

## Graduation Plan for aE Studio Students

### Personal Information

Name: Kees Fritschy

### Studio

Name of studio: Architectural Engineering

Teachers: Annebregje Sneijders, Jos de Krieger

Argumentations of choice of the studio:

AE has a focus on innovation for a better future, which got my interest. I want my project to have technical substantiation, but in the same time solve social issues. Next to that, I believe that AE offers the freedom I need to explore my interests. Out of all studios I believe that AE will give me the best suited guidance.

### Title

Title of your graduation project:

FUTURE OF FOOD PRODUCTION,  
*the revival of Imstenrade*

## Graduation Project

### Problem Statement & Objective

*Basic problem analysis covering the aspects: context, program and thematic focus.*

*The definition of the problem has to be significant to a clearly defined area of research and design:*

South Limburg is one of the problematic areas in The Netherlands, there is a shrinkage of activity and population. Young people move away to bigger cities due to a lack of economic and social opportunities, which leaves mostly older people behind. The area is in need of developments focussed on a positive prospective, projects that combine an innovative program with the spirit of the place. In Parkstad, there are many vacant buildings including monuments like castles, monasteries and farms. Those buildings are in desperate need of new functions to give them a bright future. It is important to see South Limburg as part of The Netherlands and the world, wider trends might open up opportunities which South Limburg is able to fulfil.

Many people leave the country side behind for a life in the city, but this is not without consequences. In urban environments different problems arise. The big cities in the Netherlands will keep growing in the next decades. It is estimated that the number of inhabitants of the cities in the Randstad will grow with 15 percent towards 2030 (CBS, 2016). By 2050, 69% of the world population will live in urban areas. They will become more crowded and dense. The urban surface also increases at the same time, resulting in a larger obstacles between homes and the natural landscape. Life used to be very different. For many centuries people had a closer relation to nature, which is changing at fast pace. Living in a city increases the divide between people and nature which endangers human and mental health in different ways (Turner, 2004). This is a major socio-ecological change for mankind, the lifestyle in the cities have an effect on people's health, which comes more and more into focus. The city generally has a more demanding and stressful social environment than rural areas (Lederbogen, 2011). Inhabitants of cities might end up detached from their fundamental ground of being and they will lose sight of their dependence on nature. City residents no longer see nature as mother but as a machine, it is hurtful for human health to lose touch with its biological origin (Louv, 2005). South Limburg is the perfect escape from the city to a natural environment, since it is only 2,5 hours by train from the Randstad. The natural landscape of South Limburg is ideal as a basis for tourism.

Parallel to these problems there is a need for a more self-sustaining and circular lifestyle to not exhaust the natural resources and reduce environmental impact. There is a close relation between a circular lifestyle and the connection with nature. Knowing where your food comes from and seeing it with your own eyes, establishes a bond with nature and the environment. Realising that milk comes from a cow and not from a factory almost sounds ridiculous, but is sadly the reality for many city residents. Awareness and realisation is the first step for creating balanced ecosystems everywhere. Human beings should experience to be part of the natural world to recognize their ability to live within the limits of an ecosystem. The production of food is dominating the land use in South Limburg as everywhere else in the world. Agriculture has large impact on how we organize landscapes. Human activities are influencing terrestrial biodiversity. Biodiversity is the term used to describe the countless different forms of life on earth. It is the basis for all ecosystems. As humans we are part of ecosystems as well and we fully depend on them. At this moment human actions are at top of threatening species with extinction. An average of 25% of all plants and animals are threatened worldwide (IPBES, 2019).

In the current system, more space for monoculture means less habitation space left for different species (all animals and plants). The last decades human activities and mainly the current system in agriculture led to a fast decline and extinction of species everywhere. Ideally food production should use a system where nature and agriculture are combined, to foster biodiversity and where symbioses takes place between the species.

## Objective

*This section has to include what the intentions are of the graduation project and is therefor closely related to the problem statement.*

South Limburg might lack of social and economic opportunities, however the natural landscape possesses many advantages. It is known for having fertile grounds and many natural resources. Which led to a rich cultural history as a place of habitation, from the Romans until now. The hills, forests, and streams are of exceptional quality. South Limburg has always been a place of food production, still today farms for the majority of land use. The building I selected for this project is an abandoned farm (monument Imstenrade) from 1890. The building is in need of a new function to make it flourish like it once did. The new program is based on the traditional use of the monument, a food production centre supportive to its surroundings. However it has the potential to be much more than that.

Agriculture can be changed in many different ways, one to make better use of available space. The level of production can be increased without adding external sources like water and energy, but by introducing circular systems. The most present production method in the food centre will be the food forest. This is a new type of agriculture based on the natural symbioses between plants. It produced high quality season products all year long. Both most important, the food forest in fostering biodiversity due to its variation of plants and animals that are introduced. The forest can be a recreational space and produce food at the same time. This way the recreational function of the forest is maintained as well (Wiskerke, 2018).

The potential of a food forest is high. All seasons offer a different high quality output. Nature can remain but also provides a meaningful food experience. Next to the food forest other production processes such as a brewery, dairy processing, bakery, cattle stock will be introduced. These processes get their main input out of the food forest. Next to that, technical installations will improve the efficiency and allow the reuse of more waste streams. Together a complete healthy diet will be produced and offered. Local production helps to decrease the CO<sub>2</sub> emission due to transportation that many goods have to endure nowadays.

When leisure activities can become food productive, this is multifunctional use of space. There needs to be a place where all the knowledge and tools are kept and shared, this place has the potential to be a combination of different functions: a community centre, product shop and café.

Since the mining industry closed down in the 60's, the Parkstad region is searching for a new sources of income and a corresponding identity. Tourism has the potential to fill the economical gap and create the jobs the mining industry left behind. South Limburg is a popular destination to escape the crowded cities and enjoy peaceful recreation in a natural environment. The tourism industry in South Limburg is growing and there is an increasing demand for day activities (ZKA, 2018). The food center will offer a "food experience" that includes participating in producing and eating in the restaurant. These activities have the potential to be productive, fun and educational at the same time. Furthermore, larger numbers of visitors in Parkstad result in a growing demand for provisions, which is directly solved in responsible way. The food centre fosters the spatial and social relations between the food production and the consumer. Which is sometimes completely lost. During the process of modernisation, industrialisation and globalisation in agriculture the relation of production and the consumer has been lost. In a food forest or another similar system, consumers can not only consume the food but also take participate in growing and processing.

### **Overall design question**

*Your overall design question should contain the following aspects: context, program, and thematic focus point. This should be formulated in such a way that the graduation project can answer this question.*

How to design a **food production centre** (Imstenrade), embedded in the natural landscape and culture integrated with a sustainable food, energy and material production system?

*In the food centre a complete healthy diet is produced. The design enhances the mental state of mind of the visitors and the awareness of being part of nature and an ecosystem. At the same time it brings economic, social and health benefits for the local village. The production methods used are friendly to the earth. They foster biodiversity and try to limit waste production.*

### **Thematic Research Question**

*The thematic research question focuses on a specific aspect of your overall design question. The more generic your thematic research is, the less context and program your thematic research question will contain. If your thematic research is very specific for the context, your thematic research question can almost be the same as your overall design question. Your thematic research question can be divided in several sub questions that can all have their specific research methodology and can lead to different papers.*

How can a sustainable food flow-system be integrated with the territory in South Limburg, and lead to (health, social, economic and environmental) benefits for 200 people?

### **Methodologies**

*A description of the methods and techniques of research, which are going to be utilized. For example: Literature study, reference analysis, research by design etc.*

Literature studies are the first step to explore similar strategies and mapping of possibilities. The paper on the flow production system has a big impact on the design requirements for the actual designs, however it also provides a stronger foundation for the project in terms of social and economic benefits. Case studies on flow systems do often expose additional interests for the people involved. It will be a process of disassembling other systems, analyze them, and reassembles within the context and specifics of my location.

The site visits will be of great importance, to encounter the specifics of the location and react on them. The intention is to use as many resources of the location. However, for the design process literature and case studies are both beneficial. In literature is describes how design can influence that the state of mind of its users. I have to find my own way to implement it in the design, with the available constraints and requirements. Designing the right atmosphere is essential to succeed. Case studies provide strong examples of this is carried out in practice. Visits and analyses expose strategies which are inputs for the design choices ahead of me.

## Planning

A scheme of the division of the workload of the graduation project in the 42-week timeframe. Compulsory in this scheme are the examinations at the middle and end of the semester, if required, the possible exams that have to be retaken. The submitted graduation contract might be rejected if the planning is unrealistic.

| week | date       | main focus   | specialties                             |
|------|------------|--|---|
| 13   | 26, 29 mar | P1 presentation  | no tutoring                             |
| 14   | 2, 5 apr   | process feedback p1  | no tutoring                             |
| 15   | 9, 12 apr  | excursion Parkstad, research sources and location, numbers of the flowsystem         | no tutoring                             |
| 16   | 16, 19 apr | mapping before and after flow system, continue researching, starting the first draft | Goede vrijdag                           |
| 17   | 23, 26 apr | write draft research paper + creating the flowsystem                                 | Tweede paasdag (22-4) Koningsdag (27-4) |
| 18   | 30, 3 may  | write draft research paper + creating the flowsystem                                 |   |
| 19   | 7, 10 may  | use research outcome to set out PVE and start to design                              |   |
| 20   | 14, 17 may | improve research and continue designing + additional research for other topics       |   |
| 21   | 21, 24 may | improve research and continue designing + additional research for other topics       | 23 may: Due date Paper Methods          |
| 22   | 28, 31 may | improve research and continue designing + additional research for other topics       | Hemelvaart                              |
| 23   | 4, 7 jun   | finalize research paper, prepare presentation  | Pinksteren                              |
| 24   | 11, 14 jun | P2 presentation  |   |

After P2, I am going to continue the design with the final program of demands, so it is clear what I am going to design exactly. The additional research about integrating many different qualities continues and goes simultaneous with the design process. It will be a process of trial and error and improvement step by step. At p3 I hope to present a complete design that is perfectly integrated with the program.

### P3

After P3, I will keep improving the design, and go more into detail and technical detailing. Towards finalizing the design.

### P4

After P4 I do not want to make any more design decisions. At this moment my design should be finished so I can focus on the presentation: making multiple presentation models, drawings and other artwork.

### P5 – Final presentation

## Relevance

*The value of the graduation project in the larger social and scientific framework. Is your project more generic or specific?*

My projects addresses problems on different scales and places. It connects the social and economic problems of South Limburg to larger issues in the Netherlands and a world-wide context of environmental related problems. This project addresses two of the most important tasks of our generation of designers: contribute to the reverse of climate change and foster biodiversity.

These issues and local problems are merged into a win-win situation. South Limburg could attract activity and make use of its exceptional natural qualities, and visitors and local people are able to enjoy a meaningful healthy food experience. All of this in sustainable way, that leads to a healthy future. The projects creates a healthy system and awareness in combination with high quality architecture.

## Literature

*The literature (theories or research data) and general practical experience/precedent you intend to consult.*

Small selection of literature sources:

Bistagnino L. (2011) Systemic design, designing the productive and environmental sustainability.

Wiskerke J S C. (2018) Flourishing foodscapes : designing city-region food systems.

IPBES, Diaz, S. Hien, T. (2019) Assesment report on biodiversity and ecosystem services of the Intergovernmental Sience-Policy Platform on Biodiversity and Ecosystem Services.

Daniel L. Dustin, Bricker, K. (2012) People and Nature: Toward an Ecological Model of Health Promotion. Salt Lake City, UT, USA.

Susan Cooper. (2008) Essays on Nature and Landscape. University of Georgia Press.

Lederbogen F. (2011) City living and urban upbringing affect neural social stress processing in humans.

Polydome – high performance polyculture systems.

Luscuere P. (2018) CIRCULARITEIT – OP WEG NAAR 2050? TU Delft

NB. Part of the graduation (especially in the MSc 4) is the technical building design. Therefore a Building Technology teacher will be part of the tutoring team from the P2 presentation on. This should be taken into account when writing the Graduation Plan, in the time planning as well as in the relation to the content (e.g. statement, method and /or relevance).