

**Lab
A.R**

INTERNSHIP REPORT

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Company Coach: Annemarie Piscaer

SEPTEMBER 2022-JAN 2023
ROTTERDAM

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Summary

This report is a Summary of my past weeks of working with Lab Air revolving around my goals, learning and findings throughout my experience. Lab Air is an international Design Studio with projects around air, pollution and particulate matter.

My Project was to develop a mobile toolkit that would allow air to be experienced in multiple mediums, while creating a contextual learning experience. During my time in Lab Air, besides the toolkit, I got involved with the other ongoing projects that the team was taking part in, ranging from working with an almost 500 year old ceramics factory to setting up an installation at the Dutch Design Week. In the past months, I broadened my skills in communication, crafting, material exploration and prototyping in a speculative design environment. I also got a better understanding of myself as a designer, tying these experiences back to my vision and identity.

Introduction

Being a Speculative designer with my roots and intentions in pursuing products that give control to the user, I wanted to do an internship with a hands-on approach to creating a physical project. Talking with Lab Air, I decided to use my external learning semester to create a mobile Air Experience Toolkit as a follow up to their workshop “taste the air” [1].

While the project will be finalized after the submission of the report, I feel like I got a hold of what my shortcomings and strengths are as a designer during the course of the project. While fulfilling my goals decided before I started the internship, I placed more goals for the upcoming months of my education and career.

Company Description

Lab AIR is a design studio by Iris de Kievith and Annemarie Piscaer. They took this initiative with the belief that we should take better care for a healthier living environment. In 2018 they started their collaboration with Smogware: an international and participative project to raise awareness of air pollution, developed around a set of ceramic tableware glazed with local air pollution. [2]

Goals

After coming out of a research project in my B2.2, I decided to pursue a speculative design path which is connected to physicality and forms as well as narratives. I want to communicate ideas with objects and combinations. My identity and vision have changed to follow these ambitions, especially to visualize otherwise unobservable concepts. In my past projects in Industrial Design, I worked with re-imagining regular, overlooked concepts of our daily lives such as Water, Closed Space Air Quality and Social Capital. With the power of speculation, I aimed to improve my power of communicating these concepts with my designs.

- **Experiencing speculative design as a communicative method**

After my B2.1 I decided that I wanted to pursue speculative design as a career path. I think it is a good fit as my ideas as a misfit serve a greater purpose of invoking thoughts around my thoughts that go alongside my manifesto as a designer was a subject. Making and placing objects in different contextual manners that would otherwise not exist has always intrigued me, thus I wanted to experiment within this realm in my internship. Lab Air, being about communicating air to people in ways that they didn't experience before was therefore a good and interesting partner to pursue this goal with.

- **To work on public presentations**

I knew that communicating thoughts with design also involved presentation skills. I feel good talking to people about my ideas and designs but making this more public was a topic I wanted to improve myself upon. I realize sometimes my thoughts get lost in the chaotic working order I have inside my mind and therefore this goal would also allow me to improve on transferring those ideas to other designers, not only the end-user by allowing me to stick to a narrative.

- **To design an experience.**

I see design as an experience throughout its cycle. This cycle should both include the designer's experience and the user's end experience. Therefore designing through the lenses of experiences was something I wanted to pursue. It involves a lot of steps when I would have to step outside of my own body and mind, which in turn creates a lot of moments where I would have to "kill my darlings".

- **To work with different mediums of design in a hands-on manner**

I have identified as a Maker even before I started doing design. With every year, I add more skills towards my physical understanding of materials and how to work with them. I wanted to start working with more mixed-sets of materials. My designer identity has evolved into a path in which I like to include transparent materials and purely-essential features. I therefore saw working on the Lab Air Communication Toolkit would be a good place to learn as I experimented.

- **To learn how to design with a set manifesto in mind.**

The manifesto of Lab Air and all of the projects associated to it are vague but also well-defined around the concept of air and the future. They make every decision considering these values and manifesto in mind. I wanted to learn from them how a coherent decision-making strategy around a manifesto would work and how to follow ideals of your project in an actual work environment.



Activities and Projects



The project took place in different phases as there were multiple sections I wanted to be involved in. The first being the joint project with the Royal Tichelaar Makkum, and the second being the Lab Air communication kit, which was to be designed based on a workshop the team had performed in Milan.

The Royal Tichelaar project was also going to be exhibited in the Dutch Design Week; therefore I was also going to help set up the exhibition in Strijp-S.

Our main project that we agreed upon before starting my internship was the Lab Air Communication Kit. This kit aimed to transform a workshop they conducted in Milan into a mobile layout. In response to this, I wanted to turn the workshop into a briefcase format. This project consisted of multiple layers as we wanted the piece to be bespoke to the purpose as it would also be contextually relevant showpiece to the learning experience of the workshop.

The Royal Tichelaar Makkum

The project in Makkum involved using Smog as a glazing to recreate a famous dutch painting of the sky, involving using old and new techniques for different ceramic tiles. I was also asked to recreate the old factory buildings as a model to be slip-casted to create a small-scale model similar to the Classic KLM Houses. To do this, I had to work within the constraints of the material by learning different shrinkages of clay types, detail levels and constraints of the molds created for slip casting. The details in the buildings had to be adjusted accordingly. I incorporated my vision of combining old and new by making the positive molds that the slip cast would be made from using 3D Modelling/printing. This way the details of the buildings would be truer to life while staying as efficient to manufacturability as possible.

The models were adjusted with recommendations of the Royal Tichelaar Modelling staff and then 3D Prints were taken. Due to timeline constraints the models were held to be manufactured on a later date.

The Smog glazed Dutch Skies painting needed color matching to be realistic. To aid in this process, I took photos of the colors different glazes produced and material combinations and made a Color Swatch panel in photoshop. The glazing changes color drastically before and after being in the oven so to estimate the outcomes was especially challenging. I altered the original paintings colors and made groupings of similar color zones corresponding to the nearest glazing to be used. The document could be found in Appendix A. I learned different tools to be utilized in color-matching which would normally be used in graphical design work, which is an always useful skill while aiming to present anything aesthetically. I have had affinity in using Adobe Creative suite programs but learning more professional workflows was a good byproduct of this task.

Later on, the Dutch Skies project, combined with the neighboring studios in Tichelaar was going to be presented in the Dutch Design Week. I was asked to help set up the exhibition. We built stands and a faux-wall for the exhibition space. I also took role in taking the set apart. Taking part in the backstage of how exhibitions are built and torn apart for events was a valuable experience. I have realized that I was more comfortable in designing for small scale applications and when applying my knowledge in larger sized building activities, I struggled a lot.

Lab Air Communication Kit

Setting the Scope

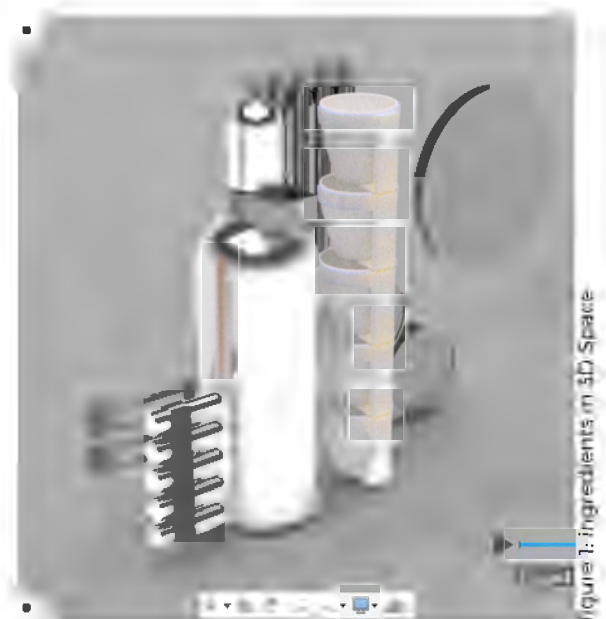
Being the main assignment of my internship, the Communication toolkit has evolved a lot during the timespan. At first there was confusion on my behalf for the concept to be followed and how much change was planned while turning this experience into a toolkit. I started the brainstorming on a Miro Board that can be seen in Appendix A. There were a lot of thoughts that broadened the scale of the kit as a whole but this meant that the project would have a larger scope and I wasn't sure to what extent we wanted to make the experience more advanced. Later on, after communicating my concerns with the team, clarification was made that we wanted to stick similar in terms of the experience as they conducted it.

Initial Constraints

I started the project by looking into the general dimensions of briefcases, walking around shops and stores that sold them and taking measurements to get an understanding of what common sizes look familiar to the eye of an observer to determine that the object is a "briefcase".

List of Ingredients:

The first step was to generate the size and dimensional constraints vaguely around the measurements of the items we intended to place inside. To achieve this, I took rough measurements of every item supposedly to be introduced. I then created rough size duplicates of each item in Fusion 360. Later on, we wanted to make this kit configurable depending on the type of the demonstration, introducing a grid system. The different layouts would be configured accordingly to the number of participants and the place performed.



Materials and Form:

1st concept:

The goal with this concept was to work with a reversal of metaphors, making the kit “Air” and the ingredients being the particulates and molecules inside it, which make up the larger substance, allowing us to live.

The initial material strategy was to utilize upcycling as the main manufacturing process, only using materials that would otherwise be discarded and sent off to landfill. The material of choice was acrylic sheets which were initially used in the covid restrictions as shields in shops. The acrylic sheets would be formed to create a shell, similar in shape to a briefcase and the fasteners would be holding the ingredients of the toolkit in place.

I learned to utilize Drape forming with a heat gun, using different jigs and guides to bring the flat sheet into the shape in mind. Initially the overall shell would have fully rounded edges, with flat sides. Figure 2 shows the initial sketch of the form. The clamshell would be separated from its middle, with the ingredients suspended from laser cut acrylic inserts for each needed internal element. In figure 3, the envisioned shape can be seen. Later on with trials, the limitations and challenges of drape forming was found. An image to the impurities will be in Appendix B. The techniques required to work with this material was found from Vivak’s Fabrication Guide [3]

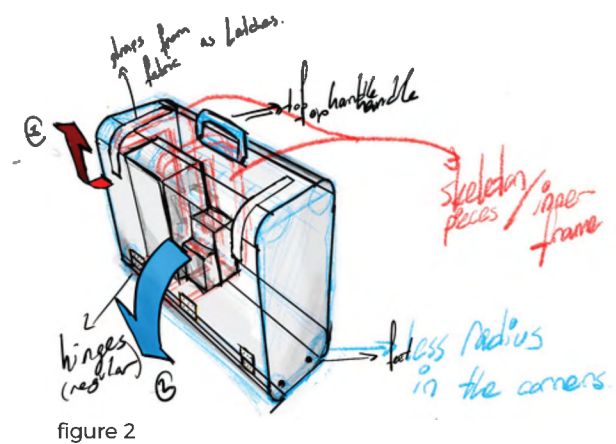


figure 2

After consulting with my coaches in Lab Air, we decided to diverge from the material of Acrylic. However, this experimentation has allowed me to find my personal designer vision involved with material choices and inclinations towards transparency. I design to be transparent and honest. Therefore, showing the inner workings of a design, makes me feel connected to the recipient of my designs. I will invest more time and effort in utilizing this honesty aspect in my career.

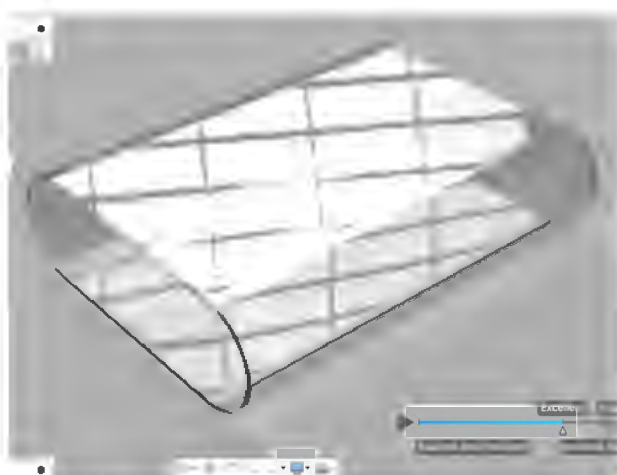


figure 3

After some coaching, the second concept took a more natural approach opposing to the direct sci-fi-esque approach. This version emphasized more towards making the story of the enclosure in line with the messages given by the kit. The shape was therefore simplified. The influences for this form are also present in Appendix A.

The material of choice this time around was wood. The form would evolve around simplicity, taking a boxy shape seen in figure 4 to both maximize inner volume and create a minimal aesthetic. A peekhole is implemented to the lower left portion to create some tension and balance between curiosity and breatheability. This peekhole was decided after the logo of Lab Air (figure 5). This enclosure, while following the same space constraints, made the kit more flexible.

The initial design was created using 9mm thick wood. This thickness and shape was prototyped using MDF to create a volume that we could interact with and check the fitment with every individual element to be included in the kit. (figure 6)

Later on with the development of the physical form, I was instructed that it was especially important that the wood was locally sourced and contributed something to the society. Therefore, I looked for wood that grew in the streets of Rotterdam. This way we aimed to transform the enclosure into a showpiece whilst being a practical carry-around solution. Having knowledge about where the wood came from, how old is it and etc. also allowed me to include it inside the narrative. I got in touch with Buurman Rotterdam, a local wood store which sells raw wood sourced from cutting down trees that needed to be removed within the city of Rotterdam. After visiting the store, I was faced with the challenge of finding the proper Stadshout piece that my designed cutting pattern would fit inside. (The cutting pattern can be found in Appendix D, Technical Drawings). I ended up settling over the wooden sheet visible in figure 7. This plank was extracted from an 26 year old elm tree that grew up in a park in Rotterdam.



figure 5

There was a conflict with my design however, since the wood was raw, the planing machine could not trim it thinner than 18mms, which would mean the overall weight and volume of the wood be doubled. The design wanted to keep the kit as thin as possible, which meant that the tolerances was tight. Based on my calculations the new weight of the enclosure would be around 6 kilos, being heavy to be practical. The Company didn't agree and then we moved forward with the new thickness.

Due to a miscommunication of while the company wanting the edges to be chamfered and my design keeping them raw, we ran into a problem with the cut pieces. The chamfers meant that the overall inner volume would decrease. I had to design a workaround with the inserts to make everything fit. These will be discussed in the Inner Volume section following.

My main takeaway from the forms and materials section was that I tend to be comfortable designing in digital environments. While this comfort is very soothing and functional, when it comes to prototyping physically, the same comfort induces anxiety in creating things for the real world as in realizations, there are always small imperfections. For future projects I will involve physical prototype iterations more so than digital iterations.



figure 6: volume prototype



figure 7: Stadshout

Inner Volume and Mounting Mechanisms

Initially it was planned that every item inside the enclosure would have their own box, with the inserts. Then this concept was left behind as with a “transparent” enclosure, encasing the ingredients in their own boxes would take away from the experience of revealing themselves. Later on after moving to the 2nd enclosure concept, the exposed ingredients aspect was carried forward, as the opening of the enclosure was aimed to be a revealing experience as if the curtains of a scene were being opened.

Aiming to create a showpiece, the inner layout also played a role in communicating the process. I wanted the kit to resemble a display window with everything laid out in a visible fashion inside the kit. To achieve this effect, instead of using conventional hinges, openable latch-styled hinges were implemented so we can separate the two halves. And also, instead of the top lid opening upwards, it was designed to swivel to the side.

Aiming to make this kit configurable as mentioned before, I designed a grid system of 50x50mm distanced mounting points, which can be used in both horizontal and vertical means. A mockup digital drawing can be seen in figure 9. The overall layout is visible in the Appendix D.

With the mounting mechanism decided, I started to draw bespoke mounting assemblies for every single ingredient to be included in the kit. The list of items are as follows:

- Test tubes
- Spoons
- Petri Dishes
- Milk Frother
- Plate
- Espresso Cups
- NO2 Cartridges (5x)
- CO2 Cartridges (5x)
- Small Scale Models of Carbon Footprints (discussed in the following chapter)



figure 8: hinges

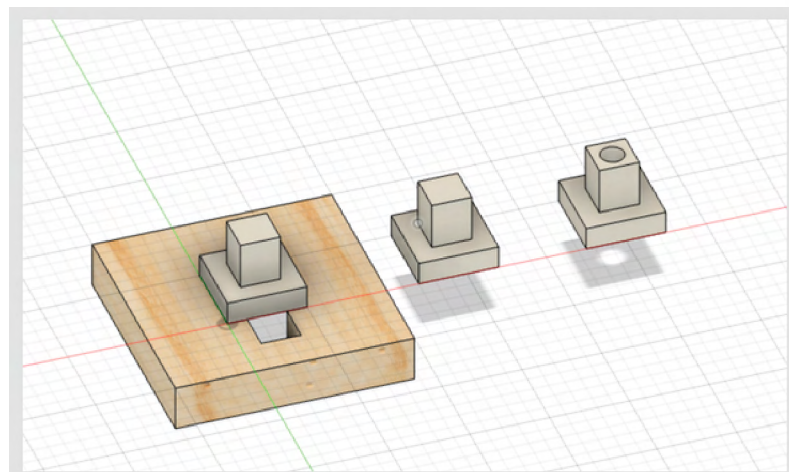


figure 9: mounting mechanism

I measured each item with a caliper, then designed their respective holsters, referencing an old hook design I made for my personal use at my home (reference design can be seen in Appendix D). These hooks were 3D printed using Recycled PLA Material. Each hook in the back has the mounting points seen in figure 9 mentioned above. The placement of the aforementioned items was also determined with consideration of their weight and fragility. For example, the Milk Frother, besides having its own holster, also rests on the bottom of the enclosure just so its weight does not cause it to interfere with the other designs.

The flexibility and angles of the hooks have been tried, with the mounts being deemed secure to the needs we have for the toolkit.

Small Scale Models

In the Taste the Air workshop, there were balloons used to help visualize the life-sized carbon dioxide emissions that have been caused by certain activities of mankind. Such as the Daily Average emission consumption of a person. For the sake of mobility, I wanted to transform these into a scale model of ornaments that would be interactable by the participants. These scale models also moved through a few iterations.

Initially there was a thought to use clear Lego Bricks but as they would feel like a toy, we steered away from that idea. The next idea I developed was to use resin and pour blocks into molds. In each resin block, depending on what it represented, I aimed to place small models tied to the context. For example, in figure 10, to show the carbon emissions caused by internet usage, I designed the block to have miniature computers encapsulated within the resin. This would again tie into the “reverse metaphor” of designing things that are in the air, caused by us. The floating computers seen in the figure resembled the molecules introduced by the activities made. After receiving feedback, it was decided to not use resin as most resin is produced with very high carbon emissions and it would be not responsible in an environmental standpoint.

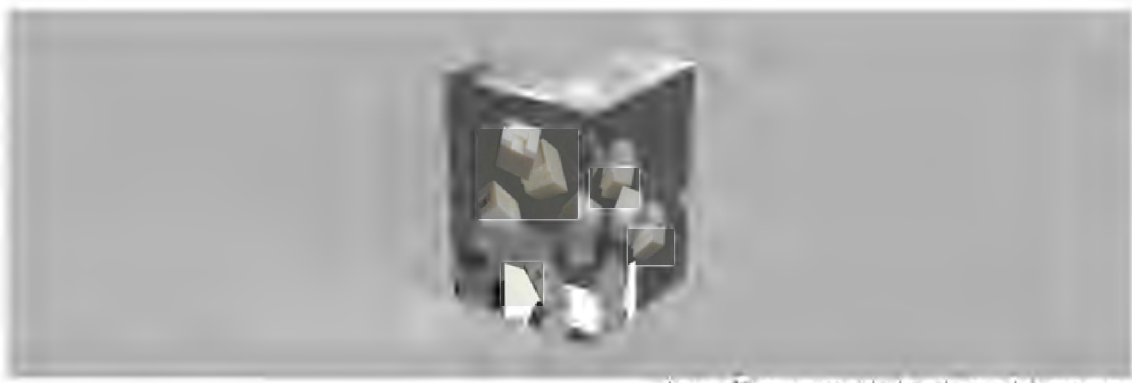


figure 10 resin-encased scale model computer

The solution designed was to use 0.5mm vivak sheets and laser cutting. These would be volumes that have relevant sizing to each other. The small-scale models represented Carbon emissions caused by certain lifestyles and habits per capita per day. The calculation for the volume of each scale model was made with a document provided by Lab Air. For the sizes, I wanted to make the Target Global Average for a person in 2030 according to the paris agreement into a cube, just so it looks to be the most proportional and “right” one to aim for. I then took the cube root of the volume to set the size. With this dimension, I picked the scale to be 1:50 as it would make the models small and interactable. The other ratios tried would either introduce a group of elements too large or too small, and the other in between scales would make it so that we would lose the real world convertibility. The specific dimensions and technical drawings can be found in Appendix E, CO2 Models. The models would then be laser cut and etched. I designed exploded views of prisms, which would be folded and stuck together carefully using CA Glue. Each model also has the relevant volume it is representing etched onto it.

The small scale models included are as follows (with each representing the activity + m³ CO₂ produced per capita per day):

- Average Daily Consumption
- Target Consumption By 2030
- Average person’s flight emissions (calculated via the most common flight path of a European citizen)
- Meat Based Diet
- Plant Based Diet
- Internet Usage
- Average Consumption of Dutch Citizens

These models aim to create a playful atmosphere where one can compare their habits and aim to target the Average consumption one has to reduce their carbon footprint by 2030 to ensure the climate change’s effects are reversible. They are meant to be used by stacking and comparing side by side.



Results and Outcomes



Makkum:

The Small scale architectural models of the factory of Makkum correspond to more than 400 years of dutch history. Mixing the new modelling techniques I applied to the historic methods of ceramics, these ornaments will be created as a reminder on to keep tradition alive, it is essential to incorporate technology into the process.



figure 11: models of the Makkum Factory

Lab Air Communication Toolkit:

With the final design being complete, all that awaits is the final assembly as with the mix-ups caused by the wood and the processing, there were setbacks in terms of the timeframe.

The Lab Air Communication toolkit represents a conversation between air and individuals with all aspects ranging from the included elements to the shell itself. The locally sourced wooden shell itself stores 3.5 KGs of Carbon [4] that the tree has cleared away from Rotterdam streets. The story of the kit will forever live on the side of the enclosure with figure a9 being engraved on its left side.

The enclosure with all its ingredients therefore provides a complete experience towards communicating air in a multi-sensory manner. (insert figure a11&12)



figure 12 final design render of the Lab Air Communication Toolkit

Acknowledgements

Thank you to:

Being one of the most stressful and fulfilling periods of my Academical Life so far, I would like to thank my coaches and the team behind Lab Air, Annemarie Piscaer and Iris de Kievith for their attitude and approaches towards me during the course of the internship. I would also like to thank the Royal Tichelaar Makkum for their hospitality in their factory and the opportunity they provided with the showcase in Dutch Design Week.

I would also like to thank Caroline Hummels for recommending Lab Air to me during my search for an internship in the past semester for helping me find a fitting company. Linda Martens for all the aid she provided when things went wrong and reassuring me with guidance she provided throughout the process of my internship.

References:

[1] Taste the Air (no date). Available at: <https://www.lab-air.nl/what-we-do/taste-the-air>.

[2] About us (no date). Available at: <https://www.lab-air.nl/about-us>.

[3] Vivak Fabrication Guide (no date). Available at: <https://plaskolite.com/docs/default-source/literature/fabrication/vivak-fabrication-guide.pdf> (Accessed: January 9, 2023).

[4] Nguyen, Q. (no date) How Sustainable Is Elm Wood? Here Are the Facts. Available at: <https://impactful.ninja/how-sustainable-is-elm-wood/>.

Reflection

Even before the start of my internship, I was personally in a mentally drained place, which ended up affecting me for the remainder of the duration. I was hopeful however since the internship area chosen was a topic that I was very passionate on.

After ending my research project on Social Capital, I saw my vision and identity shift towards a direction that is more directed towards physical design and decisions with further intentions beyond it. Doing my internship in Lab Air would mean that I would have a chance to experiment within the physical realm while also allowing me to explore myself as a designer.

My B3.1 Semester started off rough with setbacks I faced in getting my internship up and running. The effects of these setbacks were evident in the first couple of weeks of my internship, with struggling to get started as my internship didn't turn official until a few weeks after the internship has already started. Being a smaller studio, Lab Air helped me to get adjusted and our expectations of each other were set up in a forgiving environment. I was at first a bit lost since initially I was mostly running my own project under their guidance. There were confrontational moments which helped us get a solid direction and open communication. Most of these were around aiding communication and time management, both being areas that I have struggled in the past. I knew caroline was having health complications, causing her to be hard to reach at times. reflecting on it, I could have tried harder at times but it has turned into a mental hurdle larger than I could get over personally and therefore my communication with the TU/e was very limited during the timeframe.

I feel confident in saying that even beyond developing as a designer, I have developed more as a responsible working professional, while still being challenged by my own mental wellbeing issues. As I got used to being around the team, I learned how to work and function under the roof of a larger organization, which was an experience I lacked.

In my previous projects at the faculty, I mainly took the role of leading the group projects and directing the team with the help I got from my peers. During the internship period, I gained a new perspective as a role within a design project, in which I wasn't the leader and was the functioning party under the leadership of others. This experience has definitely improved on my empathy skills and prepared me for the "real world" that mostly awaits me outside of the academy. It was at times very discouraging to be disappointed in myself by the way I worked, which ended up slowing down the progress of others around me at times.

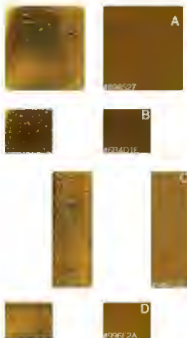
I think as we near the completion of my internship, based on the project I did and the decisions I made on the way to get here, I have a better understanding of the area of design that intrigues me and forces me to be the best version of myself. I will do everything in my power to pursue that path. But this semester has also taught me to be more open towards knowledge and ideas that might come from anyone, anywhere. Therefore, I am grateful for the experience I got to have at Lab Air.

Appendices

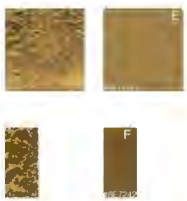
Appendix A: Brainstorming & Dutch Skies



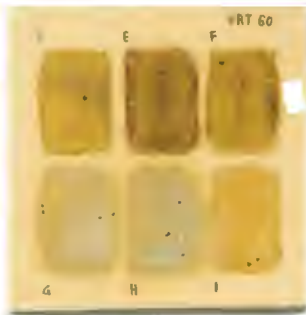
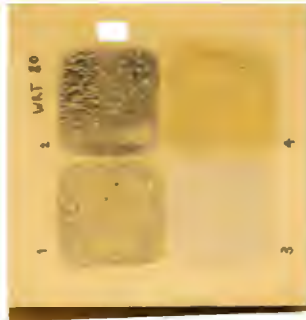
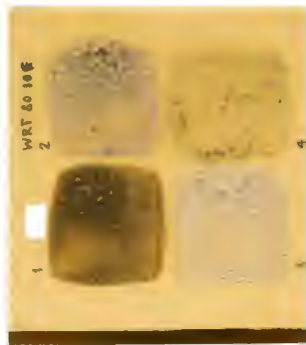
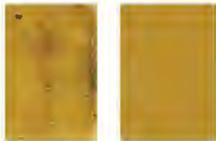
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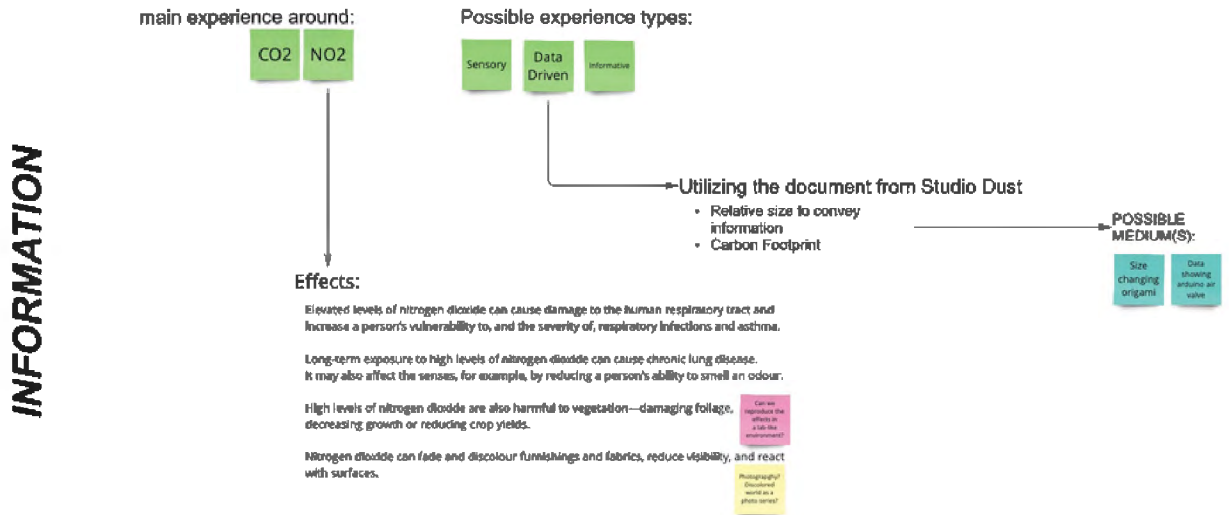
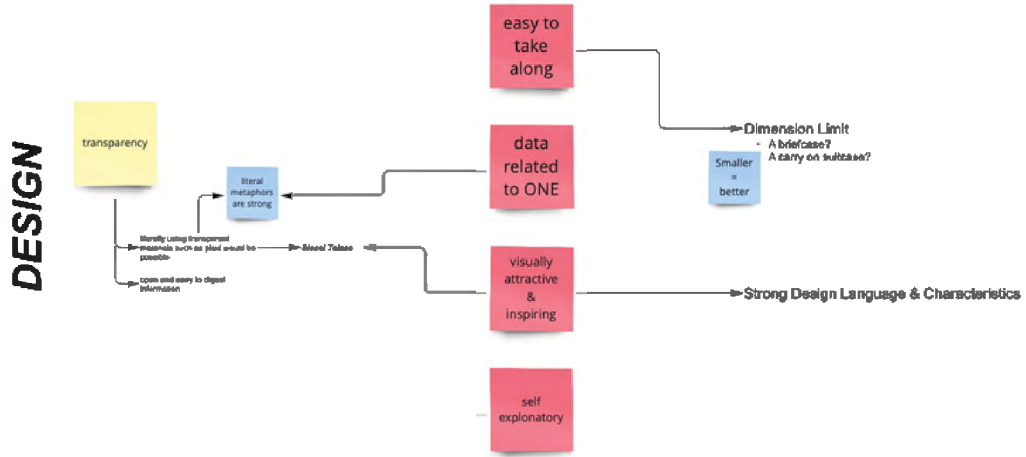
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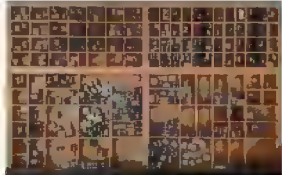
LAB AIR *communication kit*



Sense of scale by comparing to everyday objects/concepts to aid internalization of air.
Example by apple advertising campaigns.

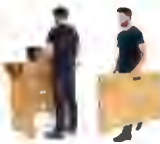
Appendices

Appendix A: Brainstorming & Dutch Skies



Folding appliances model:

Bigger objects that might be needed such as stands or holsters for various things could be made out of laser-cut honeycomb pattern.



Camera Cubes:

an idea how modular units could be placed inside the briefcase



Cutouts for individual items?

-A more sustainable twist on cardboard could be a direction to follow



Hooks:

I designed this to hook onto a pipe, a similar design could be utilized to hold the cartridges in place

Flight Cases:

Sturdy, formal looking, serious. Could be made transparent using plexiglas and working with such a shape would be easy since all sides are flat.



Links

[www.3](#)

[Templatemaker](#)

[pubmed.ncbi.nlm](#)



Visualizing Air Pollution: Communication of Environmental Health Information in a Chinese Immigrant Community - PubMed

This study developed and evaluated a visual approach to promoting environmental health literacy about highway pollution. The interactive Map of Chinatown Traffic Pollution was the centerpiece of a communication approach designed to make complex scientific...

Appendices

Appendix B: Acrylic Material Experiments



Appendices

Appendix C: Acrylic Material Experiments



Appendix D: Formal Approval Form

FORMAL APPROVAL INTERNSHIP



Date:

Student
 Teacher coach
 Period activity September – December February – June

Personal Development Plan for formal approval	Does the choice of the learning activity align with the Professional Identity and Vision development of the student and are his/her choices well-argued? Yes	[Additional feedback]
	Does the learning activity contribute to the development of the student? Yes	[Additional feedback]
	Does the chosen learning activity contribute to a balanced development in the Bachelor program of Industrial Design? Yes	[Additional feedback]
	Are the goals well-formulated? Yes	[Additional feedback]

Complete the aspects only for the chosen learning activity:

Internship (worth 25 ECTS) (requisites: 100 ECTS + P1, P2, P3)	Does the company profile align with the requirements for internships? <ul style="list-style-type: none"> Doing an internship at one-man businesses is not allowed; unless the company owner is currently teaching at the Department of Industrial Design, Eindhoven University of Technology. The company must support development in several expertise areas. 	[Additional feedback]
	Does the company coach align with the guidelines for internships? The company coach must hold a MSc. degree in (Industrial) Design or has at least 10 years of professional experience as a designer.	Okay [Additional feedback]
	Can the student work on a clearly framed design project or tasks?	Okay [Additional feedback]

Personal Development Goals (minimum 1- to include on Assessment form as well):
 *Discuss goals and positive and negative points in the coach meeting to guide how the student can develop expertise areas that might not be covered within the internship. The same goals will be included in the assessment form at the end of the internship.

- Experiencing speculative design as a communicative method.
- To work on public presentations
- To design an experience.
- To work with different mediums of design in a hands on manner
- To learn how to design with a set manifesto in mind.

Exchange (worth 25 ECTS) (requisites: 90 ECTS when the student leaves on exchange)	Name Exchange University and Department	[Name exchange university and department option 1] [Name exchange university and department option 2] [Name exchange university and department option 3] [Name exchange university and department option 4]
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Minor (worth 25 ECTS) (requisites: 100 ECTS of which P1, P2, P3) + EC approval for free minor	Minor at Department of Industrial Design at University of Twente; or at the Department Industrial Design Engineering at Delft University of Technology. (No [Elective], [Elective], [Elective], [Elective], [Elective] other departments at these Universities or other Universities in the Netherlands are allowed without permission of the Examination Committee.) Minor at a University elsewhere in the Netherlands [Name University and Department where Minor is done] [Elective], [Elective], [Elective]	[Name University and Department where Minor is done] [Elective], [Elective], [Elective], [Elective], [Elective]
What are the chosen electives?	[Elective], [Elective], [Elective], [Elective], [Elective]	[Elective], [Elective], [Elective], [Elective], [Elective]

In case a student chooses to do more than 15 ECTS worth of electives outside of the department of Industrial Design, the student needs, next to the formal approval of the coach, to file a request to the Examination Committee.

[Generations before 2015-2016 choose 6 electives, later generations choose 5 electives]

Approval	ent plan and chosen learning activity are approved by the Yes the answer above is no, please explain why] granted/supported by the Examination Committee.	[Signature]
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Please note:

- For exchange and activities that take places abroad it is strongly advised to consult the exchange coordinator for arranging insurance and to explore scholarship opportunities. Please be aware that exchange students need to be nominated by the exchange coordinator.
- For an internships it is strongly advised to contact Annalisa Franco (Internship Coordinator) for arranging your internship details.

More information:

This form needs to be completed and signed by the teacher coach. In case of an internship as activity, the student has to add their personal development plan plus this form signed by the teacher coach to the appendix of their internship report. In case of an exchange, the student needs to deliver (a copy of) this form to the International Office at the Department of ID.

- For all B3.1 options: In total students are allowed to choose a maximum of 45 ECTS of courses outside the Industrial Design Department next to the Industrial Design major. When they would like to choose more than 15 ECTS of electives outside the Industrial Design department, they have to motivate their choices and get approval of the Examination Committee (next to the formal approval of the coach per this formal approval form).

Teacher Coach: Caroline Hummels

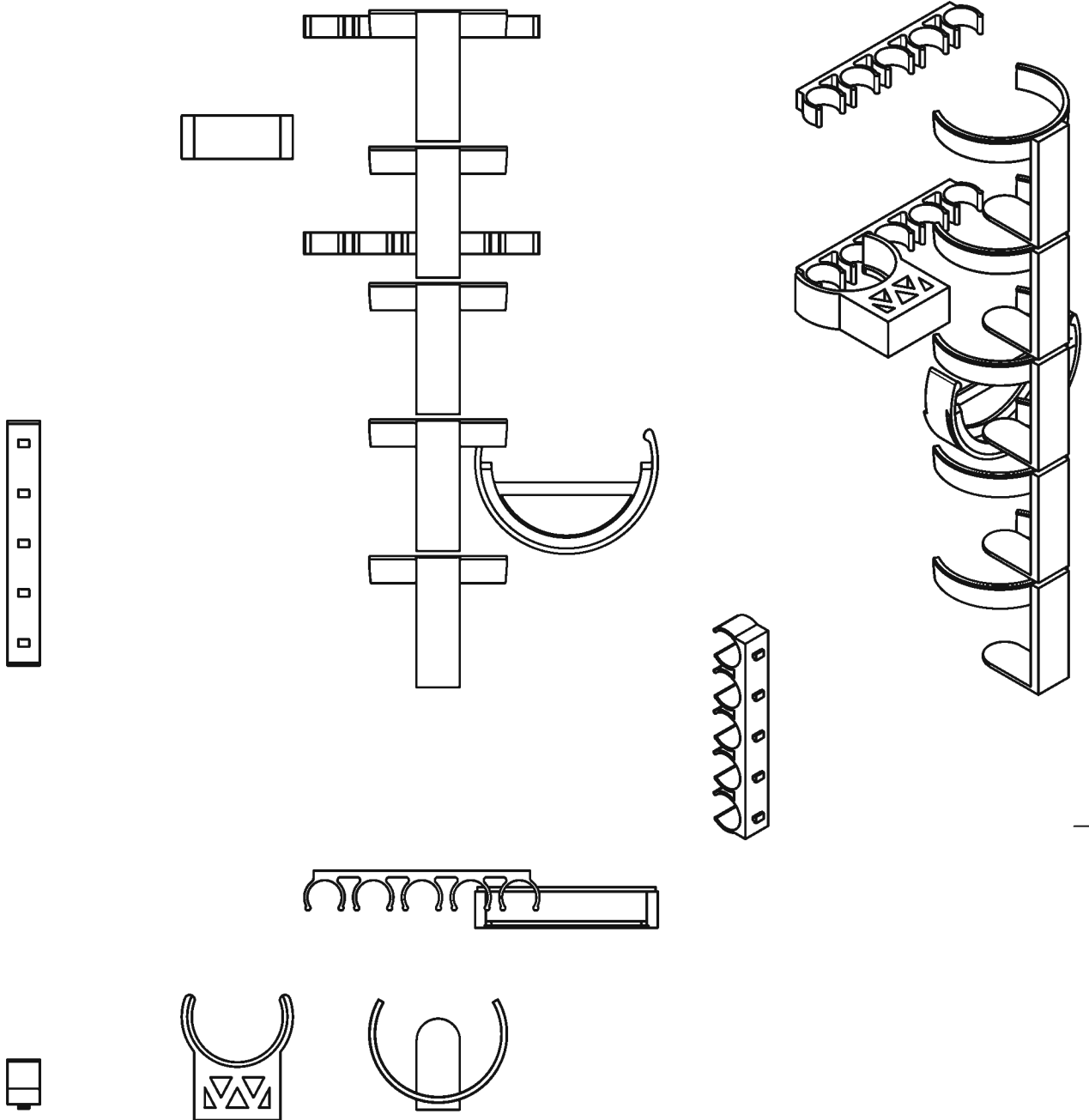


Signature: _____

More information:

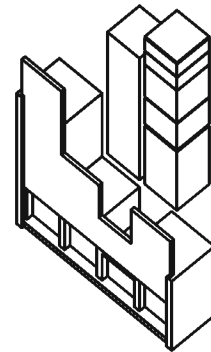
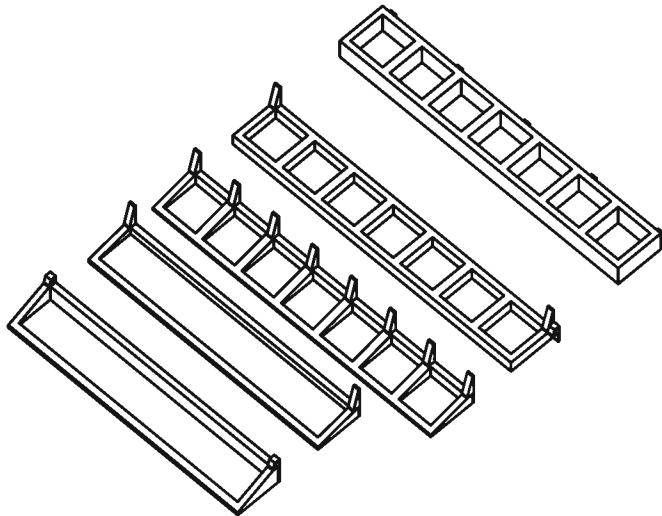
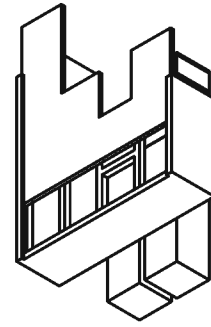
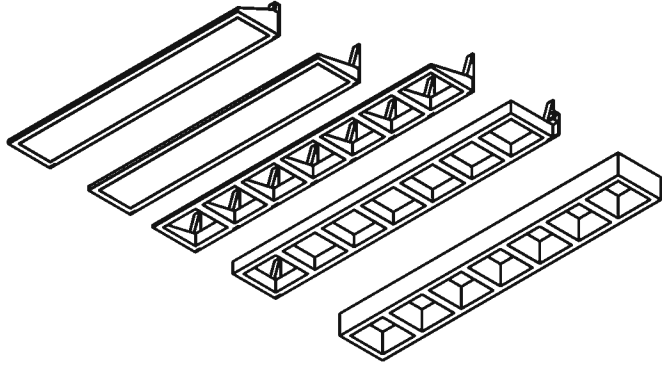
This form needs to be completed and signed by the teacher coach. In case of an internship as activity, the student has to add their personal development plan plus this form signed by the teacher coach to the appendix of their internship report. In case of an exchange, the student needs to deliver (a copy of) this form to the International Office at the Department of ID.

Appendix D: Technical Drawings



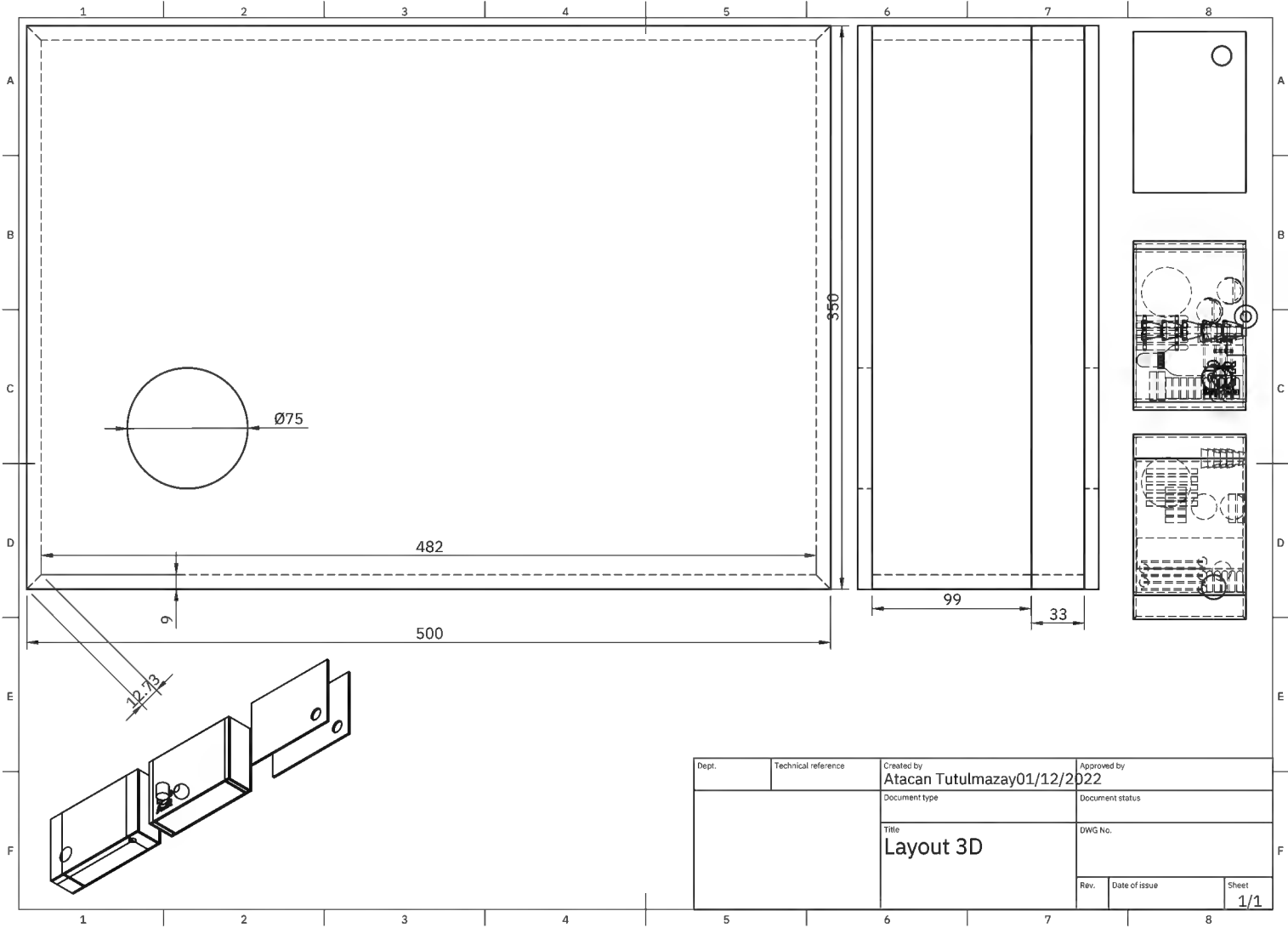
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		Rev.	Date of issue	Sheet 1/1

Appendix D: Technical Drawings



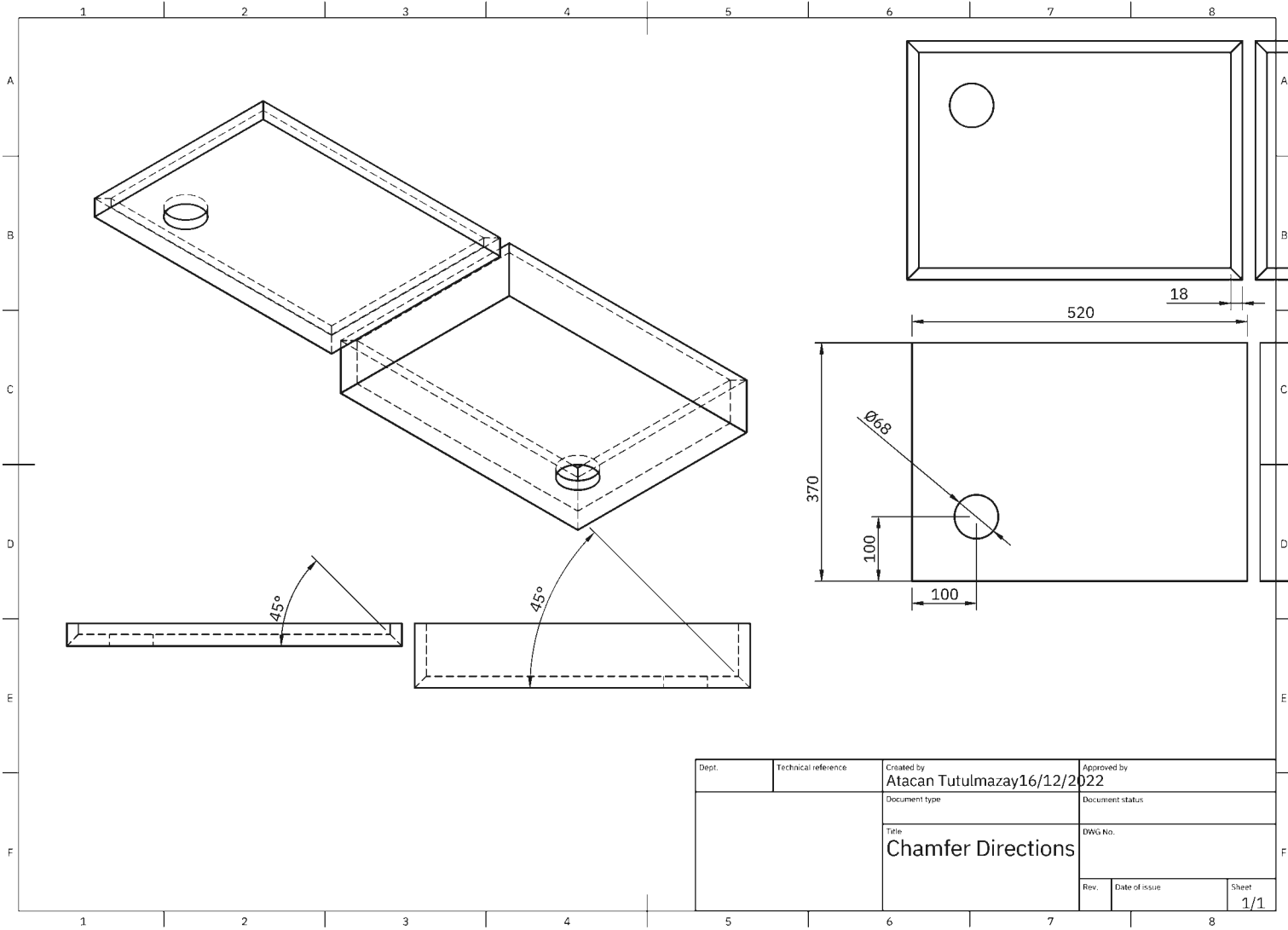
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			Rev.	Date of issue Sheet 1/1

Appendix D: Technical Drawings



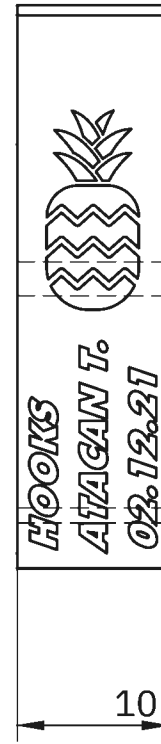
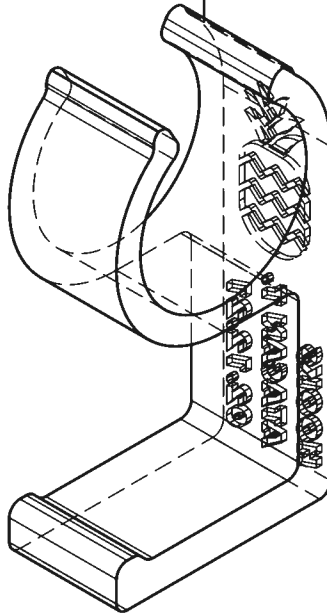
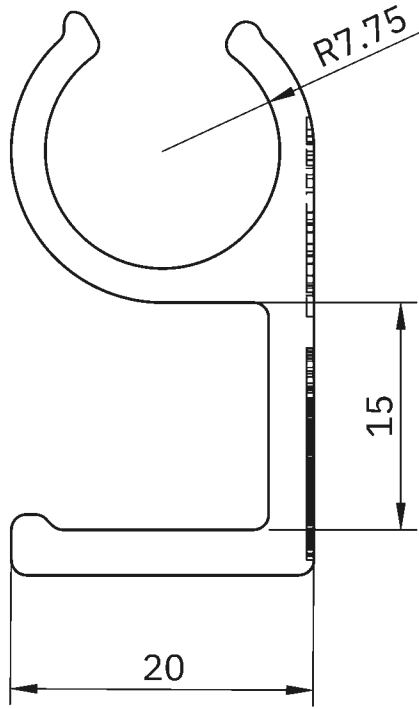
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		Rev.	Date of issue
			Sheet 1/1

Appendix D: Technical Drawings



Dept.	Technical reference	Created by Atacan Tutulmazay16/12/2022	Approved by 2022
		Document type	Document status
		Title Chamfer Directions	DWG No.
		Rev.	Date of issue
			Sheet 1/1

Appendix D: Technical Drawings



Dept.	Technical reference	Created by Atacan Tutulmazay10.05.2022	Approved by	
		Document type	Document status	
		Title hooks	DWG No.	
		Rev.	Date of issue	Sheet 1/1

Appendices

Appendix E: Small Scale Models Cutting Form

