DESIGN FOR our future

TU Delft

IDE Master Graduation

Project team, Procedural checks and personal Project brief

This document contains the agreements made between student and supervisory team about the student's IDE Master Graduation Project. This document can also include the involvement of an external organisation, however, it does not cover any legal employment relationship that the student and the client (might) agree upon. Next to that, this document facilitates the required procedural checks. In this document:

- The student defines the team, what he/she is going to do/deliver and how that will come about.
- SSC E&SA (Shared Service Center, Education & Student Affairs) reports on the student's registration and study progress.
- IDE's Board of Examiners confirms if the student is allowed to start the Graduation Project.

USE ADOBE ACROBAT READER TO OPEN, EDIT AND SAVE THIS DOCUMENT

Download again and reopen in case you tried other software, such as Preview (Mac) or a webbrowser.

STUDENT DATA & MASTER PROGRAMME

Save this form according the format "IDE Master Graduation Project Brief_familyname_firstname_studentnumber_dd-mm-yyyy".
Complete all blue parts of the form and include the approved Project Brief in your Graduation Report as Appendix 1 !

family name: Slump 4901
initials: D.W. given name: Dita
student number:
street & no.:
zipcode & city:
country: The Netherlands
phone:
email:

Your master programme (only select the options that apply to you):

IDE master(s): ★ IPD ○ DfI ○ SPD
2nd non-IDE master:
individual programme: - - (give date of approval)
honours programme: ○ Honours Programme Master
specialisation / annotation: ○ Medisign
○ Tech. in Sustainable Design
○ Entrepeneurship

SUPERVISORY TEAM **

Fill in the required data for the supervisory team members. Please check the instructions on the right !

** chair: Marieke Sonneveld dept. / section: AED
** mentor: Dicky Brand dept. / section: DA
2nd mentor: Bob Hendrikx
organisation: Loop-Biotech
city: Delft country: The Netherlands

comments (optional)

Chair should request the IDE Board of Examiners for approval of a non-IDE mentor, including a motivation letter and c.v..

Second mentor only applies in case the assignment is hosted by an external organisation.

Ensure a heterogeneous team. In case you wish to include two team members from the same section, please explain why.

APPROVAL PROJECT BRIEF

To be filled in by the chair of the supervisory team.

chair Marieke Sonneveld date 07 - 04 - 2021 signature

Digitally signed by member: DA9EAC08-B26C-4113-B94A-A49A7D7C597D 427B32F1-6AC1-4A91-8953-D59046E1B31F Date: 2021.04.07 15:01:44 +02'00'

CHECK STUDY PROGRESS

To be filled in by the SSC E&SA (Shared Service Center, Education & Student Affairs), after approval of the project brief by the Chair. The study progress will be checked for a 2nd time just before the green light meeting.

Master electives no. of EC accumulated in total: 30 EC

Of which, taking the conditional requirements into account, can be part of the exam programme 30 EC

List of electives obtained before the third semester without approval of the BoE

★ YES all 1st year master courses passed

NO missing 1st year master courses are:

name J. J. de Bruin date 08 - 04 - 2021 signature

J. J. de Bruin, SPA Digitally signed by J. J. de Bruin, SPA Date: 2021.04.08 11:34:31 +02'00'

FORMAL APPROVAL GRADUATION PROJECT

To be filled in by the Board of Examiners of IDE TU Delft. Please check the supervisory team and study the parts of the brief marked **. Next, please assess, (dis)approve and sign this Project Brief, by using the criteria below.

- Does the project fit within the (MSc)-programme of the student (taking into account, if described, the activities done next to the obligatory MSc specific courses)?
- Is the level of the project challenging enough for a MSc IDE graduating student?
- Is the project expected to be doable within 100 working days/20 weeks ?
- Does the composition of the supervisory team comply with the regulations and fit the assignment ?

Content: ★ APPROVED NOT APPROVED

Procedure: ★ APPROVED NOT APPROVED

- the project brief has been submitted late

comments

name Monique von Morgen date 12 - 04 - 2021 signature

Initials & Name D.W. Slump 4901 Student number

Title of Project A redesign of the Loop Cocoon to communicate the cycle of life.

A redesign of the Loop Cocoon to communicate the cycle of life. project title

Please state the title of your graduation project (above) and the start date and end date (below). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

start date 22 - 02 - 2021 19 - 07 - 2021 end date

INTRODUCTION **

Please describe, the context of your project, and address the main stakeholders (interests) within this context in a concise yet complete manner. Who are involved, what do they value and how do they currently operate within the given context? What are the main opportunities and limitations you are currently aware of (cultural- and social norms, resources (time, money,...), technology, ...).

Over the past centuries the funeral industry has evolved over and over again. Around the 7th century, people buried their dead outside the settlements, in nature, with their own ceremonies and rituals. But gradually, partly because of religion, preference was given to burial in or near the church. Until a few years ago the industry had not changed. It was conservative and not very progressive. Due to old traditions, conservative norms, and ethical principles tied to end-of-life, innovation was not easy to introduce to the public.

But in the Netherlands this changed when in 2019 the Funeral Service Act changed the law to allow new undertaking methods.new modern forms of funeral services such as resomize or willow coffins were granted and thereby allowing it to be more sustainable and diverse. In recent years, innovative methods of funeral arrangements had become known, which were officially prohibited.

The reasons for this are the wishes of the next of kin and requests made by and received by funeral directors and other funeral organizations such as coffin builders and designers to allow change. These wishes are forcing the industry to move to other areas such as sustainable alternatives, personal services and custom designed burial.

The start-up Loop-Biotech also listened to these wishes. In 2020 they designed and launched a living coffin made out of the material mycelium: the root network of mushrooms. The coffin provides a sustainable burial option because of the energy efficient production, breaking down body-toxins once buried, enriching nature after burial and closing the cycle of life. The coffin is designed from a practical perspective and this shows in the shape and aesthetics but thereby misses the emotional meaning.

Firstly, the desire for innovation in the funeral context by making it more meaningful for the customers also means representing the life that has been lived and the funeral being in line with who the person was in a unique and appropriate way. And by that, letting the family and friends feel closer and more connected to the deceased for an appropriate farewell. The current coffin design does not have the ability to represent this. There is no deeper interaction with the coffin on a physical, psychological, social and spiritual level.

Secondly, it doesn't show it's cycle of life and the contribution to it. As awareness of environmental problems increases, and in all industries products and services are looking for ways to become more sustainable, so too does the funeral industry.
Sustainable funerals can be a tool to provide a meaningful end to a personal quest of living more sustainably and becoming part of the cycle of life. Given the fact that the coffin is built of a living material this wish has good intention but not yet the right effect. Due to the aesthetics the coffin is compared to a brick, refrigerator and styrofoam, all unnatural comparisons. So far the development was from a technical perspective and from now Loop also has the desire to look into the experience.

That is why, during this graduation project, the living coffin/cocoon will be redesigned to communicate the cycle of life through the aesthetics to support the funeral ritual that can be adjusted to personal wishes. With the support of the material driven design method a thorough analysis about the material and funerals will be carried out to improve the current Loop Cocoon.

space available for images / figures on next page

introduction (continued): space for images



image / figure 1: The current design of the living coffin

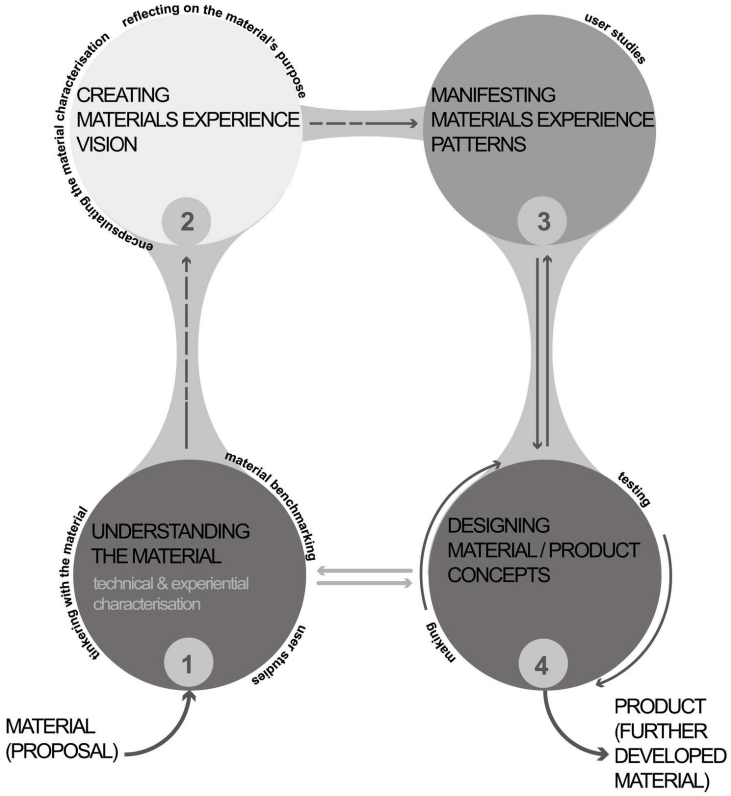


image / figure 2: Material Driven Design method

Initials & Name D.W. Slump 4901 Student number

Title of Project A redesign of the Loop Cocoon to communicate the cycle of life.

PROBLEM DEFINITION **

Limit and define the scope and solution space of your project to one that is manageable within one Master Graduation Project of 30 EC (= 20 full time weeks or 100 working days) and clearly indicate what issue(s) should be addressed in this project.

As mentioned in the introduction 'a redesign of the Loop Cocoon to communicate and support the cycle of life through the aesthetics to support the funeral ritual that can be adjusted to personal wishes' is the project ambition. There are two problem areas the project can be divided in:

- The wish of the next generation to make the funeral industry more sustainable. Loop is fulfilling this wish but not yet communicating it through the aesthetics. Right now the coffin looks almost like a wooden coffin and has a similar shape and is thereby treated as any normal coffin. It does not show it's unique elements: the livingness of the material, giving nutrients back and breaking toxins down and contributing to the cycle of life. How can this be improved?

- The funeral industry wants the ritual to be respectful and personal for the family and friends and commemorate the life that has been lived. They want an appropriate farewell as a tribute to the deceased, with elements that match the friends and family, thus making room for the inevitable mourning process. So how can the coffin support the desired personal funeral and provide the right support in the grieving process?

Derived from the problems mentioned above, improving the 'cycle-of-life'. This covers the end-of-life and the grieving process, the cycle of mother nature and the life of the living material and the coffin. The title of the project will be: How can the cycle of life of the loop cocoon be expressed more clearly?

The solution is a redesign of the coffin. By redesigning the living coffin/cocoon to communicate the cycle of life through aesthetics, the step between life and death can be less disruptive and the funeral ritual be supported . The desire is to show its contribution to mother nature in a personal and unique way and so that undertakers understand how to interact with the redesign.

ASSIGNMENT **

State in 2 or 3 sentences what you are going to research, design, create and / or generate, that will solve (part of) the issue(s) pointed out in "problem definition". Then illustrate this assignment by indicating what kind of solution you expect and / or aim to deliver, for instance: a product, a product-service combination, a strategy illustrated through product or product-service combination ideas, ... In case of a Specialisation and/or Annotation, make sure the assignment reflects this/these.

Redesigning the living coffin/cocoon to communicate the cycle of life through the aesthetics, to support the funeral ritual that can be adjusted to personal wishes.

A thorough research about the material and the funeral ritual will be carried out. By tinkering with the material, it's unique characteristics will be researched. Getting feedback on the current coffin design and the way it is used in funerals will give insight on how it can be improved. What are the rituals right now? How do people interact with the coffin on a physical, psychological, social and spiritual level. And how can these aspects of comfort be improved to make end-of-life a palliative care. With this information design requirements can be set and deliver a working prototype of a redesign of the living coffin.

Given the fact that the coffin is made out of mycelium I am planning to apply Material Driven Design Method. This method consists of four stages that provide a framework to the research and development of the material mycelium; (1) Understanding the material, (2) Material Experience Vision, (3) Material Experience Patterns and (4) Designing Product concepts.

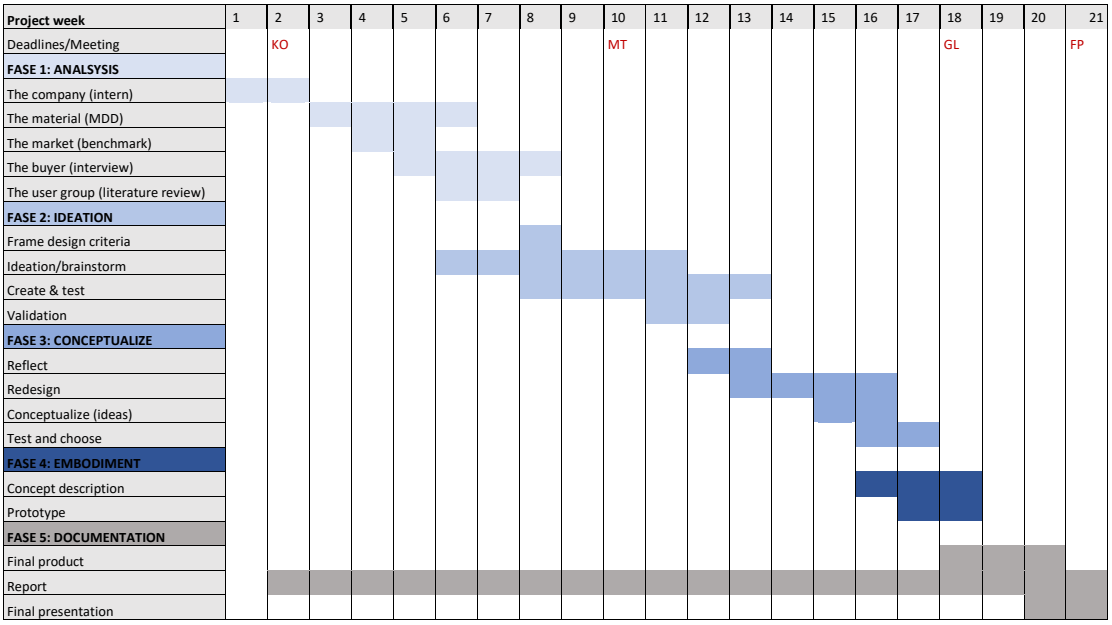
Initials & Name D.W. Slump 4901 Student number

Title of Project A redesign of the Loop Cocoon to communicate the cycle of life.

PLANNING AND APPROACH **

Include a Gantt Chart (replace the example below - more examples can be found in Manual 2) that shows the different phases of your project, deliverables you have in mind, meetings, and how you plan to spend your time. Please note that all activities should fit within the given net time of 30 EC = 20 full time weeks or 100 working days, and your planning should include a kick-off meeting, mid-term meeting, green light meeting and graduation ceremony. Illustrate your Gantt Chart by, for instance, explaining your approach, and please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any, for instance because of holidays or parallel activities.

start date 22 - 2 - 2021 19 - 7 - 2021 end date



I'm planning to apply the Double Diamond Method. I divided the graduation project into four phases: problem definition and exploration through analysis, ideate, conceptualize, prototype and deliver. Moreover, the Double Diamond Method is not a linear process, in each phase you can go back to a desired phase.

Initials & Name D.W. Slump 4901 Student number

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MOTIVATION AND PERSONAL AMBITIONS

Explain why you set up this project, what competences you want to prove and learn. For example: acquired competences from your MSc programme, the elective semester, extra-curricular activities (etc.) and point out the competences you have yet developed. Optionally, describe which personal learning ambitions you explicitly want to address in this project, on top of the learning objectives of the Graduation Project, such as: in depth knowledge a on specific subject, broadening your competences or experimenting with a specific tool and/or methodology, ... Stick to no more than five ambitions.

In addition to my ambition to do an internship at this start-up, this project appeals to me because it can provide support with saying goodbye to your loved ones. Saying goodbye is never easy, but with a new coffin design it provides space for mourners to be present with their own grief and healing process. This in combination with transforming dead organic matter and pollutants into key nutrients for new seedlings, makes this a current and relevant problem that I am eager to research.

Competences I want to improve are:
- Learn by doing. Being hands-on and testing ideas out is something I have always enjoyed.
Especially with the material mycelium there is the ability to tinker and test a lot.
- Planning. By nature, I'm a planner, and in this project, I want to prove that I'm able to plan forward. I want to improve my flexibility and deal with unexpected changes.
- Prototyping. During my masters, most of the time I designed a concept. In this project I want to challenge myself and go beyond this point and create a design that is ready to be produced on a larger scale.
- I want to have in-depth research about the user and buyer to understand their needs and wishes to improve saying goodbye and strive to provide accessible care to those in need. Since this is palliative care it requires a deep understanding of the human on a psychological and spiritual level. I find it very interesting how design can support these comforts.

The list below shows my personal learning ambitions
- I would really learn to design with a biobased material
- Turn a concept design into a real product
- Learn to incorporate the desired emotions and rituals of people into design

FINAL COMMENTS

In case your project brief needs final comments, please add any information you think is relevant.

Initials & Name D.W. Slump 4901 Student number

Title of Project A redesign of the Loop Cocoon to communicate the cycle of life.