SEASON 5
A MODULAR SYSTEM FOR URBAN FOOD PRODUCTION
URBAN FOOD PRODUCTION:

CHALLENGES:

- LACK OF SPACE, HIGH LANDPRICE
- CONFLICTING INTERESTS WITH NEIGHBOURS
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OPPORTUNITIES:
- CLOSE TO CUSTOMERS. GROW WHERE PEOPLE EAT.
- POTENTIAL ACCESS TO LOW-COST HEAT AND NUTRITION
URBAN FOOD PRODUCTION:

CHALLENGES:
- Lack of space, high land price
- 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. REPEITION CAN KEEP THE COSTS DOWN

- CONTRIBUTE TO THE URBAN SURROUNDINGS. ACCESSIBLE TO THE PUBLIC.
URBAN FISH FARM IN SHIPPING CONTAINERS
URBAN FISH FARM IN SHIPPING CONTAINERS

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

INSULATED WOOD-SKIN

WOOD-FRAME GREENHOUSE
URBAN FISH FARM. (IMAGE: STADSSJORDS FISHFARM | GÖTEBORG)
HYDROPONIC TOWERS: BASIL, PARSLEY ETC...

HYDROPONIC BEDS: TOMATOES
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 accessible 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, vegetables and pedagogic activities. It makes the solution economically resilient.

6.2 SMALL - FACTS

FLOOR AREA:
Footprint (on ground) 240 m²

INVESTMENT 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 (file) 5 000 kg

REVENUE (yearly): 760 005 sek

BREAK EVEN: 13 years
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 like 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 expand the SMALL-unit in size.

6.2 MEDIUM - FACTS

<table>
<thead>
<tr>
<th>FLOORAREA:</th>
<th>240 m²</th>
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<tbody>
<tr>
<td>Footprint (on ground)</td>
<td>240 m²</td>
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<tr>
<td>Footprint on rooftops</td>
<td>600 m²</td>
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<tr>
<td>INVESTMENT COSTS:</td>
<td></td>
</tr>
<tr>
<td>Construction cost</td>
<td>15 429 307 sek</td>
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<tr>
<td>FOOD-PRODUCTION (yearly):</td>
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</tr>
<tr>
<td>Vegetables type A (basil)</td>
<td>15 000 kg</td>
</tr>
<tr>
<td>Vegetables type B (tomatoes)</td>
<td>9 000 kg</td>
</tr>
<tr>
<td>Fish (filé)</td>
<td>5 000 kg</td>
</tr>
<tr>
<td>REVENUE (yearly)</td>
<td>2 764 400 sek</td>
</tr>
<tr>
<td>BREAK EVEN:</td>
<td>6 years</td>
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</tbody>
</table>
MEDIUM: INTEGRATED WITH CULTUREHOUSE. BJUV
6. LARGE - PRINCIPLE SOLUTION

6.1 LARGE - SHORT DESCRIPTION

The LARGE-unit is a scaled-up version of the SMALL-unit. 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.

6.2 LARGE - FACTS

**FLOOR AREA:**
- Footprint (on ground) 1080 m²

**INVESTMENT COSTS:**
- Construction cost 30 098 600 sek

**FOOD-PRODUCTION (yearly):**
- Vegetables type A (basil) 22500 kg
- Vegetables type B (tomatoes) 20250 kg
- Fish (filet) 30 000 kg

**REVENUE (yearly):** 8 830 510 sek

**BREAK EVEN:** 5 years
LARGE:
ON TOP OF
PARKING DECK
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 ARCHITECTURE
SUSTAINABLE URBAN PLANNING
ECO CYCLE SYSTEMS
PROJECT MANAGEMENT
COST CALCULATIONS
GREENHOUSE DELIVERIES
ENERGI BALANCE CALCULATIONS
INTEGRATED SOLAR PANELS
MONITORING
SUSTAINABLE URBAN FISH-FARMING
HYDROPONICS / AQUAPONICS
BUSINESS-MODELS URBAN FARMING
ETC....

STADSJORD
- Sustainable Urban Vegetable-Farming
- Business Models Urban Farming
- Etc....
NATION-WIDE PROJECT: "SÅ ETT FRÖ". STUDENTS TEACH STUDENTS. LEARNING PROGRAMMING WITH GREENHOUSE TECHNIQUE.

-ETC....
- FREDRIK HOLGREN HOLM (OX2 BIO)
- COMMERCIAL BLACK SOLDIER FLY COMPOST.
THANK YOU!