Arkitektur- og designhøgskolen i Oslo
The Oslo School of Architecture and Design

DIPLOMA PROGRAM FALL 2017

Diploma candidate: Klas Harris

Institute: The Institute of Design

Main supervisor: Nicholas Stevens

Second supervisor: Mosse Sjaastad

External supervisor: Erik Meurling (Anticimex)

Company cooperation: Anticimex

Title of project: Greener and smarter pest control

Type of project:

Productdesign ☑ Servicedesign ☐ Interaction design ☑

Ian McCraig – Pied Piper

Introduction

Where there are humans there are pests. One of the most common pests, the brown rat is not a malicious creature by definition but the fact that it wants to share its habitat with humans against our will is detrimental. Rats can cause a lot of destruction on property, they can also spread disease, this in combination with a high rate of reproduction makes it necessary for us the consider it a pest and to control the population and prevent them from entering our domicile. The way humans have dealt with pests have varied over time. Mechanical traps and poison has been the weapon of choice in this situation for a long time, not just for rats but for a wide range of pests.

The problem with poison and pesticides are the effects they have on nature, we just have to look at the widespread usage of DDT in agriculture to see what catastrophic consequences they can have. DDT have been documented to cause cancer and had a devastating effect on the wildlife and was therefore banned for agricultural use in most countries in the 70's. So there have been a drive for some time to regulate and minimize the usage of poison in pest control and it will probably grow even stronger in the years to come. I feel the search for greener, safer and smarter solutions in pest control is of importance and I think that as a designer I can hopefully see things from a different perspective and help modernise the industry.

External partner - Anticimex

I have decided to collaborate with an external partner for this project. My partner is Anticimex where I have been working as a customer service representative in 2016 and 2017. My time at the company has given me valuable insight into the subject matter and hopefully I can utilise my connections at the Oslo branch during the project.

About Anticimex
Founded in Sweden back in 1934. The company which was originally created to exterminate bedbugs (*Cimex lectularius* in latin) have since grown to become the third largest pest control company in the world. They currently operate in 17 countries and employs around 4000 people.

After the acquisition of the Danish company Wisecon in 2017 Anticimex started up a new branch named the Anticimex Innovation Center. WiseCon has been working hard for the past 10 years in developing and producing smart and non toxic rodent control equipment. The acquisition and the creation of the new branch shows that Anticimex are willing to adapt to new regulations and that they have a desire to stay ahead of the curve in terms of offering their customers greener pest control solutions.

Challenges

Private market or Industrial use
Deciding on a market could change the outcome of the final product. It might for example be more desirable for a more discreet looking product in the private market where as durability and ruggedness will be more important for Industrial use. If we want to meet the demands of both markets I think it's important to look at the scalability of the system and if it would be beneficial to have two separate product lines.

Product, Interaction and Service
The main focus of the project will be designing a product although there will also be elements of interaction design, there could also for example be the need for an app which will then push the project towards screen based interaction. Whether or not the product will be part of a service remains to be decided but I will need to find a good balance between disciplines.

Different wants of stakeholders
Pest control is often part of a service, either as a contract directly with the pest control company or through insurance. I need to consider and balance the wants and needs of the different stakeholders. The requirement specification will need to reflect this.

Reinventing the rat trap
The fact that the rat or mouse trap is one of the products that have been redesigned and patented the most throughout history could make it difficult to approach. Therefore I think I need to look at how the product is being used and the general functionality more than going into the specific engineering.

Other considerations

Security and increased complexity of a connected product
If the final product are to be a part of a network as opposed to a stand alone device there is always the inherent risk of either abuse by the way of hacking or other technical difficulties such as compatibility issues between devices. Any connected device could in theory be a weak point in a malicious attack. This will not be a problem for most private users in a smart home setting but security measures should be considered non the less, especially if the product is to used in an industrial setting.
Having a connected product as opposed to a stand alone device will also add complexity to the final delivery.

Changes to a mature industry
Any industry which have been used to doing things a certain way over a long period of time will have challenges with rapid change. Laws and regulations are slowly pushing the pest control industry towards greener solutions but it will be important to see where the industry currently stands and what sort of approach will have the biggest impact

HMS
Health and safety considerations is an important factor. and last but not least making sure that the end product follows environmental regulations set by miljødirektoratet.

Approach and work method

Field work
I will try and get my hands dirty and spend some time with the pest control technicians in the field. This will give me an opportunity to study their work method and give me insight into problem areas which I might not have discovered otherwise.

Expert opinion
I hope to conduct interviews with pest control technicians, biologists and other people involved in the pest control supply chain.

Mapping through Systems oriented design
To gain a better understanding of the topic I will use SOD techniques to map out the subject matter. This will help visualize connections and areas of interest which otherwise might not be as obvious.

Workshop
I will conduct workshops with both people active in the field and possible end users of the product or service.

End Product

A system, product or a range of products for pest control which does not rely on the use of poison/pesticides and has improved usability over what is currently on the market. I aim to give the end user greater control over the pest situation in the home and/or industry.

Communication and deliverables

The following will be a part of my delivery:

Report of the process which will include:
• Research and mapping.
• Sketches, drawings and photos.

Documentation of products and findings:
• Models
• Videos
• Photos
• Final Presentation

Final exhibition displaying appropriate models envisioning the final product, accompanying posters and information.

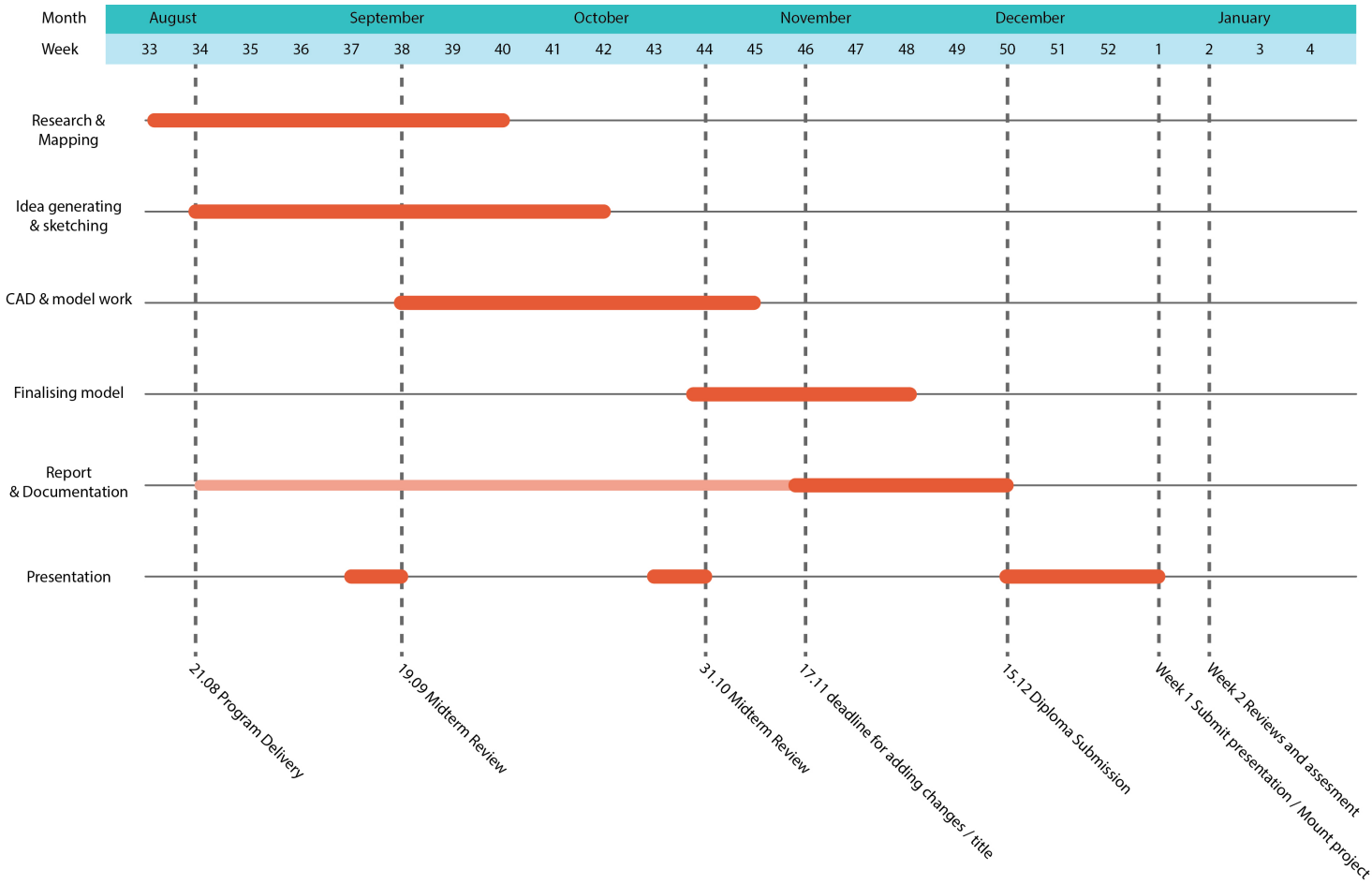
Supervisors

Main faculty supervisor – Nicholas Stevens
Faculty co-supervisor – Mosse Sjaastad
External supervisor – Erik Meurling - Anticimex

Reading list

Folkehelseinstituttet, avdeling for skadedyrkontroll (2017) *Veien til godkjent skadedyrbekjemper del 1 og 2*

Plan


Month
August
September
October
November
December
January
Week
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 1 2 3 4
Research & Mapping
Idea generating & sketching
CAD & model work
Finalising model
Report & Documentation
Presentation
21.08 Program Delivery
19.09 Midterm Review
31.10 Midterm Review
17.11 deadline for adding changes / title
15.12 Diploma Submission
Week 1 Submit presentation / Mount project
Week 2 Reviews and assesment