Appendices

Appendix A Project Brief

DESIGN FOR our future

5902

TU Delft

IDE Master Graduation

Project team, Procedural checks and personal Project brief

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

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

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

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

STUDENT DATA & MASTER PROGRAMME

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

family name: Charoenchim
initials: N given name: Napaskorn
student number: 5236142
street & no.:
zipcode & city:
country:
phone:
email:

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

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

SUPERVISORY TEAM **

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

** chair: Marina Bos De-Vos dept. / section: DOS/MOD
** mentor: Ahmee Kim dept. / section: DOS/MOD
2nd mentor: Rinske Wikkerink
organisation: Kraaijvanger
city: Rotterdam country: Netherlands

comments (optional): Marina has expertise in strategy, design value, and role identities in multi-stakeholder projects and Ahmee has expertise design practices for social, public sector. They have worked as/with architects.

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

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

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

TU Delft

Procedural Checks - IDE Master Graduation

APPROVAL PROJECT BRIEF

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

chair: Marina Bos-de Vos / Marina Bos De-Vos date: 12 - 09 - 2022 signature: Marina Bos-de Vos — Digitally signed by Marina Bos-de Vos Date: 2022.09.12 10:26:47 +02'00'

CHECK STUDY PROGRESS

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

Master electives no. of EC accumulated in total: 27 EC
Of which, taking the conditional requirements into account, can be part of the exam programme: 27 EC
List of electives obtained before the third semester without approval of the BoE:

(V) YES all 1st year master courses passed
( ) NO missing 1st year master courses are:

name: C. v.d. Bunt/M. von Morgen date: 13/9 - 20/9 2022 signature: MvM

FORMAL APPROVAL GRADUATION PROJECT

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

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

Content: (V) APPROVED ( ) NOT APPROVED
Procedure: (V) APPROVED ( ) NOT APPROVED
comments

name: Monique von Morgen date: 20/9/2022 signature: MvM

Toolkit for Participatory Design in Architecture

project title

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

start date 12 - 09 - 2022 31 - 01 - 2023 end date

INTRODUCTION **

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

Complex architectural projects usually involve different stakeholders and end users. Architects, as the designers of buildings, are required to have skills of understanding users' needs to be able to purpose and aesthetically design for them. The traditional architectural design process usually consists of five phases, the programming phase to the construction phase (Valde, 2021). Clients often provide the program of requirements/desires (PoR), and architects design and ask for approvals throughout the process. However, there is development in the design process. The start of a project does not always have a clear requirement, resulting in a broad framework. Therefore, architects use design methods to gather insights to refine the framework in each design phase. Some architectural practices have involved stakeholders in the design process, for example, through organizing workshops to get insights. Consequently, architects, together with stakeholders (users and experts), can define the problems and provide solutions until the completion of a project.

Kraaijvanger, an architectural firm located in Rotterdam, has projects with public organizations, municipalities, experts, and private organizations. For that, the design process has to be understandable and flexible to involve and guide the stakeholders along the project. Kraaijvanger Architects has been developing and experimenting by working with Design Thinking and other Agile processes with architectural design processes (figure 1) on large, complex, public buildings. Stakeholders namely clients, users, and experts are involved in participatory design activities, such as workshops divided into theme groups, with architects (figure 1). Kraaijvanger Architects wants to standardize the methods to the point that it is usable and adaptable for future projects.

To collaborate with stakeholders in architectural projects, architects need to refine the framework in each phase of design, from the sketch design phase to the construction phase. However, the number of insights provided by stakeholders increases depending on the understanding and visualization that is presented for the project. In contrast, during the sketch design and preliminary design phase, the visualization of a building is not yet clear and precise, which is sometimes difficult to understand for non-designers. Therefore, there is a challenging area where architects need to communicate enough to get insights from stakeholders (figure 2).

The possibility of developing and using participatory design can increase understanding of the requirements/desires of the stakeholders as well as communicate the value that architects' purpose, resulting in effective collaboration in the architectural design process. The graduation project will focus on analyzing stakeholders and designing a participatory design toolkit to support collaboration between architects and stakeholders.

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Personal Project Brief - IDE Master Graduation

TU Delft

introduction (continued): space for images

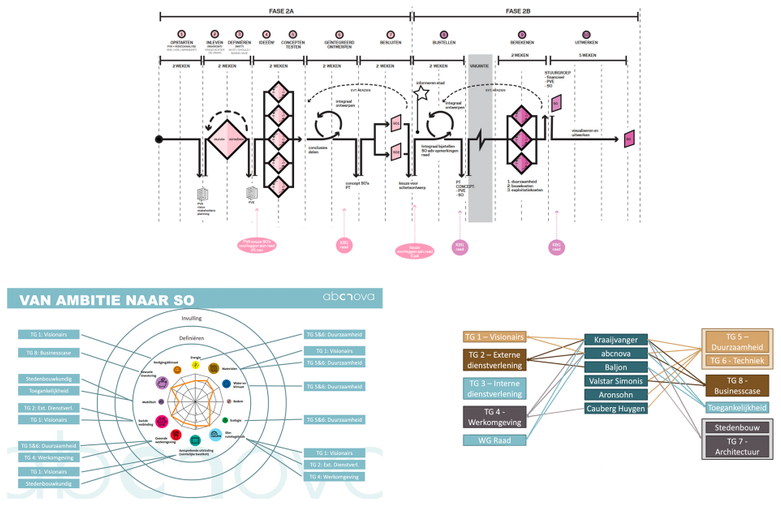


image / figure 1: Design process and stakeholders involvement from Kraaijvanger

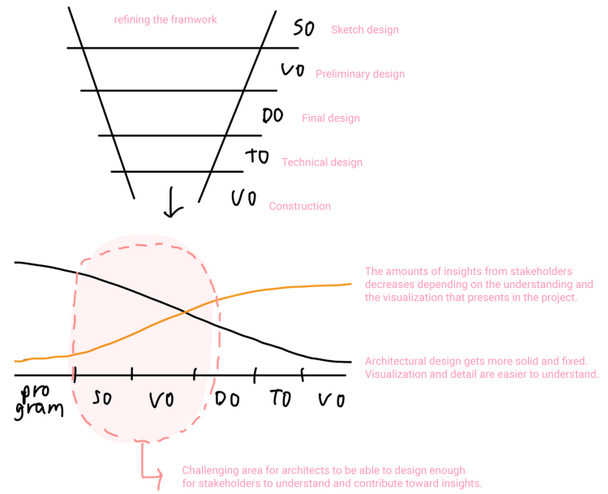


image / figure 2: Diagram of opportunity for the toolkit

PROBLEM DEFINITION **

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

In architecture, design methods have been slightly introduced and used intuitively (Ciepłucha, 2018, Indrosaptono et al., 2021). An architectural firm, Kraaijvanger, applies design methods to get insights from users and refine the framework throughout the design process. The firm gathers inputs from different stakeholders through workshops, meetings, or other communication channels along the design process. Then, architects internally analyze insights and design the building.

I will research and design based on two projects from Kraaijvanger, the House in the City and another private company building. The first project allows me to analyze the process and result from the collaboration in the sketch design phase until the final design development phase. The second project is suitable for designing and iterating the toolkit because it is currently in the sketch design phase, an early architectural design phase.

The following research question is answered during this project.
Research question: How to design a participatory design toolkit for architects (Kraaijvanger) to collaborate with stakeholders on the architectural project?
Sub question:
1. What is the current way of collaboration between architects (Kraaijvanger) and stakeholders?
2. How can the methods/tools of participatory design better support their(Kraaijvanger) collaboration with stakeholders?
3. What does work/not work in the participatory design toolkit that I have designed?
Sub questions will be answered through the planning of this project (figure 3).

ASSIGNMENT **

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

To design a participatory design toolkit for architects (Kraaijvanger) to collaborate with stakeholders on the architectural project.
~~I will research participatory design in architecture that supports collaboration between architects and stakeholders.~~

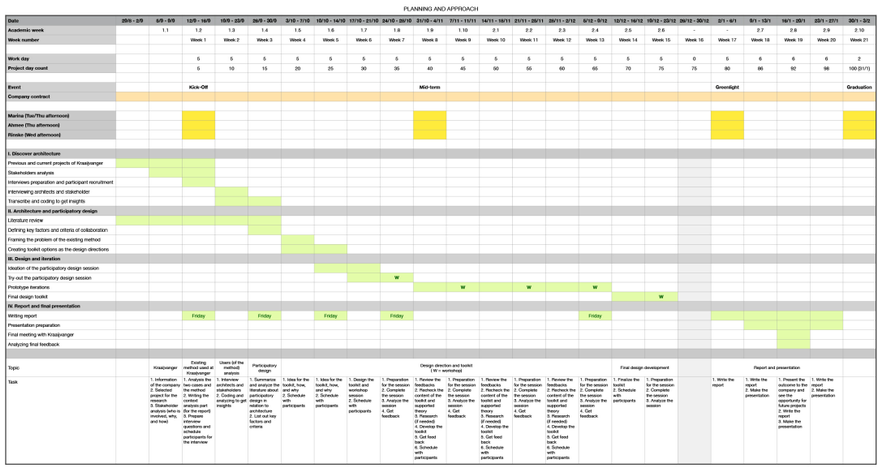
To answer the research question,
I will study two selected projects of Kraaijvanger, the House in the City and a private company building, which are related to participatory design in architecture.
1. Research their past project on how the firm has used the design method to involve stakeholders and generate insights into the design. I will interview the architects and stakeholders of the project.
2. defining the problem and finding opportunities to synthesize the results from the past and optimize them for the future. Together with the literature review, I will define key factors and criteria to improve their collaboration.
3. designing and testing the design toolkit with architects and stakeholders of the second project (a private company building) because it is still in the early phase of design.

As a result, the deliverables will consist of:
1. A toolkit for participatory design in architecture
2. Guidelines for the toolkit
I expect to use the toolkit as a collaborative tool between architects and stakeholders (clients, users, and/or experts) to optimize the understanding of the project while being able to generate insights. Consequently, architects have meaningful/in-depth information to design in the next step.

PLANNING AND APPROACH **

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

start date 12 - 9 - 2022 31 - 1 - 2023 end date



The planning of this project is divided into four stages (figure 3).
I. Discovering problem
- I will research the context of this graduation project by 1. analyzing the existing method used by architects at Kraaijvanger in the past projects 2. interviewing architects and stakeholders involved in their current project, and 3. getting information about the current projects at Kraaijvanger where I will be following and trying the toolkit.

II. Researching literature
- I will do a literature review on architecture and participatory design to define key factors and criteria of collaboration. Later on, I can initially start framing the problem of the existing method and creating options for the design directions of the toolkit.

III. Designing and testing
- To initiate and start setting up the workshop and participatory design session in architecture.
- I will continue this part with prototyping and iterating with architects and stakeholders. The feedback and insights will be taken into consideration for the final stage.
- Finalize the toolkit and make it ready to be used in the future.

IV. Reporting and final presentation
- Writing the final report using text, diagrams, and visuals to explain the toolkit. Producing a tangible version of the toolkit. Presenting the graduation project.

Personal Project Brief - IDE Master Graduation

TU Delft

MOTIVATION AND PERSONAL AMBITIONS

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

I have always been interested in architecture since I did my bachelor in the faculty of architecture and continued working for four years in the company. I see that the collaboration in the architectural firm I used to work with is neither efficient nor structured, resulting in my curiosity about an effective internal strategy that encourages collaborative working methods. Second, in architectural projects, there are often clients and other professionals involved. Therefore, I want to analyze and empathize with the way of working and expectations from different people to create an alignment to increase internal and external value.

This project from Kraaijvanger will allow me to learn and understand how they work internally. Moreover, the projects they are working on mainly include multiple stakeholders. I find it challenging to discover their needs and desires during the process of planning and completing a project. I want to design the tool for architects to be more efficient in the architectural design process when they need to understand and communicate with their clients and other people involved.

Lastly, the career I aim for will still be in the field of architecture, and I do want to combine the knowledge of two fields between architecture and what I have studied in the Master of SPD to be more strategic and future focus as well as business considerations. Later, after I graduate, I wish to become a part of the business development team in a big company. Then, consequently, I would like to have my design studio.

References

1. George Valdes (2021). Guide to architectural design phases, URL: https://monograph.com/blog/guide-to-design-phases
2. Rachael Luck (2018). Participatory design in architectural practice: Changing practices in the future making in uncertain times. Design Studies, 59 pp. 139–157.
3. Kraaijvanger (2022). Graduation project brief: Design Thinking.
4. Wojciech Ciepłucha (2018), 7 Design methods in architecture
5. Indrosaptono et al. (2021), The Studies of Architectural Design Method, Journal of Architectural Design and Urbanism, E-ISSN: 2620-9810

FINAL COMMENTS

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

Appendix B

B1. Findings from literature review on participatory design and participatory design in architecture

1. Purpose of the PD: probing, priming(immerging), **better understanding, generating idea**
2. Tools and technique:
    a. For better understanding
        i. 2D collages
        ii. 3D mockup
        iii. Diary, timeline
        iv. Cards
        v. Game board
        vi. Acting out
    b. For generating idea
        i. 2D collages
        ii. 3D mockup
        iii. Cards
        iv. Game board
        v. Acting out
        vi. Improvise
3. **Envision future** products and practices; scenarios and related tools
4. PD is driven by **ongoing and systematic reflection** on how to involve users as full partners in design and how this involvement can unfold throughout the design process.It has to be **long enough** into the development and implementation of new products and situations for this mutual learning to be completed.
5. **Conflicts** and contradictions are regarded as **resources in design**
6. In design conversations often **there is a switch in tense** between the discussion of ‘what is known’, to ‘what will be’, and ‘what is becoming’ and it is the ability to negotiate temporal shifts when designing that is considered next.
7. **Design happens in-the-moment** as the participants’ understanding of a design situation evolves
8. The human ability to see something, to perceive what it is and to be able to recognise it as something, draws on **our experience** of the world we live in, our multi-sensory perception and cognitive faculties at understanding and interpreting what is going on around us.
9. In some situations, such as discussing the appearance of the building, **language use was limited** and the absence of a common vocabulary or architectural language limited the discussion to very basic constructs.
10. Various **aspects of game designing**;
    a. games to conceptualize designing,
    b. the “exchange perspective”-design games,
    c. the negotiation and work-flow oriented design games,
    d. scenario-oriented design games.
11. There is a strong chance that they do not understand exactly **what it is they need from space and buildings.**
12. Recommendations are made to improve **the exchange of information** in architecte-user interactions
    a. Architect’s introduction of the event to establish a common understanding of the purpose and the meaning of a wish-list.
    b. Architecte-user interaction without the presence of a user authority figure.
    c. Architect’s conversational prompts to probe the underlying reasons for user ideas so the discussion can be problem-seeking as well as problem-solving.
    d. Architect’s conversational strategies to include more prompts to reveal the meaning of the space to the users and raise the discussion to the higher order representational elements of design by asking follow-up questions
13. Emmitt and Ruikar (2013) define **the difference between participative and collaborative as a difference in power.**
14. Five **key components** (A-E) in PD
    a. At least two distinct Cultural-Epistemic-Praxis units (CEPs)
        i. To fulfill the criteria of being design collaboration, there has to be at least two CEPs in collaboration, and at least one has to belong to the design discipline
    b. Productive threads of CEP exchange
        i. This output could be shared viewpoints, new knowledge or joint decisions.
    c. Knowledge brokering
        i. It is further described as a figurative place not just for transporting ideas between actors, but for transforming them.
    d. Iterative cycles
        i. several cycles, time and iteration, getting immediate feedback
    e. Tangible new outcomes
15. **The design dialogue** was developed to serve as a tool for architects seeking to involve users and their knowledge in the design process in a strategic way.
16. A typical process conducted according to DD consists of **three to five workshops, similar in structure, the focus of which shifts** from the current situation, inspiration, and vision to an increasingly detailed proposal.
17. The architects, working in teams of two or three, take **the role of workshop facilitators, planning and preparing** the material and workshop exercises in addition to coaching the participants during the workshop.
18. The **objectives of a facilitated workshop**
    a. the purpose of creating relationships between those present.
    b. as a way of sharing ideas and opinions
    c. the process of exchange and learning
    d. agreeing on and establishing goals for the project and the process
    e. It involves problem solving, decision-making or conflict resolving.
19. **Roles of architect** in PD
    a. Incorporate user in design
    b. Explain how the process work
    c. Share expertise by asking question and showing consequences
    d. Have less control, less freedom
    e. Get deeper understanding
20. Participating in co-design means that you(architect) **share your expertise by opening up the design process.**

B2. Lists of literature review on participatory design and participatory design in architecture

Topic	Paper	Keyword	Insight	Note
PD	A Collaboration System Model for Planning and Evaluating Participatory Design Projects	Participatory Design, Collaboration, Evaluation, Generative Design Research, Cambodia	- Participatory design (PD) is the process of expert designers and participants from impacted communities working together to create appropriate solutions. - This style of project creates contextually appropriate solutions and empowers impacted communities to have increased ownership over the process and end result. - The three knowledge-sets were process knowledge, design knowledge, and basic knowledge. Christiaans stated that process knowledge is domain-independent while design and basic knowledge are domain-specific. - It is likely that a participant would contribute basic knowledge in the form of tacit knowledge about their socio-cultural environment, daily activities, and specific wants and needs. Designers would contribute process and design knowledge in the form of technical skills and project management and planning. - Challenges with participants - a lack of experience with formal activities, lack of tenacity, and lack of creative ability, the technical expert's ability to equalize power relations, use appropriate activities, and work within the relevant socio-cultural context	theme- reflection session, - mutual knowledge, - participants and challenges
PD	A tool for reflection—on participant diversity and changeability over time in participatory design	Participation; participant diversity; changeability over time; reflection tool; vulnerability	- The concept of a reflective practice does not provide systematic guidance on how to conduct a continuous and long-term reflection. - The idea is that the PRT (Dalsgaard and Halskov (2012) Project Reflection Tool (PRT)) will facilitate the identification of flaws in the approach, and that the act of documenting will encourage further reflection. The author agrees that there is a deficiency of rigorous project reflection, but adds that there is even less reflection regarding the people involved. - This has provided her with an understanding that vulnerability and whether or not people find it easy to participate always need to be taken into account, no matter what context	theme- reflection session - participants
PD	From User-Centered to Participatory Design Approaches		- It is the belief that all people have something to offer to the design process and that they can be both articulate and creative when given appropriate tools with which to express themselves. - They(users) are beginning to use their influence to get what they want, when they want it and how they want it. - If we can learn to access people's experiences (past, current and potential), then we can make user experience the source of inspiration and ideation for design. And by making user experience the source of inspiration, we are better able to design for experiencing. - Explicit - observable - tacit - latent - Special tools are needed to access the deeper levels of user expression. By accessing people's feelings, dreams and imaginations, we can establish resonance with them. - Say think (SAY) - do use (DO) - know feel dream (MAKE) - The Make Tools serve as a common ground for connecting the thoughts and ideas of people from different disciplines and perspectives. - Its purpose is to discover as-yet unknown, undefined, and/or unanticipated user or consumer needs. Ideas and opportunities generated by users are usually quite relevant and powerful when acted upon and brought to market.	important and interesting
PD	Probes as Participatory Design Practice		- to collect ideas for creative design solutions from prospective users: A set of materials and questions stimulate users to observe, document, reflect and comment on their own everyday life over a certain period of time. - probes work as capture artifacts, (auto)biographical accounts, by making the invisible visible, by establishing participants as experts and by facilitating dialogue and conversation.	tools
PD	Probes, toolkits and prototypes: three approaches to making in codesigning	design; codesign; making; cultural probes; prototypes; generative toolkits; service design; design fiction; future	- the designerly ways of doing research is that they involve creative acts of making - Methods and tools for making give people – designers and non-designers – the ability to make 'things' that describe future objects, concerns or opportunities. They can also provide views on future experiences and future ways of living. - in the very earliest phase of the design process, the focus is on using making activities for making sense of the future. - we really cannot separate making from telling and enacting. - The meaning of the artifact is revealed through the stories told about it and the scenes in which it plays a role. - Generative toolkits are used to follow a more deliberate and steered process of facilitation, participation, reflection, delving for deeper layers in the past, making understanding explicit, discussing these, and bridging visions, ideas and concepts [scenarios] for the future.	tools sequence
PD	A Heuristic Structure for Collaborative Design	collaborative design, design theory, heuristic structure	A Heuristic Structure for Collaborative Design (CD) Five components seem to recur in our review of the CID literature; (1) cultural-epistemic-praxis units, or CEPs; (2) productive threads of CEP exchange; (3) knowledge brokering; (4) iterative processes; (5) demonstrable new outcomes.	PD definition
PD	Understanding the collaborative-participatory design	Collaboration, participation, user, design	- Working in interdisciplinary teams is more and more being regarded as essential for design, since multiple expertise and different ways of thinking allow the same design problem to be tackled from different points of view. - It is worthwhile noticing that user-centered design has permitted direct contact between designer and end-users, thus improving collaboration between the parties involved in the development process. However, there is still a controlling attitude from the designer, which can prevent the user from having a more active participation, this being the limiting factor for the user-centered approach [7] - collaborative-participatory design involves designing with the user, at the participatory design involvement level, and it points to the user as an inside and active contributor throughout each step of design development.	PD definition
PD	Using Probes for Sharing (Tacit) Knowing in Participatory Design: Facilitating Perspective Making and Perspective Taking	probes, older adults, senior citizens, co-crea- tion, participatory design, expertise, tacit knowledge, neighbourhood, boundary objects	- The sharing of expertise and tacit knowledge is one of the core objectives in participatory design projects. - The intention of using probes is literally to send a probe into the everyday life of people in order to collect information. - Whereas expertise used to be understood as something logical, the understanding of it has moved towards ideas of expertise as something practical: "something based on what you can do rather than what you can calculate or learn" - He conceptualized tacit knowledge as something highly personal and difficult to communicate	knowledge tools
PD	A Framework for Organizing the Tools and Techniques of Participatory Design	Tools, techniques, methods, approaches, framework	Here we find various toolkits deliberately aimed at supporting particular groups of potential users in making robust representations of systems or products (see Müller (2007) and Sanders (2008) for examples).various toolkits deliberately aimed at supporting particular groups of potential users in making robust representations of systems or products (see Müller (2007) and Sanders (2008) for examples).	Tools, context and setup
PD	What is it that makes participation in design participatory design?		What are the common themes, characteristics and qualities that connect across different applications of participatory design? 1. Equalizing power relations 2. Situation-based actions 3. Mutual learning - 'reflection-in-action' 4. Tools and techniques 5. Alternative visions about technology 6. Democratic practices - a set of values	PD definition
PD	Challenges and Opportunities in Contemporary Participatory Design		- Participatory Design projects are always driven by ongoing and systematic reflection on how to involve users as full partners in design and how this involvement can unfold throughout the design process. - One of the greatest challenges in Participatory Design projects is for the process to continue long enough into the development and implementation of new products and situations for this mutual learning to be completed and for the process and its outcomes to be both reflected upon and otherwise evaluated.	PD and challenges

PD	Scandinavian Approaches to Participatory Design		- Methods for participatory design include techniques for involving future users, people who know the work, in all parts of the development process: determining design objectives on social {not only technical} bases; 1. analysis of the current situation and co-construction of problem formulation 2. conceptualisation of design, designing and evaluating possible design solutions 3. implementing changes including training people for new practices 4. evaluation, maintenance and ongoing improvements 5. iterative design - Conflict in design is an important resource for creativity - Conflicts arise in relation to multiple needs, multiple objects (motives), and the alienation that individuals experience within institutions and the order imposed by work and societal institutions.	PD definition
PD	Designing Exploratory Design Games: a framework for participation in participatory design?	Designing exploratory design games, game pieces, rules, participation, framework, participatory design processes.	various aspects of designing; 1. games to conceptualize designing, 2. the "exchange perspective"-design games, 3. the negotiation and work-flow oriented design games, 4. scenario-oriented design games.	Tools and purpose
PD	Dotte Agency: A Participatory Design Model for Community Health			
PD	Routledge International Handbook of Participatory Design			
PD	Collaborative Design Management			
AR	User Needs and Expectations	Buildings, Users, Needs, Perceptions, Habits, Productivity, Performance, Probe, Workplace, Strategy	- The parts that are most relevant to our subject matter here are: 1: Habits, Needs, Preferences, and 2: User Strategies - Habits, needs and preferences are to some extent culturally dependent. They are affected by attitudes to health, safety, risk, and fashion as well as regulations, and organizational and social norms. - Users' needs and preferences are (obviously) linked to user strategies which in turn are connected to 3: Activities. - Users give highest importance to: 1. the activities or tasks in which they are primarily engaged 2. their preferences, which have a firm cultural basis	interesting paper, users need and building
AR	Architect and user interaction: the spoken representation of form and functional meaning in early design conversations	architectural design, conceptual design, communication, collaborative design, design activity	- Medway (2000) identifies four main categories, the elements of design that may be represented through the discourse of architecture. Medway's four elements are 1. the functional or structural naming of attributes of the space (75) 2. a perceptual awareness of properties of the space (7) 3. a phenomenological description of the experience of the space (17) 4.the symbolic meaning applied to the space (3) - Recommendations are made to improve the exchange of information in architecte-user interactions 1. Architect's introduction of the event to establish a common understanding of the purpose and the meaning of a wish-list. 2. Architecte-user interaction without the presence of a user authority figure. 3. Architect's conversational prompts to probe the underlying reasons for user ideas so the discussion can be problem-seeking as well as problem-solving. 4. Architect's conversational strategies to include more prompts to reveal the meaning of the space to the users and raise the discussion to the higher order representational elements of design by asking follow-up questions	Interaction of architect and users in architecture
AR	Challenges in co-designing a building	Architecture profession; co-design; design process; building design	- Collaborative approaches: collaborative approaches try to overcome the problem in the briefing and the design process by involving users directly in the design process through collaboration between architects, researchers, clients and users. Users are actively engaged in all stages of the design process and asked to express their subjective experience and knowledge directly. - the challenges 1. challenges in managing the changing role of actors in co-design approaches compared with more traditional approaches. 2. challenges for architects and designers in deciding which of the various tools and methods developed in participatory architecture to use at different design stages1 and for different types of projects. 3. challenges in ensuring that a high-quality design outcome is achieved in co-design approaches.	Co design and challenges in architecture
AR	Challenges in co-designing a building	Architecture profession; co-design; design process; building design	- the collective creativity of collaborating designers across the whole span of a design process and in a broader sense, it refers to the creativity of designers and people not trained in design working together in the design development process (Sanders and Stappers, 2008). - challenges for future architecture practice. - Lawson (1980) categorized them into three different types distinguished by methodological differentiation in the design process: design by drawing; design by science; and collaborative approaches. - collaborative approaches try to overcome the problem in the briefing and the design process by involving users directly in the design process through collaboration between architects, researchers, clients and users. - clients and designers must discuss issues and solutions together in the design process to produce better buildings	Co design and challenges in architecture
AR	Seeing architecture in action : designing, evoking and depicting aesthetic becoming	design practice, creativity, architecture, temporality, visualisation, ethnomethodology	- This is also noteworthy, as in design conversations often there is a switch in tense between the discussion of 'what is known', to 'what will be', and 'what is becoming' and it is the ability to negotiate temporal shifts when designing that is considered next. - Another attribute emphasized is that design happens in-the-moment as the participants' understanding of a design situation evolves. What is becoming is acknowledged. - Sometimes the experience of buildings and spaces previously visited are brought into conversation, and salient aspects of an experience known to one person can, to some degree, be shared with other people present. - in design interactions, a shift in tense between what is, will be and is becoming is profound for making sense in a co-evolving situation.	Interaction of architect and users in architecture
AR	Architects and users in collaborative design	Architect, Co-Design, Collaborative Design, Facilitator, Front-end activity, Participatory Design, Users	- Architects are possibly one of the actors in the building industry working closest to users, or at least have the possibility to do so. To be able to identify user needs, they borrow from research methodologies. Architects interview, observe and collect data that feed into their process of design. The notion is that if the architect can find the requirements they will incorporate them into their design and find good solutions. This view wrongly assumes that the user possesses all the answers, or that the architect can find all the answers just by looking for them in the user's contexts.	Interaction of architect and users in architecture
AR	Kinds of seeing and spatial reasoning : Examining user participation at an architectural design event	user participation, reasoning, architectural design, problem solving, ethnomethodology	- The human ability to see something, to perceive what it is and to be able to recognise it as something, draws on our experience of the world we live in, our multi-sensory perception and cognitive faculties at understanding and interpreting what is going on around us. - In the participants' ongoing attempts to find a solution for these characteristics of the problem were revealed and specified and the problem was re-formulated. While problem formulation and the propagation of a problem in the course of interaction is not on its own novel, given some preconceptions of user engagement in architectural design, in this setting these actions were remarkable.	user participation in architecture

AR	Dialogue in participatory design	architectural design, social design, user participation, communication, conceptual design	- To observe how user needs are discussed when architects meet with building users. Several themes emerged from this review; 1. That generalization, extrapolating user preference to a broader population, should be approached with caution. 2. Tacit knowledge, giving insight into user experience of an environment, can be revealed through discussion. 3. Descriptive narratives and metaphors can reveal tacit knowledge. 4. Users suggesting 'solutions' can limit a design solution. 5. In some situations, such as discussing the appearance of the building, language use was limited and the absence of a common vocabulary or architectural language limited the discussion to very basic constructs.	Interaction of architect and users in architecture
AR	Participatory design in architectural practice: Changing practices in future making in uncertain times	participatory design, architectural design, user participation, design research, epistemology	- Collaborative practice signals a commitment to "mutual knowledge" is a core concept in participatory design. - "methodology comes out of doing and then reflecting after doing" - This ability to scale beyond a project is important as architects champion participation in design, development and creative growth at larger scales. - The PD project acts as a site for learning and change in several senses, and may include the participants' changed understanding and appreciation of the value of the community in which they live, as well as concrete changes to spatial arrangements in the environment.	PD in architecture
AR	Co-design in the architectural process	Participatory design, collaboration, co-design, design research, placemaking, architectural authorship	Through the ten workshops, it was discovered that co-design activities that are focused and designed according to the user uncover information that supports the design process. The workshops introduced in this paper were an effective way of ideation at the beginning of the spatial exploration. In order for co-design to genuinely impact the design process throughout the work stages, there is a need for the workshops to not only delve deeper into specific aspects of design but also to involve more than one user group. The co-design process is a learning process, both for the architect and for the users.	Case
AR	Architectural Co-Design – Emerging Best Practices for Indigenous Housing		- Co-design can help to establish the project vision, define programs, set guiding principles, and inform the design. - there are also challenges associated with co-design and community engagement processes, especially when determining the scope of the engagement and what is possible. It is very important to be clear with community members about what is on the table and what is not. - four guiding principles for engaging in architectural co-design for Indigenous housing: collaborate, listen, learn, understand	Case and challenges
AR	Involving user perspectives in architectural design through scenarios: Lessons learned with students designing a co-working space	Architectural Design, Co-working, Design Education, Scenarios, User Experience.	- Architects are typically expected to come up with novel concepts, without having direct access to those they are designing for. Clients often do not coincide with users, and in many design competitions, even contact with the client is limited - The skill to involve user perspectives is deemed necessary for communication with the growing number of stakeholders in professional practice - Scenarios are narratives about user-product interactions that are used to explicitly and iteratively explore user experience in design - scenarios have the potential to enhance the focus on user experience in architectural design by having (student) designers iteratively take the users' perspective - scenarios allowed for a future-oriented exploration of a new building programme	Education, scenario, persona
AR	Learning to talk to users in participatory design situations	architectural design, design practice, design education, communication, user participation	- expert architect vs less-experienced architect - The graduate's proficiency at introducing a design workshop was seen to improve during the timescale of the project, yet the ease with which the users joined the design discussions remained less fluent than an event led by the project architect. - the skills to facilitate participatory design workshops are learnt over time and with experience in practice.	Education, experience
AR	COLLABORATIVE DESIGN MANAGEMENT	architectural design, design management, interdisciplinary collaboration, participatory design		

Appendix C

C1. An overview of workshop 1 (City hall Amersfoort) observation

Amersfoort — workshop with citizens (19.00 - 21.00)

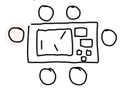
participant → architects of the project (3)
citizen of amersfoort (74±)
people from municipality who helps organize (5±)

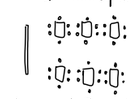
tools → worksheet, reference images, floor plan, VR, 3D visualization of rooms, pen, post-it

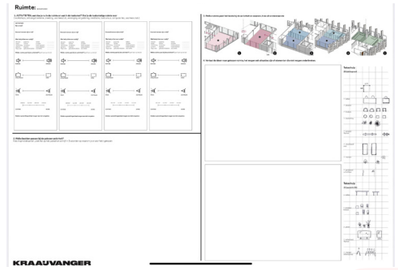
purpose → to get inputs from citizen of what the room should be, which function should it have
(architect already has those rooms fixed in the building. they just want to know what it's for)

set-up → Participants sit in groups randomly (in total is 6 groups with 3-5 people)

1. A person from municipality welcomes everyone and tells the schedule (5 mins)
2. Lead architect presents the work : basic information of the project city hall (10 mins)
3. Architect team explains the set-up and tools (10 mins)
4. workshop session (30 mins)
   - each group has abt 3-5 citizens with one person who knows about the project either from KA or municipality
   - each group has people from different expertises so the outcome are various







5. Each group presents the outcome from their discussion (2 mins each)
   → people can ask some questions here
6. there is an artist drawing/ visualizing the discussion from each group into an image (as the summary of this session)
7. drink and talk in general

analyze/note
- architects seem to satisfied with the session because participants are really engaging and it goes smooth
- there are some strange participant that go off topic in the group
- facilitators are needed
- the drawing that summarizes everything is nice and easy to understand
- participants aren't not really trying the VR
- there is a floor plan but it seems confusing if there's no one (like architect) asks and draw for the group
- the big screen is good to show the context
- participants give opinion from their experience or people they work with for the future use

for example 2 adults working with people w/ disabilities

C2. An overview of workshop 2 (Battolyser) observation

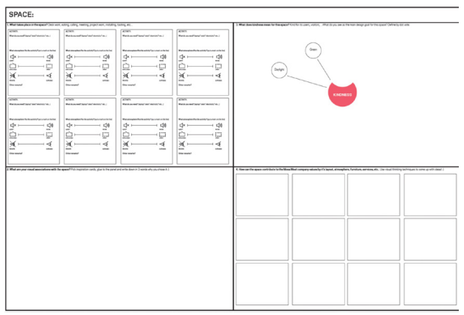
MM — 2nd workshop
information from the firm → divide into groups of 6 → 3 areas/group (entrance, restaurant, lab) → total 5 groups
→ architect as a facitator

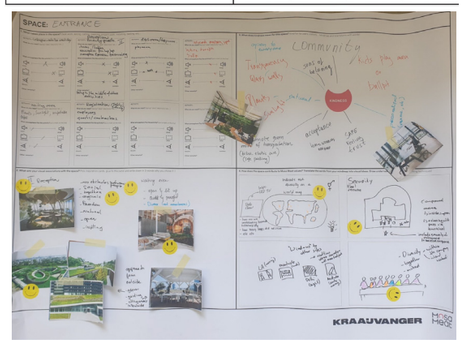
participant → employee abt 30 ppl

purpose → to get inputs on how they perceive the project and what they want
+ worksheet
Kraaijvanger has information of what are the spaces in this building which can be specified in the worksheet

tools → worksheet, post-it, pen, reference images, stickers

set-up →
1. Introduction of the project by architect
2. instruction of how to do the activities by architect (also give examples) (this take about 10 mins)
3. divide people into group (of 6) based on their department
4. give the worksheet & tools (this take 30 mins/area)
5. participant presents their work group by group and they put stickers on the idea they like (this take about 10 mins
6. they do it again for 3 rounds
7. conclusion



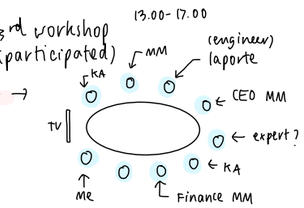


analyze/note
- engaging activities
- simple because they use those spaces before
- what about inputs from architects ?
- connection to the next workshop is unclear
- I personally like voting
- paper is A1 : big enough for everyone to draw
- Architect gets inspiration out of this workshop (more like a concept for look and feel and some important elements)

C3. An overview of workshop 3 (Battolyser) observation

MM — 3rd workshop (participated) 13.00 - 17.00

participant → MM, KA, (engineer) laporte, CEO MM, expert ?, KA, me, Finance MM



purpose → to present and get feedback on scenario options)

tools → print out of plan, 3D mass orientation, post-it, pen, reference images, pptx.

set-up →
1. presentation from KA architect
   - planning of the meeting
   - concepts / keyword
   - the purpose, outcome, and what's next
   - scenerios (function, aesthetic, ref.)
   (this take 1 hour)

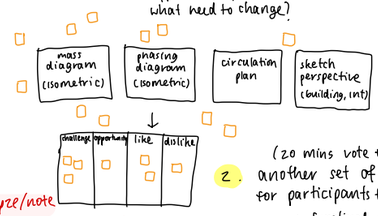
note - some people start asking questions and give opinion on the options
- there are conflicts in what they want and what can't be done
- somebody has a strong opinion over one option
- sometimes they talked about things that's not directly on the purpose of this meeting yet
- architect roles are presenting, asking questions, and taking note, giving opinion

2. lunch (30 mins)

3. workshop on scenerio (14.30 - 17.00)
   (architect as facilitator + 5 participants)
   1. for each scenario/do one by one (total 4)
      → challenge
      → opportunity
      → like
      → dislike
      ask participant to write on a post-it individually
      → typical MM? what need to change?

in the presentation, architect also shows +/- of each scenerio too

1. scenerio 1 & 4
   15 mins post-it
   45 mins discussion
2. scenerio 3
   10 mins post-it
   15 mins discussion
3. scenerio 2
   5 mins post-it
   20 mins discussion



analyze/note
- it is to get a feedback on scenerio not really a participatory design (I think)
- the 4 key words helps to scope down what architects want and also leads to further conversation
- set 3 questions is good to have in order to see which to focus on most
- main activities here are (listening and talking (not really doing)
- there is not yet a clear outcome
- some people speak more than others

   (20 mins vote + discussion)
   2. another set of questions for participants to vote — see if it fits with each scenario??
      1. functinal set up
      2. phasing possibility
      3. good circulation
      4. representative/approaching
      5. employee happiness
      6. future grow
   3. put things in order (prioritize the 6 options)
      rank from 1 to 6
   4. architects will come back and develop furture
      ↓
      and take to engineer about possibility too.

C2. Findings from observation from three workshops of case studies

1. Purposes of the workshop
2. Set-up in the workshop
3. Content of the workshop
4. Tools in the workshop
5. Outcome of the workshop
6. +/-
7. Summary

	MM1	MM2 (Participated)	AMF (Participated)
Purposes of the workshop	To ask questions/get a big picture idea	To get feedback	To ask questions/get a big picture idea
Set-up in the workshop	- Big room - With introduction + workshop + conclusion - 5 groups of 6 people - 3 architects as facilitators - total approx 2 hrs	- Small room - With introduction + discussion - 1 group of 5 people - 2 architects - total approx 4 hrs	- Big room - With introduction + workshop + conclusion (a person visualized the discussion) - 5 groups of 2-5 people - 3 architects and 2 municipal as facilitators - total approx 2 hrs
Content of the workshop	- Asking activity question (users have experience with it) - Having icons and scale to make it easy to visualize/imaging - Inspiring by having inspiration card - Triggering by giving words and example for idea generating - Guiding by giving an example (is it guiding?) - There is storyline building up in the worksheet - Presentation and vote in the end	- Presenting scenarios (options) - Recap what architect has done - Inspiring by having reference images - Triggering by asking participants to think individually first and discuss later - Structure the discussion with the topic building up	- Asking activity question (users have experience with it) - Having icons and scale to make it easy to visualize/imaging - Inspiring by having inspiration card - Guiding by giving an example (is it guiding?/ the drawing doesn't look clear to participants) - There is storyline building up in the worksheet (participants did not follow 1,2,3,..) - Presentation in the end
Tools in the workshop	- Worksheet - Pen - Inspiration card - Sticker - Presentation from AR	- Presentation from AR - Post-it - Pen - Floor plan, 3D - Perspective	- Worksheet - Pen - Inspiration card - Floor plan - VR - Presentation from AR
Outcome of the workshop	- Inspiration for architect to design (the big concept)	- Useful information from the discussion for later phases	- Inspiration for architect to see what kind of activity will happen (the big concept)
+/-	- Simple because participants have experience with old space so they can talk about it - Architects can start asking about the room in the beginning even though it doesn't define yet with the size, blabla - Participants and their experiences > easy to explain - Not sure if the setting of the worksheet should go in one direction (maybe it should be circular?) - Voting is interesting - There is no visualization for conclusion as AMF - Architects get the concept from participants' inputs	- The main activity is discussion to find (possible)solutions - It focuses on listening and talking about the provided options - The (building up)structure of what to discuss about is good - There is no clear conclusion from the workshop - Participants are more like experts and owners - Individual and the group discussion - Less inspiring/triggering compares to the other two - Small room doesn't really fit for doing kind of activity - Architects also give opinion in the discussion	- 2 hours is good for a workshop with users - It is sharing and continuing the conversation and less of the discussion - Nothing can go wrong in the idea - Facilitator is needed. Each group processes differently - Participants seem to like the conclusion in the end - There are some unsuitable participants - Participants don't really follow the steps in the worksheet - Some tasks take too much time so they decide not do it or do it too quick - Drawing can be challenging for some people

Summary

- There must be a clear purpose and structure for each workshop and the facilitator explains it to participants.
- If possible, explain the whole series of workshops. It can be a rough plan.
- Physical space needs to be big enough or fit for the desired activity.
- Time given and provided tools must be fit for each other and serve the purpose.
- Tools should be simple and also flexible. (for the sequence of use, how to proceed,..)
- All facilitators should be informed of their role and there is level of involvement.
- If possible, explain the whole series of workshops. It can be a rough plan.
- Participants: experts vs users vs one-time users.
- Introduction and conclusion is important.
- How much triggering and guiding needed is depending on the purpose of the workshop.
- There are many ways of collaboration: drawing, talking, building blocks,..

Appendix D

D1. An interview guide for architects

How to design participatory design toolkits for architects to collaborate with stakeholders in architectural projects?

Interview Questions_architects_HvdS

Hi! I'm Napaskorn and I'm a student at the TU Delft. Currently I'm working on the graduation project and for that project Ireally need your input and expertise as a user. What we are trying to do with this research is gathering insight on your opinions and ways of doing. This means that you can not give a wrong answer. I am just going to have a conversation based on some questions that are formulated.

Did you read the consent form and if so, do you agree with everything that is being said there? (*If not, do you have any questions or changes?)*

If a question is unclear, if you don't understand a topic or if you want to know some context, feel free to ask.

Do you have any questions before I start?

1) I would like to know about your firm and your responsibility in the firm and in this project, could you tell me about the company, your role, and your contribution toward the project?

I would like to explore the project 'HvsD' and your participation in the project. I will start with the next question.

1) What is the project about and who is involved?
2) Could you explain the situation of the design process of the project at this moment?
3) How was the process in the previous phase? What have you done and with whom?
4) Could you explain about the participatory design activities that happened?
    a) How many workshops have happened before in each design phase?
    b) Who are the participants?, Who selects them?, How many people participate?
    c) Where does the workshop happen?, How long does it take in each session?
    d) What are the tools being used?, How is the setup?
    e) What are the outcomes of the workshop?, How will you use it in the design?
    f) How do you feel after the workshop is done? Happy? Curious? Excited?
5) (If architects are not participating in the workshop) Would you like to do the participatory activities with others? why?
6) (If architects are participating in the workshop) How was your experience participating in the activity?
    a) Was there anything that you were looking for? And did it serve your purpose?
    b) How would you improve that workshop? why?
7) What is the next step of the project? How do you proceed from now?
8) How much do you like involving/working with stakeholders in any participatory activities throughout the design process?
9) What do you consider as a value in architectural design? What is the most important thing in the design?

Thank you so much for participating in this interview. Your answers really helped with gaining more insight in participatory design in architecture. If you want I can keep you up to date with the results and send you the final research paper later on.

D2. An interview guide for users

How to design participatory design toolkits for architects to collaborate with stakeholders in architectural projects?

Interview Questions_users_HvdS

Hi! I'm Napaskorn and I'm a student at the TU Delft. Currently I'm working on the graduation project and for that project Ireally need your input and expertise as a user. What we are trying to do with this research is gathering insight on your opinions and ways of doing. This means that you can not give a wrong answer. I am just going to have a conversation based on some questions that are formulated.

Did you read the consent form and if so, do you agree with everything that is being said there? (*If not, do you have any questions or changes?)*

If a question is unclear, if you don't understand a topic or if you want to know some context, feel free to ask.

Do you have any questions before I start?

1) Could you tell me about yourself and your life in Amersfoort?

I would like to explore the project 'HvsD' and your participation in the project. I will start with the next question.

1) Could you tell me how you got involved in this project?
    a) What were activities you had done in the past for this project?
2) What is your experience in the workshop session that was provided last week?
   (I want to experience the workshop by listening to your story)
    a) Which group were you in? How come you decide to join that group?
    b) How was the conversation going within the group?
    c) The tools for this workshop are paper work, set of plan, reference images, post-it, and pen. How do you find the tool useful for this workshop? Did you try looking at the 3d walk through?
    d) What were the outcomes of your group? Are you satisfied with it?
    e) How did you feel after the workshop was done? Happy? Curious? Excited?
3) Are there other projects that you have participated in the session like this?
    a) If yes, compared to HvdS, what are the differences?
    b) If not, would you love to have more of the participatory activity?
4) Regarding the design from architects, what is your opinion on the outcome from the workshop and the development of the design?
5) How much do you like involving/working with architects in any participatory activities throughout the design process?
6) What do you consider as a value in architectural design? What is the most important thing in the design?

Thank you so much for participating in this interview. Your answers really helped with gaining more insight in participatory design in architecture. If you want I can keep you up to date with the results and send you the final research paper later on.

D3. An interview guide for clients

How to design participatory design toolkits for architects to collaborate with stakeholders in architectural projects?

Interview Questions_client_HvdS

Hi! I'm Napaskorn and I'm a student at the TU Delft. Currently I'm working on the graduation project and for that project Ireally need your input and expertise as a user. What we are trying to do with this research is gathering insight on your opinions and ways of doing. This means that you can not give a wrong answer. I am just going to have a conversation based on some questions that are formulated.

Did you read the consent form and if so, do you agree with everything that is being said there? (*If not, do you have any questions or changes?)*

If a question is unclear, if you don't understand a topic or if you want to know some context, feel free to ask.

Do you have any questions before I start?

1) Could you tell me about yourself and your role regarding the workshop in Amersfoort?

I would like to explore the project 'HvsD' and your participation in the project. I will start with the next question.

1) Could you tell me how you got involved in this project?
    a) What were activities you had done in the past for this project?
2) What is your experience in the workshop session that was provided last week?
   (I want to experience the workshop by listening to your story)
    a) What are the activities that you involve in this workshop?
    b) What is your opinion of the set up? Introduction-Activity-Conclusion
    c) If you didn't do the activity, Do you wish to join the workshop as a participant? Why?
    d) Do you have any suggestions for the workshop? Positive and negative feedback?
    e) How did you feel after the workshop was done? Happy? Curious? Excited?
3) Are there other projects that you have participated in the session like this?
    a) If yes, compared to HvdS, what are the differences?
    b) If not, would you love to have more of the participatory activity?
4) Regarding the design from architects, what is your opinion on the outcome from the workshop and the development of the design?
5) Is The result useful for your side in order to improve the service of the municipality?
6) How much do you like involving/working with architects in any participatory activities throughout the design process?
7) What do you consider as a value in architectural design? What is the most important thing in the design?

Thank you so much for participating in this interview. Your answers really helped with gaining more insight in participatory design in architecture. If you want I can keep you up to date with the results and send you the final research paper later on.

D4. An interview guide for experts

How to design participatory design toolkits for architects to collaborate with stakeholders in architectural projects?

Interview Questions_experts_HvdS

Hi! I'm Napaskorn and I'm a student at the TU Delft. Currently I'm working on the graduation project and for that project Ireally need your input and expertise as a user. What we are trying to do with this research is gathering insight on your opinions and ways of doing. This means that you can not give a wrong answer. I am just going to have a conversation based on some questions that are formulated.

Did you read the consent form and if so, do you agree with everything that is being said there? (*If not, do you have any questions or changes?)*

If a question is unclear, if you don't understand a topic or if you want to know some context, feel free to ask.

Do you have any questions before I start?

1) I would like to know about your firm and your responsibility in the firm and in this project?
2) Could you tell me about the company, your role, and your contribution toward the project?

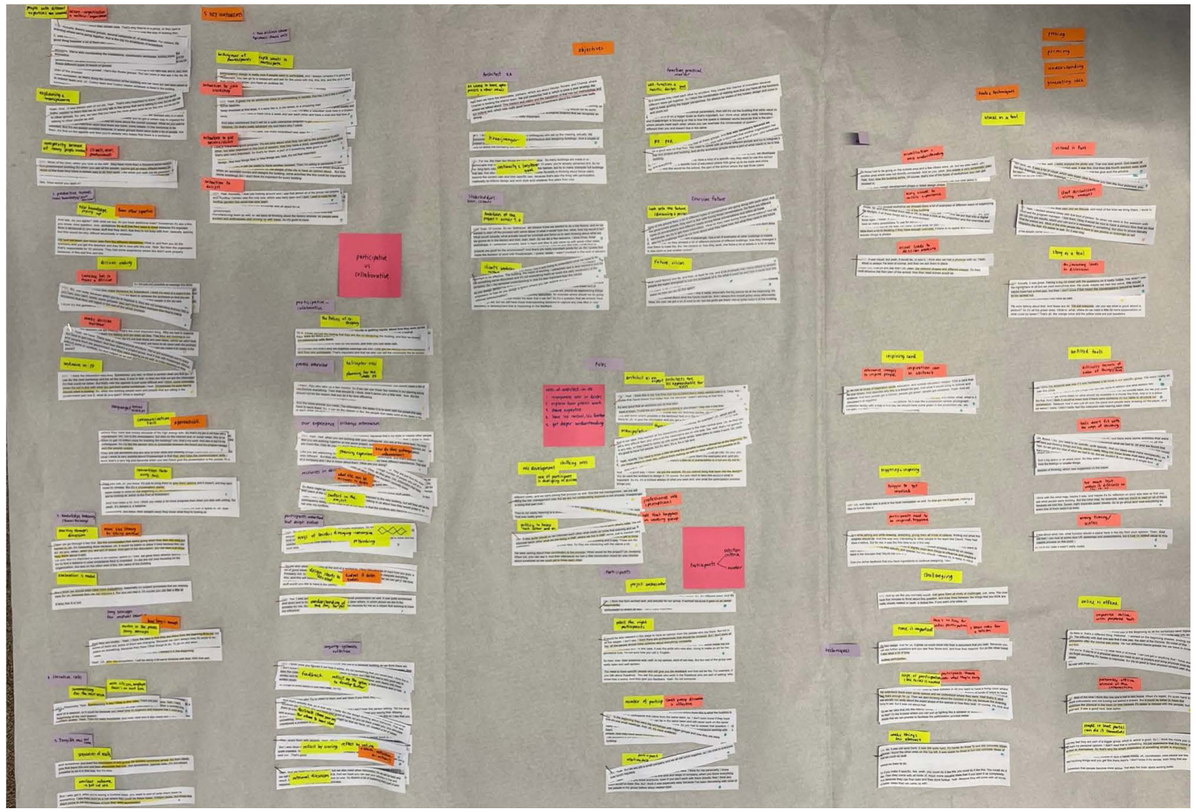
I would like to explore the project 'HvsD' and your participation in the project. I will start with the next question.

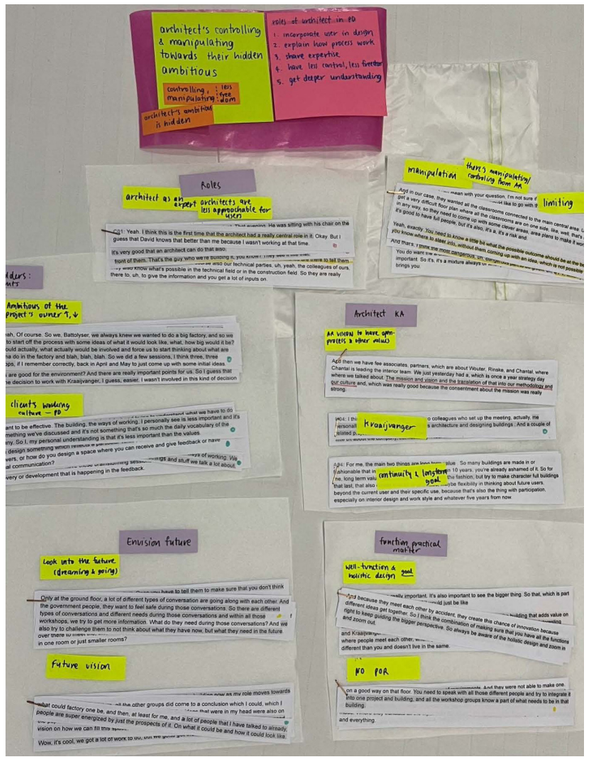
1) Could you tell me how you got involved in this project?
    a) What were activities you had done in the past for this project?
2) How did you experience the workshop session that is divided into theme groups?
   (I want to experience the workshop by listening to your story)
    a) Which group were you in? With whom?
    b) How was the conversation going?
    c) What were the tools being used? How was the setup?
    d) What were the outcomes of the workshop? How would you use that set of information?
    e) How did you feel after the workshop was done? Happy? Curious? Excited?
3) Are there other projects that you have participated in the session like this?
    a) If yes, compared to HvdS, what are the differences?
    b) If not, would you love to have more of the participatory activity?
4) Regarding the design from architects, what is your opinion on the outcome from the workshop and the development of the design?
5) How much do you like involving/working with architects in any participatory activities throughout the design process?
6) What do you consider as a value in architectural design? What is the most important thing in the design?

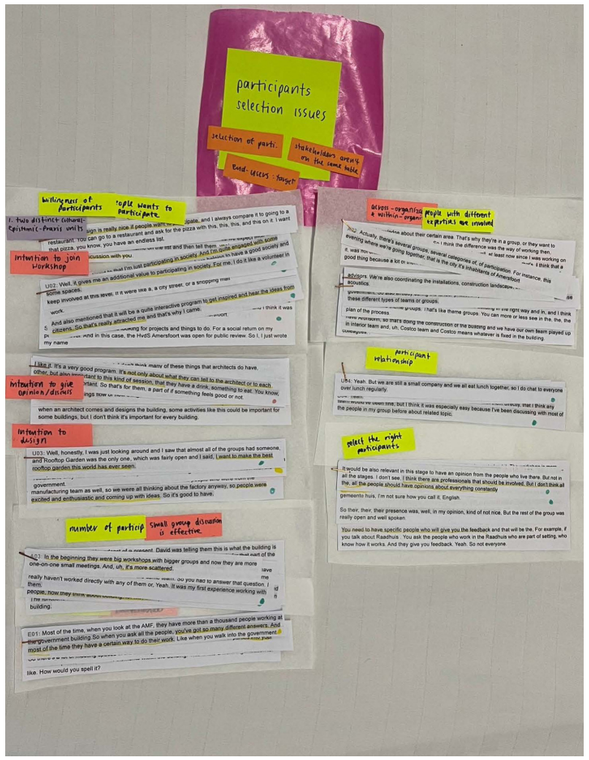
Thank you so much for participating in this interview. Your answers really helped with gaining more insight in participatory design in architecture. If you want I can keep you up to date with the results and send you the final research paper later on.

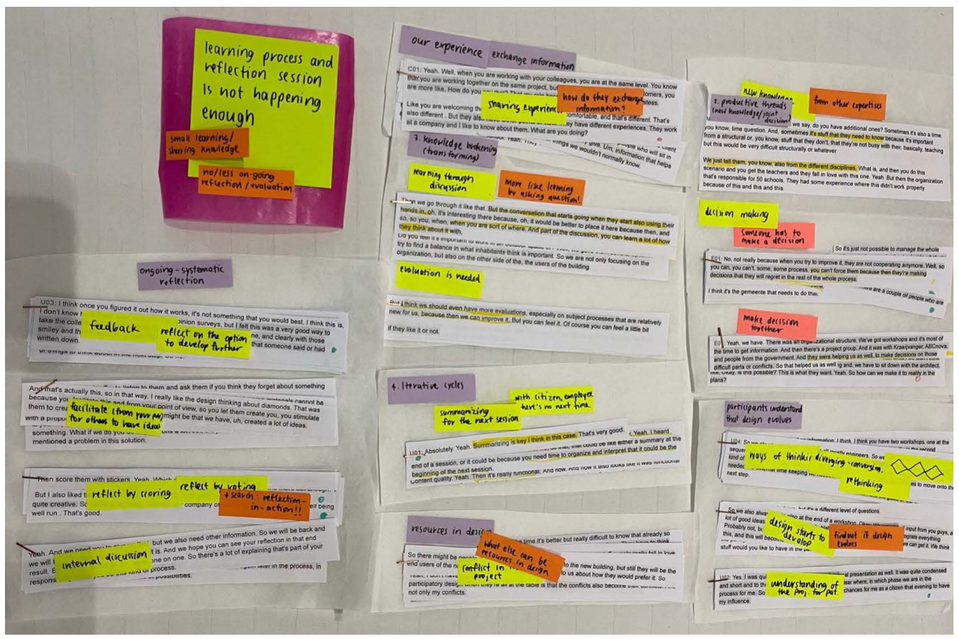
D5. An overview of contents from interview transcripts

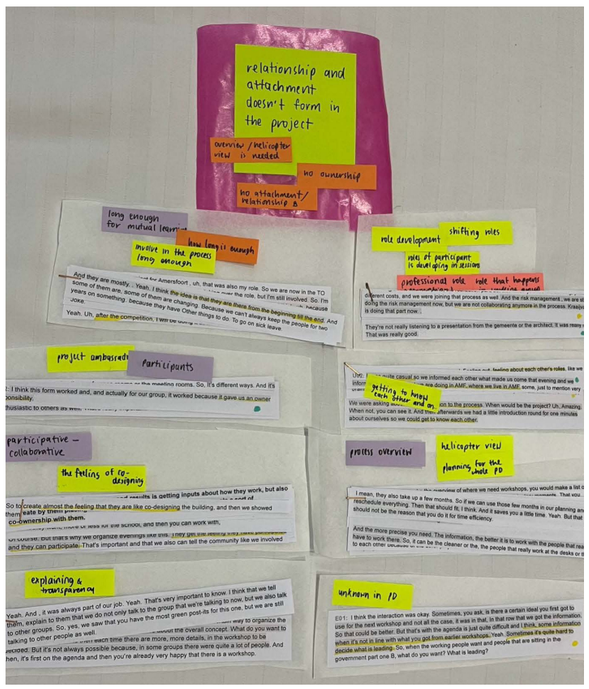
D2. Coding and clusterring from transcripts

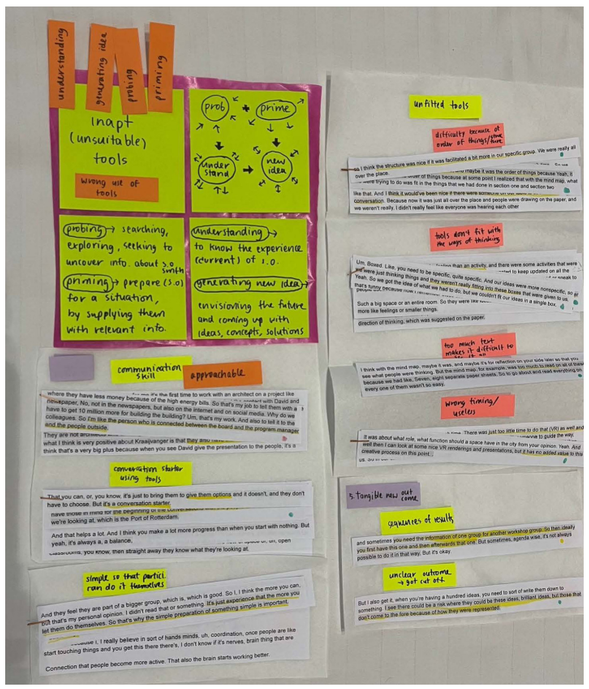












D3. A table of themes, sub-themes, and quotes from the interview

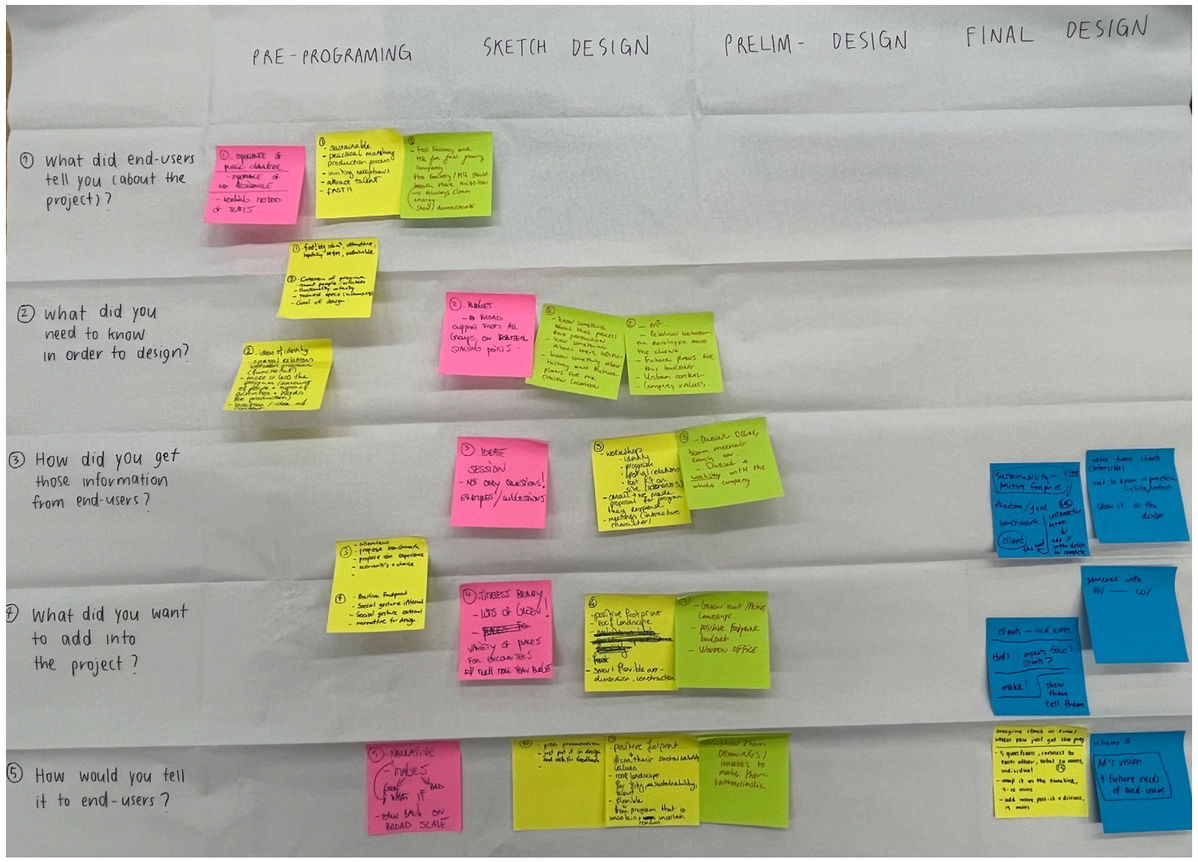
Theme	Sub theme	Quote	Interviewee
1. Architect is controlling and manipulating towards their hidden ambitious/Architect does not share their ambitions openly with clients resulting in manipulation	Common or shared goal for the future	So I think the combination of making sure that you have all the functions right to keep guiding the bigger perspective. So always be aware of the holistic design and zoom in and zoom out.	A02
		Only at the ground floor, a lot of different types of conversation are going along with each other. And the government people, they want to feel safe during those conversations. So there are different types of conversations and different needs during those conversations and within all those workshops, we try to get more information. What do they need during those conversations? And we also try to challenge them to not think about what they have now, but what they need in the future.	E01
	Ambitious of architect is hidden compared to client's ambitious	I think and I push towards my clients. Most of them like it. And what I misuse participation for is, if we collect all this rain water, what could we do with it? You want a waterfall? You want to pond with fish? When did you know ... So you have these flows of water, air biodiversity, and all these energy soil materials, that in the end decide if they come out cleaner or dirtier that decides if it's supposed to be the footprint of the building or not. And instead of making it very technical, try to link it to what people want working and, seeing the pigeons, breed their eggs outside your window ...	A04
		Instead of someone giving you something you really don't wanna have that you can't design with. And that's, I think the most dangerous part to be given an option, which you don't like	A01
	Secret control and manipulate in the decision making	Of course you, you have this idea about where you would like to go with the design. So it's not you give them unlimitless freedom in the direction that you wanna go into. So they feel as if they decided everything but of course you gave them the examples and you translated their inputs into something. So there's a little bit of manipulation in it but you try not to show it of course. And it's in a good way. I mean, we are the experts. So you wanna bring that layer into the design, You do want the architect to design it. Of course. But you need to take into account what is important. So it's a mixture always of what you want and, and what the participation process brings you.	A03
		there's several ways to go there and sometimes you need to participate and sometimes you need to take control. And still get to know, because we did invest a lot of time to empathize.	A04
2. Participants selection issues	Different intentions of participants	I saw this evening mentioned in one of the digital newsletters. And also mentioned that it will be a quite interactive program to get inspired and hear the ideas from citizens. So that's really attracted me and that's why I came.	U02
		I like it. It's a very good program. It's not only about what they can tell to the architect or to each other, but also important to this kind of session, that they have a drink, something to eat. You know, that's also very important. So that's for them, a part of if something feels good or not.	C01
		I think it was super energizing to see all the suggestions and all the ideas that everyone came with. So not just being talking about my group, but just in general what it could be. Because this was exactly what this workshop was all about for us	U03
	Group of people with different disciplines or experiences	Within the municipality, you would have people who are specialized in the whole logistics. You would have people who are specialized in the public service of getting passports and stuff like that. Yeah. You would have people specialized in sustainability. You would have people specialized in disableds people also being able to use the building in the right way and in, and I think we had about nine theme groups.	A02
		During the tender phase, they already made a format. So based on experience on other projects, most of the time it has standards, I guess, which groups you have for participating in the government. So also already during the tender phase, they made an example, we could, we can use these different types of teams or groups.	E01
		So these are the categories already that you have. And then you can talk with the municipality. Well, who are going to be the people that are going to be from those groups. Usually there are people who work in that environment already, who have some experience with it. Not a design experience, but user experience.	A05
		It would be also relevant in this stage to have an opinion from the people who live there. But not in all the stages. I don't see, I think there are professionals that should be involved. But I don't think all the, all the people should have opinions about everything constantly	U01
	Complexity	Most of the time, when you look at the AMF, they have more than a thousand people working at the government building.So when you ask all the people, you've got so many different answers. And most of the time they have a certain way to do their work.	E01
		They came up with the plan later, so, oh, this is what we did. And then you can require external feedback, which is a good thing to do. It could also be difficult to involve a lot of parties into your design.	A01
		House vor de Stad, which it's called so little bit more than a city council, but really also building where all kinds of different peoples can meet is why it's so complex. because it's not like you have one client, like one guy who used to be CEO and he says, okay, let's do it or let's not do it.	A02
	Size and time matters	In the beginning they were big workshops with bigger groups and now they are more one-on-one small meetings. And, uh, it's more scattered.	A03
		And it wasn't too hard because maybe we were not a very big group. And maybe in other groups there was. But more of a conversation about what they like or not like. So then it was the photos and I think people hated drawing anything. I also realized that not everyone likes to draw or hasn't drawn in a very long time.	U03
		It's like starting at seven or seven 30 until nine or nine 30. That's the max. Two hours. Two hours, not longer. And good food. Good technique. That's important. The technique should be good, you know, everybody should hear what people are saying. And presentations should be good, and that's also important. And people like to give their opinions in a small group, not like, one group. And you have to get a microphone to tell, that's difficult for some people. So now this evening was like, Wow, that's a big, big plus.	C01
3. Relationship and attachment does not form in the project	The feeling of co-designing/co-ownership	I think, two good results is getting inputs about how they work, but also to create by them placing literally stuff like that themselves, if you create a sort of co-ownership with them.	A02
		it's separated between long term super functionality for the production process and okay. We have a vision, but we don't know how to translate it into the interior. there. We have to really participate together or co-create together to get what they want.	A04
		My experience is that most of the time when you organize something like this, And you ask for their opinion or that of their ideas, there are not really ideas which we didn't have to think about ourselves. It's also because sometimes you think, okay, but for, for 90%, we think about that. Of course. But that's why we organize evenings like this. They get the feeling they have participated and they can participate.	C01
		It was really enjoyable. I think you know, Kraaijvanger could have come and showed us the place and, and said, Okay, this is how it looks. It's amazing. And look at this. I think people would've also found it nice, but I think this was a better way to do it. Because here everyone's just got involved in the entire process. And you know, if Kraaijvanger uses some of those ideas, people could be like, oh my god, my team!	U03
		I think this form worked and, and actually for our group, it worked because it gave us an owner responsibility. Otherwise, it's easy to just sit back and to listen to the facilitator and to decide whether you're not going to open your mouth.	U02
		It's good to involve different people from the organization because they can just speak with other people in their organization as well and be some kind of ambassador about the whole project and be enthusiastic to others as well. That's really important.	E01
	Overview/helicopter view of the project is needed for everyone	Sometimes you really need practical people because they know in detail what they need in different places. But sometimes you need more helicopter views about some teams. And then it's most of the time easier to talk with the managers because they are able to look more on a higher level. And the more precise you need. The information, the better it is to work with the people that really have to work there.	E01
		The whole time, you have to think about what's our next step. It's not a pace path you're walking, but every time you're looking, how we are going to do the next step or what is important, who do we need in this process, are the right people in the different workshops. It keeps you rethinking the process all the time again over and over.	E01
		I think if you make the overview of where we need workshops, you would make a list of workshops we developed. Of methods or whatever. And participatory moments that you would like to have one. If we list them and link them, we will see that we have, for some moments we have nothing developed. And for some moments we have developed three different kinds. And when do you use which one? So that would be very helpful for me as well, but for everyone, I think, in the company.	A04
		So first, you want to know a little bit more about the overall concept. What do you want to do inside a building? And then each time there are more, more details, in the workshop to be decided. But it's not always possible because, in some groups there were quite a lot of people. And then, it's first on the agenda and then you're already very happy that there is a workshop.	E01
	Sufficient time involvement in the process	Some people you have like a project team. And, some people that's like a core team. They are in charge for all these groups from gemeente and they are mostly. I think the idea is that they are there from the beginning till the end. And some of them are, some of them are changing. Because we can't always keep the people for two years on something. because they have Other things to do.	A05
		I'm still involved. So I'm still working two, three days a week on this project. And most importantly, I think because we still have the process of participation and I started it in the beginning, after the competition, I will be doing it till we're finished with that part, with participation.	A03
	Role development happens	Of course, when you're working in a group, there are some roles . There are some roles growing during these minutes of working together, right? So one of the group members takes the role of facilitator and recap what is said and try to write it down and to ask some questions to refine what is set. So that's an informal role, which is informally shaped in the group.	U02
		So it was an interaction between architect and me and sometimes I was taking the lead, sometimes she was taking the lead.	E01
4. Learning process and reflection session is not happening enough	Sharing experience and conflict as resources in design	There is always conflict. I don't have a general approach to how to deal with conflict, but the nice thing about participatory design when they're all at the table is that the conflicts also become their conflicts. And not only my conflicts.	A04
		We had to think how we can manage it in time And, how can we manage the information between the different workshops? Because sometimes one workshop group says, Oh, we, we really want to have this. And then in the other group they say, No, that's not nice. We want to do it like this. So then you have to manage it between the workshop groups.	E01
		They are not experts in the sense that they know how the design works. They are just from the client side. There's someone who wants to be sure that there is a enough number of people who will sit in the building that they know with more details so they give information that helps us design, they would give you the information of other things we wouldn't normally know.	A05
		If they go into a rabbit hole that I I know is, from experience it's something that cannot be successful. I will share a story about this in this project. Where things ended up in that way. That we learned this and this from it so you can do it, but then only with this and this. You know, so that's and in these workshops, especially with this school. They were enthusiastic and it was a lot of energy. And then you also add ideas and whatever. What do you think about this? You know, it's, it's really together.	A04
	Reflect by voting and giving feedback on positive/negative points	I felt this was a very good way to take the collective feedback of a lot of people in a very short pile of time, and clearly with those smiley and those red dots, people could really relate to a lot of things that someone said or had written down. So we were organizing that part, and most of the time an architect could tell more about the design of the project and show them different options. And sometimes, we were discussing those options in the mural with what are the positive parts of this design, or what are the negative parts and what do we need to keep and what whatnot.	U03 E01
		I really like the stickies. I really like that as a way of voting. and no, in general, I think it was a really great exercise to kind of finish off our company offsite. I think everyone that went away with a bit of a vision of like, Wow, this is what we're working to in the future. And I've had my input and it's quite creative.	U04
		In that phase and we showed them all kinds of possibilities. And then we narrowed down what they think of the possibilities. So they had to put green and red post-its for instance. on the positive aspects of the examples that we gave them and the negative, the downsides, so that we could see. But this one has the most green post-it so there's preference for this	A03
		I had some people talk easily and some people not. But when I walked through the tables, everybody was talking with each other and they were, You saw that also with when they give their feedback at the end.	C01
	Learning happens in the discussion	But the conversation that starts going when they start also using their hands in, it's interesting there because it would be better to place it here because then, so when you are sort of part of the discussion, you can learn a lot of how they think about it.	A02
		it's just not possible to manage the whole project, just with the workshops you need, the different layers in the organization to decide what you are going to do. And most of the time, the people from the government side, they do know maybe on this part you have to do this, because then, It's good for different reasons, and sometimes it's just better to do B because of other reasons. So, so they, they know the organization and we don't know the organization as well as they do.	E01
		sometimes it's stuff that they need to know because it's important from a structural or stuff that they're not busy with they are, basically, teaching but this would be very difficult structurally or whatever. We just tell them, you know, also from the different disciplines.	A03
	Participant's ways of thinking is various	We were all mostly engineers. So we very much like step by step sequentially. We went through everything kind of one by one. So I think it was yeah, so that was this kind of, the worksheet was the most we used and then the two pens and then we enjoyed, we needed the external time keeping we needed, and we needed quite a few nudges to move onto the next step.	U04
		I think that we understood clearly what was the question for this evening and for this moment, and, so we started the discussion and the conversation and the creative process by diverting all possibilities and then converting to some really good ideas or to converting to actually three, how to say, two, three, definitions of three concepts, actually.	U02
		that was funny because we started with three and then we started talking and thinking and sketching and then two other participants popped into our group. Which was quite interesting because they brought their own ideas and their own conversation into the conversation we had with the three of us. So then we needed some minutes to incorporate the thinking and to level the abstraction and the goals of our creative process.	U02
		Sometimes we advise the government, maybe you can do this or in other cities they do this, or we can have a look over there to see how they manage the things in their new building. But most of the time it's just advice and it's for the government to decide whether we want to do this or not, we don't want to do it. So, we can only trigger them to think, to think or rethink their decisions	E01
		So first think of all the possibilities that are options and, and let go of everything, you know, your existing city hall. And inspiring them with examples that they have never seen before. So lots of reference projects. And then after you have all these ideas on the table, you narrow it down again and you cross out all the things that are the discussions.	A03
		To just come up with what is needed. So what do I put at a particular location, in this case, Rooftop garden, rooftop tennis, that reflects or can help empower people or make them have fun. Yeah, the fun part was easy. But it wasn't very straightforward.	U03

	Lacking of evaluation	I think we should even have more evaluations, especially on subject processes that are relatively new for us, because then we can improve it. But you can feel it. Of course you can feel a little bit if they like it or not.	A02
5. Inapt tools	Wrong timing in using tools	It was about what role, what function should a space have in the city from your opinion. And well then I can look at some nice VR renderings and presentations, but it has no added value to this creative process on this point.	U02
		There was just too little time to do that (VR) as well and facilitate our way of thinking. I think that if it was more structured with someone to guide the way, then it would be useful.	U01
	Difficulties in using tools	I think, unspokenly, we found this format on the paper too limited or too directive for our process.	U02
		I think it's important to be present and let as much as possible of the process be done by themselves. So it also, that means this has to be really comprehendable and, and simple.	A02
	Structure is needed	I think it would've been nice if there were someone on our table to structure our conversation. Because now it was just all over the place and people were drawing on the paper, and we weren't really, I didn't really feel like everyone was hearing each other.	U01
		Mind map was a bit tricky to me, and maybe it was the order of things because Yeah, it could be related to the order of things because at some point I realized that with the mind map, what we were trying to do was fit in the things that we had done in section one and section two	U03
	Explain the purpose of using tools	I think it was an architect who made some really beautiful images of how the factory could look like. So then we have those in mind for the beginning of the conversations with the people who own the area that we're looking at, which is the Port of Rotterdam.	U04
		There's always also something to say for keeping it very open because you throw away options. But the way we present it always is like, you don't have to choose, it's just to start the conversation.	A04

Appendix E

E1. Workshop 1

Worksheet from the workshop



Appendix F

F1. Workshop 2

Schedule and planning

Schedule (2 hours)

Sensitization
10 mins Preparation
10 mins Introduction (and example)
Co-design
5 mins Recap briefly in group
40 mins Group activity (10 mins/round)
15 mins Reflection
Conclusion
30 mins Presentation & Q/A (6 mins/group)
10 mins Ending

Sensitizing

- Making a collage of yourself on A5
- Introduction of the project and activity

Co-design

- Each group has 1 architect with 3-4 participants with different spaces assigned
- There will be a deck of card separated into 5 categories: character, time & light, activity, object, and setting in front of each person
- The objective is to create a desired story/journey of a space by select one category to start with eg. character
- The group select max 3 cards per category that fit the space
- Select the next category, repeatedly select cards
- In each card, there are questions (1. What is the focus 2. Why it is selected 3. When it happen) to be answered as a group
- Architect will have a paper to note (he is also part of the group)
- Glue the selected images on the board
- Move to round two, same activity but with new POV
- Continue until round four, same activity but with new POV

- All the work is sticked to the board for the reflection session
- The reflection is to see the overview of how the space is used by different characters. There are boxes to add or highlight idea: must have, should have, could have

Conclusion

- Each group has 6 mins to present the work and answer to the questions (2 mins pitch + 4 mins question)
- Architect concludes the workshop (if there is the next one, architect explains the plan)

Note for architects

Round	*1*	*2*	*3*	*4*
Space				
Character				
Time/Light				
Activity				
Object				
Setting				
Emerging idea				

Worksheet for sentisization session

Name : .....

Date : .....

Worksheet 1 from the workshop 2

Worksheet 2 from the workshop 2

Appendix G

G1. Workshop 3

Worksheet for workshop 3

Briefly share your 3 favorite activities

	Activity	*where it happens*	*how do you feel*	*why that feeling*
1				
2				
3				

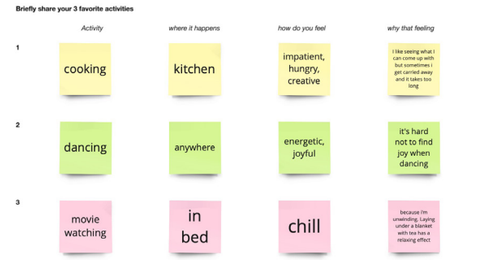
Select 3 images for activity you do and 3 images for space you like

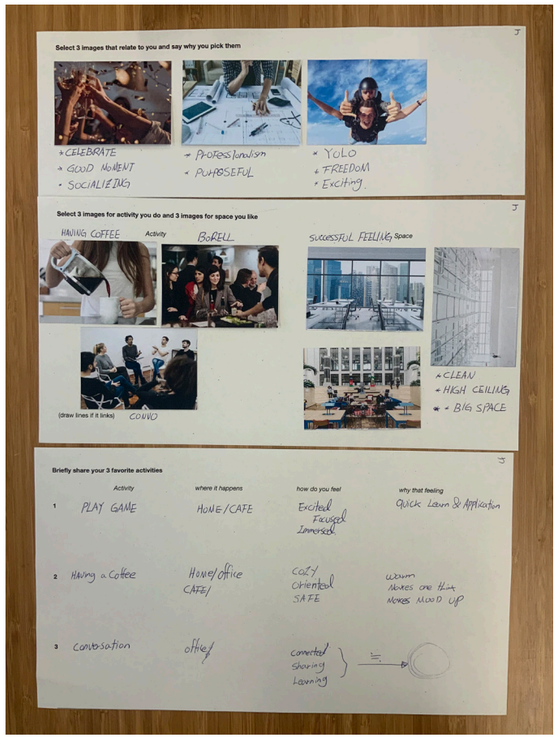
Activity *Space*

(draw lines if it links)

Select 3 images that relate to you and say why you pick them

Worksheet from workshop 3

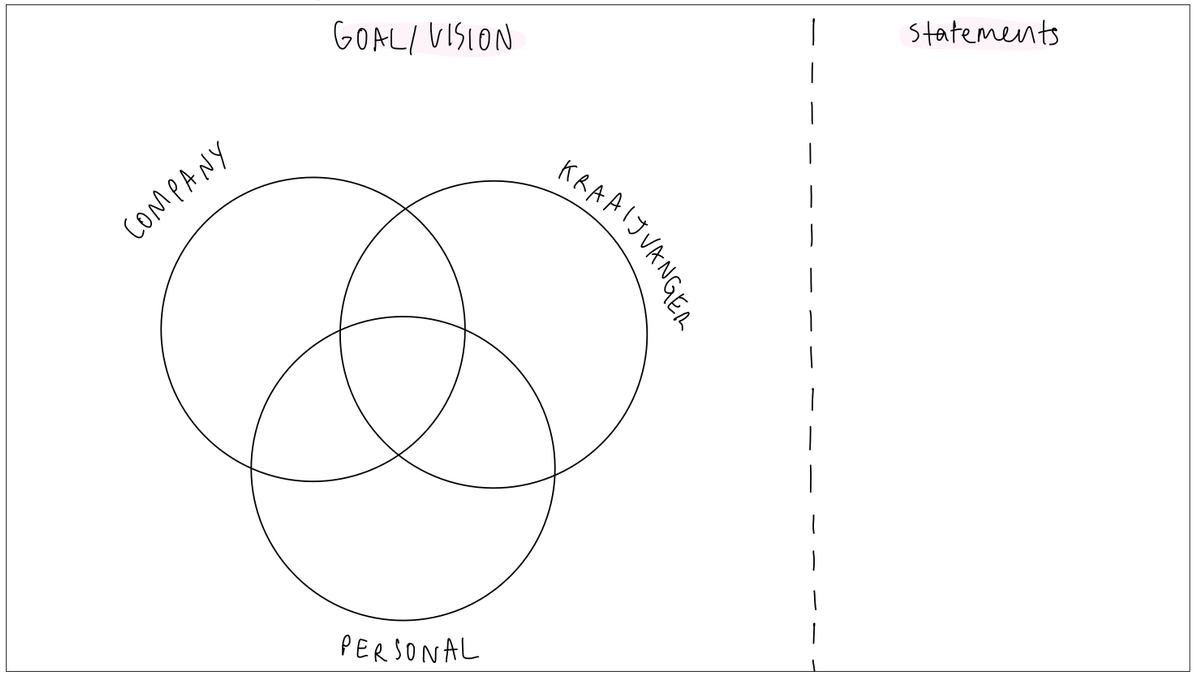




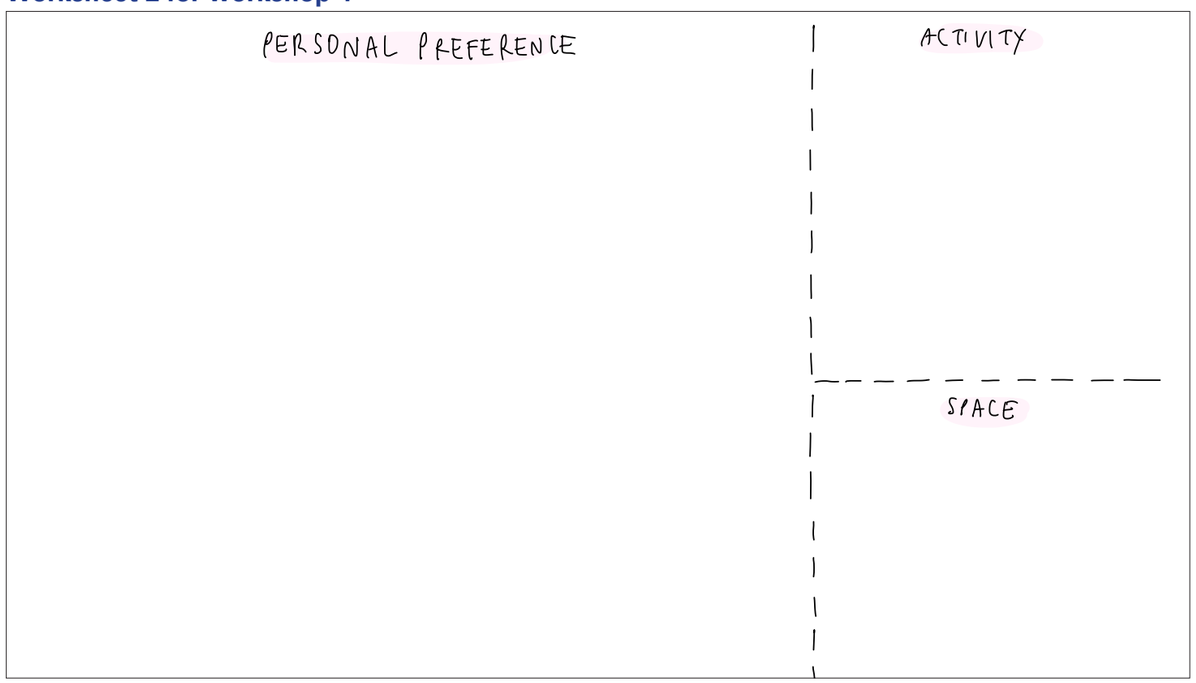
Appendix H

H1. Workshop 4

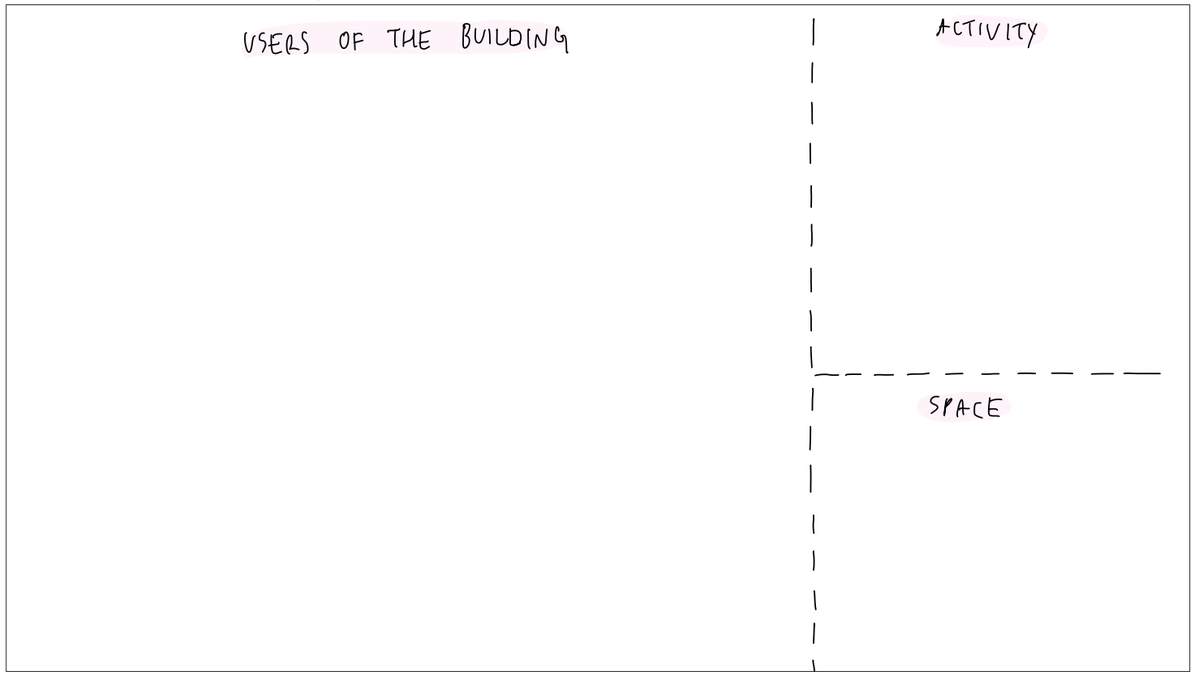
Worksheet 1 for workshop 4



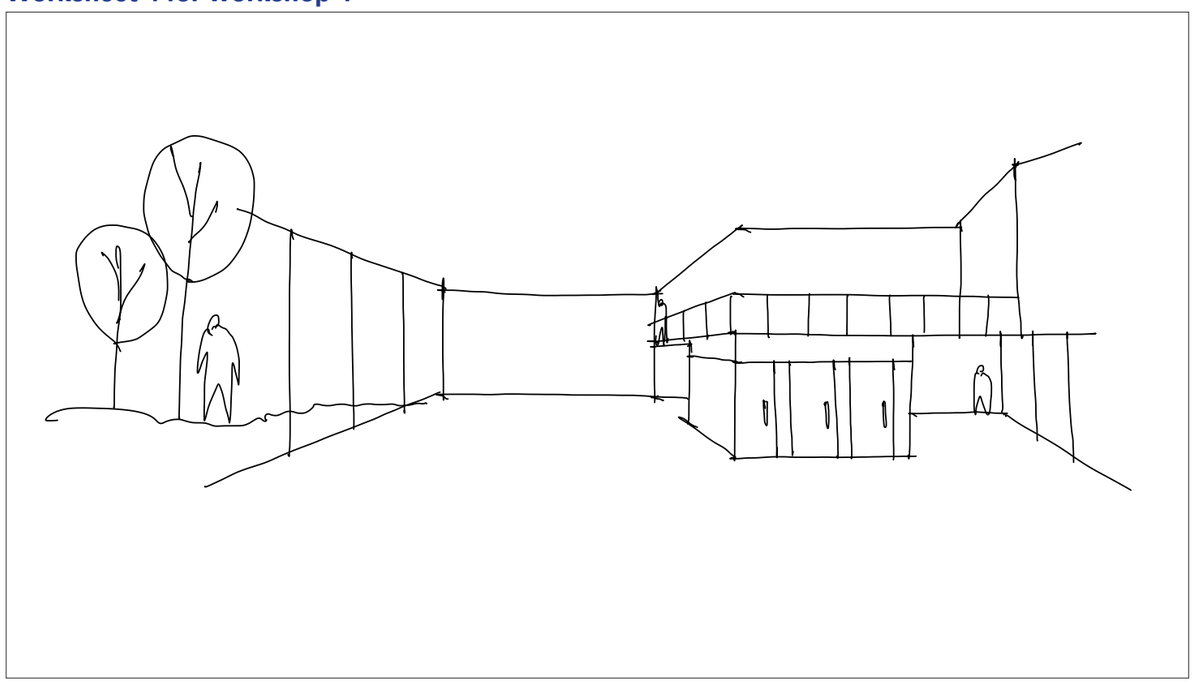
Worksheet 2 for workshop 4



Worksheet 3 for workshop 4



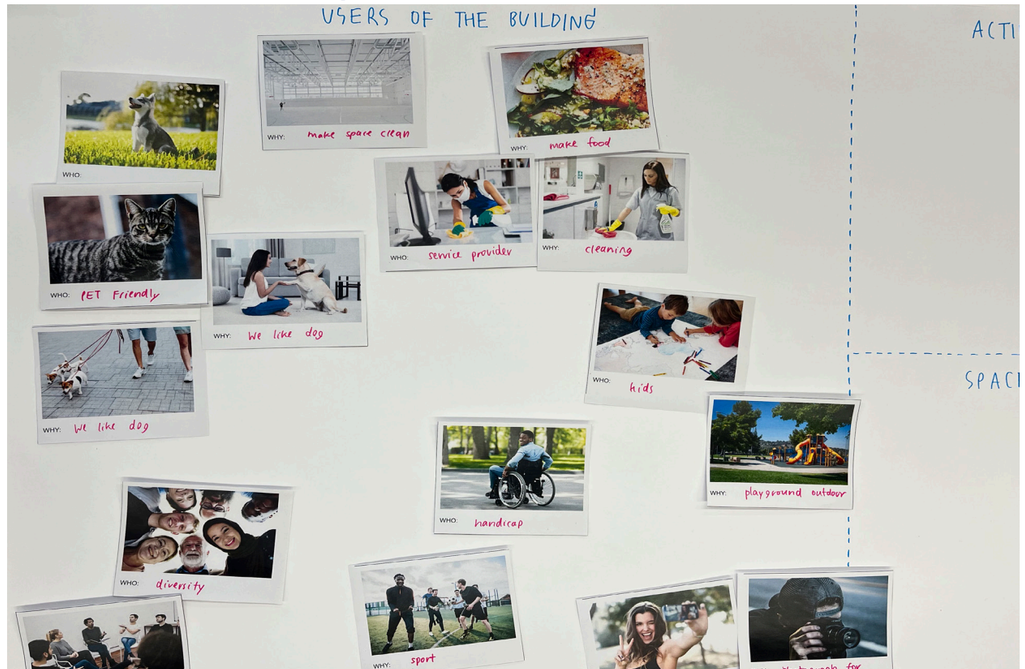
Worksheet 4 for worksheet 4



Filled worksheet 1 from workshop 3

Filled worksheet 2 from workshop 3

Filled worksheet 3 from workshop 3



Filled worksheet 4 from workshop 3

Appendix I

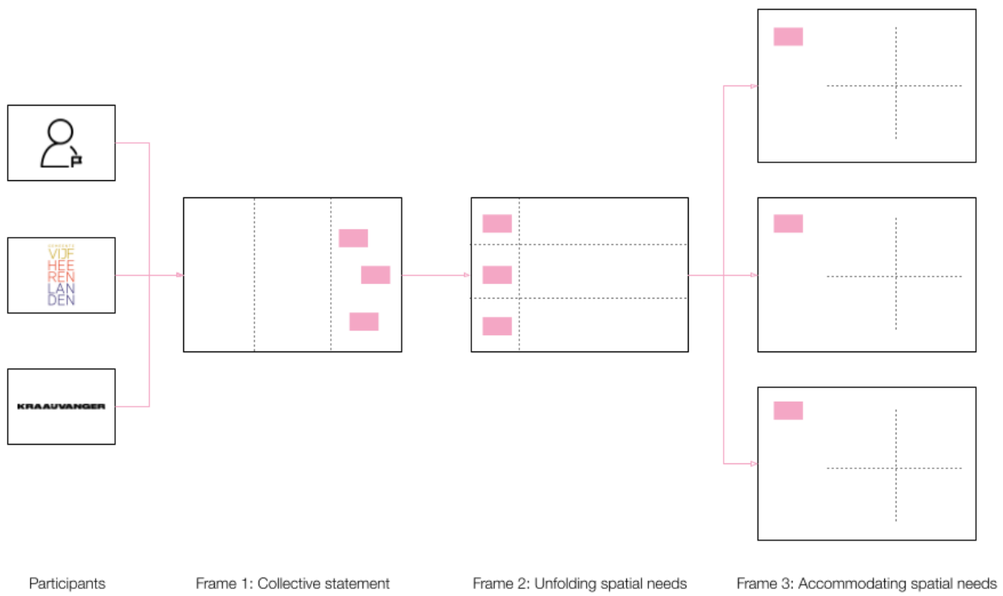
I1. Workshop 5

Schedule and planning

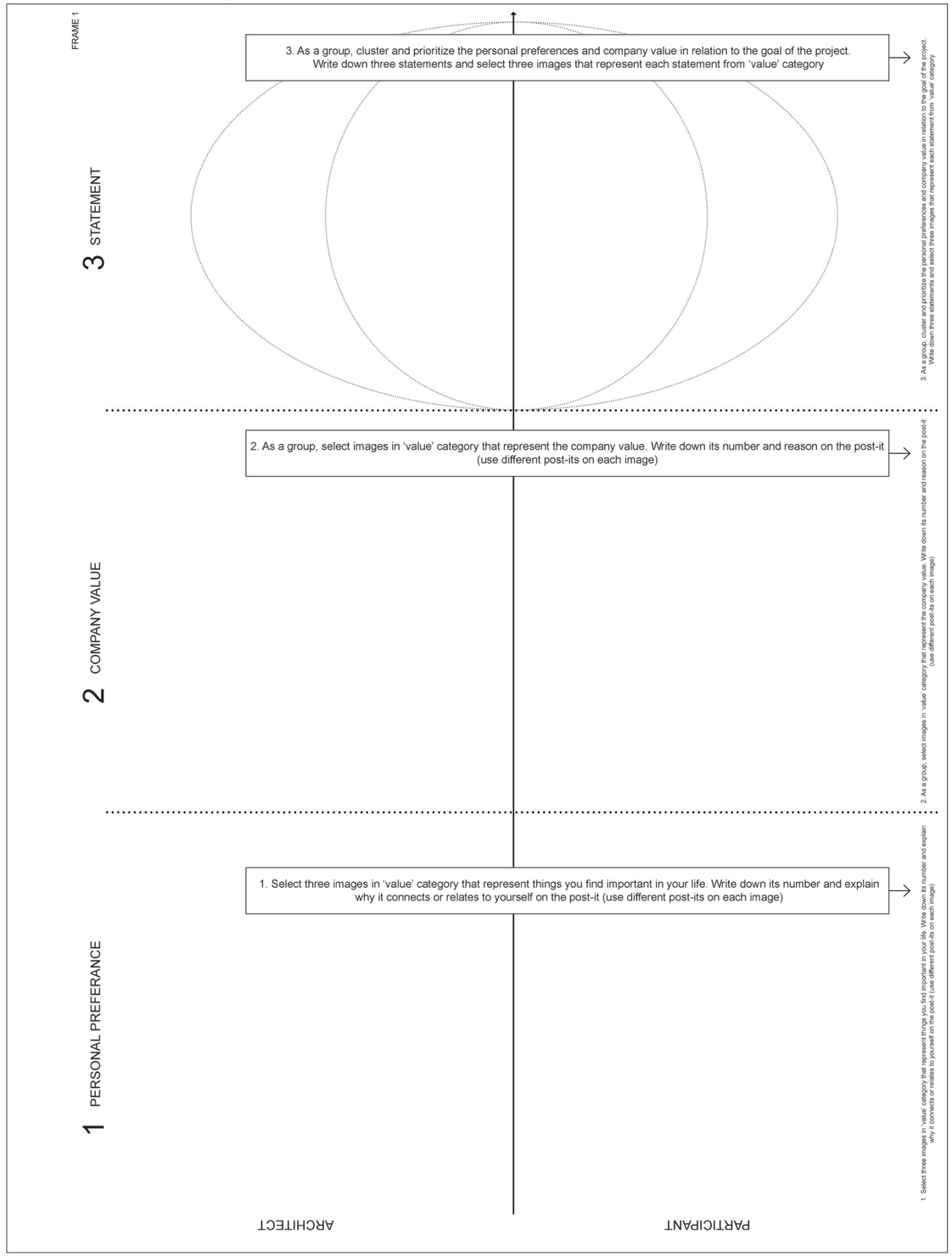
Schedule : 13 Dec 2022

09.00 - 09.15	Introduction to the project
09.15 - 09.20	Break
09.20 - 09.50	Frame 1: Collective statement
09.50 - 09.55	Break
09.55 - 10.25	Frame 2: Unfolding spatial needs
10.25 - 10.35	Break
10.35 - 11.05	Frame 3: Accommodating spatial needs
11.05 - 11.10	Break
11.10 - 11.40	Presentation and Q&A
11.40 - 11.45	Break
11.45 - 12.00	Ending

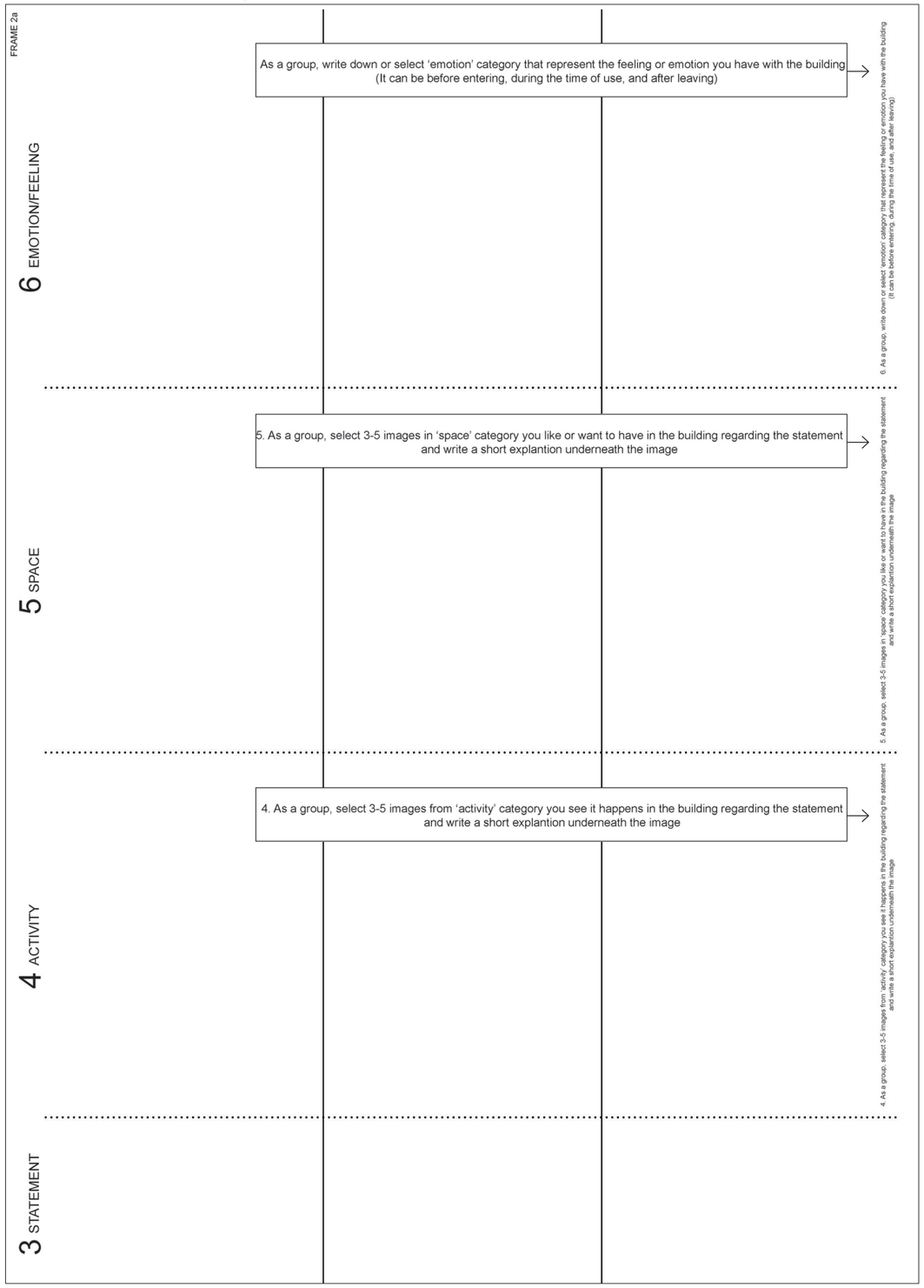
Overview of the activity



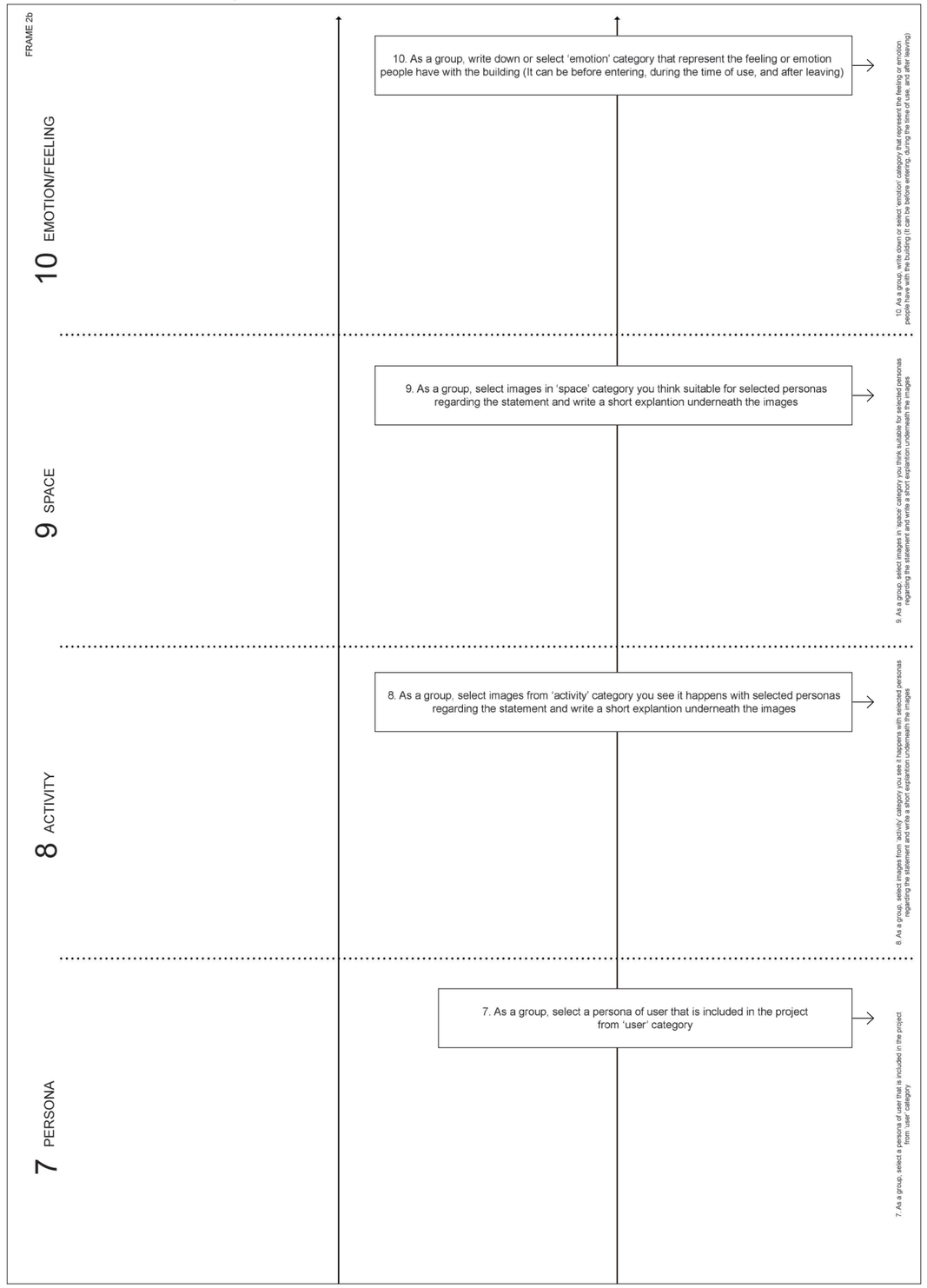
Worksheet 1 for workshop 5



Worksheet 2a for workshop 5



Worksheet 2b for workshop 5



Worksheet 3 for workshop 5

FRAME 3a

PUBLIC

IDEATION

INDOOR

OUTDOOR

PRIVATE

STATEMENT 1

1. Write down one statement from previous session
2. Move images from Frame 1 and 2 to this frame for the idea generation
3. Map selected images on the matrix (on the right side)
4. Draw lines or sketch for any ideas or connections

1. Write down one statement from previous session
2. Move images from Frame 1 and 2 to this frame for the idea generation
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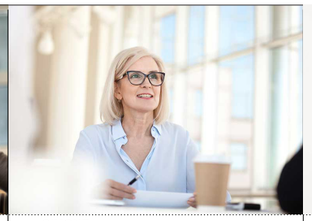
Personas

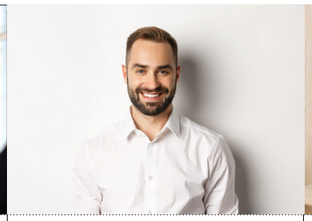
HENK

- citizen
- register children
- get a passport
- always working



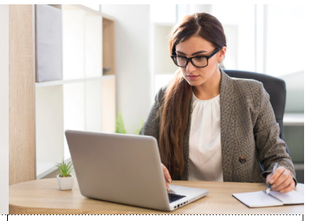
SIMONE

- partner
- want to improve collaboration with municipality employee



STEVEN

- city counselor
- no money waste
- idealist
- want to represent ideas



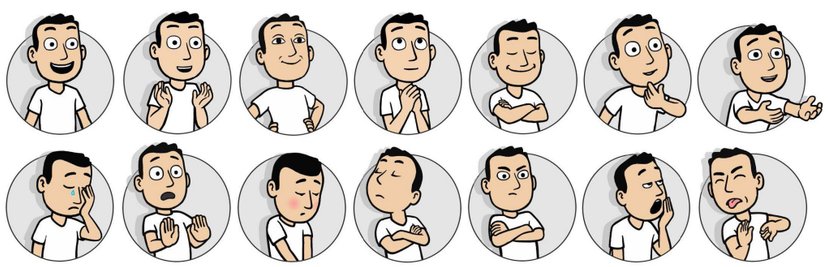
MYKE

- construction firm
- like getting things done
- want quick deals

Words

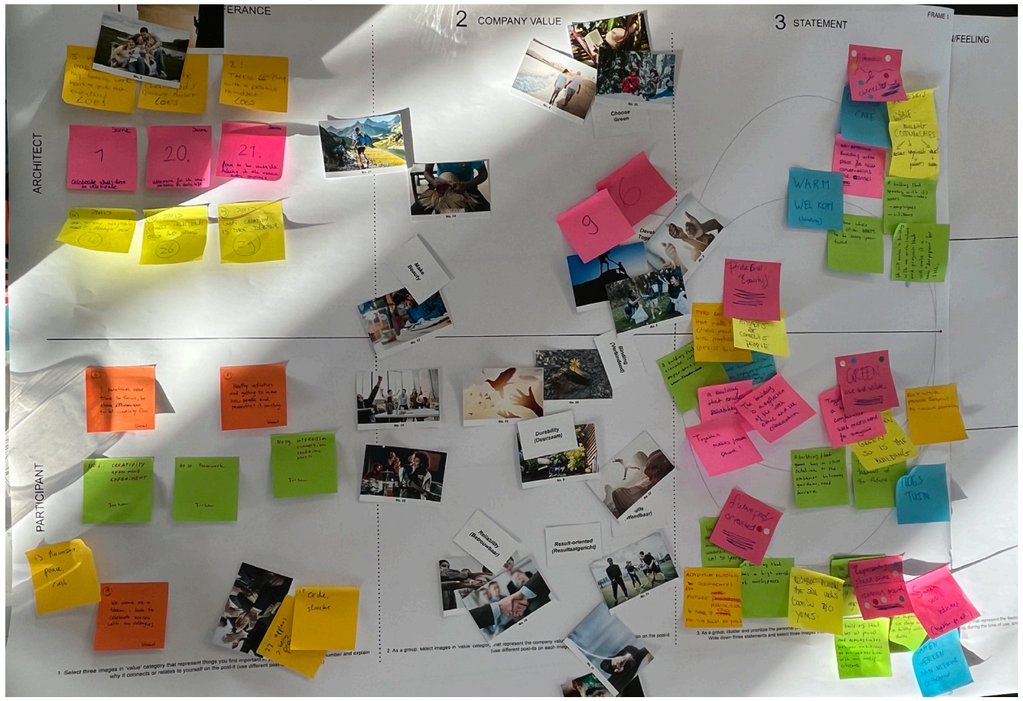
Choose green	***Develop together***	***Make Beauty***	***Result-oriented (Resultaatgericht)***
Agile (Wendbaar)	***Binding (Verbindend)***	***Reliability (Betrouwbaar)***	***Durability (Duurzaam)***

PreMo tool

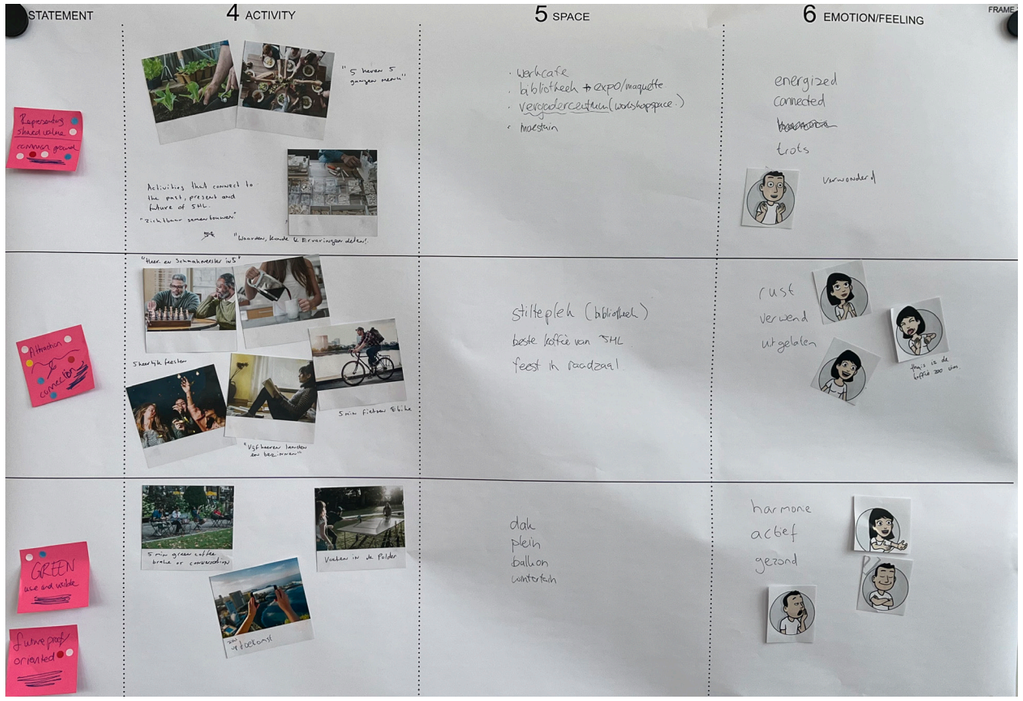


Desmet, P.M.A. (2019). PrEmo card set: Male version. Delft, Delft University of Technology. ISBN: 978-94-6384-076-7.

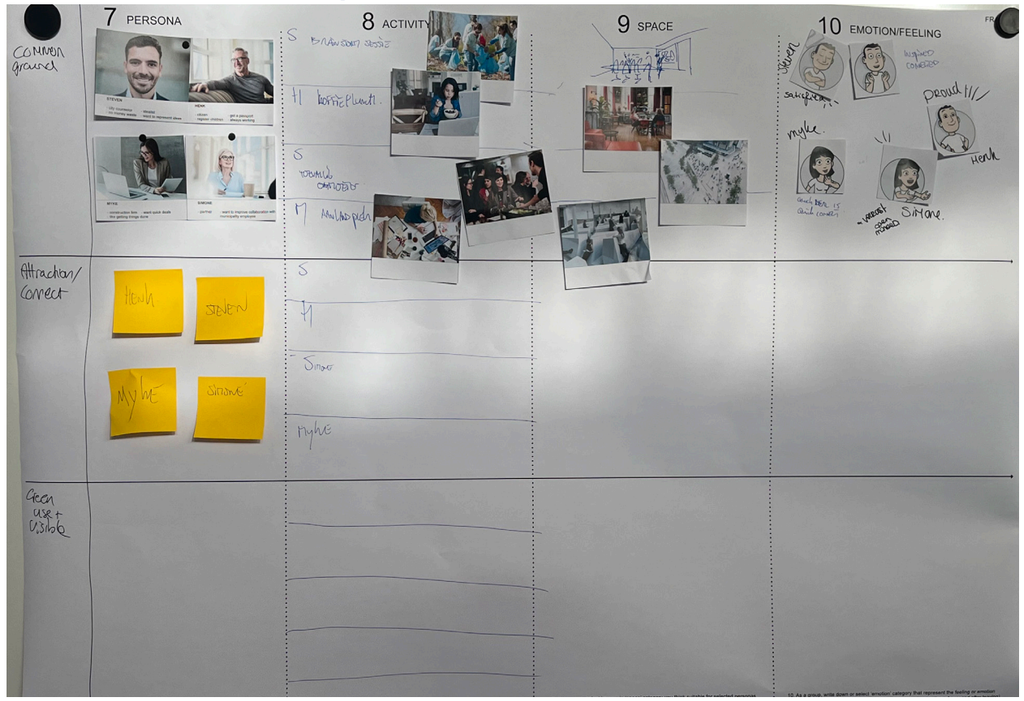
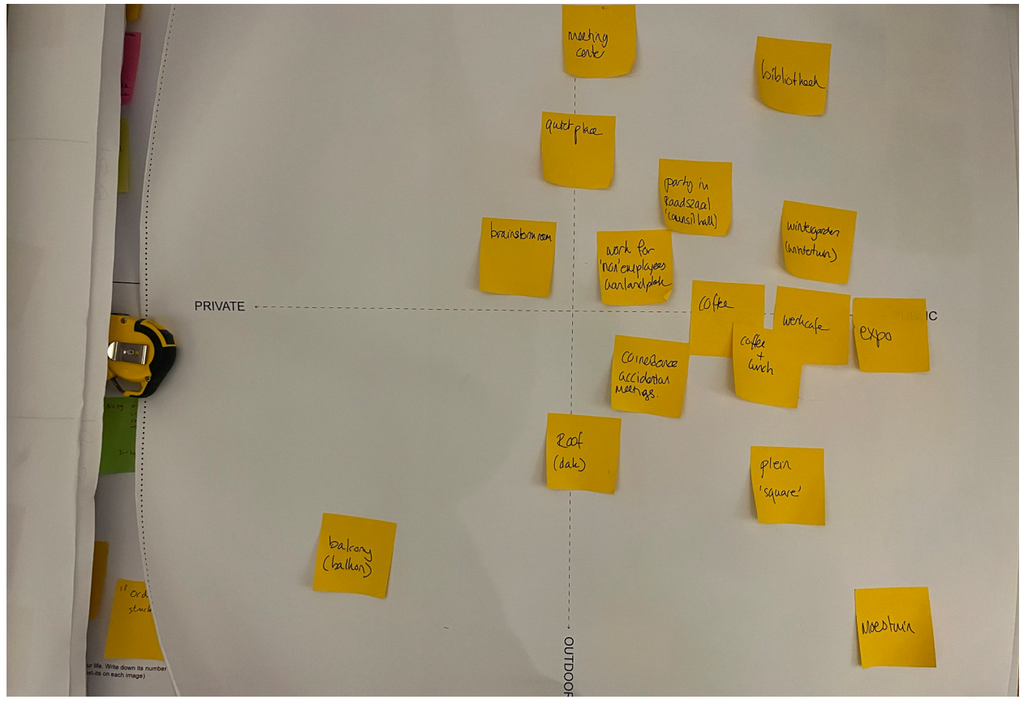
Filled worksheet 1 from workshop 5



Filled worksheet 2a from workshop 5



Filled worksheet 2b from workshop 5



Filled worksheet 3 from workshop 5