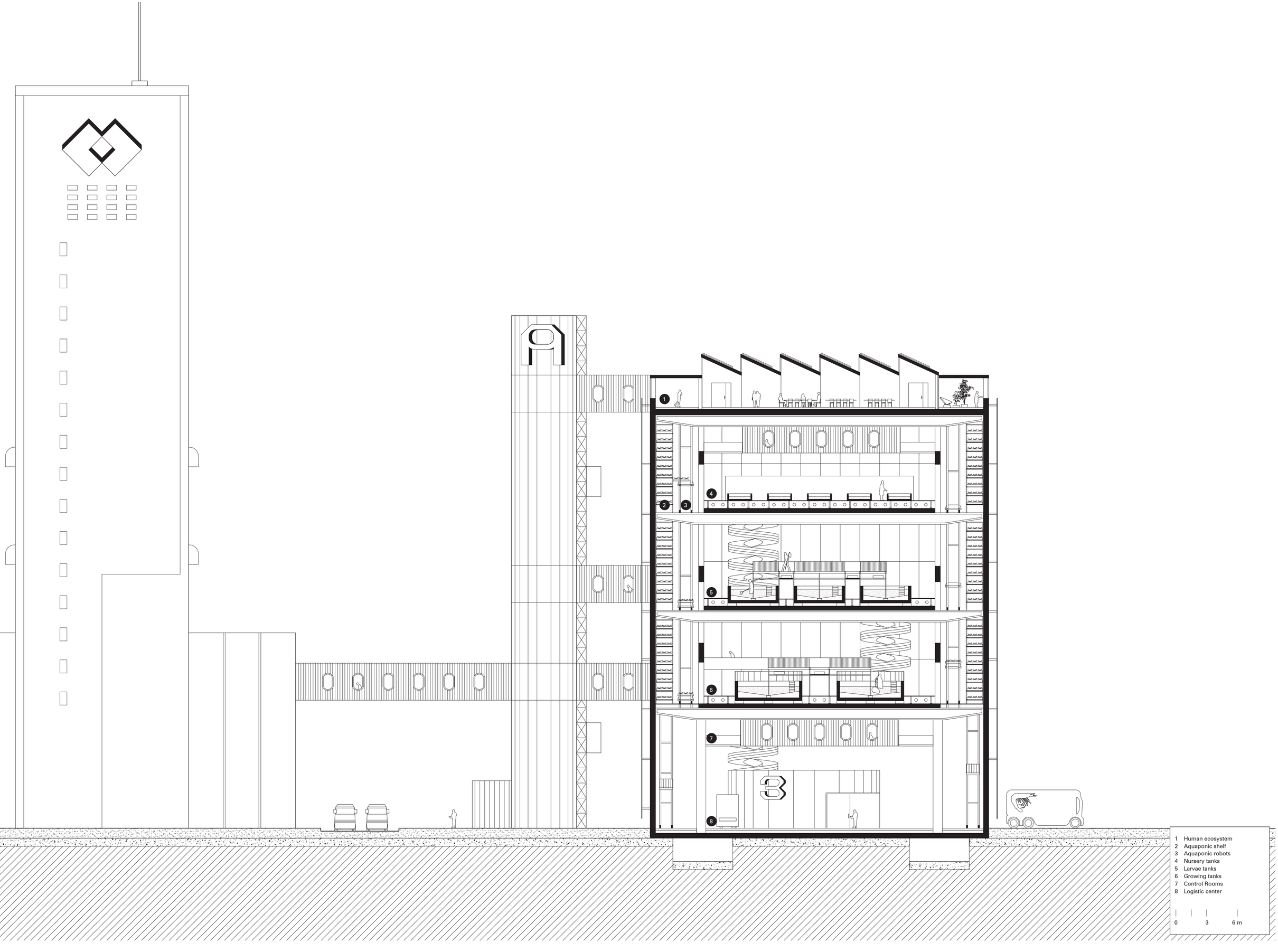

4
2
3
1
1 Salt mine
2 Shaft tower
3 Finger
4 Vertical core
0
20
40 m

Pink is Not a Color — Ana Herreros Cantis (ES)

The section depicts the soil conditions of the site and the relationship between the existing factory and the new farm, along with outlining the shared resources such as salt extraction and residual heat.

6/17

Contribution to *Supermarket*

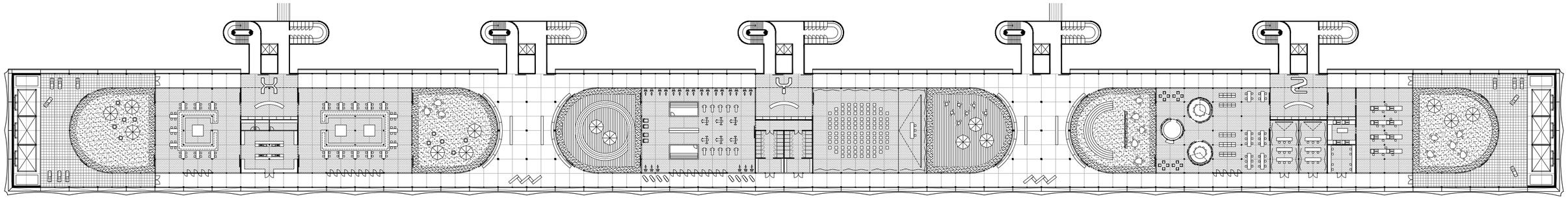

1
2
3
4
5
6
7
8
1 Human ecosystem
2 Aquaponic shelf
3 Aquaponic robots
4 Nursery tanks
5 Larvae tanks
6 Growing tanks
7 Control Rooms
8 Logistic center
0
3
6 m

Pink is Not a Color — Ana Herreros Cantis (ES)

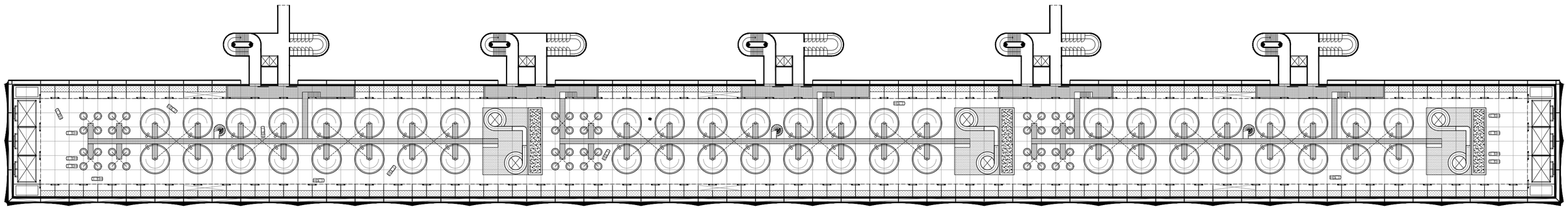
The section illustrates the vertical production that takes place inside the dark and sealed volume that operates with a recirculating water purification system to create a circular combination between shrimp and leafy green production.

7/17

Contribution to *Supermarket*



1



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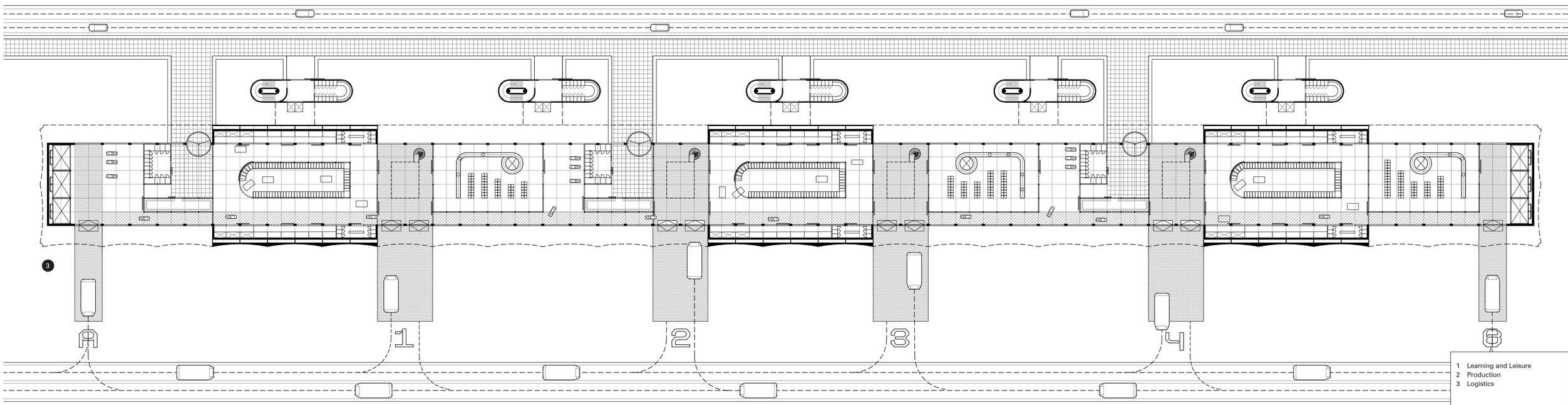


3

1 Learning and Leisure
2 Production
3 Logistics

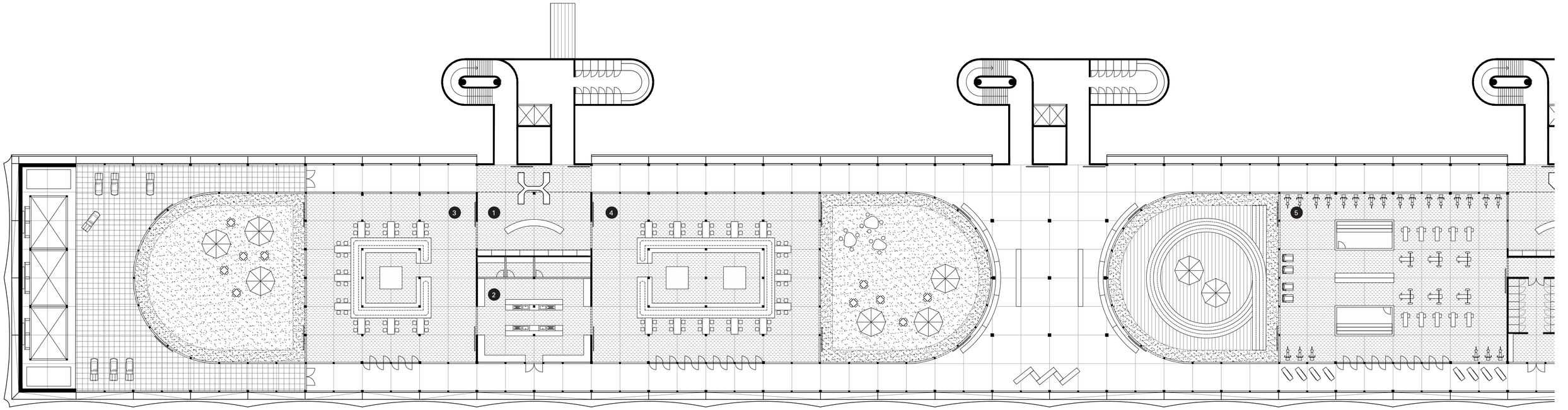
0 15 30 m

Pink is Not a Color — Ana Herreros Cantis (ES)

Regularity, infinity, the absence of center and seriality compose a geometry that contains the relationship between multiple entities through three different environments: the human ecosystem, the productive volume, and the logistical ground floor. These environments are capable of being multiplied according to the changing parameters of human consumption.

8/17

Contribution to *Supermarket*

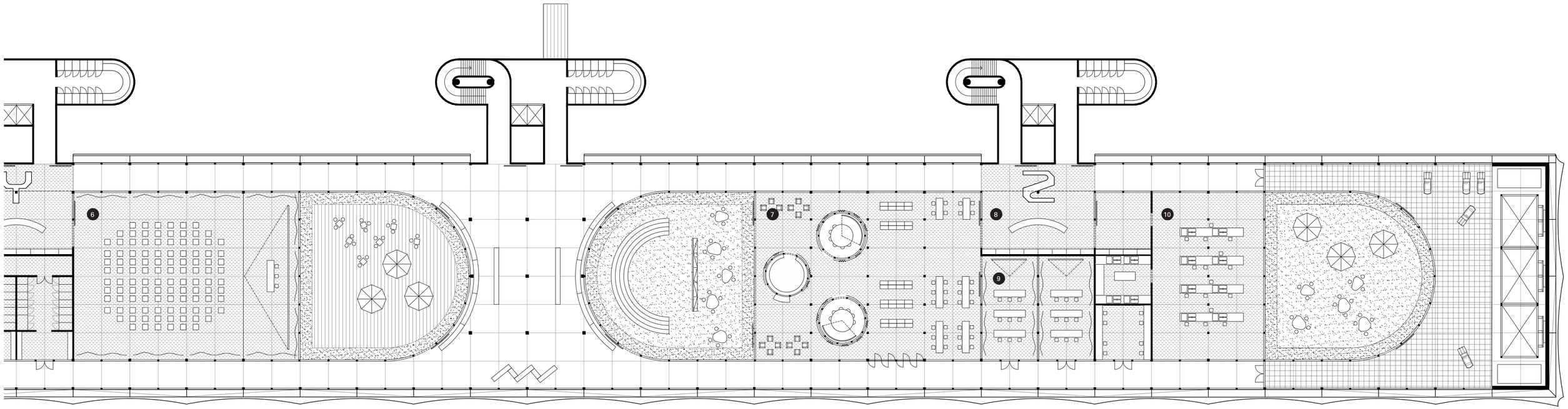

3
1
4
2
5

Pink is Not a Color — Ana Herreros Cantis (ES)

Spaces for visitors and students, such as a training center and public canteen, are located on top of the farm, reinforcing landscape views to revaluing the industrial site.

9/17

Contribution to *Supermarket*



1 Lobby
2 Kitchen
3 Tasting cantine
4 Big cantine
5 Gym
6 Auditorium
7 Training center
8 Lobby
9 Classrooms
10 Laboratories

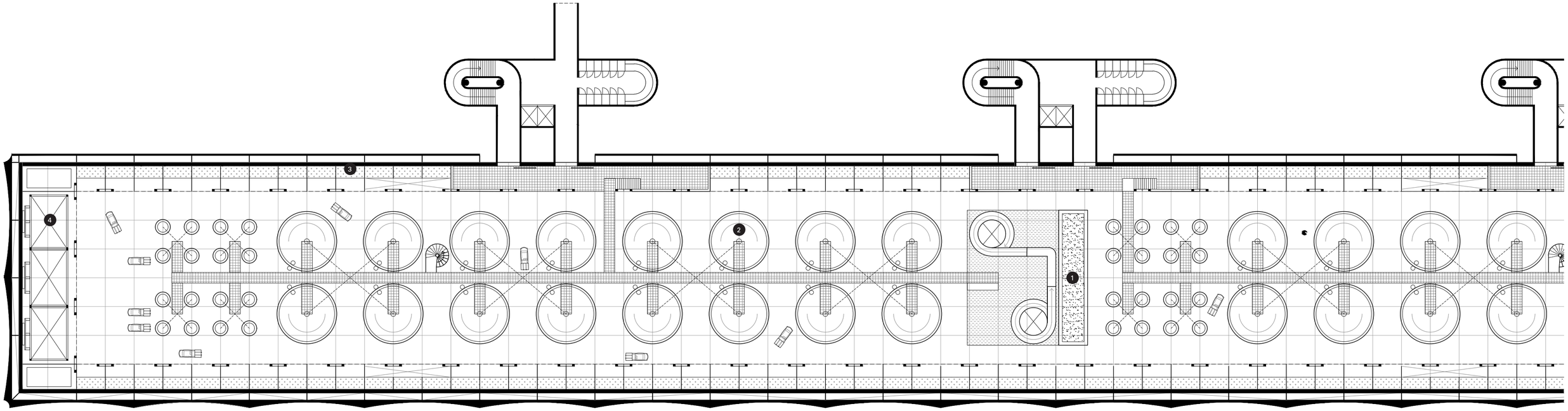
0 5 10 m

Pink is Not a Color — Ana Herreros Cantis (ES)

Spaces for visitors and students, such as a training center and public canteen, are located on top of the farm, reinforcing landscape views to revaluing the industrial site.

10/17

Contribution to *Supermarket*

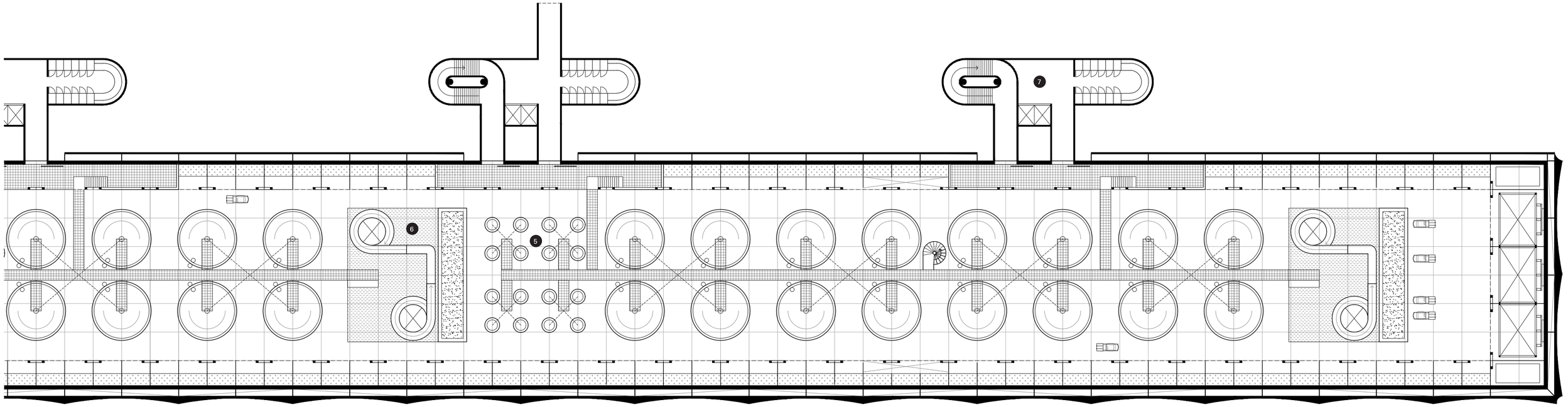

3
4
2
1

Pink is Not a Color — Ana Herreros Cantis (ES)

The growing floor is dimensioned to produce two tons of shrimps each week, following the tank rotation system applied in shrimp farming.

11/17

Contribution to *Supermarket*



1 Filtering tank
2 Growing tank
3 Green leafs
4 Lift trucks
5 Zooplakton
6 Spiral conveyor belts
7 Vertical core

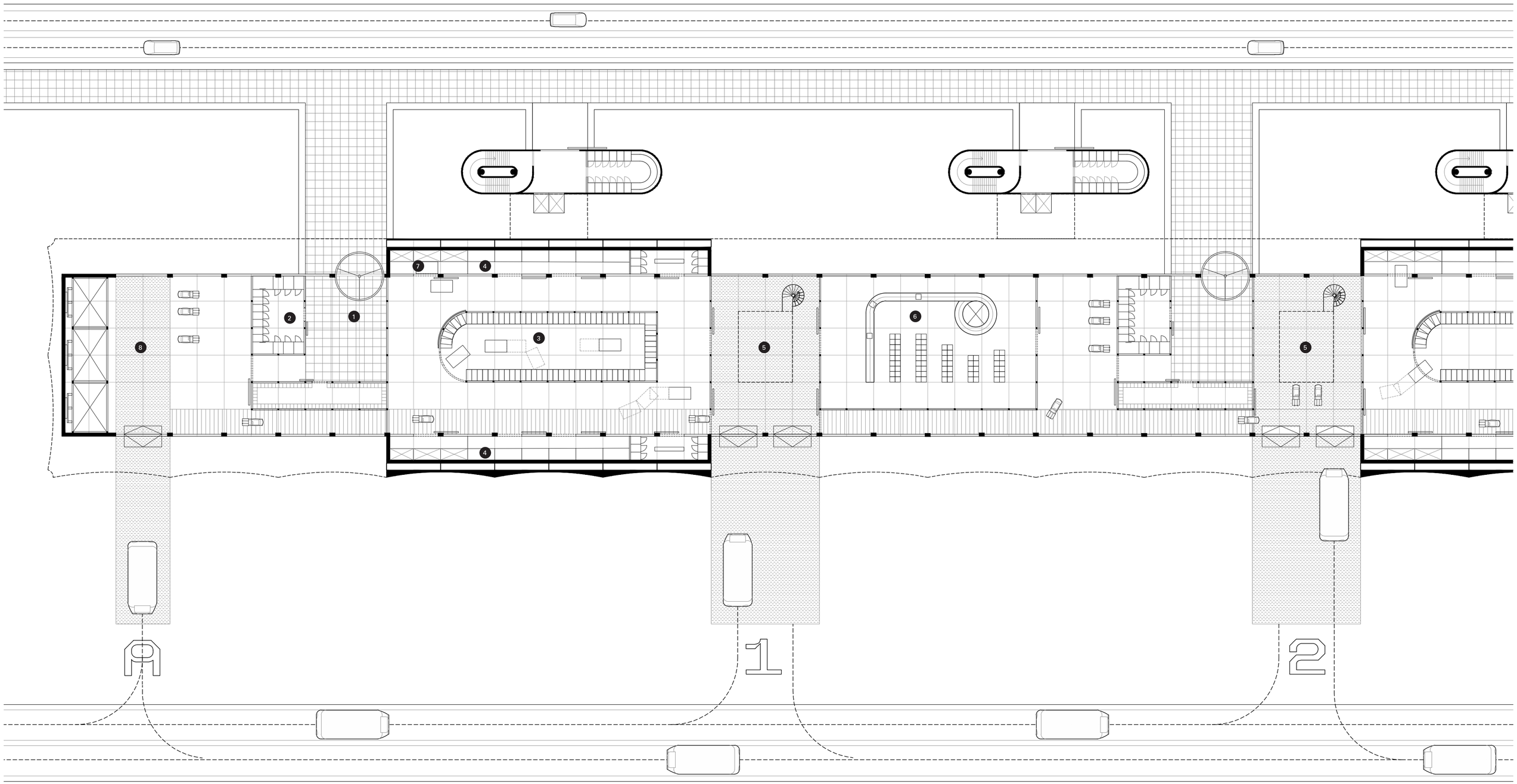
0 5 10 m

Pink is Not a Color — Ana Herreros Cantis (ES)

The growing floor is dimensioned to produce two tons of shrimps each week, following the tank rotation system applied in shrimp farming.

12/17

Contribution to *Supermarket*

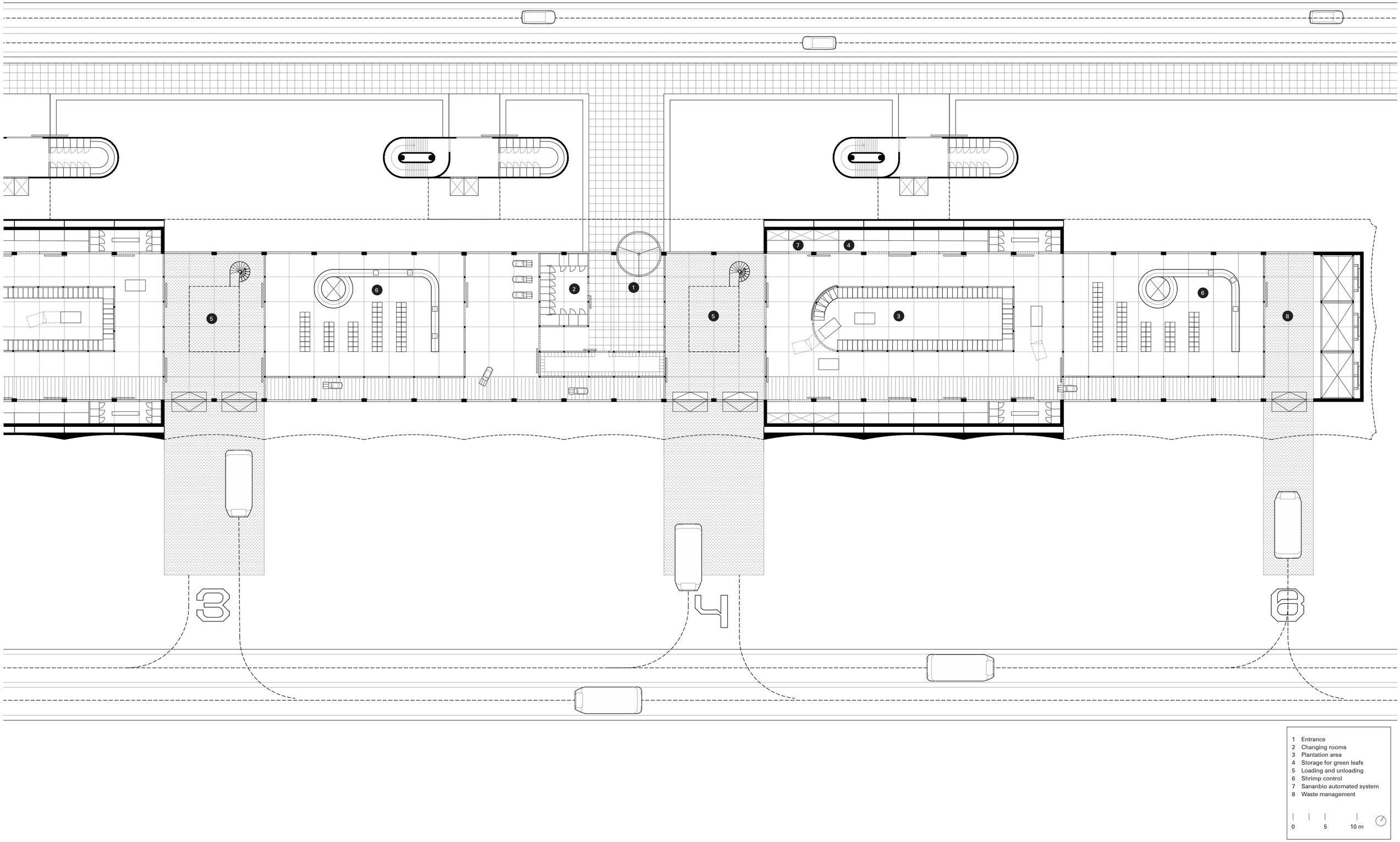

7
4
2
1
3
5
6
8
5
4
A
1
2

Pink is Not a Color — Ana Herreros Cantis (ES)

The ground floor illustrates the dynamic functioning of the trucks, which form a choreography with the control system and the vertical production.

13/17

Contribution to *Supermarket*



1 Entrance
2 Changing rooms
3 Plantation area
4 Storage for green leafs
5 Loading and unloading
6 Shrimp control
7 Sananbio automated system
8 Waste management

0 5 10 m

Pink is Not a Color — Ana Herreros Cantis (ES)

The ground floor illustrates the dynamic functioning of the trucks, which form a choreography with the control system and the vertical production.

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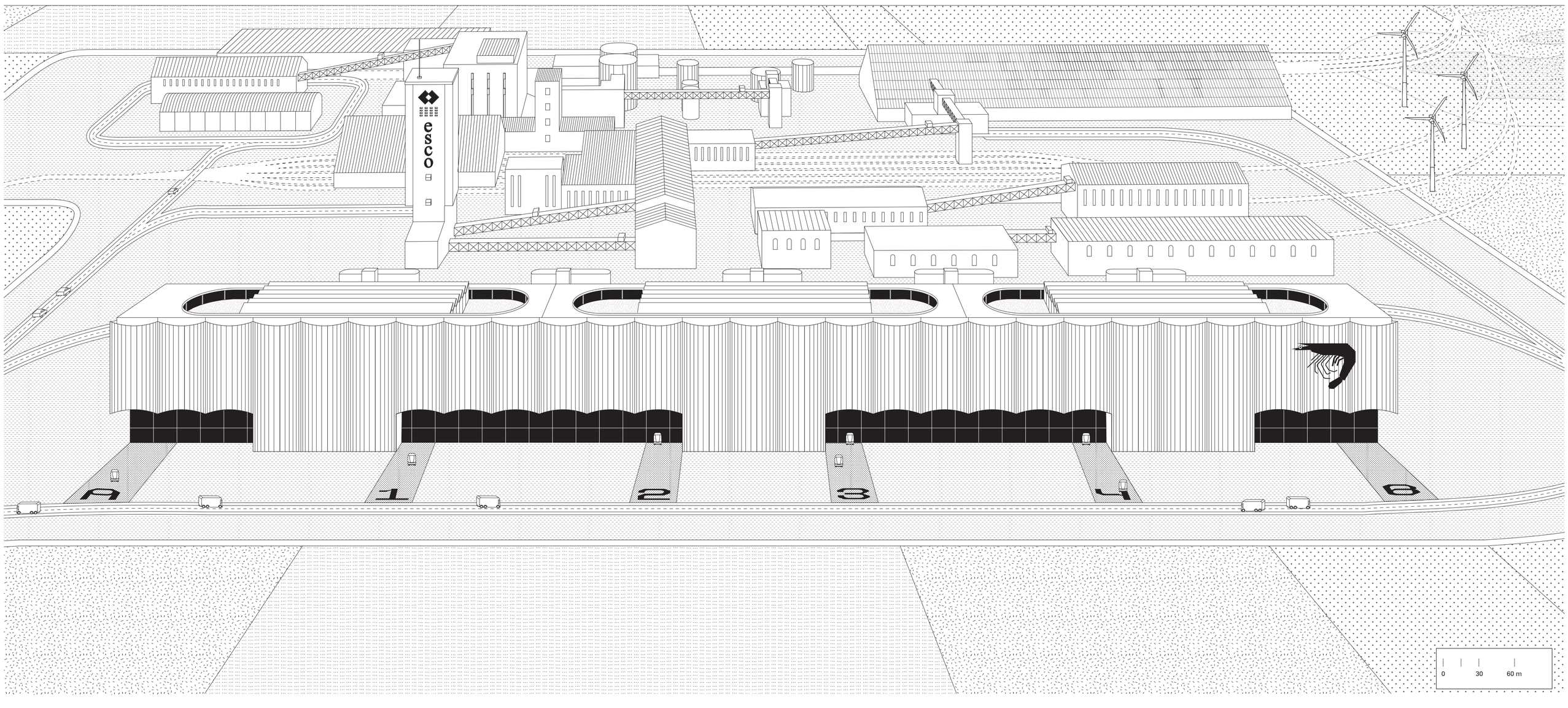
Contribution to *Supermarket*


esco
A
1
2
3
4
0
0
30
60 m

Pink is Not a Color — Ana Herreros Cantis (ES)

Approaching the new age of shrimp farming, monolithic construction blur the boundaries between artificial and natural, creating a new collective understanding of the ocean and the culture of fishing.

15/17

Contribution to *Supermarket*

esco

3

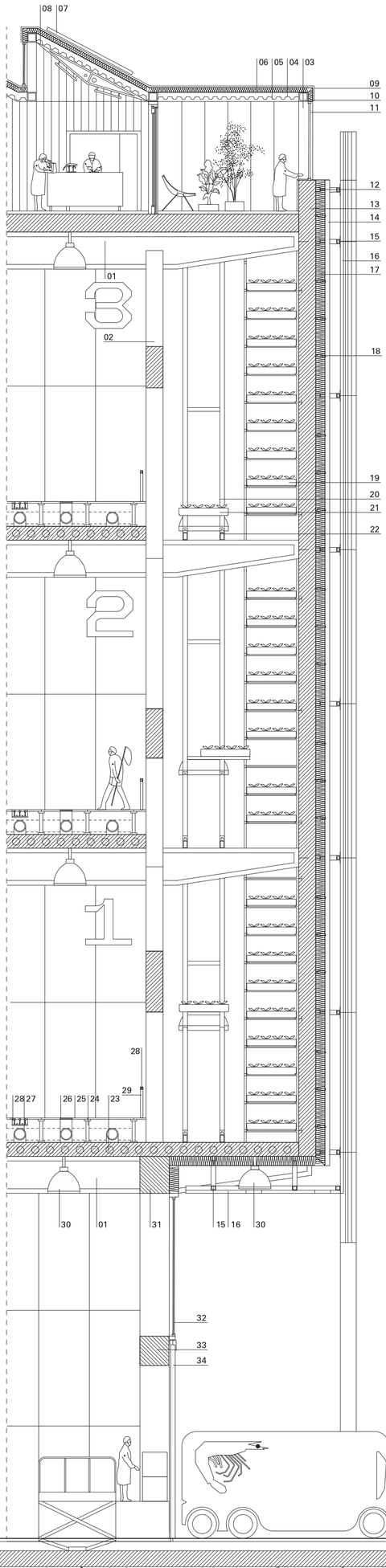
0 30 5 m

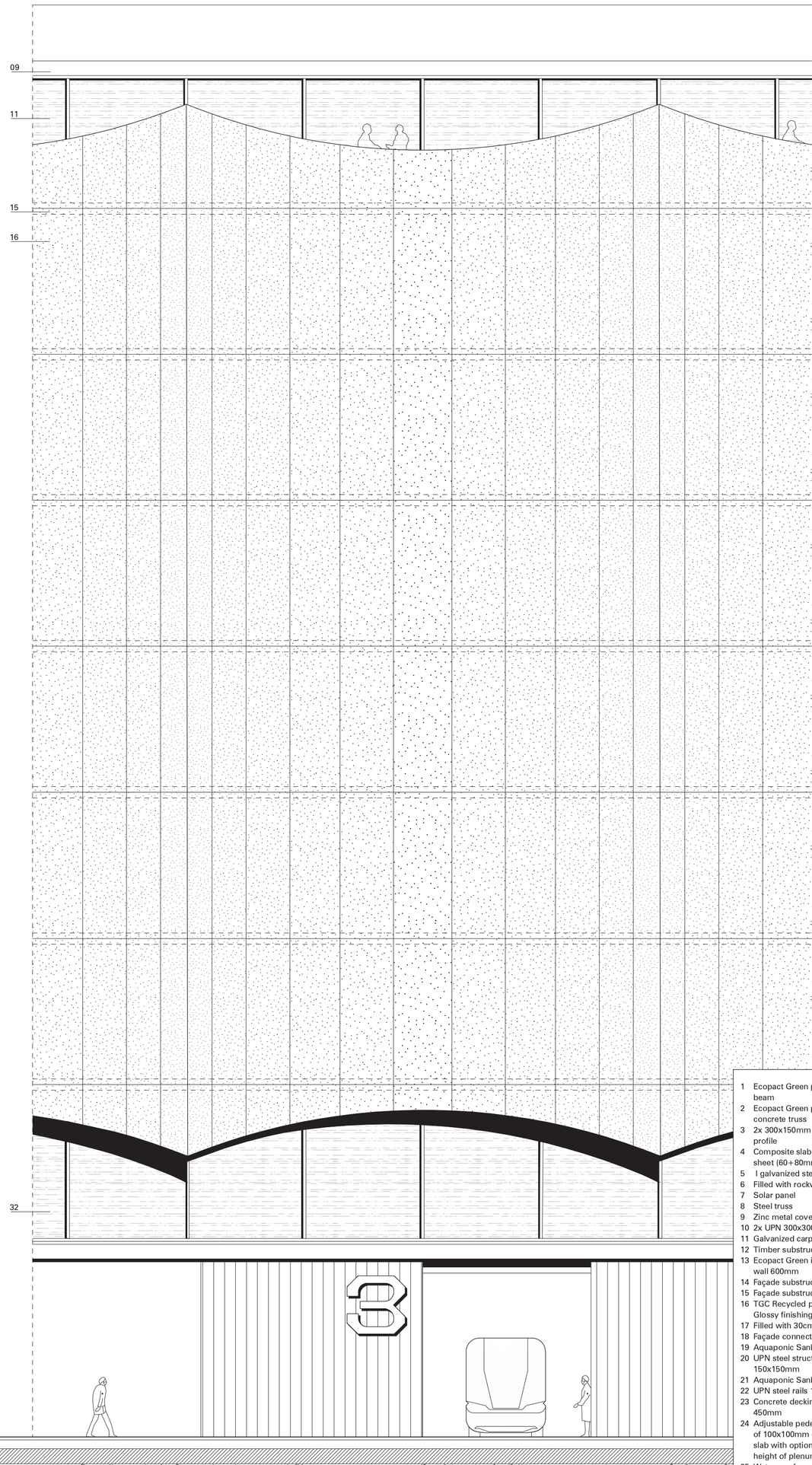
Pink is Not a Color — Ana Herreros Cantis (ES)

The perspective shows how the sublime repetition and scale bring spatial qualities to the sealed dark volume, where the sturdiness of the tanks is combined with light walkways to create two different levels.

16/17

Contribution to *Supermarket*





1 Ecopact Green prefab concrete beam
2 Ecopact Green prefab diagonal concrete truss
3 2x 300x150mm UPN steel profile
4 Composite slab grooved metal sheet (60+80mm)
5 I galvanized steel beam
6 Filled with rockwool 100mm
7 Solar panel
8 Steel truss
9 Zinc metal cover
10 2x UPN 300x300mm
11 Galvanized carpentry
12 Timber substructure
13 Ecopact Green in situ concrete wall 600mm
14 Façade substructure
15 Façade substructure
16 TGC Recycled plastic panels. Glossy finishing. 50 mm
17 Filled with 30cm rockwool
18 Façade connectors
19 Aquaponic Sanbio shelf
20 UPN steel structure 150x150mm
21 Aquaponic Sanbio robot
22 UPN steel rails 150x300mm
23 Concrete decking structure 450mm
24 Adjustable pedestal with base of 100x100mm glued to the slab with option of variation in height of plenum
25 Waterproof accessible technical flooring 600x600mm
26 Plenum HVAC
27 Water pipe 300mm diameter
28 Accesible power supply point
29 Handrail with slab fastening plate
30 Noxion LED Downlight Vero
31 Ecopact Green concrete beam 1000x1200mm
32 Galvanized carpentry
33 Ecopact Green concrete beam 1000x1000mm
34 Sliding door

0 3 6 m

Pink is Not a Color — Ana Herreros Cantis (ES)

The construction detail of the facade responds to the Strategic Guidelines for a Sustainable Aquaculture document from the European Commission, specifying not only the combination of shrimp and leafy green production, but also the use of glossy panels made out of recycled plastic from the ocean.

17/17

Contribution to *Supermarket*