Future Food Supply Chain

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This document functions as a reflection on my graduation project, the Future Food Experience Chain. The aim of this document is to describe my project in terms of research and design, understand the broader social, technical and contextual relevance.
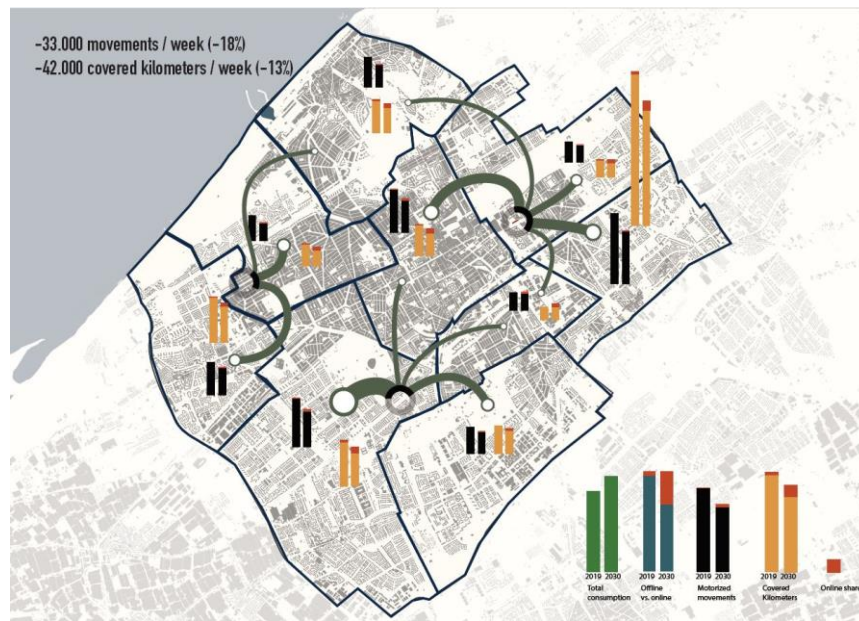
Problem statement and objective
The project aims to resolve the problematic arising from the upcoming new trend in the food sector: online grocery shopping. Due to increase of online orders major city traffic veins are suffering from more congestion as more delivery vans have to get in and out the city. On the social aspect the problem lies within the gap between human and food: it is getting bigger due to digitalisation. From the time of our existence until the industrial revolution people were bound to food. However since a couple of centuries there is a gap forming between men and its food. The rise of online shopping will help enlarging this gap. It is therefore the objective to create a food facility building that destresses the urban traffic congestion and links the relation between the men and the food back again.

The project is situated in the Hague at the Grotiusplaats. It is the assignment to transform the former Bruggebouw Oost. The objective is to design a new urban food chain facility which responds in a sustainable way on the trend within the food supply chain (rapid increase of online grocery shopping) and meets the climate goals of 2030. It is the goal to improve the logistical system, the food supply chain, the building itself and its relation to its urban context.

Aspect 1: relation between research and design
In order to get a clear image of the development within the food supply chain I researched the current trend and its impact on the city. From my research I got the conclusion that it is more efficient to deliver groceries from a central urban point. Furthermore I created a projection of 2030 of the city of The Hague (image 1). A calculated amount of groceries, amount of space, vehicles and electricity needed to supply the part of the city where the Bruggebouw is situated. I formed a masterplan to supply the city in an efficient way. Three urban distribution centres alongside the tramline. The cargo will be supplied at night using the (unused) electric tram network and disperse the goods during day with the shortest action ratio as possible with an electric vehicle fleet. The research formed a part of my program of requirement: the distribution part.

Aspect 2: the relationship between your graduation top, the studio topic, your master track and your master program.

The studio topic is called Second Life. This track of Architectural Engineering focusses on rehabilitating and transforming the building stock of 1960-2000. It is the objective to show the potential usage of these buildings. In my research I scoped one upcoming problem with the contextual potential of the Bruggebouw Oost. On a broader scale the studio of Architectural Engineering lays its focus on a technical approach to find solutions for wicked problems. Something that my approach really suits. In the graduation studio of Architectural Engineering students get the opportunity to rethink society in its broadest context. Designs could be provocative or unrealistic but it let the broader public rethink our term of 'normal'. In the studio the student is educated in such a way that we try to find spatial solutions for a broad palette of problems. The architect an analytical, spatial and holistic problem solver.

Aspect 3: elaboration on research method and approach chosen by the student in relation to the graduation studio methodical line of inquiry, reflecting thereby upon the scientific relevance of the work.

To predict the future is a difficult matter. I will never be able to predict the exact future scenario. However, it does made me think of the possible risks, affects and possibilities that might occur. In my case, there is a trend and if we let it happen, cities will be hit hard and people are more and more disorientated within the food landscape. My project gives a possible design solution where multiple fields of social, technical and logistical interpretations could thrive. A central point in the city where multiple food related functions form a synergetic whole and at the same time shows people that backside of their food history.

 At the time of writing the online grocery revenue increased fivefold. Therefore we as architects must think about how we could change this negative trend into a positive one. It requires a spatial designer approach. The scientific relevance of the work is therefore high, I would say.

Aspect 4: elaboration on the relationship between the graduation project and the wider social, professional and scientific framework, touching upon the transferability of the project results.

As I said before, the gap between men and food is getting bigger. The food supply chain got more efficient due to innovations and new technologies. It helped getting mankind grow to this point. Suffiency is the key to feed our world populations. It is a trend that is irreversible. People are always looking for the most efficient way of living.

But what we can do, and in specific what architects can do is create spatial qualities where people are still linked with food. In order to think where our food is coming from, how it is prepared and how much energy and effort it takes to get it to your house, transparency is the key. Only then people can see the value of it and consume the food in a more conscious way. To bring such a facility as a urban distribution centre to the city centre is not only a logistic efficient and sustainable step, but is also reconnects people with its food. In the end, we are made up of air, water and food. It is a basic need and let's keep it that way. It is not only up to the farmers, transportation companies or supermarket owners, but we as architects would and should play a big part of the transformation. Sketch it, draw it, deliver it, eat it.

Aspect 5: discuss the ethical issues and dilemmas you may have encountered in (i) doing the research, (ii, if applicable) elaborating the design and (iii) potential applications of the results in practice.

The question is if we as humans have to accept the fact that the gap between us and food is getting bigger. So do we need to support the online trend or should we stimulate local urban farmers is often the question. I position myself with the following statements. Firstly, the one doesn't exclude the other. In fact, it could have a great synergy in which the local producer or processor can link their product with the local urban distribution network and display and promote itself. Streams could be so much more efficient if local producers are linked with the local distribution network. Supporting a local farmer and using an efficient distribution network that releases urban pressure can and should come hand in hand.

Secondly, we need to be more efficient with our food chain in order to feed our increasing world population. More efficient in our land, water, road transportation and food waste usage. The most architects see our sector miles away from the food and agriculture sector, but we play a crucial role in solving problems that require spatial qualities.