



SEASON 5

A MODULAR SYSTEM FOR URBAN FOODPRODUCTION

URBAN FOOD PRODUCTION:

CHALLENGES:

- LACK OF SPACE, HIGH LANDPRICE
- CONFLICTING INTERESTS WITH NEIGHBOURS

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- CLOSE TO COSTUMERS. GROW WHERE PEOPLE EAT.
- POTENTIAL ACCESS TO LOW-COST HEAT AND NUTRITION

URBAN FOOD PRODUCTION:

CHALLENGES:

- LACK OF SPACE, HIGH LANDPRICE
- CONFLICTING INTERESTS WITH NEIGHBOURS

OPPORTUNITIES:

- CLOSE TO CUSTOMERS. GROW WHERE PEOPLE EAT
- POTENTIAL ACCESS TO LOW-COST HEAT AND NUTRITION

NEW HUMAN AND URBAN QUALITIES:

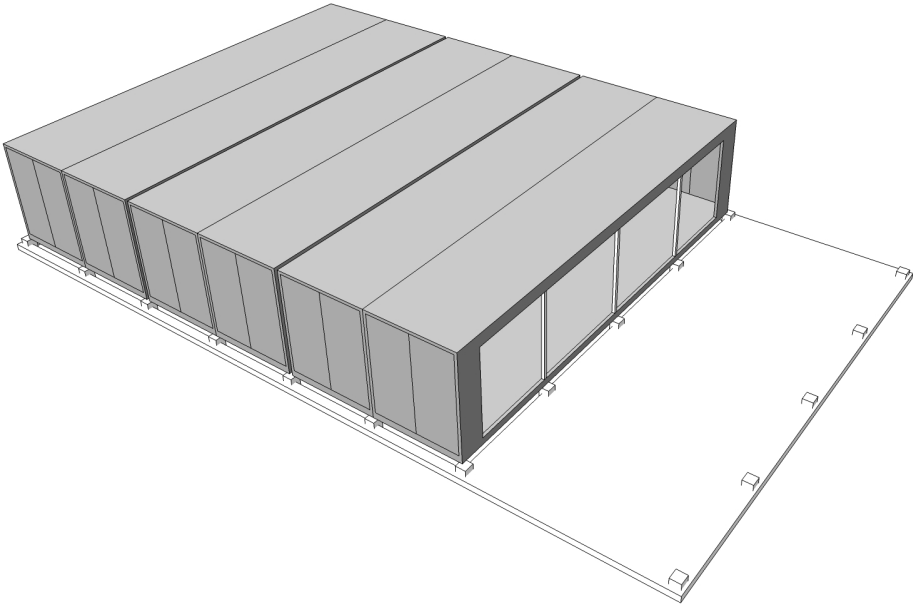
- PRODUCTION OF FOOD PRESENT IN THE HABITATS OF FUTURE CITIES
- RICHER URBAN ENVIRONMENTS. OASIS OF GREEN, SMALL SCALE, HUMANE QUALITIES IN A DENSE URBAN DEVELOPMENT.



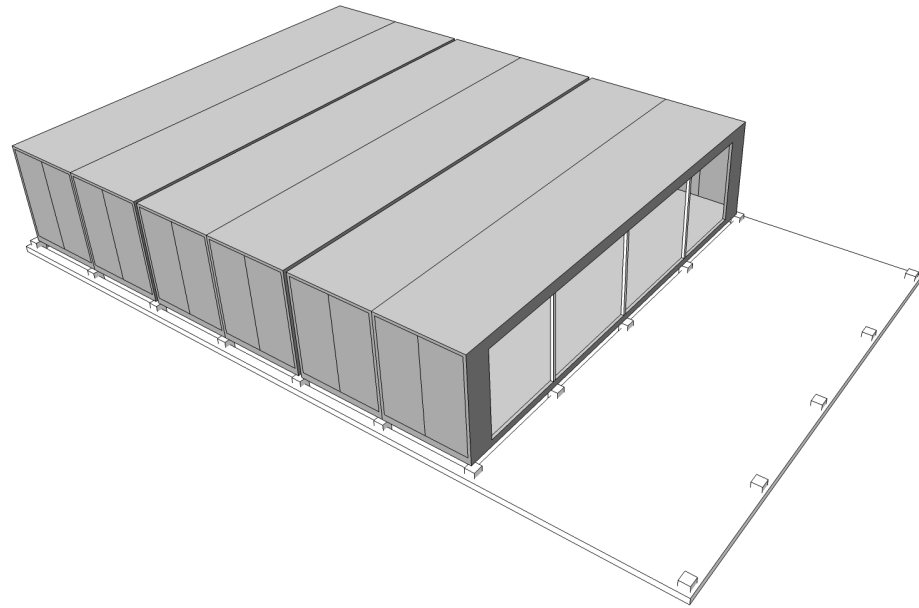
DEMANDS SEASON 5:

- COMPACT
- ADAPTABLE TO MANY DIFFERENT SITUATIONS AND SIZES OF THE SITE
- MODULAR AND SCALABLE. REPETITION CAN KEEP THE COSTS DOWN
- .
- CONTRIBUTE TO THE URBAN SURROUNDINGS. ACCESIBLE TO THE PUBLIC.

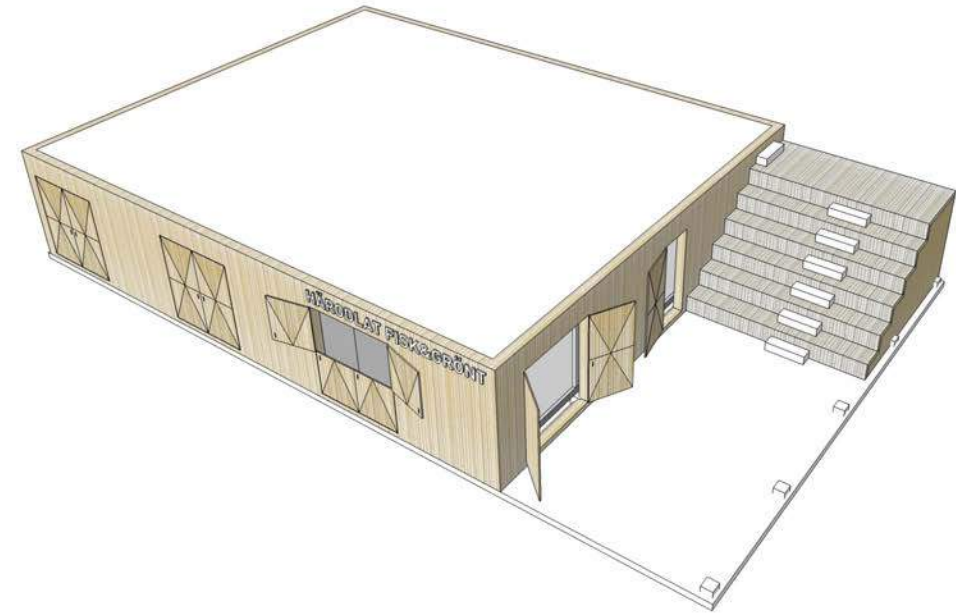
URBAN FISH FARM IN SHIPPING CONTAINERS



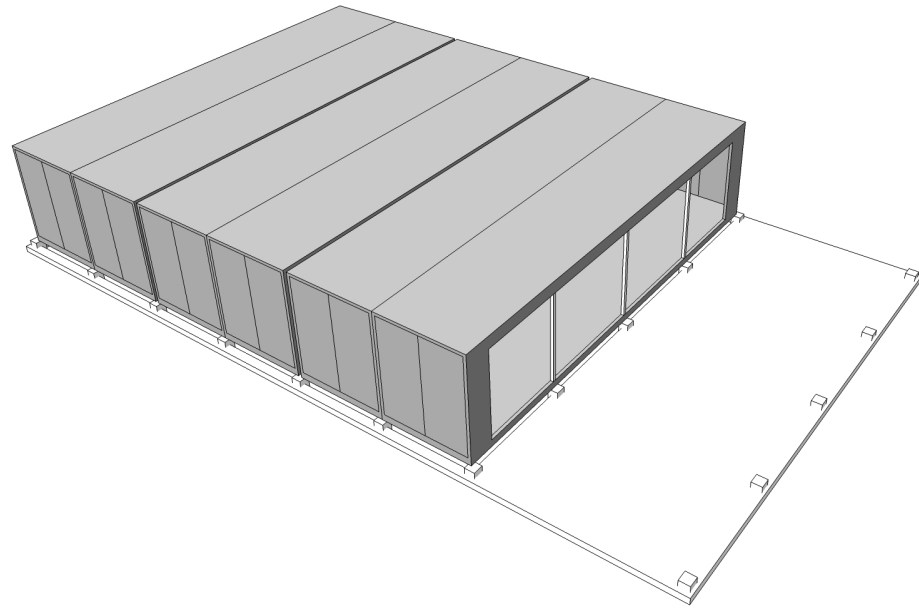
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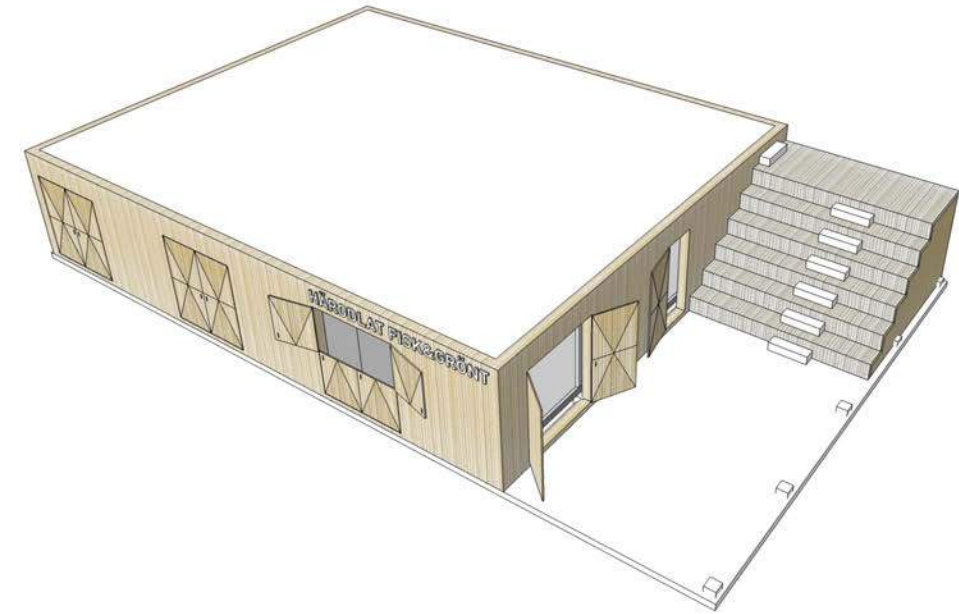
INSULATED WOOD-SKIN



URBAN FISH FARM IN SHIPPING CONTAINERS



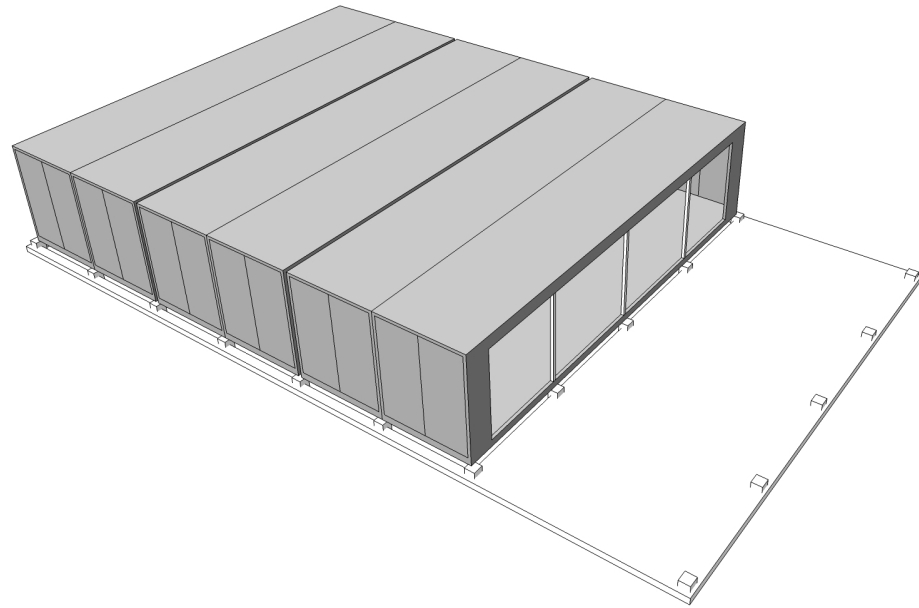
INSULATED WOOD-SKIN



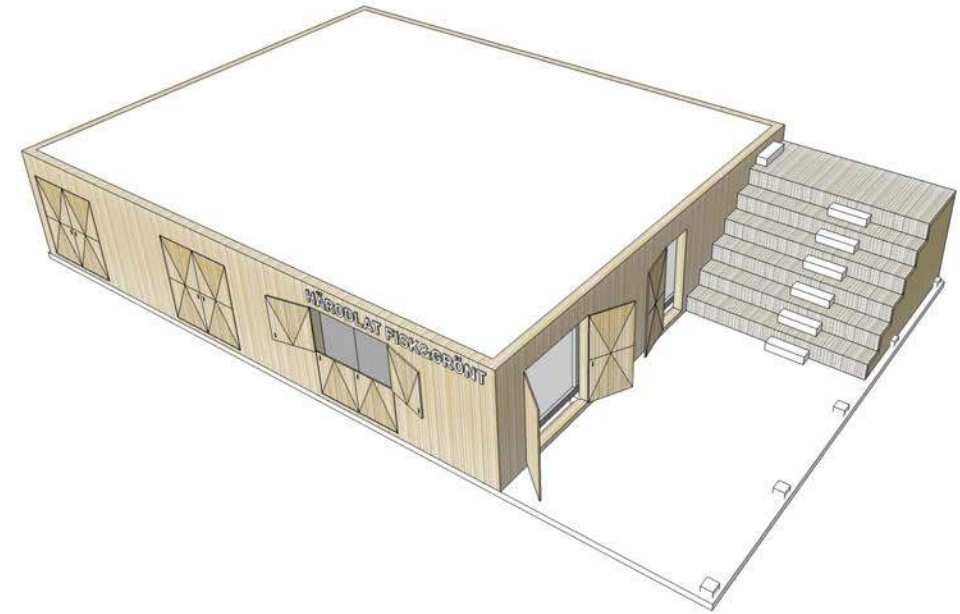
- HYDROPONIC VEGETABLE CULTIVATION
- GREENHOUSE CLASSROOM
- PUBLIC GREENHOUSE + SHOP



URBAN FISH FARM IN SHIPPING CONTAINERS



INSULATED WOOD-SKIN

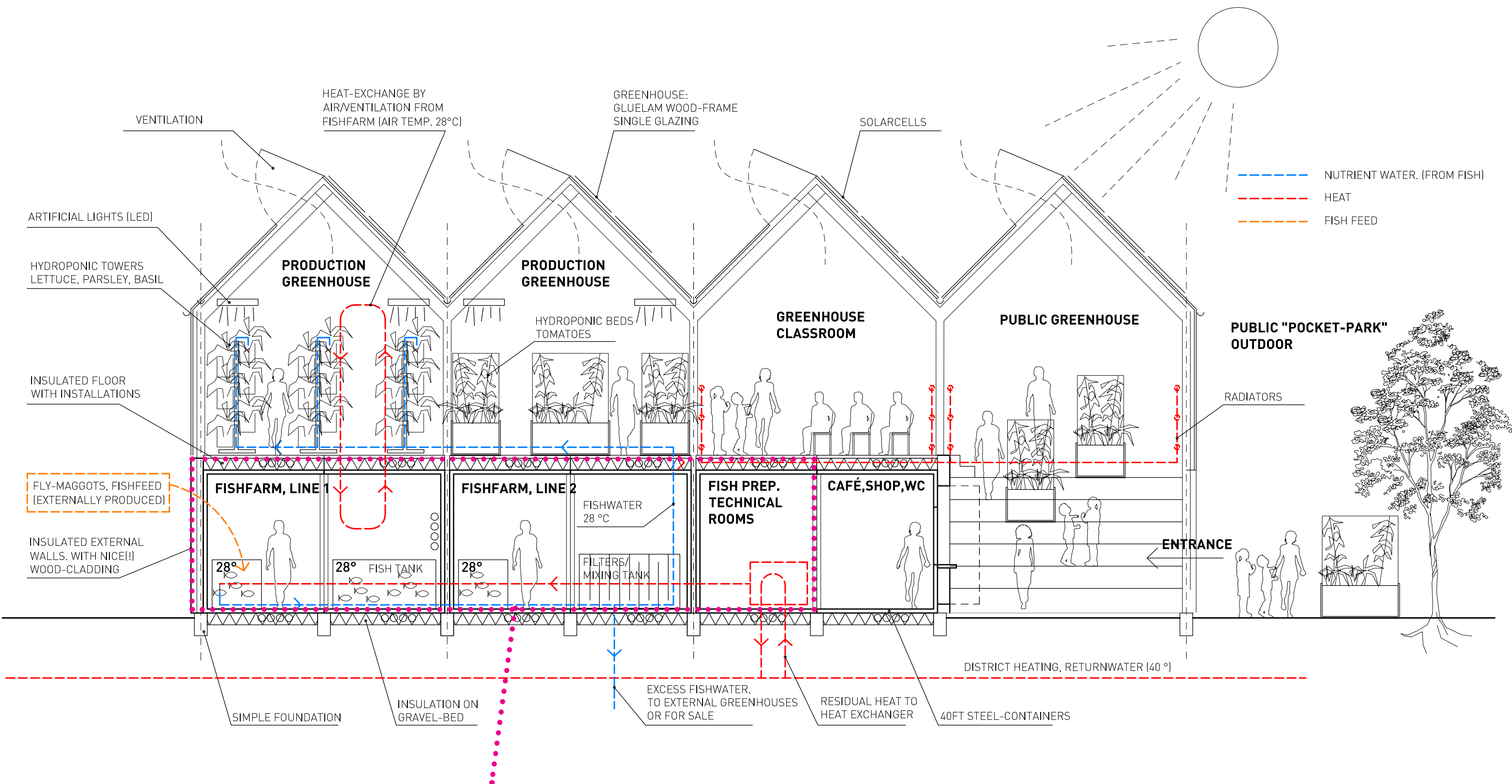


- HYDROPONIC VEGETABLE CULTIVATION--
- GREENHOUSE CLASSROOM
- PUBLIC GREENHOUSE + SHOP



WOOD-FRAME GREENHOUSE



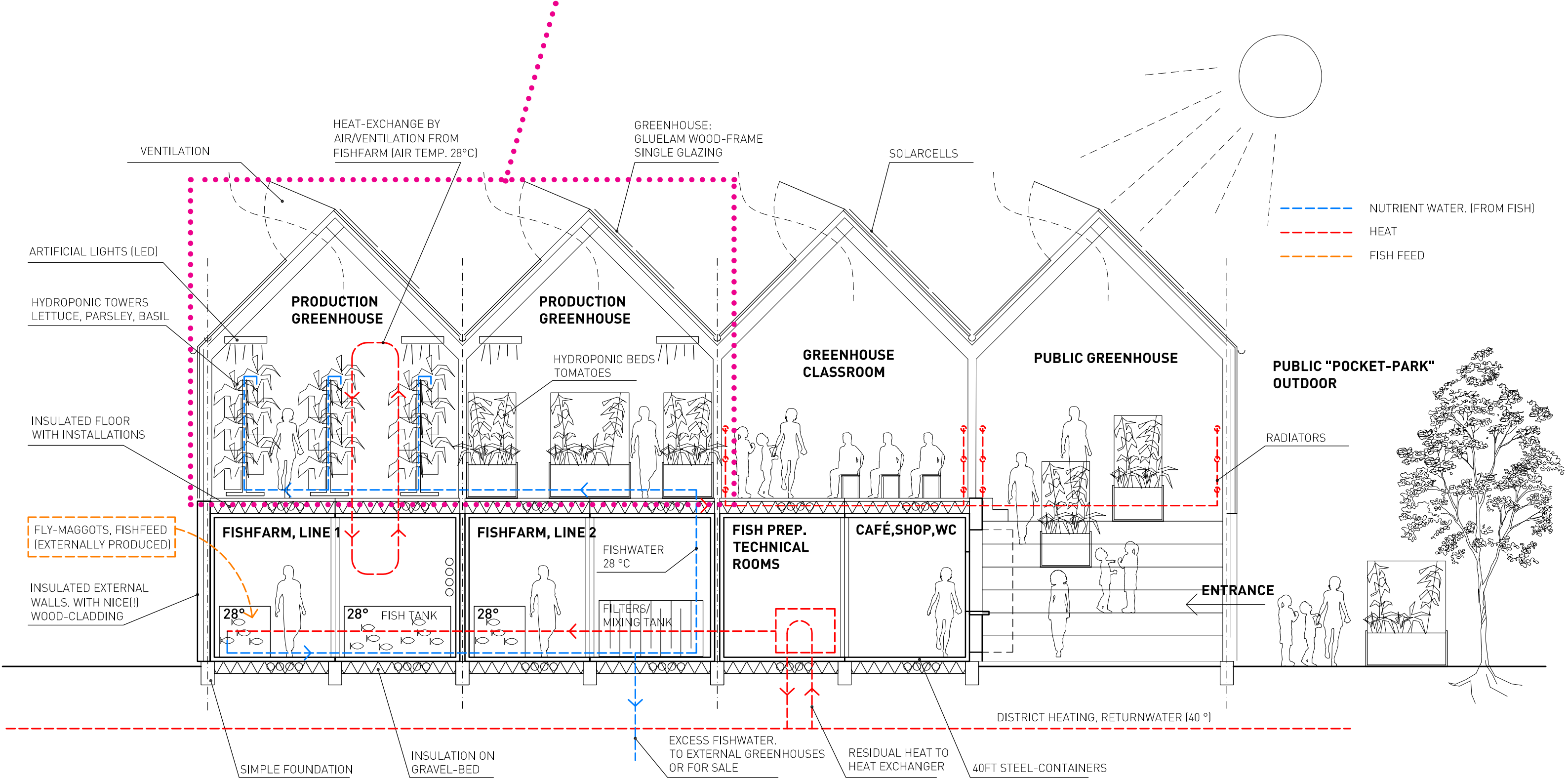


URBAN FISH FARM

URBAN FISH FARM. (IMAGE: STADSJORDS FISHFARM I GÖTEBORG)



HYDROPONIC VEGETABLE CULTIVATION



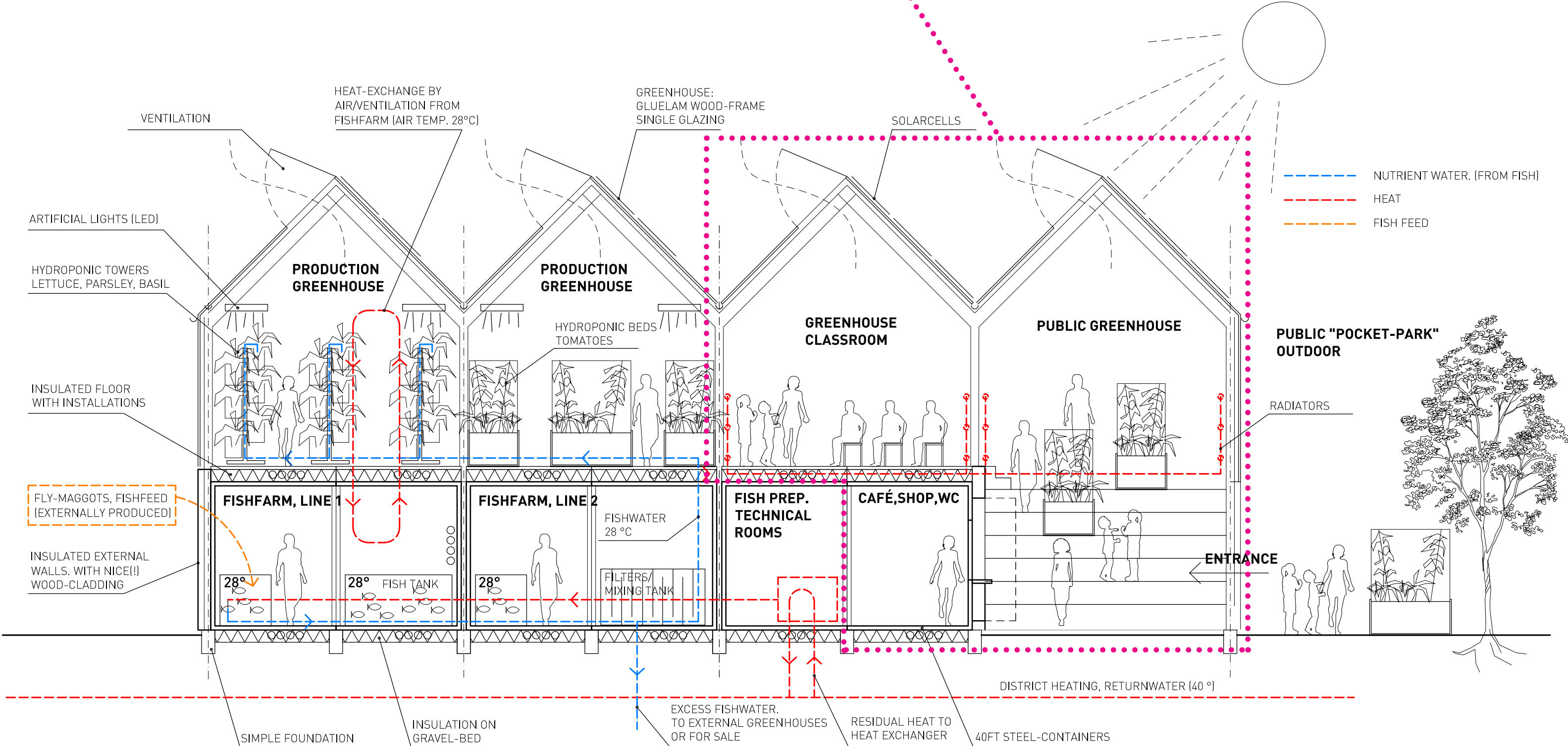


HYDROPONIC TOWERS: BASIL, PARSLEY ETC...

HYDROPONIC BEDS: TOMATOES



PUBLIC GREENHOUSE CLASSROOM FISH+VEG SHOP





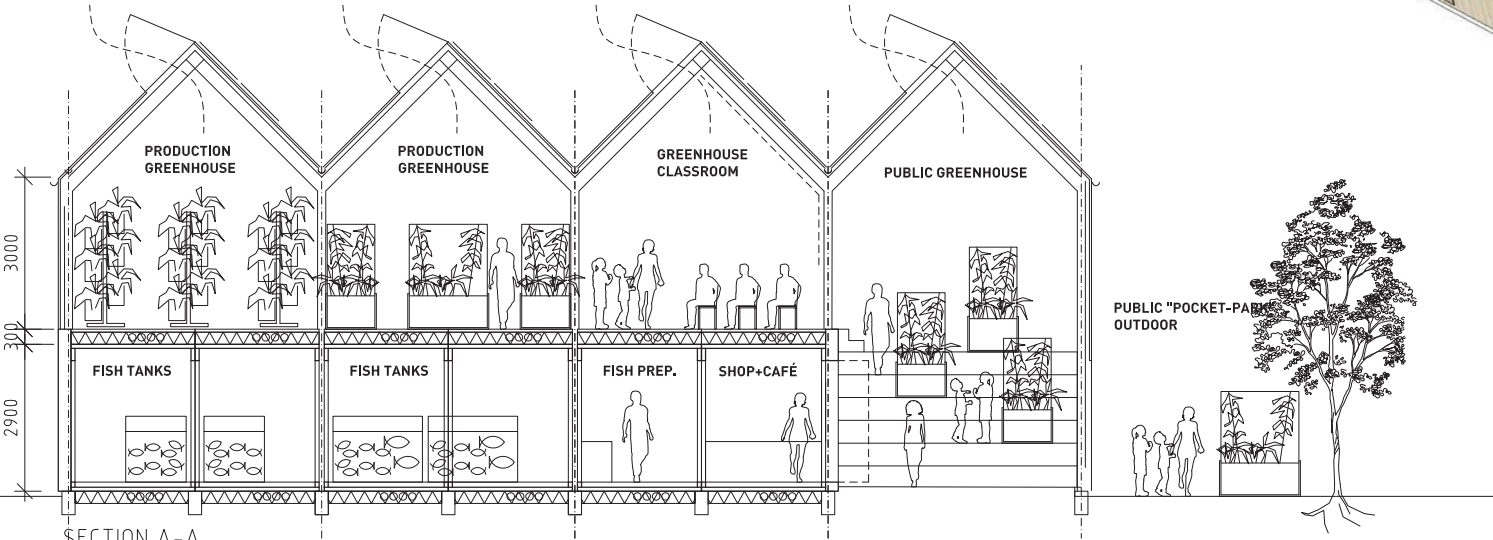
PUBLIC GREENHOUSE

4. SMALL - PRINCIPLE SOLUTION

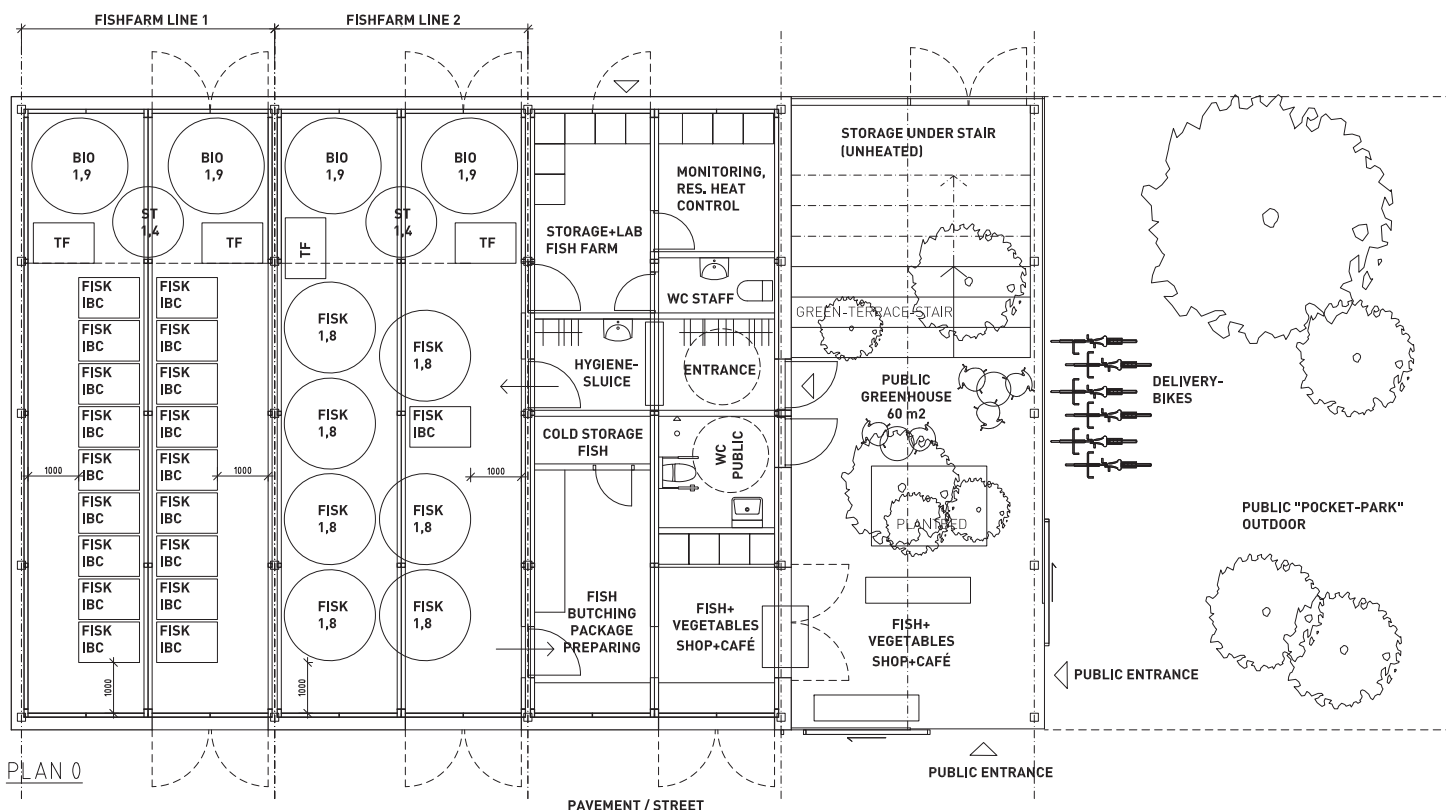
4.1 SMALL - SHORT DESCRIPTION

The SMALL-unit is a space efficient unit (footprint 240 m2) for fish- and vegetable production, food sale and pedagogic activities accesible for the public and invited guests. The unit contains a container-based fishfarm production space with the capacity to deliver 10 tonnes of fish yearly. The second floor contains a 150 m2 intense and vertical hydroponic cultivation. A public greenhouse-space is connected to the food-production parts. It announces and opens up the unit to the public. Here you can, on site, buy maximum fresh fish and vegetables in the shop. Guided tours and classes are held. And pupils from all over the city gather here to participate in the ”så ett frö”-program.

The SMALL-unit rests on 3 independent economical legs; Fish, vegetbles and pedagogic activities. It makes the solution economically resilient.



SECTION A-A



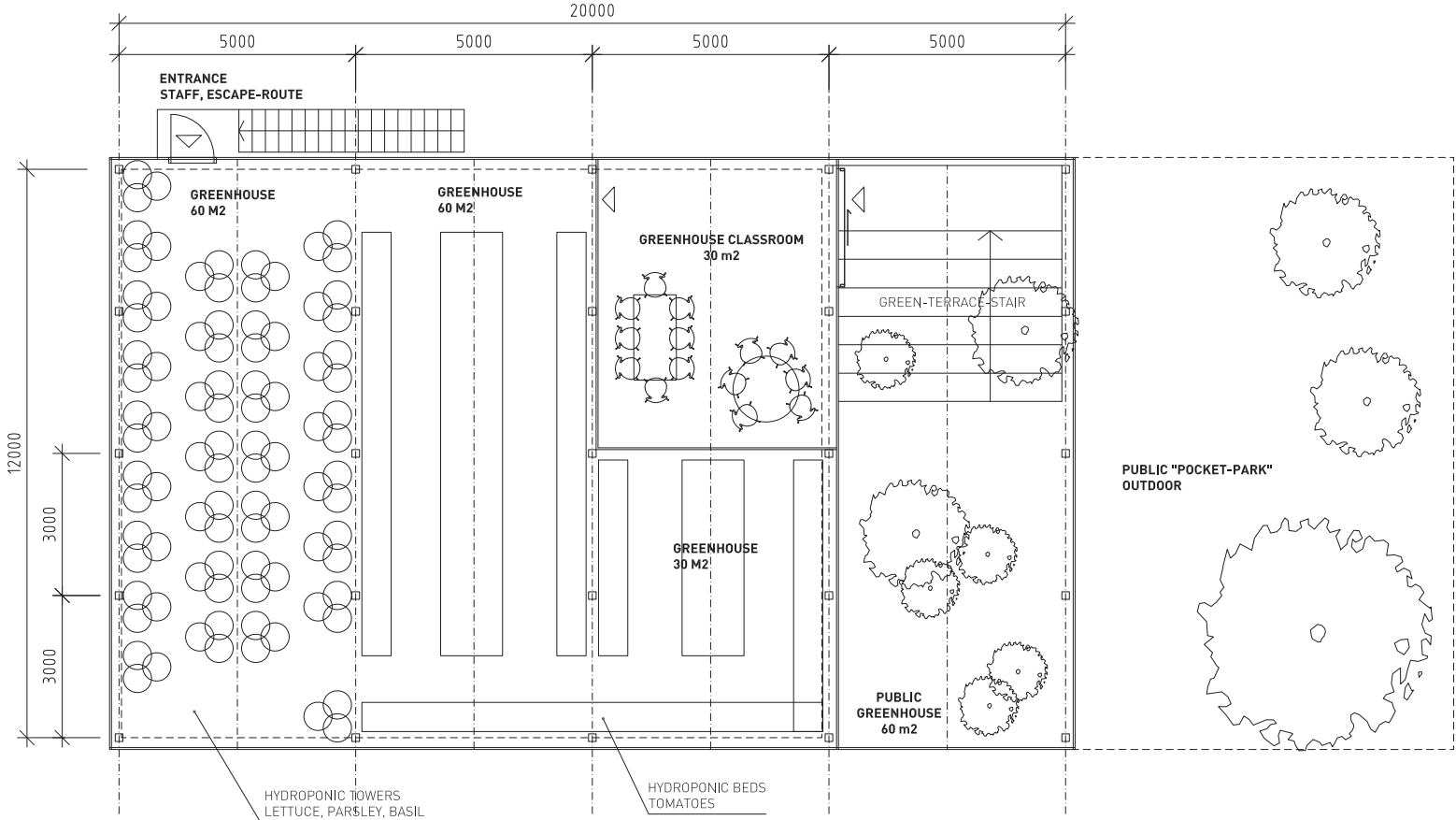
PLAN 0

SECTION, PLAN 0
SCALE 1:150 (A3)



6.2 SMALL - FACTS

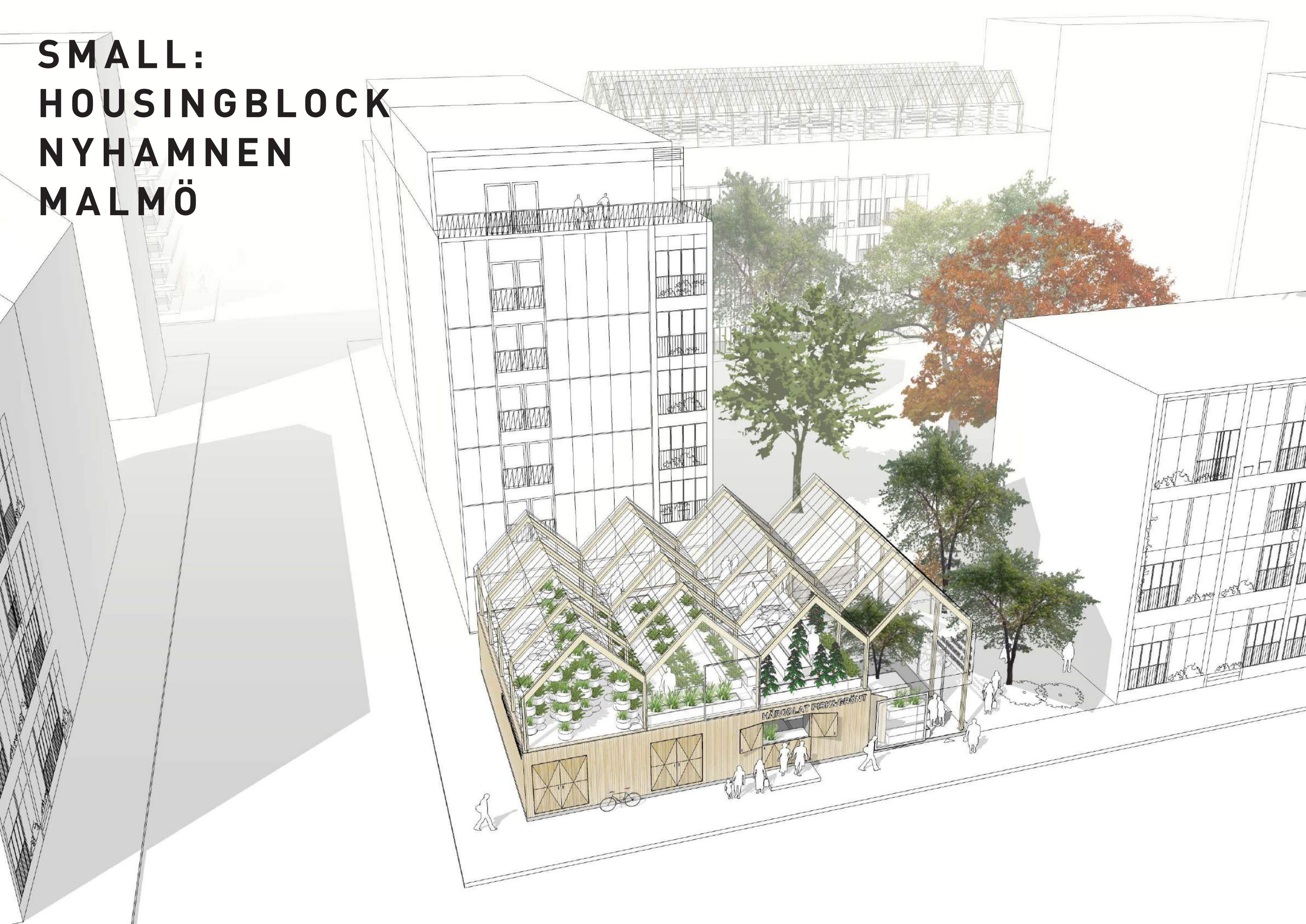
FLOORAREA:	
Footprint (on ground)	240 m2
INVESTEMENT COSTS:	
Construction cost	9 741 740 sek
FOOD-PRODUCTION (yearly):	
Vegetables type A (basil)	3 750 kg
Vegetables type B (tomatoes)	4 500 kg
Fish (filé)	5 000 kg
REVENUE (yearly):	760 005 sek
BREAK EVEN:	13 years



PLAN 1TR

PLAN 1
SCALE 1:150 (A3)

SMALL: HOUSINGBLOCK NYHAMNEN MALMÖ



5. MEDIUM - PRINCIPLE SOLUTION

5.1 MEDIUM - SHORT DESCRIPTION

The MEDIUM-unit is a combination of the SMALL-unit and rooftop-cultivations on existing or new housing/office buildings close by. The vicinity is an important factor to make the whole plant possible to manage by one, or a few operators. The SMALL-unit has an excess of nutrient fish-water enough for app. 600 m2 of intense hydroponic cultivation in greenhouse or outdoor (sv. friland) and it works lika a "motor" that fuels the hydroponic cultivations.

The MEDIUM-solution is a truly integrated urban-food-production solution that makes use of the least used surfaces in the city, with the best natural-light conditions. It can be built all in one go or as a way to step-by-step extend the SMALL-unit in size.

Kajodlingen. Göteborg.
Rooftop farm Clarion Hotel



6.2 MEDIUM - FACTS

FLOORAREA:	
Footprint (on ground)	240 m2
Footprint on rooftops	600 m2
INVESTEMENT COSTS:	
Construction cost	15 429 307 sek
FOOD-PRODUCTION (yearly):	
Vegetables type A (basil)	15 000 kg
Vegetables type B (tomatoes)	9 000 kg
Fish (filé)	5 000 kg
REVENUE (yearly):	2 764 400 sek
BREAK EVEN:	6 years

ROOFTOP OUTDOOR CULTIVATION
300 m2 greenhouse cultivation

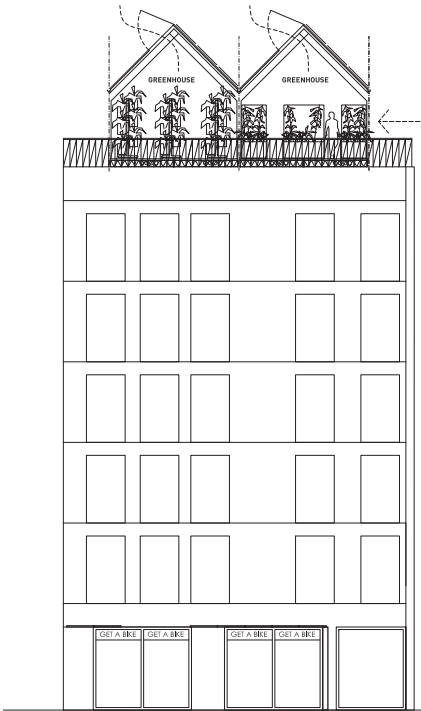
ROOFTOP GREENHOUSES
300 m2 greenhouse cultivation



3D-VIEW OF AN URBAN BLOCK

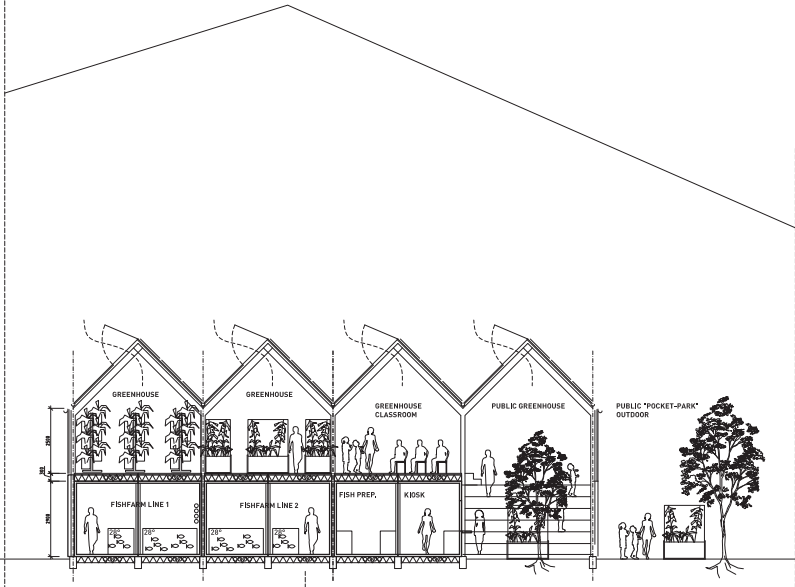
SMALL-UNIT:
120 m2 fish farm
150 m2 greenhouse cultivation

GREENHOUSES ON ROOFTOPS
SURFACE: 300 M2



OFFICES
PRINCIPAL SECTION

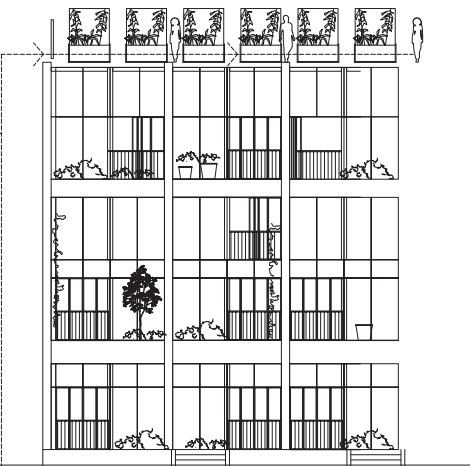
EXCESS OF NUTRIENT FISH-WATER FROM SMALL-UNIT
SUPPORTS 600 M2
ROOFTOP CULTIVATIONS



SMALL-UNIT

PUBLIC
"POCKET-PARK"
OUTDOOR

ROOFTOP
OUTDOOR CULTIVATION
(FRILAND)
SURFACE: 300 M2



HOUSING

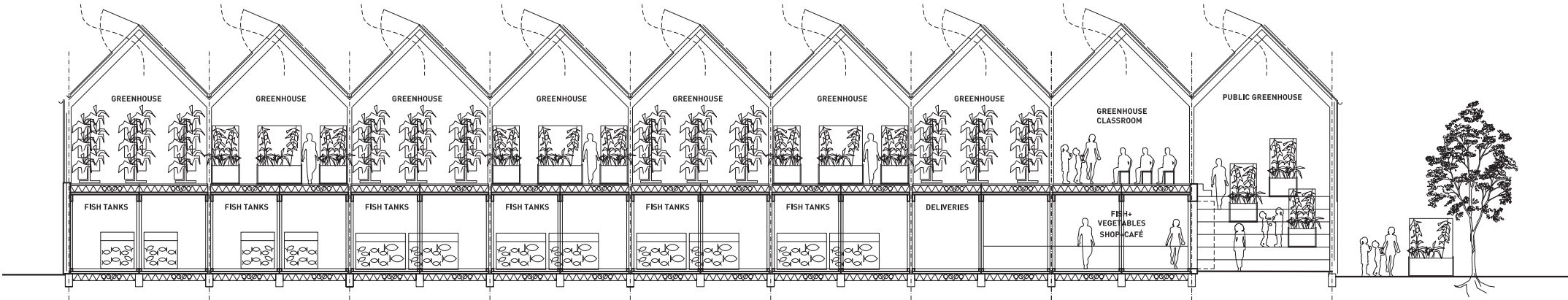
**MEDIUM:
INTEGRATED WITH
CULTUREHOUSE.
BJUV**



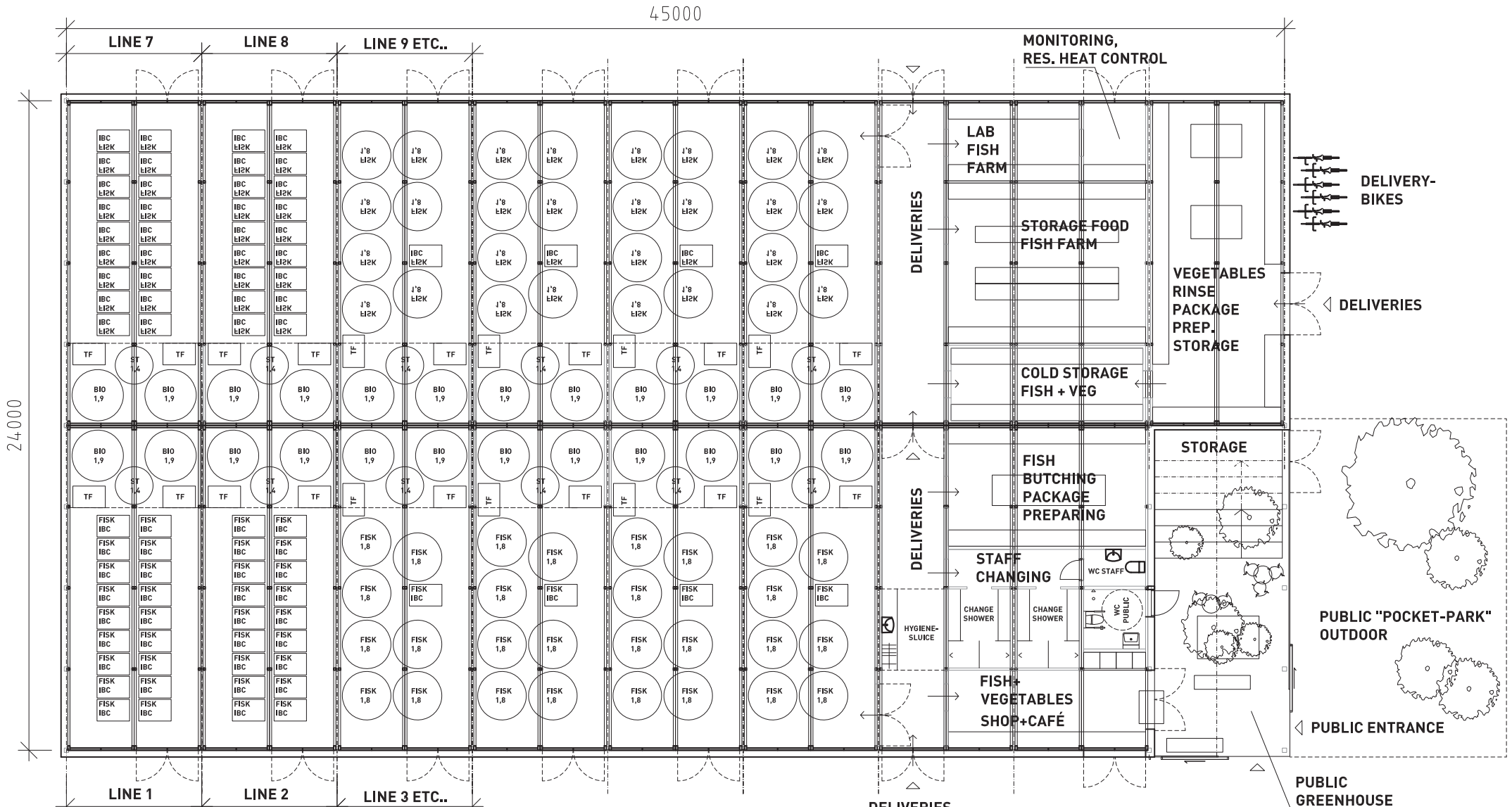
6. LARGE - PRINCIPLE SOLUTION

6.1 LARGE - SHORT DESCRIPTION

The LARGE-unit is scaled-up version of the SMALLunit. The food-producing parts (fish farm and cultivation) are scaled up. The public greenhouse stays the same size and therefore get a less important role for the business case. The footprint is 1080 m2.



SECTION A-A



PLAN 0

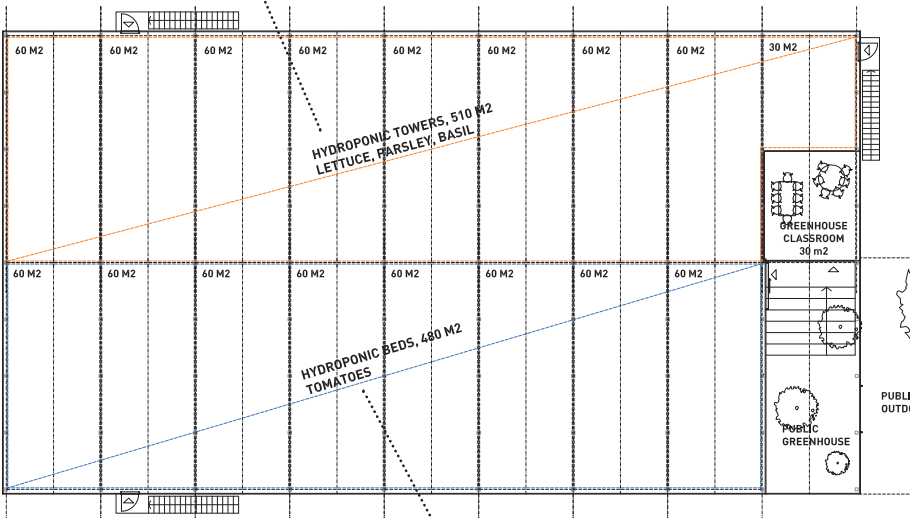
SECTION, PLAN 0

SCALE 1:250 (A3)

6.2 LARGE - FACTS

FLOORAREA:	
Footprint (on ground)	1080 m2
INVESTEMENT COSTS:	
Construction cost	30 098 600 sek
FOOD-PRODUCTION (yearly):	
Vegetables type A (basil)	22500 kg
Vegetables type B (tomatoes)	20250 kg
Fish (filé)	30 000 kg
REVENUE (yearly):	8 830 510 sek
BREAK EVEN:	5 years

HYDROPONIC TOWERS 510 M2
(LETTUCE, PARSLEY, BASIL, ETC..)

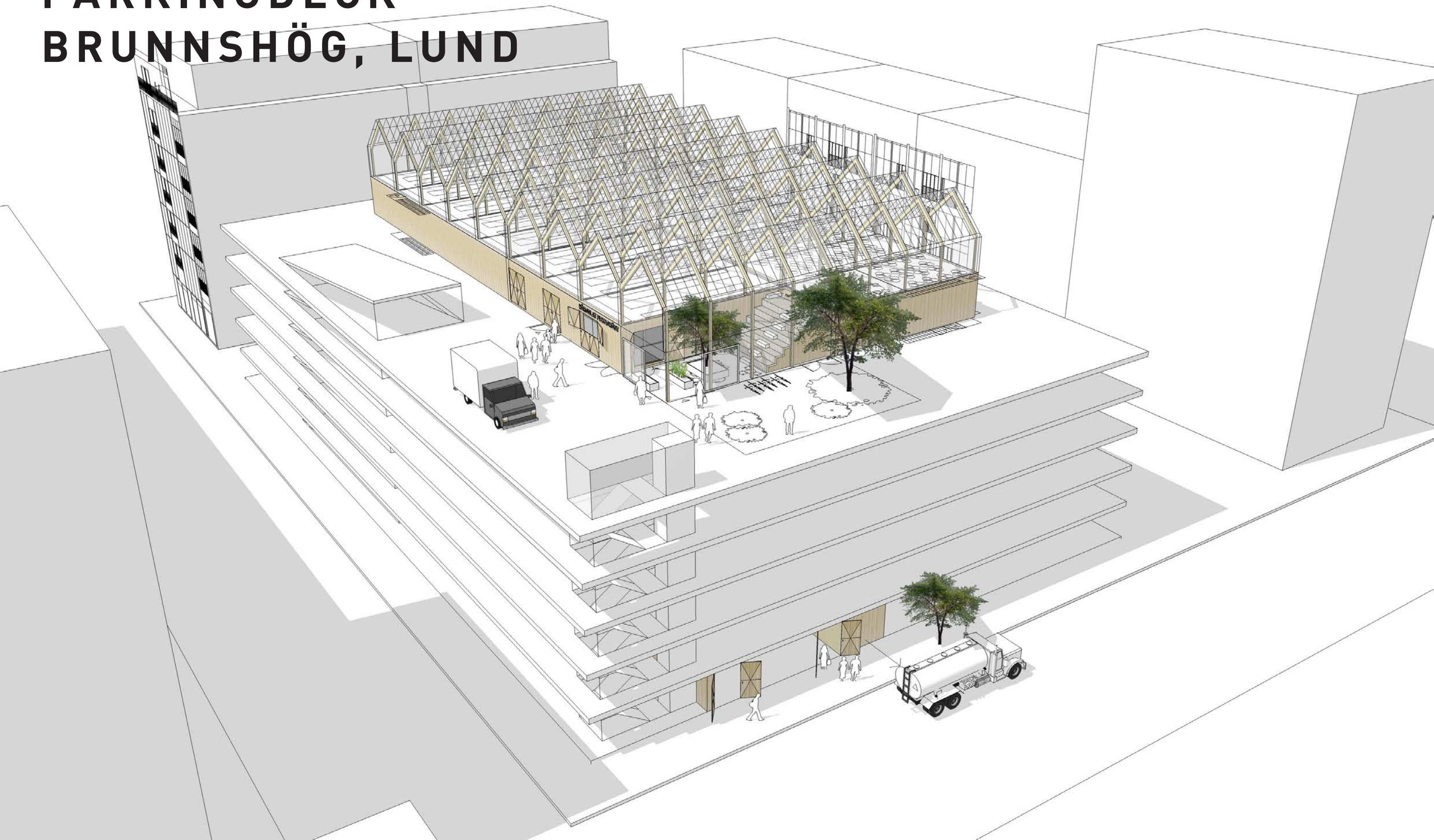


PLAN 1 - greenhouse

SCALE 1:400 (A3)

HYDROPONIC BEDS 480 M2
(TOMATOES, ETC..)

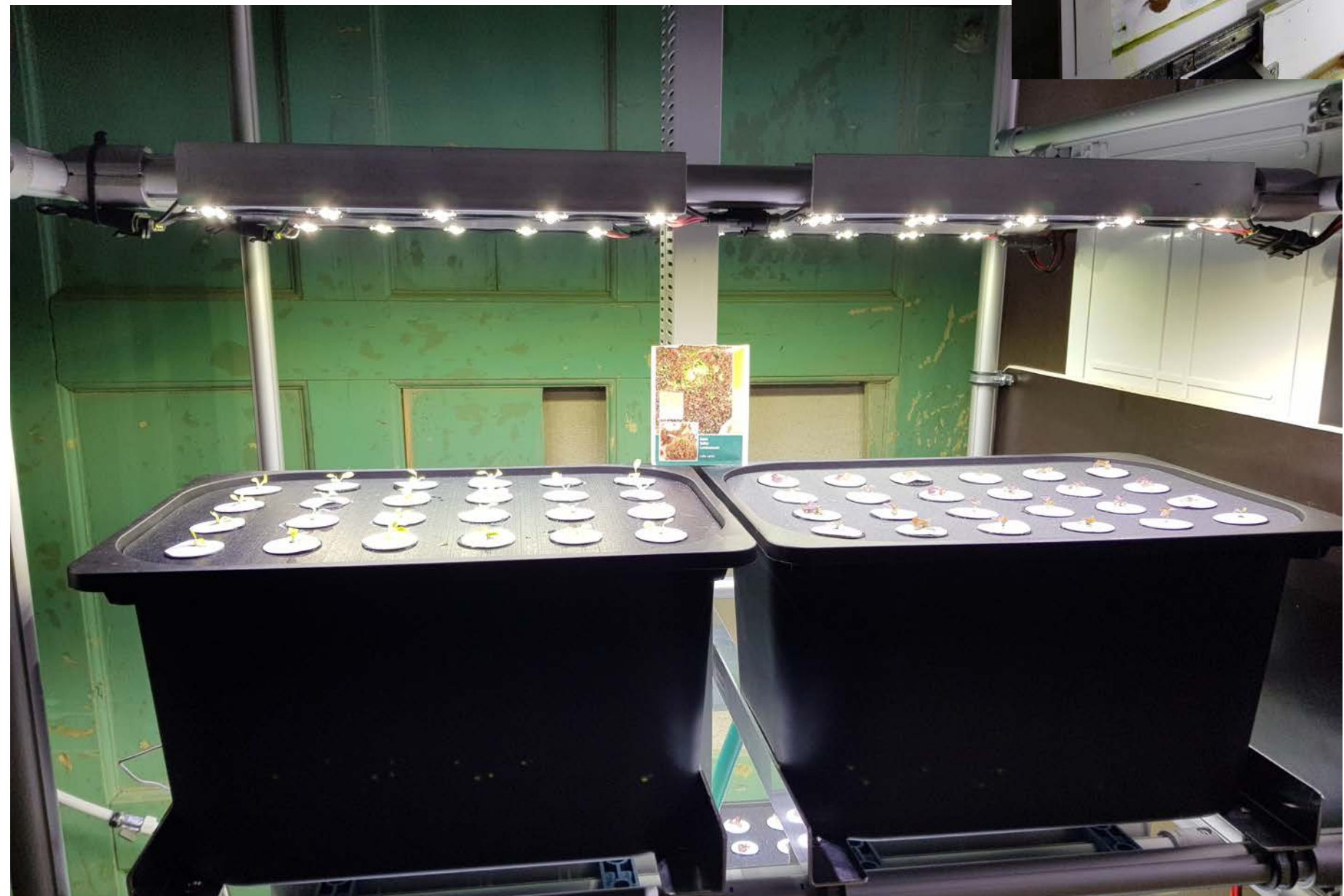
**LARGE:
ON TOP OF
PARKINGDECK
BRUNNSHÖG, LUND**



ALTERNATIVE: AEROPONIC FARMING

GROWING IN A FINE SUSPENDED
MIST OF NUTRIENT WATER

IMAGES FROM PILOT REFERENCE.
ALOVIVUM, HENRIK HEDLUND.



TEAM SEASON 5 - HANDS ON EXPERIENCE



GREENHOUSE
LIVING

**Tailor
made**
arkitekter

emulsionen

LARKING

eco relief

STADSJÖRD



SÅ ETT FRÖ.
VÄSTSVENSKA
HANDELSKAMMAREN



KAJODLINGEN

OX2

BLACK SOLDIER FLY
COMPOST

- GREENHOUSE ARCHITECTURE
- SUSTAINABLE URBAN PLANNING
- ECO CYCLE SYSTEMS
- PROJECT MANAGEMENT
- COST CALCULATIONS
- GREENHOUSE DELIVERIES
- ENERGI BALANCE CALCULATIONS
- INTEGRATED SOLARPANELS
- MONITORING



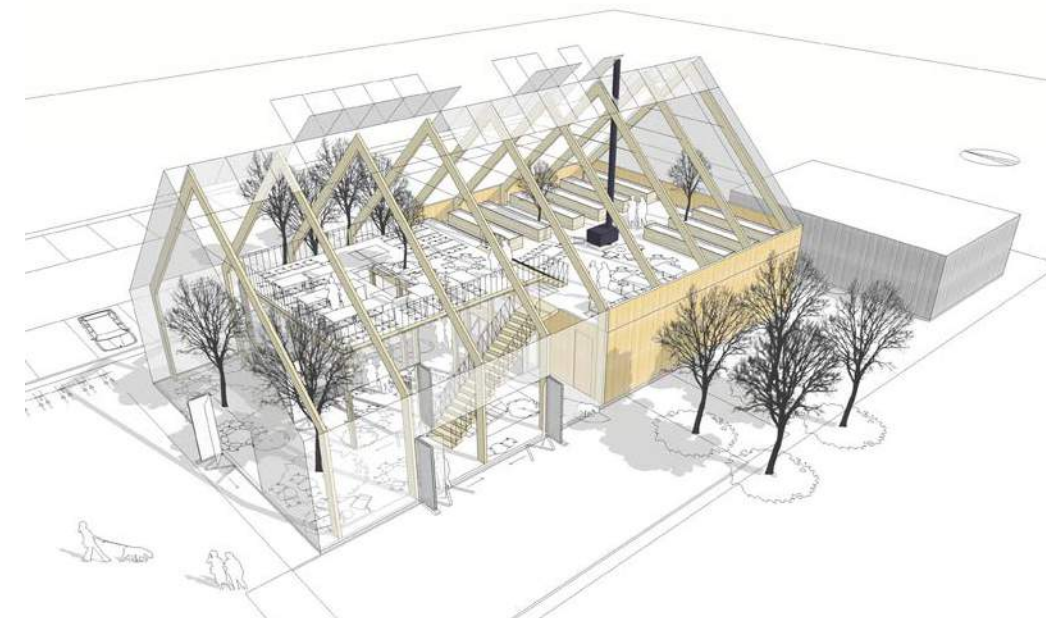
**GREENHOUSE
LIVING**

**Tailor
made**
arkitekter

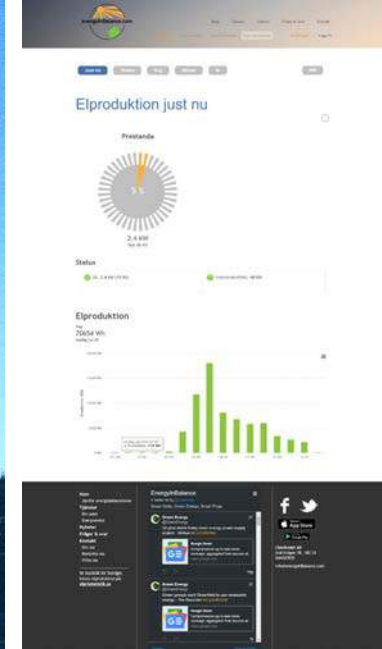
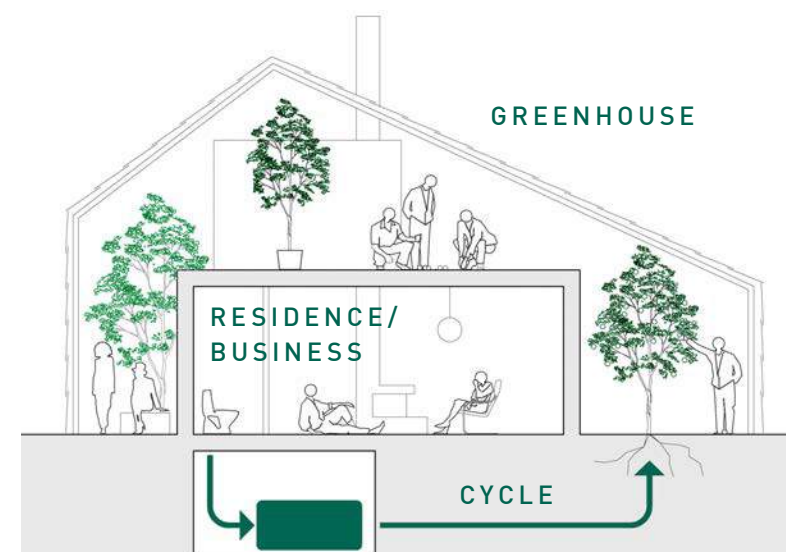
emulsionen

DARKING

eco relief

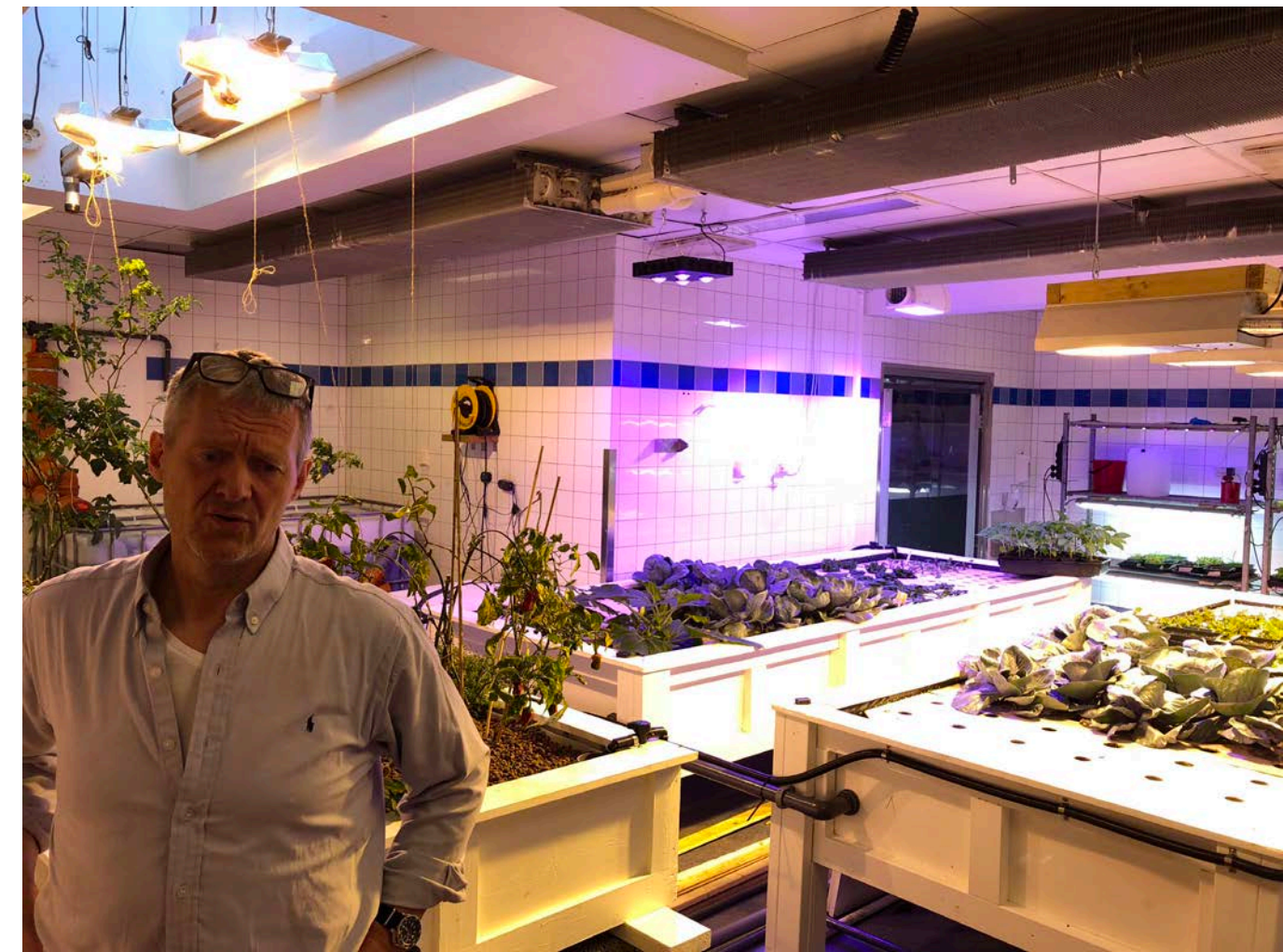
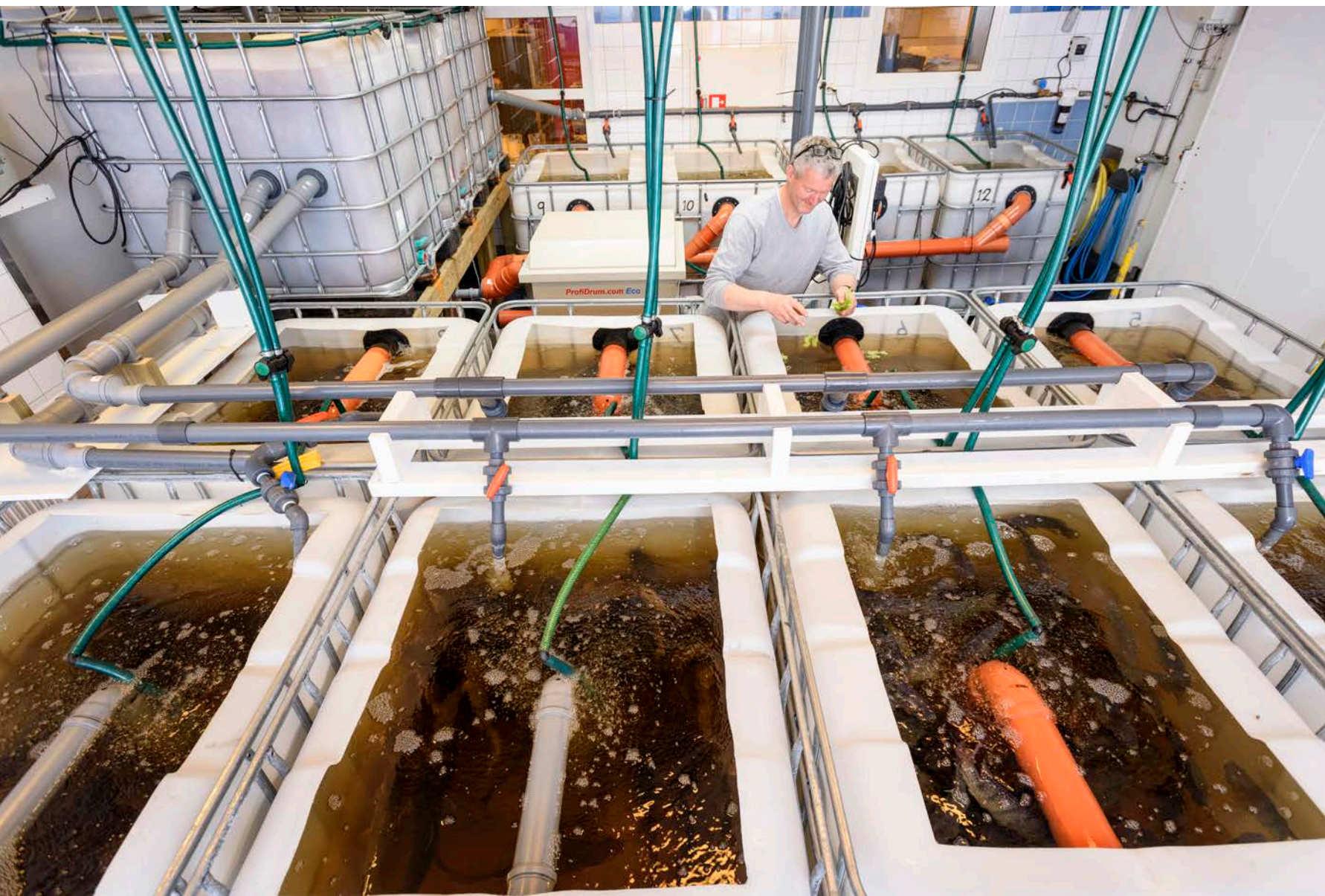


NATUREHOUSES



- SUSTAINABLE URBAN FISH-FARMING
- HYDROPONICS / AQUAPONICS
- BUSINESS-MODELS URBAN FARMING
- ETC....

STADSJØRD





- SUSTAINABLE URBAN VEGETABLE-FARMING
- BUSINESS-MODELS URBAN FARMING
- ETC....



KAJODLINGEN





SÅ ETT FRÖ.
VÄSTSVENSKA
HANDELSKAMMAREN

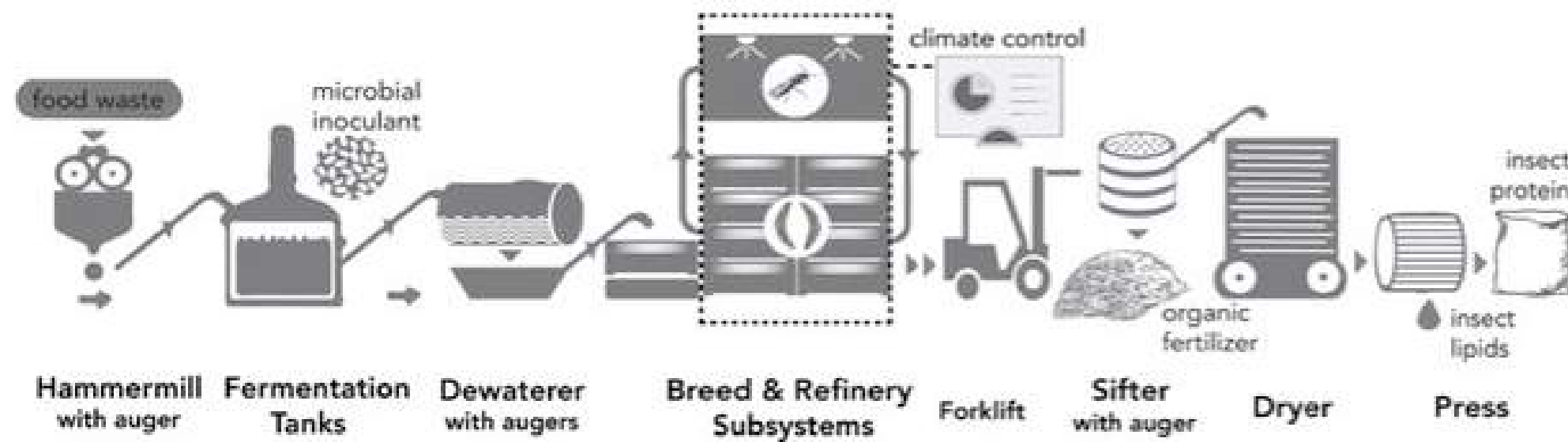
-NATION-WIDE PROJECT: "SÅ ETT FRÖ".
STUDENTS TEACH STUDENTS. LEARNING
PROGRAMING WITH GREENHOUSE TECHNIQUE.

-ETC....





- FREDRIK HOLGREN HOLM (OX2 BIO)
- COMMERCIAL BLACK SOLDIER FLY COMPOST.



BLACK SOLDIER FLY
COMPOST



THANK YOU !