Today's food production system leads to disconnection from the nature and the different ecosystems.

Conceptualize
Creation of the concept and the programme.

My intentions are to...

- Increase people's self-sufficiency
- Decrease dependence of large-scale farmland

Complement today's farmers with a new "grass root" system. A system where the people decide what to grow. Starting small-scale with this new system and then expanding it over time, creating a kind of movement. People have become disconnected from food production. It's important that we get reconnected to it by reconnecting with our nature. We will get a better understanding of ecosystems and ecosystem services. This will increase the environmental awareness and the respect for the environment.

- Create alternative ways of getting your food
Adopting modern farming methods on a small scale, creating a system for allotments that can be applied almost everywhere, even in urban areas. A small-scale food production is very homogeneous. By having a "grass root" system, the possibility of a more heterogeneous selection of vegetable species and farms created.

- Not impose a new space to the community but to create it for the community
As architects we literally shape the world with our interventions. We create spaces that work as frameworks not leading to new possibilities. It's important as architects to be aware that we affect everything that we build, way we get in contact with our interventions. Even if you're just observing from a distance or reading about it, both psychologically and physically. Due to having the architects' role to create spaces that work as frameworks which creates possibilities for sustainable communities to socially and environmentally, through processes where you synthesize knowledge of the potential users, knowledge of experts and psychological and physical mappings.

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CASE STUDIES FROM LAST SEMESTER

Visit to urban garden at Odontologgatan in Umeå

Visit to urban garden in Hamburg

AQUAPONIC SYSTEM

RESEARCH COLLABORATION

CASE STUDIES FROM LAST SEMESTER

Visit to an urban garden at Odontologgatan in Umeå

Visit to a urban garden in Hamburg
The Ålidhem allotment gardens will be a system consisting of several aquaponic hubs and an education hub.

Real Estate Map of Ålidhem - The first number is the number of apartments in that real estate and the second number is the number of people registered in that real estate.

Aquaponic Hub Programme

A modern system for allotment gardens that creates the possibility for every million programme building to get its own allotment garden.

Normally there are at least one to two garbage disposal units in every real estate. The law "miljöbalken" recommends that you should have 50 meters or less to closest garbage disposal unit.

Garbage facilities

- In an open area
- In an enclosed area

Aquaponic Hub - Connected to garbage facility. The model is the current garbage facility.

Aquaponic Hub - Connected to garbage facility. The model is the current garbage facility.

Aquaponic Hub - Connected to garbage facility. The model is the current garbage facility.

Education Hub - Connected to current urban garden. A public place where there will be different activities related to gardening and environment. Everything from harvest parties to lectures. This is a place where everyone can meet and share experiences. My project last semester.
Design of One Unit

The Design of each unit is based on zipgrow towers and a media bed that utilize the aquaponic system flood and drain.

HARVESTING
LEAFY GREENS every 5 WEEK
HERBS every 3 WEEK

NUMBER of ZipGrow towers to be able to harvest every week
LEAFY GREENS 5 towers
HERBS every 3 towers

ONE UNIT
8 + 8 TOWERS
1 shared media bed

1 ZipGrow tower
0,9 kg Fish
67,5 liter of water

16 ZipGrow tower
14,4 kg Fish
972 liter of water

2m*0,6m*0,3m media bed
30%-60% volume of media bed is water
70% of volume = 252 liter to have a small buffer

2 meters long because an 8 tower unit is about 2 meter.
0,3 meter deep because that is how deep a media bed should be.

8 ZipGrow towers unit. Stationary
Mainly for growing leafy greens and herbs. By having a vermicompost where fish food factory you get the opportunity of adding red worms to your zipgrow towers. This will increase filtration and help break down solids and making nutrients more bioavailable in the aquaponic systems.

4 ZipGrow towers unit. You can spin it
Mainly for growing leafy greens and herbs. By having a vermicompost where fish food factory you get the opportunity of adding red worms to your zipgrow towers. This will increase filtration and help break down solids and making nutrients more bioavailable in the aquaponic systems.

Fish tank
The tank’s volume is 1,491 liters. Which is the amount of water needed in the system plus a little bit more, so that there is a small buffer.

Media bed
The growing media used will be LECA. Which is one of the best material for several reasons one being that it is pH-neutral. You can have red worms in this also for the same reasons as the zipgrow towers.
Ålidhem Valas, mainly built from 1966 to 1973 as a part of the million programme. The real estate I am working with mainly consist of typical million programme houses.

FISH FOOD FACTORY
The fish food is made of soldier fly larvae. The soldier fly larvae feed on the compost. When the larvae reach its last stage they will crawl out of the compost container by themselves. Then you can put them into a machine that shape them into pellet form. This way they are more easily digested by the fish. The decomposing made by the larvae produces a nutrient rich leachate, which can be used as a nutrient supplement for foliar or water application.

GARBAGE FACILITY
When you throw away your food waste here into a big square pipe. The food waste then falls into the compost in the fish food factory.

YOU THROW AWAY YOUR FOOD WASTE HERE INTO A BIG SQUARE PIPE. THE FOOD WASTE THEN FALLS INTO THE COMPOST IN THE FISH FOOD FACTORY.

CIRCULATION
All fish tanks are placed underground to avoid the sun light. This is because you want to avoid the production of algae.

ONE UNIT

MARTIN HENDEBERG
Studio 1, UMA 3
Plans of building to show the relation between allotments belonging to people who live in this building (SEMIPRIVATE AREA) and people who live in another building in the real estate (SEMIPUBLIC AREA).

**Floor 1 to 3**

- Garbage facility / future production hub
- Education hub

**REAL ESTATE OWNERSHIP:**
- RIKSBYGGEN / Bostadsrättsföreningen kemisten
- HSB / Bostadsrättsföreningen biologigränd

**SEMIPRIVATE**

**SEMIPUBLIC**