

Internship report



**Fabrique
Public &
Industrial
Design**

By:
Company mentor:

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01 | Introduction

Who am I?

Hi my name is [REDACTED] I am a student at the TU Delft, following the master Integrated Product Design. For the second year of my master I decided I wanted to do an internship at a design company in the Netherlands. After studying for four years in a row I was interested in getting to know how all the theory comes back in practice. Since I am studying the master IPD my interests are more towards the later phase

of the design process. During my internship I wanted to learn more about embodiment and materialization. The projects I did during my bachelors and masters were more focused on conceptualization so I was ready for a new challenge. On top of that I am still indecisive about my future direction, I hope this internship will help me find out what I like.

Application process

When I knew I wanted to do an internship I made up some requirements for myself to go looking for places I wanted to do my internship. Since I am an IPD student I wanted to work somewhere where they design tangible products and where the focus would be on the embodiment of a product.

I started looking for companies that would fit my interests. That is where I came across

Fabrique Public & Industrial Design. I recently had done a project for the Dutch Railways so I gained more interest in designing for the public space. I wanted to know if I would like working in this sector later in my career. That is why I applied for an internship at this company.

I submitted my portfolio and CV at the end of May and I could start my internship at the beginning of September.

What is Fabrique?

Fabrique is a design company based in the Delft, Rotterdam and Amsterdam with 3 different departments: Graphical design, Public & Industrial Design and Branding & communication. Fabrique was founded in 1989 and has now more than 100 employees.

My internship took place at Fabrique Public & Industrial Design based in Delft. It is located in the Agneta Park area.

Fabrique Public & Industrial Design is also split in two departments: Fabrique Invent

and Fabrique Public Design (where I did my internship).

Fabrique Public Design, designs products for consumers and for use in the public space. Their work differs from working for municipalities on bus shelter to making a swimming pool seat for a commercial company.

Fabrique Public Design are specialised in making products with aluminium extrusion profiles.



02 | Experiences

My learning goals

Before I started my internship I set some personal goals that I wanted to achieve during my internship at Fabrique Public & Industrial Design. But my main goal would be to get a taste of the working live and to map my interest. During my studies at the TU Delft I was not really sure about what my future career would look like and what kind of projects really interests me. And I hoped with this internship that I could add some

interesting work/graduation directions. But it could also mean that I could cross some directions out if they did not turn out to interest me.

On top of this I of course wanted to improve my design skills. Getting some tips and tricks from designers that would cope with these skills everyday could really help me to get better. My goals are explained in the figure below.

CONCEPTUALIZATIONS



I would like to learn more about the way appearances of products come to life. I like to design a form by its functions but at the same time it needs to fit the look and feel of the company or product range. I am interested how this translates in a design company.

VISUALIZATION



During the internship I want to improve in visualizing a product. First of all become quicker in making a 3d model in SolidWorks, but also improve my render skills. This is something we do not learn at TU Delft. I hope to improve this during my internship.

MATERIALIZATION



After designing the form of a product it needs to be manufactured. I would like to learn more about the choice of materials and ways to manufacture and assemble a product.

I would like to learn how to incorporate these aspects into a design of a product.

The atmosphere at the workspace at Fabrique was informal and friendly. The office is a working place for 10 people divided in two departments. When I arrived I felt immediately part of the team. Every day we take the time to lunch together and have a break from working. After a start

exercise I got to work on the projects for the clients. At first I was a bit afraid that I did not know enough to work on these projects but with the help of my colleagues I gained confidence. It was nice to see that the things I learned at my bachelor and master were useful during these projects.

When I arrived at my internship there was a personal computer waiting for me. I had my own work area where I could work for my whole internship. Our department consists out of 5 members including me and another intern. The workplaces are positioned close

to each other. This was convenient, so I was able to ask questions easily if I needed help. My colleagues made me feel at ease and they were always willing to help each other out with their projects.

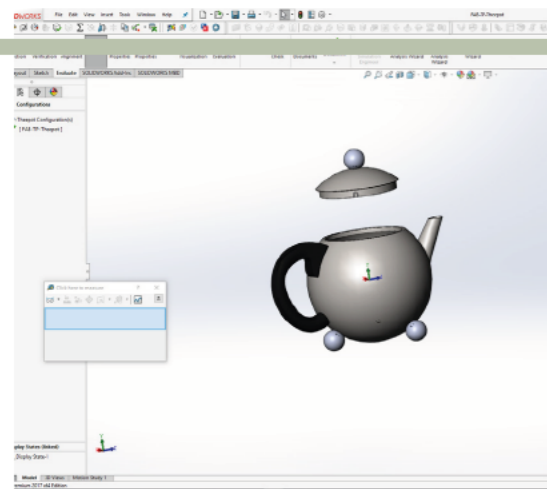
View from my workspace



03 | Tasks

During my internship I could work on different projects. I started with an small project to determine my capabilities. After that I could work on real projects. The project varied from making parts of a product to making renders. I spend

some time on making an animation for an upcoming product. And towards the end of my internship I could work on a product as a whole. A selection of the projects I worked on will be shown in this chapter.



Start exercise

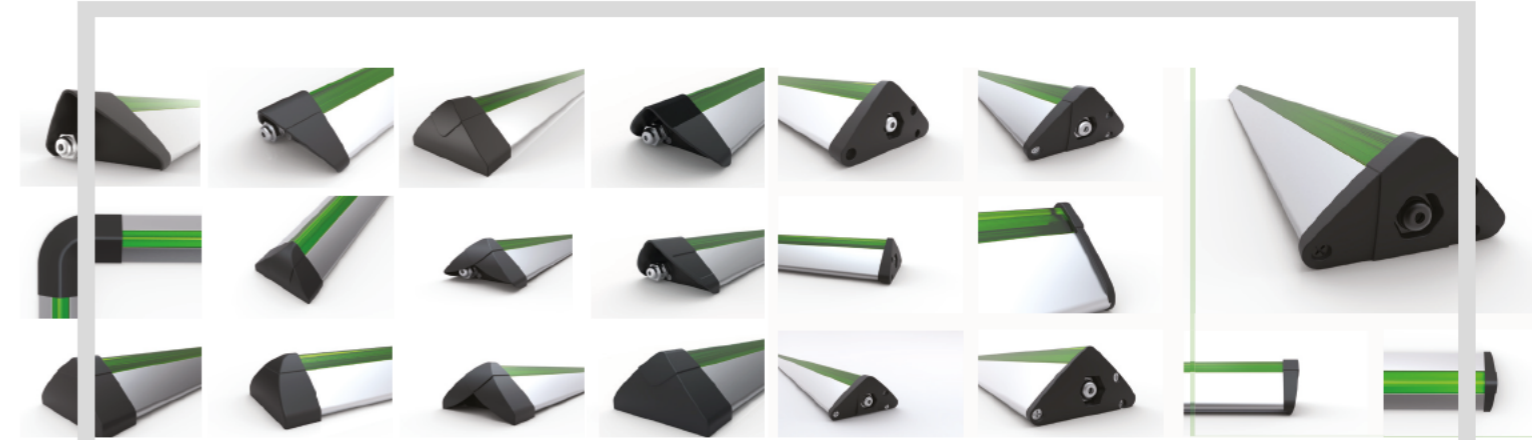
At the start of my internship I was asked to do an orientation exercise, to determine my skills regarding 3d modeling (SolidWorks), technical drawing and making renderings.

When I was installed behind my desktop a was given a teapot and my task was to first create a 3d model of the pot in SolidWorks. Hereby I already learned new things, since I did not make organic shapes before in SolidWorks.

After modeling the teapot I needed to make technical drawings of the product. During TecDoc in the bachelor I learned to make drawings according to a lot of detailed rules. It was interesting to see that all these details, such as aligning the jug-points and ordering the numbers did not matter so much anymore.

The last exercise was to make renders in Keyshot of the model. During my studies I did not work with Keyshot that often, but I had seen it before. I liked to play with it and I managed to make some nice renders. Thereby I also needed to make a render video of the teapot.

All these aspects of the first exercise were going to be the things I would use during the rest of my internship.

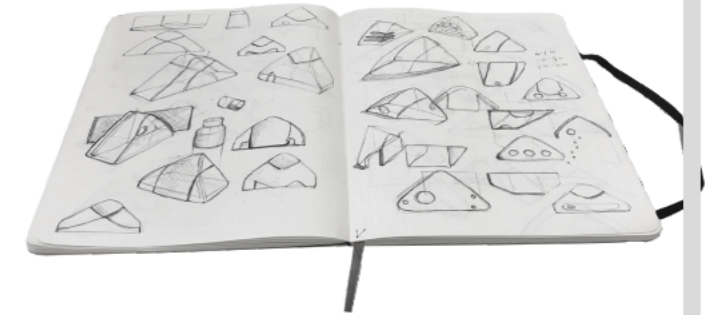


End cap emergency light

An existing light line, that is used to highlight tunnel doors, needed to have a new end cap. The former metal plate needed to be replaced by an injection molded part.

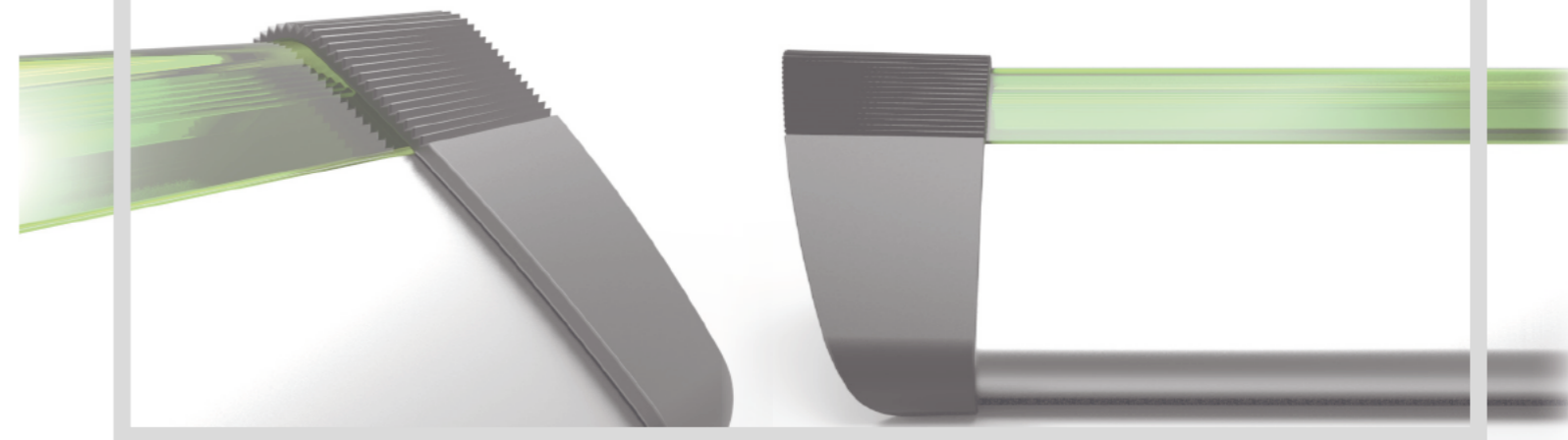
The part needed to hide the cable gland and fit the form language of the existing product. For this project I started with sketching a lot of different forms.

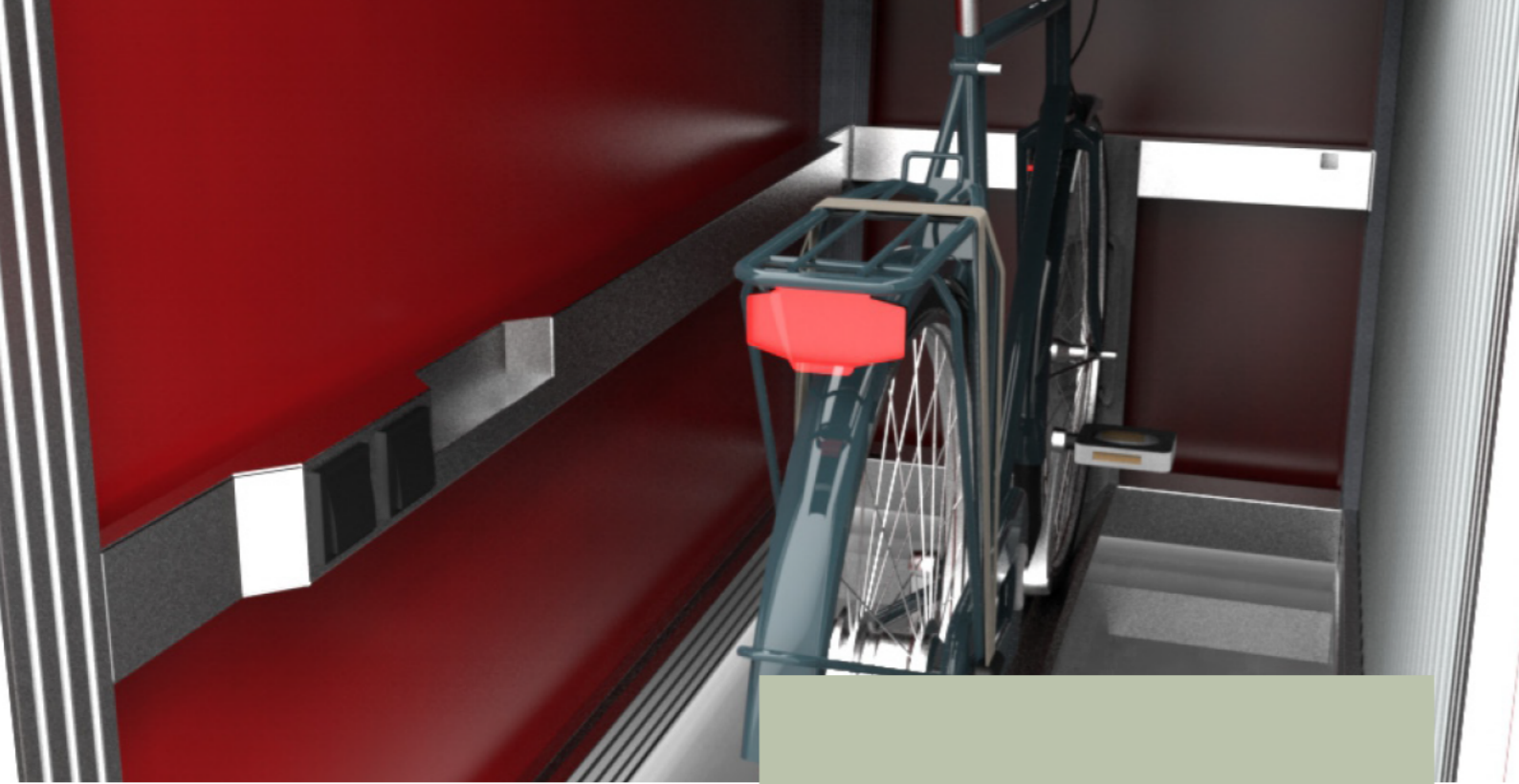
After little time I was already making 3d models of them to see if the forms were even possible. After that I made some quick renders to see if the part was appealing and would fit the form of the rest of the product. When I had made some viable options, the caps were 3D-printed. This



gave a good view of how it would fit the product and what still needed to be changed. The product was made that it would be releasing in the mold and by using the right tolerances to fit the beam.

The end result is the cap on the bottom of the page.



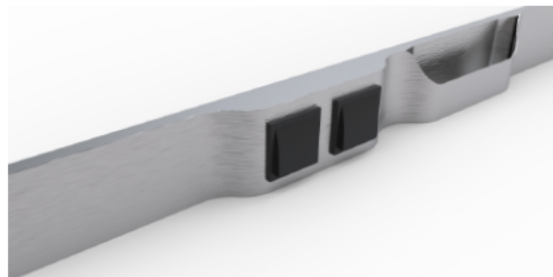
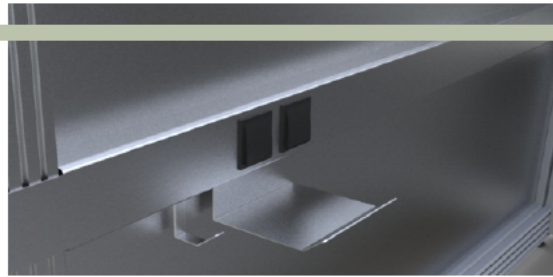


Bike locker charge bar

Fabrique was working on a bike locker that works as a save for bikes. The locker would be mainly used for E-bikes, therefore there needed to come a charging point for your e-bike battery. After finding out what the best position would be of the point I needed to make the product.

This was when I first started to work with sheet metal. During my studies at IDE I had never learned to work with this material, we usually use injection molding as main production method. It was interesting to see the new possibilities but also the restriction while using sheet metal.

I learned some nice tricks to get rid of visible screws and bold and I learned to work with this material in SolidWorks. It was interesting to come up with smart ways to make a form and still be able to produce it. Because most of the time in our bachelor we were not really trained to make a form manufacturable.



Animation Westend Lighting

I was asked if I could make an animation to show the working of a new product. The product shows passengers the way to the right gate at the train station. By using light lines on the ground the passenger flow would be optimized.

In the past I made some small animations for concept videos but never a whole video. I took this opportunity to become better at

it. I made a small part and sent it to the client, they agreed with the style and I made the rest of the video. I was harder than I first expected, since it took me a lot of time to get used to work with AfterEffects. I learned a lot by doing and googling tips and tricks. During this project I interacted with the client, to make the storyline the way they wanted it to be.





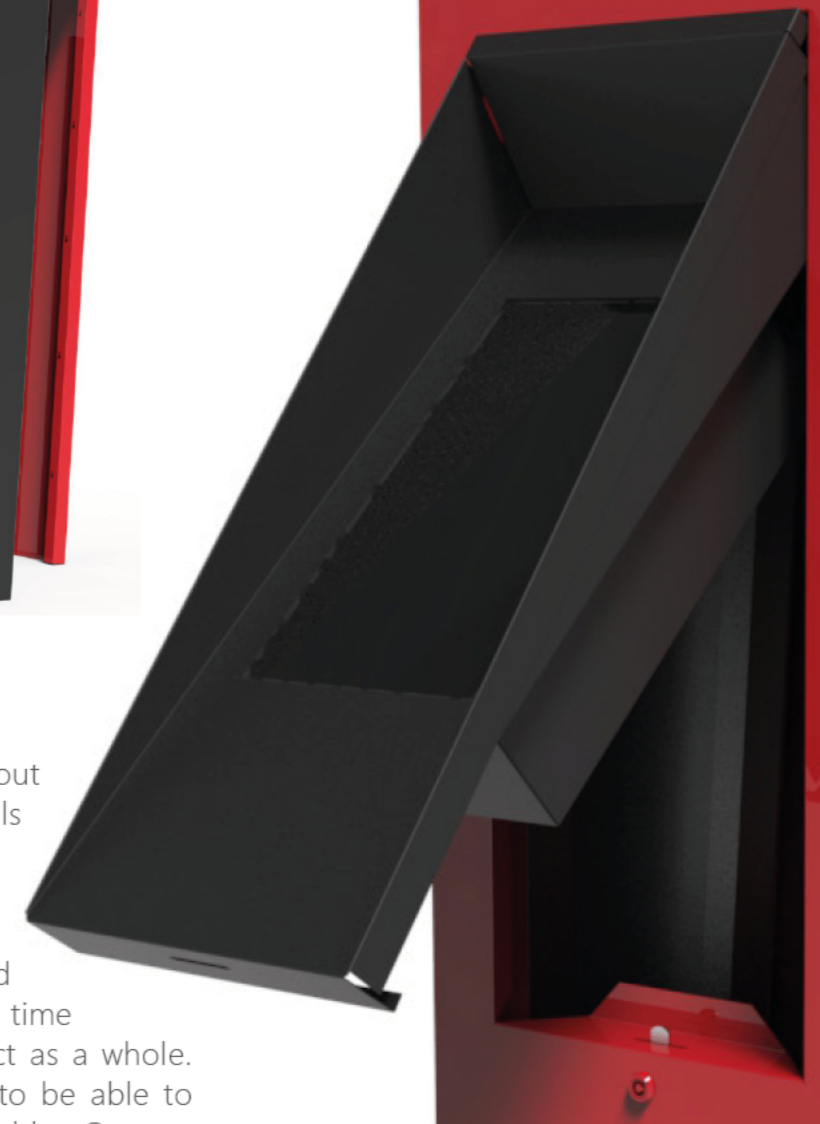
Bike locker control column

One of the last projects I did was creating a control screen to go with the bike locker. The task was to make a column that could stand alone but also be attached to the bike lockers. The column should be in the same style as the bike lockers.

I started again with sketching different forms that would fit the appearance of the bike locker. I used the 5 degree angle of

the locker as a returning element. As soon as I was putting the design in SolidWorks I was thinking about the manufacturability of the product. It was interesting to see that I already had created this new mindset during my internship.

Making renders of the different models had led to the choice of continuing with the model on the top of the page.



I started to make decisions about the production and materials that should be used for the product. With some help of my colleagues I managed to make a real product. I liked this project since for the first time here I was creating a product as a whole. I had to find new solutions to be able to make the form manufacturable. On top of that it was needed to think about the assembly and maintenance of the product. Therefore the decision was made to make the screen fold out by using hinges at the top and use a small lock to close the system. Hereby the screen can easily be replaced if it stops working.

After designing the control column, I was asked to make a cost price analysis. It was interesting to see the price difference from the mass produced products I designed before.



Renderings

During my internship period I was asked to make several renders of products Fabrique was working on at that moment. Some examples are shown below. I made renders of a couple of bus shelters but also an

impression of a concept of a bicycle tunnel. I learned to become quick in using Keyshot and learned new ways of using it.



04 | Evaluation

Evaluation learning goals

The goals mentioned on page 6 were almost all achieved during the internship.



Conceptualization

I got to work on projects, for example the bike shelter column, to work on the appearance of a product. This helped me to get better at form design.



Visualization

Since I had to work a lot with SolidWorks and Keyshot, I definitely improved my skills.



Materialization

I learned more about working with aluminium by using sheet metal, but also by seeing colleagues working with aluminium extrusion.

Fabrique designs products for the public space, I gained more knowledge about the way these products are designed, manufactured and maintained. It was interesting to see that the way a project was done was different than we do at IDE. I was used to make a lot of sketches and do customer research before starting a new project. However at Fabrique they already have a lot of experience in designing these kind of products. The designers could start immediately with making 3d models. It was nice to take a look at the products that were made in the past and get inspired by the design choices that were made. During my internship I gained more knowledge on the way public products are manufactured. In my bachelor I did not learn a lot about manufacturing, therefore I found it interesting to learn more about for example sheet metal.

Work experience insights

During my internship one of my goals was to gain more insights about the working life. I wanted to know what things I like and like less.

At IPD all the projects you do are team efforts, in contrast to the projects I did at Fabrique. At my internship the projects I did were individual and I noticed that I

sometimes I had trouble keeping my focus. This was also because all the work is behind a PC, and not much joint brainstorming was done. Although the designers at Fabrique were always keen to help each other out, I do prefer working in a team. I believe working on a project with multiple designers can improve the product, since everyone has a different view.

As I mentioned before almost all the work was done behind a computer. I noticed that especially in the beginning this was quite hard for me but I got used to this way of working. I learned that I prefer to have a bit more variation in work and I started to miss making and testing prototypes. Prototyping is something I would like to do in a future job or graduation. However this was not really possible at Fabrique since they make large products such as bus shelters.

At the start of the internship I thought I wanted to focus on the embodiment part of the design cycle. But I noticed that I did not ideate and brainstorming and coming up with smart solutions for user problems.

Overall I think I gained a lot of insights of my interests during this internship. Even though I enjoyed working at Fabrique, in the future a bigger design office might suit me better, where more team work is done.