

# Intrinsic Transitions

A strategy for housing corporations to facilitate sustainability in neighborhoods.



*Intrinsic transitions:  
A strategy for housing corporations  
to facilitate sustainability in neighborhoods.*

Graduation Project | Delft, 2018

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*To compensate for the printing  
paper I donated one tree and  
the cover of this report is made  
from paper with flower seeds  
to give you all some eco-positivity!*





# Preface

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Hello!

I would like to welcome you to my graduation report.

I have worked on this project with great pleasure and it feels almost impossible to convert everything I have experienced in the past six months to a 50-page report. But I tried my best and hope the next 50 pages give you a glimpse into the number of wonderful stories I collected working on this project.

Stories that come from all the different conversations about 'vlieg schaamte' and 'trein trots'. Heavy discussions to understand sceptic opinions and difficult aspects of a sustainable lifestyle. From the large number of newspaper articles I received from people who were unexpectedly touched by this project and enthusiastic responses saying:

***“Look Eline, I bought a second-hand blouse!  
Are you proud?”***

All in an attempt to unravel the complexity of sustainability and trying to find a common language that creates a single step towards a sustainable future. To all who shared their personal experiences with me and supported me in this project: thank you!

# Summary

*This graduation project investigates the stimulation of sustainable behaviour among residents from a housing corporation in Eindhoven, Wooninc., and proposes a program for grassroots infrastructure as a way to support sustainable transitions in neighborhoods.*

As a partner of the “Duurzaamheidspact Eindhoven” housing corporation Wooninc. formulated the ambition to be more sustainable (Theeuwes, 2018). In order to do so, they not only want to improve their core business but also wants to engage their residents with a more sustainable lifestyle. They adopted the method of ‘De Verborgen Impact’ which includes a train-the-trainer process that trains leading residents, so-called peers, to motivate their fellow residents for a (more) sustainable lifestyle. This led to the key objective for this project:

***“Design a fitting intervention that peers can use to motivate residents of Wooninc., so that they feel activated to make their lifestyles (more) sustainable.”***

## Approach

By exploring the design brief and using the designers’ Personal Principles for Good Design the Transition Design method was chosen as the main driver for this design process to understand the project within a broader system context. In addition, the 1:10:100 scheduling technique was applied to allow rapid iterations and to create a concept that is successful and supported by each of the stakeholders.

## Research & findings

By conducting four iterative cycles insight in behavioural change was gained from literature and interviews. This resulted in insight in how to reverse internal and external barriers into levers that can be used to support residents in the transition towards a more sustainable lifestyle. This led to the development of the ‘Sustainable Transition’-framework. Which incorporates relevant theories found in literature and maps seven leverage points to inspire for transition towards sustainable behaviour. Based on this framework concept development happened iterative from preliminary vision to the final concept of ‘Onze Verborgen Impact’ Transition Program and Transition Toolkit.

The ‘Sustainable Transition’ - framework indicates that to engage residents, as well as peers on their intrinsic motivation all the dimensions of a personal transition should be supported including: motivation and ability, personal values and their position in the process of change. Based on this framework a vision for the final concept was developed:

“Making sustainability transparent and accessible (lower the external barriers) by emphasizing the positive side and the advantages of sustainable behaviour (reversing internal barriers). To show that sustainability, in different ways, is accessible for everyone.”

## The ‘Onze Verborgen Impact’ Transition Program

Testing prototypes with peers and residents, showed that this concept should not predefine how the peers encounter their fellow residents in their neighborhoods but should enable peers to create their personal approach. This led to the final concept, a transition program called ‘Onze Verborgen Impact’. This program exists out of different elements:

- Train: training of the peers by experts
- Create: supported by experts peers create their personal approach with which they want to involve residents
- Join: residents can participate in the local initiatives set-up by the peers and explore sustainability in their own phase.
- Impact: the structure of the program makes it possible to bring new ideas that are generated for improving sustainability at neighborhood level to a higher level
- Transition Toolkit: a toolkit with instruments to support the above-mentioned elements such as: three training templates, different recruitment materials and a ‘Mijn Verborgen Impact’ - booklet to support peers and residents in their personal sustainability journey.

The final concept taps into the intrinsic motivation of peers by recognizing their personal ideas and creates favourable neighborhood initiatives where residents can experience and discover the benefits of sustainability in their own pace. This transition program, gives Wooninc. the opportunity to implement targeted sustainability infrastructure to reach their sustainability ambition and can be easily scaled to other housing corporations giving ‘De Verborgen Impact’ the chance to spread their message further.

Essential in this program is that development is an ongoing process. For successful implementation, it is advised to keep the program flexible and open also start small and scale up gradually.

# Intrinsic transitions: Motivate residents towards a (more) sustainable lifestyle

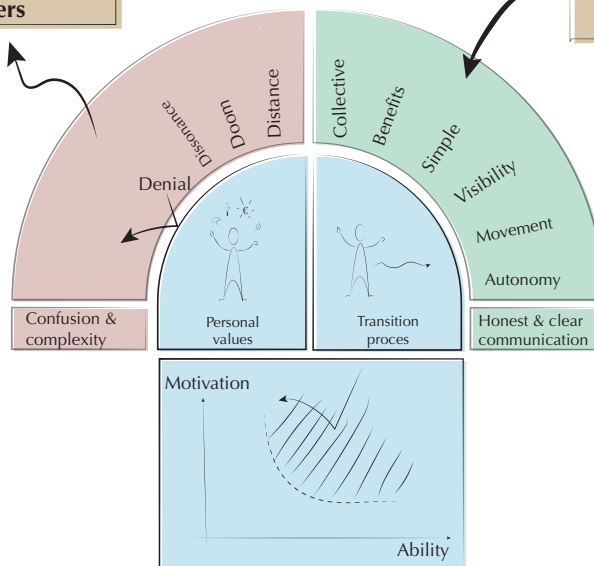
Consumers are confused about the concept of sustainability. Caused by **lack of objectivity** and **conflicting messages** (Hoekstra, 2013).

Resistance towards sustainability is caused by the **way our brain works** (Griskevicius, Cantú, & van Vugt, 2012)

**A shift in paradigms is** considered to be the most powerful effect to drive change towards transitioned lifestyles (Meadows, 1999).

Internal and external processes that create barriers

Turning barriers into levers



## Key findings

Literature and interview studies

**1) For behaviour to occur** there should be sufficient motivation and ability.

**2) Personal values** are people's main drivers for behaviour to occur.

**3) Our sustainable behaviour is** depending on the **position in the process of change**. Every stage has stage specific interventions

**4) Successful interventions** can also be smaller initiatives on neighborhood and personal-level

## Key findings

Prototype tests

**1) Peers** should be able to use their own sustainability interests and tell from their own experience.

**2) Residents** are more sensitive for a sustainability message when it aligns with their personal values

**3) By making it social and collective** residents can inspire each other to creates a bigger movement

**4) Successful interventions** can be on personal, small scale initiatives and on neighborhood level.

## 1. Train

To explicitly link personal interests to the initiative of peers

## 2. Create

To finalize the initiatives by linking them to the concerns of residents

## 3. Join

To tell a positive story that aligns with values of residents

## 4. Impact

Create impact on personal, small scale initiative and neighborhoodlevel

Transition program



Training templates

Recruitment materials

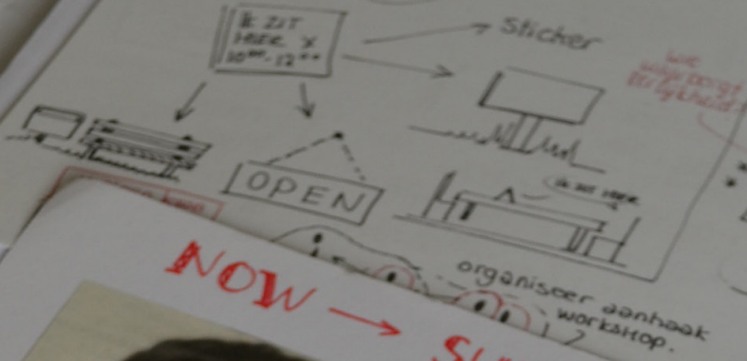
Pitch cards

'Mijn Verborgene Impact' booklet

Transition Toolkit for peers based on the method of "De Verborgene Impact"



PUNT WAAR  
MENSEN  
NAAR TOE  
KUNNEN:



transition design  
• cultuur schakel  
• kleine stappen  
om klaar te komen

WAT HOUDT MENSEN  
• PEER MET MEESTE  
LOG-INS KEGGT  
SUBSIDIE VOOR  
TIEF  
INITIATIEF MET  
INITIATIEF MET  
LIKES ERJGT SUBSIDIE?

• meer vega in  
mijn café  
• geld voor mijn  
répair café  
• voorstelt  
voor mvi

**NOW → SUSTAINABLE LIFESTYLE IS....**



"My part is so small"  
↓  
overwhelming

DISTANCE

CONFUSING  
"Wat kan ik doen?"  
"Where to begin."

# PLAN CYCLE 2

WEEK 40

MAP

ma workshop  
Eline as designer

di@  
AMSTERDAM

Plot insights cycle 1

wo workshop  
uttypen  
+proj. brief  
+prognose  
(good)

WEEK 41

MAP  
IDEATE

8/10

9/10  
BELLEN: HANS SCHOUTEN  
LEARNINGS  
PLAN: HOE SITUATIE EINDH.  
+ RETREKKEN HUBBIES  
CLUSTER THERE'S

10/10

WEEK 42

IDEATE & DECIDE  
DECIDE

15/10

16/10

IDEAS  
• Existing examp.  
• use LV.

DESIGN STUDIO  
WORKSHOP

interim meeting 1

WEEK 43

PROTOT  
& TEST

22/10

pilot co-n

23/10

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# 1. Introduction

introduction to the project

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# 1.1 Setting the stage

While writing this graduation report Milieu Centraal, announces a national campaign to support people to make sustainable choices (Spierings, 2019). Changing our current way of living is, according to different studies, inevitable if we want to maintain livability on earth. Many people in Dutch society want to live sustainable, but don't know how. Approximately one year ago, I was one of them searching for a sustainable lifestyle without much loss of comfort. By integrating my personal experiences in this graduation project, I want to contribute to supporting people in making sustainable choices. But how?

The documentary 'Worsteling van de Groenmens' (van Nes, 2018) led me to the sustainability framework of Babette Porcelijn called: The Hidden Impact (from now on referred to as 'De Verborgene Impact'). This framework highlights a new perspective on our consumption habits and shows that changing one's current way of living can be effective. I decided to contact Babette Porcelijn, to see if a possible collaboration could lead to a graduation project.

This graduation project investigates the stimulation of sustainable behaviour among residents from housing corporation Wooninc. in Eindhoven, using 'De Verborgene Impact' as the underlying framework.

## Structure of this report

- Chapter 1 will discuss all relevant aspects among which: the initial project brief, introduction to the designer and the approach.
- Chapter 2 and 3 will elaborate on the findings of the analysis that led to the starting points for the design.
- Chapter 4 will discuss the conceptualization and explanation of the final concept.
- Chapter 5 and 6 will close off this graduation report with an evaluation of the final concept and a reflection on the process and the designer's personal identity.



Figure 1 - Article in Dutch newspaper: Volkskrant 12 februari 2019



## 1.2 Project brief

Eindhoven is faced with the task of reducing the CO<sub>2</sub> emissions of more than 100,000 homes and all commercial buildings before 2050 by 95%. To accelerate the sustainability of houses, the municipality of Eindhoven together with five housing corporations signed the “Duurzaamheidspact Eindhoven” in September 2018 (Theeuwen, 2018).

One of the participants in this pact is housing corporation Wooninc. Eindhoven. They turned to Porcelijn to calculate their environmental impact and gain insight into their largest sources of impact. Research insights showed that, if the housing corporation wanted to use their full potential as a company, they should take into account their biggest impacts through all the circles of influence. Using ‘De Verborgen Impact’ framework, Porcelijn researched that, the impact of their residents - as consumers, is three times as high as the internal and primary process of Wooninc. (Porcelijn, 2018).

With this knowledge Wooninc. decided not only to improve their core business (consisting of their internal and primary process) but also put an effort into engaging their residents towards a more sustainable lifestyle. To do this, Babette Porcelijn proposed a train-the-trainer process to Wooninc., in which knowledge flows from high to low through the entire network of the corporation ending up at the residents of Wooninc. (Suhrheinrich, 2011). This pyramidal concept of train-the-trainer involves training a person, or group of people (experts), who in turn train other people (peers).

### Initial proposal

A team of internal employees from Wooninc. will be trained to recruit and train leading residents, so-called peers. Peers are current residents from Wooninc. that match with different profiles: young old, male-female, various cultures or educational level. Preferably those peers play a major role in the community for example as energy coach, debt relief workers or teachers. The peers will be trained to play an ambassador role to motivate other residents in their community towards a more sustainable lifestyle (see figure 2).

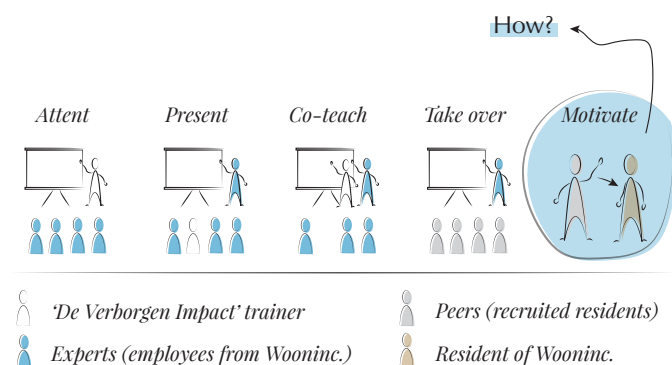


Figure 2 - Train-the-trainer process for Wooninc.

What remained undefined was *how* this team of peers would approach the residents in the neighborhood after their training. As ‘design for behavioural change’ is never an easy challenge, it has been pointed out that designs targeting behavioural change often fail due to the misfit of the design with people’s social identity (Neven, 2010) or their community norms. To make the traject effective, it is important to carefully think about how to connect, with the motivations and values of the residents. This led to the aim of this graduation project:

The aim of this project is to design a fitting intervention that peers can use to motivate residents of Wooninc., so that they feel activated to make their lifestyles (more) sustainable.

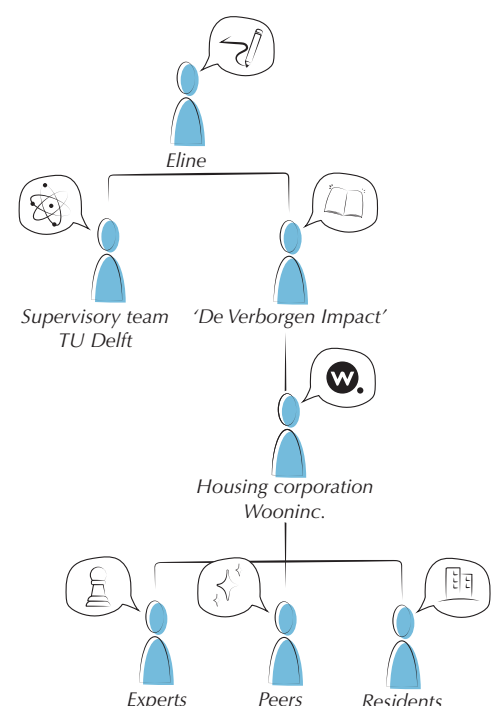


Figure 3 - Overview of stakeholders involved

## 1.3 The designer

*A personal ambition in this graduation project was to design in tune with my identity. Therefore, at the start of this project, I formulated my Personal Principles for Good Design (Baha et al., 2018), which are represented by four examples of products.*

I am inspired in places where there is room for dialogue. During a dialogue, mutual exchange of knowledge and viewpoints can take place which gives ideas the chance to emerge and grow. Dialogues help to find my own position in this complex world and enable me to grow as a person.

I find it important to discuss these principles because they underlie the basis of the process of this graduation project and the way choices were made.

### *Principle 1 - Substantial*

I believe good products are products that have the purpose to communicate an inspiring vision. This principle is represented by a Fjallraven Kanken backpack, 164 brick. With their keywords, functional, sustainable and timeless the vision of this brand is to make nature more easily accessible to people. By designing this backpack-design they are not explicitly telling people to go into nature, but they facilitate them to go into nature by making it more attractive.



**Figure 4** -Fjallraven Kanken backpack, 164 brick

### *Principle 2 - Honest*

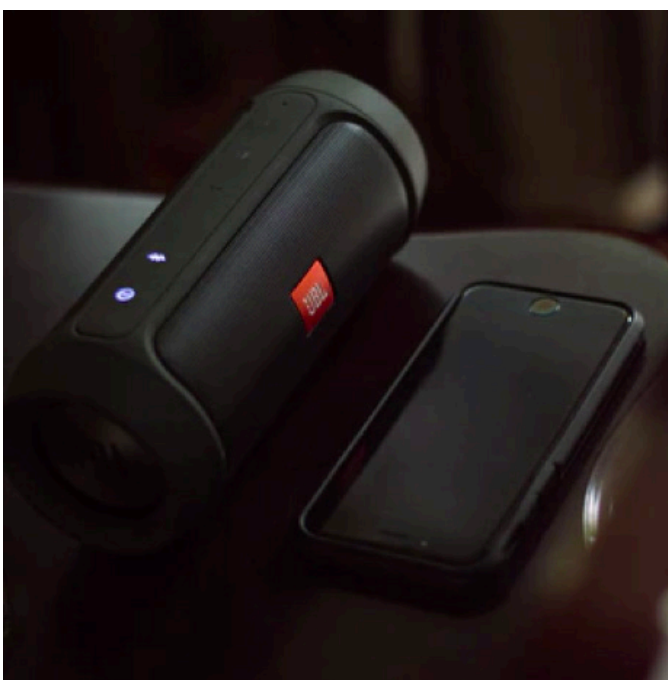
Also, I think it is important that a product communicates what it is, and what it is not. As an example, I used the Clima Bottle, by 24 bottles. This thermos flask has not many functions, but what it does is of high quality. And at the bottom of the bottle it says: CO2 neutral, 24h cold, 12h hot, stainless steel. With this subtle note, it shows what you get and what you do not. And, from my own experience, I know that this bottle keeps its promise, and that is why I like it.



**Figure 5** -Clima Bottle, by 24 bottles.

#### *Principle 3 - Consistent*

Good design, in my opinion, is when you experience that the purpose is integrated into every aspect of the design. To clarify what I mean I take the example of a *Flip 4 JBL Bluetooth speaker*. By its integration of form, materials and colours the design is thought through. Without unnecessary elements (only a four buttons interface), the look and feel of this JBL speaker are aligned with their vision: 'creating the best sound'- experience.



**Figure 6** -Flip 4 JBL Bluetooth speaker

#### *Principle 4 - Understandable*

Lastly good design, to me, are products that are reduced to their essence. A good example of understandable design is the *2 Seconds Pop Up Tent by Quechua*. This design is easy to carry (by the folded construction), easy to set-up and break down and everything is connected (once the tent is set up, it is immediately ready for use). To me, it shows that the designer understood the problem of setting up a tent and was, therefore, able to reduce the design to its most important elements.



**Figure 7** -2 Seconds Pop Up Tent by Quechua

# 1.4 Approach

After exploring the design brief and using the designers’ Personal Principles for Good Design the approach for this graduation project was chosen. This chapter will give an overview of the process and theories that are used in this graduation project. In this project, two main theories are used. First, Transition Design (Irwin, Kossoff, Tonkinwise & Scupelli, 2015) will be used as a basis for organizing the research and directing the goal setting. Second, the organization around this project follows an atypical, iterative, design process based on the 1:10:100 approach by Van Turnhout (2013). Lastly reflective and co-design activities were used as supportive methods.

*“The transition to sustainable futures calls for new ways of designing that are based upon a deep understanding of how to design for change and transition within complex systems”*

- Terry Irwin, 2011

## 1.4.1 Main design approach: transition design

In his Transition Design paper 2015, Irwin introduces a new area of design research and practice, that proposes design-led societal transition towards a more sustainable future. Transition Design is based on the need for social transitions to a more sustainable future, and argues that design plays a key role in these transitions. With this idea Transition Design contributes to the evolution within the field of Design for Sustainability, which is gradually expanding from a technical and product-oriented focus to a more large scale system-level change in which sustainability is understood as a sociotechnical challenge (Ceschin & Gaziulusoy, 2016).

Transition Design is concerned with the way in which change manifests itself and how this change can be accelerated and controlled in complex systems. Transition Design is based on finding solutions that maximize satisfiers within daily life or existing lifestyle and tries to combine and connect existing solutions so they become a single step towards a longer-term goal.

This approach is different from current design methods because it does not emphasize the technical or product-centric focus but aims to bring about a larger system change. In order to do this, Transition Design does not focus on ‘the problem and the solution’, but looks at ‘the current conditions within a system and the desired conditions within a system’.

This project makes use of the Transition Design approach, as the main design approach because in this way it tries to incite a transition towards (more) sustainable behaviour among the residents of Wooninc. Although this design approach is relatively new, seeing the project as a single step within a broader transition can help to create a meaningful and effective final concept.

This approach influenced the stages of the design project in different ways. Firstly, to foster an experimental and cooperative design process, iterative and reflective design approaches will be introduced within different stages of the project.

The research phase will emphasize on mapping current conditions within the system by investigating how sustainability is experienced. Also it will pay attention to investigating what leverage points should be maximized in order to accelerate a transition towards sustainable behaviour. The goal setting phase will focus on creating my personal vision for this project and collaboratively reflecting upon this vision with stakeholders to decide upon a final vision for the design. Together with the identified leverage points, this will describe the desired conditions within the system and form the starting point for the further design process. During the conceptualization phase constant attention will be paid to iteratively sharpening the concept to find out which design will tap into the right leverage points to accelerate a transition towards sustainable behaviour. In the evaluation phase, attention will be paid to evaluate with different stakeholders whether or not they can imagine the final concept to support them towards a transition that is supported by the different leverage points.

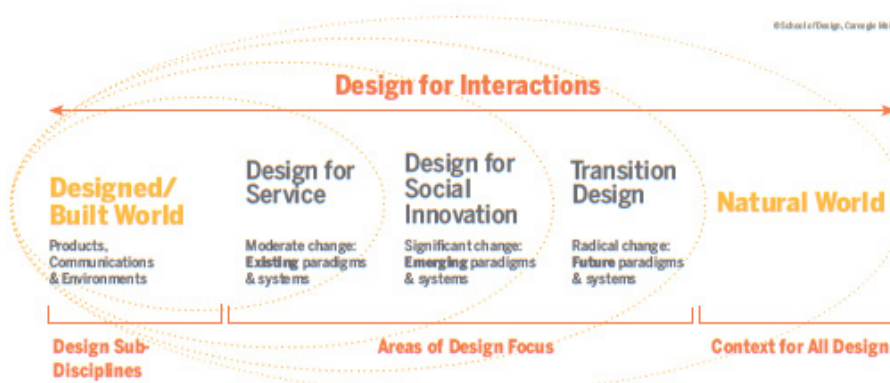


Figure 8 - Position Transition Design in the field of Design for Interaction



### 1.4.2 Process method: 1:10:100

Designing for multi-stakeholders is fundamentally different than designing for end-users only (Tomico, O., Lu, Y., Baha, E., Lehto, P. Hirvikoski T., 2011). It requires a more cooperative and reflective mindset to be able to connect all different types of needs. Therefore I decided to organize my project according to the 1:10:100 approach. An approach where, instead of once, the traditional design cycle\* is run through multiple times during one project. The benefit of this iterative process is that it allowed me to constantly sharpen conducted insights with stakeholders and create common understanding with stakeholders (Van Turnhout, 2013).

As van Turnhout describes, the 1:10:100 actively encourages 'discovery' in a design project; it is very flexible and open to growing insight. As in each cycle, new insights are processed into solutions and prototypes and evaluated with stakeholders. With this evaluation output a new focus is created, which is used as input for the next cycle.

The development of this concept evolved moving through four different cycles. To illustrate what this meant regarding this graduation project, figure 9 gives a process overview of all the steps and activities taken in each consecutive circles, leading to the final concept.

\*The traditional design cycle is characterized by five successive phases which are: research, specify, ideate, prototype and feedback and evaluate.

### 1.4.3 Supporting theories

#### *Co-reflection*

If you want to encourage drastic changes in lifestyles, the current way of designing, mostly focussed on product optimisation, does not go far enough. It requires a cooperative and reflective approach to involve the visions of the community (Cucuzzella, 2009). In this way, the designer not only becomes a designer but also a facilitator (Irwin et al., 2015).

By adding diverse critical reflective elements into my design process, I wanted to give stakeholders the opportunity to include their vision into this project. Co-reflection sessions enabled me to both facilitate stakeholders in forming their vision about the topic, but also confront them with my personal vision (Tomico et al., 2018). By a collective reflection, it is possible to get multiple perspectives from stakeholders on the design space and create a shared view on the design challenge.

To conduct a co-reflection session the following steps should be incorporated:

1) First, the designer should define its personal vision and initial value proposition or concept. This will be used as input for the co-creation session.

2) Designer prepares the co-creation session by making templates and an introduction presentation.

3) Then the co-creation session will be conducted. The vision and initial value proposition or concept of the designer is confronted with multi-stakeholders. This session contains of three successive rounds:

- Exploration round: stakeholders create their vision upon the design challenge (using created templates)
- Ideation round: stakeholders translate their vision into a value proposition of concept
- Confrontation: designer presents his or her personal vision and initial value proposition or concept after which a collaborative reflection occurs to collect different perspectives on the vision of the designer.
- The session is closed by creating a collaborative perspective on the challenge

4) Through reflection on the insights from the co-reflection session, the next iteration for the project can be defined.

### ***Personal Principles for Good Design***

One of my personal ambitions in this graduation project is to learn to feel confident in designing more in tune with my values. Increasingly more research is done on the importance of designers being aware of this identity for creating radical innovation. Being aware of one's identity enables designers to share their worldview through design which makes them able to participate in the design culture discourse (Manzini, 2016). By examining my own value system and the role it plays in the design process, I want to take position in this project in a way that aligns with my identity.

To explore my identity I formulated a vision and Personal Principles for Good Design. A vision and principles carry out what you love and what kind of world you want to design for. Sensing Personal Principles for Good Design is a method that empowers design students to be confronted with their personal values and beliefs and use it in their design processes (Baha, 2018).

To sense my designers' identity, two workshops were conducted in order to grasp my Principles of Good Design underlying this identity. For this workshop two mood boards were made:

"Good Design-board": including product that I consider is good design

- "Inspiring People-board": including people that I consider are inspiring.

These collages are used to start a conversation about why I consider these products as 'good' design and those people as inspiring. By discussing both boards with my project mentor, Ehsan Baha (PHD at the faculty of Industrial Design) important elements were extracted and clustered. Which led to my vision towards the field of design, and sensing four Personal Principles for Good Design (which were elaborated in the previous paragraph 1.3).

As Irwin pointed out, the designer's own mindset and attitude is an essential part of the design process because it affects the way in which a problem and the possible solution are identified (Irwin, 2011). Also in this projects these principles had influence at different phases. For example, it led me to the decision to use Transition Design, and the selection of different leverage points. Also in the conceptualization phase it supported me in following certain ideas that aligned more or less my Personal Principles for Good Design.

### **Summary of approach**

- This project will use the Transition Design approach as a main approach to design for this multi-stakeholder and transitional system. In an attempt to understand the complex context research on the current system and desired system will be conducted.

- To incorporate iterative cycles within the design process, the project will be organized around the 1:10:100 method with four cycles. In which the cycles will follow the traditional design phases.

- Co-reflection is used in this project to foster collaboration within the project and to align my personal vision with the perspective of different stakeholders. To explore my personal vision I defined my personal identity using four Personal Principles for Good Design.

- One last important note:  
This combination of methods led to an iterative project structure, as can be seen in figure xx. To ensure that any reader, even one not so familiar with design, can pick up this report and (hopefully) understand the basic underlying structure of the project, I decided to structure the report in a more logical and traditional way compared to the actual process. In this way I hope to convey the main information clearly.

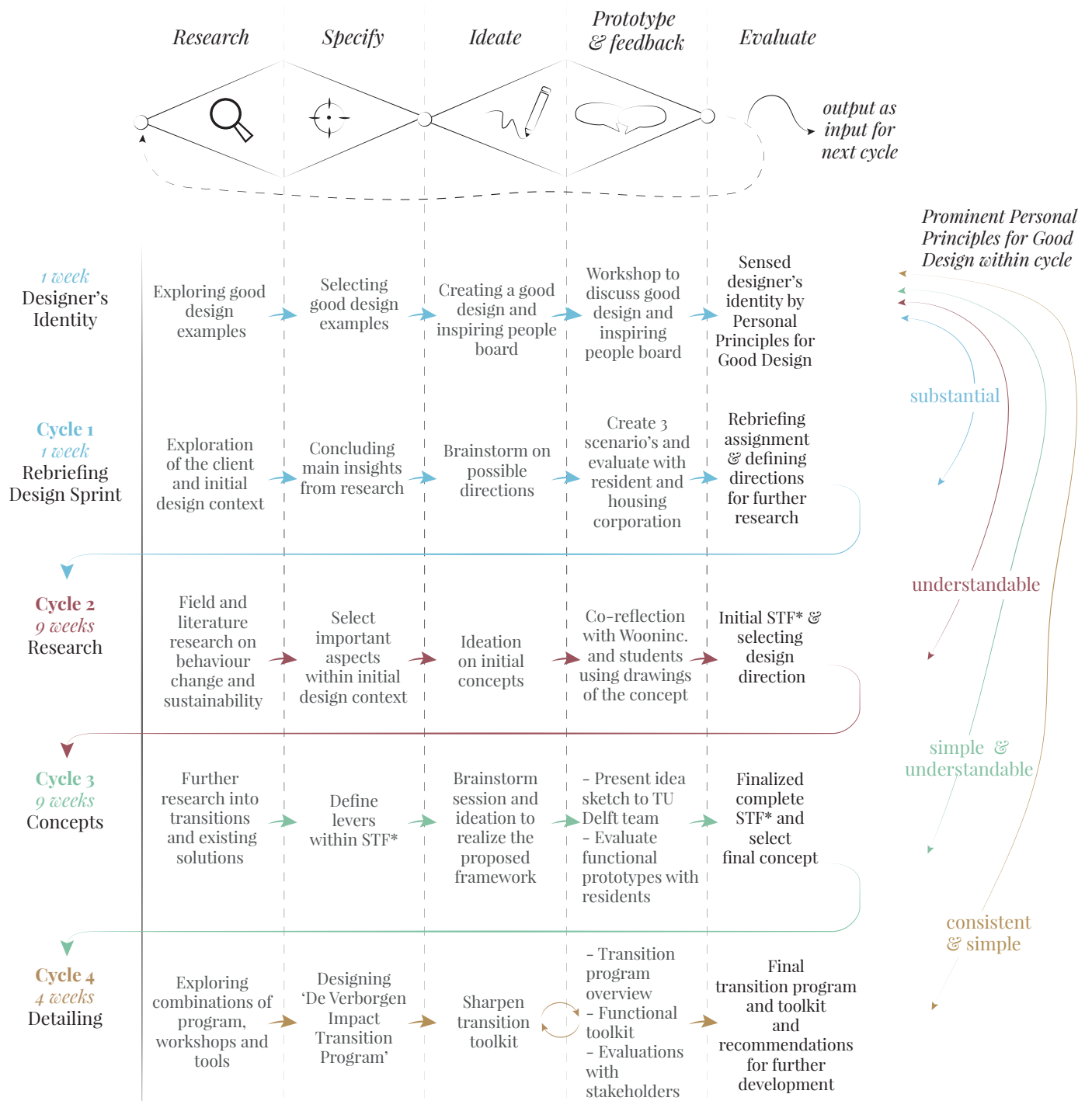


Figure 9 - Overview of project activities







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## 2. Research

### current situation

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*“The world is changed by your  
example not by your opinion.”*  
- Paulo Coelho

*This chapter elaborates on the current situation within the project context. It is a complex issue with many different aspects that are influencing each other. Therefore I did research on three different levels.*

*First this research will focus on a brief internal client analysis (paragraph 2.2). The client is Studio Babette Porcelijn that developed the ‘De Verborgen Impact’. By identifying the possibilities of De Verborgen impact it will be possible to determine the potential for further development.*

*Second, the context of the project is further elaborated in this research (paragraph 2.3). This concerns the vision and strategy of Wooninc. and their experience with neighborhood participation. This gives insights into which elements to take into account according to the physical and organisational context and how ‘De Verborgen Impact’ can use this for implementation.*

*The last part contains literature research and interviews that focuses on the current experience and understanding of sustainability in relation to behaviour (paragraph 2.4). This is the most important and elaborated part of the research and it results in significant conditions for the development of the concept.*

## 2.1 Client analysis: De Verborgen Impact

*This client analysis was done to understand the initial situation around De Verborgen Impact.*

*This research is based on analysing the lectures and workshops Babette Porcelijn gives, interviews with the readers of her book 'De Verborgen Impact', and an analysis of the tools she developed according to her book. Finally I have compared her method with the approach of similar organisations in the field of sustainability and behaviour. Doing this gives a better understanding of the success factors of Babette Porcelijn and her method.*

### 2.1.1 De Verborgen Impact-method

Babette Porcelijn is motivated by the vision and strategy to show people a new perspective to reduce their individual impact on the Earth. In order to do so, she communicates in opportunities and possibilities and gives positive perspective for action. By focussing on personal energy and readiness for change. To highlight this new perspective on our consumption habits, Porcelijn created a new sustainability framework (Porcelijn, 2014) called: 'De Verborgen Impact'.

You can look at 'De Verborgen Impact' as an iceberg (see figure 10). Most of our sustainable actions focus on the visible impacts such as CO<sub>2</sub> emission by our cars, plastic waste or electricity use. But this is just the tip of the iceberg. What is underneath, is everything what happens at the other side of the world. For example, deforestation for the cultivation of food, pollution and water use. These are the, so called, hidden impacts of our consuming behaviour.

In collaboration with an LCA research agency in Delft, Porcelijn calculated that 80% of our impact lies in these hidden impacts, which we mostly don't include when talking about sustainability. It means that we can be five times more efficient (ecologically seen) if we start to include this hidden impacts in our decisions. Porcelijn was interested in what this meant concerning consumer decisions, so together with CE Delft they calculated the top-10 consumer impacts including hidden impacts (see figure 11). This impact top-10 can be summarized in the following four categories: stuff, transport, housing and food and beverage (figure 12).

### 2.1.2 Overview of tools

To communicate her research and message, Porcelijn developed a set of tools which are elaborated in figure 13. During lectures and workshops she uses these materials to convey the story and help people make their lives more sustainable. To be able to spread the message widely, she also trains people to become 'De Verborgen Impact' trainer. Who are, after two days of training, able to give lectures and workshops themselves according to 'De Verborgen Impact' method. To be able to serve people at home as well, the online Impact Calculator was developed. The tool contains questions, based on the impact top-10, to help people calculating their biggest personal impacts and get insight in how to become effectively more sustainable. Next to the book, this online Impact Calculator is the most important and fundamental tool of 'De Verborgen Impact'.



Figure 10 - Iceberg is used as a metaphor to illustrate our hidden impact.



Figure 11 - Impact top-10 with 1. products 2. meat consumption and 3. house

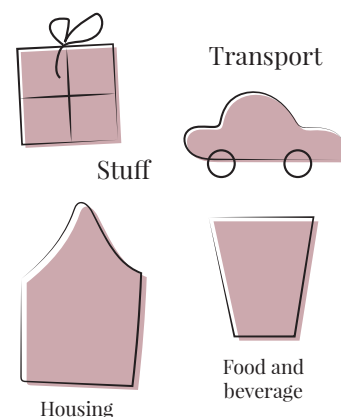
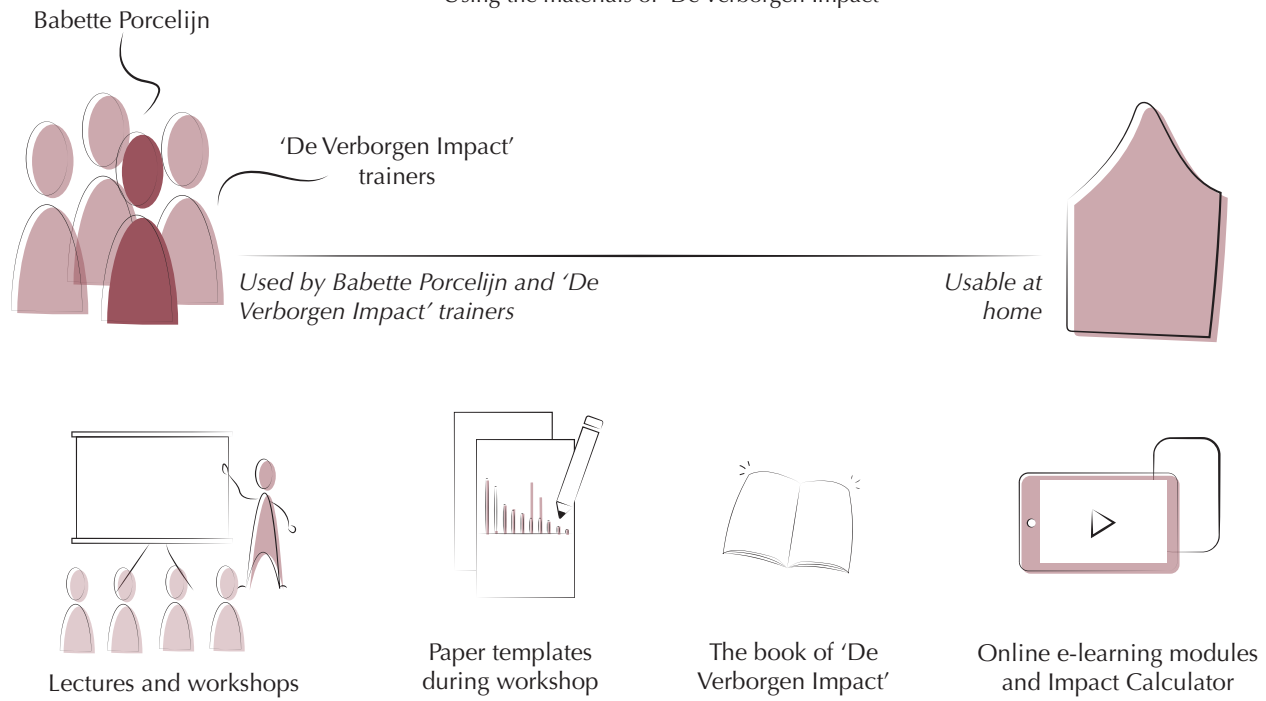


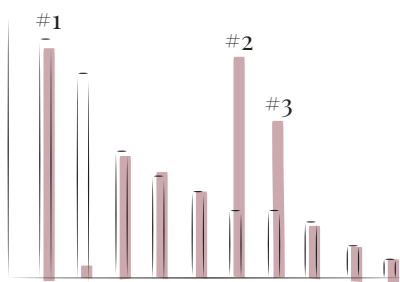
Figure 12 - Four categories of the impact top-10

## How to support people to become effectively more sustainable

Using the materials of 'De Verborgen Impact'

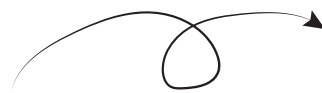


### Workshop set-up using paper templates



#### What is my impact?

Using the online impact calculator or filling in a paper template with empty top-10



|           | #1 | #2 | #3 |
|-----------|----|----|----|
| Better    |    |    | ★  |
| Different |    | ★  |    |
| Less      |    |    |    |

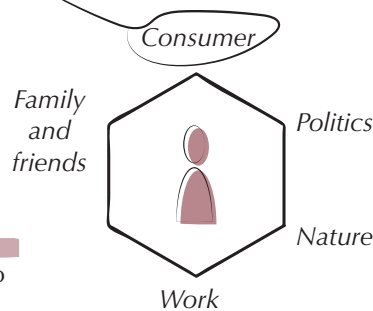
#### What can I do?

Using the Better, Different, Less matrix to think about solutions to tackle individual biggest impacts



#### Sustainable in different roles

In which role can I contribute to the sustainability of society?



#### Try out one week

To experience how your actions feels



Figure 13 – Overview of tools and workshop set-up

# User test

## How do users experience the tools?

### Readers of the book

Why: To investigate which elements of 'De Verborgen Impact' - method have proven to be effective for participants in order to change towards a more sustainable lifestyle, and which not.

Who: 4 readers of the book: 'De Verborgen Impact'

What: semi-structured interviews were conducted. They were asked what elements of the story made them decide to take sustainable actions and what their first steps were after reading the book.

Outcomes:

The extensive findings of the interviews can be found in my Mid-Term Report (2018). Three important insights about why the book stimulated the participants to action:

>> Getting insight in the context around sustainability a simple and understanding way

>> Being able to pick out actions that fit peoples life at that moment

>> Together this leads to perspective for action

### Experience with the online top-10 tool

Why: To investigate in how people experience filling in the online impact tool,

Who: 5 participants

What: to fill in the tool and record their experiences out loud and an emotion curve was made mapping their experiences (see figure 14 and 15).

Outcomes:

>> By receiving the results at the end, ones' personal sustainable state, most participants indicated that they experienced a concern. Although the aim of the tool is to give a positive experience, **they did not feel empowered to change their current behaviour, because the results gave insufficiently perspective for action.**

This were four important insight for the development of my concept in a later stage.



Figure 14 -Participant using the online Impact Calculator

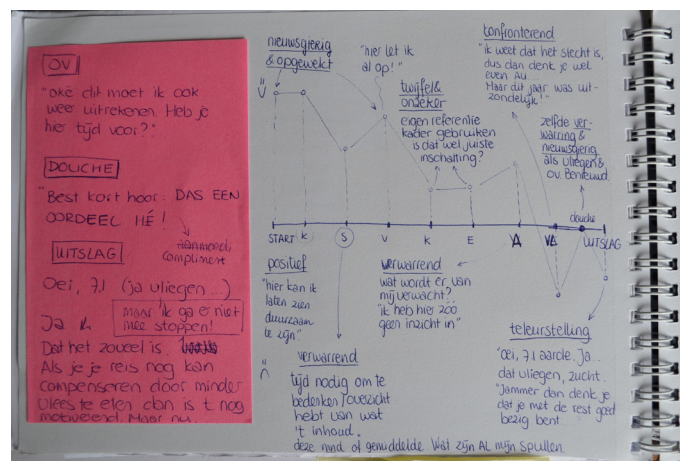


Figure 15 - Emotion curve of experience during filling in Impact Calculator

### 2.1.3 Similar projects

With this project, 'De Verborgen Impact' will dive into a different new area. As Porcelijn herself indicated, with the ongoing energy transition, there are several organisations that are committed to supporting people in the transition towards a more sustainable lifestyle. To orientate what is ongoing in this market, a brief competitors analysis was done by looking at similar organisations such as: Klimaatgesprekken, Energiecoaches (as part of the organisation VerduurSaam) and Buurkracht. Interviews and websites are used, as referred to in the references chapter.

In this quick scan I have plotted these organisations on two axis: a focus on neighborhood level and a focus individual level and a single focussed approach versus a broad approach, taking all levels of impact into account (see figure 16). This made clear that the focus area of 'De Verborgen Impact' (neighborhood and broad approach) is one that is not covered yet. Therefore 'De Verborgen Impact' could have a promising added value.

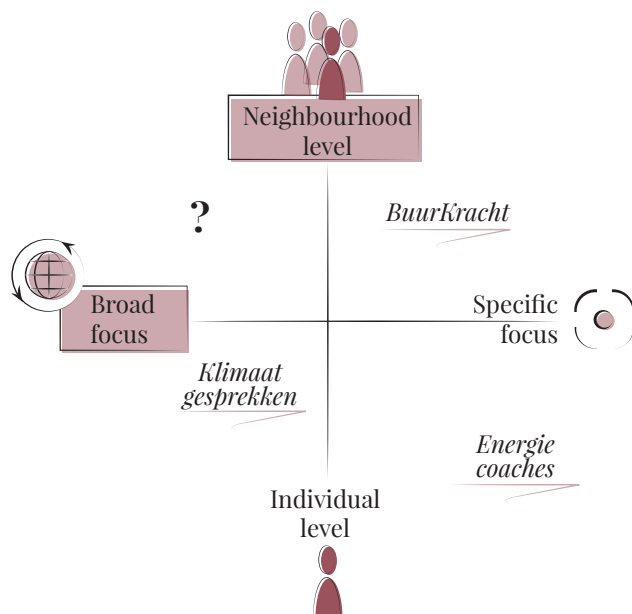


Figure 16 – Overview of area organisations

#### To summarize

This client analysis showed that

- The story of 'De Verborgen Impact' has several success factors for changing to a more sustainable lifestyle. The most important, as indicated by the readers of the Book 'De Verborgen Impact' are:

- A positive tone of voice
- Makes sustainability tangible
- Everyone picks what fits their lives

- Based on the experience from users of the online impact top showed, the existing tools that are based on the method can be improved to gain in effectiveness.

- Finally, by creating possibilities for neighborhood collaboration and involving residents within the current approach of 'De Verborgen Impact', the method enters a new market area that complements what already exists.



## 2.2 Project context analysis: Wooninc. and neighborhood

To get more understanding of the organization of Wooninc., their way of working and their relationship with residents a context analysis was done. This research is based on two interviews and several informal conversations with residents to get an understanding of the situation around social housing. The two interviews were conducted with the manager of Wooninc., and the chairman of Stichting Huurders Wooninc (SHW), the residents representation of Wooninc. This led to insights into the working area of Wooninc, the current communication channels between the housing corporation and its residents and information about neighborhood participation.

### 2.2.1 Housing corporation Wooninc.

A housing corporation is mainly responsible for the availability, affordability, the quality of social housing and the quality of life in the residential environment. They envision their approach as down-to-earth and formulate their core values as follows:

- Human: we are approachable, involved and 'we do it together!'
- Decisive: we are passionate, with a vision, and 'we just do it!'
- Unconventional: we are progressive, flexible and 'we distinguish ourselves!'

### 2.2.2 Assets and neighborhoods

As one of the smaller housing corporations, Wooninc. owns almost 11.000 houses spread out over 11 municipalities around Eindhoven. Those 11.000 houses are divided into (1) social- and (2) commercial rental properties, and (3) owner-occupied properties. This shows that instead of enclosed neighborhoods, Wooninc.'s portfolio is diverse and consists of individual buildings spread over multiple districts in Eindhoven.

### 2.2.3 Communication with residents

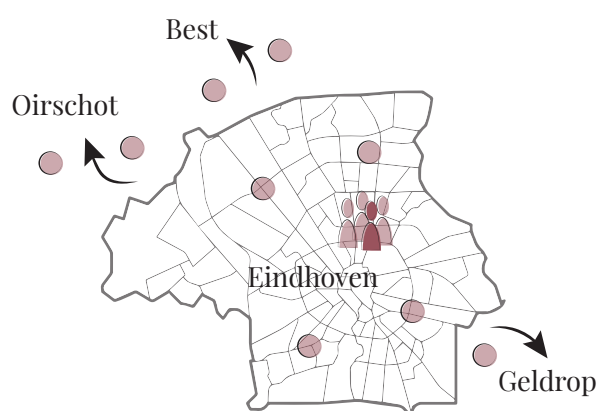
According to their first value statement, Wooninc. finds it important to be involved with their residents. Therefore, as figure 17 shows, the resident representation has two parts:

As both interviewees indicated, the existing collaboration between Wooninc. and the SHW works quite well, and is very valuable.

As this project focuses mainly on residents of social housing, those people often have no control about what happens to their homes. To connect to the residents both interviewees stretch the importance of connecting with the residents ("What do they want?"). As the two quotes below illustrate, to get their attention it is the most effective to go to the places where their lives takes place.

*"Instead of inviting them to join a resident meeting on Thursday evening at 19.00, it is way more effective when you are driving a bus through the streets to inform people about for example renovation plans."*

*"Most residents will only come if you 'sit on their skin'. Especially when they find something unpleasant. For talking about 10% rent increase you don't get people together, but if you say let's talk about disturbance, then the community center is loaded!"*



**SHW with 9 board members** that represent all residents of Wooninc. and has meetings with Wooninc. 2 times a year



**30 residents' committees** that represent residents in family homes and apartments.

Figure 17 –Residents of Wooninc. are represented in two ways

### 2.2.4 Experience with resident participation

On the question how both their experiences are with participation of residents, the chair of the SHW points out that many participation projects stay within this same circle of people. He roughly described four levels of participation:

**Level 1: A few people at the front, shouting very loudly that they know what is best for the neighborhood. They are present at every participation project, or they have organised it themselves.**

**Level 2: A small group of volunteers who do clean their sidewalk and work just a little bit harder compared to the other residents. And they are always with the same group.**

**Level 3: A level of semi-committed volunteers, who are enthusiastic but only involved when it suits them. Result is that you can not always count on them in participation projects.**

**Level 4: A big group of people who have whole other priorities**

Within a participation project, picking the right people to collaborate with is important. They should be both enthusiastic and capable. What these participation levels show, is that most of the projects stay within the two upper layers of residents. According to the chair of SHW, it can be a challenge to keep them involved too. Because it is voluntary work, when people find another job or they don't like it anymore, they stop. To make sure such a project generates itself and continues, there must be some potential for new growth.

One way of doing this is by making it more attractive for the level three residents to do things just a little more often. In this case, it ripples down through the rest of the neighbourhood and not all the work has to come from the 'upper'-layers and you have a bigger chance that it will generate itself.

"First, look at the potential of people: what can they do. Because in reality most of the time you have people who are enthusiastic but not capable, or the other way around."

This remark is an interesting illustration of the deeper finding that peers and coaches are more effective when they have multiple skills. A balance between social- and hard skills (Straver, K. Siebinga, A. Mastop, J & De Lidth, M., 2017).

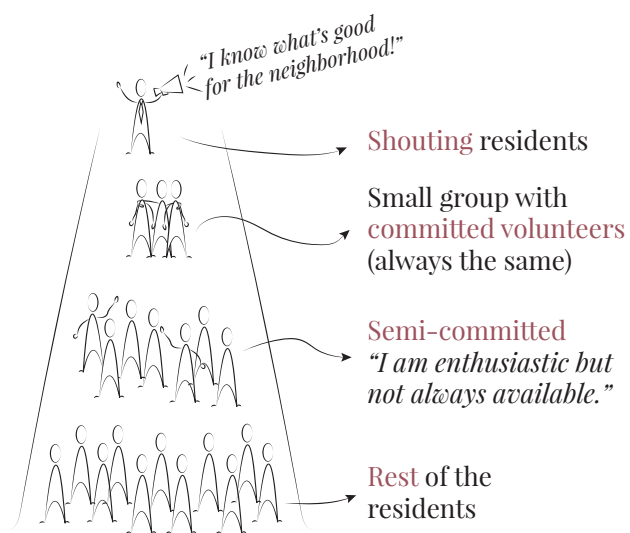


Figure 18 -Four levels of participation

#### To summarize

- The project context analysis showed that in a neighborhood approach the following things should be taken into account:

- We have to do with a smaller focus than neighborhoods, namely communities of residents living in a building that can or want to collaborate on sustainability.

- Those communities of residents are spread over multiple cities and neighborhoods in and around Eindhoven. This requires a flexible approach.

- This analysis indicated the importance of staying close to the experience, location and mind-sets of residents. It could be helpful to connect with the existing networks within the neighborhoods, to get a broader reach for residents.

- In order to effectively communicate a story to residents, it is important for peers that they are qualified with the right skills (pick the right people to motivate people).

## 2.3 Experiencing sustainable lifestyles

*The main part of this research focuses on the current experience of sustainability. It aims to find out what a sustainable lifestyle means and what is important to residents regarding to sustainability. And to determine elements that should be taken into account to enable sustainable behaviour change. To understand the current sustainability experience, literature research and interviews with experts were conducted. Next to that six semi-structured interviews were conducted with people who are going through behavioural transitions to find elements that play an important role in behavioural change. This research gave insight in the relevance of an individual sustainable lifestyle, how residents experience sustainability and how a transition towards behavioural change could be enabled and supported.*

### 2.3.1 Relevance of a sustainable lifestyle

To determine what is asked from the residents in this project, this section presents a brief description of what a sustainable lifestyle means and why it is important to focus on individual behaviour in creating a sustainable society.

#### Meaning of a sustainable lifestyle

According to the Brundtland-rapport published in 1987, the goal of sustainability is to “create and maintain conditions, under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic, and other requirements of present and future generations.”

So, sustainability implies that the earth can, even in the long term, carry the total of our consumption. But currently, this is not what is happening. To fulfil the needs of the total world population, we need 1.7 planets. Even worse, if every world citizen should live like an average Dutchman, we would need 3.5 planets instead of the one planet we have. This means we face an enormous task to transform society in a very short time (1 - 2 decades) from wasteful and polluting, to sustainable and clean is an enormous task in which government, industry and us (as consumers) need to cooperate (Porcelijn, 2014).

#### Engaging individuals

Individual solutions alone are not sufficient to solve the climate crisis. Evidence suggests that environmental gains from technical improvements in product efficiency have historically been outweighed by an overall increase in consumption. So, a sustainable future requires a broader perspective of evaluation and innovation, one founded not only on an approach of efficiency, but also one of sufficiency. Efficiency largely depends on technical innovations; get the same goods and services out of less. Sufficiency relies on individual behavioural changes as well as on social innovation; improved well-being out of fewer goods and services (Cucuzzella, 2009).

A report from the Rare's Center for Behavior & the Environment shows that individual behaviour plays a major role in almost half of the climate solutions (2018). Next to the fact that by changing our individual behaviour we could reduce about one-third of the projected global emissions between 2020 and 2050, individual solutions build stronger bottom-up support for pro-environmental policies and solutions (Gilchrist, 2018). Therefore, engaging people is crucial if we want to transform society in a very short time.

### What needs to be done?

A lot of different and contradicting information, predictions and advice are circling around about sustainability (Hoekstra, Verhegge & Hannink, M., 2013). This makes it difficult to determine what a sustainable lifestyle means. Researcher Babette Porcelijn defined a sustainable lifestyle as follows:

***“We use almost four Earths, and we only have one. Your lifestyle is sustainable when you are living within the planetary boundaries of our Earth and do not take more than the planet can produce.”***

– Babette Porcelijn, De Verborgen Impact

Subsequently, you can compensate for your remaining impacts, living eco-neutral. And if you, for example in your work, also commit to making society more sustainable, and have more constructive than harmful impact, then you live eco-positive.

### 2.3.2 Barriers for sustainable behaviour

In my search for barriers it appeared that we find it hard to anticipate on sustainable behaviour for many different reasons. These can be distinguished into external and internal barriers.

#### External barriers

In general, consumers are confused about the concept of sustainability. Lack of objectivity around the concept of sustainability and conflicting messages in media create diverse interpretations of what ‘sustainability’ and ‘a sustainable lifestyle’ means (Hoekstra, 2013). Also the lack of clarity about who is responsible, creates inefficient or even absence of sustainability activities.

***“Special supermarkets costs way more money, so you think you’re doing something right, but then it turns out you’re not: its not transparent enough.”*** - Kiki

#### Internal barriers

Resistance and apathy towards sustainability are caused by the way our brain works. Out of evolutionary self-defence, we shut ourselves off against sustainability (Griskevicius, Cantú, & van Vugt, 2012). Per Espen Stoknes (2015) did research on this topic and pointed out how five inner defences, distance, doom, dissonance, denial and identity evoke certain reactions that stop people from engaging in environmental behaviour. I recognized these defences in my literature research and interviews, see right page. The fifth defense, identity, will be explained in paragraph 2.3.3.



## How and why five inner defences avoid us from acting sustainable



### Distance

The problem is far away in space and time

Makes us feel **helpless**, and feel like this is **outside of our influence**

#### WHY?

Natural selection has shaped our psychology to maximize the here and now. This causes that modern people still overwhelmingly weight immediate outcomes more heavily than distant ones (e.g., Frederick, Loewenstein, and O'Donoghue 2002; Green and Myerson 2004) and underestimating the probability and severity of future outcomes (Hardin 1995; Slovic 1987).



### Doom

Emphasize on disaster, losses and sacrifice.

Makes us fearful, resulting in **avoiding messages** like this

#### WHY?

"What happens when we frame it as a negative message: it tends to activate our limbic system. This brainpart processes information quickly and uncritically. Which encourages quick decisions and fight-freeze-flight-reactions.

This limbic system constantly interacts with the prefrontal cortex. If one system becomes more active, the other becomes less active.

When our limbic system is activated by heavy negative emotions such as fear, it means we lose access to our prefrontal cortex. This is where all the problem solving, foresight, creativity, imagination and strategizing takes place. We need this part to come to thoughtful judgments and decisions, to regulate and control emotions and to resist temptations (Lertzman, 2017)."



### Dissonance

What we know conflicts with what we do

This internal conflict awakes inner discomfort, to avoid this we start to **bring up excuses**

"You have noticed that you are doing something that is not right, that ultimately works **demotivating**. It gives mean excuse to just continue".

### Denial

Being aware of something, but live and act like not knowing

We try to find inner refuge from fear and guilt by **ignoring** or **ridiculing** the facts.

#### WHY?

What happens if awareness raises a little bit, and our cognitive dissonance is activated. It can make people go in the complete opposite direction and they want to just rebel (Lertzman, 2017). This denial is reinforced by others when friends, family or community agree not to raise the tricky topic (Per Espen Stoknes, 2015).

### Identity

How the choices will affect our future, who we think we are and want to become.

Personal values override the facts and therefore **decision based on identity** instead of research

### 2.3.3 Adopting a new behaviour

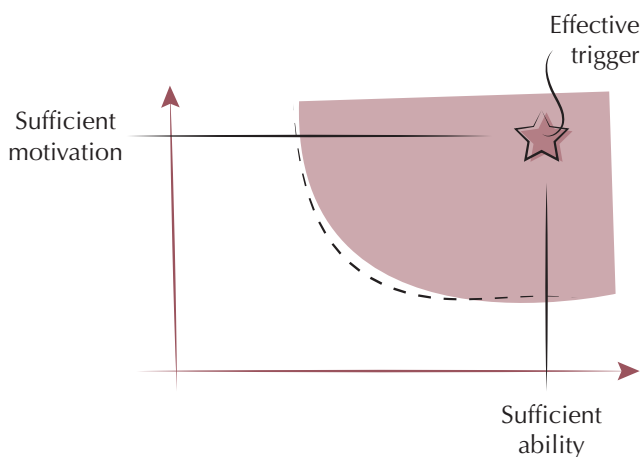
In order to turn unsustainable lifestyles into sustainable ones, it is important to understand existing theories about behavioural change. In this section I will discuss three relevant theories:

- The Behavioral Model of Fogg (2009)
- The Mentality Value & Lifestyle model of Motivaction (2013)
- The Transtheoretical model of Behavioural Change of Prochaska and DiClemente (1992)

#### Behavioral Model: Motivation and ability

Fogg (2009) describes that the basis to let behaviour occur is that people should feel motivated enough and are able to act (in this case environmentally friendly). As figure 19 shows, Fogg's Behavioural Model (2009) summarizes that designers should offer sufficient motivation, sufficient ability and an effective trigger for behaviour to happen.

This indicates that there are opportunities to support people in changing towards a more sustainable lifestyle. In order to stimulate behavioural change, you need to focus on two things. Influence on motivation and influence on ability. These were also important topics that arose in my interviews. For example, one interviewee said that , although he was motivated to act sustainable, when the right alternatives are not offered, it would be an excuse to continue with his previous behaviour.



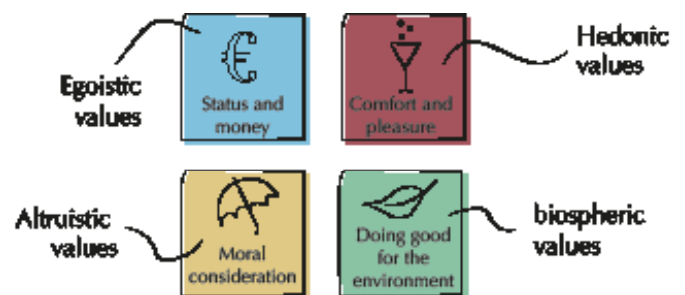
**Figure 19** -Fogg's model (2009) describes three conditions for behaviour to occur: motivation, ability and trigger.

The importance of having the right trigger was also pointed out by a resident:

***"In order to get people on board, you first have to have a reason. Because if you turn to people with the message: "you have to get rid of the gas at home". Then they think: go away!"***

So how can we generate the right motivation and ability in order to change the current 'unsustainable' habits of the Wooninc. residents towards (more) 'sustainable' ones. The next two sections will discuss how motivation and ability are influenced by the two following things:

- Personal values, which are people's main drivers for behaviour to occur.
- The position of a person in the process of change (from awareness to action), that determines the gradation of consciousness.



**Figure 20** -The four types of values as distinguished by Van der Werff, 2018

## Values -


### We act in line with our values

We base our decisions on personal values rather than research. In situations, we consider how the choices will affect our future, who we think we are and want to become.

In general, one can distinguish four types of values: hedonic, egoistic, altruistic and biospheric values (van der Werff, 2018), which are explained in figure 20. And everyone prioritizes values differently. Based on these values people omit, distort and generalize the situation. In this why, each person filters information in his own way (Korzybski, 1933), forming our daily behaviour.

Based on this theory, Motivaction (2013) has defined five mentality profiles with regard to sustainability (see figure 21). By connecting sustainable behaviour to this mentality, people can bring their behaviour in line with their personal values. This prevents dissonance (that uncomfortable feeling when values are conflicting, as discussed in chapter 2.4.3) and therefore makes acting environmental friendly more likely.

That's why I derived five persona's from this theory enriched with insights from my interviews (see figure xx). These profiles were of major importance during the development of my concept.



| Sustainability type | Too late to be sustainable   | Sustainability is not my problem!   | Convenient interests  | Silent practitioner   | Inspiring practitioner   |
|---------------------|--|---|---|---|--|
|                     | The too late to be sustainable are retired and enjoy the things they had no time for | The not my problem resident experiences acting sustainable as a sacrifice | The convenient practitioner wants to live sustainable but is not sure how | The silent practitioner does not like to be in the spotlight                | The inspiring practitioner likes to search for cool sustainable innovations. |
| Goal                | Enjoying retirement as long as possible  | Having money left at the end of the month to save for large expenses      | Wanting to do good for environment with low effort                        | Taking personal responsibility for the environment                          | Making the right decisions and inspire others                                |
| Needs               | Everything in direct environment is alright  | Effortless sustainable actions with personal relevance                    | Low-key and efficient sustainable alternatives                            | Practical examples and act sustainable within personal context              | Personal gain and realize ideas for modern sustainable initiatives           |
| Prominent values    | Altruistic   | Status and money  | Fun and comfort   | Altruistic and biospheric   | Money and status   |
| Conflicts           | The complexity of the changing world and age make it hard to change habits           | If others not act sustainable why should I adjust my lifestyle?           | The amount of conflicting information about what is good to do.           | When people only talk about how to solve problems instead of acting upon it | When people see them as a preacher for sustainability.                       |

Figure 21 - The different sustainability types that define the target groups for this project

## Process - Our sustainable behaviour is depending on the position in the process of change

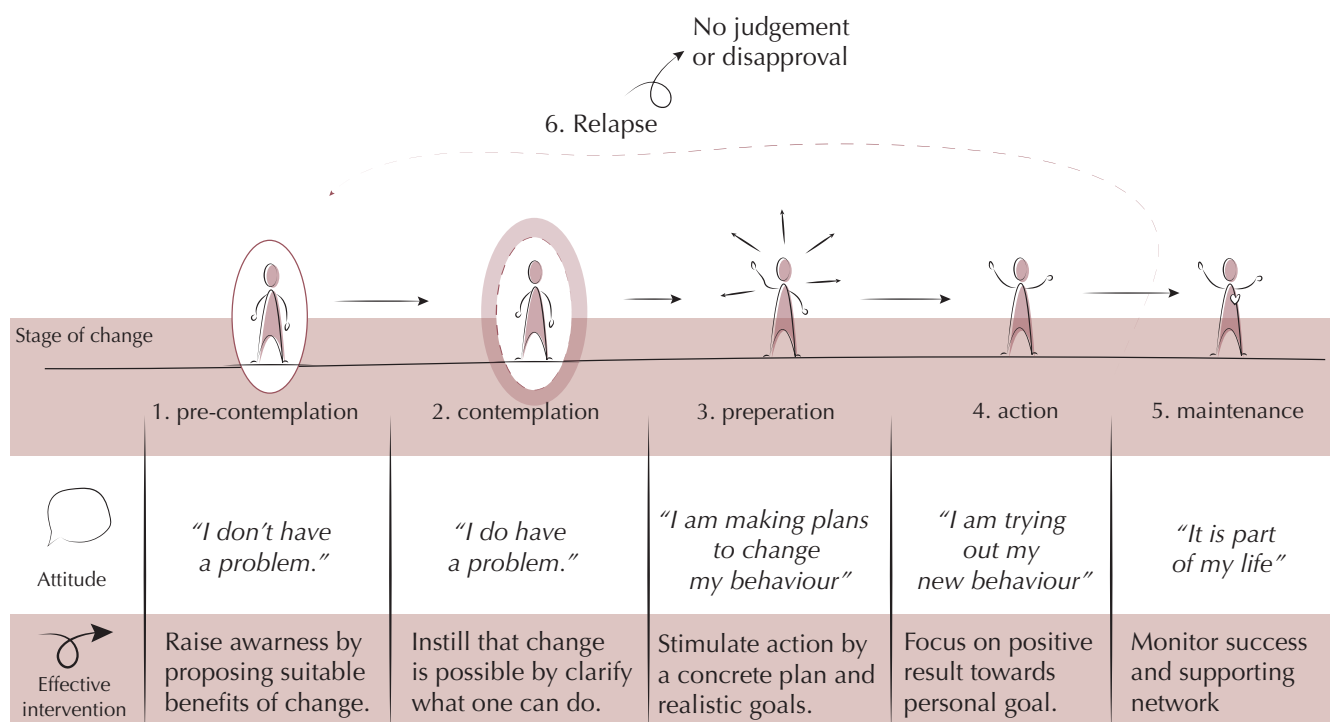
Behaviour is defined as a person's external reactions to its environment. It can be innate or learned from outside sources. When repeated often enough it can become a habit, which Prochaska and Di Clemente (1992) describe as: "a gradual progression of small steps towards a larger goal."

So adopting a new behaviour is a process that unfolds over time which can take approximately 18 till 254 days before this new behavior is automatized (Lally, 2009).

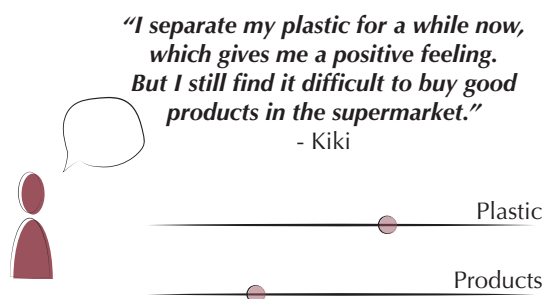
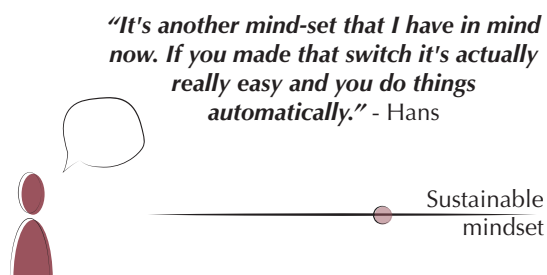
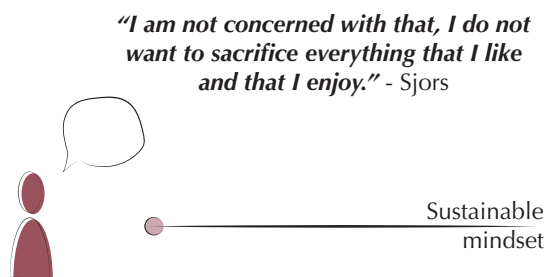
The Transtheoretical model, developed by Prochaska and Di Clemente, describes that although the duration varies per individual, to move through the process of change, everyone has to pass all stages (see figure 22). And has to accomplish stage-specific tasks to move through these stages and reduce resistance (Prochaska et al., 1992).

I could indicate these stages during my interviews as well. Not surprisingly, different persons find themselves in different stages. Also interesting was that the stage of consciousness can differ depending the topic. See figure 23 how different quotes illustrate the complexity of this matter.

For the development of the concept this phenomena has important consequences. For instance this requires an approach that offers different tools that can be used for the variety of stages. But also it is important to recognize that you can not look at the residents of Wooninc. in a one dimensional way. This needs a good assessment and diverse approach in order to support a resident to move forward in the changing process.



**Figure 22** -The Transtheoretical Model integrates the key constructs of different theories and can be applied to a variety of behaviours (simple and complex), populations, and settings (Prochaska, DiClemente, & Norcross, 1992).



— Process of change

● Position in process

## To summarize

When talking about the experience of sustainability the next topics should be taken into account:

- Although the common impression is that the individual impact is small, research has shown that one person can make a difference in reducing the total global impact. Therefore I consider, focussing on individual behaviour change is useful if we want to achieve a sustainable society. It helps giving people insight and perspective for action if you want to motivate them.

- For a sustainable lifestyle one should reduce the his or her biggest individual impacts within the planetary boundaries of the earth. This means that individuals must be motivated to change unsustainable behaviours into sustainable ones.

- The concept should support all the dimensions of a personal transition. This determines whether a resident is sensitive for the support to move forward in the changing process. The following dimensions are considered as important:

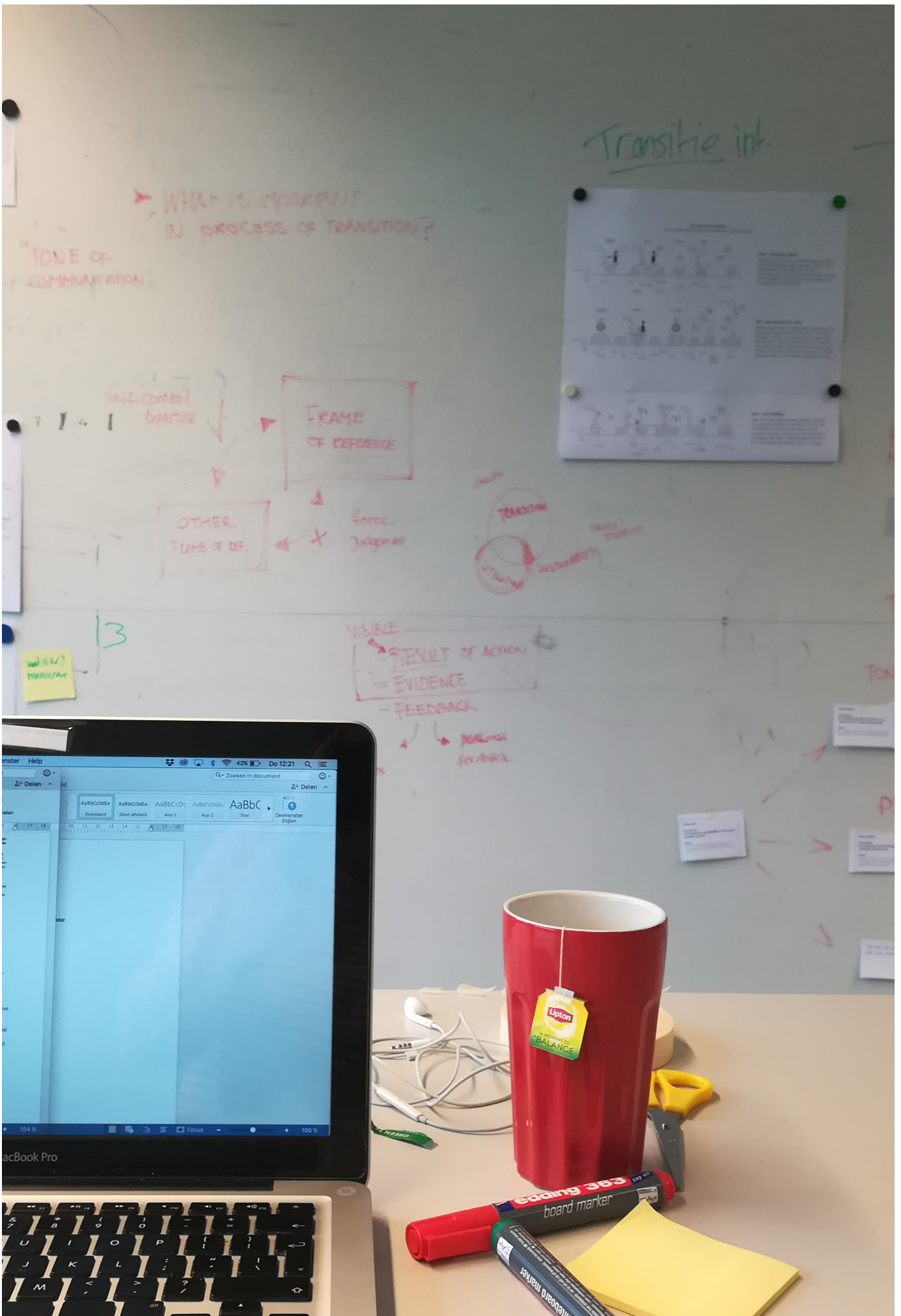
When motivating people to change behaviour, people can encounter barriers (internal and external). In order to support residents successfully in adopting sustainable behaviour, these barriers must be reversed into drivers. The way this should be done asks further exploration and will be presented in the next chapter.

When reversing barriers into drivers one very important consideration is aligning to the values of people. Therefore the continuation of this project makes use of the five persona's as shown in figure xx as representatives of the different segment groups living in the houses of Wooninc.

A last important consideration when designing an intervention for behavioural change is the stage of one person within the process of change. This requires a good assessment and diverse approach.

**Figure 23** – Stages of change can vary per person but also within subjects





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# Key take-aways of research

1.

Although the story of 'De Verborgen Impact' has proven to have several success factors for changing to a more sustainable lifestyle, the existing tools that are based on the method can be improved to gain in effectiveness.

2.

As the brief competitor analysis showed, there lies an opportunity in incorporating 'De Verborgen Impact' in a neighbourhood level approach.

3.

A flexible approach is required: as the area of Wooninc. is spread out over different cities, neighborhoods and building.

4.

For peers applies: pick the right people to motivate people.

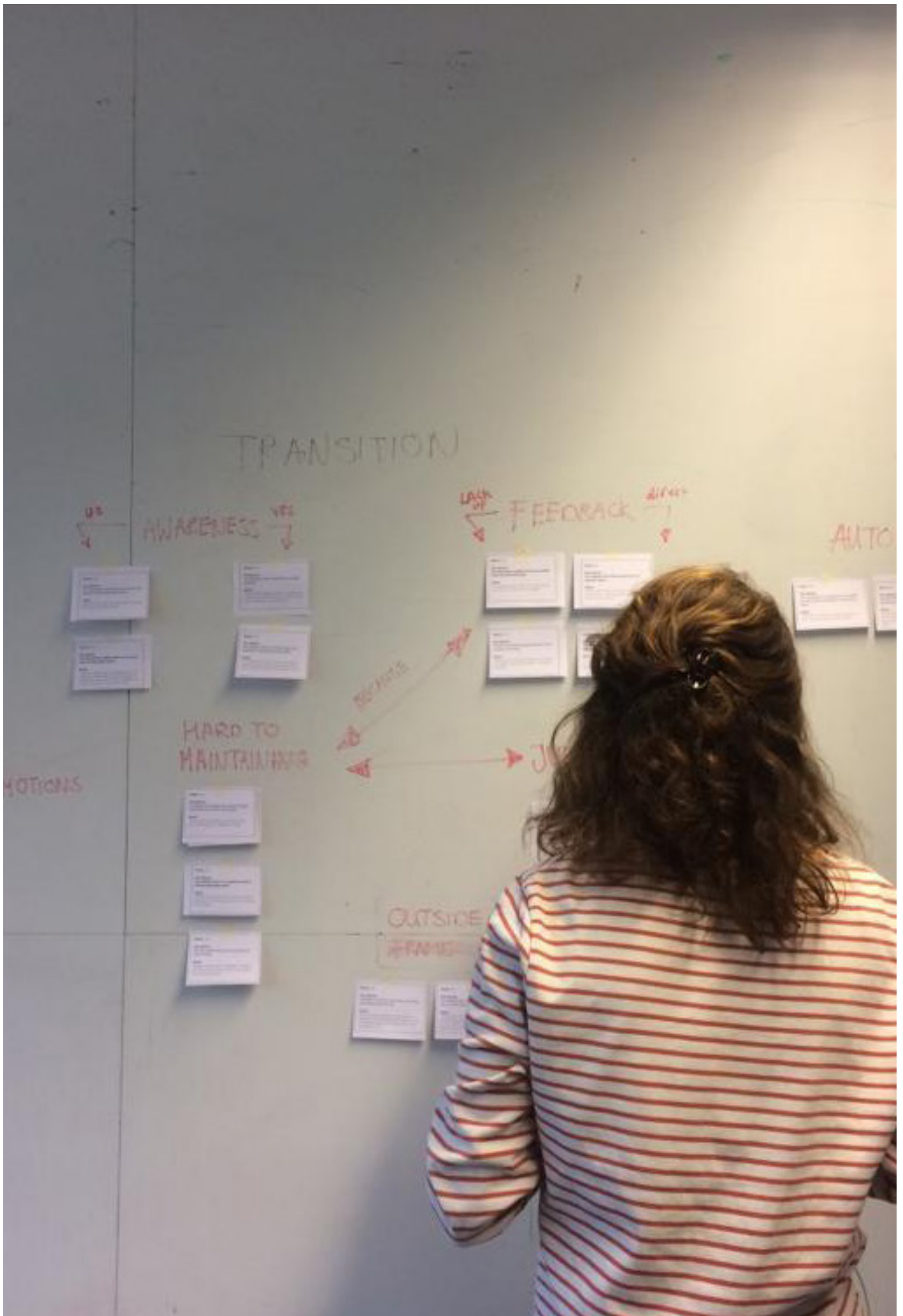
5.

In order to support a resident to move forward in the changing process the concept should support all the dimensions of a personal transition. These include: motivation and ability, personal values and their position in the process of change.

6.

When motivating people to change behaviour, people can encounter barriers (internal and external). In order to support residents successfully in adopting sustainable behaviour, these barriers must be reversed into drivers.

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## 3. Goal setting

### Desired situation

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***“You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete.”***

—Buckminster Fuller

*Predominant design methods are based on a problem-solving approach. They define a problem, improve those areas that may present negative impacts and optimize the areas that present positive effects. However, this project will first define the desired conditions for the system as a starting point for the conceptualisation-phase of this project.*

*An emerging voice in the field of Design for Sustainability argues that, a sustainable future requires a broader perspective of evaluation and innovation. As the field expands from a technical and product-centric focus towards large scale system level change. In this view sustainability is understood as a socio-technical challenge (Ceschin & Gaziulusoy, 2016)*

*Findeli (2001) proposes that, to design for sustainable transitions, designers should define its object of design as ‘conditions of existing system – desired conditions of the system’ and look to leverage existing capabilities within that system to keep the change going (Irwin, 2015, Findeli, 2001).*

*In theory, those leverage points (based on desired conditions for the system) will be the reason for shifting paradigms of residents, leading to a more sustainable lifestyle. Those leverage points will indicate places to intervene and therefore form the starting points for the conceptualisation phase of this project.*

*In this chapter I will:*

- First create a preliminary vision and propose a design direction based on the previous research.*
- This preliminary vision and design direction were used as input for a co-reflection session to define the final vision and retrieve requirements for the desired system.*
- This led to a final vision and a ‘Sustainable Transition’ - framework that maps effective leverage points. Together this will drive the conceptualisation and detailing phase of this project.*

## 3.1 Vision on intrinsic sustainable transitions

*To decide on the direction as a starting point for the conceptualization and detailing phase of this project, a vision is created based on the previous research chapter. To incorporate the vision of different stakeholders, co-reflection was used to sharpen the preliminary vision and decide upon a design direction for the continuation of this project. This section elaborates on the preliminary designers' vision and the outcomes of the co-reflection sessions.*

### 3.1.1 Preliminary vision

As the previous research showed it is important to align with all the dimensions of a personal transition in order to support an intrinsic motivation to change behaviour. In this I recognize most of my Personal Principles for Good Design, which I defined as: substantial, honest, consistent and understandable. This formed the base for my preliminary vision.

Currently sustainability is experienced as something intangible, complex and confusing. Residents experience becoming more sustainable as "becoming a green-activist." or "giving up my privileges." This can be caused by previous negative experiences or failed attempts with sustainable behaviour, or because people are just under-informed about sustainability (Prochaska, 2009).

To avoid this kind of feelings the aim of this vision would be to create another experience with sustainability. To create a situation in which people do not feel forced to give up on things, or feel judged by others, but using enthusiasm to motivate people. One interviewee described it as follows:

***"If you have to do something because your father or mother did, you will be pushed. But if you learn what is in your nature, and you learn how to use that, you will score best!" - Sjors***

Applying this quote to the context of a sustainable lifestyle: this could mean that when people tell you how to act sustainably, you will feel forced or persuaded. But if you can align sustainable actions with personal values and things you are good at, for example cooking or repairing stuff, people can have a whole different experience with sustainable actions. I formulated my preliminary vision for this concept as follows:

***"People should be supported to use the things they are already good at, to create intrinsic motivation."***

***"Therefore, the concept should enable peers to use the things they are already good at to inspire their fellow residents by sharing their own stories and experiences."***

### 3.1.2 Direction and co-reflection

To design interventions that transform unsustainable modes of living towards sustainable modes, Cucuzzella (2009) points out that cooperative design methods should be used. In order to incorporate the vision of different stakeholders into my design process, I decided to conduct co-reflection sessions (Tomico et al., 2011). This method enables the designer to facilitate a group of stakeholders in creating their vision but also allows designers to express their professional vision (for more detailed information see approach paragraph 1.4). As input for these two sessions I translated my preliminary vision into the direction: "pop-up workshops" (see figure 24).

This concept was used as input for the co-reflection sessions. To get the perspective of different stakeholders on this concept, I decided to conduct two separate co-reflection sessions. One with a group of 20 TU Delft students, pretending as residents. This session was used to get the resident perspective, and as a pilot session for the second co-reflection. The second session was conducted with the two managers of Wooninc. and two members of the resident organisation SHW. Figure 25 shows the set-up of the co-reflection session and how it resulted into relevant outcomes. The further execution of the sessions and the outcomes will be discussed on the next page.

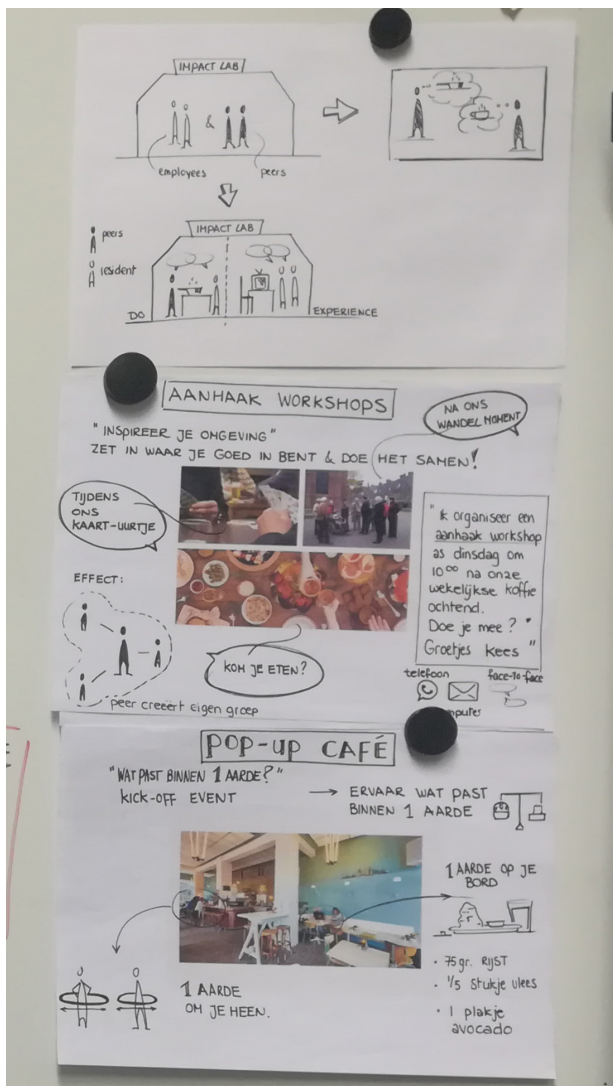
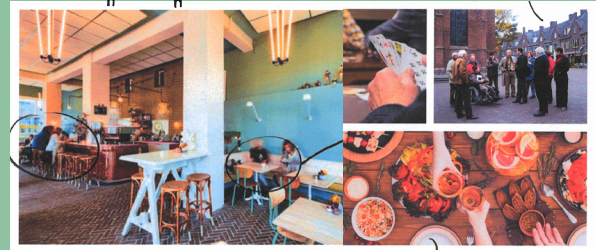
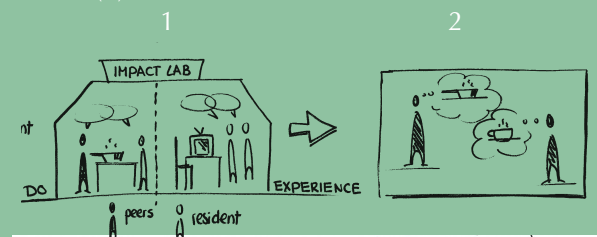


Figure 24 -Quick scenario and collages for impression of direction

## Explanation of 'op-up workshop'

This direction is based on the idea that the concept should make use of the existing energy within the neighborhood. In this concept Wooninc. will make spaces available within their buildings that can function as a pop-up 'Impact-Lab' (1). For instance, houses that are currently not rented out, a kitchen from one of their service flats or spaces within their own office. In these spaces, peers are able to organize their own 'Verborgen Impact' workshops that are related to their personal interests and talents (2).



Peers will develop these pop-up workshops during the two-days training, together with the WoonInc. experts. Here peers get the chance to map their strengths and social groups in which they operate and use those elements to organize practical workshops. Fellow residents can join these workshops or can be organized within existing groups of the peers (for example, a weekly coffee or card club).

Instead of communicating vague knowledge or complex matters, this approach makes sustainability more tangible and concrete by translating the story of 'De Verborgen Impact' into practical workshops. These workshops make it possible for residents to actually experience what sustainability means and lowers the threshold to get in touch with what a sustainable lifestyle means.

# Co-reflection outcomes

## Why

Get multiple perspectives on the preliminary vision and concept

## Who

Session 1 - The resident group: A group of 20 master students of the TU Delft. Divided into five groups of each 4 students, imagining they are residents on the base of the persona's as presented in paragraph 1.4.4)

Session 2 - The Wooninc. group: Two managers of Wooninc and two members of the resident organisation SHW

## How

A co-reflection session in which a vision and a concept of stakeholders is confronted with the vision and concept of the designer. The session consisted out of three rounds, exploration, ideation and confrontation. Every round was preceded by a brief introduction of the designer to explain the goal and set-up of each round (see figure 27).

Round 1 - Exploration: in which the participants form a vision on the topic.

Round 2 - Ideation: in which the participants translate the created vision into a concept (see figure 28)

Round 3 - Confrontation: where the vision and concept of the designer is presented. Which is followed by an interactive discussion between the designer and the participants to reflect upon the designers input (see figure 26).

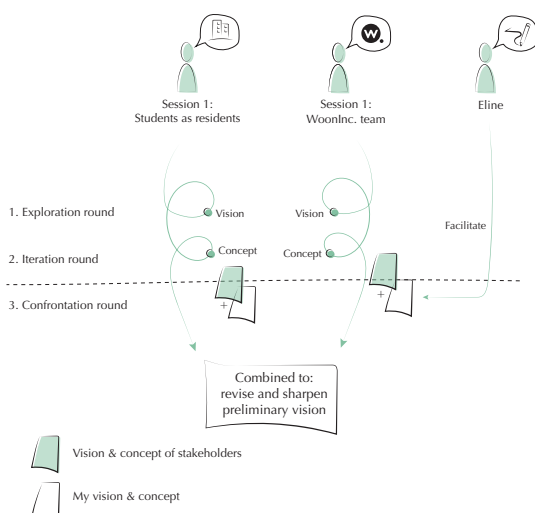


Figure 25 - Overview of setup co-reflection

## Outcomes

In each session the groups developed a vision and a concept, which are described in detail in appendix C. Analysing the visions, concepts and critical reflections of the two groups led to the following conclusions:

**Reflections highlight the importance of a clear why.** The members of the resident organisation SHW mostly liked the *for residents, by residents* principle of this approach. This is something that needs to be emphasized more, as one person in the resident group wanted to know: *"Why is Wooninc. making me do this?"*. They indicated that suspiciousness towards the projects would keep them from getting involved with the project.

**A foreseen benefit is needed to attract people.** What goes along with a clear why, is a clear benefit. Those two aspects create a certain urgency that is important to attract people. All the persona groups wanted to know *"What is in it for me?"*. The Wooninc. group also mentioned something about this. They said: *"From our experience, in order to attract the resident, please them with something. Even if it is just coffee or a pen."*. On the other hand the resident group mentioned that they were surprised by the information. This was seen as a benefit as well and would create engagement and curiosity towards more information.

**Both groups value the way workshops make sustainability practical and social.** As one person said: *"These peer-to-resident workshops would make the idea behind 'De Verborgene Impact' tangible."*. Others mentioned that sharing experiences and seeing your neighbors being involved with the project as well, would stimulate them to participate. This indicates that *doing* creates *engagement* into the topic of sustainability. A remark was made about the workshops, that peers would feel uncertain about conveying the message of 'De Verborgene Impact' in the right way. So training peers is about soft- and hard skills but also personal effectiveness.

**Visibility and flexibility of a pop-up location is appreciated:** The fact that the Impact-Lab is open for everyone creates an inviting feeling that makes it easy approachable and visible for the visitors. Openness makes that one can observe without immediate participation and avoids direct commitment, which was indicated as pleasant. Having a place to spread the word was also seen as very motivating. The Wooninc. group preferred a pop-up location above a fixed location because this means different neighborhoods can be reached as well.





Figure 26 – Co-reflection session Wooninc, confrontation round



Figure 27 – Co-reflection students introduction round



Figure 28 – Co-reflection students ideation round

### 3.1.3 Conclusion: final vision

Based on the outcomes of the co-reflection session, the preliminary vision was refined into a final vision. As the co-reflection showed, it is important that peers convey and support the message of 'De Verborgen Impact' in a way that not only contains their personal interests but also **reconnects the story with what the residents wants to work with**. Therefore the final vision for this project is:

***"I want to make sustainability transparent and accessible (lower the external barriers) by emphasizing the positive side and the advantages of sustainable behaviour (reversing internal barriers). To show that sustainability, in different ways, is accessible for everyone."***

This vision requires a certain interaction between peers and the residents. Which is described in two statements:

- 1) By enabling peers to use their personal sustainability interest and talents to inspire other residents. Doing this, peers should feel confident and relaxed.
- 2) By supporting residents to explore what sustainability means to them. And make them feel empowered to continue with sustainable behaviour. During this exploration, they should feel free to make their own plan.

#### To summarize

This final vision is relevant in different ways:

- Enabling peers to pick out the elements from the story that suit their interests will allow them to enrich 'De Verborgen Impact' story with their own personal experiences to inspire fellow residents.
- By using the personal experiences of peers, they embody practical examples of the four sectors of 'De Verborgen Impact': food, stuff, transport and housing.
- The fact that peers introduce different practical examples makes that residents can connect to the sector or peer that appeals most to them. The different practical examples can increase the understandability of what a sustainable lifestyle means.

## 3.2 ‘Sustainable Transition’ - Framework

*With the final vision in mind, the leverage points for how to get there should be outlined in order to create a starting point for the conceptualization phase. Throughout my entire project, as outlined in figure 9 in paragraph 1.4, I gathered all the information I needed to define these leverage points to inspire for a sustainable lifestyle (see appendix A). The main activities contained: literature studies, twenty semi-structured interviews with users and domain experts (see appendix B for a selection and chapter 7 for the interview references), two co-reflection sessions, several workshops and different prototype tests. This section summarizes the outcomes.*

### 3.2.1 Exploring levers for sustainable transitions

The research chapter showed that, in order to design for a sustainable lifestyle, both personal values and individual position in the behaviour change process should be considered. The base for these leverage points is formed by the, earlier presented, theory of Stoknes. He pointed out how five inner defences counterwork sustainable engagement and advocates that by reversing those inner defences, one can create enablers for transition towards sustainable behaviour (see figure 29).

As argued earlier it is important that those defences are turned into drivers. Based on my interviews, literature and co-reflection sessions I identified seven levers to inspire and enable a transition towards a sustainable lifestyle:

1. Collective
2. Benefits
3. Simple actions
4. Visibility
5. Movement
6. Autonomy
7. Clear communication

The next part discusses each element using relevant insights from interviews and literature references.



#### Lever 1: Make it collective

The feeling of social connections makes the ability to act more closely, personal and urgent. According to Gardner and Stern 2002, what happens in such situations, is that people perceive themselves as interdependent with other members from small social networks and are therefore more willing to self-sacrifice. It is interesting that, although all the interviewees went through a personal transition, they pointed out the importance of social aspects. Three in particular: support, inspiration and shifting paradigms.

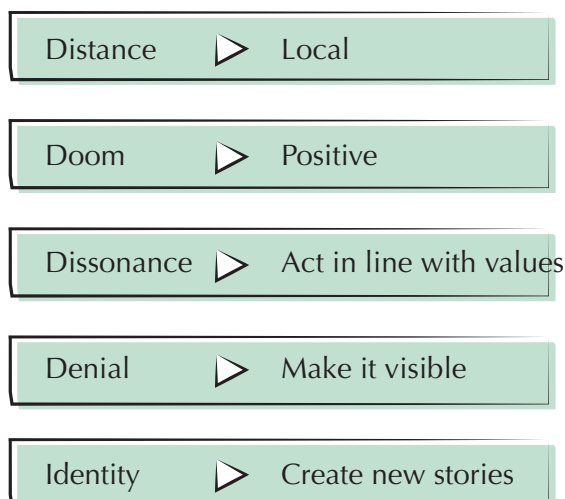
#### Support

Feeling part of a group makes people more likely to act sustainably (Griskevicius et al., 2012). One interviewee said: “The fact that I am doing it together with my girlfriend makes it easier to maintain my new behaviour because I give in to temptations less quickly.” - Twan

As domain expert Jeanine Pothuizen pointed out during the interview: “For people who are enthusiastic, it is demotivating when you are in a group with deniers.” Being in a group with like-minded people creates a safe environment in which there is room for understanding, tolerance and sense of belonging. One of the interviewees highlighted the importance of tolerance in a process of behaviour change:

**“It feels uncomfortable if you have the idea that people have a judgment about what you are doing. Because you don’t want that people think you are a green-activist.”**

- Saskia



**Figure 29** – Reverse inner defences into enablers for transition towards sustainable behaviour



**Figure 30** – Klimaatgesprekken makes use of this concept as well

### Use stories of people to inspire other people

Finding common ground with like-minded people is very important in maintaining a new behaviour, but not only that. It also plays a major role to get into contact with a new behaviour. We tend to imitate others and follow the majority caused by an automatic process in our brains (Schultz et al. 2007). As Gardner and Stern (2002) showed in their research, the adoption of green technologies speeds up in dense community networks through word of mouth. Almost every interviewee indicated that their change in behaviour was triggered by someone in their social environment. As an interviewee mentioned:

***“My roommate was separating plastic from her own intrinsic motivation. Suddenly I noticed more and more articles about this topic and I realized “hey! This also applies to me!” This created the foundation for me to start separating waste too.”*** - Kiki

### Shifting paradigms

The fact that people are driven by different values and are in different stages, makes them more or less sensitive to certain information. Therefore, the extent to which information is effective strongly depends on their own ‘bubble’ and it is therefore important that **the intervention provides for the piercing of that ‘bubble’** (figure 31). Inspiration from the social environment creates a low threshold to get in contact with new behaviour. If someone in our social environment is acting sustainability, this enthusiasm can be contagious and can trigger people to do the same. As a result, an expanding of paradigm is triggered.

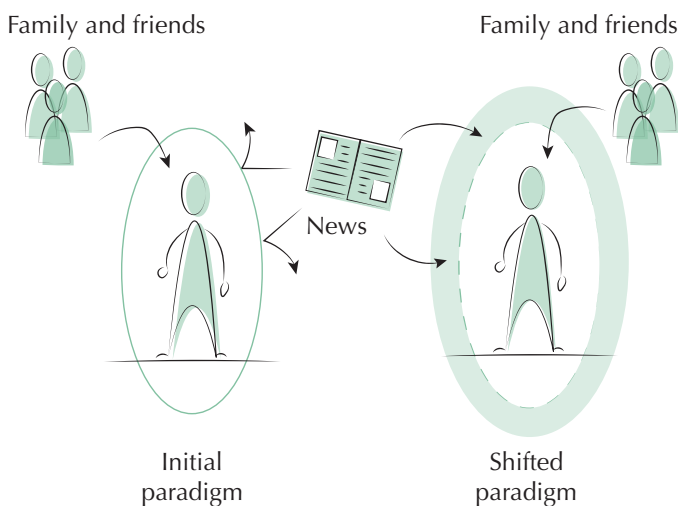


Figure 31 - Shifting paradigm

Also literature showed that shifting paradigms is considered to be the most powerful effect to drive change towards transitioned lifestyles (Meadows, 1999). A similar thing was mentioned by one of the interviewees. She said:

***“I tell my personal story on social media. And I notice that people come back to me, to tell me that I inspired them to change their lifestyle.”*** - Janneke



### Lever 2: Focus on the benefits of change

Unlike doom messages, positive framing activates the problem-solving capacity of our brain. Which stimulates our foresight, creativity and imagination (Lertzman, 2017). And adopting new behaviour requires exactly those parts of our brain. By avoiding negative and loaded messages and emphasizing the benefits of change, our brain is able to create a goal to work towards.

On the question what do you need to maintain your sustainable behaviour, one interviewee answered: “What I need to maintain my behaviour, is that it stays fun.” One of the ways to keep it fun was, according to this interviewee, “that at a given moment you gain benefit from it. Not only in the idealistic atmosphere, but also simply in the practical sphere.”

Also, people will be more willing to behave pro-environmentally if they foresee a (material) gain for themselves or their social community (Griskevicius et al., 2012). As the chairman of the SHW remarked:

***“We work with people, and the first question that is asked: what’s in it for me?”*** - Hans

It is important to notice that the type of benefit can differ. Depending on your priority in values, the type of benefit will differ too. Along the process I distinguished the following types of benefits:

- Increase of convenience
- Save money or gain status
- Gain health
- Increase happiness



### Lever 3: Simple actions

□□△ As the previous chapter already explained, ability to act is one of the main drivers for behaviour to occur. One way of encouraging exploring new behaviour is dividing the target behaviour into concrete and simple actions. Many interviewees indicated that using the online Impact Calculator gave insight into their current behaviour. This simplified overview of a complex situation gave them a guideline to start with targeted and effective actions. As one of the interviewees said: "Knowing what I can do makes it manageable because it gives you focus."

During the co-reflection session, one of the participants noticed the following: "The pop-up workshop would increase my awareness, but would not lead me towards action. Because it doesn't connect with my activities in daily life."

Another way to increase this ability to act is to **make the action fitting in people's daily life**. One interviewee showed how the integration with daily routine activated her roommate to separate plastic waste: "I placed a bin that was fitting in our kitchen, now it is not disturbing them but gives them time to explore themselves with separating waste. Now two other roommates are separating their waste as well."

### Lever 4: Visibility



"First seeing, then believing." is an expression that seems to apply to behaviour change too. Our minds are not designed to respond to environmental problems when such problems are presented in cognitive terms (Griskevicius et al., 2012). Today people rarely see, feel, touch, hear, or smell how their behaviours affect the environment. By making the outcome tangible, people directly experience the effect of their actions: "The tangible examples increase my understanding of the idea behind 'De Verborgen Impact'".

Doing makes people experience that their action pays off. Prochaska (2009) mentioned the effectiveness of monitoring successes for effective behaviour change. This motivating effect was pointed out by one interviewee with the following example:

**"A neighbour of mine has, after careful consideration, got solar panels on her roof. And now she tells everyone in the neighborhood how much money she saved."** - Jack

### Lever 5: Movement



As the first lever already showed, when talking about individual change taking collectivity into account is important. Because when people perceive that many others are doing likewise they are more open to engage in behaviour in favour of the environment (Cialdini, 2003). Personal choices are highly dependent on the existing community norms and social- and environmental moderators in their living context (Kenneth et al., 2012). That an individual approach can be accelerated when it is part of a larger movement is something that was pointed out many times. An interviewee said:

**"My opinion? You have to do it massively if you want to have result. My individual actions do not bring any results."** - Sjors

When social approval is indicated to sustainable actions, people that are environmentally aware are more motivated to sustain their pro-environmental behaviour. This is even more effective compared to the use of financial incentives (van der Werff, 2018; Griskevicius et al., 2012).



### Lever 6: Autonomy

Sustainable behaviour is less likely to show up when people feel deprived of their 'rights'. According to one of the interviewees:

**"For those few years that I still have left, I want to do everything I like and enjoy. I don't want to give things up."** - Sjors

Experiencing the right of self-government, is one of the three elements necessary to support motivation (as discussed in paragraph 2.4.4). Having a choice to do what you are capable of at that moment, increases this experience of autonomy, and therefore the chance of sustainable behaviour. As one interviewee described:

**"Why I felt encouraged after reading the book of 'De Verborgen Impact'? I could pick out the parts that I was capable of doing at that moment."** - Janneke

**"He told me about his experience with eating less gluten, but emphasized that 'everyone should find out, and do what feels right for themselves'."** - Twan



A second important factor in the experience of autonomy is tone-of-voice. Many interviewees highlighted the importance of no pointing fingers, as one interviewee said:

*“She told me like it was a joke. This made me feel free to explore myself what it meant to me.” - Kiki*

Having autonomy increases the chance of acting in line with your values. This prevents the emergence of internal discomfort, and therefore the chance of excuses lowers as well.

***“I would like to do everything by bike, but if you have two kids who need to go to school and it is raining outside. I still prefer to go by car, because bringing my kids to school has my priority!” - Luc***

#### **Lever 7: Honest and clear communication**

The last lever, interestingly, aligns very well with my second Personal Principle for Good Design. During the co-reflection session many participants were questioning the hidden agenda of Wooninc.. They indicated that this suspiciousness would keep them from participating in a project like this.

***“Why is Wooninc. making me do this?”***

- participant in co-reflection

The way of communicating information appeared to be an important element as the readers of the book indicated that one of the things they liked about the book was her honesty.

***“At some point she dares to say: “I do not know.”” - Hans***

This honest and clear communication gives the idea that what is being told is true to and reduces the feeling of ‘being used’ or to be misled.

### 3.2.2 'Sustainable Transition' - framework

The exploration of the leverage points showed how existing barriers can be reversed into enablers for sustainable behaviour. Adding these levers to the outcomes of the research chapter, led to the 'Sustainable Transition' - Framework (see figure 32).

- The red area shows how external and internal barriers (confusion, doom, distance, dissonance and denial) avoid people from getting engaged with sustainable behaviour (discussed in paragraph 2.3.2). As they do not correspond with one's identity.

- The blue lined areas illustrate the three dimensions of a personal transition, that determines whether or not a concept will support a resident to move forward in the changing process (as discussed in paragraph 2.3.3).

- The green area indicates that the barriers can be reversed into levers to inspire for sustainable behaviour.

This framework identifies opportunities for effective interventions:

Using inspiration and positive interactions between peers and residents will stimulate the residents' intrinsic motivation to engage more in sustainable actions. As the framework shows, to inspire for sustainable behaviour, social, beneficial, simple and tangible are elements that have to be emphasized.

To connect the story of 'De Verborgten Impact' to people with the same values, existing networks within the neighborhood can be of use. This can increase the chance of opening the personal bubble of residents and can be a start to become more aware of sustainable actions.

For the further development of the concept it is important to realize that the leverage points, as mentioned in the framework, can not only be used in training or workshops, but also in very accessible initiatives that can be set up by individuals themselves.

This creates a network of activities in the neighbourhood that can strengthen each other which ultimately results in creating a movement.

## 'Sustainable Transition' framework

Using the interview and literature research

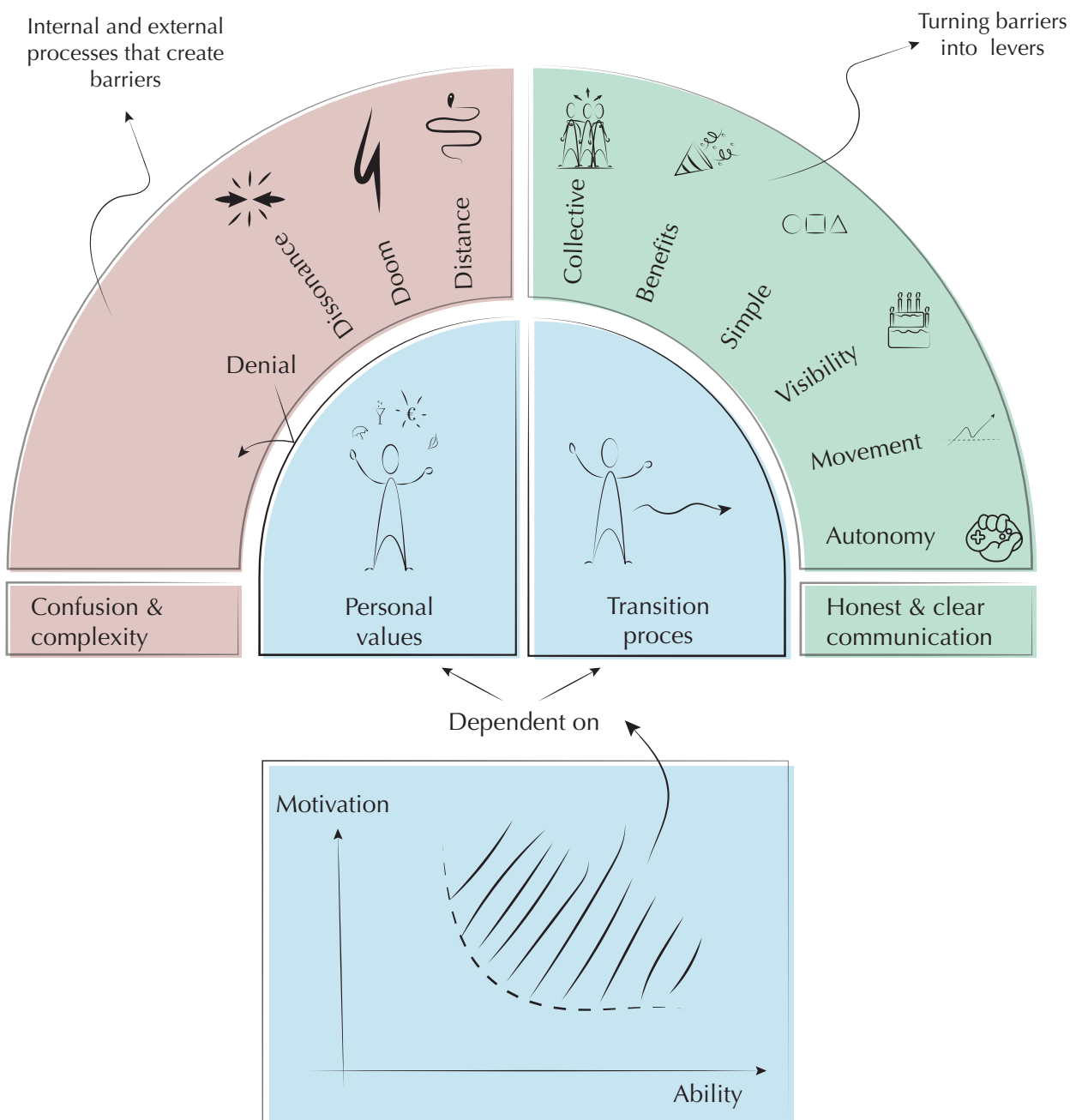


Figure 32 -The 'Sustainable Transition' framework







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# Key take-aways goal setting

1.

For effective motivation, peers as well as residents must be engaged on personal motivation. This insights has led to refining the preliminary vision into a final vision which is:

*“I want to make sustainability transparent and accessible (lower the external barriers) by emphasizing the positive side and the advantages of sustainable behaviour (reversing internal barriers). To show that sustainability, in different ways, is accessible for everyone.”*

2.

To reverse barriers into enablers there are seven leverages identified. Together these are forming the ‘Sustainable Transition’ - framework:

1. Make it social
2. Emphasize the benefit
3. Simple actions
4. Experience results
5. Make it part of a bigger movement
6. Give people autonomy
7. Honest and clear communication

3.

To drive the conceptualization and detailing phase of this project the levers were plotted on the different aspects of my final vision. This results in the following overview:

- 1) **Peers** have to be enabled to use their personal sustainability interests and talents confidently to inspire other residents. So that he can convincingly tell the story from his own experience (levers: honest and benefit).
- 2) **Peer to residents:** resident can be inspired by the personal stories of the peers, when it aligns with their own values. This will make them feel empowered to explore what sustainability means to them and act upon it (levers: simple, visible and autonomy).
- 3) **Resident - resident:** By making it social and collective residents can inspire each other which creates a bigger movement (levers: collective and movement).







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## 4. Final concept

### ‘Onze Verborgen Impact’

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**“Evolution of design for sustainability:  
from product design to design for  
system innovations and transitions.”**

- Ceschin & Gaziulusoy

According to the Future of Sustainability report (2019), facing and embracing challenges like climate breakdown will be impossible without inclusive and resilient local communities (...) and to accelerate these systematic changes, concerted interventions are needed.

For Wooninc. such a concept for local interventions was developed, as this concept should enable peers to support fellow residents in the process towards sustainable behaviour\*.

In the previous chapter was defined that, based on the ‘Sustainable Transition’ - framework, peers should use their personal talents and interests in order to inspire other residents. Now it is important to investigate how to translate this into a concept that supports peers in telling their personal story, in order for this intervention to be effective. Therefore different activities were conducted to investigate the possible elements that should embody

the final concept. By testing early prototypes, different combinations of program elements and tools were explored leading to a final outline and content for the concept.

In this process different insights came up and were used to improve the concept step by step. This chapter will first elaborate on the activities and insights that were conducted to derive the final concept. After which the overview of the final concept ‘Onze Verborgen Impact’-Transition Program will be presented in combination with the Transition Toolkit. Lastly this issue of implementation is addressed.

**\* A quick recall of the initial question:**

as partner of the Duurzaamheidspact Eindhoven Wooninc. formulated the ambition to be more sustainable. In order to do so, they not only want to improve their core business but also want to engage their residents into a more sustainable lifestyle. They adopted the method of ‘De Verborgen Impact’ which includes a train-the-trainer process that trains leading residents. This led to the key objective: design a fitting intervention that peers can use to motivate residents of Wooninc., so that they feel activated to make their lifestyles (more) sustainable.”

# 4.1 Conceptualization process

To understand the steps that were taken in the conceptualization process, it is important to describe briefly the final concept and its elements. The final concept is a transition program that exists out of different elements: (1) train: training of the experts and peers. (2) Create: peers create their personal approach with which they want to involve residents. (3) Join: residents can participate in the local initiatives set-up by the peers and explore sustainability in their own phase. (4) Impact: new ideas are generated for improving sustainability at neighborhood level. (5) Transition Toolkit: a toolkit with instruments to support the above mentioned elements.

## 4.1.1 Process of conceptualization

The above described concept is a results of different phases. A leading question within these phases was to find out what peers need to feel confident and relaxed, and how residents can explore in their own pace and feel empowered to change their behaviour.

Throughout the project different prototype tests and workshops with peers and residents, were conducted to evaluate different combinations of elements and content. Including prototypes for dilemma cards, an Impact passport tested pitches and workshops with peers.

This section will elaborate on the conducted activities that optimized:

- (1) the elements that outline the 'Onze Verborgen Impact Transition'-program and
- (2) the content of the Transition Toolkit

This optimization happened simultaneously and the outcomes and insights influenced each other. Figure 33 illustrates how the concept evolved along the four cycles of

this project. I will briefly discuss every step in this process:

- The initial concept was a training for peers with a digital environment after which they approached the residents directly.
- The second step in the conceptualization was adding the element join. That made it possible that peers were supported in organizing workshops to realize a collective experience for residents.
- The third step in the conceptualization was adding the element create. That made it possible for peers to develop their own story and they were
- The fourth step resulted in the insight that all the tools and materials should be presented in a toolkit including training templates and communication materials.

The next four pages will highlight the findings of the conducted prototype and usertests of the dilemma cards, pitches of peers, a booklet and workshop.

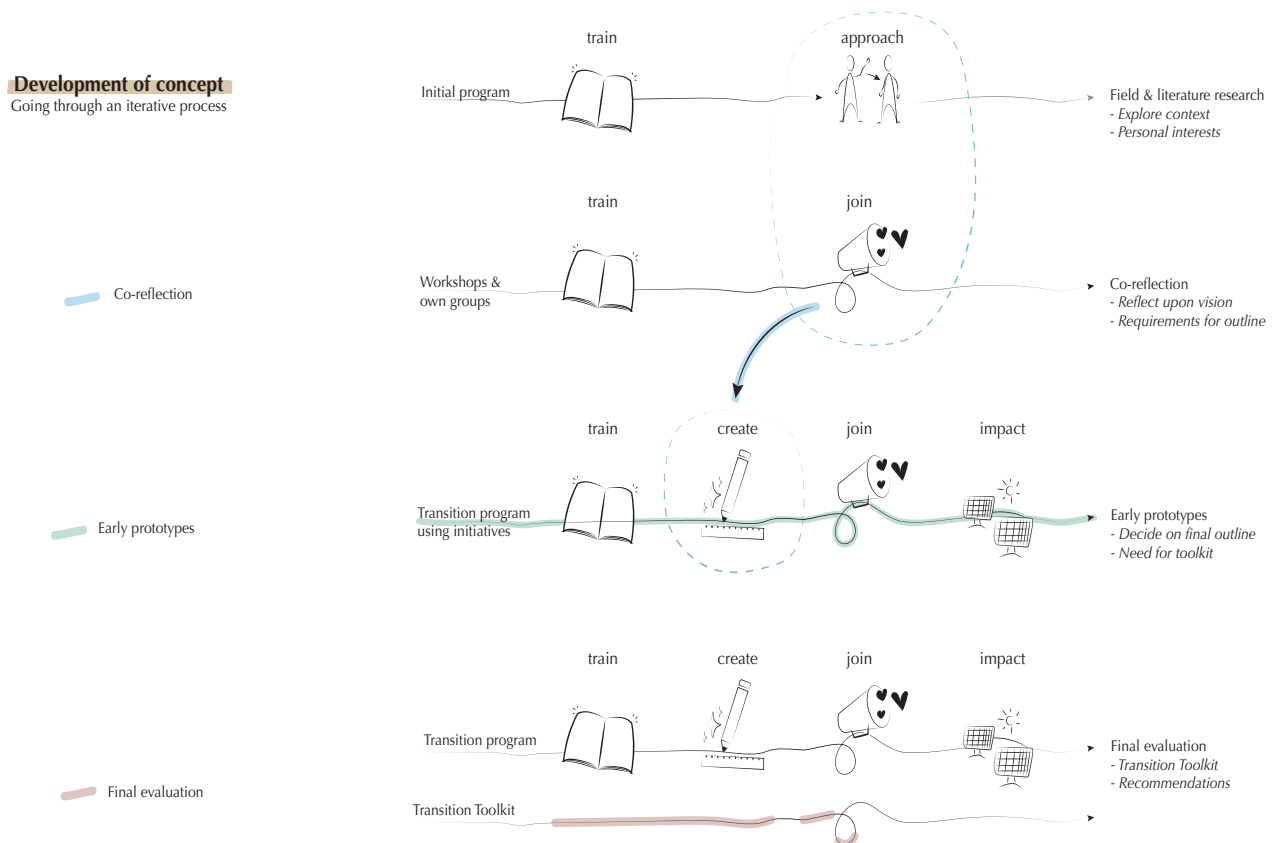


Figure 33 -The iterative development of the concept



# Test I

## Dilemma cards

levers: collective, simple, visibility  
position in process: stage 1

### Which element:

Explore supportive materials for peers to start a conversation with residents

### Why:

To test whether presenting a sustainable choice in the form of a dilemma creates a starting point for a conversation. And if being aware of the effect of certain choices, increases the likelihood of changing current behaviour.

### Who:

IDE Master students and 2 housing corporation employees

### How:

By testing dilemma cards using paper prototypes (see figure 34). Figure 35 shows the front of dilemma cards shows a dilemma: 'an awesome secondhand jeans or 2x a week no hamburger' and shows the amount of months you save with this choice. The back of dilemma cards shows the amount of water this saved with 40% of the people in the neighborhood, see figure 36. The dilemma cards combine several principles:

- See the effect of an individual choice
- Knowing that other people chose the same
- See the result of many individual choices together

### Outcomes:

**Using icebreakers evokes a conversation:** all participants asked the counter question: "What would you choose?" therefore it could support the start for a conversation.

**To incite action, need for options to continuation:** participants indicated that a dilemma proposes the feeling of having no other option, which can counterwork a positive experience towards sustainability.

**Immediate experience of benefit:** the participants were sceptic about the result of the collective. They reacted surprised by seeing the consequences of their individual choice but indicated that it would not be sufficient to act accordingly. So another benefit should be introduced.



Figure 34 – Participant using dilemmacards



Figure 35 – Front of dilemma cards

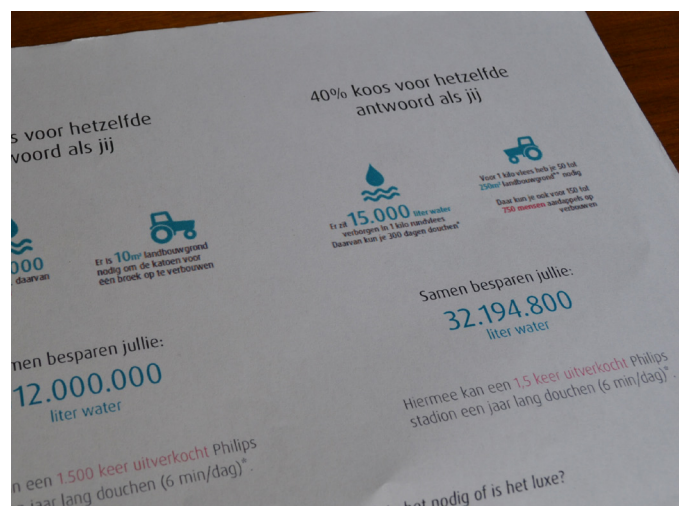


Figure 36 – Back of dilemma cards

## Test II

### 'De Verborgen Impact' - pitches

Lever: benefit, visibility, honest & clear, align values  
Position in process: all

#### Which element:

Connect personal values to 'De Verborgen Impact'

#### Why:

To validate if peers are able to connect their personal interests to the story of 'De Verborgen Impact' and how they experience presenting such a story in front of an audience

#### Who:

4 peers

#### How:

During a 'Verborgen Impact' training day, peers-to-be were asked to personalize the standard 'Verborgen Impact' presentation using their personal why. They presented their story during the last part of the training in front of an audience (see figure 37).

#### Outcomes:

**Peers combine their personal why with benefits and top-10 category:** as figure xx illustrate, the presentations showed a personal type of benefit (saving money, future perspective, increasing health) with a category of the Impact top-10. This shows that people with their stories embody the impact top-10 with practical examples of how to practice sustainability in daily life. This will increase the chance that a resident can identify itself with the story of a peer.

**Peers need support to give a to-the-point presentation:** to give a to-the-point presentation can be hard. The concept should give peers handles to briefly explain the content of the story of 'De Verborgen Impact'. This will increase their expertise and make them more confident about communication.

**Use peers' enthusiasm and ideas for initiatives:** the participants during the training days have a lot of ideas for potential initiatives other than workshops. Such as organising a vegetarian neighborhood picnic, writing a blog about sustainable travels and having a shop with sustainable products. These ideas can be used for new initiatives.



example of enthusiasm

*"I am involved in organizing a sustainable village picnic. And I can see a good combination between 'De Verborgen Impact' and these activities."*

*"When I filled in the Impact Calculator I was just looking for a new car. I asked myself, what if we sell our car? So we decided to not buy a new one. Saved money there!" - start from pitch peer*

example of benefit



Figure 37 - Two examples of pitches introducing a benefit and ideas for new initiatives.



## Test III

## 'Mijn Verborgen Impact' -passport

Levers: Benefit, Simple, Visibility, Autonomy, Values  
Position in proces: stage 2, 3 and 4

### Which Element:

## Materials to support residents in maintaining sustainable results

### Why:

To validate if a booklet is giving people concrete perspective to take action and whether it supports them in continuing making progress.

**Who:**

Two residents of the same household within my personal sphere of influence

## How:

The booklet (see figure 38) is inspired by context mapping booklets. These booklets are used to prepare participants before having a deep dive interview (Sanders and Stappers, 2008).

## Outcomes

**People use the same booklet differently:** as the first resident indicated “*I got insight into what I do or don’t do on certain parts.*”. As the second resident remarked: “*I would not have thought that I would like it so much, to get to work on it concretely. It was nice to be able to make an action plan.*”. They used it differently according to their position in the process of change.

**The recurrence stimulated:** the step-by-step plan supported them to set goals about what (and how) they want to change. About the small inspiration assignment they said that it helped them to think further about their internal why: *“A column in the newspaper made me realize that I could be part of the generation that ‘let it happen’. I put that in the booklet because that is my motivation to work on this. I don’t want to be that generation.”*

**Do not assume that people share things just like that:** the small assignment in the booklet asking to share the dilemma with a person you see that day, was experienced as uncomfortable, because of the unforeseen or possible reactions.

**The core of the booklet should be:** supporting the discipline of residents to execute their ambition.



**Figure 38 -Booklet prototype**



**Figure 39** – Participant used a newspaper article as inspiration



**Figure 40** - The dilemma cards were re-used in the booklet as small activity

## **'De Verborgen Impact' - workshop and 'Mijn Verborgen Impact' -passport**

Levers: collective, simple, honest & clear

Position in process: stage 3, 4 and 5

### **Which element:**

Peers giving workshops to their fellow residents

### **Why:**

Explore and evaluate how a workshop in the neighborhood should look like.

**Who:** 4 neighbors living in a social housing flat in Delft

**How:** a living room from one of the participants was used to set-up a workshop. During this workshop I presented myself as a peer and gave a short presentation about 'De Verborgen Impact'. After which participants received the same booklet as in the earlier test. Together we filled in the booklet and talked about the topics within the booklet (see figure 41 and 42). One week later I came back to evaluate how the residents experienced the booklet and the workshop.

### **Outcomes:**

**Clear goal for each individual:** in between meetings, none of the participants used the booklet. As the booklet was very much focussed on changing, the one participant that felt she was already doing enough didn't feel supported by the booklet. One participant said: *I feel that I am doing enough already, so why would I use your booklet.*" Therefore the concept should also make people feel proud of what they are already doing.

At some point, all four neighbors started to share their personal tips and tricks for saving money or food, and they felt proud about those tricks. One quote I find worth mentioning: *"I never put deep fried chicken in my airfryer, because it brings down the temperature of the fryer, therefore it takes way longer before its done. That's how I save energy and euro's!"*

**Workshop should be adaptable to circumstances:** A workshop must align with the target group. It doesn't trigger for action if participant that join are not in the right phase, or when there are not able to act because of age, money or other circumstances. As one participant said: *"I'm old, so I don't have a car and I never throw away my left-overs. So what should I do now?"*

**Possibilities for flat initiatives to support each other:** One of the residents said: *"When my kids come by, I always ask them for help with repairing stuff. If they are not able to fix it I will throw it away."* Several other remarks were made during the workshop that indicate opportunities to share experiences and support each other towards more sustainable lifestyles: *"I could introduce this to my coffee club on wednesday, it's sometimes nice to talk about something other than illness."*



Figure 41 -Participants working in their booklet



Figure 42 - Participant talking about sustainable tips and tricks



#### 4.2.2 Conclusion of conceptualization process

Evaluating the different combinations of program elements and tools, led to the following essential elements that the final concept should embody:

##### No restrictive approach

Comparing the reactions of the passport-users from both tests, I realized that this concept should not be restrictive in how peers should encounter their fellow residents in their neighborhoods. Successful interventions are not only workshops but can also be smaller initiatives on a personal level. By allowing peers to create their personal approach that emphasizes the positive and beneficial aspects of sustainability, the concept can recognize their personal ideas which will increase the intrinsic motivation of peers.

##### Space for personal process

It must be avoided that people who feel they make a sufficient effort, feel attacked by the program and the way peers communicate. To prevent this the project requires a transition program that offers space and opportunities for every resident independent of their position in the process and in line with their values.

##### Support peers to recruit residents

As the test with the dilemma cards showed, sharing things about such a 'sensitive' topic as sustainability, requires some support as well. Therefore peers should be supported in the process of recruiting people for their initiatives.

##### Creating impact on three levels

By attending and developing the workshops, I experienced three ways in which impact can be created.

1. Impact on a personal level leading to sustainable behaviour of individuals.

2. Impact on other initiatives: Organising small-scale events and activities that are in line with sustainable behaviour and offering a clear benefit to residents, such as cooking workshops, sustainable festivals or repair cafes. Which is increasing the visibility and creates a sustainable infrastructure on local scale.

3. Impact by new ideas and recommendations that are presented to the housing corporation of municipality. Which they can use to create targeted and neighborhood specific investments for a sustainable neighborhood.

##### Transition Toolkit

In order to create a self-sustaining program the transition program should be guided by a toolkit that provides the essential materials to:

Stimulate experts and peers to collaboratively create initiatives that are matching the interests of the peers and reconnects with the things residents want to work with.

Empower peers to communicate their personal sustainability story in such a way that it inspires their fellow residents to shift their current paradigms

The next section will elaborate on detailing the program elements and the supporting tools.

## 4.2 ‘Onze Verborgen Impact’- transition program

*This section first presents a holistic overview of ‘Onze Verborgen Impact’ - transition program followed by a more detailed explanation of the elements embodied in it. And the tools that are used. ‘Onze Verborgen Impact’ - transition program enables housing corporation Wooninc. to achieve a positive impact in the neighborhood together with their residents. The program emphasizes the positive and inventiveness aspects of sustainability by encouraging residents to get started with their personal initiatives. The chapter will discuss the set-up of the program, after which the elements will be explained in detail. Not only by indicating what it is, but also what the different stakeholders do and how the different tools are used.*

### 4.2.1 The way it works

To understand the program it is important to distinguish three dimensions. First the structure of the program, second the elements within this structure and lastly the Transition Toolkit that is supporting the peers, experts and residents throughout the program.

#### Structure

Figure 43 illustrates the structure of this program in which different stakeholders collaborate in order to inspire and facilitate residents towards a more sustainable lifestyle using the method of ‘De Verborgen Impact’.

#### Elements

To make this program work ‘Onze Verborgen Impact’ - Transition Program is built-up in four elements:

(1) Train, (2) Create, (3) Join and (4) Impact. Figure xx gives an overview of the complete program. Illustrating the the back-end of the program: peers who create, facilitated by experts, their personal approach to involve fellow residents. Next to that the front-end of the program in which the user experience of the concept can be seen.

#### Transition Toolkit

To support all elements in the program, the Transition Toolkit was developed, which are illustrated in figure xx. These materials have a twofold purpose:

(1) to support peers in establishing their sustainable initiatives and communicating an inspiring story  
(2) And second, to support experts of Wooninc. to train and facilitate the peers

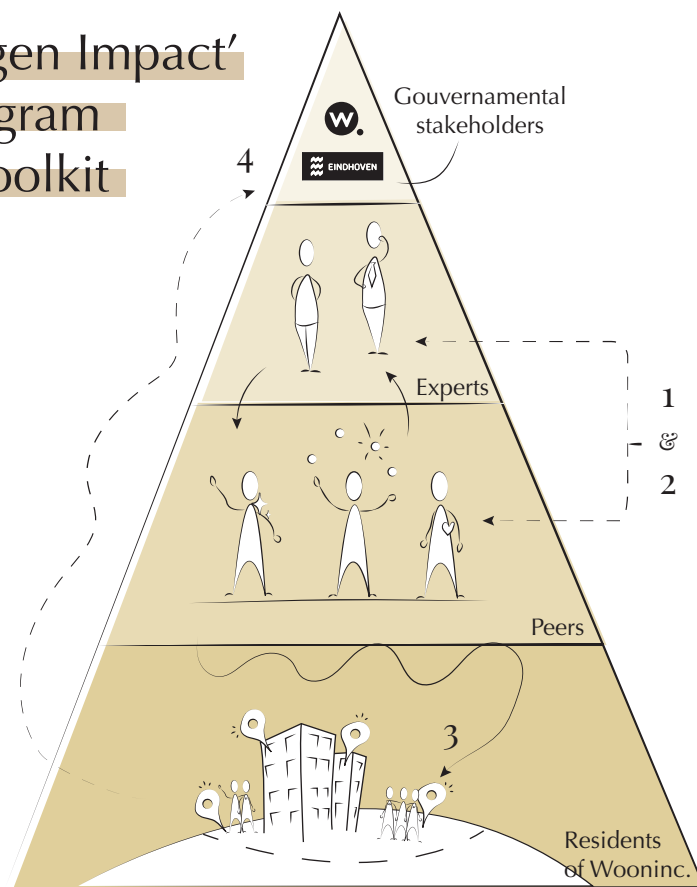
It contains a combination of existing tools (among others three e-learning modules and an online Impact Calculator which are not in the scope of this project) and customized or new developed offline tools. These last tools were the main focus of this graduation project.

At this moment the Transition Toolkit contains:

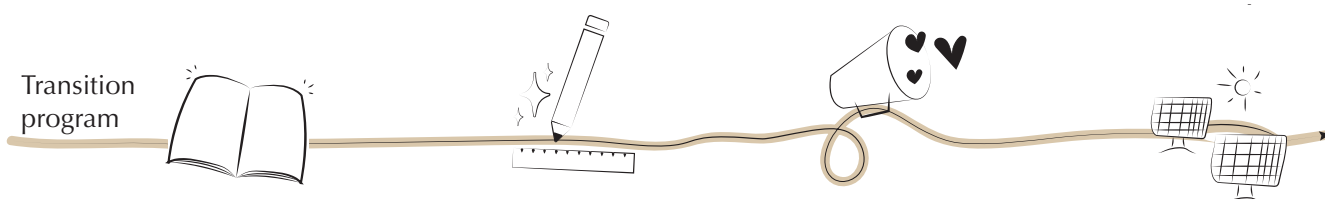
- Three templates for training purpose
  - Recruitment materials
  - ‘Mijn Verborgen Impact’ - booklet
  - Pitch cards
  - Three e-learning modules\*
  - The online impact top-10 tool\*
- \* out the scope of this project

The flow of the program will be discussed in the next section, by discussing the different elements and the used transition tools from the Transition Toolkit.

# 'Onze Verborgen Impact' Transition Program & Transition Toolkit



Collaboration model



## 1. Train

*Goal: To explicitly link personal interests to the initiative of peers*

*Insight: Aligning personal interests is motivating*

*Activity: Peers fill in the templates*

## 2. Create

*Goal: To finalize the initiatives by linking them to the concerns of residents*

*Insight: Addressing residents on their values is motivating*

*Activity: Peers can fill in the recruitment material*

## 3. Join

*Goal: To tell a positive story that aligns with values*

*Insight: telling a positive sustainability story can be challenging*

*Activity: Peers can use the booklet with pitch-cards*

## 4. Impact

*Goal: Create impact on three levels*

*Insight: A feeling of support is necessary for continuation of sustainable behaviour*

*Activity: Peers can collect ideas and pass these on to the experts of the housing corporation*

## Transition Toolkit



Training templates

Recruitment materials

Pitch cards

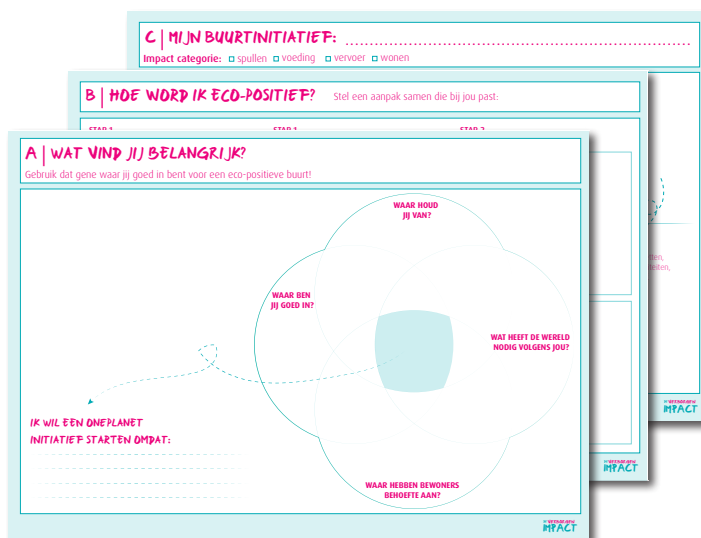
'Mijn Verborgen Impact' booklet

Figure 43 - Overview of 'Onze Verborgen Impact' collaboration model, Transition Program elements and Transition Toolkit

**Goal:** To explicitly link personal interests to the initiative of peers

**Insight:** Aligning personal interests is motivating

**Activity:** Peers fill in the templates



## Templates

Three templates, see figure 44, are developed to facilitate peers in finding initiatives that overlap their interests and at the same time reconnect to what their fellow residents want. Three consecutive templates have been developed to support this process

|            | Goal  | Based on   |
|------------|---|--|
| Template A | Find overlap between peers interest and what residents need | Joseph Campbell, <i>Pathways to Bliss: Mythology and Personal Transformation</i> |
| Template B | Stretch solution space to a variety of initiatives          | Prochaska and DiClemente, <i>The Transtheoretical Model</i>                      |
| Template C | Concretize personal initiative and create pitch             | Osterwalder and Pigneur, <i>The business model canvas</i>                        |

## Template A | What do you find important?

Template A, see figure 45, is created to encourage peers to find one's' personal 'bliss'. based on the philosophy of Joseph Campbell. His view on life is: 'follow your Bliss.'. In the book *The Power of Myth* (1991) he shows that you can find your 'bliss' at the common ground of what you are good at, what you love, what the world wants to pay for and what the world needs.

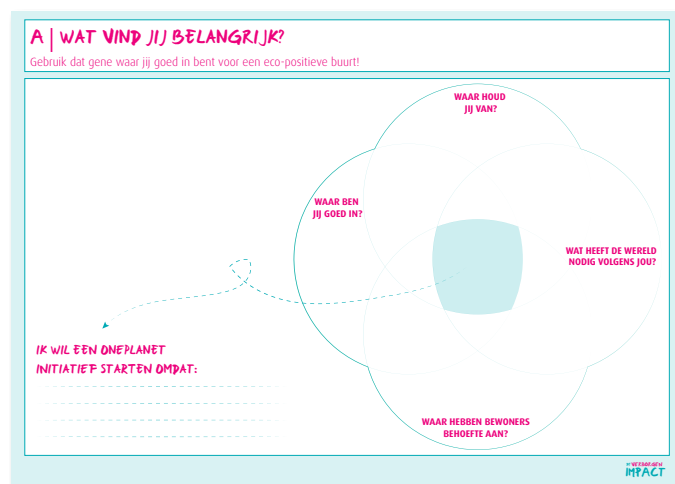


Figure 44 -Overview of templates and underlying literature.

Figure 45 - Template A





## Train

Experts are recruited within Wooninc. to collaborate in this program. They receive a thorough training from trainers of 'De Verborgen Impact' in which they learn the insights of the method and how to recruit and train peers themselves.

During the training, experts train peers, according to the story of 'De Verborgen Impact'. The main starting point is to let peers get started with what gives them energy. But how? The peers get a two day training. The first day is focussed on transferring knowledge on 'De Verborgen Impact' and peers are encouraged to contemplate about their personal approach.

The second day is focused on peers presenting their personal 'De Verborgen Impact' - story and pitching their initiative. At the end of the training the peers formulate their Buurtinitiatief: a personal approach with which they want to involve fellow residents.

**The tools that are applied are:** the three special developed templates to support the peers to link their interests to the their personal initiative. During the two-days training peers use the 'Mijn Verborgen Impact' - booklet to get to know the workflow of 'De Verborgen Impact'. The tools will be discussed in the Toolkit below.

### Template B | How do I become eco-positive?

To stretch the solution space for finding different types of initiatives, as discussed in the previous paragraph, template B can be used (see figure 46). After determining the overlap between interests and what residents want, this should be connected to a type of initiative. For example if a peer likes to initiate an initiative to transfer knowledge, take action with a group or give individual advice, this template helps to give an overview of the options and to brainstorm on the types of initiatives.

**B | HOE WORD IK ECO-POSITIEF?** Stel een aanpak samen die bij jou past:

|   |   |   |
|---|---|---|
| <b>STAP 1</b><br>Kijk terug naar werkblad A<br><br><b>WAT WIL JIJ INZETTEN VOOR EEN ECO-POSITIEVE BUURT?</b><br>_____<br>_____<br>_____ | <b>STAP 1</b><br>Hoe wil jij aan de slag<br><br><input type="checkbox"/> <b>PRAKTISCH AAN DE SLAG</b><br>- reparatie<br>- een elektrische fietsen festival<br>- vegetarisch koken | <b>STAP 2</b><br>HOE WIL JIJ AAN DE SLAG?<br><br><input type="checkbox"/> <b>SAMEN AAN DE SLAG</b><br>_____<br>_____<br>_____ |
| <b>WAT HEB JE HIERVOOR NODIG?</b><br>_____<br>_____<br>_____  | <input type="checkbox"/> <b>IK FOCUS GRAAG OP KENNISOVERDRACHT</b><br>_____<br>_____<br>_____   | <input type="checkbox"/> <b>LIEVER 1-OP-1</b><br>_____<br>_____<br>_____  |

Figure 46 - Template B

### Template C | My Neighborhood initiative

The last template C, see figure 47, helps to concretize the generated initiative from template B. In five steps peers can describe what their idea is, who they aim to reach and why they would like the initiative. The third step asks how they think they can reach out to these residents. Followed by what they need from experts in order to establish their initiative. The last step asks the peers to make a concrete to-do list of three elements with the first actions they should take, for example: "Writing an email to person x".

**C | MIJN BUURTINITIATIEF:** \_\_\_\_\_

Impact categorie: ☐ spullen ☐ voeding ☐ vervoer ☐ wonen

|   |  |
|---|--|
| <b>STAP 1</b><br>VOOR WIE IS DIT INITIATIEF?<br>en waarom vinden zij dit ook een goed idee?   | <b>STAP 2</b><br>ZO GA IK MENSEN BEREIKEN<br><br><b>DIT IS MIJN IDEE:</b><br>maak het zo visueel mogelijk!<br>_____<br>_____<br>_____  |
| <b>STAP 4</b><br>DIT ZIJN DE EERSTE STAPPEN DIE IK MOET ONDERNEMEN:<br><input type="checkbox"/> _____<br><input type="checkbox"/> _____<br><input type="checkbox"/> _____ | <b>STAP 3</b><br>DIT HEB IK NODIG:<br>bijvoorbeeld: co-initiatiepartners, budgetten, een concrete actie van een expert, faciliteiten, of benodigde materialen voor je initiatief.<br><input type="checkbox"/> <b>nee</b> <input type="checkbox"/> <b>jai namelijk:</b> _____<br>_____<br>_____ |

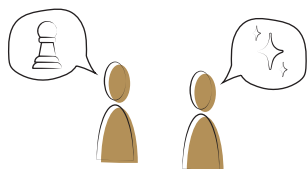
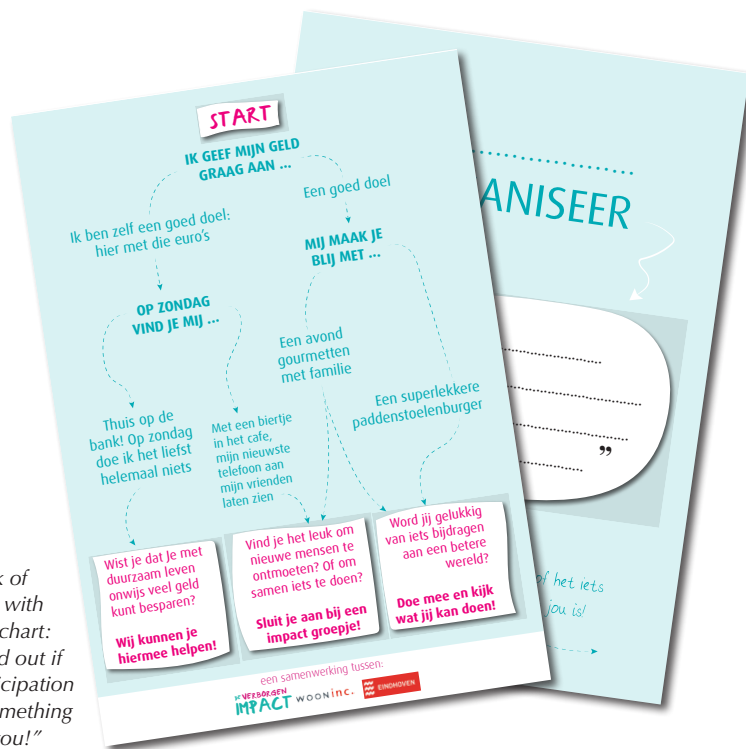
Figure 47 - Template C

Goal: To finalize the initiatives by linking them to the concerns of residents

Insight: Addressing residents on their values is motivating

Activity: Peers can fill in the recruitment material

Back of flyer with flowchart:  
"Find out if participation is something for you!"



## Transition Toolkit

### Recruitment materials

With the recruitment materials peers can easily announce their initiative. The flyers and small business cards are meant to give to fellow residents or to place it at a prominent place in the complex of the peer.

The recruitment materials are mainly focussing on emphasizing the benefits of participating in the initiative.

The flyers and businesscards are generic so that the peers are able to personalize the materials to their initiative easily and the flyers only need to be printed once. This personal approach is meant to increase a clear and honest communication between the peers and the residents.

**"Before participating, I want to know the purpose and goal of this program."**

- participant in co-reflection session 1

### Flyer

At the back of the flyer a short flowchart is printed. This test is meant as a low-key teaser informing the resident about the benefits of participating in an initiative (see example above). The build-up of the flowchart is shown in figure 48 and is based on the earlier defined sustainability types.

The first question separates the hedonic and egoistic values from the biospheric and altruistic values. The second and third question led to a reason why participating in an initiative would be beneficial for him or her. The benefits are not only focussed on sustainability but try to emphasize the benefits for different sustainability types.

### Structure flowchart

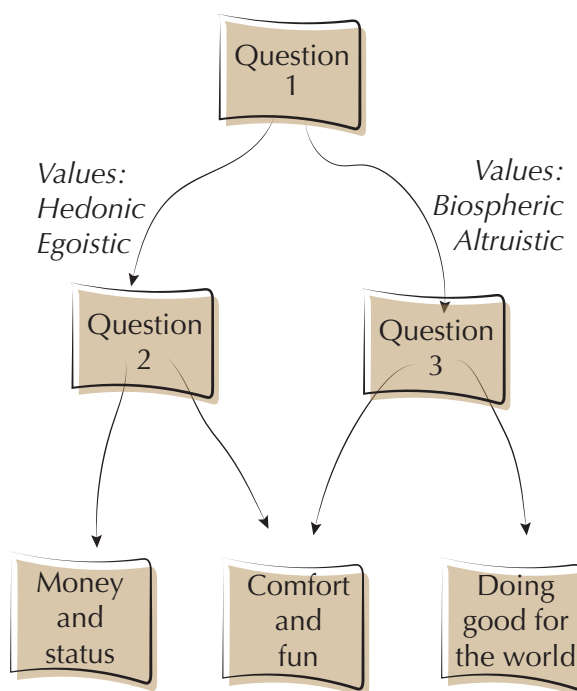
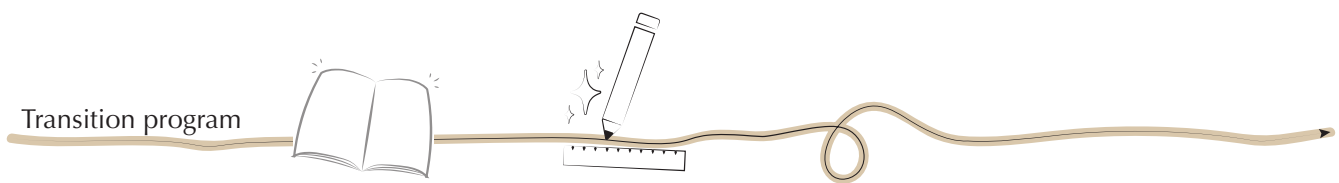


Figure 48 - Structure of flowchart at the back of the flyer



## Create

The next element in the flow of the program is create. Peers determine their personal Buurtinitiatief during the training and finalize their personal approach in the creation phase. They receive support from the experts to concretize their initiative. This support will depend on the type of initiative, for example available spaces, subsidies or expertise. In this stage they also make use of the recruitment materials to introduce their initiative to their fellow residents. In this way peers make sustainability visible in their neighborhood using their own story.

The initiatives can have several appearances: from organizing vegetarian dinners for neighbors or initiating

a monthly repair café in the local café to giving personal impact advice or managing a Facebook-group for smart sustainable tips and tricks. Using the flyers and businesscards peers can link their initiatives to the concerns of different residents (see figure 49).

**“You are less eager to accept the story of institutions. But when a friend or a fellow neighbor tells you the same story, it does arrive.”** - participant co-reflection

**Tools that are applied:** Recruitment materials, templates

### Businesscards

As the co-reflection earlier showed was that a new project in the neighborhood always asks for some explanation.

**“I need to have something to tell what I am.”**  
- participant in co-reflection session 1

Therefore the businesscards are meant to give peers material to explain what they are doing. There are two sets of cards: “I am organizing .....” and “Makes ..... you happy too?”. Peers can choose the quote that suits them most, or they can choose for a particular quote when talking to a resident, if they sense that the resident is sensitive for the initiative or just for the benefit.

At the back of the card the peers can leave his or her contact details. Hereby peers give residents the opportunity to contact the peer in their own time, when they feel ready to participate in the initiative (see figure 49).

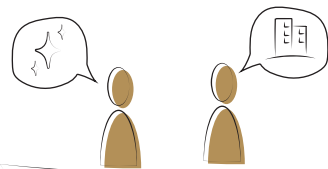


**Figure 49** - Example of two types of business cards saying: “I’m organizing a festival for electric bikes” and “Makes money saving you happy too?”

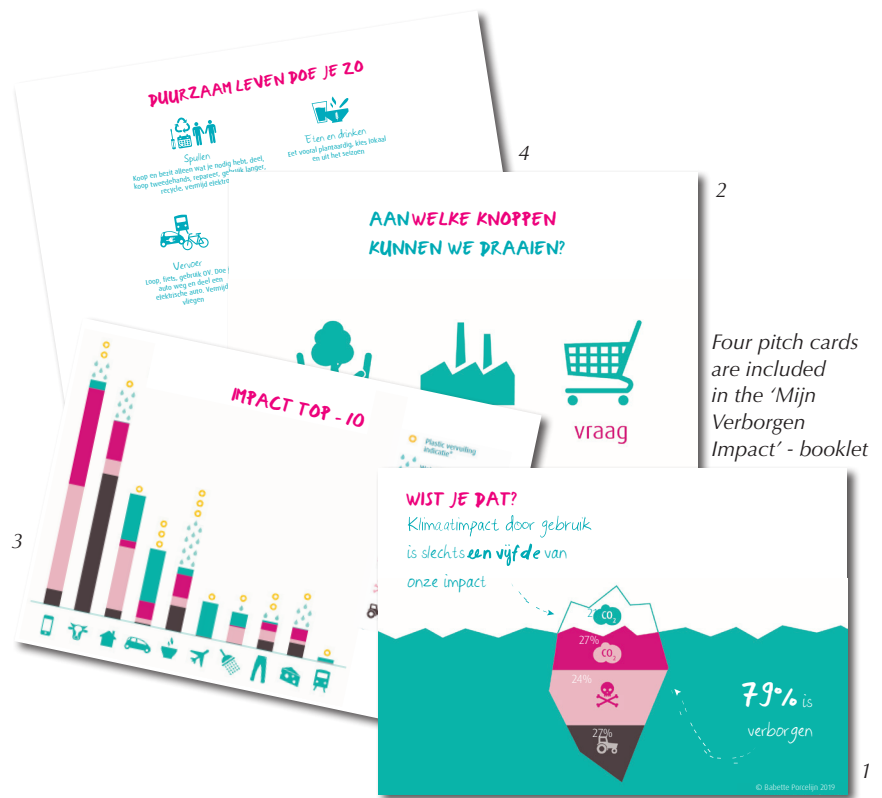
Goal: To tell a positive story that aligns with values

Insight: telling a positive sustainability story can be challenging

Activity: Peers can use the booklet with pitch-cards



## Transition Toolkit



Four pitch cards are included in the 'Mijn Verborgen Impact' - booklet

### 'Mijn Verborgen Impact' pitch cards

As the test with the 'Mijn Verborgen Impact' - pitches (paragraph 4.1) showed, communication of a simple and positive sustainability story can be challenging. Therefore four pitch cards are developed, as above presented.

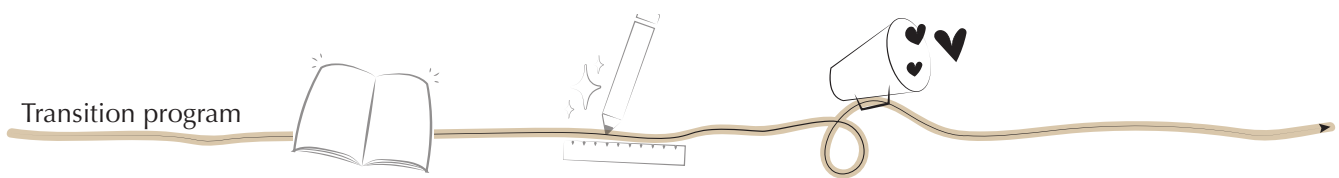
The cards gives peers the tools to effectively communicate the story of 'De Verborgen Impact'. This approach using pitch cards is inspired by the research of Nancy Duarte. Who created a structure for great talks based on her analyses of the success of Steve Jobs' presentations (Duarte, 2011). Using of the same method to reverse barriers into levers (see 'Sustainable Transition' - framework), these cards help peers to react on scepticism about sustainable behaviour namely by turning problems into opportunities, see figure 50.

### Frequently heard comments and associated pitch card

|                     |  |
|---------------------|--|
| <p>Pitch card 1</p> | <p><b>"My actions do not contribute anyway."</b><br/> <b>Yes they do, because:</b><br/> Presented problem: We do not include many forms of impact<br/> Reversed to opportunity: You can be five times more effective!</p>      |
| <p>Pitch card 2</p> | <p><b>"If the gouvernement is not doing anything, why would I change?"</b><br/> <b>Good point, but:</b><br/> Presented problem: We as consumers contribute to impact<br/> Reversed opportunity: Therefore we can influence</p> |
| <p>Pitch card 3</p> | <p><b>"I don't know where to start."</b><br/> <b>If you look at this:</b><br/> Present: Overview of impacts<br/> Reversed opportunity: You can see what is most efficient</p>  |
| <p>Pitch card 4</p> | <p><b>"I want to keep doing what I want."</b><br/> <b>Understandable and possible:</b><br/> Presented problem: Many things that are of influence<br/> Reversed opportunity: You can choose what fits you!</p>                  |

Figure 50 - Frequently heard comments and associated pitch cards





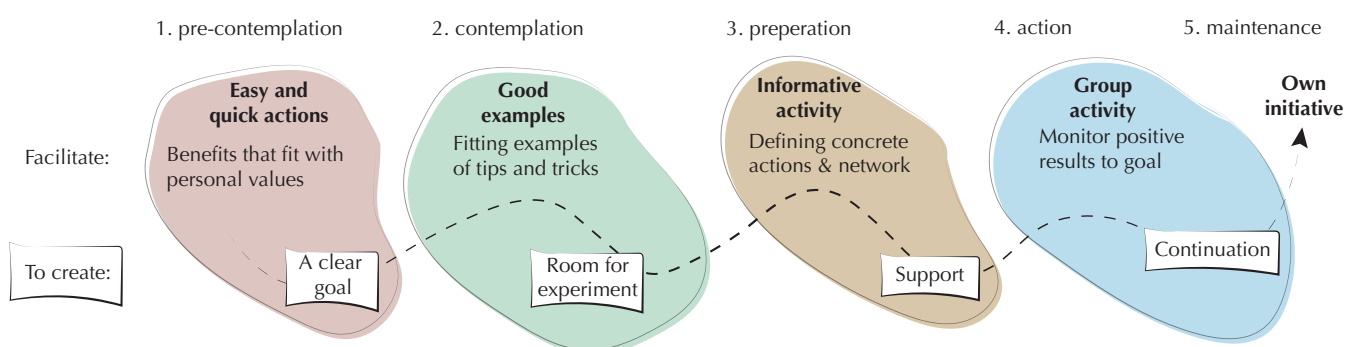
## Join

Residents can join the peers and participate in their initiatives. People get engaged by the story of the peers for different reasons. It could give them a practical advantage, for example, a repaired laptop. Or because they are looking for opportunities to live more sustainably. This of course depends on what the initiative is, the personal position of the resident in the process of change and their values (see figure 51).

**Tools that are applied:** recruitment materials, the 'Mijn Verborgen Impact' - booklet and pitch cards



### How to guide residents through a process of change?

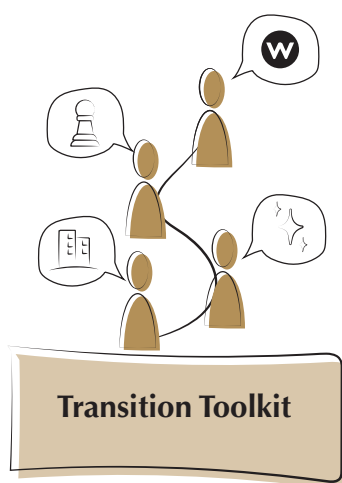


**Figure 51** – How residents in different phases of change (Prochaska & DiClemente, 1992) can benefit from initiatives.

Goal: Create impact on three levels

Insight: A feeling of support is necessary for continuation of sustainable behaviour

Activity: Peers can collect ideas and pass these on to the experts of the housing corporation



Selection of the pages from the 'Mijn Verborgen Impact' - booklet

## Impact on personal level: 'Mijn Verborgen Impact' - booklet

The booklet is the personal guideline for peers and residents to find support in their transition towards more sustainable actions. Because many of the residents of Wooninc. are from an older generation there is decided to make a physical booklet instead of turning it into an app. The booklet embodies the method of 'De Verborgen Impact' and supports peers and residents in three ways:

1. Guideline for their own process of change (gives reader insight and knowledge).
2. Simple overview of 'De Verborgen Impact' proces
3. Tools to share the story of 'De Verborgen Impact' to others.

1. As one of the prototype tests showed, it requires discipline to be able to carry out an ambition of changing behaviour. Recurrence was highlighted as an important enabler of this discipline. This booklet aims to support individuals through this personal changing process, based on the model of change from Prochaska and DiClemente (1992).

**"I would like to have a guideline to live by, to emphasizing the things I still can do."**  
- participant Impact Passport prototype test

To give this guideline, the booklet consists out of five steps that fit each phase of the behavioural model of change. The five steps are:

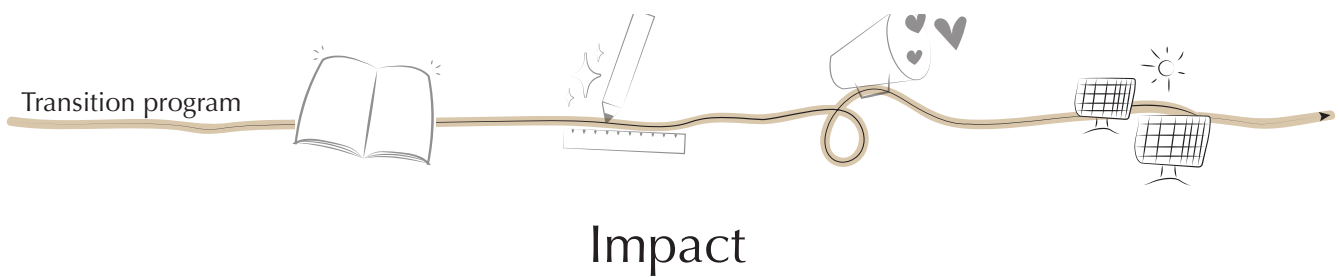
- Step 1: Discover what your biggest impacts are
- Step 2: Determine your dot on the horizon
- Step 3: Search for positive solutions
- Step 4: Do what makes you happy
- Step 5: Inspire the people around you

Each step gives the reader tools to pass (pre-)contemplation, preparation, action and maintenance. For people who are already in the action or maintenance phase, this booklet gives means to map their personal status and involve others in the story (from pre-contemplation to contemplation).

Breaking down the transition of becoming more sustainable into five concrete steps makes the transition understandable and tangible. Also the booklet enables you to keep track of you eco-positive actions, the example page is shown above. On different pages you can focussing on the success and write down what you gained from it. In this way it emphasises the positive side of changing which should encourage maintenance of sustainable actions.

2. Peers can also use this booklet during the training days as a guide through the method of 'De Verborgen Impact'. Peers can also use this booklet later in the process, for their own workshops with residents.

3. Small activities and pitchcards  
In the booklet smal activities, including the previous discussed pitch cards are included. By sharing with others, readers can find a supporting and stimulating network that is needed to keep up with the new behaviour.



#### 4.2.5 Impact

The last element in the program is impact. The structure of the program makes it possible to bring grassroots experiences to a higher level. Because as the previous chapters showed by making the program collective, residents can inspire each other and creates a bigger movement. During the initiatives, peers can collect the residents' needs and experiences regarding sustainability. By transferring those needs and ideas towards the experts of Wooninc., a bottom-up approach is created in order to facilitate targeted and neighborhood specific sustainable actions that ask for larger investments (for example collective solar panels or electric car chargers). Figure 52 illustrates how bottom-up initiatives from peers find their way to Wooninc. and the municipality.

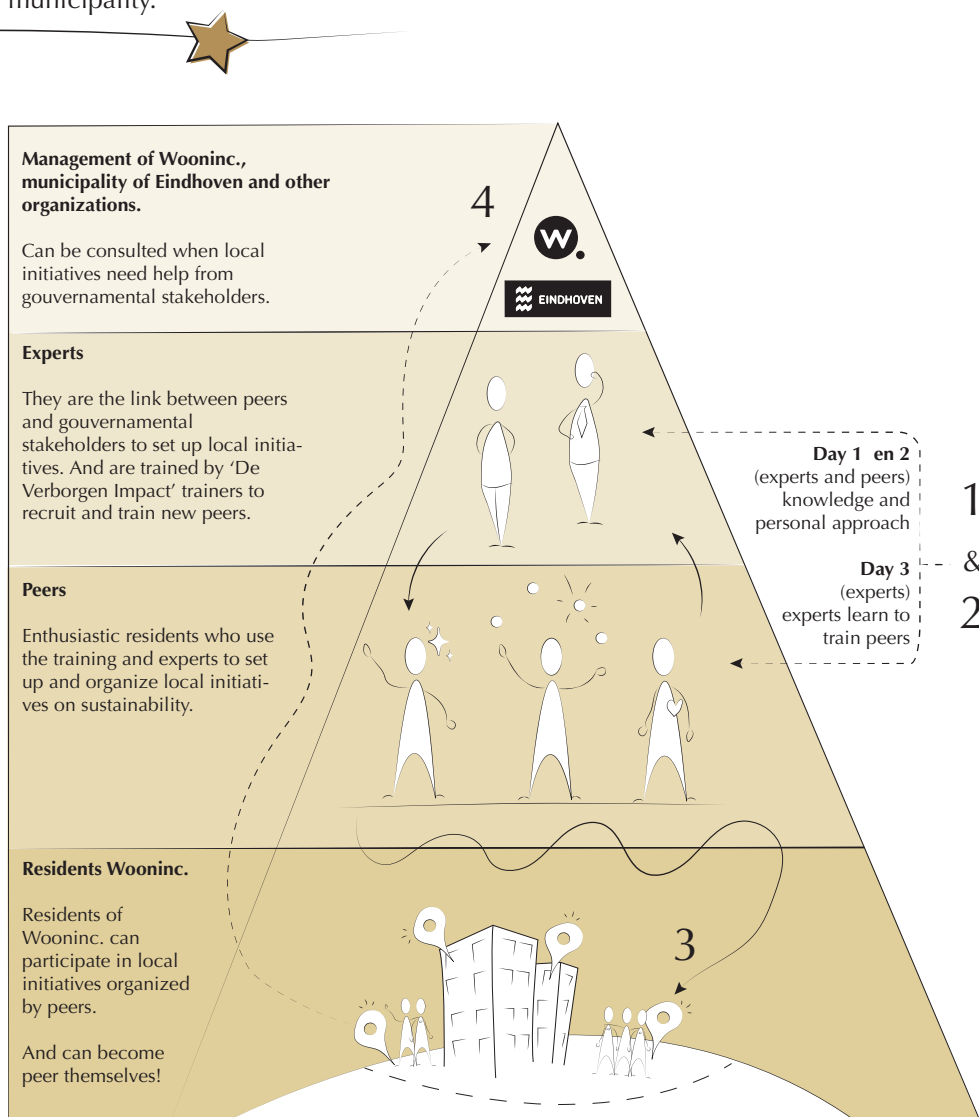


Figure 52 - Collaboration structure of 'Onze Verborgen Impact'

## 4.3 Implementation

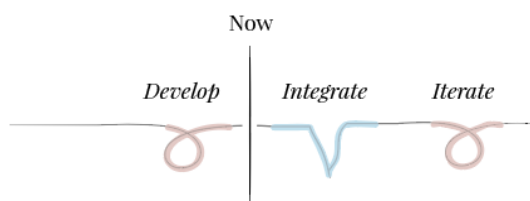
*'Onze Verborgen Impact' - Transition program consists of a front-end: the visible side for experts, peers and residents and the back end: the organisational side for the housing corporation. To implement this program, the back end has to be designed as well, mostly considering experts and organisations. Because 'Onze Verborgen Impact' - Transition Program will start in May 2019, interesting in this project is, that it was gradually implemented during the design process.*

To investigate the implementation path for this program, during the design process, pitching was done twice at two different housing corporations (in- and outside Eindhoven). The goal of these pitches was to discuss if, and how, 'Onze Verborgen Impact' - Transition Program could be integrated in their neighborhoods.

The dynamic interaction between the design process and practice resulted in short trial and error cycles on how to implement 'De Verborgen Impact' program. Several aspects of the implementation are discussed in this section.

### Flexible and open

'Onze Verborgen Impact' - transition program is based on the enthusiasm of peers and experts. To keep them involved it is important that the program should be flexible and open to adapt to their needs and wishes.



**Figure 53** - Stage 1: Develop, Stage 2: Execute, Stage 3: Iterate

In May 2019 the first group of experts and peers will be trained by trainers of 'Onze Verborgen Impact'. Most probably, after the first round of initiatives (the last part

of 2019) the program or the Transition Toolkit should be adapted to make them even more compatible with the needs and wishes of the experts, residents or the housing corporation (the imagined plan for implementation is shown in figure 53).

### Start small

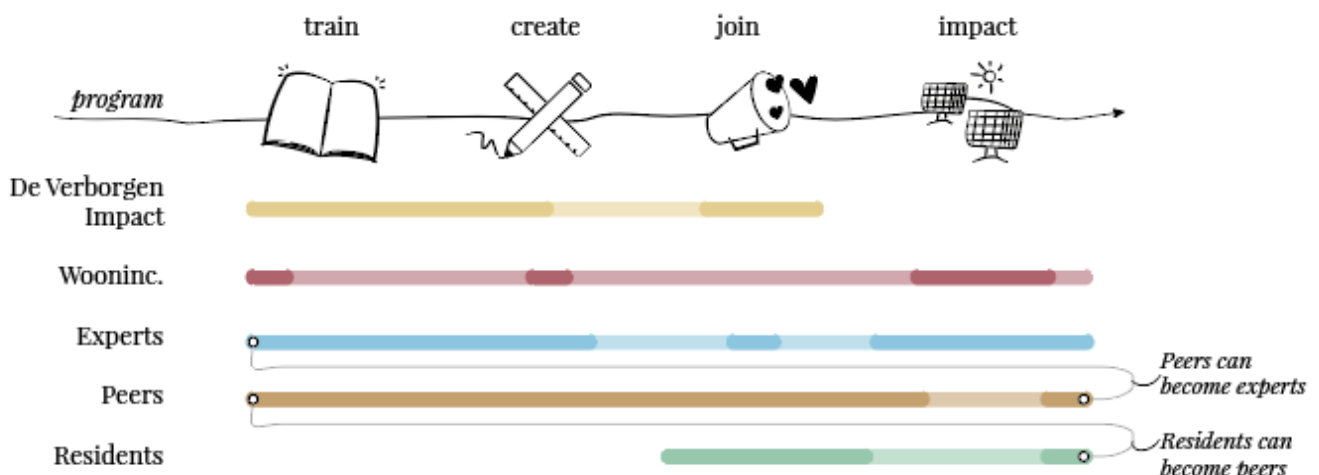
It takes some time to establish your name as peer in the neighborhood. People need to have time to get used to the idea of peers and to get familiar with their initiatives. Therefore, the first round of peers can start small. Their initiatives can be used as examples to gradually inform more residents about the initiatives.

### Collaborations with 3rd parties

For Wooninc. it is important to include other parties in this project in an early stage of the process. For instance because a broad collaboration can help to quickly take initiatives to the next level. 'Het Duurzaamheidspact' is a good foundation for this. Also, to not reinvent the wheel multiple times, it can be interesting to involve residents active within Klimaatgesprekken or BuurKracht (who are possibly already active in the neighborhood) in this program. Their expertise can be used on an expert or peer-level.

### Scalability

Because of the flexible and open program, the outline and toolkit can be introduced to other housing corporations as well. They can shape the program to their particular situation.



**Figure 54** - Interactions between elements and stakeholders



# Key take-aways final concept

1.

The design process happened iterative in which a series of prototype testing with peers and residents led to the essential elements for the outline and content of the final concept: 'Onze Verborgen Impact' - Transition program.

2.

The program distinguishes three dimensions. First the structure of the program, second the elements within this structure and lastly the Transition Toolkit that is supporting the peers, experts and residents throughout the program.

3.

Figure 54 and 55 gives an overview of the interactions between the elements, tools and stakeholders

4.

Collaboration on the different levels can accelerate a sustainable infrastructure on a neighborhood level. This benefits from a good coordination between Wooninc., the municipality of Eindhoven and other housing corporations.

5.

By turning the story of 'De Verborgen Impact' into grassroot initiatives this prgram creates a clear and honest communication. By emphasizing the benefits, this program stimulates positive interactions between peer and resident focussed on the values of residents.

6.

The elements of this program are built upon the seven levers as defined in the 'Sustainable Transition' - framework and used within the small details of the final Transition Program and Transition Toolkit.

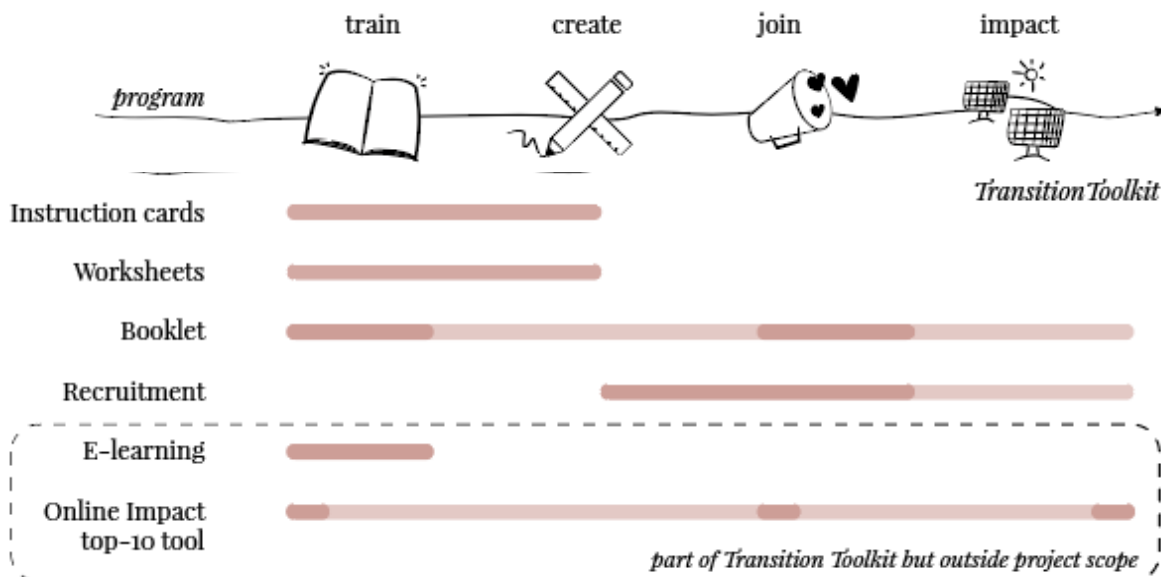
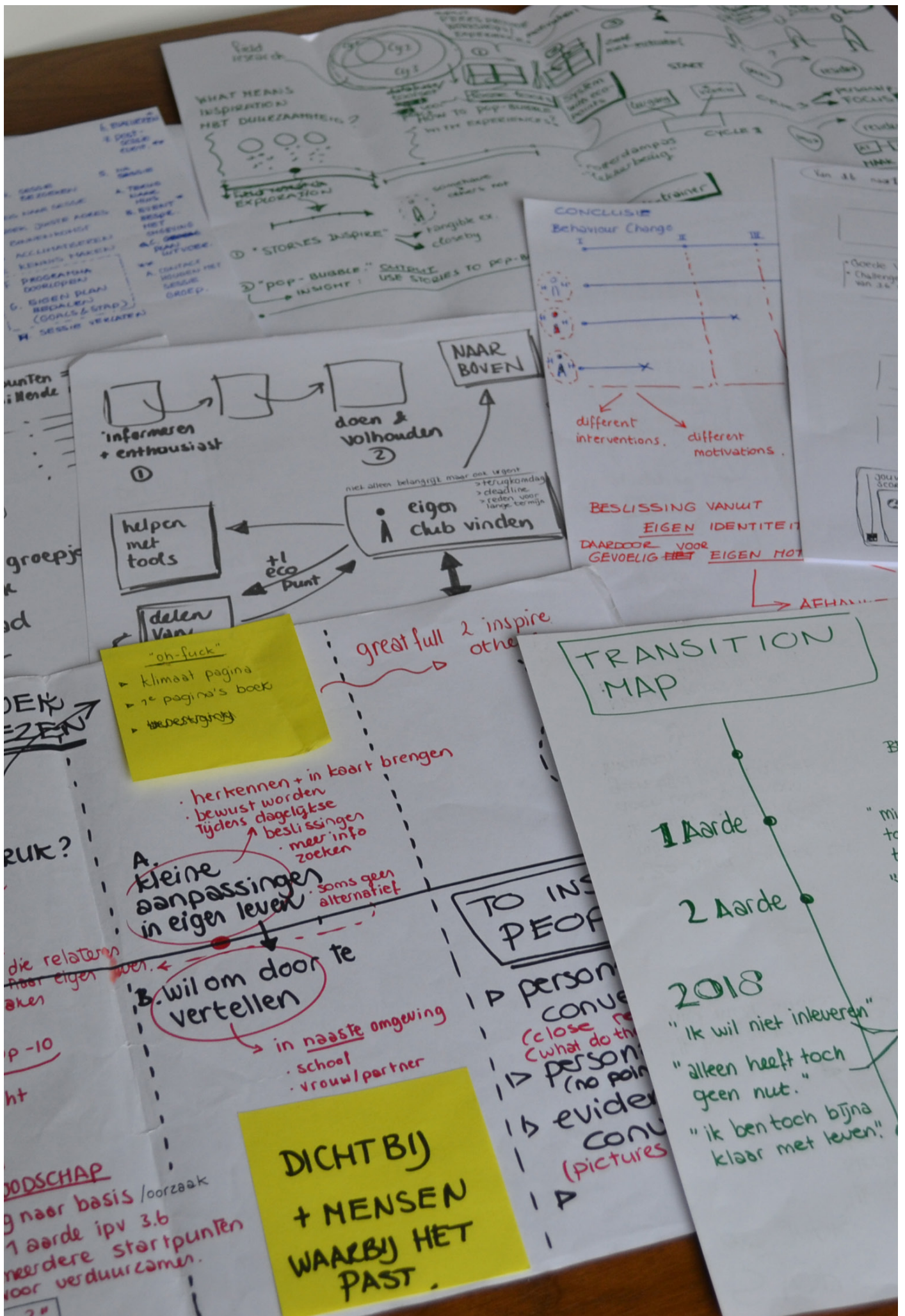


Figure 55 -Interactions between elements and Transition Toolkit



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## 5. Evaluation

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*“I think, it is a  
big step forward.”*  
- Babette Porcelijn

*Because the implementation of this program is on a short notice, to ensure a smooth continuation towards the start of the program writing recommendations is an important closure for this project.*

*To write accurate recommendations for this project, a final evaluation was done to test the feasibility, desirability and viability of the program and toolkit. Next to that, this evaluation was used to validate the previously formulated design vision:*

*“I want to make sustainability transparent and accessible (lower the external barriers) by emphasizing the positive side and the advantages of sustainable behaviour (reversing internal barriers). To show that sustainability, in different ways, is accessible for everyone.”*

*This chapter presents the evaluation of ‘De Verborgen Impact’ - Transition program. First the evaluation plan and the derived results will be discussed. Continued by the recommendations that can be drawn from these results. The chapter closes with a final conclusion about ‘De Verborgen Impact’ - Transition program and toolkit.*

## 5.1 Evaluation of ‘Onze Verborgen Impact’

### 5.1.1 Method

‘De Verborgen Impact’ - Transition program aims to inspire residents of Wooninc. for a transition towards a sustainable lifestyle. Looking at the timeframe of this project it is not feasible to measure this desired effect on the long-term. What I can validate is to what extent people imagine that implementing ‘De Verborgen Impact’ - Transition program would cause more residents to take sustainable actions. Therefore I decided to validate the final program on three different levels by interviewing different stakeholders (see figure 56) and asking them the question:

“According to you, where does the realisation of this concept depends on?”

The following three activities were conducted during the final evaluation:

1. Functional prototype test with peers and residents to test their part of the feasibility and desirability.
2. Expert interview with Karin Kauw from Eigenwijks in Amsterdam Nieuw-West to evaluate the viability of the program.
3. Focus group with housing corporation Wooninc. to test their part of the feasibility and desirability.

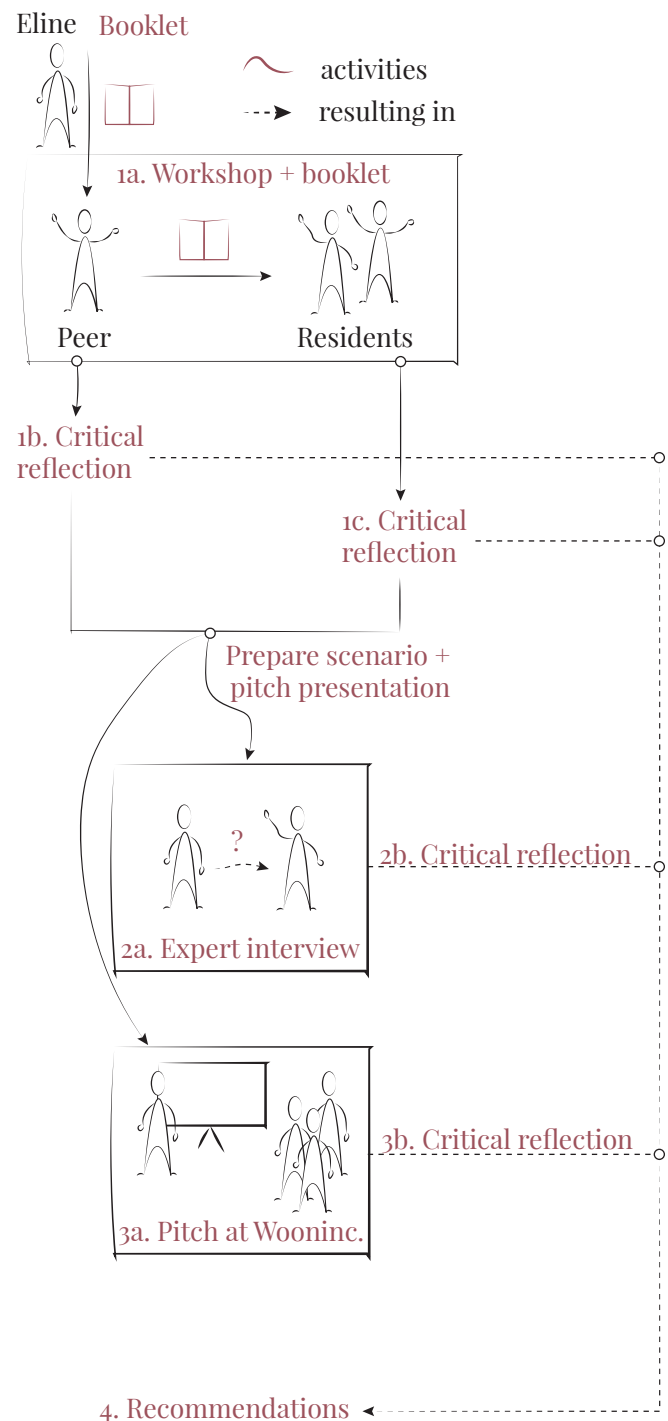


Figure 56 - The overview of the evaluation set-up



### Functional prototype test

The goal of this functional prototype test was to collect the perspective of the peers and residents on 'De Verborgen Impact' - Transition program and toolkit. In order to find out to what extent the workshop can support a positive sustainability story of a peer.

The functional prototype test was conducted with a group of three participants (see figure 57). The first conducted the role of peer and was involved in the previous prototype test of the workbook. She recruited two others volunteers out of her own network, to play the role as a resident.



Figure 57 - Three participants testing the tool from the Transition Toolkit

The prototype test consisted of three parts:

#### Execution

During the functional prototype test, the workbook was introduced to the participants by the peer. The two participants were asked to take the booklet home and use it for one week. Their experience with the booklet was evaluated one week later.

#### Critical reflection with peer

After the introduction of the program and usage of the booklet the key questions were: Can you imagine implementing 'De Verborgen Impact' - Transition program and toolkit would cause more residents to take sustainable actions, why? And what would be your points of attention?

#### Critical reflection with residents

The participants were first asked to think for themselves about this question. And as a start of the evaluation, the participants were asked to name a tip and a top about the workbook, and a tip and a top about the program in general. This made the feedback very concrete and surfaced the most important theme's.

## Interview

To estimate the extent to which this program and toolkit is viable on the long term, the plans for this program were validated with an expert in this field. Therefore one interview was performed with Karin Kauw, a community worker at Eigenwijks (see box Eigenwijks\*). For six years they run a program where they train so called 'health ambassadors' among their residents, who get support to initiate their personal neighbourhood initiatives around health.

To guide the semi-structured interview an explanation sheet was developed, as shown in figure 58, to explain the concept of the program and toolkit. The main question for the interview was: to what extent do you see 'De Verborgene Impact' - Transition Program and toolkit as a realistic concept to lead more people taking sustainable actions? And where does this concept depend on?

## Pitch at Wooninc.

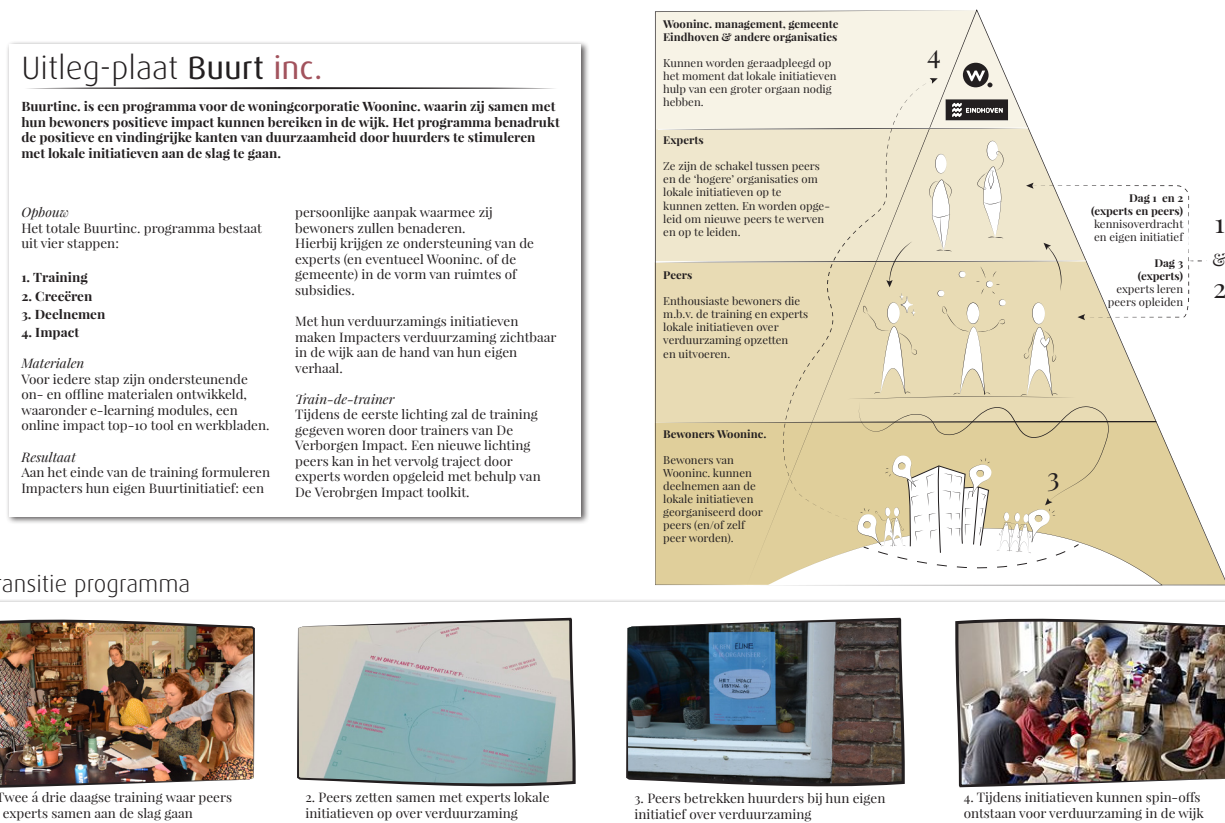
To collect the final perspective, that of the housing corporation Wooninc., a pitch was given to the management of housing corporation Wooninc.. This session consisted out of two parts:

### Pitch

The concept of 'De Verborgene Impact' - Transition Program and the Transition Toolkit were pitched, using the explanation slide from figure .

### Critical reflection

During a critical reflection the participants were asked to name a tip and a top about the program and the toolkit. After which a discussion could arise around these topics. The session ended with a round: from your perspective, where does this concept depend on?



Een Design for Interaction afstudeer project door Eline van Terwisga, maart 2019  
Een samenwerking tussen Think Big Act Now, Wooninc. en de Technische Universiteit Delft

**Figure 58** - Overview of the explanation sheet made using footage of the functional prototype test.

### 5.1.2 Results

To discuss the results of the evaluation first the goal of this project and its core principles will be evaluated. During the critical reflection, also several points of attention emerged which I will briefly discuss.

#### Evaluation of the design goal

The key objective of this project was to design a fitting intervention that peers of could use to motivate residents of Wooninc., so that they feel activated to make their lifestyles (more) sustainable. The fact that the project of Eigenwijks on health in Amsterdam is running very well in the past few years, could be seen as a proof of concept. Kauw experiences a growth in enthusiastic ambassadors and a lasting number of initiatives. Although it remains hard to significantly proof if the concept works for such an abstract goal.

In line with this experience, also the residents and peer in the functional prototype test of 'Onze Verborgen Impact', reacted positive on the workshop and materials. One said: "Our conversation has started something in me. Although I have little time, I now have decided to get our fruit and vegetables from the market."

#### Evaluation of the three core principles

The following three core principles were stated to derive the final concept:

1) Peers have to be enabled to use their personal sustainability interests and talents confidently to inspire other residents. So that he can convincingly tell the story from his own experience (levers: honest and benefit).

2) Residents can be inspired by the personal stories of the peers, when the peers stories align with their own values. This will make them feel empowered to explore what sustainability means to them and act upon it. (levers: simple, visible and autonomy)

3) By making it social and collective residents can inspire other residents which creates a bigger movement (levers: collective and movement).

#### 1) Peers forming their own approach and group of residents

The manager housing of Wooninc said: "What I like about it, is that these materials clearly show that peers do this from their own interest and get the chance to work with what gives them energy."

About the materials the peer remarked during the functional prototype test: "Normally I stop thinking about alternatives, but the positive vibe of the materials helped me to think further."

The group who tested the functional prototype was formed by itself after the test with the early prototype of the Impact Passport (see paragraph 4.2). The participant talked about it with friends who got enthusiastic to participate as well. This shows that existing networks can be an effective mechanism to reach for people.

Recruitment materials are a good addition to the toolkit, so peers can explain what they are doing in the neighbourhood.

*"That peers collect their own group is a very good idea. I am happy with the results."*

- Babette Porcelijn

#### \* Eigenwijk Amsterdam Nieuw-West

Eigenwijks is a residents' organisation that stands up for the interests of residents in Amsterdam Nieuw-West. This organization keeps an eye on what is going on in the neighbourhood and supports them with a professional infrastructure to develop their ideas. For example, designing a process, facilities for resident meetings, helping to organise activities and connecting groups with professionals. They have a number of physical places in the neighbourhood, houses of the neighbourhood, where residents can go for advice and training.

## **2) Making sustainability transparent and accessible and communicating the positive side and advantages of sustainable behaviour to residents**

One remarkable insight from the functional prototype test was that one participant beforehand said: “I am here, but I find sustainability intangible and awkward to talk about.” During the critical reflection a week after, the same participant said: “Our conversation and the booklet made it much more concrete: I now know that I can focus on my own choice.”

Also the manager housing of Wooninc. reacted: “I expect that this will make it easier for them. By showing that there is more besides energy and offer something that makes them enthusiastic.”

*“I really want to get to work with this!” - Wooninc.*

## **3) By making it social and collective residents can inspire other residents which creates a bigger movement**

As previously discussed, the first participant of the functional prototype test was able to recruit new participants from their personal network using the ‘Mijn Verborgen Impact’ - booklet. She indicated that the booklet created the inspiration to share the story of ‘De Verborgen Impact’ and by sharing the story she triggered new participation. This shows that the Transition Toolkit not only inspires but also enables and supports the expanding of a movement by giving a guideline and tools to do something with the shared motivation. The group-structure also helped the participants to remind each other when implementing new sustainable actions.

*‘For me, the conversation created the right atmosphere to talk about this topic a bit deeper.’*

- Participant in functional prototype test

## **Points of attention**

### **1. Avoid the judgement!**

Wooninc. mentioned that they could imagine the program to be motivating among their residents because it does not focus on what doesn’t work or what isn’t allowed. In order for this program to work, during the prototype tests the residents also stretched the importance of avoiding judgement. As one said: “I already have a judgement about myself, when it comes from outside that I start to resist.”

### **2. Commitment of experts**

Kauw marks the commitment of experts as a crucial issue in these type of programs. Because peers should always have a place to go to with their questions. To get an idea of what this involvement looks like, Eigenwijks is a professional organisation with 35 employees who focus entirely on maintaining a network between residents and professionals in the neighbourhood. This benchmark shows approximately the intensity of labour that is needed from experts in order to maintain such a project.

### **3. Acknowledgement**

It is tempting to put a lot of effort into supporting the new group of peers. To maintain the energy, it is important to keep the peers motivated. As the peer indicated as well: “Keep in mind that for me it should also be valuable to collaborate in this program!” This shows that it is important to pay attention to both the new and the old group of peers. Kauw indicated that appreciation and learning new things were also important for the Health ambassadors in their program: “Especially with volunteers, it is important to say: thank you for what you do!”

### **4. Pay attention when involving professionals**

In order to avoid suspicion of residents towards the project, the focus of the initiatives should always be on what the residents want.



This is especially important when collaborating with professional, as Kauw indicates:

“The risk of involving professionals in the process is that they bring in their own agenda. This can distract the attention from what the residents want.”

Wooninc. mentioned another important element about involving professionals. They experienced difficulties to explain potential partners what they want to achieve with this approach and how. They saw the explanation sheet as a solution to do this.

#### 5. Keep it small

From the critical reflection, it can be deduced that thinking small is essential. In order for this program to be effective the following two things should be kept in mind:

First, a program like this introduces something new into the neighbourhood, it takes a while before people get familiar with it. As Kauw mentioned that it will take approximately around 2-3 years for people to get familiar with it, and know how to find it.

“It took us 2-3 years before people started to recognize us.”

Secondly, a big challenge according to Kauw is to keep the initiatives small. Because people are easily inclined to think in big actions. This is also something that appeared during the prototype test, one of the participants came up with the idea to influence the larger packaging industry. But these are projects where peers themselves cannot really do things. In order to avoid such multi-year and stakeholders projects, attention should be paid to keep the initiatives small.

#### 5.1.3 Conclusion

Apart from the fact that the long-term goal of this project is difficult to assess, the reactions on the Transition Program and Transition Toolkit of different stakeholders are promising. The evaluation showed that the program is considered:

- Feasible, when Wooninc. reserves enough the time and money for experts to commit to the program. Also ‘De Verborgen Impact’ can implement this program and toolkit within their current abilities.

- Desirable because the materials encourage to concrete actions. But only when it is ensured that judgement is avoided at all times. Next to that attention should be paid that the interests of residents is the focus of the initiatives. For Wooninc. this program is desirable because they can facilitate targeted infrastructure.

- Viable, as the benchmark project Eigenwijks can be seen as a proof of concept. Only should be taken into account that they have an entire organisation behind the program that is fully committed to maintain the network and activities.

The following things will be taken into account for further recommendations in the next chapter:

The evaluation showed that in order to maintain such a project, commitment from experts is essential.

When working with volunteers extra attention should be paid to expressing appreciation.

Involving professionals can distract the focus from residents interests. Keeping the focus on what the residents want is important to attract residents towards the initiatives.

There needs to be time to let the program settle in the neighbourhood.

## 5.2 Recommendations

*As the results of the evaluation show, the design meets the goal of the project. As people reacted positively on the program plans and results. Based on this, I decided to not change the final concept for now but propose the following recommendations regarding working with peers, the implementation and future improvements for the Transition program and Transition Toolkit.*

### Working with peers

'Wooninc.':

- As this program runs on volunteering peers, attention should be paid to keep the group of peers involved. Therefore it could be helpful to organize nice events for all the peers where lectures are given or they can network with other peers.

- Keeping the focus on what the residents want is important to attract residents towards the initiatives. Therefore, avoid distraction from other agenda's. I would recommend housing corporation Wooninc. to introduce this program to the tenants organisation SHW, that always puts the interests of the tenants first.

### Implementation

'De Verborgen Impact':

- With such a dynamic context, continuous development is part of concept. So reserving time to adapt and change the program materials according to the first round of initiatives is necessary to adapt to experiences in practice.

Wooninc.:

- Time should be given to let the program settle in the neighbourhood. Therefore, instead of big promotion, start small and collect evidence first, to slowly create a snowball effect within the neighbourhood.

- Given the commitment is needed from experts to maintain such a program, it could be helpful to give experts a specific role based upon interests. For example person x is responsible for contact with peers, person y for organizing permits and recruiting subsidies and person z for internal communication. This can increase personal responsibility.

### Future improvement

- To provide housing corporations with a 'pitch' to involve other third parties, it could be helpful to refine the explanation sheet into a pitch story.

- For the long-term, collaborating with multiple housing corporations would give the opportunity to combine the achievements of different housing corporations together within the online impact tool. Doing this would give an overview of what everyone together is capable to achieve.

- To encourage a continuation of the program without intervention of trainers from 'De Verborgen Impact' good instruction cards should be created to create a self-explaining toolkit which explains in detail how to use the materials within the Transition Toolkit and which steps to take. In these instruction cards should be included that experts secure and guard a variety of initiatives in the neighbourhood. This to make sure all types of residents are included and feel welcome.

- To collect proof of concept, I would suggest creating a 'Onze Verborgen Impact' - webpage that shows all the upcoming initiatives. This webpage could be independent or a sub-page of the current website of 'De Verborgen Impact'.

### Further research

As organizing initiatives is of such importance for success, this is an important topic for future research. During this project only a should amount of time could be dedicated to the exploration of how this organisation can be supported. The developed prototype that was designed was not tested with peers over time.

## 5.3 Conclusion: project conclusion

*The key objective of this project was: design a fitting intervention that peers can use to motivate residents of Wooninc., so that they feel activated to make their lifestyles (more) sustainable. This is a multi-layered issue (technical, social and organisational) with multi-stakeholder involvement (Babette Porcelijn, Wooninc. and residents). Such a complex project requires a fitting approach. Exploring the design brief and my Personal Principles for Good Design, I decided to use an iterative and cooperative design approach (Transition Design and co-reflection), in order to create a concept that is successful and supported by each of the stakeholders.*

### Approach

By conducting four iterative cycles insight in behavioural change was gained from literature and interviews. This resulted into insight in how to reverse internal and external barriers into levers that can be used to support residents in the transition towards a more sustainable lifestyle. This led to the development of the 'Sustainable Transition'-framework. Which incorporates relevant theories found in literature and maps seven leverage points to inspire for transition towards sustainable behaviour. Based on this framework concept development happened iterative from preliminary vision to the final concept of 'Onze Verborgen Impact' Transition Program and Transition Toolkit.

### The main results of this project

The 'Sustainable Transition' - framework indicates that to engage residents, as well as peers on their intrinsic motivation all the dimensions of a personal transition should be supported including: motivation & ability, personal values and their position in the process of change. Seven levers were identified to accelerate this transition:

1. Make it social
2. Emphasize the benefit
3. Simple actions
4. Experience results
5. Make it part of a bigger movement
6. Give people autonomy
7. Honest communication

Iterative conceptualization cycles resulted in the final transition program called 'Onze Verborgen Impact'. This program exists out of the following different elements:

- Train: training of the experts and peers
- Create: peers create their personal approach with which they want to involve residents
- Join: residents can participate in the local initiatives set-up by the peers and explore sustainability in their own phase.
- Impact: new ideas are generated for improving sustainability at neighbourhood level
- The Transition Toolkit: a toolkit with instruments to support the above mentioned elements

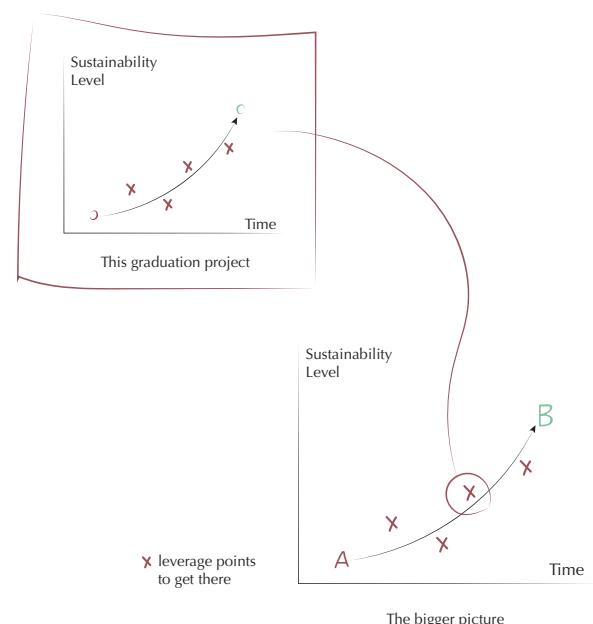
This program supports peers to establish their personal sustainable initiatives in collaboration with housing corporations and creates benefits for all the different stakeholders in different ways. By allowing peers to create their personal approach, the concept acknowledges their personal ideas and talents. Initiating favourable neighbourhood initiatives makes residents able to

collectively experience and discover the benefits of sustainability. Wooninc. can implement a targeted and neighbourhood specific sustainable infrastructure to reach their sustainability ambition by collecting needs and new ideas of their residents. Lastly, for 'De Verborgen Impact' this is a program that can be scaled to other housing corporations which stimulates the dissemination of the 'De Verborgen Impact' message and increases the visibility of sustainability.

### Limitations

Lastly several important limitations need to be considered. First, the Transition Program and Transition Toolkit was not tested with the actual residents and peers of Wooninc. This means that the design goal could not be fully validated. Also only qualitative research has been done with Wooninc. and an expert in the field of resident participation. More research should be conducted among current residents and peers of Wooninc. in order to give a stronger validation. Essential in this program is that development is an ongoing process. Therefore it is advised to keep the program flexible and open for adaptations. It is recommended to start small and scale up gradually in order to increase successful implementation of the Transition Program and Transition Toolkit.

To conclude, as illustrated in the figure below, you can consider this project as just one of the leverage points within the bigger transition towards a more sustainable future.





This phenomenon gives one a free feeling. It feels like floating on the road and you can go wherever you want.

care for the bike results in attachment

It does what it has to do. It has a couple of buttons and the quality is good. The design is exaggerated. It fits different

was important have experienced the products.

Theme of the board

Facilitating Behaviour → Eline's lifestyle

## Good design board

GVB sticker in the Train

Ad

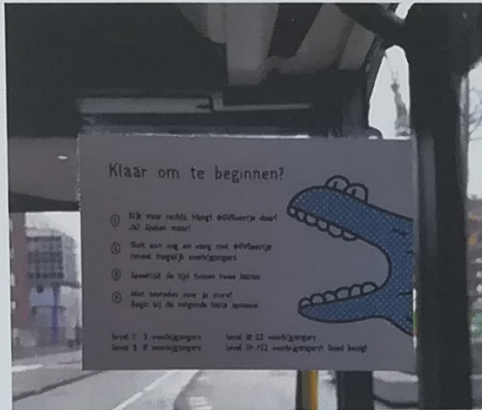
Because it is fun.  
Very simple.  
It is to support you in not using your phone in the train but you are not forced to.

no manual + no warnings

They show limits of a design.

(2)

thing good usual when the as product.



JBL Bluetooth speakers

X Race bike



Quechua Tent

I does what it should do. Nothing more.

E.g. Flying Tiger Xenos Blocker Primark H&M

why good?

Because otherwise it does nothing.

why does it exist? just addiction? It does not do anything

why? I am irritated by everything that is unnecessary.

AH Bonus card

Bonus card ads have certain humor.

Part of AH. I cannot remember AH without it & long lasting anymore.

It gives people a feeling of something extra. = consistent

It is a friendly approach of customers. = humor different for everyone.

world is very and k. Humor everything and positive and too much of them.

not needing to think much → people should get things that they



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## 6. Reflection

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*The last chapter of this report will be a reflection on both the process and the personal experience of the project. Although it feels a bit early to properly reflect on the entire project, this reflection will be an attempt to look back at the things that happened within this project, and determine what I consider are important learnings for future projects.*

*Normally this would mean, to take further into the master, but in this case these learnings mean: learnings to close off my time as an ID student and to take with me into the 'real' field of designing.*

*Firstly, this reflection dives deeper into the project process. To look back at the used methods and determine what I consider are important learnings to take with me for future projects.*

*The second part of this reflection will be a personal reflection. It will give an overview of the things that went well in this process, parts that were hard and the things that make me feel proud of what I managed to achieve in this graduation project.*

## Reflection on project process and methods

*I want to start with saying that this project went much more chaotic than I tried to present it in this report. The use of fairly new methods, took me out of my comfortable design space. It was confusing and challenging but now I am writing this report, I realize how much value this exploration of different methods has brought me. I will briefly highlight my main thoughts about each method.*

### 1:10:100 planning

By implementing the 1:10:100 planning approach I decided to move away from my familiar way of designing. So instead of completing one phase before moving to the next I incorporated a more trial- and error design process. The first quick cycle (using the Design Sprint) helped me to get over the first hurdle of making choices but along the way it led to a slightly less structured process because of the amount of conducted information. When having such a complex topic, the scoping before every cycles is extra important and in a next project I would pay more attention to this.

### Transition Design

As this design approach is relatively new, in the beginning it was hard to concretize the method into a way that I could use it in my design project. But I am glad I did put effort in it because the principles of this approach gave me an interesting new perspective on what design can achieve. Normally, I ask myself once in a while: 'I am so fixed on this little detail, what am I actually doing?'. I could feel overwhelmed by this question but the principles of Transition Design made me realize that every small part can be a leverage point within a bigger transition. For me, uniting different fields of knowledge and cooperatively creating solutions resulted in a more meaningful and confident design process.

### Co-reflection

Involving so many different people in my project helped me to familiarize with this complex subject more quickly. I have really enjoyed doing this, because it brought me close to the reality I designed for. Co-reflection sessions, as I experienced, are less suitable for large groups when looking for a deeper reflection. It can create a quite

chaotic situation where all participants want to share their experience. In this case it is even more important to align expectations and make sure what the participants can get out of your cooperation for themselves.

### Personal Principles for Good Design

In this project, I sometimes felt more guided by the expertise of the people around than by the guidelines of a method. Several times I tried to solve this uncomfortable experience by going back to my four principles. For example the choice of the final concept, where I was tempted to make it a too comprehensive system. By going back to my principles I realized that this direction was not in line with my principles honest and understandable. By formulating my Personal Principles for Good Design at the beginning of this project supported me to align my process with my personal vision. If it led to better or more radical results, I am not sure, but being aware of my designer's vision made me more confident about the choices I made. Looking back, I can see my principles reflected in my results and I know that the path I took in this project is my personal perspective.

## Personal reflection

*Theoretically this project is not different from any other ID project, but still the experience was different. As a master student Design for Interaction I want to reflect upon how I interacted with this project.*

### Very personal

From the project brief to the decision for the design method and from design direction to final concept. I feel that I have been able to create my very own project. This resulted in the fact that I could work on the project with a lot of motivation, but also made that I sometimes felt very personally involved with it. I realized that, by sensing my Personal Principles for Good Design, working from my personal principles can also be my threat and that, by standing for who I am I can convince other people with my personal story rather than keeping everyone satisfied. What I would recommend myself looking back at this project, is that I would like to learn better how to cope with my weaknesses, rather than being frustrated about them.

This would increase my confidence as a designer.

### Working with a client

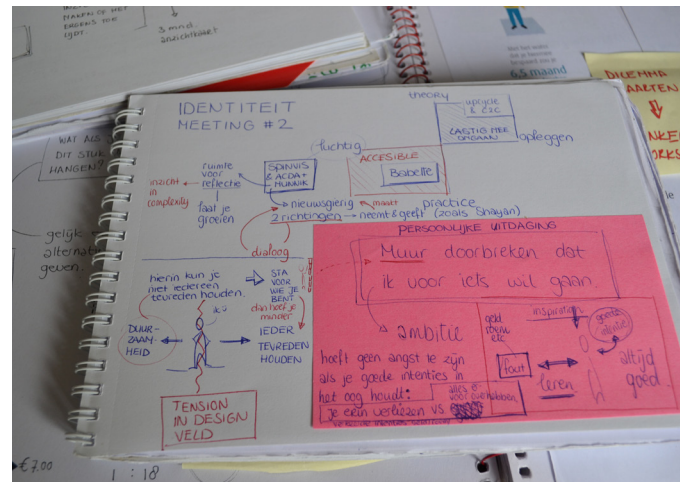
The fact that I was able to practice so close to reality brought an extra dimension to this project. Sometimes, the close collaboration with the client and involvement of so many different people looked more like a co-creation. I experienced this as a good test for reality, because what I found out is that close collaboration with a client is way different compared to working on study related projects. As in reality much more concerns are involved from different stakeholders making the design and the design process not always the first priority. I tried to carefully listen to find out the underlying message and use that to strengthen my design.

### Time to reflect

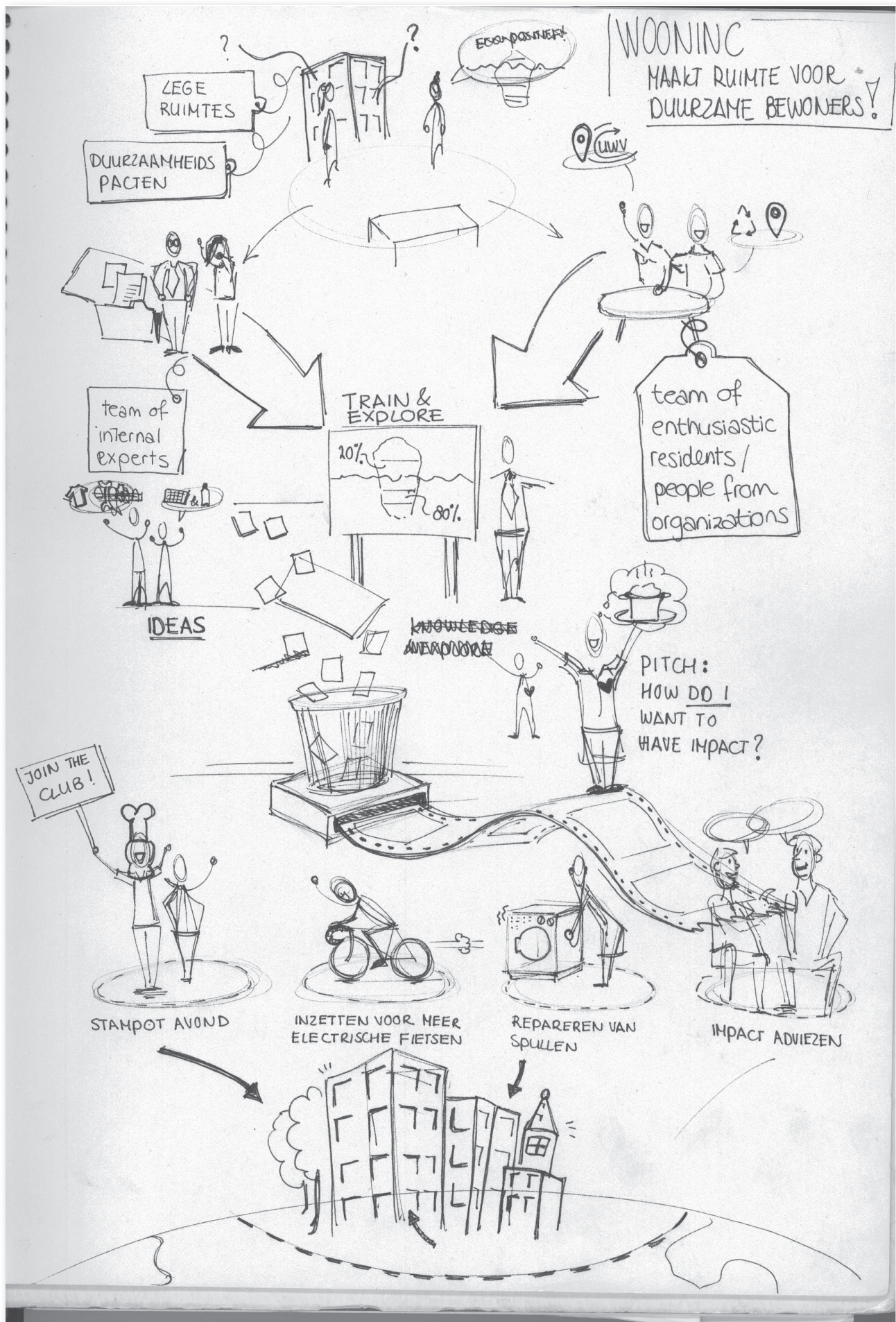
The combination of the fast commercial practice and the academic approach were sometimes conflicting. Next to the fact that I felt very personally involved, I did not always give myself the time to take a step back and reflect on my project. Even though I experienced that at the moments I did take some time to reflect it created overview and helped me to draw conclusions on the things that happened and to look forward to the steps that needed to be taken. The limited time for reflection resulted in the fact that towards the end of the project I had to combine a lot of insights and results in a coherent story. Leading to some difficult moments close to the deadlines. But, on the other hand, this combination of commercial practice, academic approach and personal involvement also triggered me to push myself to the limit.

### Mastering complexity

Graduating is a challenge, showing that you are a designer who is academic, shows depth and is to-the-point at the same time. I feel proud about what I have learned during this project and the way I tried to master the complexity of this topic. By involving new methods, experts and people into my project I constantly took myself out of my comfort zone. Which sometimes was exhausting but enabled me in the end to visualize different relationships and connections among all different perspectives. I would like to persist this in my professional life.









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Mieke (2019), Interview domain expert on transition design, 20 February 2019  
Karin (2019), Interview domain expert on neighbourhood initiatives, 15 March 2019

Only the first names of the interviewees are mentioned to protect their privacy.



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## 8. Appendix

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# Appendix A - Activities detailed overview

## Outside cycles

### Identity workshop

*Project mentor &*

## Cycle 1

### 'Duurzaamheidspact Eindhoven' meeting

*4 housing corporation managers and the chairmans of their resident association and a representative of the municipality*

### Interview

*Domain expert on resident involvement  
Manager housing*

### Evaluation

*1 resident  
1 manager housing*

## Cycle 2

### Interview

*Domain expert on consistent sustainable behaviour  
Domain expert on honest sustainability communication  
Chair housing association Wooninc.*

### Semi-structured interviews on behaviour change

*3 interviews (Twan, Sjors, Kiki)*

### Semi-structured interviews with 'De Verborgten Impact'-readers

*4 interviews (Janneke, Hans, Jack, Saskia)*

### Co-reflection

*Session 1: 25 students (as residents)  
Session 2: 2 board members of resident association SHW and 2 employees housing corporation Wooninc.*

### Evaluation idea proposal

*2 employees housing corporation  
Presentation for 30 residents at resident meeting*

## Cycle 3

### Interview

*Domain expert on climate coaching and conversations*

### Creative session

*3 IDE Master students  
Babette Porcelijn*

### Prototype test 1: dilemma cards

*2 employees housing corporation  
4 IDE Master students*

### Prototype test 2: personal presentation

*4 peers*

### Prototype test 3: 'Impact' - passport

*2 residents*

### Prototype test 4: Workshop + 'Impact' - passport

*4 residents*

## Cycle 4

### Critical reflection on transition program

*Expert on service design communication  
Expert on transition design*

### Evaluation of final concept

*Functional prototype & critical reflection  
1 peer and 2 residents*

### Interview

*Domain expert on neighborhood initiatives*

### Pitch and critical reflection

*Employee of housing corporation Wooninc.*



Research



Ideate



Specify



Prototype & feedback

# Appendix B - Interviews detailed

*In this project different people were interviewed to get their perspective on this topic. This appendix gives an overview of all the interviewed people. In the main text references can be found to these interviews. To be able to reference clearly the following categories were made:*

## Domain experts

### Domain expert 1:

Involve residents

Main message:

- make it social
- personal communication
- create a certain buzz

### Domain expert 2:

Consistent sustainable behaviour

Main message:

- sustainable behaviour is influenced by contextual- and individual factors
- align sustainability with personal values to reduce value conflict
- a positive environmental-self identity increases engagement with more sustainable actions (see figure xx).

### Domain expert 3:

Sustainability communication

Main message:

- Because of misleading information many people behave unsustainable unintentionally
- Let unsustainable choices deviate from the standard to stimulating sustainable choices (sustainability enhancing choice architecture)

### Domain expert 3:

Climate conversations

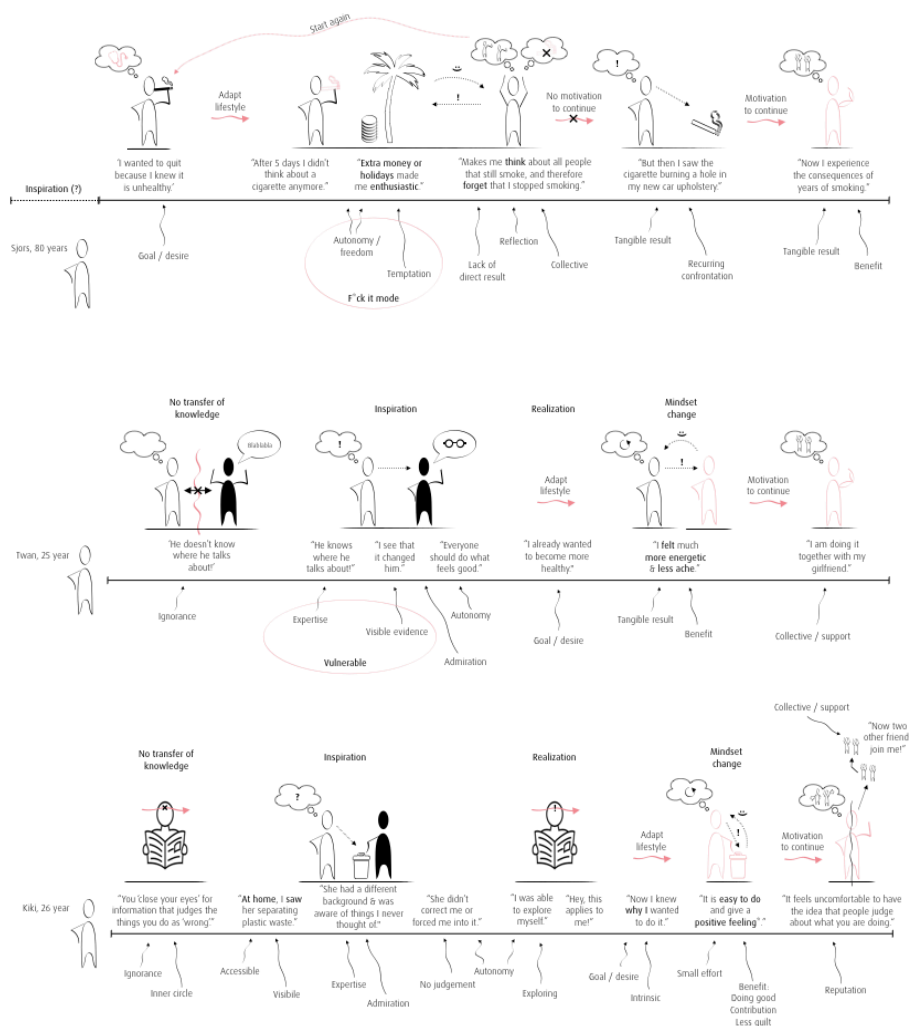
Main message:

- Begin by creating a cohesion within the group, a safe environment makes it difficult to drop out.
- Word-of-mouth advertising most effective to recruit participants.
- Coaches need to sense what people in the group need.
- Bringing like minded people together works to find recognition and to exchange experiences.



## Interviews about transition in behaviour

Several semi-structured interviews were conducted. The main insights were translated into timelines, as shown below:



### Sjors - stop smoking

Sjors tried many times to stop smoking. He knew that smoking would be unhealthy in the end, but maintaining was hard for him. When he was exposed to unusual situations he was tempted to start again. But when a cigarette burned a hole in his car upholstery he realized: now it is enough!

### Twan - eating less gluten

Inspiring person seen as one with expertise, tells a personal story with visible evidence. You can see a connection with your own life. You start implementing it in a way that works for you, directly gain a (beneficial) result makes you convinced. Try to continue by help of others.

### Kiki - separating plastic waste

Kiki got inspired by her roommate to start separating plastic waste without forcing her into it. This made her able to explore the topic herself and gain more information. It raised here awareness and created a why. Now she feels pleasant to do something good for the environment with such an easy action. Which makes her able to inspire other roommates as well.

# Appendix C - Co-reflection

This chapter presents the results of the 1 day co-reflection session organized among 25 IDE master students. This session was conducted to gain multiple perspectives on the concept proposal at the ending of cycle 2. This appendix elaborates on the developed visions and concepts during co-reflection session 1 (see figure A1). From these visions and concepts the base principles were distracted (as figure A2 shows).

The main findings of the reflection are used to enrich the concept. Six important elements: visible manifestation, experiencing by doing, social event, honest communication, relation to daily life, show progress to increase chance of continuation.

## Method

- Introduction about the co-reflection method
- Structure of session: students were divided into five groups and were asked to imagine themselves as residents of Eindhoven. They had to explore
- Way of evaluating: all visions and concepts were processed by filtering the overall vision and valuable elements of the ideas.

- Questions to be answered:

1. Would residents want to get involved in such an Impact Lab?
2. What in this concepts motivates to make a start with reducing impact
3. What barriers are there within this concept?
4. What else?

## Evaluation

Persona 1

Vision: more sustainable actions gain more benefit  
The vision of group David was that the concept should allow more benefit (give something in return) when executing actions that reduce impact.

Idea: Group David proposed a way how to create participation by encouraging competition.

Interesting notes:

Encouraged by wife & friends

Barriers: too hipster and why is Wooninc. making me do this?

Principles used in concept:

- A. The more people participate, the more benefit for the resident
- B. Compare on different scales: personal, street, district level
- C. The benefit should be something tangible and in the local context, in this case free beers.

Persona 2

Vision: simplify behaviour and show effect of behaviour  
Group Henny envisioned that the concept should make use of language that people understand and can relate to, to make the consequences of current behaviour better understandable.

Idea: The idea of group Henny is to show the consequences of current behaviour in relation to a positive and negative future scenario and therefore create understanding about their current behaviour.

Interesting notes:

Encouraged by relatives

Barrier: complexity & restrained habits

Principles used in concept:

- A. Current behaviour is simplified by small steps for- or backwards
- B. The future scenario should be related to something close-by for example the lives of their (grand) children.
- C. Competition: your direct environment is doing better than someone else's

Persona 3

Vision: show what actions have biggest impacts (quick wins)

The vision of group Esther was that the concept should show what actions in daily life create the most impact (instead of doing all kind of small stuff) and therefore give residents the confident and support that what they do contributes.

Idea: Group Esther suggested to design a physical installation in such a way that it visualizes the connection between the bigger picture and what you do as a person everyday will create a shared inspiration.

Persona 4

Vision: confrontation with current behaviour & sharing tips  
Group Jacob envisioned that by conversation and sharing practical tips on how to act, will inspire residents to try these out at home.

Idea: Group Jacob suggested that residents can participate in a workshop or event where they will be physically confronted with their own behaviour. This encourages conversation and a moment to share practical tips on how to reduce your behaviour.

Persona 5

Vision: build something together towards common goal  
Group Jason suggested that residents will be motivated to change their behaviour if they can do it together and feel responsible for each other.

Idea: Group Jason envisioned to create a concept that allows residents to join a local group with a common goal. Showing group process in the form of a local ranking system between different groups encourages competition and therefore the responsibility to help the residents within the groups.

# KNOW THAT ACTION PAYS OFF = POWERFUL

CONVULSIONS @ WORK  
SAVE MONEY HIS WIFE SAYS SO

**David**  
Sustainability is not my problem, it's mine.  
CONSCIOUSNESS IMPULSIVE, MATERIALISTIC, PRACTICAL  
Goal: I want to be a sustainable person.  
As long as I can live my life, I am fine.  
Frustration: Individual actions are not enough.  
I don't see why I should be a sustainable person and still be a sustainable person. I don't see why I should be a sustainable person and still be a sustainable person.  
Satisfaction: I have money left over from the monthly budget. I can put that aside for my sustainability at home.  
I want to live the way of a sustainable person and still be a sustainable person. I want to live the way of a sustainable person and still be a sustainable person.

**Henny**  
No time to be sustainable 2.0 Earth  
CAUTIOUS, TRADITIONAL, MATERIALISTIC, PRACTICAL  
Goal: I want to be a sustainable person.  
As long as I can live my life, I am fine.  
Frustration: Individual actions are not enough.  
I don't see why I should be a sustainable person and still be a sustainable person. I don't see why I should be a sustainable person and still be a sustainable person.  
Satisfaction: I have money left over from the monthly budget. I can put that aside for my sustainability at home.  
I want to live the way of a sustainable person and still be a sustainable person. I want to live the way of a sustainable person and still be a sustainable person.

**Esther**  
Government sustainability interests 2.8 Earth  
CONSCIOUSNESS IMPULSIVE, MATERIALISTIC, PRACTICAL  
Goal: I want to be a sustainable person.  
As long as I can live my life, I am fine.  
Frustration: Individual actions are not enough.  
I don't see why I should be a sustainable person and still be a sustainable person. I don't see why I should be a sustainable person and still be a sustainable person.  
Satisfaction: I have money left over from the monthly budget. I can put that aside for my sustainability at home.  
I want to live the way of a sustainable person and still be a sustainable person. I want to live the way of a sustainable person and still be a sustainable person.

**Jacob**  
Government sustainability interests 2.8 Earth  
CONSCIOUSNESS IMPULSIVE, MATERIALISTIC, PRACTICAL  
Goal: I want to be a sustainable person.  
As long as I can live my life, I am fine.  
Frustration: Individual actions are not enough.  
I don't see why I should be a sustainable person and still be a sustainable person. I don't see why I should be a sustainable person and still be a sustainable person.  
Satisfaction: I have money left over from the monthly budget. I can put that aside for my sustainability at home.  
I want to live the way of a sustainable person and still be a sustainable person. I want to live the way of a sustainable person and still be a sustainable person.

**Jason**  
Government sustainability interests 2.8 Earth  
CONSCIOUSNESS IMPULSIVE, MATERIALISTIC, PRACTICAL  
Goal: I want to be a sustainable person.  
As long as I can live my life, I am fine.  
Frustration: Individual actions are not enough.  
I don't see why I should be a sustainable person and still be a sustainable person. I don't see why I should be a sustainable person and still be a sustainable person.  
Satisfaction: I have money left over from the monthly budget. I can put that aside for my sustainability at home.  
I want to live the way of a sustainable person and still be a sustainable person. I want to live the way of a sustainable person and still be a sustainable person.

MOTIVATED BY

MOTIVATED BY

MOTIVATED BY

MOTIVATED BY

MOTIVATED BY

- EXPL. MORE BENEFIT FOR MORE SUSTAINABLE ACTIONS.  
B. LOCAL & HIS WIFE/FAMILY
- IDEATION  
CREATE COMPETITION:  
A. THE MORE PEOPLE PARTICIPATE THE MORE BENEFIT  
B. BENEFIT = SOMETHING TANGIBLE & LOCAL  
local pub, cafe, shop, restaurant, money, services, movement, what you want, less rent, fixed window.

- EXPL. RECOGNISABLE REFERENCES  
A. UNDERSTANDABLE BY  
B. FAMILY
- IDEATION  
CLARIFY THE EFFECT OF CURRENT BEHAVIOR  
A. EFFECT = SOMETHING CLOSEBY (CHILDREN)  
B. SIMPLY CURRENT BEHAVIOR BY

- EXPL. SHOW WITH WHAT ACTIONS MOST IMPACT TO GIVE SUPPORT & CONFIDENT.
- IDEATION  
MAKE IT LOW-KEY  
A. NOT TOO CHALLENGING  
B. CONNECT BIGGER PICTURE TO DAILY BEHAVIOR.  
C. VISIBLE IN NEIGHBORHOOD.

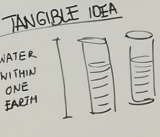
- EXPL. DO IT TOGETHER & START A CONVERSATION
- IDEATION  
PHYSICAL SPACE FOR ACTION & CONVERSATION  
A. CONVERSATION BY TANGIBLE CONCENTRATION  
B. EXCHANGE PRACTICAL TIPS  
C. MEET EACH OTHER EVERY NOW & THEN TO SEE/EXPERIENCE PROGRESS

- EXPL. SHARING RESULTS WITH LOCAL COMMUNITY & FEELING RESPONSIBLE FOR OTHERS / TO HELP OTHERS. POSITIVITY.
- IDEATION  
BUILD SOMETHING TOGETHER BY LOCAL BANKING SYSTEM BETWEEN GROUPS  
A. PROGRESS BY HELPING OTHER  
B. COMMON GOAL

UNDERSTANDABLE → SUPPORT & CONFIDENCE

REPEITION SHARE PRACTICAL KNOWLEDGE

BUILD PROGRESS TOGETHER TOWARDS COMMON GOAL.



VERLEIDEN