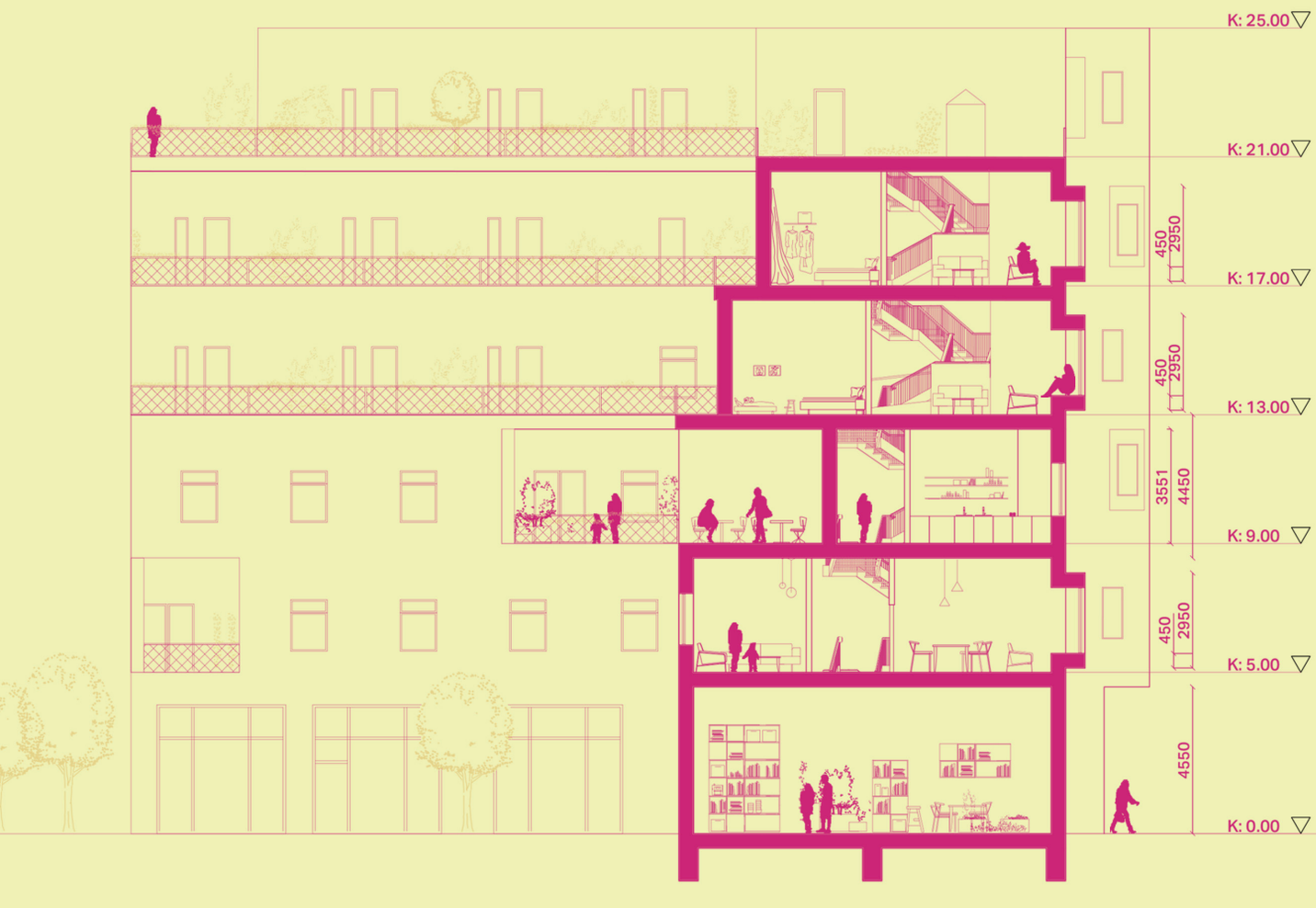
HER
Choice

Women's Crisis Center

-

Designing Healing Spaces for Victoms of Violence



Acknowledgements - TAK!

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Lastly, we would like to thank each other for an inspiring collaboration throughout this thesis process. Our shared dedication, discussions, and continuous support have been essential to both the development of the project and our personal growth along the way.

01.

Prologue

Reader's guide

This Master's thesis is based on interviews and workshops with women who have been in violent relationships, some whom have lived in crisis centers. Additionally empirical data has been collected to support this narrative. Altogether, these insights and experiences will be referred to as "the Women".

The scope of this project consists of two parts: a report and a design guideline.

The report contains the collected data, including the theoretical framework, analyses, interviews, design process and finally, the design proposal.

The Design guideline is a conclusion based on the insights gathered throughout our research and is intended to function as a practical handbook for the future design of women's crisis centers.
These two parts can be read independently and in no particular order, depending on the reader's interests or needs.

The use of AI

In this master's thesis, the AI tool ChatGPT was utilized to assist with specific aspects of the writing process, such as grammar refinement and the translation of selected content—particularly interview quotes with The Women —from Danish to English. All content and research presented in this thesis are the result of our independent work and investigations.

Title paper

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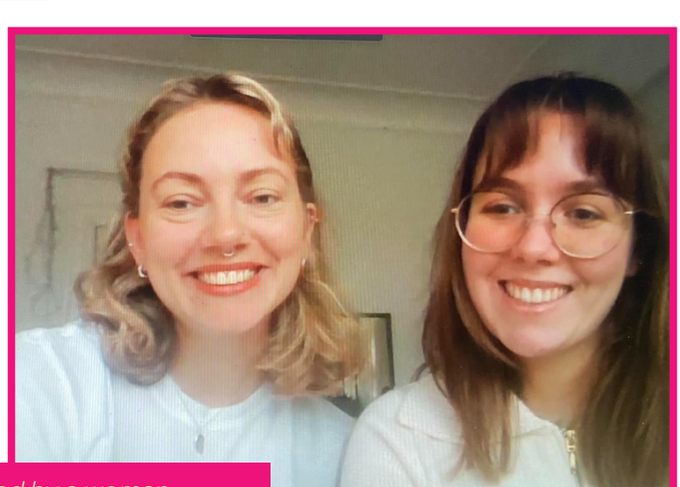
Linda Jórun Poulsen

Natasja Buur Ungstrup



Captured by a woman who shared her story with us

Abstract

This thesis lays the foundation for a future design guideline for Crisis Centers for women affected by domestic violence, with a focus on trauma-informed approaches and healing architecture that support both emotional and physical recovery. Aimed at architects, professionals, and others interested in this topic, the forthcoming guideline will offer practical strategies for designing safe and empowering environments that directly respond to the needs of women in acute crisis.

Grounded in empirical research such as theoretical and evidential frameworks and user engagement—including participatory design workshops, interviews, and observational studies - this project addresses a typology that remains significantly underexplored in architectural discourse. Primary design considerations include spatial organization, acoustic and visual comfort, and secure room configurations.

This report uses a site (chosen site) study of a proposed Crisis Center at Stigsborg Brygge in Nørresundby—designed to house 15 women and their children—to explore and test the effectiveness of strategies identified through empirical research. This case study serves as a tool for developing and evaluating architectural methods, which will inform future design guidelines. The facility features private living quarters, therapeutic spaces, communal areas, and restorative outdoor environments—all supporting the The Women's healing journey.

Through the integration of research insights and architectural exploration, this thesis culminates in a detailed design proposal titled Her Choice and establishes a framework for a design guideline intended to inform future Crisis Center projects and contribute to socially sustainable architecture that prioritizes the needs of women in crisis and those supporting their recovery.

> *"... you slowly fall apart more and more, and your self-confidence and self-worth completely disappear."*
>
> Interview with Margrethe (Appendix 1)

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PROGRAM

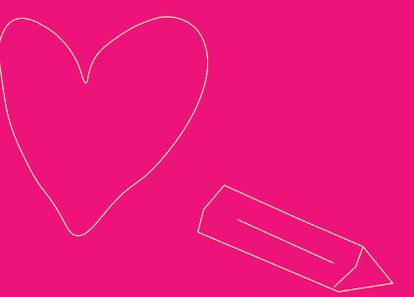


Fig. 1: Methodology - Investigating the problem through the stages of Discover, Empathize and Define.

02.

Introduction

This program explores how architecture can support healing and emotional recovery for women affected by domestic violence.

Grounded in both qualitative and quantitative research, the project emphasizes user insights and participatory design. Quantitative data includes national statistics and evidence-based literature. Qualitative data stems from interviews and workshops with the women, interviews with crisis center staff, and on-site observations at Aalborg Krisecenter. The workshop and interview findings were analyzed thematically and visualized through graphs, images, and summaries. As a conclusion of the empirical data, a user persona, Mary Jane, was developed to represent core needs of the women to guide the design process.

The program is further shaped by contextual analysis, a theoretical framework on healing architecture, and a methodology combining design thinking and the double diamond model—supporting an iterative, user-driven approach. All the concluding insights in the program are used as strategies in the design guideline handbook (see Design Guideline Handbook).

Motivation
Why is it important?

Healing environments for PTSD symptoms

The number of women in abusive relationships is significantly increasing. Danish statistics show that the number of women seeking refuge at crisis centers in Denmark has risen from 1671 women in 2017 to 3030 women in 2023 (Danmarks Statistik, 2023).

Statistics from the Danish national organization LOKK show that every year, approximately 118,000 women are exposed to domestic violence. Despite this, only a small percentage seek help at crisis centers. A study report from LOKK showed that 2,940 women stayed at a crisis center in 2023 (LOKK - LOKK, no date). Additionally, LOKK's 2017 annual report reveals that 43 crisis centers received 10,767 requests from women seeking help—whether for themselves, on behalf of a relative, or as a professional inquiry. Of the requests for shelter, 56% were denied due to a lack of available space (Årsstatistikker - LOKK, 2017, p.10). This indicates a significant gap between the need for support and the resources available.

Many of the women have endured abusive relationships for extended periods, ruining their trust in themselves and others and leaving lasting effects such as psychological trauma, including Post-Traumatic Stress (PTSD) (Staff, 2023). A Ph.D. study by Sarah Bøgelund Dokkedahl from SDU examined the long-term effects of violence on 150 women in crisis centers. Through surveys and interviews, it was found that most exhibited symptoms of PTSD and complex PTSD including increased stress, alertness, sleep disturbances and more (Dokkedahl, 2024, p.11).

This highlights that a significant percentage of women in crisis centers experience severe emotional distress entering a Crisis Center, making it a crucial issue to address. This raises the question of how architecture can play a role in creating healing environments that support emotional needs and recovery of PTSD symptoms.

69%

“The majority of the participating **women** exhibited **symptoms** of PTSD or Complex **PTSD** at the time of admission (a total of 68.9%) (Dokkedahl, 2024, p.11)”

Fig. 2. Envisioned outcome

WHAT?

- A Design **Guideline**
- **Site-testing**

Stigborgsbrygge Nørresundby

Envisioned
Outcome

Design Guideline

The objective of this thesis is to develop a design guideline (see Design Guideline) that integrates strategies grounded in empirical insights, as presented in the following program section, which includes theoretical, evidence-based and user research.

These strategies aim to establish a foundational framework of architectural approaches that support the recovery of women experiencing PTSD-related symptoms. The project adopts a user-centered methodology, emphasizing the importance of involving users throughout the design process. The resulting guideline is intended to be adaptable for similar applications in future contexts.

Site testing

The strategies outlined in the guideline will be tested through a case example at the new district Stigsborg brygge in Nørresundby - to document and explore their effectiveness as well as provide design methods in the process of testing, so these methods can be applied to the design guidebook. This case will showcase a design proposal for a Women's Crisis Center, combined with an ambulatory visit center, aimed at supporting women affected by domestic violence. The focus is on ensuring both emotional and physical security in actively aiding the recovery of women experiencing PTSD symptoms.

Problem Statement

Problem Statement

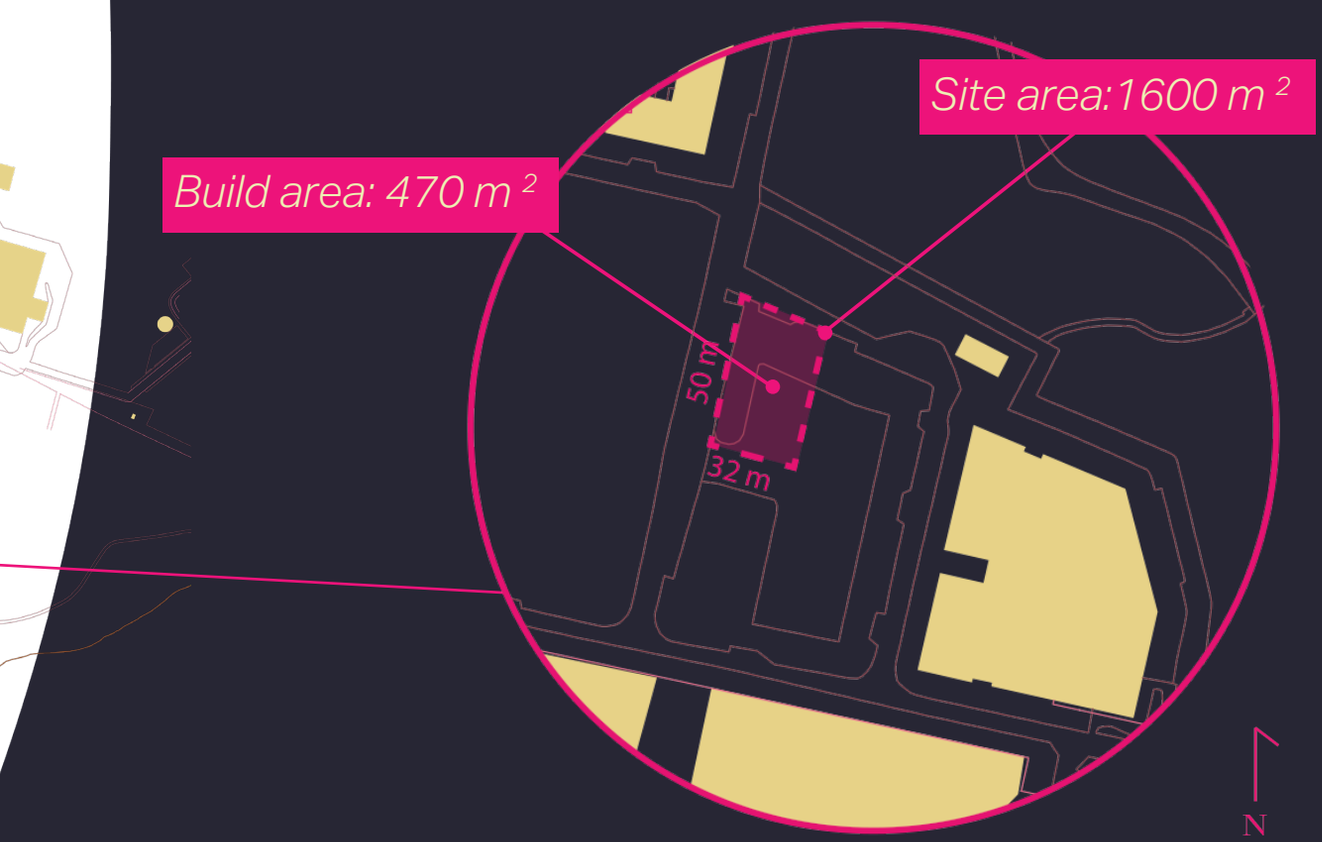
The project emphasizes how architectural elements can create a secure and healing environment for women in crisis centers experiencing PTSD symptoms. Based on empirical data it explores visual and acoustic comfort, spatial organization, and room configuration as primary elements in fostering emotional and physical safety, while other factors, such as thermal comfort, air quality, and related aspects, are considered secondary. By addressing both the immediate needs of women in the acute trauma phase and the long-term impact on their mental well-being, the design aims to support recovery.

The Site Testing

The crisis center will offer temporary housing for 15 women and their children at Stigsborg Brygge in Nørresundby, along with essential facilities such as treatment spaces, communal areas, and outdoor environments - all designed to support women's emotional and physical needs during the acute trauma phase. The site will be 1600 square meters, with a built area of 470 square meters.

Fig. 3. The location of the site

“How can **architectural strategies** in women’s crisis centers be designed to **reduce PTSD symptoms** in the acute trauma phase through **healing elements** such as visual comfort, acoustic comfort, and spatial configuration?”



Domestic Violence
What is it?

Definition

The Danish Social Welfare Agency (Socialstyrelsen) defines violence as follows:

Violence is an act or threat that regardless of its purpose can violate another person's integrity. Or that frightens, causes pain, or harms the person..(Landsorganisationen af Kvindekrisecentre, n.d.).

Violence is thus a form of control and power over another person. Domestic violence is defined by the UN as a pattern of behavior in any relationship that is used to gain or maintain power and control over an intimate partner. Abuse can take various forms, including physical, sexual, emotional, economical and/or psychological actions or threats. Such actions involve manipulation, terror, or humiliation (United Nations, n.d.).
Domestic abuse can happen to individuals who are or have been in an intimate relationship, within family members or in a household. People of all genders can be victims of abuse, however in most cases the violence is perpetrated by men against women. This abuse has serious consequences both for the victims but also for children who are exposed to domestic violence. Research indicates that children exposed to domestic violence are at a higher risk of becoming either victims or perpetrators of violence later in life, perpetuating a cycle of abuse across generations. (United Nations, n.d.).

Fig. 4. Violation of another person's integrity

> *Violence is an act or threat that regardless of its purpose can violate another person's integrity. Or that frightens, causes pain, or harms the person..*
>
> (Landsorganisationen af Kvindekrisecentre, n.d.).

Feminist City
The city of fear

As we grow up, we learn how to navigate society. The way we are taught to behave depends not only on our environment but also on our gender. Women, in particular, are socialized to be hyper-aware of their own safety, constantly adapting their behavior to minimize risk.

Leslie Kern, in Feminist City, explores how this internalized fear shapes women's lives, influencing not only their movements but also their understanding of risk and safety. The paradox is that while women are taught to fear public spaces, the reality is that most violence against them happens in private, often at the hands of someone they know.

The fear women carry

When growing up as a woman you get embedded to be conscious about your vulnerability. Going from being a child to a woman different acts go from being cute to inappropriate. Society teaches women from a young age how to behave and dress in certain ways in terms of safety.

"There's no way I can do justice to the puberty years and describe all the messages girls receive about our bodies, clothing, hair, makeup, weight, hygiene, and behavior that feed into the bigger message about controlling ourselves for the sake of safety." (Kern, 2021, p.144)

These kinds of instructions and the coverage of the subject in news, television, movies etc. learn women to fear strangers and reinforce the idea that women are co-responsible for their own safety. However, this narrative often obscures a crucial reality that most assaults against women are not committed by strangers but by people they know, in private spaces such as homes or workplaces.

"We do sort of believe that "our rape" is already out there, an inevitability waiting in the shadows." (Kern, 2021, p.147)

If women are conditioned to believe that violence is inevitable, it raises the question: why would they leave a violent partner when the alternative might be just as dangerous? For some, staying in a known abusive relationship may feel like a way to maintain a degree of control, avoiding the uncertainty of future violence from someone new.

This deeply embedded fear influences how women navigate the world. In certain contexts they need to avoid assaults and harassment by mapping out perceived danger zones and modifying their behavior accordingly In response to this, urban design strategies are being implemented worldwide to enhance safety in public spaces such as better lighting, open sightlines, and community centered planning all aim to reduce crime and increase women's sense of security.

Fig. 5. The City of Fear

Bold women

Women are constantly defying their fears. When they overcome those and walk home from a bar at night, refusing to let fear dictate their movement, this is not seen as bold but rather reckless. Society fails to acknowledge that women rely on instinct and experience to make calculated choices about their safety.

"We are taught to be nice, to not cause conflict. And we often believe that acting nice will protect us from threats because we've seen how abuse escalates when women say no, ignore men, or walk away from at uncomfortable situation. It's an internal wrestling match between our own instincts and knowledge, social conditioning, fear of being too fearful (e.g. "paranoid"), and our all-too-common memories of past violence" (Kern, 2021, p.160)

Women are expected to be both cautious and fearless, submissive yet strong. The contradiction in these expectations reflects the broader societal failure to address the root causes of gender-based violence. Instead of placing the responsibility on women to navigate a system stacked against them, urban and architectural design must shift towards creating environments that prioritize safety, autonomy, and empowerment.

> "Listening to and believing women will be standard practice"
>
> (Kern, 2021, p.165)

Conclusion

In this project, we aim to create a space where women can feel empowered and regain control over their lives. While entering the crisis center may be a vulnerable time, with many women experiencing a fractured sense of self-esteem, the goal is to help them gradually reclaim their power, supporting their recovery. This theory emphasizes the importance of the environment in fostering a sense of safety. By designing spaces tailored to meet the various needs of the women - whether it's a restorative environment for solitude or a communal space where they can connect and share common values - the hope to empower them and design an environment that helps them regain control and supports their healing journey.

Methodology

User centered and evidential approach

Introduction: A hybrid approach

In this project, a mixed design methodology is used, combining Design Thinking by Design Thinking leaders at IDEO (Workshopper, 2025) and the Double Diamond process developed by the UK Design Council (BiteSize Learning, 2025).

Design Thinking is a human-centered method that emphasizes empathy - understanding who you are designing for and identifying their needs to create solutions that are truly user-focused. The Double Diamond provides a structured approach that alternates between divergent and convergent thinking, ensuring a thorough and systematic design process. (fig.8).

Both frameworks are iterative, user-centered, and provide creative problem-solving tools, but they differ in their structure. Design Thinking is more flexible and adaptable, focusing on user empathy, while the Double Diamond follows a clear, structured process with a strong emphasis on problem definition.

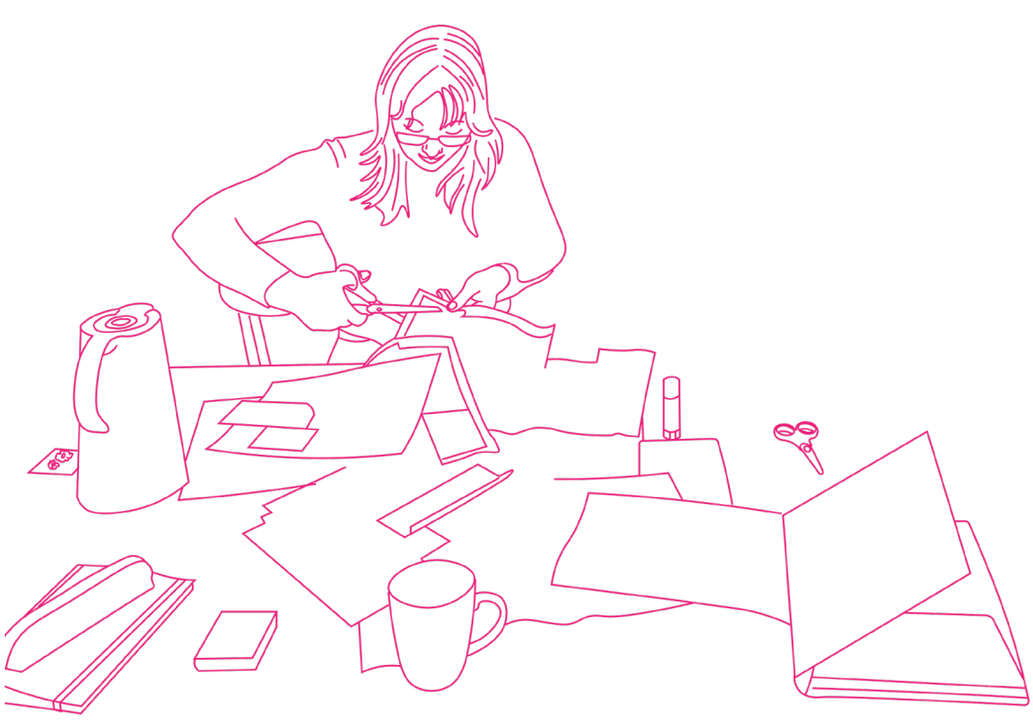
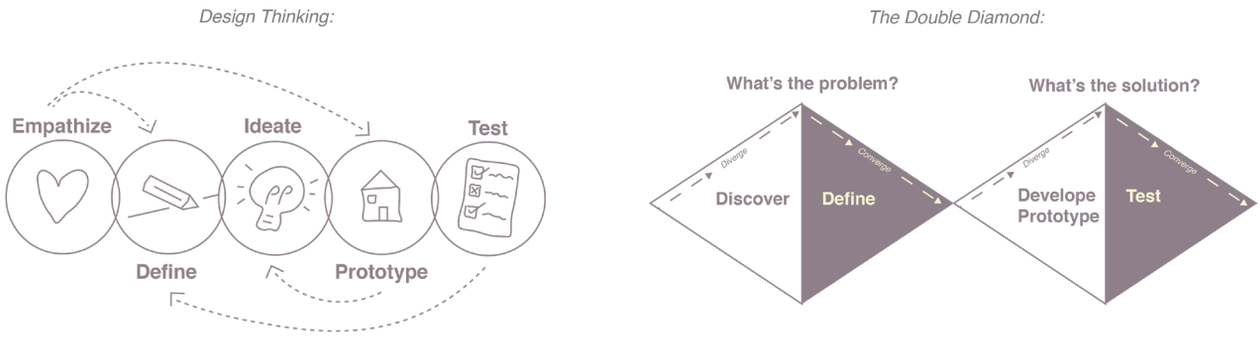


Fig. 6. User-centric focus: Sketch of one of the Women participating in a workshop session

Fig. 8. Design Thinking and the Double Diamond model. Based on: (BiteSize Learning, 2025) (Workshopper, 2025)



By combining both approaches, a stronger problem exploration process is created which benefits from the strengths of each method. In this project, Design Thinking's Empathize stage is used to deepen the Discovery phase of the Double Diamond. A more flexibly iteration is used between Define, Develop, and Test, as encouraged by Design Thinking. Finally, we apply the Diverging and Converging principles of the Double Diamond to balance broad exploration with focused problem-solving (BiteSize Learning, 2025) (Workshopper, 2025) (fig.8).

The following sections explain the hybrid design process phases in depth: Discover & Empathize, Define, Develop Prototype and Test. The approach is explained and how they interconnect in an iterative process. Lastly, we outline the specific methods used to accomplish and connect each phase.

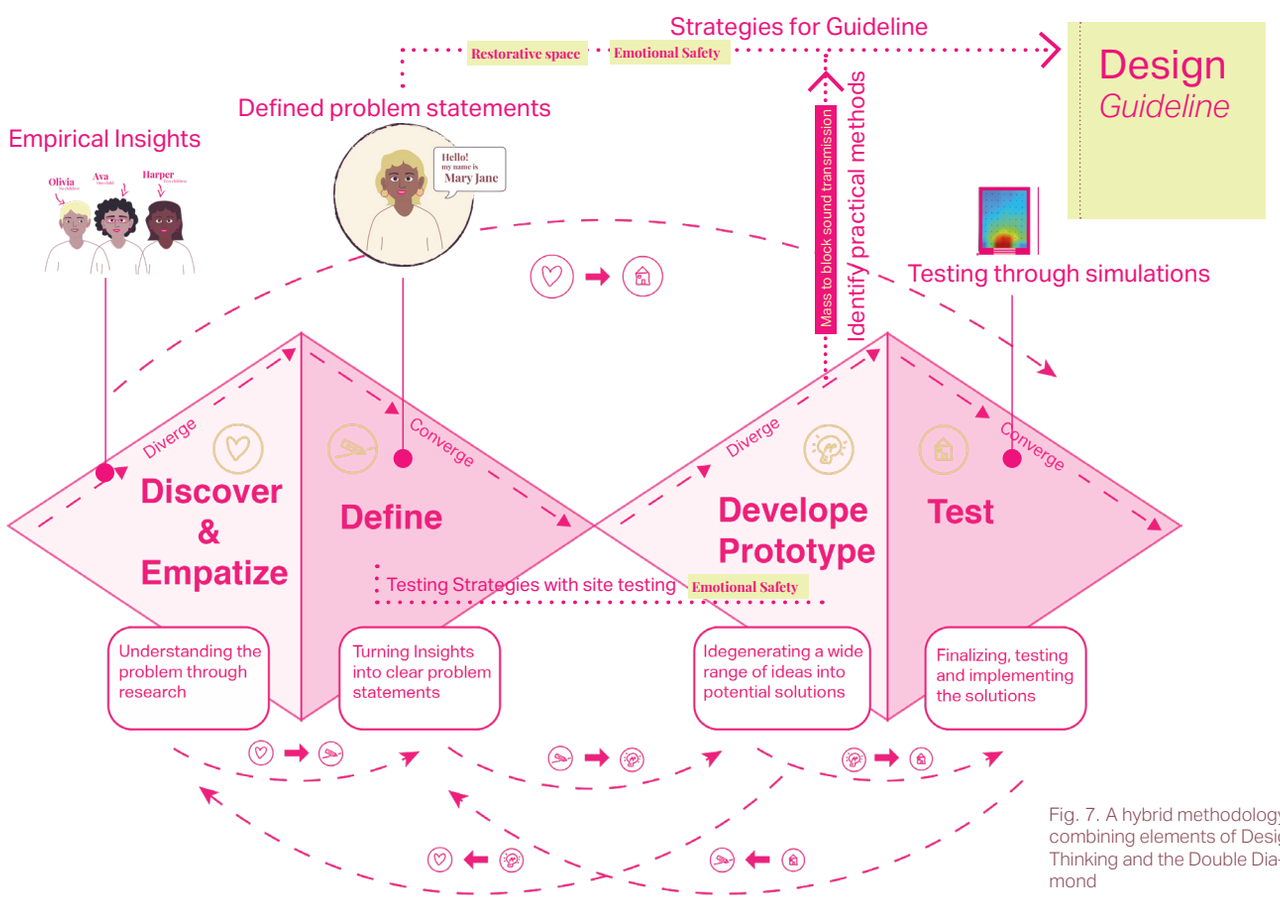


Fig. 7. A hybrid methodology combining elements of Design Thinking and the Double Diamond

Fig. 9. Engaging in an iterative process throughout the Discover and Empathize phases. Based on: (What Is Design Thinking? An Overview, 2020)

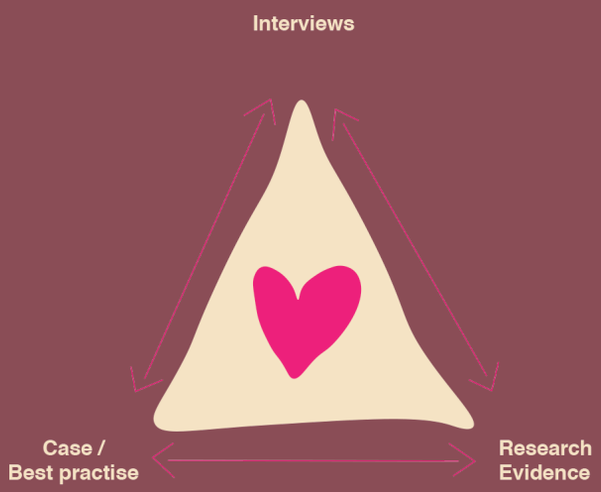
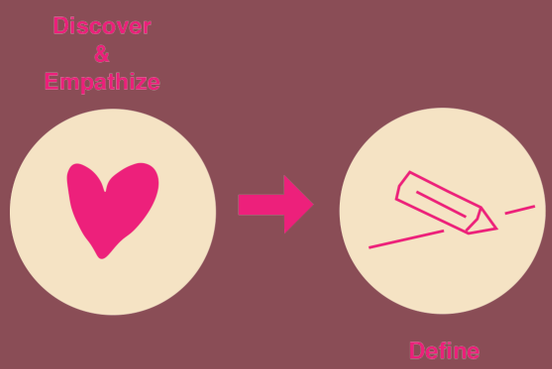


Fig.10. How insights are transformed into defined problem statements. Based on: (What Is Design Thinking? An Overview, 2020)



Discover & Empatize

This phase is about understanding the problem by exploring all relevant perspectives before narrowing down. The aim is to think broadly and critically, asking fundamental questions such as:

- Why do we need a crisis center?
- How might we best support women in crisis centers who have experienced domestic violence?

Since the user is closely integrated - especially The Women in crisis centers - it is essential to focus on the phase 'empathy'. This includes gaining deep insights about their needs, behaviors, emotions, thoughts, and daily routines. To build this understanding different perspectives in this phase are considered – One perspective includes gaining qualitative insights from interviews victim of violence. Another perspective involves acquiring academic knowledge on the subject in the form of evidence-based research. A third perspective focuses on best practices, analyzing existing best practices through the lens of the persons, created in the phase of 'Define'. All perspectives are iterative and inform each other throughout the process. This cycle provides deep user insights, allowing for a better understanding of the emotional and psychological needs of the women.

At this stage, we also apply divergent thinking, expanding our understanding by gathering a wide range of perspectives and insights before refining our focus (BiteSize Learning, 2025) (Workshopper, 2025).

Define

In the Define phase, we structure and analyze the information gathered during the Discover and Empathize phase to identify core challenges. At this stage, we work on connecting all insights, identifying common themes and refining our focus into clear problem statements that guide the next steps. This involves sorting data, identifying patterns, and synthesizing insights into well-defined problem statements (BiteSize Learning, 2025) (Workshopper, 2025) (fig. 12). It is also in this phase the design strategies are defined.

In this phase we use a combination of methods such as creating storyboards and personas out of the data gathered from the discover and empathize phase (fig. 12).

Here, we shift from broad exploration (divergent thinking) to a more focused approach (convergent thinking), ensuring that we prioritize the most important challenges to address.

Develope Prototype

This phase is where we take our problem statements and explore potential solutions. Once again, we use divergent thinking, generating a wide range of ideas through methods like brainstorming, sketching, modeling, and different experimentations (Fig. 11). At this stage, the focus is on quantity over quality - every idea is valuable, as it might inspire further development (BiteSize Learning, 2025) (Workshopper, 2025). To be able to do this we use a combination of methods such as sketching, simple physical modeling, brainstorming, references, and more.

As we refine our solutions, we use convergent thinking to narrow down ideas, selecting the most promising ones for further development. We do this through dot voting and feedback sessions. If new insights emerge, we return to the Develop & Prototype phase or all the way back to phase 1, Discover & Empathize, refining our ideas based on user feedback. (fig. 11)

Test

In the Test phase, we take our refined ideas and turn them into detailed, testable solutions. This stage involves building high-fidelity prototypes, testing with, and making final refinements based on their feedback and evaluation (BiteSize Learning, 2025) (Workshopper, 2025).

At this point, all the work from the previous phases—Discover, Define, and Develop—comes together, ensuring that the final solution is well-informed and user-validated. Methods here include 3D modelling software, detailing, evaluations, and more.

The goal of this phase is to identify and resolve any potential issues before implementation. If necessary, we refine our solutions further based on user interactions(fig. 12). In real-world applications, this stage would also involve observing user behavior in the completed design environment, ensuring that the solution effectively meets their needs.

Here, we again shift from broad exploration (divergent thinking) to a more focused approach (convergent thinking), as we begin the detailing part of the design leading to the final design proposal.

Fig. 11. Problem statements being examined as potential solutions. Based on: (What Is Design Thinking? An Overview, 2020)

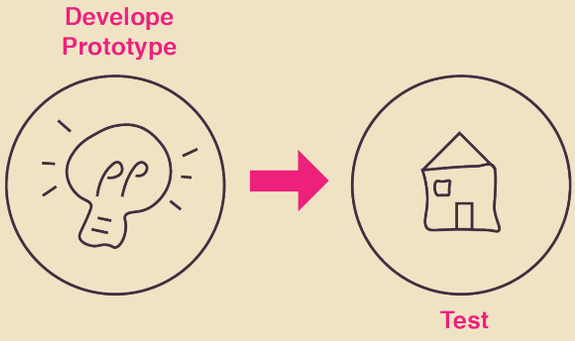
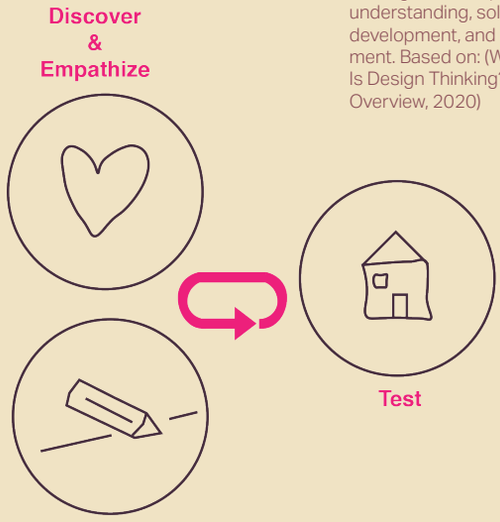


Fig. 12. Iteratively moving between problem understanding, solution development, and refinement. Based on: (What Is Design Thinking? An Overview, 2020)



Discover & Empatize

Understanding the problem through different types research

Interviews: Conversations with stakeholders, users(The women), and experts to gain qualitative insights.
Tools: Audiorecording, notes, online transcriptions

Academic research: Collect evidence-based studies to understand how we can support PTSD healing and improve overall well-being for The Women
Tools: Google Scolar, Primo, books

As-is scenario: Documenting a scenario of the crisis center to identify opportunities and issues
Tools: Illustrator, Photoshop, handsketching (more coming)

Site-analyses: Analyze the physical site location of the crisis center, including access to nature, sunlight, window placement, and noise levels, and how these factors can support healing.
Tools: Qgis, illustrator, photoshop, Google Earth, Photographs, Skraafoto

Sensory mapping: Visualizing how the Women think, feel, and behave within the space to identify opportunities for improvement.
Tools: Miro, post-its (not decided yet)

Mind-mapping: Organizing research insights, ideas, or user feedback in a hierarchical and visual format to reveal connections and relationships
Tools: Miro, post-its (not decided yet)

Casestudies/best practices: Reviewing similar projects and designs to learn from the successes and challenges related to this typology.
Tools: (not decided yet)

User workshops: Conduct workshops with the women to gather their narratives and insights.
Tools: Emotional mapping, collage, photographs

Define

Turning insights into clear problem statements

Personas: Create personas representing the different types of women who come to the crisis center based on the findings from the Discover & Empatize phase
Tools: Sketching, Illustrator

Functional diagram: Create a diagram to map out the necessary functions of the building and how they relate to each other
Tools: Sketching, markers, Illustrator

Define strategies: Conclusions drawn from empirical data, theoretical framework & simulations, inform the strategies in the Design Guideline
Tools: Google docs, hand sketching, ChatGPT

Concept: Creating a concept for the project to use as a driver and director.
Tools: Hand sketching, markers, Illustrator, akvarel paint

Design concept: Develop a design concept to guide and support the right design decisions throughout the project.
Tools: Hand sketching, markers, Illustrator, akvarel paint

Develope Prototype

Ideagenerating a wide range of ideas into potential solutions

Brainstorming: Generating a wide range of ideas, without judgment, to explore all possibilities.
Tools: Mindmapping, white board, sketching, miro

Sketching & diagramming: Visualizing early-stage ideas and spatial relationships through rough sketches and diagrams
Tools: Analogue/Digital Sketching, akveral painting

Concept development: Exploring multiple conceptual ideas and frameworks before narrowing them down
Tools: Analogue/Digital Sketching, Painting, Rhino,

Space planning: Exploring multiple conceptual ideas and frameworks before narrowing them down
Tools: Analogue/Digital Sketching, Painting, Rhino, Sketch-up (not decided yet)

Prototyping : Create physical or digital prototypes of key areas to test and refine how the design elements (such as light, materiality, space flow) function.
Tools: Rhino, physical modelling

Material studies: Choose materials that contribute to a healing environment for The Women
Tools: The material libary, photographs from personal archive

Collaging/references: Combining images, textures and materials to create visual compositions that inspire the design.
Tools: Photos from googl(cc licens), personal photos, glue, paper, markers, glitter

Atmospheric sketching: Using atmospheric sketching to visualize ideas and to detail spaces even further.
Tools: Hand sketching, markers, akvarel paint, photoshop

Test

Finalizing, testing and implementing the solutions

Visual communication: Visual communication tools to present the final design proposal, 3D models, and design concepts to users and exam. This allows you to assess the effectiveness of your design ideas and how well they meet user needs, especially regarding healing through architecture.
Tools: rhino ceros, photoshop, enscape, mdf boards, glue

Climate simulations: Run simulations to evaluate light, within the design to ensure it fosters a healing environment.
Tools: Standards, grasshopper, ladybug, Climate studio

Climate simulations: Estimate calculations on iindoor temperatures on the different window sizes.
Tools: Excel spreadsheet (24 hours average max)

Indoor climate design: Finalize the indoor climate features, ensuring that daylight and acoustics are optimized for healing.
Tools: Rhino ceros, climate studio, forms, standards

To be scenario: Creating to be scenario to explore design solutions and visualize the spatial design concepts.
Tools: Hand sketching, markers, akvarel paint, photoshop

Fig. 13. Methods used in the design process

A *social* CRISIS

Designing for *Trauma*

Introduction

This section explores the crisis center typology in order to understand gender-based violence from both historical and evidence-based perspectives. It begins by examining the history of crisis centers to contextualize the issue as a broader societal problem, helping to inform how crisis centers can be designed to effectively support women's needs today. The section then presents an evidence-based analysis of the consequences of violence, drawing on academic research. Finally, it introduces an evidence-based framework—the Trauma-Informed Approach—which offers guidance on how architecture can support healing by responding to the specific needs of women who have experienced trauma.

> *Trauma is a widespread, harmful and costly public health problem. It occurs as a result of violence, abuse, neglect, loss, disaster, war and other emotionally harmful experiences*
> *(SAMHSA, 2014, p.2)"*

History of Crisis Centers

Introduction

Violence against women is a remnant of the past, from a time before it was recognized as a societal issue. Throughout different waves of feminism particularly in Europe and North-America, people of various genders have fought for different forms of equality. During first-wave feminism, women fought for the right to vote, access to education and equal rights in marriage. Second-wave feminism brought attention to domestic violence, which until then had been seen as a private matter. Today, feminism has evolved into a broader fight for structural change ("Feminisme og kvindebevægelsens historie," n.d.). All these fights were steps towards equality, but progress was not achieved all at once.

In the 1970's, The Women's Movement in Denmark was established. Women's houses were opened in major cities, offering consultation services primarily for women who were victims of violence. The first women's crisis center in Denmark was founded in Ringsted, in 1978 as a part of the local women's house. However, it was the women's movement's occupation of Danner's foundation in Copenhagen in 1979 that, through national fundraising and extensive media coverage, became an inspiration for other women's groups in Denmark. In the following years, between 1979 and 1987, 28 women's crisis centers were established nationwide (Landsorganisation af Kvindekrisecentre, 2012, pp.9-10). Today, the exact number of crises centers in Denmark remains unclear due anonymity concerns, but in 2023 there were 82 crisis centers (Kronstrand, 2023).

The functions of Crisis Centers

The function of Crisis Centers has evolved since their establishment in the 1970s. Initially, the focus was on providing consultation services for women and immediate refuge. Over time, this expanded to offer a broader range of support services and consultations, and crisis centers for people of different genders including men and a LGBTQ+ crisis centers (Forenede Care, 2024). Today, different types of crisis centers exist to address various needs. Emergency shelters provide safety, anonymous housing, and counseling, while others focus on long-term recovery and reintegration into society.

Fig. 14. Awareness of victims of violence

Fig. 15. Women advocating for victims of violence

The future of Crisis Centers

Despite the crucial role in supporting survivors, crisis centers often lack a dedicated architectural approach. Many houses are in repurposed buildings that were never designed with trauma-informed design in mind. As a result, aspects such as privacy, healing environments and aesthetic designed security tools are frequently not seen as integrated. Architectural design plays a fundamental role in creating spaces that foster recovery. However, many crisis centers operate in old, repurposed buildings, which creates an institutionalized atmosphere with a lack of personal space and common rooms designed to accommodate different mental states.

By addressing the missing focus on architecture, crisis centers can transform from temporary shelters into holistic environments that support long-term recovery of their users.

The consequences
Of violence

Psychological and physical consequences of violence

One common trauma response associated with PTSD is tonic immobility - a state of temporary paralysis in response to extreme fear or threat. This survival mechanism can leave survivors feeling ashamed or guilty for not reacting during the violent incident (Dokkedahl, 2024, p.16). PTSD is one of the most prevalent psychological consequences of trauma, often manifesting in a range of symptoms among women who have experienced violence, including:

- Sleep disturbances
- Chronic feelings of fear and unsafety
- Difficulty concentrating
- Symptoms of PTSD or Complex PTSD
- Depression and anxiety (Danner (n.d.))

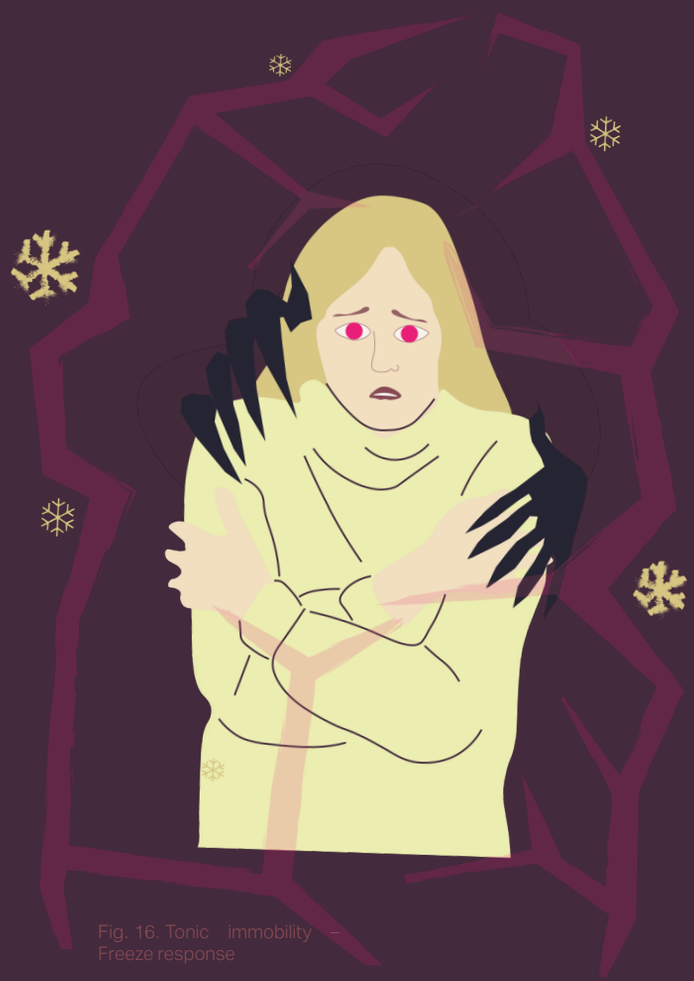


Fig. 16. Tonic immobility – Freeze response

Research findings

A PhD research project by Sarah Bøgelund Dokkedahl from the Psychological Institute at SDU conducted an in-depth study of 150 women in crisis centers. Using surveys and interviews, the study tracked their psychological state during their stay and three months after leaving (Dokkedahl, 2024). The results showed that 68.9% of the women displayed symptoms of PTSD or Complex PTSD (Dokkedahl, 2024, p.11). The most common symptoms of these are:

PTSD symptoms

- Flashbacks: Nightmares and intrusive thoughts that disrupt daily life
- Avoidance strategies: Avoiding places, people, or thoughts related to trauma
- Increased alertness:
  - Chronic stress and hypervigilance
  - Irritability
  - Difficulty concentrating
  - Trouble sleeping

> *The feeling of guilt can partially explain the development of symptoms of PTSD and Complex PTSD, which emphasizes the importance of working with the guilt of women exposed to violence (Dokkedahl, 2024, p.11).*

Complex PTSD symptoms

Complex PTSD often affects those who have experienced prolonged trauma. Symptoms include (Dokkedahl, 2024, p.18-19):

- Emotional dysregulation
  - Hyporegulation: Emotional numbness and difficulty identifying emotions
  - Hyperregulation: Intense emotional outbursts
- Negative self-perception: Feelings of worthlessness, shame, and guilt
- Disturbed relationships: Difficulty maintaining healthy relationships

Another study conducted by the Danish Health Authority (Socialstyrelsen) surveyed 310 women who had experienced domestic violence. The findings showed that:

- 44% exhibited PTSD symptoms (Landsorganisationen af Kvindekrisecentre, 2016, p.16)
- 31% frequently experienced flashbacks
- 26% felt fear when reminded of the violence
- 28% had severe sleep disturbances

However, research also shows that women often experience a significant reduction in symptoms during their stay at crisis centers (Dokkedahl, 2024, p.11). This suggests that crisis centers play a critical role in the healing process- which raises the question: Can architecture play an active role in this healing process of women who have experienced domestic violence?

Conclusion

Although crisis centers provide essential psychological support, research suggests that the physical environment can also impact recovery. If crisis centers contribute to reducing PTSD symptoms, how can architecture actively support the healing process? By integrating evidence-based research into architectural design, we can create spaces that do not just provide shelter but actively support recovery for these women.

This research highlights the importance of user-centered and evidenced based design in creating environments that truly meet the needs of women affected by violence. The findings from these studies will inform the design of this project - from an evidence-based perspective, ensuring that the architectural approach is based on scientific knowledge, user experiences and iterative design processes. By grounding the design process in academic research methods, ensures that the outcome is not only functional but also emotionally supportive for The Women.

Trauma
Informed Approach

The 6 principles of TIA

"Trauma is a widespread, harmful and costly public health problem. It occurs as a result of violence, abuse, neglect, loss, disaster, war and other emotionally harmful experiences (SAMHSA, 2014, p.2)

The Substance Abuse and Mental Health Services Administration (SAMHSA), an agency within the U.S. Department of Health and Human Services, developed a framework with six key principles for addressing trauma to promote healing and recovery. This framework, referred to as the Trauma-Informed Approach (TIA), emphasizes physical, psychological, and emotional safety for both providers and survivors. The goal is to help individuals and caretakers regain a sense of control and empowerment (SAMHSA, 2014). The framework is designed to be adapted across various sectors that have the potential to support individuals in coping with traumatic experiences, as well as to guide systems in becoming more trauma-informed (SAMHSA, 2014, p.3).

> "Science has revealed that **without** a sense of **safety,** the pre-frontal cortex **cannot develop** or use the executive functions needed to carry out **decision-making**, goal setting, planning, task initiation and **self-control** (Trauma-Informed Care | Texas Health and Human Services, no date, p.1)"

Similarly, other organizations emphasize the importance of Trauma-Informed Approach. For example, Texas Health and Human Services integrates these principles into its framework, similar with the SAMHSA's guidelines (Trauma-Informed Care | Texas Health and Human Services, no date). Likewise, VIVE, the Danish National Research and Analysis Center for Welfare, highlights research documenting a high prevalence of trauma, particularly among individuals in the social sector. These groups are at an increased risk of further traumatization, highlighting the importance of trauma awareness in care interventions (Fynbo, Berger, and Frøslev-Thomsen, 2022, p.3). In response, VIVE has developed a prototype based on SAMHSA's Trauma-Informed Approach (TIA) to enhance practices and raise awareness of trauma in social interventions (Fynbo, Berger, and Frøslev-Thomsen, 2022, p.13).

The purpose of this theoretical section is to provide an understanding of the Trauma-Informed Approach (TIA) and establish a theoretical foundation for architectural design choices. By examining these principles, we aim to create spaces and architectural strategies that minimize trauma symptoms and triggers, ultimately supporting women in their recovery and healing. The following sections outline the six core principles of TIA, drawing on findings from SAMHSA, Texas Health and Human Services and VIVE.

Fig. 17. One of the principles of TIA: Safety
Based on: (Center for Care Innovations, 2024)

Safety

One of the fundamental principles of TIA is ensuring emotional and physical safety. When individuals feel threatened, the stress response system is activated, leading to reactive rather than thoughtful responses. By fostering a sense of safety, the nervous system becomes less reactive and more regulated. Different types of safety include:

- Physical safety: Must be established first to create healthy connections. Creating secure physical environments with clear exits, spatial rooms, multiple windows, and no dark corners (Fynbo, Berger and Frøslev-Thomsen, 2022, p.9)
- Emotional safety: Allowing individuals to express emotions without fear of shame
- Social safety: Fostering a sense of belonging through supportive relationships.
- Moral safety: Ensuring individuals are surrounded by people who share similar values and feeling safe withing the groups (Trauma-Informed Care | Texas Health and Human Services, no date, p.1) (SAMHSA, 2014, p.10) (Fynbo, Berger and Frøslev-Thomsen, 2022, p.9).

Trustworthiness and Transparency

"Trustworthiness means maintaining respectful and professional boundaries, prioritizing privacy and confidentiality .." (Trauma-Informed Care | Texas Health and Human Services, no date, p.3)

Trust and transparency take time to build. Creating clear, consistent, and stable environments helps foster trust, calms the nervous system, and enhances the individual's ability to process experiences (Trauma-Informed Care | Texas Health and Human Services, no date, p.3).
"Peer support and mutual self-help are key vehicles for establishing safety and hope, building trust, enhancing collaboration, and utilizing their stories and lived experience to promote recovery and healing" (SAMHSA, 2014, p.11)

Peer support

"Peer support and mutual self-help are key vehicles for establishing safety and hope, building trust, enhancing collaboration, and utilizing their stories and lived experience to promote recovery and healing" (SAMHSA, 2014, p.11)

Peer support can take place through informal gatherings (e.g., coffee meetings, shared activities) where individuals can exchange experiences and build healing relationships. This allows individuals to learn from both their own and others' experiences, reinforcing the importance of community support (Trauma-Informed Care | Texas Health and Human Services, no date, p.4; SAMHSA, 2014).

Fig. 18. The six principles of TIA, Based on: (Center for Care Innovations, 2024)

1. Safety

2. Trustworthiness and Transparency

3. Peer support

Collaboration and Mutuality

> Collaboration is creating an environment of "doing with" someone rather than "doing to or for" someone." (Trauma-Informed Care | Texas Health and Human Services, no date, p.5).

Encouraging collaborative interactions allows individuals to explore options from their own perspectives, empowering them in the decision-making process (Trauma-Informed Care | Texas Health and Human Services, no date, p.5; SAMHSA, 2014).

Empowerment, Voice and Choice

> Empowerment is different than cheerleading. Rather than providing a direct compliment or encouragement, empowerment is asking someone to identify capacities and strengths." (Trauma-Informed Care | Texas Health and Human Services, no date, p.6)

Empowerment focuses on strength-building, skill development and validation. This includes creating spaces where individuals can express thoughts, emotions, opinions and fostering a supportive community with cultural, spiritual and social connections (Trauma-Informed Care | Texas Health and Human Services, no date, p.6; SAMHSA, 2014).

3. Collaboration and Mutualiity

3. Empowerment, Voice and Choice

3. Humility

Humility

> Humility and responsiveness enable individuals and organizations to respond respectfully and effectively to people of all backgrounds in a manner that recognizes, affirms and values their worth. (Trauma-Informed Care | Texas Health and Human Services, no date, p.7)

Trauma-informed approaches actively counteract racial and cultural biases, ensuring that care is inclusive, respectful, and culturally responsive. Instead of focusing solely on individual coping mechanisms, it is crucial to address systemic discrimination and inequalities. In practice, this may involve designing inclusive and accessible spaces that foster equity and belonging (Trauma-Informed Care | Texas Health and Human Services, no date, p.7-8; SAMHSA, 2014).'

Conclusion

Although TIA is traditionally used in contexts other than architecture, its six principles offer valuable approaches. In this project, the aim is to challenge how these principles can be applied to architecture as a catalyst for creating spaces that actively support healing and recovery from trauma. By prioritizing and incorporating the six elements of TIA - trustworthiness and transparency, peer support, collaboration and mutuality, empowerment, voice and choice, and cultural humility – the project seeks to use TIA as an active design tool to help women in their recovery and provide comfort in relation to the trauma they have experienced. Our goal is to create spaces that offer a sense of safety, control, and empowerment through thoughtful design choices. Including spaces for informal gatherings to encourage peer support, where women can exchange experiences and build relationships with one another. Additionally, the aim is to create both physically and emotionally secure environments by incorporating clear exits, spacious rooms, multiple windows, and avoiding dark or enclosed spaces to provide comfort. The following sections showcase the key insights taken from this theoretical framework, which are used in the design process.

SITE

Site
Analyses

Introduction

The selection of the location of a womens crisis center plays a key role in shaping the architectural response, both in relation to the physical surroundings and the social context. This section outlines the logic behind choosing a location within the newly developed urban district of Stigsborg Brygge, as well as an analysis of the site's existing and planned functions. A thorough context analysis is conducted to examine the site's architectural character, focusing on aspects such as volumetrics, façade articulation, spatial voids, entrances, and material detailing. These elements inform the integration of a women's crisis center into the surrounding context.

The local development plan outlines a building scale ranging from two to six stories, drawing inspiration from the historical center of Aalborg. The tallest volumes are positioned towards the larger open spaces within the district, supporting a gradual and context-sensitive transition in scale. Along the main streets, building heights are kept around four storeys to ensure a coherent and enclosed streetscape.

Furthermore, environmental factors such as sun exposure and noise levels are analyzed to ensure that the spatial organization and orientation of the building supports both comfort and well-being, key concerns in trauma-informed design.

Choosing
The site/Case exploration

Parameters

Several parameters are considered when selecting a location for the women crisis center. In an interview with the manager and the development employee at Aalborg Crisis Center, it became clear that proximity to the city is crucial both in order to be close to facilities like hospital and police station and also to prevent the women from feeling isolated. Furthermore, the plot needs to have a shielded parking area for the women's cars not to be directly visible to the public.

Access to sunlight is essential for creating a bright and uplifting environment for the recovery of the women. Accessibility to nature provides a calming space for the women to walk, further enhancing their recovery (Ulrich, 1984). Additionally, a calm surrounding atmosphere with low noise levels and a sense of security is essential, as constant background noise can increase stress and anxiety, while a feeling of safety, achieved through good lighting, clear pathways, and a well-chosen location, allows the women to focus on their healing process.

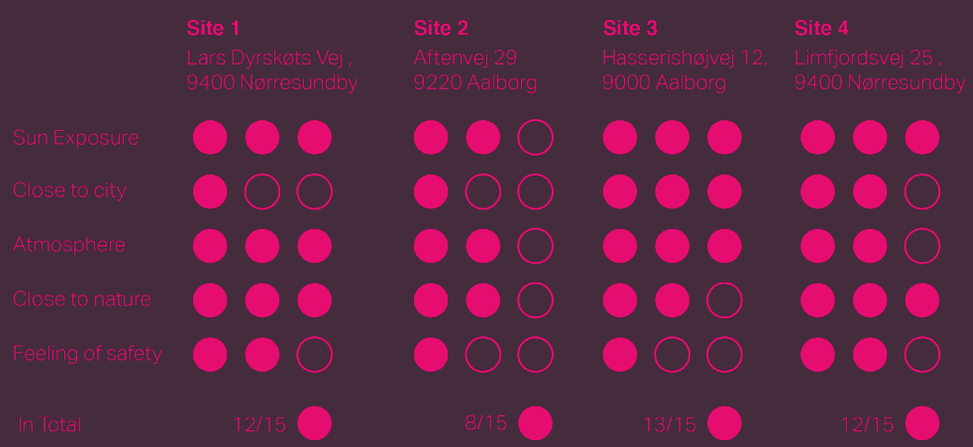


Fig. 19. Evaluation of Four Potential Cases

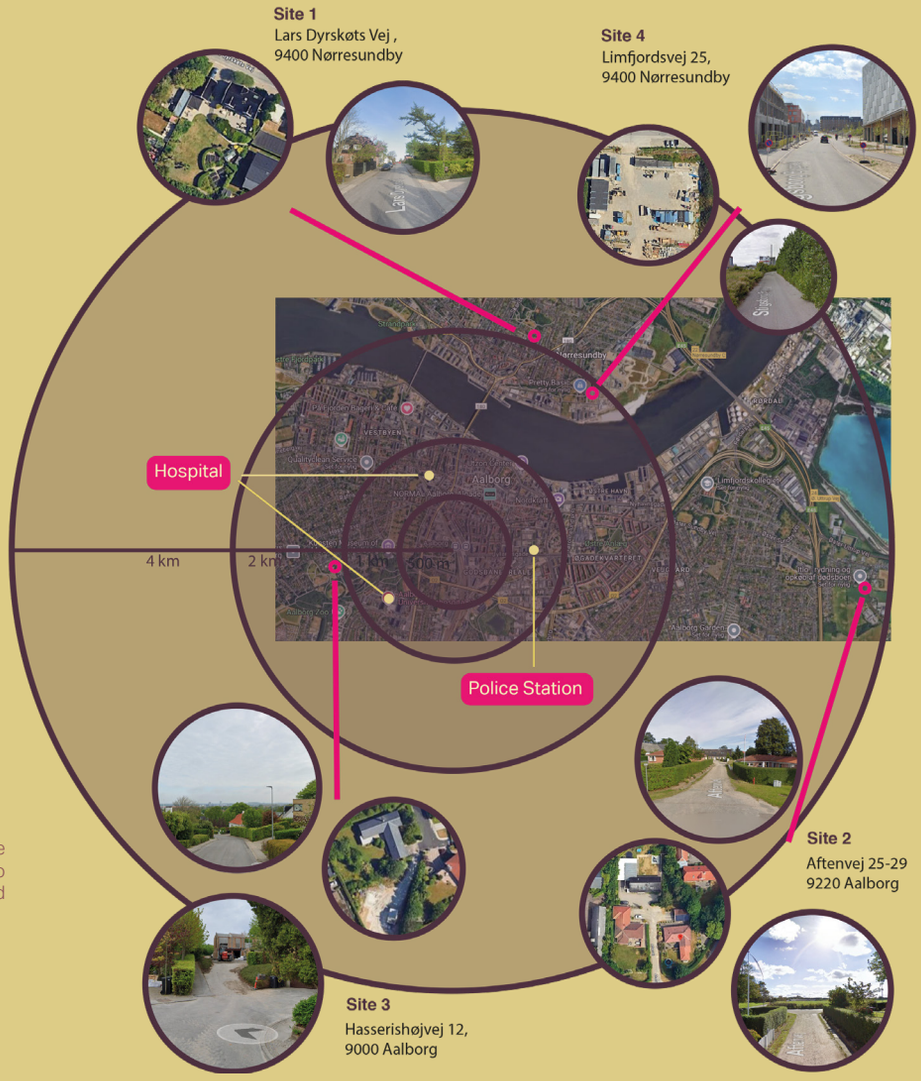


Fig. 20. Distance from the Central Area and Access to Essential Functions. Based on: (Google Maps, 2025)

Finding the right location is challenging, as it must balance safety, atmosphere, and functionality while meeting spatial requirements.

The four potential locations are situated in different parts of the city: Sites 1 and 3 are in residential neighborhoods close to nature, Site 2 is slightly outside the city, offering more privacy, and Site 4 is in the developing district of Stigsborg Brygge, Nørresundby, where the crisis center could contribute to the upcoming urban landscape.

The selection of Site 4 at Stigsborg Brygge reflects a careful balance between safety, accessibility and environmental qualities. Its proximity to the city ensures easy access to essential services, while the nearby waterfront and recreational areas provide a serene setting that supports recovery. Additionally, integrating the crisis center into a developing urban district offers an opportunity for the women to feel connected to society rather than isolated. This site not only meets the functional and spatial requirements but also contributes to fostering a sense of renewal and possibility for its residents.

Functional
Analyses

The site is located at Stigsborg Brygge, a new residential district in Nørresundby. Various facilities are available in the immediate surroundings, including a bus stop, a children and youth campus, playgrounds, a large recreational area, and a harbor bath. This new district is envisioned as a vibrant area with amenities that welcome both families and individuals living in the urban space. Within a 2-kilometer radius, both the hospital and the police station are situated. These facilities create a strong foundation for a women's crisis center, providing a safe space for women in a crisis phase who need support and inspiration for a new everyday life. Imagine sitting inside the crisis center, looking out the window, and finding comfort in the view of nature, the fjord, and the vibrant surroundings.

Fig. 21. Sightlines Toward the Café and Bakery area on the right side.

Fig. 22. View Toward the Park Area seen from the Site's Location Facing Northeast.

Fig. 23. Functional uses within Stigsborg Brygge

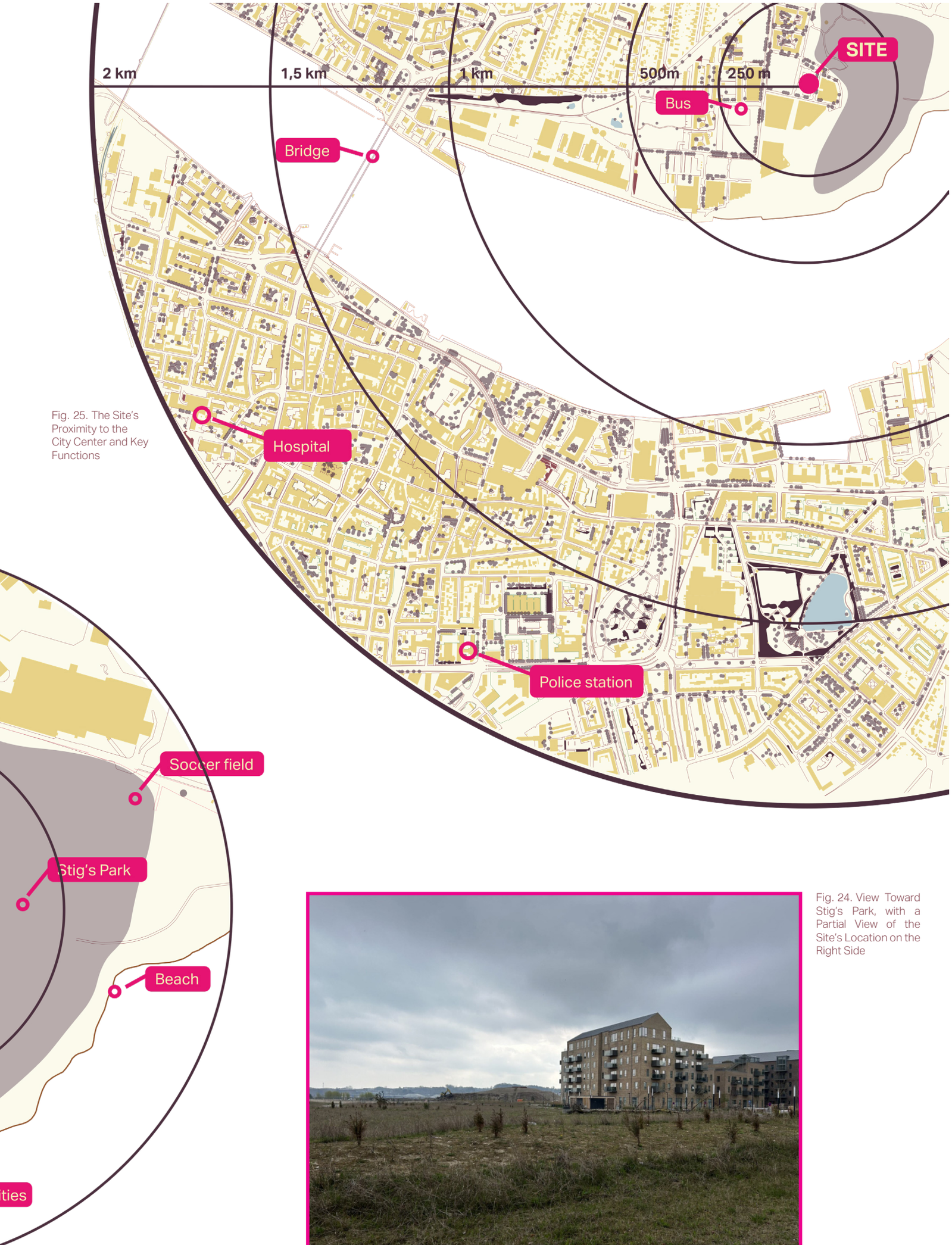


Fig. 25. The Site's Proximity to the City Center and Key Functions

Fig. 24. View Toward Stig's Park, with a Partial View of the Site's Location on the Right Side

Context
Volume Analyses

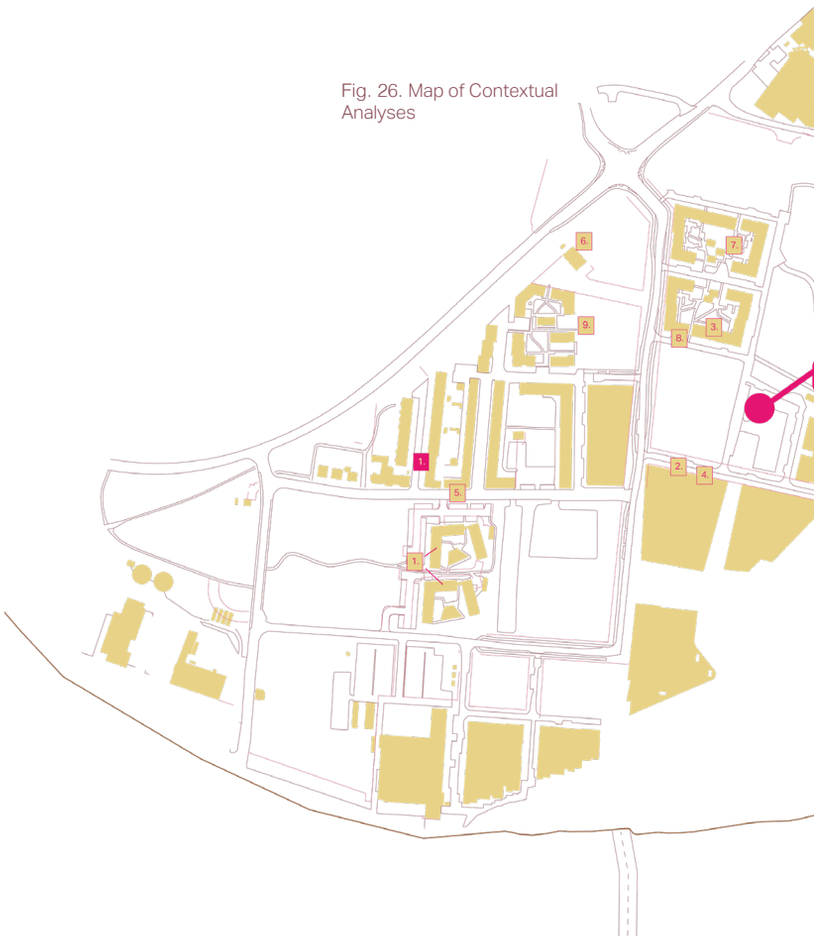


Fig. 26. Map of Contextual Analyses

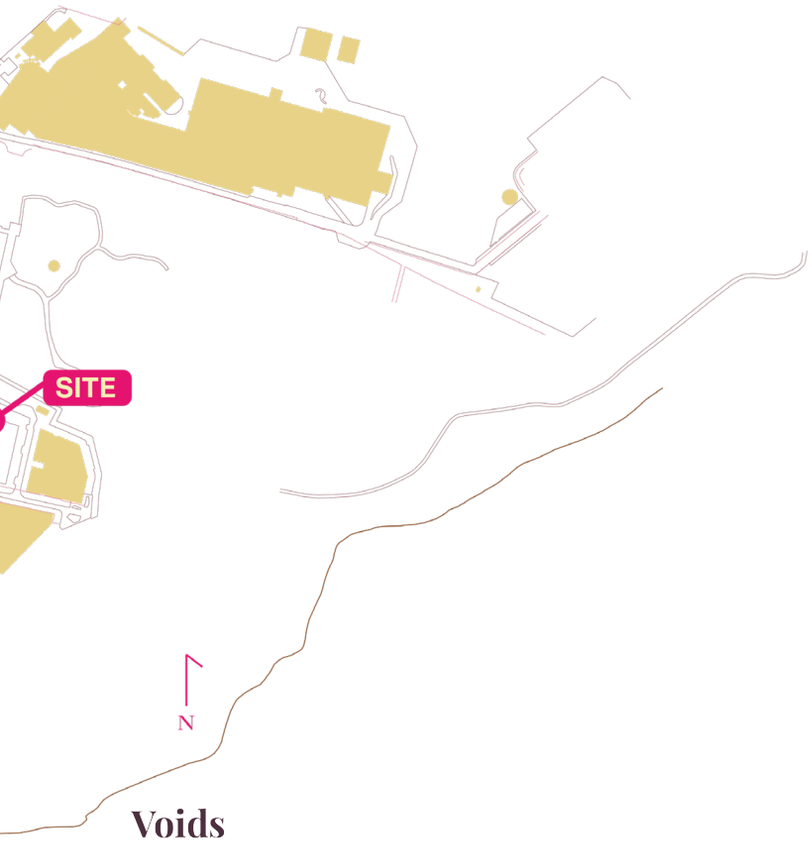
Volume and facade

In the immediate context of the project site, the building volumes exhibit variation both in height and in the articulation of the façades. Setbacks in the façades not only contribute to a more dynamic urban landscape but also create sheltered outdoor spaces such as balconies and roof terraces. These variations enhance the architectural expression and support a more human-scale environment.

Fig. 27. Context Studies on Volume, Mass, and Variation

Volume, mass and variations

SITE



The voids and materiality

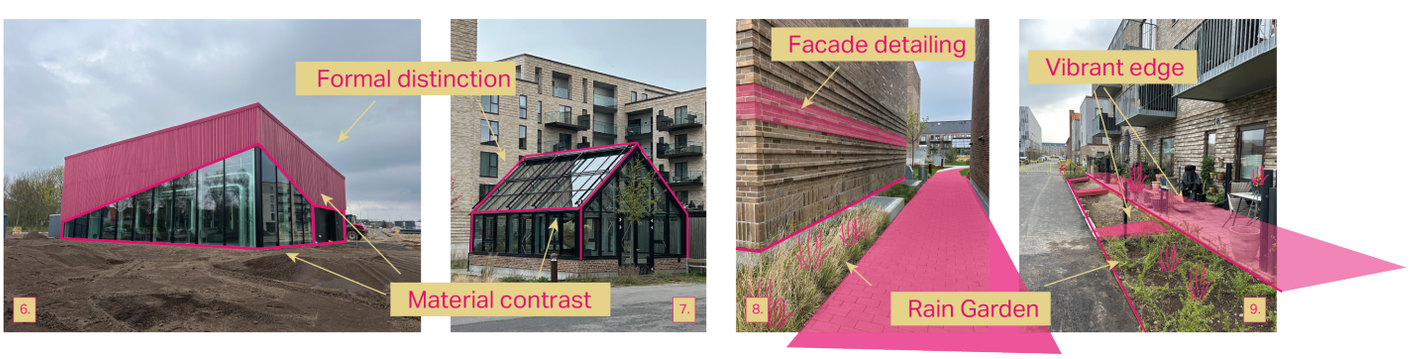
Various types of voids within the building enable different forms of retreat and interaction. Recessed floor plans allow for visual connections between individuals engaged in different activities, fostering a sense of presence without requiring direct contact. The design of entrances can support either a clearly visible and accessible entry or a more discreet, homelike transition. Architectural detailing plays a key role in visually communicating the intended use of spaces and can help guide users intuitively toward specific functions or areas.

Voids

Fig. 28. Context Studies on Voids and Materiality

Entrance

Detailing



Sun
Analyses

To examine the solar conditions on the project site, a solar analysis was conducted at four key times of the year, the two solstices and two equinoxes (see Appendix 2). These dates represent the different solar ancles throughout the year to provide an understanding of the seasonal sunlight exposure.

Additionally, a simulation in Grasshopper illustrates the distribution of direct sun hours across the different floors of the building. Throughout the year, the ground floor and first floor receive minimal direct sunlight. However, a supplementary simulation in Climate Studio indicates a higher amount of indirect sun hours, suggesting potential for sufficient daylight and passive lighting strategies. On the upper floors, there is a significantly greater amount of direct sunlight, highlighting the need for solar shading solutions to avoid overheating and glare.

The solar analysis not only provides insight into seasonal variations in sun exposure across the building mass and the project site, but also informs the design process in terms of room configuration, ensuring that the spatial arrangements support the specific need of a crisis center. Furthermore, it guides decisions on solar shading and facade strategies. These insights are integrated to enhance spatial qualities and ensure thermal comfort throughout the building.

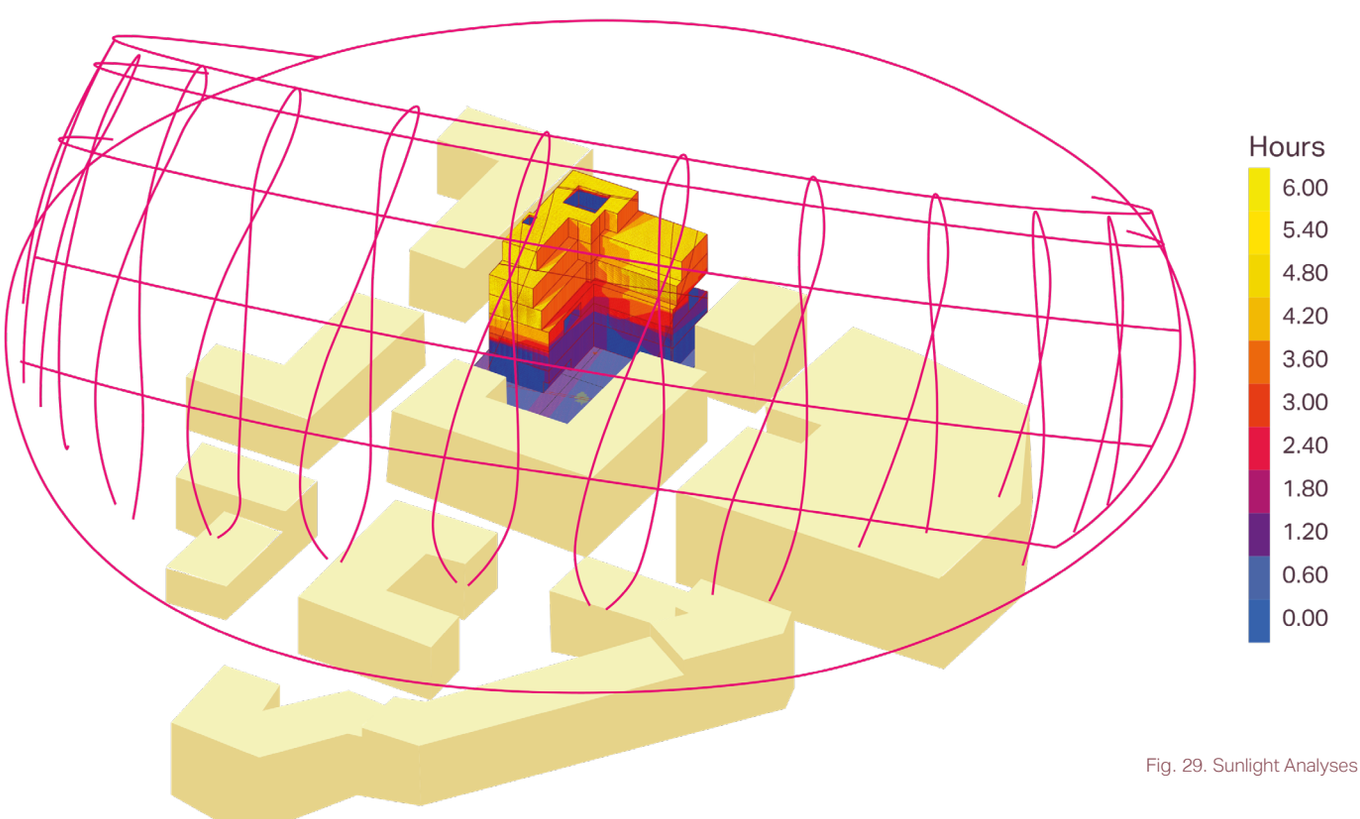


Fig. 29. Sunlight Analyses

Noise
Analyses

Noise analysis is important, as noise has a significant impact on mental well-being and the recovery process for women in a crisis center. Since the area is part of a newly developed district, there is currently minimal external noise. However, the adjacent road is planned to be of a similar scale to roads typically associated with noise levels of 50–55 dB. Based on this, standard sound insulation and regular windows are considered sufficient for mitigating external noise. Therefore, the focus shifts toward managing internal noise to ensure a calm and restorative indoor environment.

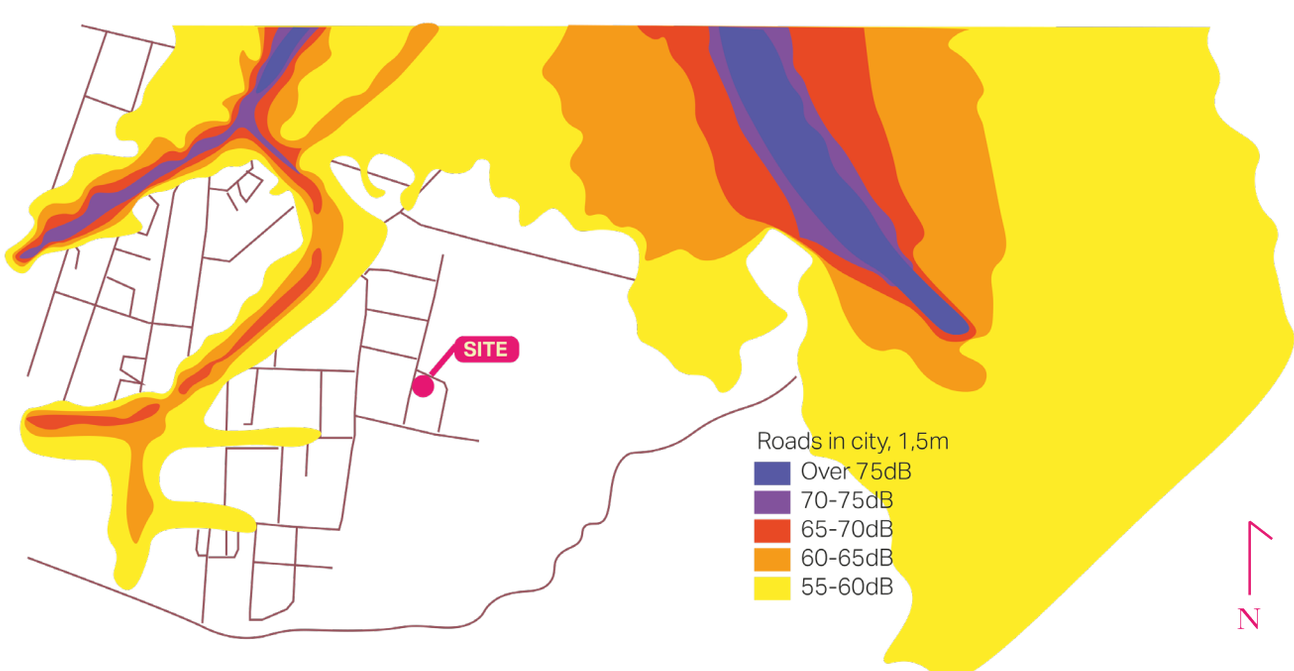


Fig. 30. Noise Analyses

USER

User research

Introduction

This section provides an overview of the user studies conducted to gain a deeper understanding of The Women's needs and behaviors in the context of domestic violence. The studies employed a range of methods, including interviews, observations and workshops. Here two employees at Aalborg Crisis Center were interviewed, followed by an observational tour of the center. Next, two interviews were conducted with women (unaffiliated with Aalborg Crisis Center) who were former victims of abusive relationships, offering valuable insights into their experiences.

Finally, a workshop was conducted around four key themes, involving three women who had previously stayed at Aalborg Crisis Center. The findings from these various studies contribute to a comprehensive understanding of the challenges and needs faced by these women.

Note that all women are anonymized, except for Interviewee Laila.

Aalborg
Crisis Center

Interview with the manager and development employee

Visiting Aalborg Crisis Shelter revealed different needs for facilities. The center accommodates nine women and ten children. The crisis center needs to be close to the city to ensure logistical ease and to avoid isolating the women from activities and other advantages of urban life. For those who need to stay on the premises for their own safety, the facilities should feel homelike and support various activities

Upon arrival at the crisis center, the women will have a screening interview with an employee in a meeting room near the entrance. Counseling and the residence area in two separate sections of the building. Different facilities are missing to support the women.

Admin building

- 1 consulting room at the entrance
- A Bathroom at the entrance
- 3 individual offices
- Big meeting room used for common lunch between employees
- Meeting room with table and lounge area/ comfortable seating
- Storage space approx. 30sqm (wish for more)
- Workshop

Needed Facilities

- A shared office space
- More storage space
- A space for residences to have visitors

Residence facilities

- Kitchen
- Dining room
- Television/living room
- Playing room
- Washroom
- Bathroom / changing table
- Bedroom
- Laundry-room
- 2 Bedrooms for nightshift

Needed facilities

- Privat refrigerator
- Privat bathroom
- Beds for one woman and 3-4 children in each room
- Common area with different zones to accommodate different needs
- A space to the older kiids to hang out

Outdoor space

- Playground
- Seating areas for smoking
- Enclosed seating area

Ambulatory consultance (This need to be totally delimited from the residents space

- 5 meetingrooms 10-20sqm
- Some with a computer
- Some with a meetingtable
- All with Comfortable seating are

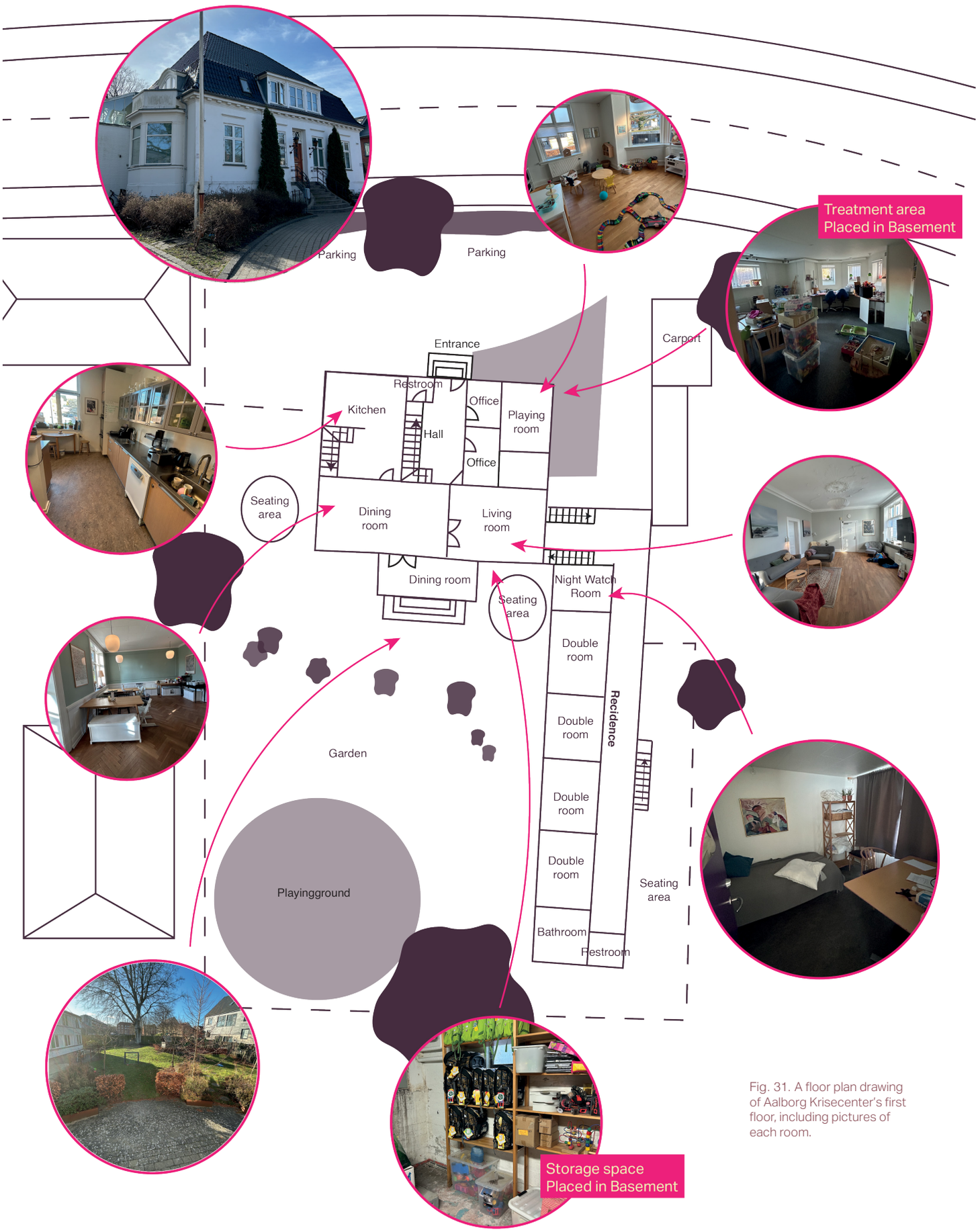


Fig. 31. A floor plan drawing of Aalborg Krisecenter's first floor, including pictures of each room.

Margrethe
Interviewee

Interview insights

This study includes an interview with Margret, who has experienced both physical and psychological violence in two relationships. Although she is not currently in a violent relationship and hasn't been in one for years, she still experiences symptoms as a consequence of the violence. One of the ongoing struggles she faces is a persistent sense of fear and alertness. She shares an example of this feeling:

> "... I check if there are any emergency exits, so yes, if something happens – it's not something people know – but I quickly look around, okay, there are two places I can get out. And I still do that now, even though it's been over 10 years." (Appendix 1)

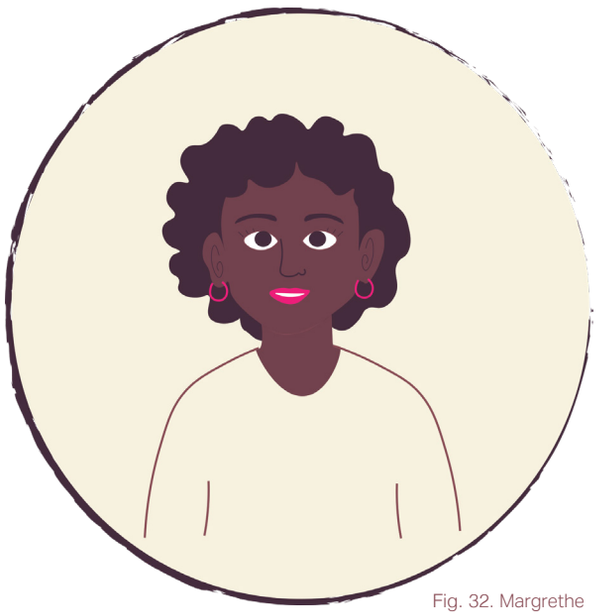


Fig. 32. Margrethe

Margret hasn't stayed at any crisis center and hasn't received any psychological help, but she has managed to support herself through self-help. One way she copes with her thoughts and feelings is through reading and spending time in nature and her garden, which calms her and reminds her of positive experiences, such as sailing, which she loves.

The study summarizes key insights from the interview with Margret. These insights will inform the design process, addressing women's needs and desires. This data will be used in later creation of a fictional persona and storytelling, based on all the research. This will help shape architectural strategies used in the design process.

About Margrethe

Age: 42 years old
Number of Children: 3
Type of Violence:
Physical and psychological
Duration of abuse: 12 years
Resources used: Self-help

Fig. 33. Key Insights from Interview with Margrethe

.. you are constantly walking on eggshells, so you use a lot of energy just to exist - Margrethe (Appendix 1)

Sleep difficulities

"... I sleep so lightly that I register the slightest movement in the bed."

Fear and Alertness

"... I have to check if there are any emergency exits, so yes, if something happens..."

Physical symptoms

".. I feel nauseous and have stomach pain. I can feel my chest tighten up, and I can almost trigger a headache in no time." (when feeling alert)

Avoidances

Feeling unsafe in stressful environments she sometimes uses avoidance strategies "... my bathroom visits can sometimes take a bit longer."

Low self-esteem

"... you slowly fall apart more and more, and your self-confidence and self-worth completely disappear."
".. you are told for many years that you are not good enough, that you are stupid, ugly, that no one else will want you."

Shame and guilt

"... I sleep so lightly that I register the slightest movement in the bed."

Feeling unsafe

She feels unsafe when visiting her uncle which drinks and can be enraged at times: ".... I feel nauseous. I become mentally and physically unwell when I have to go home to the family."

Need for control

"I really need to feel safe in order to let go of that control."

Nature calms her

"The sound of water is the most amazing thing for me, and listening to the wind in the trees swaying. It's a bit like the masts on the boats."

Likes Reading

"... when you sit with some books and look down, you can disappear. Especially the good books, you can disappear into a completely amazing world sometimes..."

Unaware of aid

"I would dare to claim that it is socially heavier for those who go to a crisis center... It's not Director Larsen's wife, she doesn't go to a crisis center."

Flashbacks

She feels unsafe when visiting her uncle which drinks and can be enraged at times: ".... I feel nauseous. I become mentally and physically unwell when I have to go home to the family."

Fig. 34. Key Insights from Interview with Laila

Laila
Interviewee

Interview insights

Laila is a woman who is not anonymized and is a former victim of domestic violence. She left her abusive ex-husband, who had been violent towards her. Twelve years ago, she sought help at a Crisis Center after being in a relationship where she endured various forms of abuse. Laila has experienced all types of violence, including physical, psychological, sexual, economic and social abuse. She has stayed in two different crisis centers, bringing her two daughters, who were around 15 and 17 at the time. Currently, Laila is undergoing a PTSD diagnostic assessment due to the consequences of the violence.

About Laila

Age: 52 years old
Number of Children: 2
Type of Violence: Physical, psychological sexual, economic and social violence
Duration of abuse: 21 years
Resources used: Crisis Centers

> “The positive things were definitely the community and the opportunity to choose to be part of it, because as a victim of violence, you’re very isolated.” (Appendix 3)

Fig. 35. Laila

I was incredibly scared when I arrived at the crisis center... It manifested in a way where I just couldn't find peace... You live with several other women, so it was difficult to find a sense of calm. There was always someone talking.
- Laila (Appendix 3)

Alertness

"When you're in a crisis situation, sounds become amplified. Simply because you're constantly on high alert."
"Well, I would say I was incredibly scared when I arrived at the crisis center."

Sleep difficulities

"A room with better soundproofing...so that when you finally manage to fall asleep, you're not woken up by other restless souls, if you can call it that."

Feeling uneasy

"The thing is, you couldn't really find peace, and honestly, that's the case no matter which crisis center you go to you're living together with several other women, so it was hard to find a sense of calm."

Noise-sensitive

"Well, you can still hear that there are people around — kids playing and so on. I guess I felt that something was still missing, but then again, I'm also very sensitive to sound."

Emotionally Dysregulated

"Irritation, anger, being tearful, trouble concentrating — back then, I just chalked it all up to the fact that I'd been in the relationship for so many years."

Shared Connection

"I definitely think it's a great strength that the bathrooms and kitchen are shared...Those become some of the most important relationships"

Privacy

"...if only there were a place where the children could be looked after or go to school... just so you could get that little breather, because it's very intense living so close together."

Restorative place

"It's important to consider having a recreational area where you can withdraw and have some time to yourself."

Feeling unsafe

In the beginning, I felt safest just staying at the crisis center.

Likes Reading

"I read a lot — really immersed myself in a book — because that was also a way of being more with myself, a way of signaling that I needed to be on my own."

Music as calming

"Listening to meditation music or something like that — I think it really works if you already have some calm in your body."

Restorative exercise

"I could definitely see the benefit of, for example, having a treadmill where you could go for a walk — in case you couldn't go outside for safety reasons."

Workshop 1
Visual atmosphere

Study 1: Purpose

Four types of workshops were held with three women who had all stayed at Aalborg Crisis Center. The first meeting involved a woman who stayed without children (Olivia), while the second meeting included two women, one of whom had one child (Ava), and the other had two children (Harper) during their stay at the Aalborg Crisis Center.

The first workshop focused on visual atmosphere and was divided into two parts. In the first part, the women were shown a series of images in a slideshow, one at a time. Along with this, they were provided with a questionnaire and asked to circle or add words describing the positive or negative feelings they associated with each image (Fig. 37). The goal of this activity and method was to gain insight into their emotions and sensory experiences, helping identify elements that might feel either safe or unsafe to them.

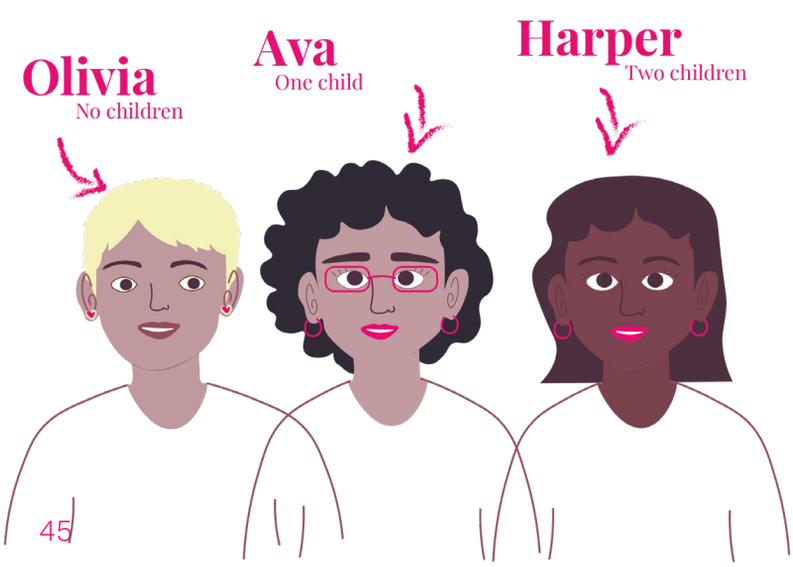


Fig. 36. Workshop with Three Women from Aalborg Crisis Center

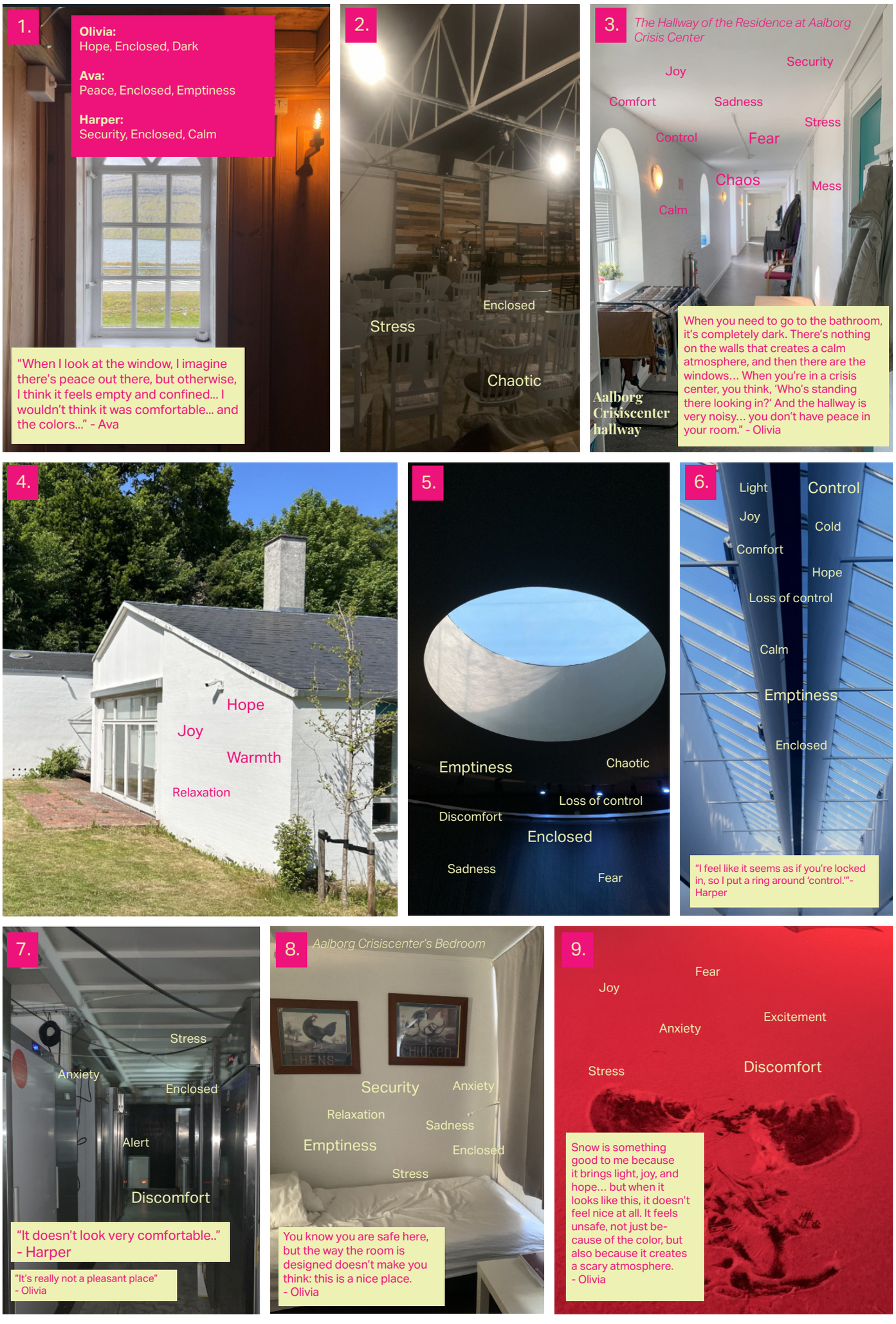
Results

The results of this workshop demonstrate that the women had mixed and, at times, strong emotional responses to the images. High-contrast photos, such as Image 1, evoked both negative feelings ("enclosed," "discomfort") and positive ones ("hope," "calm"). While they liked the view, the room itself did not feel safe or comfortable.

Images from Aalborg Crisis Center (Images 3 and 8) sparked deeper reflection. While these spaces felt safe, they also carried emotional weight from a difficult time. Olivia noted that the dark hallway felt unsafe at night and noisy, highlighting the impact of lighting and acoustics on perceived security.

These insights highlight the importance of integrating elements such as lighting, openings, materiality and color to minimize harsh contrasts and create a sense of security. Balancing visibility and enclosure allow residents to better perceive their surroundings, fostering comfort and safety. Additionally, the calming effect of nature is significant but must be thoughtfully applied. In a dark and enclosed interior, the benefits of a view may not outweigh the negative impact of shadows and confined spaces. Similarly, using soothing colors and lightning can contribute to emotional security.

Fig. 37. Workshop Visual Atmosphere Part 1: Results



Study 2: Purpose

In the second part of the visual atmosphere workshop, The Women were again shown a slideshow and a series of photos. However, this time, they were presented with three photos at a time, each accompanied by a question related to the feeling of safety. They were asked to rank each photo on a scale from 1 to 3, where 1 represented the safest feeling and 3 the least safe. Additionally, some women provided verbal feedback on specific images, which has also been highlighted in the figure .

The purpose of this study is to enhance the understanding of how different environments influence perceptions of safety. By comparing photos side by side and responding to a structured question, participants can more easily identify and articulate the differences between spaces where they feel secure versus those where they do not. This method also provides insights into their emotional responses to various environments.

> *“It must be the first one. It’s again that thing where I’m inside a city and not in a secluded park... it’s about what’s around me. There are no people to be seen in picture number two. - Harper”*
>
> (Appendix 4)

Results

The results indicate that many of The Women provided similar responses. In the first slide, all three women chose the same answer. Olivia specifically mentioned that she selected photo 2 because she felt the safest when she had a clear view inside the house.

Another significant finding was that The Women felt safest when surrounded by people. In slide 2, Harper particularly emphasized that she felt more secure in a city environment rather than in a secluded park where no people were visible. This pattern was also evident in slide 3, where all participants selected photo 2 as the safest entrance to the crisis center, primarily because it was not isolated from people.

These results highlight the importance of social presence in enhancing the feeling of safety. Avoiding isolation should be a priority when designing secure environments. While natural settings can provide benefits, they should be integrated into open, populated spaces to prevent feelings of insecurity. Proper lighting, clear sightlines, and easy access to emergency exits further contribute to a sense of safety.

To support these findings, design strategies should focus on promoting natural surveillance through secure, well-lit communal areas. Crisis centers should be centrally located and highly visible to ensure accessibility and reinforce a sense of security. Integrating nature into urban spaces can enhance safety, provided that it maintains visibility and encourages social interaction rather than creating secluded areas.

Results:

1. Most safe — *3.Least safe*

Slide 1

Olivia:
2, 3, 1

Ava:
2, 3, 1

Harper:
2, 3, 1

Which **window view** would make you feel the safest?

"It feels safe being inside the house" - Olivia

Slide 2

Olivia:
1, 2, 3

Ava:
1, 2, 3

Harper:
1, 2, 3

Which of these **rooms** would make you feel the safest?

"It must be the first one. It's again that thing where I'm inside a city and not in a secluded park... it's about what's around me. There are no people to be seen in picture number two." - Harper

Slide 3

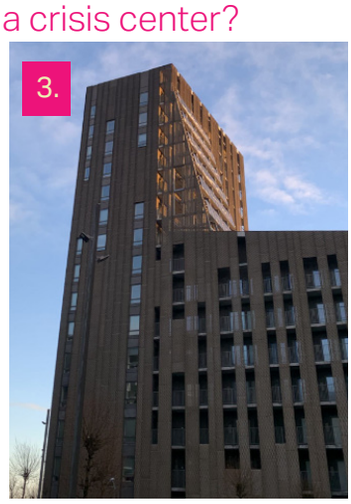
Olivia:
2, 3, 1

Ava:
2, 3, 1

Harper:
2, 1, 3

Which **entrance/exit** would feel the safest in a crisis center?

"There are buildings around it. Number 1 seems to be isolated, inside the forest, and I don't think a crisis center should be placed there. It looks very run-down and would be easy to break into."- Harper



Slide 4

Olivia:
1, 3, 2

Ava:
1, 2, 3

Harper:
1, 3, 2

Which **road** would you feel the safest walking down??

Fig. 38. Workshop Visual Atmosphere part 2: Results

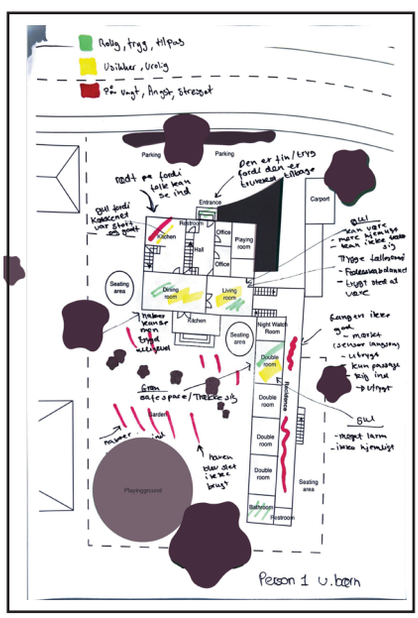
Workshop 2
Emotional Mapping

Methods

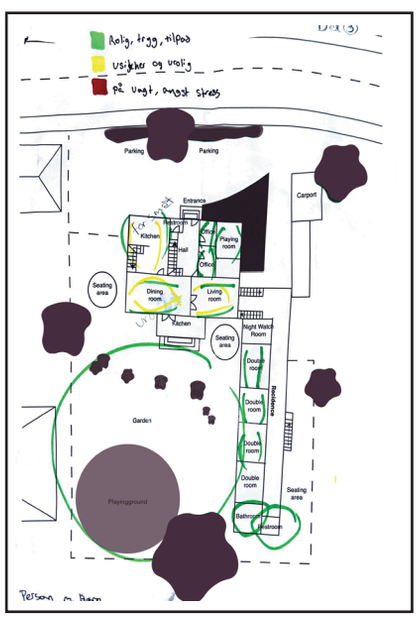
The second method is emotional mapping, where the women create a visual representation of their emotional experiences in different rooms of Aalborg Crisis Center. Each participant is provided with a floor plan of the center and three colors: green, yellow, and red.

Fig. 39. Results of Women Coloring Their Emotions in Red, Yellow, and Green

Olivia
Without children



Ava
One child



Harper
Two children

Purpose

The second method is emotional mapping, where the women create a visual representation of their emotional experiences in different rooms of Aalborg Crisis Center. Each participant is provided with a floor plan of the center and three colors: green, yellow, and red.

Green represents areas where they feel **calm and safe.**

Yellow indicates areas where they feel **uncertain or slightly uneasy.**

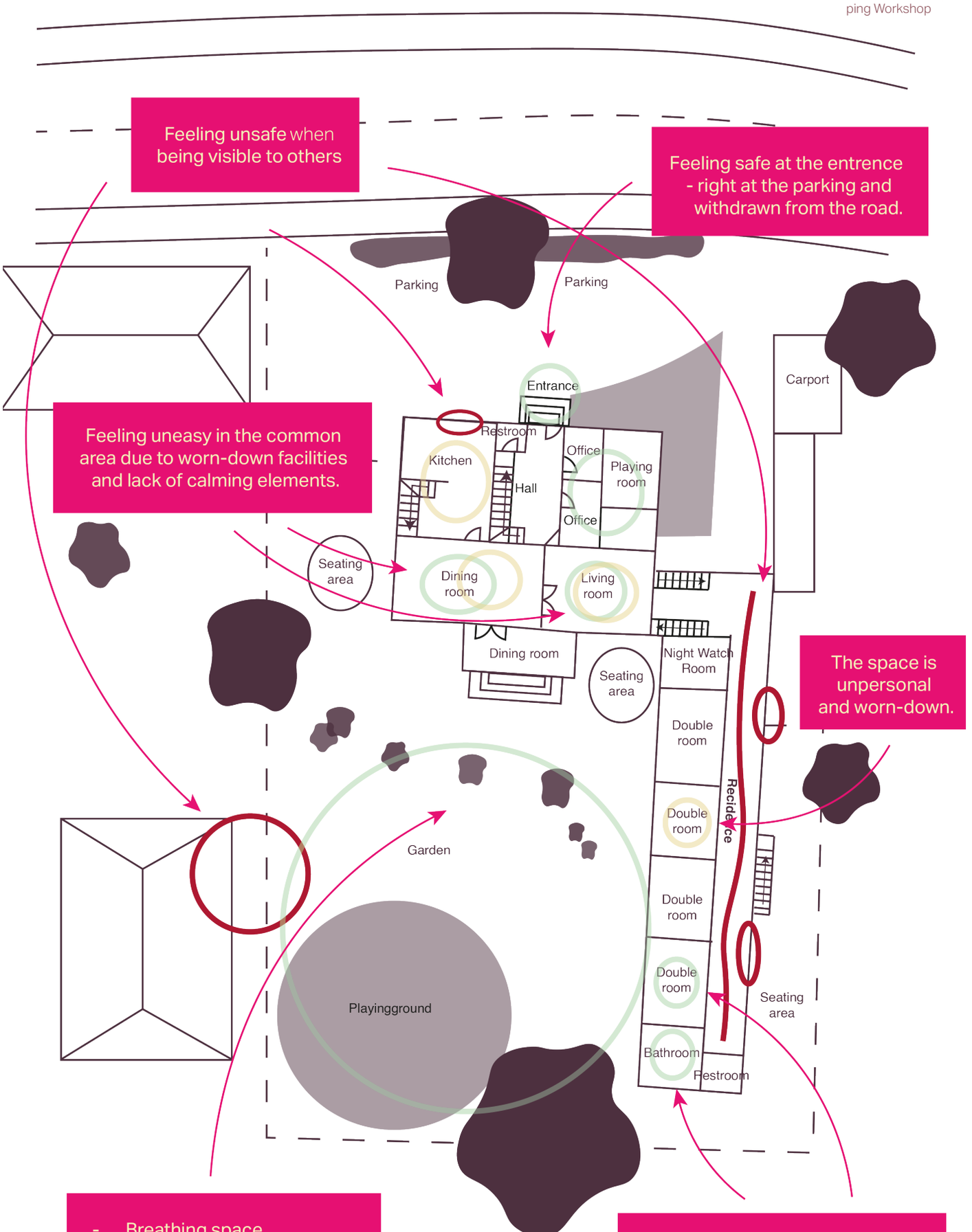
Red highlights areas where they experience **high alertness or anxiety.**

The mapping can be supplemented with short written notes. After the task a follow-up discussion will provide a deeper insight into their experiences and why the specific areas have the chosen colors.

Results

In general the women felt more stress in the common areas, especially in the kitchen which was too small, had directly access to the basement (many of the children was running through the kitchen as a part of their playing), also the kitchen has a window with directly visibility to the public street which makes some of the women feel insecure. All the women expressed the noise level as being stressful.

Fig. 40. Synthesis of Results from the Emotional Mapping Workshop



Workshop 3
Collage: Security

Purpose

In the third part of the workshop, the women were asked to create a collage with the title "Safety". The goal was to gain a deeper insight into what feeling safe looks like to them. The purpose of this activity is to provide The Women with an opportunity to express themselves creatively, using the collage to translate ideas, moods, or atmospheres into visual form with the help of using printed pictures, words, glue and color pencils.

> *"Oh, that's cozy! If there were a sofa like that!*
> *We women used to sit together in the evenings and watch movies.*
> *- Ava"*

(Appendix 4)

Results

It was insightful to observe The Women as they created their collages. Words like warm, cozy, relaxation and care were some of the words used to describe what "safety" means to them. For example, Ava chose images of pillows, candlelight, birds, and flowers - suggesting that elements of nature and soft, warm lighting can help create a sense of calm and comfort. This points to the importance of designing environments that feel soothing and welcoming.

Despite their differences, the collages shared common themes especially the value of community. Olivia and Ava both included large sofas arranged so people face each other. Olivia recalled how, at the crisis center, women would gather on the sofa in the evenings once the children were asleep. This highlights the need for shared spaces that foster connection and inclusion. The presence of soft materials like pillows and blankets further emphasizes the importance of physical and emotional comfort in communal areas.

These observations suggest that safety, for these women, is closely linked to warmth, connection, and sensory comfort important considerations in the architectural design of supportive environments.

Ava

Fig. 41. Collage Created by the Women Titled 'Security'. Original danish words are translated to english (Appendix 4)

Oh, that's cozy! If there were a sofa like that. We women used to sit together in the evenings and watch movies.
- Ava (Appendix 4)

Harper

"

.. the cake, it was something that really caught my attention. 'What if it's your child's birthday?' But that wasn't something you had to worry about - it was taken care of for you. - Harper

"

(Appendix 4)

Olivia

".. outdoor environments where you can sit in peace away from neighbors, and it's very much like a cozy corner. And I really enjoy nature."
- Olivia (Appendix 4)

"Having flowers indoors gives you a feeling of being in a safe environment."
- Olivia (Appendix 4)

"..you create something that is cozier and calmer, and there's space for everyone... It's like you create a large area where you kind of feel like you're sitting in a big cozy corner, with cushions and blankets, making it a bit more comfortable."- Olivia (Appendix 4)

Workshop 4
Materials and Tactility

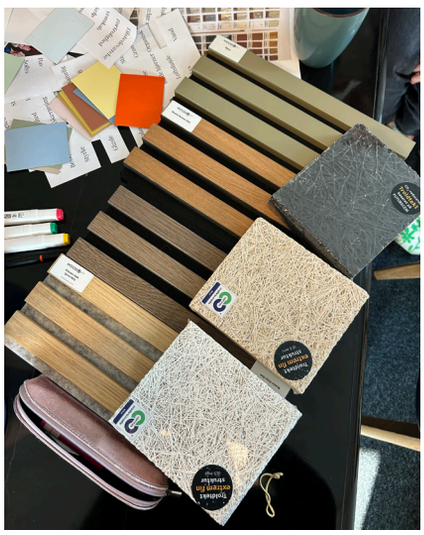


Fig. 44. Collection of materials and colors

Fig. 43. Participant-chosen materials and colors

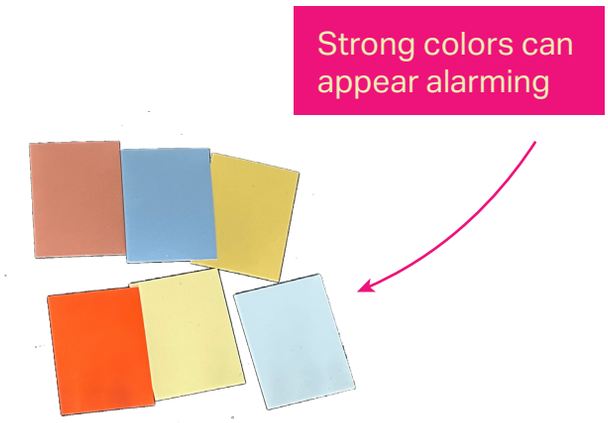


Fig. 42. Participant-excluded colors

Methods

Participants are presented with a curated selection of materials (e.g., a color palette, Troldtekt in different colors and acoustic panels) and asked to describe their associations and emotional responses to each. They are asked to select the materials they find most calming and suiting for a crisis center. Responses are documented through notes and photos.

Purpose

The purpose is to explore how different materials are perceived emotionally and physically by the women, and how certain textures, weights, temperatures, or surfaces can evoke feelings of safety, comfort, or discomfort. This can help identify materials that support a sense of calm and well-being in environments for trauma recovery.

Results

The women agreed that a muted color palette is suiting, but also that it is important with calming colors since white often can appear cold and industrial. In general, the lighter materials was more chosen as they were associated with warmth and cozyness. The women expressed a need for a feeling of home, and several pointed out that natural materials like wood and soft materials such as wool contributed to that sense by being comforting and familiar. These preferences suggest that materiality plays a key role in creating an atmosphere of emotional safety and well-being.

Fig. 45. Sketch of one of the Women participating in the workshops

PERSONA

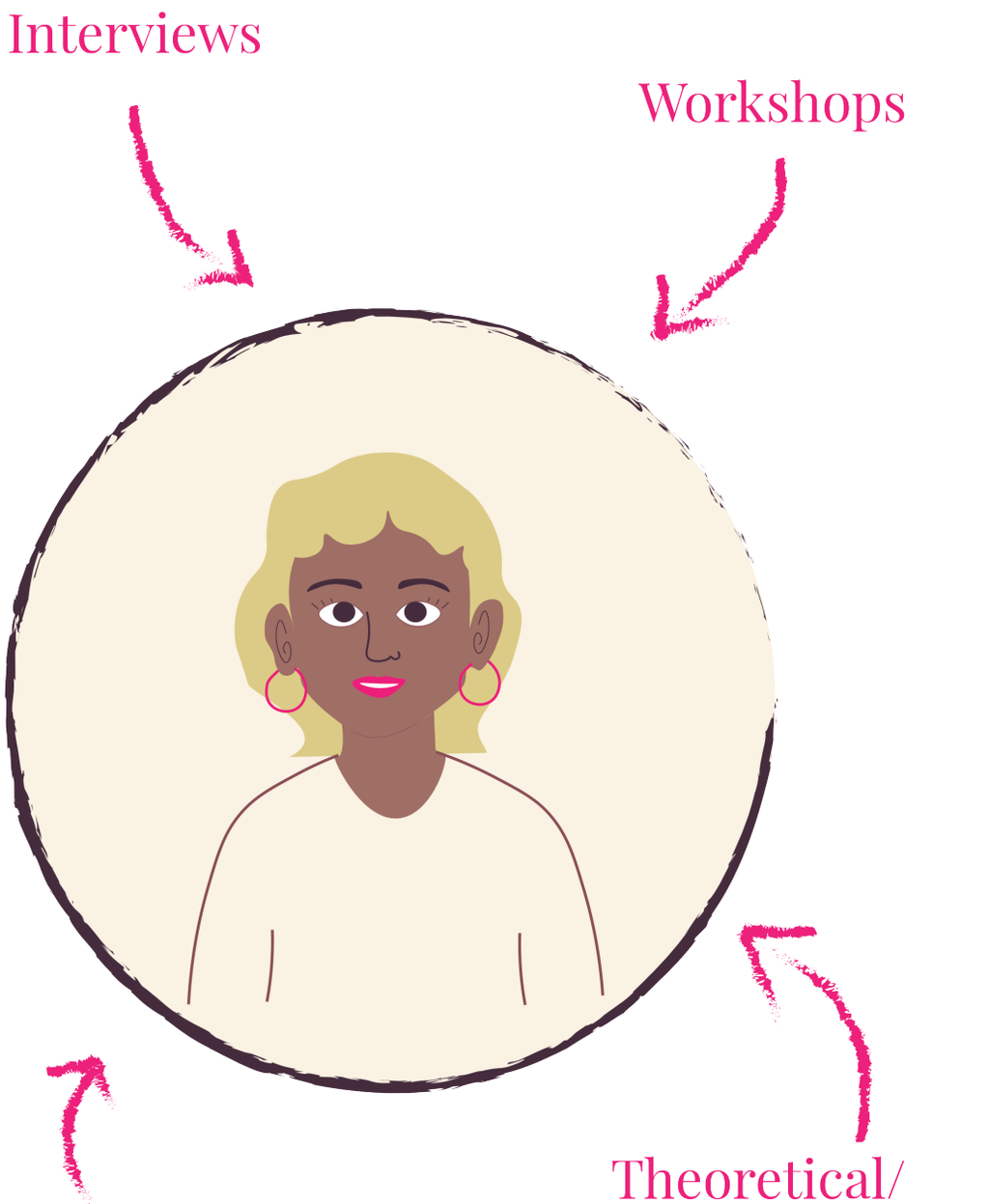


Fig. 46. Persona Developed Through Empirical Research

Mary Jane

Introduction

The following represents a fictional persona, created based on previous insights - from user interviews, theoretical research and best practices. This persona offers a comprehensive understanding of The Women and serves as a tool to design with the user in mind, ensuring we address their needs, desires, and behaviors.

Creating a persona allows us to empathize with The Women and visualize their challenges in a storytelling format, which is crucial for a user-centric project. By focusing on the user, we ensure the final design meets their real needs and addresses their unique challenges.

Following the persona, a AS-IS storyboard is presented - a visual representation of the user's challenges and behaviors, represented through a series of sketches.

The Persona

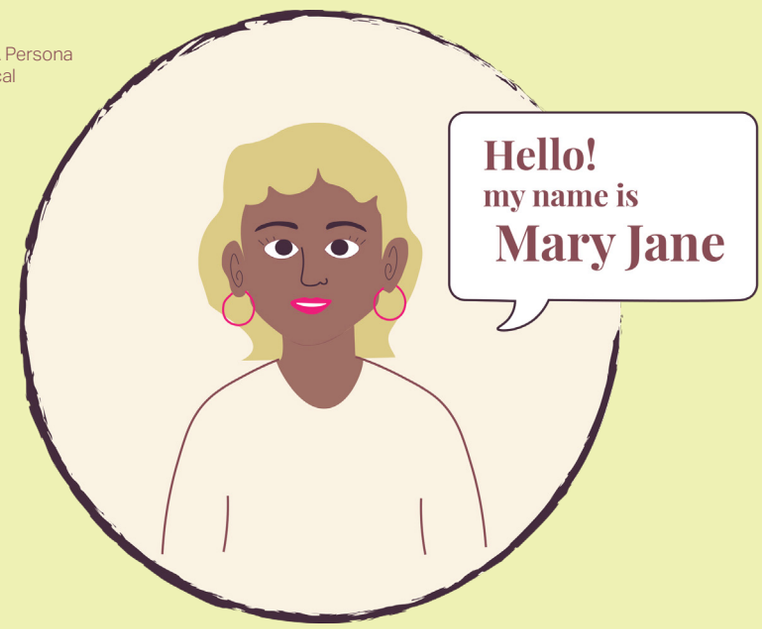


Fig. 47. Mary Jane: A Persona Created from Empirical Research

Narrative

Mary Jane, 38 years old, is a mother of two—her 14-year-old son and 6-year-old daughter. She has recently left an abusive relationship, enduring physical, psychological, and sexual violence. Now in a crisis center, she has been there for a week and is struggling with stress, anxiety, and emotional triggers. She feels constantly on alert and finds it difficult to regulate her emotions and let her guard down. Some days, physical symptoms like stomach pain and nausea overwhelm her. On these days, she avoids common spaces because they feel too crowded and noisy, although she craves social connection and a sense of belonging.

She often struggles to find quiet moments to rest and focus while caring for her children. However, she does feel safe when she meets the other women in the shared kitchen and bathroom and has had some great conversations and connections with them.

At night, she struggles with insomnia and nightmares, and loud noises leave her feeling unrested. A sense of shame often creeps in, making her question why she stayed in her abusive relationships for so long.

When she has the energy, she typically enjoys reading and spending time in nature and the garden, but that is a bit difficult here. The sound of birds and rustling leaves helps calm her, but the center's limited view of nature makes her feel unsafe when crossing the road to reach it. As a result, she often retreats to her room, but it is dim and difficult to focus there, especially with her children also occupying the space. She likes to decorate and sometimes wishes her room had a more recognizable, homelike feeling.

Mary Janes' Needs & Desires

Fig. 48. Mary Jane's Needs and Desires

Safety

She needs an environment she can trust and feel physically and emotionally safe.

Control/Empowerment

She needs an environment, where she can gain sense of control over her surroundings.

Restituation

She needs spaces that can calm her nervous system and reduce sensory overload, supporting her recovery from the symptoms she is experiencing.

Access to nature

She wishes for easy access to nature as she finds the sound and movement of nature calming.

Quality sleep

She needs a good sleep environment to support restful sleep.

Space for children

She wishes there were a space where her children could stay and connect with others, allowing her more time to rest and recuperate.

Privacy

She needs a calm place, a space where she can retreat in privacy

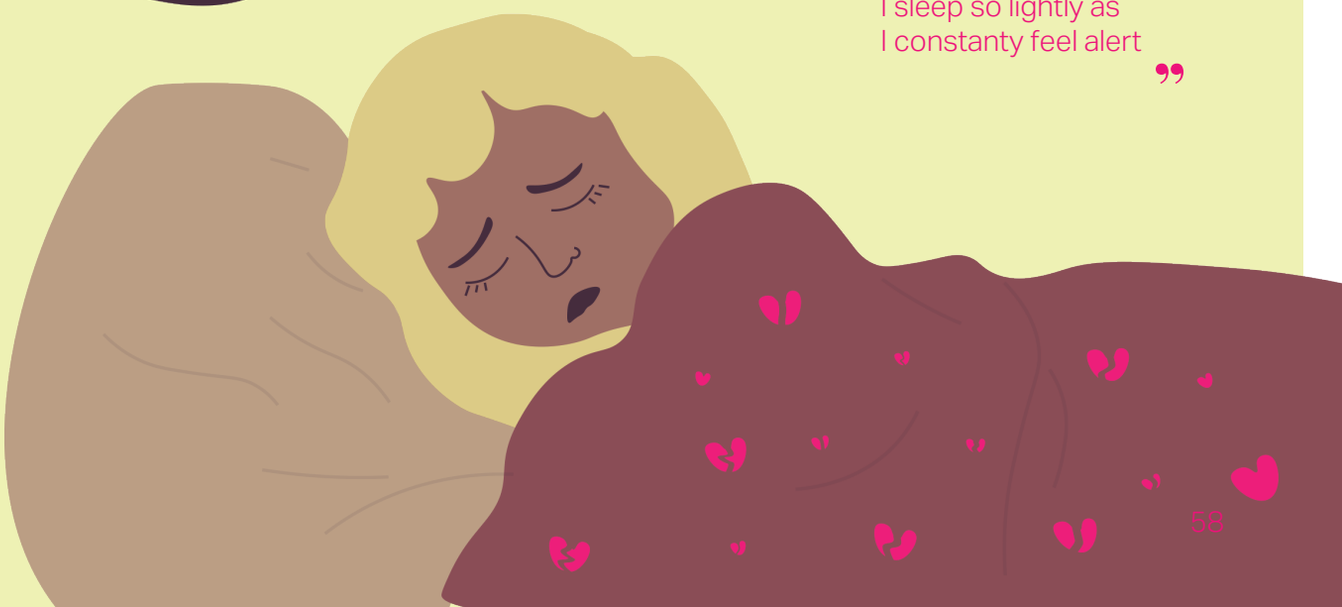
Self-reflection

She desires a safe and calm place where she can enjoy activities such as reading, painting, yoga, or exercise, as these help her build self-esteem.

Social connection

She wants a sense of belonging and to feel connected with others, but on her terms, especially when feeling overwhelmed.

> "I sleep so lightly as
> I constanty feel alert"



AS

—

IS

Mary Jane's *Challenges*

Storyboard

The following page presents an AS-IS storyboard - a visual representation of Mary Jane's typical challenges and behaviors at the Crisis Center, illustrated through a series of animated drawings. This storyboard offers insight into Mary Jane's emotional experiences during her stay, highlighting how she uses, perceives and feels about the spaces around her. It reveals her emotional responses and the impact of the environment on her well-being.

The storyboard is based on empirical research and helps us better understand Mary Jane's needs and desires within space.


Arriving at
The Crisis Center
My chest's tight... why does it feel so enclosed and all those cars are so visible?
FV 4792
How can I focus or sleep when every sound seeps through these walls?
"Kids playing in the background"
I want to belong ... but it's so loud, so packed. I'm too anxious today I need to retreat to my room
Consultations
Waiting room
I miss the birds and trees... but leaving the crisis center feels too scary right now.

Fig. 49. Storytelling of Mary Jane's Current Challenges at the Crisis Center

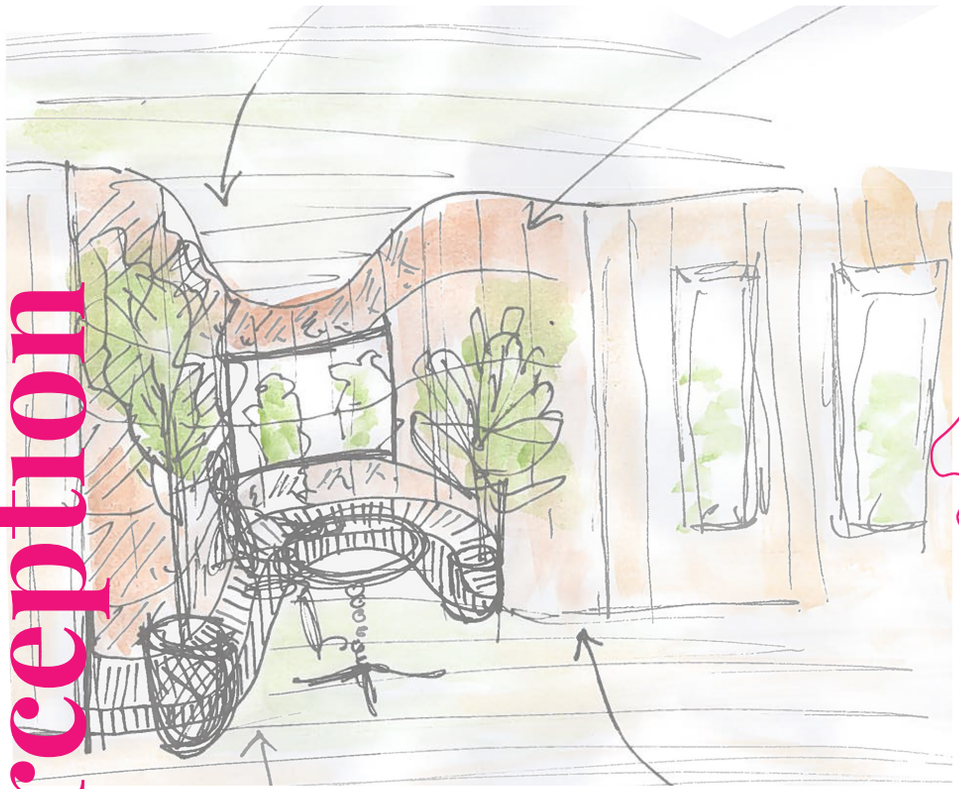
The *Architectural* Solution

Healing architecture

Healing through architecture has been practiced throughout history, utilizing different techniques to improve well-being. For women staying at a crisis center, architecture plays a crucial role in creating a safe and supportive environment, especially for the women in high-risk group, who needs to remain on the property. Healing architecture is a tool that through various principles, the architecture can have a positive influence on the well-being among users. By using healing architecture in the design of a crisis center it is possible to support the women and reduce stress and symptoms of PTSD.

> *I can assert with certainly that architecture has an immense influence on everyone, the doctors, the nurses, the patients, and even on visitors*
> *(Katharina Matzig, 2013, p.224)*

The Atmospheric Perception



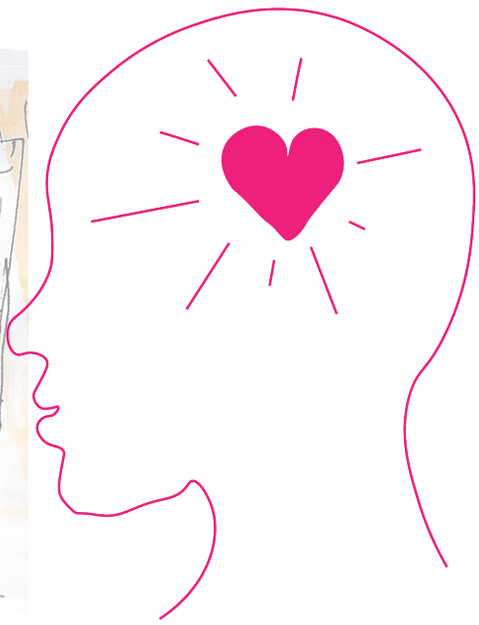


Fig. 50. The Impact of Healing Architecture

> *"I enter a building, see a room, and – in the fraction of a second – have this feeling about it"*
> *(Zumthor, 2006, p13)*

This immediate and intuitive response illustrates what is often referred to as atmospheric perception, a subconscious, embodied reaction that arises through a multi-sensory experience of space. "As we enter a space, the space enters us"(Pallasmaa, 2014, p.232). Pallasmaa argues that the spatial experience is a fusion between subject and object. Our experience of architecture is not solely determined by aesthetics, but shaped by emotions and memories (Pallasmaa, 2014).

Atmosphere is thus not something we merely observe, it is something we feel. It emerges from an interplay between materiality, light, acoustics, proportions and temperature. As Zumthor notes "We perceive atmospheres through our emotional sensibility – a form of perception that works incredibly quickly". The perception happens instantly and unconsciously yet has the power to make us feel either safe, anxious or comforted. whether we feel attached or alienated to a space, depends on its atmosphere whether it invites calmness or causes tension (Pallasmaa, 2014, p.236).

In Atmospheres: Architectural Environments – Surrounding Objects, Zumthor offers a nuanced breakdown of atmospheric perception by identifying twelve spatial elements that shape the perception of architecture. These include aspects such as light, sound, temperature, material compatibility and levels of intimacy. Which all have an impact on how spaces are perceived.

For individuals living with symptoms of PTSD, who often experience increased alertness and sensory sensibility, atmospheres can be particularly intense and triggering. This creates specific demands on the architectural design of spaces like crisis centers, where the atmosphere must actively contribute to a sense of safety and psychological relief. Here the atmosphere becomes more than a background condition but a therapeutic element. The use of soft and dynamic daylight, natural materials, muted color palettes and sound-absorbing surfaces can help regulate the nervous system. Through spatial design, the atmosphere can reduce stress and support emotional grounding and enable recovery.

Healing
Architecture

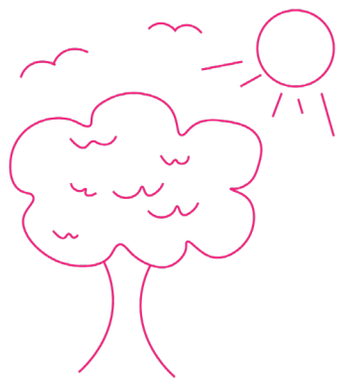


Fig. 51. The Impact of Healing Architecture

"I can assert with certainly that architecture has an immense influence on everyone, the doctors, the nurses, the patients, and even on visitors." (Katharina Matzig, 2013, p.224)

Parallels between architecture and recovery has been well documented. In 1984, Roger S. Ulrich conducted a study on 46 patients recovering from a gallbladder surgery, comparing the patients with a view to nature to those facing a brick wall. His finding revealed that patients with a natural view left the hospital almost a day earlier and required lower doses of pain medication. (Ulrich, 1984)

"Because most natural views apparently elicit positive feelings, reduce fear in stressed subjects, hold interest, and may block or reduce stressful thoughts, they might also foster restoration from anxiety or stress" (Ulrich, 1984)

Ulrichs research showed that a natural view improved the recovery of the patients and that it reduces stress and anxiety. Implementing nature into the design of a crisis center can similarly support the healing process for the women.

Historically, hospitals have incorporated large windows and skylights to utilize the visibility from the sunlight, aiding patients' recovery and air purification. These were seen as some of the most effective means for infectious diseases before the development of antibiotics (Sternberg, 2009, p.4).

This principle was applied in Alvar Alto's tuberculosis sanitarium, 1929-1923, where patient rooms faced south towards pine forest, ensuring access to fresh air and daylight to support healing. (Sternberg, 2009, pp.4-5)

Applying Healing Architecture to a Women´s Crisis Center

For women in crisis, architecture can serve as a tool for psychological recovery and emotional stability. A crisis center designed with healing principles in mind should integrate:

Views of nature to reduce stress and promote recovery.

South-facing communal spaces to maximize natural light.

Daylight access in all areas to regulate circadian rhythms.

Spaces for movement that allow residents to retreat without having to leave the property.

By thoughtfully designing the crisis center, architecture can actively reduce symptomes of PTSD and complex PTSD and contribute to rebuilding a sense of safety and well-being.

Therapeutic
Landscapes

The outdoor environment of a crisis center plays a crucial role in supporting the healing process for women and children. Through thoughtful design strategies, outdoor spaces can offer a sense of security, promote social interaction, and encourage everyday activities that foster well-being. Balancing safety, accessibility, and comfort is essential to creating an environment that supports both recovery and a sense of normalcy (Marcus and Sachs, 2013).

In *Therapeutic Landscapes* a range of design strategies is gathered based on an action research project conducted as a part of the evidence-based health design of Danner's garden.

These strategies can be integrated in various ways, depending on the specific context. The accompanying diagram illustrates a principle-based overview of the strategies.

Security against intrusion is a fundamental consideration in the outdoor areas of a crisis center, as there is a risk that perpetrators may attempt to locate residents. To support healing and recovery, women and children must feel safe in their surroundings.

Accessibility is key to ensuring that the outdoor area can be used confidently. Facilities should be intuitive and easy to understand, making initial use feel manageable. Varied spatial transitions can further support gradual, low-threshold engagement with the garden.

Social involvement should be supported through spaces that allow for different levels of interaction. A mix of open and more private zones can encourage spontaneous meetings while also allowing for passive participation and quiet observation.

Safe play is essential for children's development and well-being. The outdoor space should provide a secure and stimulating environment with opportunities for both active and calm play, accommodating a range of age groups and needs.

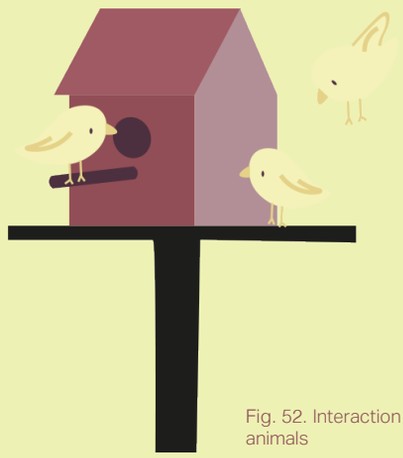


Fig. 52. Interaction with animals

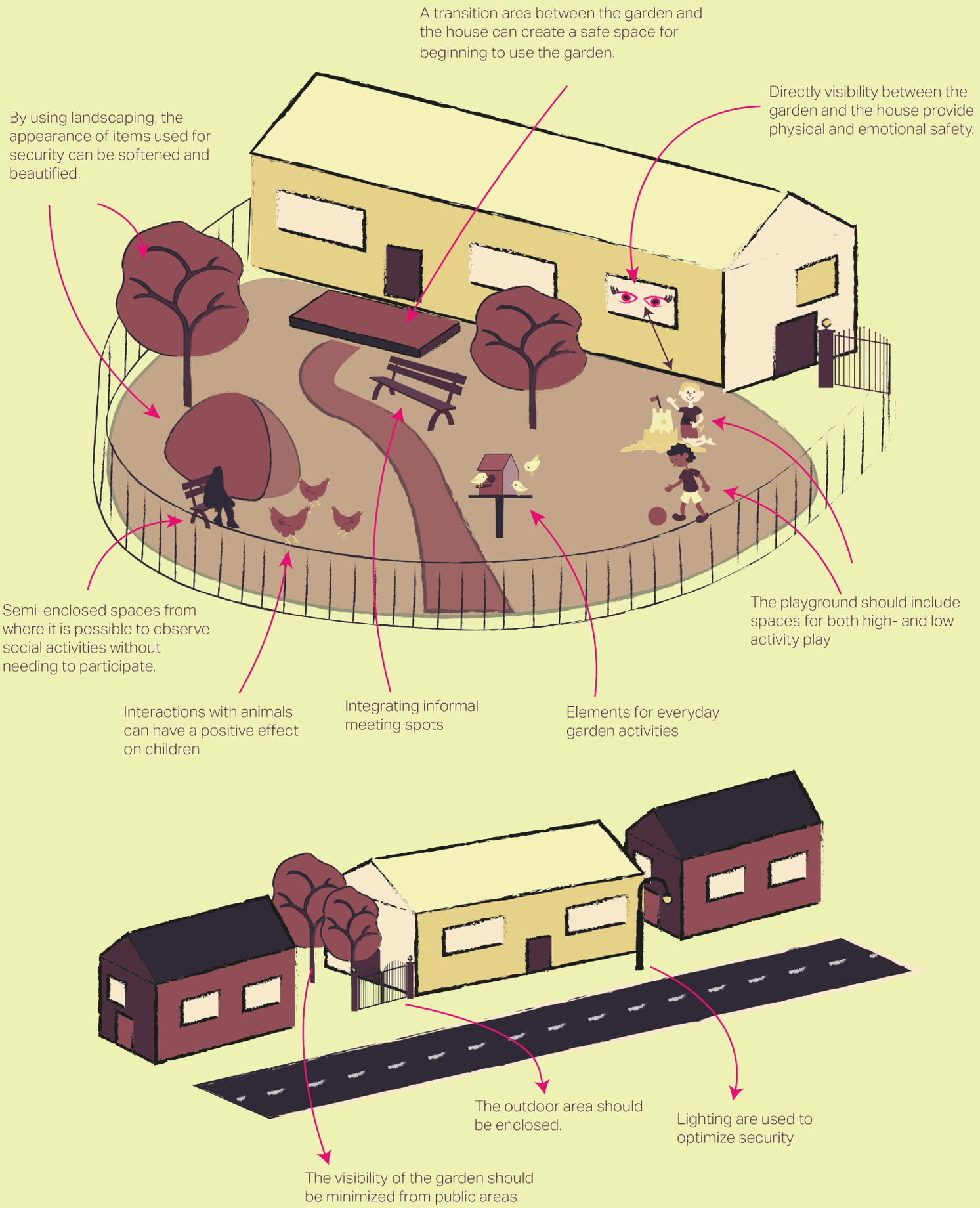


Fig. 53. Strategies for Outdoor Environments to Enhance Healing Spaces

Best Practice
Maggie's Center, Leeds

Maggie's Centre in Leeds is part of a network of care centers founded in 1995 with the vision of offering cancer patients a supportive, welcoming and a non-institutional environment. (Light Bureau, n.d.)

The architecture is characterized by the use of light, natural materials that gently reflects both natural and artificial light, creating a soft atmosphere. The building's organic form, combined with a series of staggered and open floor plans, generates a sense of spatial fluidity that feels both calming and approachable.

Large openings frame views of the surrounding landscapes and brings in daylight. Additionally, narrow windows are strategically placed where roof planes meet, allowing indirect light to reflect off the ceilings, contributing to a gentle and evenly lit interior.

Together these design strategies support a carefully balanced and calm environment that promotes both emotional comfort and physical recovery.

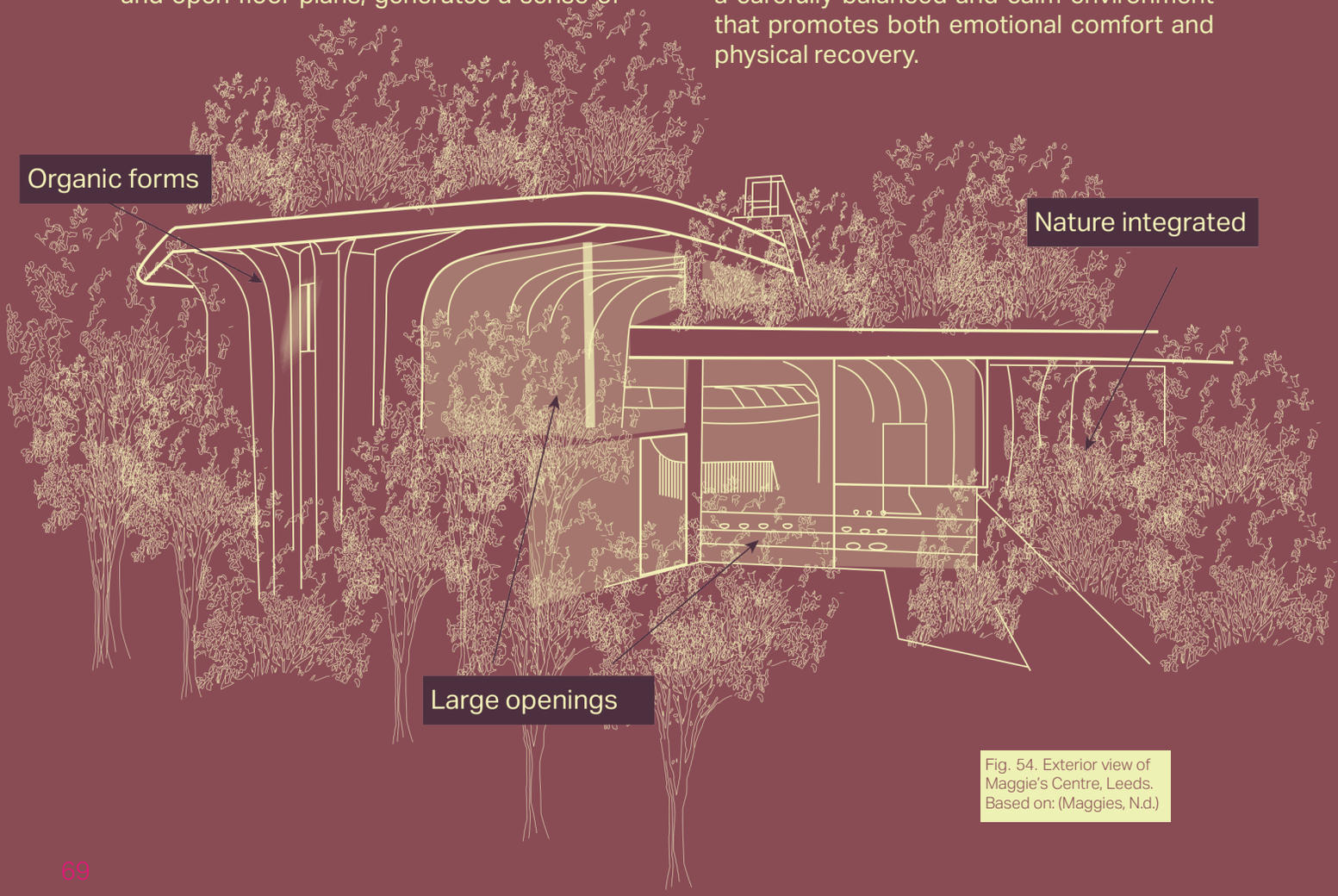


Fig. 54. Exterior view of Maggie's Centre, Leeds. Based on: (Maggies, N.d.)

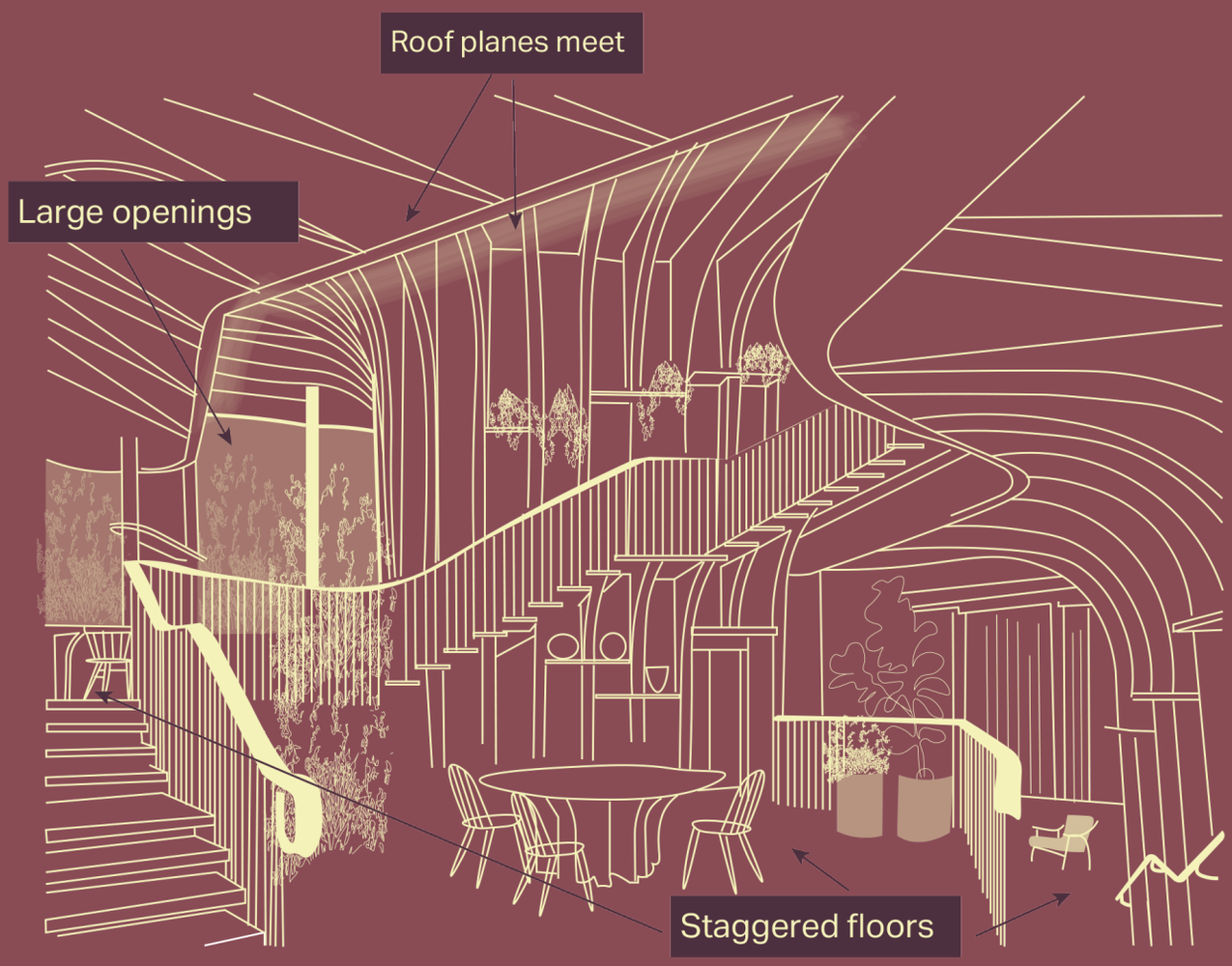


Fig. 55. Interior view of Maggie's Centre, Leeds. Based on: (Maggies, N.d.))

Acoustic Visual Thermal

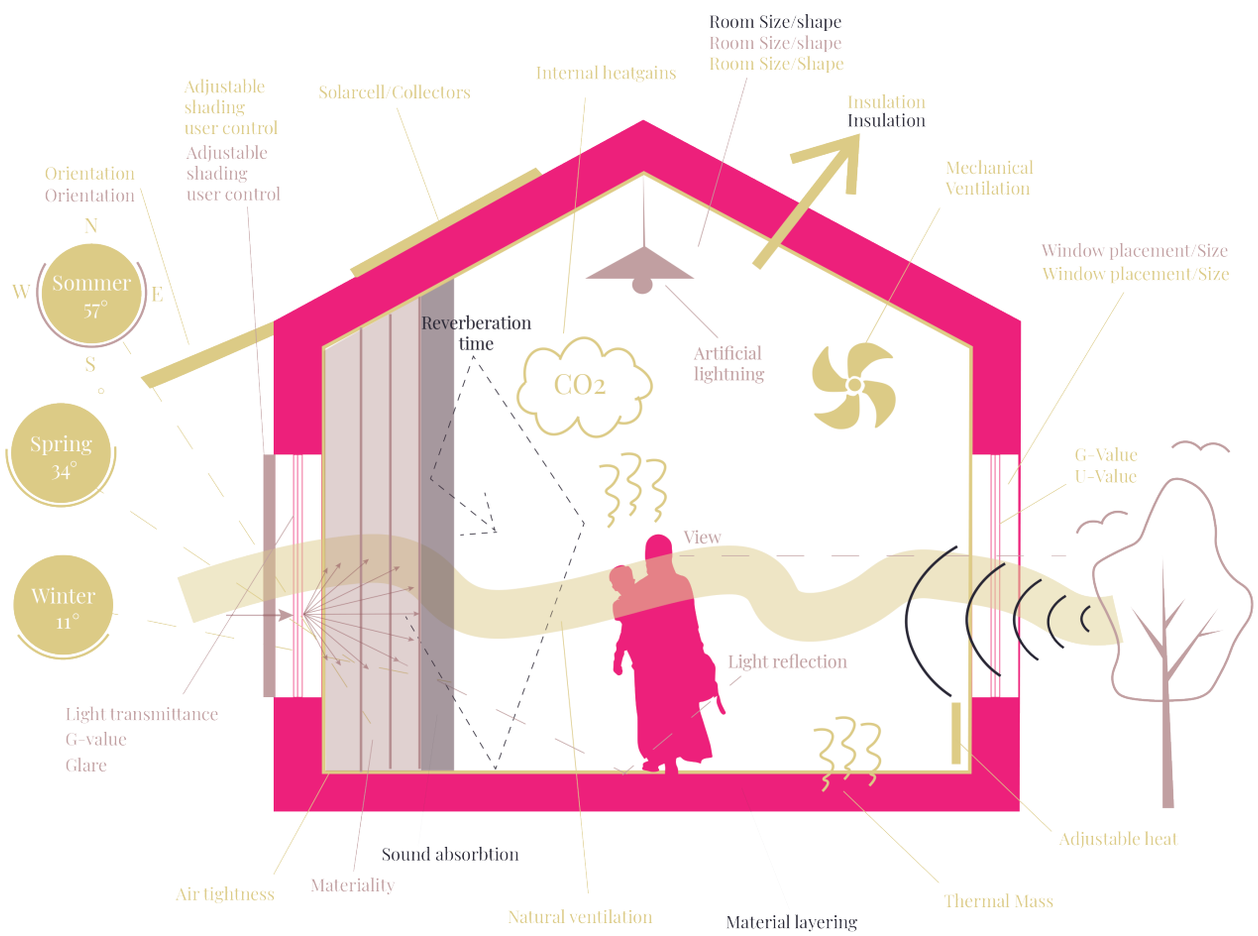


Fig. 56. Holistic Indoor Comfort

Holistic
Indoor Comfort

Introduction

This chapter examines indoor comfort not as a singular variable, but as a holistic condition shaped by the interplay of daylight, acoustics, temperature, and user control. While this project places particular emphasis on acoustic and visual (daylight) comfort—given their critical role in fostering a calm, restorative, and safe environment as identified through user research—thermal comfort, though secondary in focus, is regarded as an integral component of the overall strategy. The design acknowledges the interconnection between these factors, recognizing that they collectively contribute to creating a comfortable, safe, and supportive environment for the women.

The following pages present an exploration of daylight and temperature, examining theoretical research on how daylight influences circadian rhythms to support restorative sleep environments, in parallel with thermal comfort, as these dimensions are interconnected. The subsequent section investigates acoustic comfort and noise control, drawing on BR18 standard values for housing to further reinforce the creation of restorative environments.

Daylight
And temperature

As discussed in earlier sections, many women in crisis centers suffer from sleep disturbances, nightmares, flashbacks, anxiety, and heightened states of fear (see section The Consequences of Violence – An Evidence-Based Research Perspective). This chapter explores the role of daylight and light quality in creating a healthy indoor environment and highlights how specific light strategies can support healing and emotional regulation.

Circadian Rythm and the Importance of Daylight

"... I sleep so lightly that I register the slightest movement in the bed." - Interview Margrethe

The circadian rhythm is regulated by the brain's suprachiasmatic nuclei (SCN), which depends on environmental light cues to maintain the internal clock (Blume et al., 2019). Exposure to natural daylight stimulates serotonin production, promoting wakefulness, while darkness supports melatonin production, which prepares the body for sleep. (Blume et al., 2019).

Light exposure at the right time and intensity is key. High-intensity daylight in the morning (>2500 lux) improves sleep quality and reduces nighttime awakenings (Liu et al., 2022; Blume et al., 2019). Late-night exposure to artificial light, even as low as 10 lux, can disrupt deep sleep.

To support the circadian rhythm through early daylight exposure, common areas can strategically be placed in south facing zones. These receive high levels of morning light and help reinforce a stable wake-sleep cycle.
In parallel, thermal comfort is addressed through integrated temperature studies to ensure that large, glazed surfaces do not compromise the indoor climate.

Design strategies can be implemented to prevent overheating, ensuring that indoor temperatures do not exceed 26 °C for more than 100 hours per year or 27 °C for more than 25 hours annually, as recommended (Dansk Standard, 2019). (Dansk Standard, 2019)

Furthermore, to optimize sleep quality, bedroom temperatures are recommended to remain between 17–21 °C. When bedrooms are placed in south-facing areas, shading elements can be used to prevent overheating while still allowing for natural light intake.
The color of light plays a key role in circadian rhythms. Blue light(400nm-500nm), dominant in daylight, boosts wakefulness, while warm-toned light(600nm-700nm), such as sunset or candlelight, helps promote relaxation and prepares the body for sleep. (Burgess et al., 2024)

Light Color and its Effect

Light is also directly connected to mood. By regulating serotonin levels and stabilizing circadian rhythms, lightning powerful tool in treating mental health challenges Morning light therapy has proven effective in reducing PTSD symptoms with just 60 minutes of daily exposure over four weeks (Burgess et al., 2024).

26 °C for no more than 100 hours per year or 27 °C for no more than 25 hours

Bedroom temperatures are recommended to remain between 17–21 °C

High-intensity daylight in the morning >2500 lux improves sleep quality

Fig. 57. Daylight and temperature boundary values and demands

Architectural Atmosphere of light

"Light manifests the space which things and life inhabits, and Nordic light thus creates a space of moods." (Dean Hawkes, 2023, p.10)

Light is not only functional, it shapes the emotional experience of space. Alvar Aalto's design of the Paimio Sanatorium exemplifies how natural light can promote healing through large windows, soft reflections, and warm spatial atmospheres. Dynamic light creates variation and supports circadian rhythms. Through careful window placement, a balance is created between light, view, and privacy to create a sense of safety for vulnerable users.

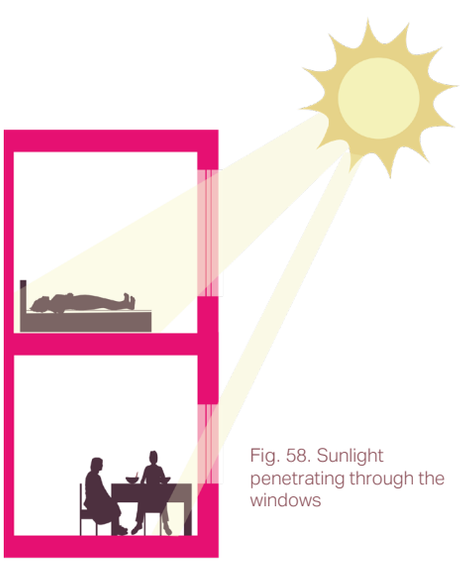


Fig. 58. Sunlight penetrating through the windows

Light quality and visual comfort in healing architecture

Light quality plays a central role in creating supportive and psychologically safe environments for women with PTSD. Sufficient general lightning levels contribute to a sense of orientation and calm environment. Artificial lighting must minimize glare, offer consistent brightness, and ensure correct rendering of colors to prevent confusion or disorientation.

In addition to artificial lighting strategies, the design of daylight access is essential. The daylight factor, which expresses the ratio between indoor and outdoor illuminance under overcast sky conditions, is used as a benchmark to ensure healthy light levels in interior spaces. According to DS/EN 17037, a daylight factor above 2% in occupied rooms is generally considered sufficient for visual comfort and mental well-being.

Lighting design in the crisis center follows principles aligned with the Danish Building Regulations (BR18) and DS/EN 12464-1 (indoor lighting standards), which stipulate recommended lux levels and glare limitations for visual comfort. Adaptive lighting systems, including dimmers and motion sensors, ensure flexibility and allow women to control their lighting environment throughout the day—supporting both energy efficiency and psychological safety.

Acoustics
And noise control

> *When you're in a crisis situation, sounds become amplified. Simply because you're constantly on high alert." - Program section: Laila Interview*

Based on the user research, The Women identified noise as a significant trigger due to heightened alertness. During the workshop sessions, some described noise between bedrooms as particularly distressing. Noise in the common areas was also mentioned as overwhelming, especially on difficult days when they felt more alert and sensitive (Program section: Workshop 2 – Emotional Mapping). These insights highlight the importance of working with acoustics and noise control to create a supportive and healing environment especially in the bedroom and common areas.

Since the crisis center serves as temporary housing for the women, it makes sense to consider acoustic conditions typically found in residential settings rather than institutional ones, in order to create a more homelike experience. According to the Danish building regulations (BR18, § 368), special attention should be given to the following aspects of acoustic design:

- Sound transmission (Airborne sound insulation/Impact sound):
  - Between rooms
  - Noise pollution from technical
  - Noise pollution from nearby roads
- Reverberation time.

"If rooms with noisy activities are adjacent to dwellings or shared living areas, specific soundproofing measures must be implemented (BR18, 2025) " (Author's translation with AI assistance)

For dwellings and other buildings used for accommodation, it is important to ensure that The Women are not disturbed by noise from other rooms, technical installations, or external sources such as roads and railways, in order to support better sleep and restorative environments. According to the Danish Building Regulations (BR18, §369), sound classification C is recommended for residential buildings intended for overnight stays, with specific boundary values set to ensure this standard is met. Attention to these boundary values, as well as to sound transmission and reverberation time, can help create healing environments—particularly in bedrooms, to support rest, common areas or other restorative environments that should promote restorative acoustic comfort. (BR18, 2025).

Fig. 59. Noises Impacting the Women's Acoustic Comfort

Airborne sound insulation, R'w: Br18 Boundry values, Class 3

The ability of a wall, floor, or ceiling to reduce the transmission of sound that travels through the air, such as voices, music, or other noise.

Between dwellings, common areas or noisy rooms.: *≥ 60 dB (Sound Reduction, Rw)*
Noise exposure outdoors with closed windows: *≤ 33 dB*
Technical installations *≤ 30 dB* (BR18, 2025)

Impact sound (Footstep noise), L'w: Br18 Boundry values, Class 3

Sound from vibrations (like footsteps, knocking, dropped objects etc.) which travels through the structure to other rooms.

Living rooms, kitchens and shared living areas – from rooms with particularly disturbing noise. *≤ 48 dB* (BR18, 2025)

Reverberation Time, T: Br18 Boundry values, Class 3

How long (time) sound reflections remain audible in a room after stop of soundsource. Longer reverberation times make spaces sound echoey, while shorter times make. speech and music clearer. (Lydisolering i bygninger, 2014)

Common areas: *≤ 0,6 s (frequency range 250-4000 Hz)*
Staircases, corridors with access to + 2 units: *T ≤ 1,3 s (500-2000 Hz)*
Corridors also used for small common area: *≤ 0,9 s (frequency range 500-2000 Hz)*

Frame/ *Work*

Conceptual *Foundation*

Introduction

In this section, the conceptual foundation for the design framework will be presented. It begins with the overall concept of the project, which highlights the main driver or vision guiding the design choices and decisions. This vision ensures that all elements of the project are purposeful and aligned with its core intention.

Next, a functional diagram is introduced which illustrates the organization, interconnections, and flow between functions, helping to clarify how different spaces relate to each other. It also supports the development of the overall concept by mapping out spatial relationships.

Finally, a room program is presented. Based on insights gained during the research phase, it defines the required spaces within the crisis center, including their size, function, relationships, and any specific requirements.

Concept

The concept brings together all the insights gained from the empirical research into a clear, guiding vision for the project. “Her Choice” reflects the diverse needs of women that this project aims to support—ensuring they are given the opportunity and autonomy to heal on their own terms.

This concept serves as a continuous reminder of the project’s essence: a design centered around her needs, her choices, and her right to feel safe, supported, and empowered throughout the healing process.

Functional
Diagram

The functional diagram reflects the spatial organization guided by the project’s core concept. The building is divided into distinct zones - all connected through a central communal space -the heart. This central space acts as a spine, promoting movement and interaction while creating a sense of unity.

Each zone supports a different aspect of the healing journey, while also offering both introverted and extroverted spatial options. These variations allow The Women to engage or retreat as needed, providing flexibility and personal choice in how spaces are experienced.

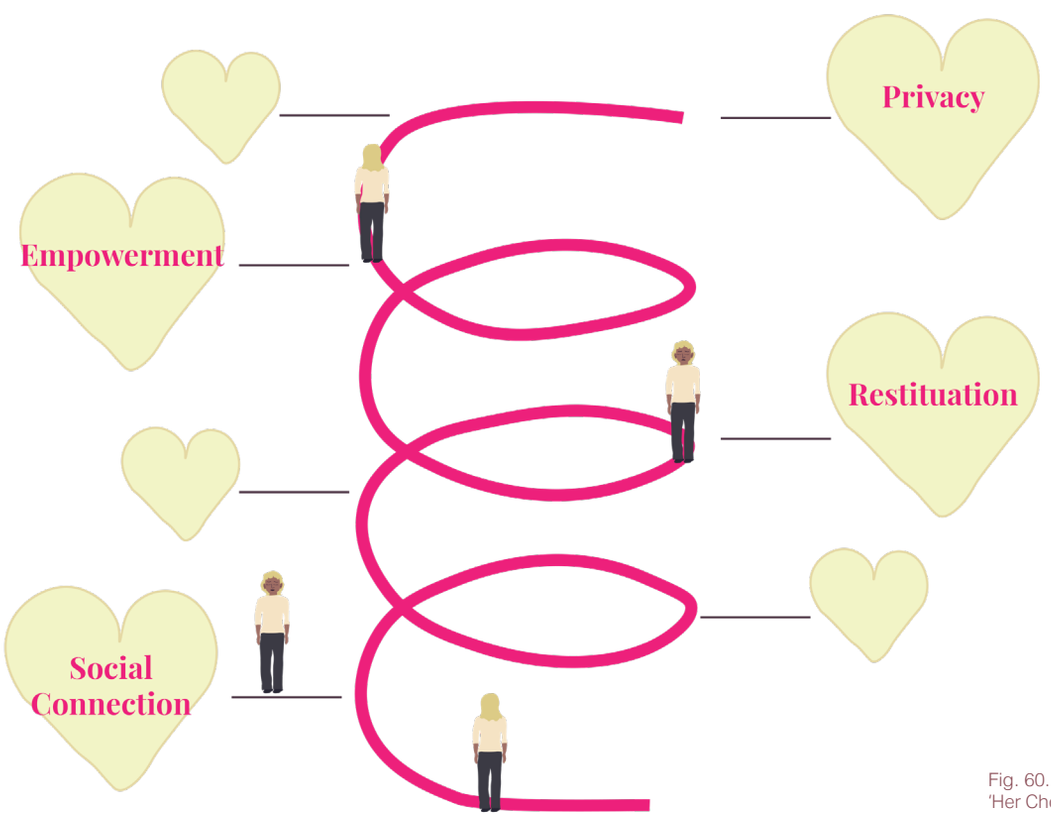


Fig. 60. The Concept of ‘Her Choice’

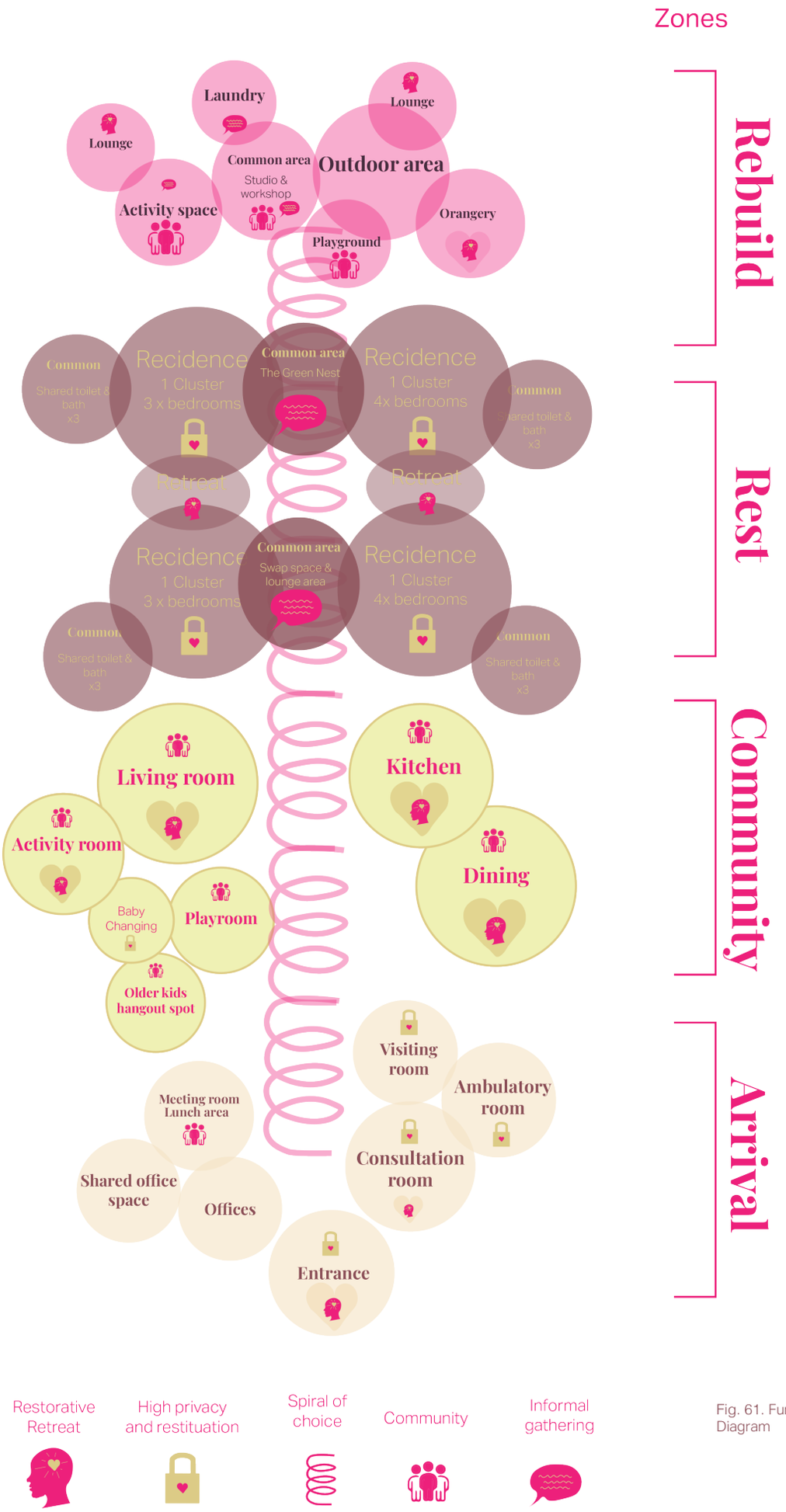


Fig. 61. Functional Diagram

Room program

Administration building								
Type	Amount	Size m^2	Artificial Light Lux	nat. or art. light	Airborne sound isulation R'w dB	Reverberation time Seconds	Atmosphere Open/closed	Temperature Degrees celcius
Standards			DS/EN 12464-1:2021		DS 490:2018	DS 490:2018		
Consulting room	1	14	300-500	Nat./Art.	55dB	0.5 sec	Closed	20-22
Ambulatory me-eting room	5	10-16	300-500	Nat./Art.	55dB	0.5 sec	Closed	20-22
Washroom	1	3	200	Art.	50dB	0.6 sec	Closed	20-22
Individual offices	3	12	500	Nat./Art.	55dB	0.6 sec	Closed	20-22
Big meeting room	1	15	300-500	Nat./Art.	60dB	0.6 sec	Open	20-22
Storage space	2	15	200	Art.	58dB	0.9 sec	Closed	20-22
Workshop	1	10	500	Art.	58dB	0.9 sec	Open	-
A shared office space	1	22,5	500	Nat./Art.	58dB	0.6 sec	Closed	20-22
Visitors room	2	15	200	Nat./Art.	58dB	0.6 sec	Closed	20-22
Wardrobe	1	4	100	Art.	58dB	0,9 sec	Open	
Kitchen	1	14	400	Nat./Art.	58dB	0.6 sec	Open	20-22
Class room	1	20	500	Nat./Art.	58dB	0.6 sec	Open	20-22

Residence facilities									
Type	Amount	Size m^2	Daylight uDi_a	Artificial Light Lux	nat. or art. light	Airborne sound isulation R'w dM	Background noise LAeq, dB(A)	Reverberation time Sec.	Atmosphere Open/closed
Standards			BR18(2025) (§ 377 - § 384)	DS/EN 12464-1:2021		DS 490:2018		DS 490:2018	
Recidency	15	20		200-500	nat. / art. light	55dB	25dB	0,5sec	Closed
Bedrooms for nightshift	1	10	>300	100-300	nat. / art. light	50dB	35dB	0,5 sec	(Open)
Bathroom private	15	5	>300	300-500	nat. / art. light	40dB	35dB	0,5 sec	Closed
Kitchen	1	35	>300	300-500	nat. / art. light	58dB	40dB	0,5 sec	Open
Dining room	2	15	>300	300-500	nat. / art. light	58dB	35dB	0,6 sec	Open
Living room	1	35	>300	200	nat. / art. light	58dB	35dB	0,6 sec	Open
Playroom	2	15	>300	200-300	nat. / art. light	58dB	35dB	0,6 sec	Open
Older kids space	1	15	>300	200	nat. / art. light	58dB	35dB	0,6 sec	Closed
Activity room	1	30	>300	100-300	nat. / art. light	58dB	25dB	0,6 sec	Open
Laundryroom	1	18	>300	300	nat. / art. light	58dB	40dB	0,6 sec	Closed
Washroom	1	5	>300	100	nat. / art. light	40dB	40dB	0,5 sec	Closed
Baby changing area	1	6	>300	100	nat. / art. light	40dB	35dB	0,5 sec	Closed
Common area	2	20	>300	200	nat. / art. light	58dB	30dB	0,6 sec	Open

Fig.62. Room program

DESIGN

PROCESS

03.

Introduction

This section outlines the design process of the project, which aims to develop concrete design strategies for the Design Guideline (see Design Guideline) with the intention to ensuring both emotional and physical security in actively aiding the recovery of The Women at Crisis Centers.

Building on the empirical and theoretical research presented earlier in the program section, this phase translates abstract strategies into practical methods. Through an iterative process of sketching, diagramming, modeling, and other exploratory tools, it investigates how these strategies can be applied in architectural practice. The case study of Stigborgsbrygge provides a contextual foundation for this development, serving as the basis for testing and refining ideas with the goal of incorporating them into the Design Guideline for use by architects and others interested in the topic.

In alignment with the problem statement, the focus is on creating a healing environment particularly by addressing visual comfort, acoustic comfort, and spatial configuration.

The overarching design strategies developed from the empirical research (see Program Section and Design Guideline) are highlighted in yellow boxes for clarity, while key reflections related to these strategies are marked in pink boxes. These reflections illustrate how the strategies are tested in the site testing area, Stigborgsbrygge, to develop methods that support the strategies, as outlined in the Design Guideline. All outcomes from this process are incorporated into the final Design Guideline book.

Strategy Reflections

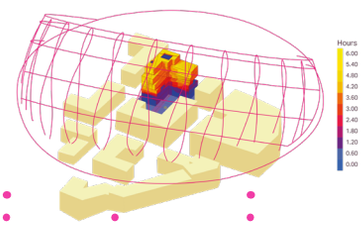
Problemstatement

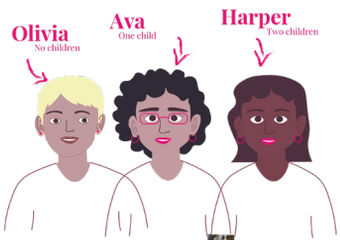
> *How can architectural strategies in women's crisis centers be designed to reduce PTSD symptoms in the acute trauma phase through healing elements such as visual comfort, acoustic comfort, and spatial configuration?*

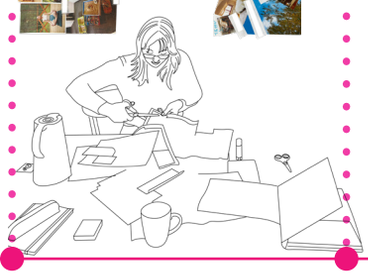
Timeline
Design Process

Site visit

Visisiting Aalborg crisis center







Start - Design process

Status Seminar

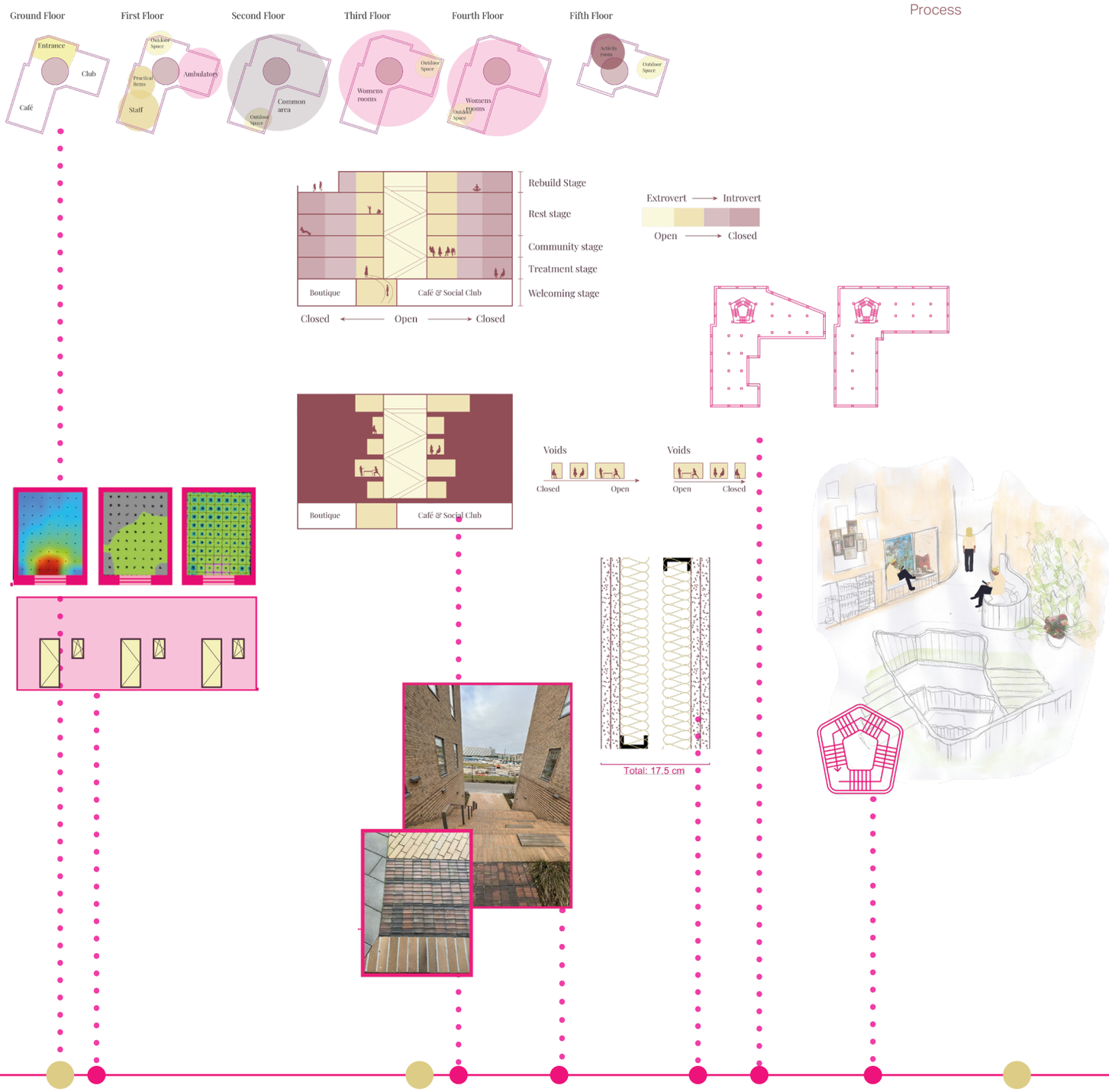
01: User Insight Gathering

02: Problem Framing - Needs Identification

03: Design Guideline

04: Giving The Form

Fig. 63. Timeline Design Process



Mini Pin up

Design freeze

Project submission

06: Daylight, acoustics and indoor environment studies

05: Structural principles

Form Follows Safety

The site offers varied conditions, with views of nature, public and semi-private areas. During form development, several configurations were tested to support key needs such as physical safety and anonymity. An L-shaped layout was chosen to create a more private, sheltered backside by orienting one facade toward the public, limiting exposure and enhancing security. The inward-facing form reduces noise and allows for optimal sunlight, making it ideal for placing bedrooms and common areas on the east- and south-facing sides to support circadian rhythms to support mood, and sleep regulation.

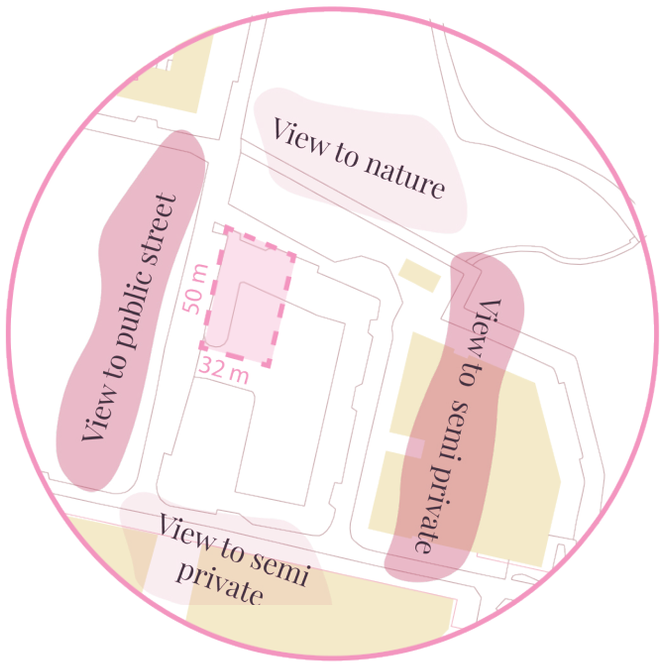
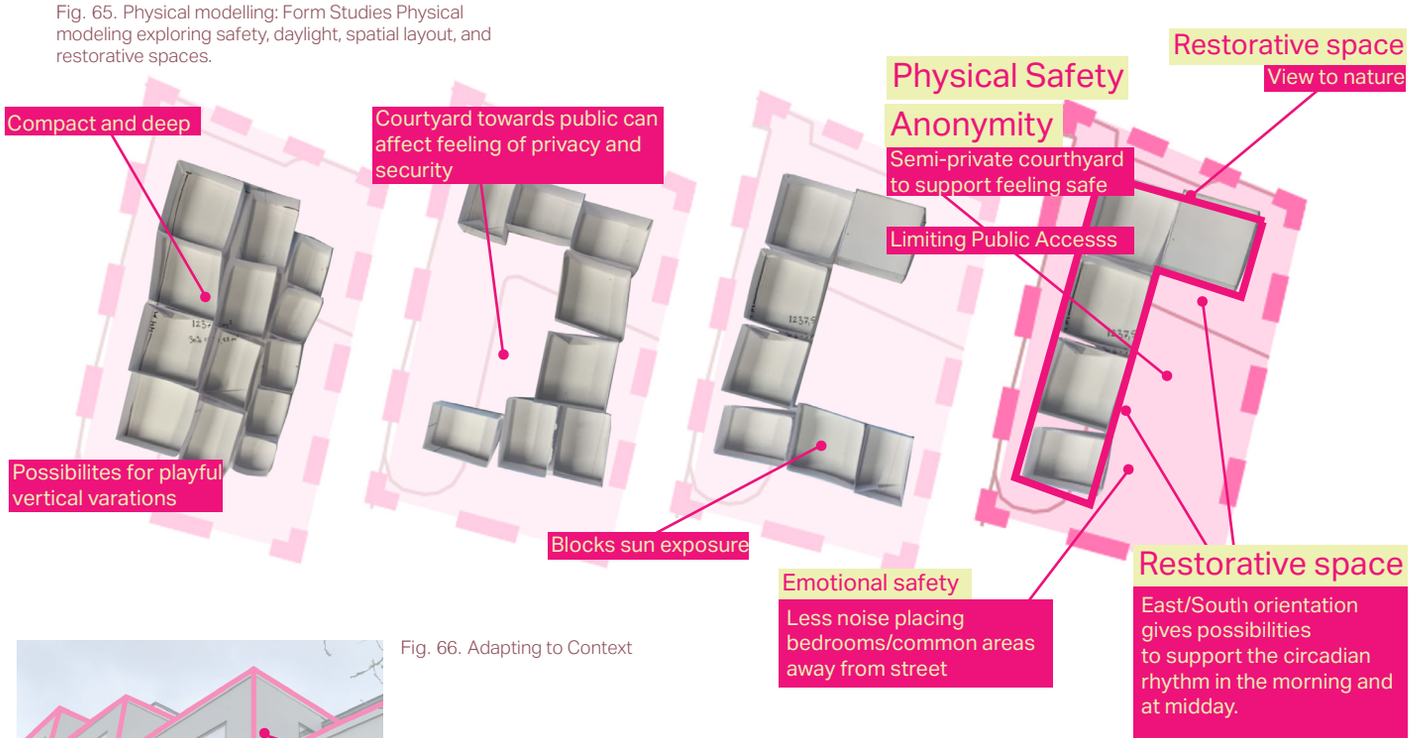


Fig. 64. Diagram showing surrounding views and levels of exposure

N

Fig. 65. Physical modelling: Form Studies Physical modeling exploring safety, daylight, spatial layout, and restorative spaces.



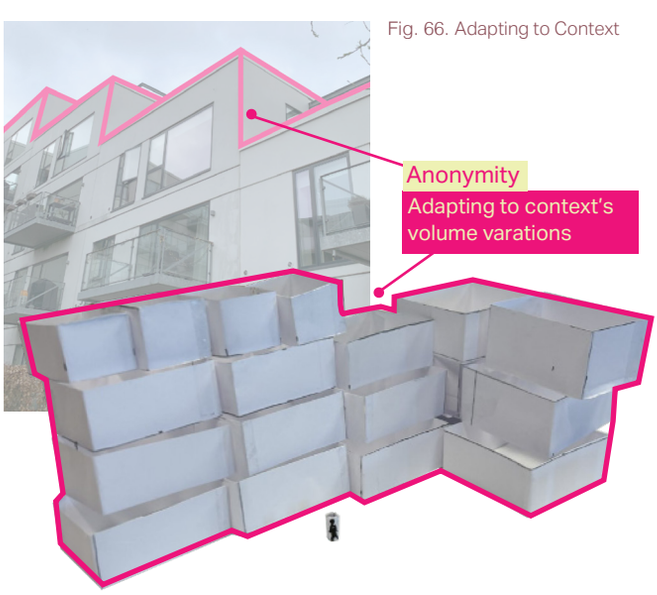


Fig. 66. Adapting to Context

Variation and Discretion

The form study also includes facade variations. Adapting the facade to the surrounding context enhances privacy and identity protection, helping the building blend in rather than signal that it is a crisis center, as anonymity is vital for ensuring safety and protecting the women from feeling observed.

Fig. 67. Physical Modeling:
Voids as Restorative Spaces

Restorative Voids

Due to the surrounding context at Stigsborg Brygge, where buildings range from 5–6 floors, the crisis center is designed as a vertical structure to blend in. This height, however, makes outdoor access challenging. To support restorative spaces—valuing nature's healing effects and user feedback about nature views—voids were introduced. These voids act as light sources and small retreats, providing daylight and easy outdoor access nearby. This enhances emotional safety by preventing interiors from feeling dark or enclosed aswell as easy accessible retreats.

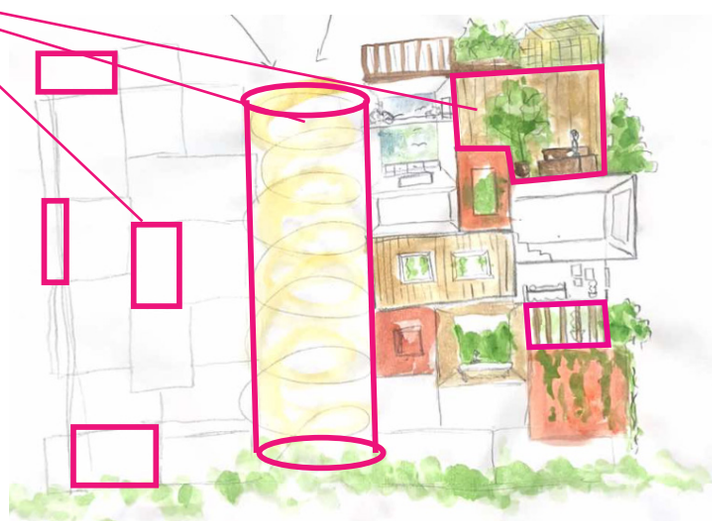
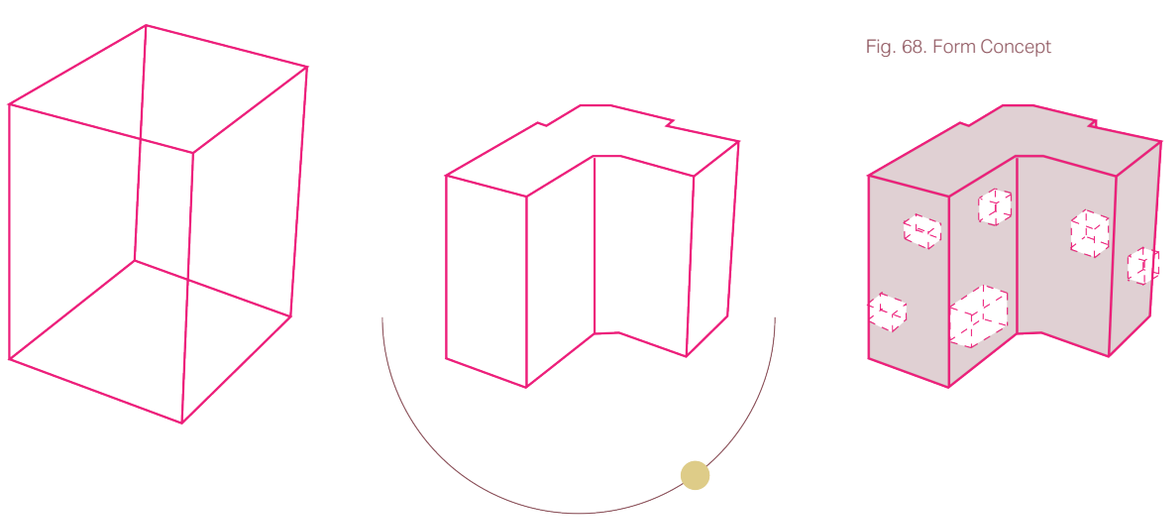


Fig. 69. Sketch of Voids

Form Concept

The L-shaped form supports emotional safety by optimizing daylight and acoustics, creating a calming environment that aids the healing process. It also enhances physical safety by limiting public access and forming a semi-private, enclosed space that protects anonymity. Integrated voids allow for natural light, circulation system, and offer small retreats—further strengthening the sense of emotional security.

Fig. 68. Form Concept



Base volume:
30% of site

Daylight Access

Integrating voids to
facilitate retreats

Defining the voids and variations

The voids and form variations were developed with a clear entrance and intuitive circulation in mind, ensuring simple, readable floorplans (fig. 75). This layout aligns with the functional zoning (see Safe Movement and Choice) and reflects the woman's journey toward healing—from the public café at ground level, gradually moving upward through treatment, common, rest, and activity zones. A central circulation core supports this step-by-step progression with easy navigation.

To enhance privacy and identity protection, the bedroom facade were pushed back, reducing exposure and creating opportunities for sheltered recreative outdoor spaces.

Roof variations provide private recreational areas with sunlight and views to the north, supporting recovery and a sense of retreat.

Voids were placed in common zones to offer accessible outdoor escapes. Facing east, south, and north, they optimize daylight and nature views, contributing to emotional safety and restoration.

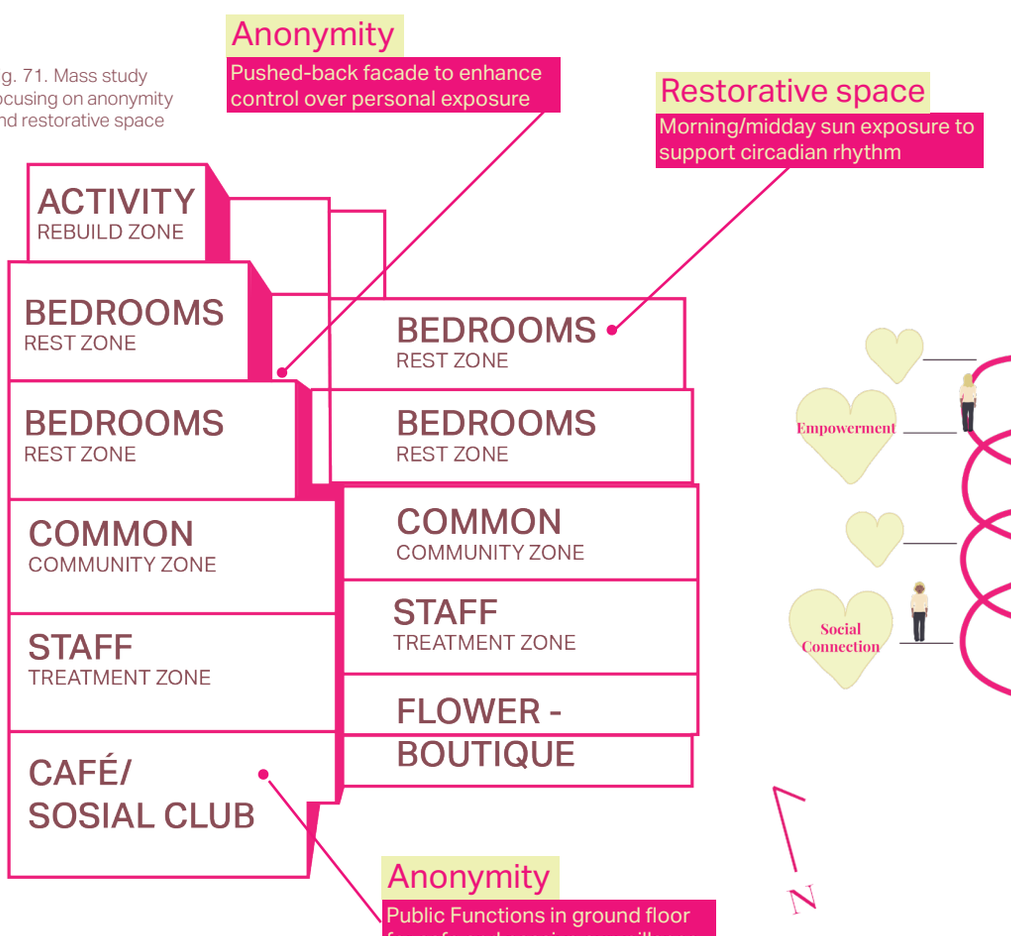


Fig. 71. Mass study focusing on anonymity and restorative space

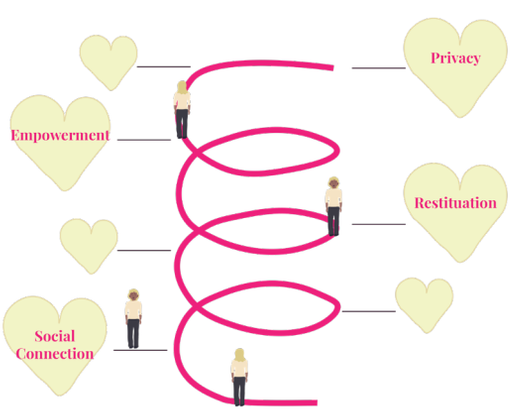
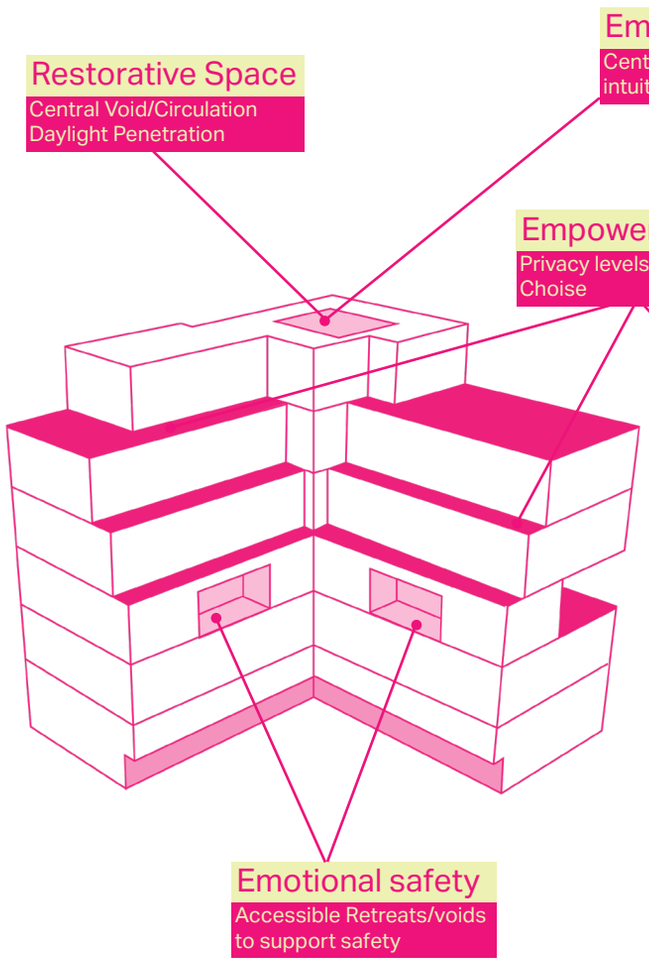


Fig. 70. Concept: Woman's journey towards healing

Fig. 72. Shaping Voids



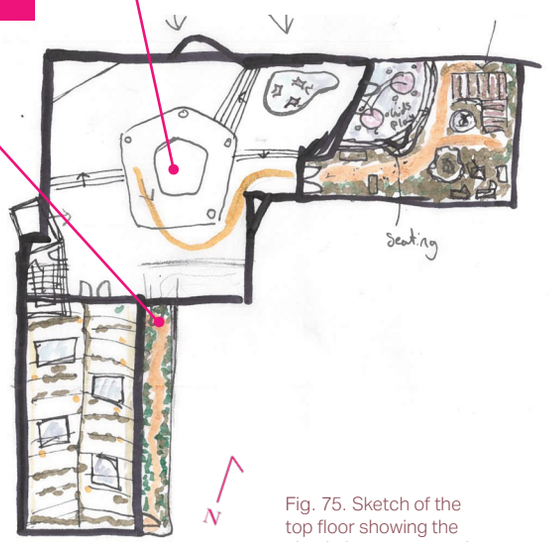
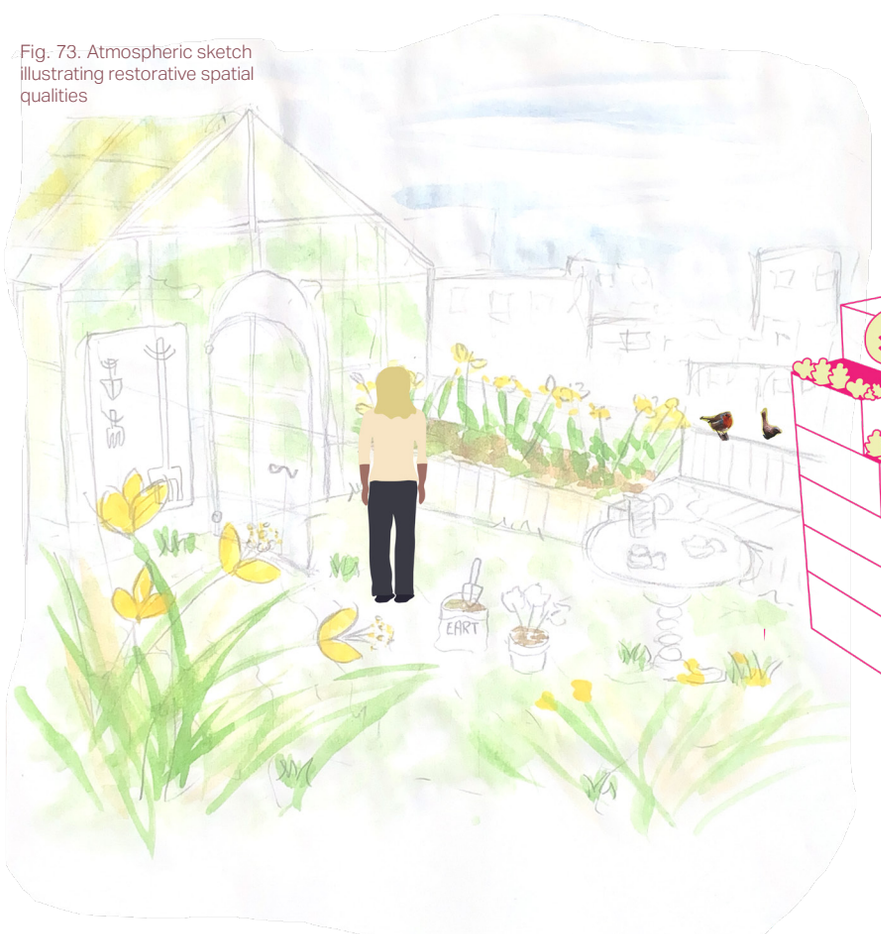


Fig. 75. Sketch of the top floor showing the circulation system and recreational areas.

Fig. 73. Atmospheric sketch illustrating restorative spatial qualities



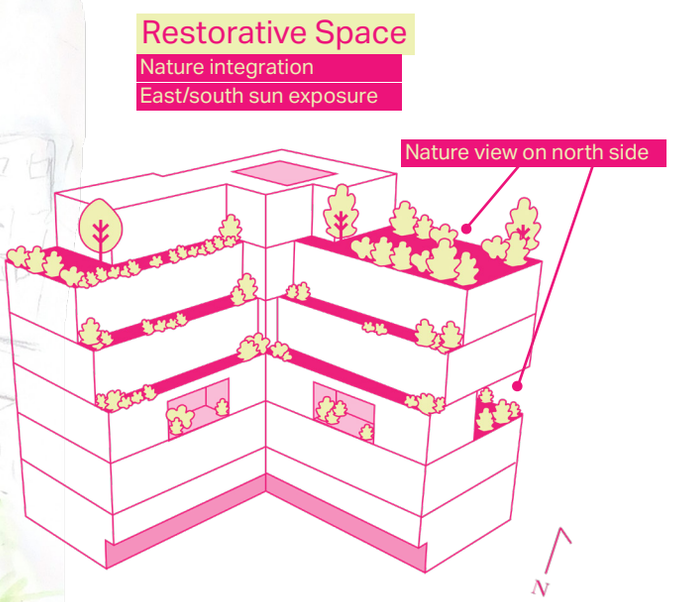


Fig. 74. Restorative spaces integrated through form variations and voids

Blending into
Surroundings

Anonymity

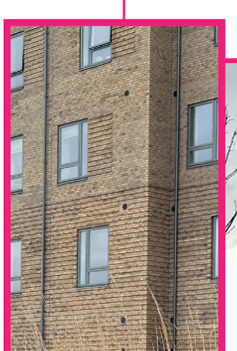
Blending building into surrounding architecture

Material transition

Material coherence

Variations in materiality

Material transition between floors



Active groundfloor

Fig. 76. Adapting to context

The external materials of the crisis center are envisioned to align with the existing buildings — both to remain discreet and ensure anonymity for the women, thereby supporting their emotional safety, and to comply with the local planning context.

The surrounding buildings are constructed in red and yellow brick, using façade variations both between different buildings and within individual elevations. This creates a visual rhythm that highlights transitions, such as between the ground floor and the upper levels, and includes detailing around windows. Similar strategies are applied to the paving, marking different zones and transitions.
These architectural strategies can be adopted in the crisis center to ensure it blends into its surroundings while offering a lively façade that can express vertical movement and spatial sequences within the building.

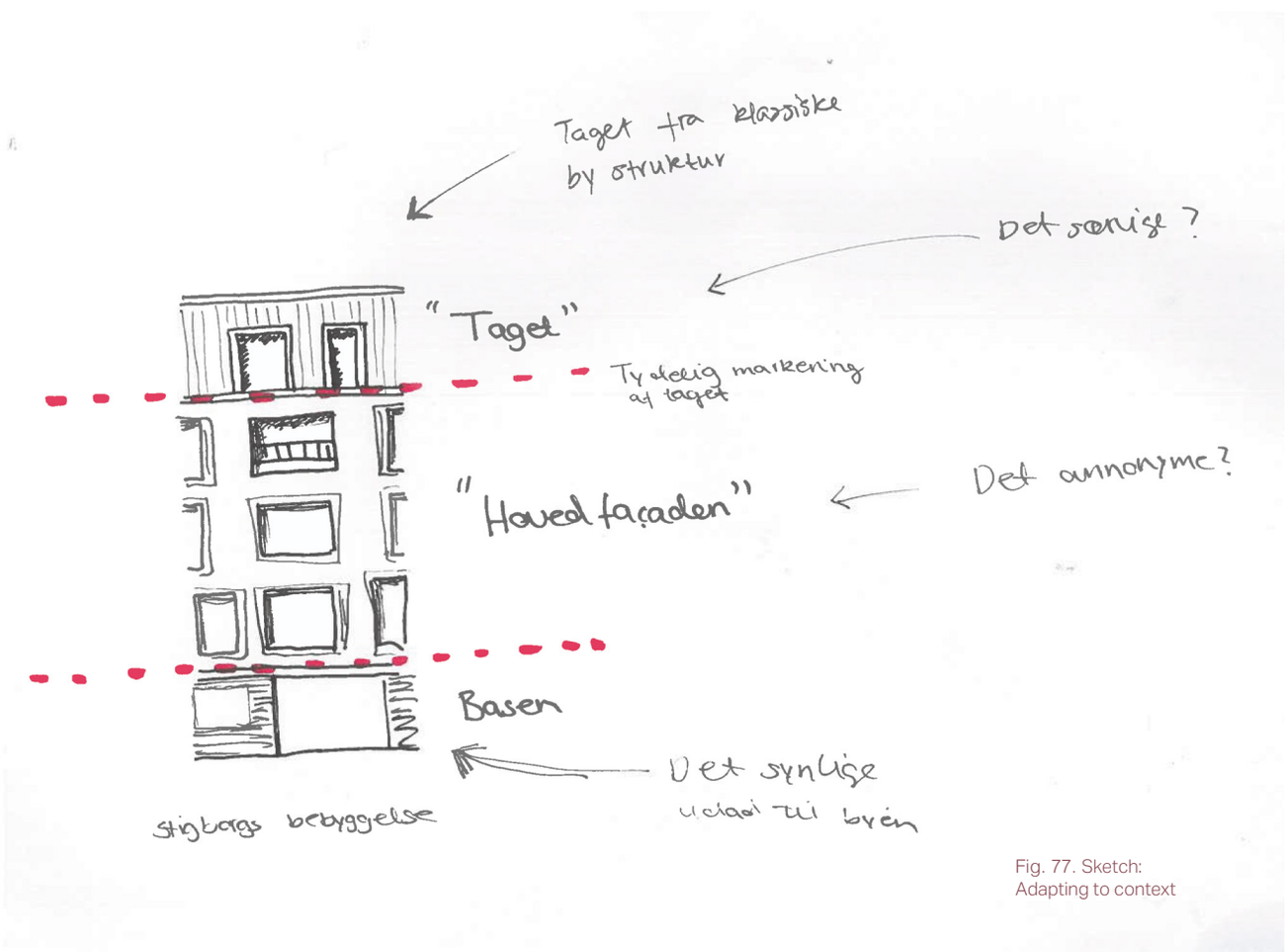


Fig. 77. Sketch:
Adapting to context

Healing in Layers

Functinal Zoning and Spatial Hierarchies

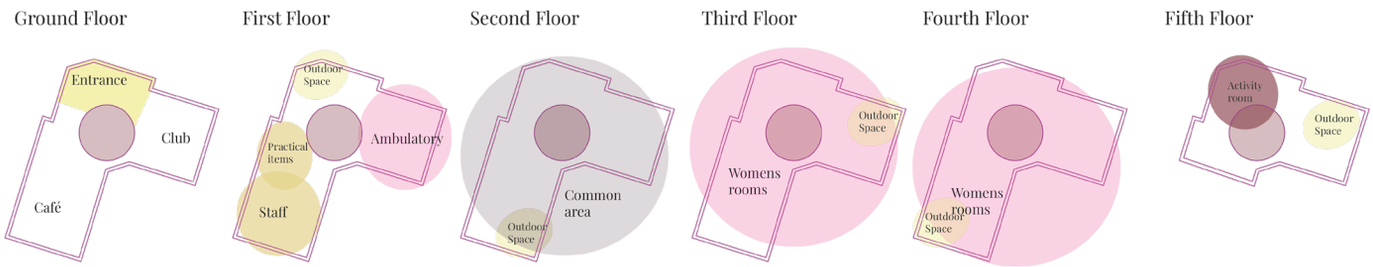


Fig. 80. Spatial Hierarchies

Hierachies

In this phase of the design process, the focus is on creating a coherent narrative and intuitive flow throughout the building, ensuring that the various functions support one another and generate a sense of synergy in the women's experience.

This is especially important in a building used by multiple actors, where the majority are extremely vulnerable. It made us acutely aware of the significance of circulation and how users encounter different functions along their path.

With this in mind, the ground floor was quickly designated primarily for public and commercial functions in order to ensure anonymity for the crisis center above. The first floor became a transitional zone, where ambulatory visitors come for treatment, staff members work, and the resident women receive therapy.
The upper floors were reserved exclusively for the women, giving them a sense of ownership and empowerment in their living environment.

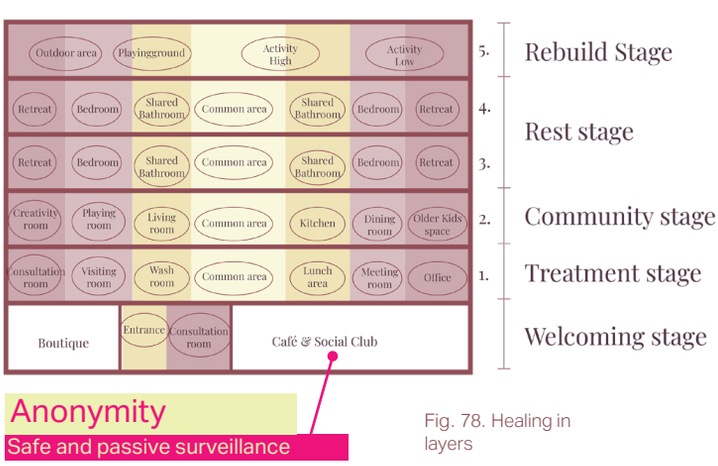


Fig. 78. Healing in layers

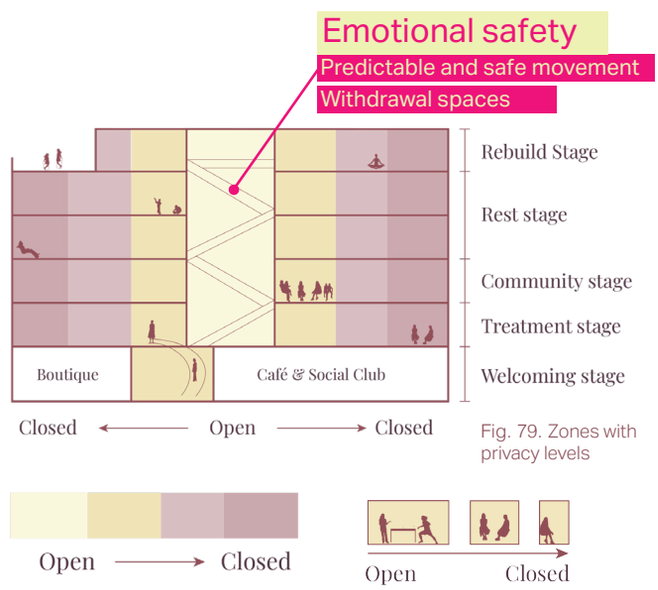


Fig. 79. Zones with privacy levels

Design Concept

With these insights in mind, a guiding design concept was needed to help us move forward toward the final proposal. The women have different needs throughout the day and week, and the spaces must be able to support these shifting needs in order to foster healing and restore a sense of empowerment in their lives.

To support this, we developed a design concept where each floor transitions from more introverted and enclosed spaces toward a central heart—an open, extroverted core where communal and active functions are placed. This spatial gradient is intended to offer both refuge and connection, depending on where the woman is in her personal journey.

..It's again that thing where I'm inside a city and not in a secluded park... it's about what's around me. There are no people to be seen in picture number two.

(See Program: Workshop 1 - Visual Atmosphere)

Safe Movement and Choice

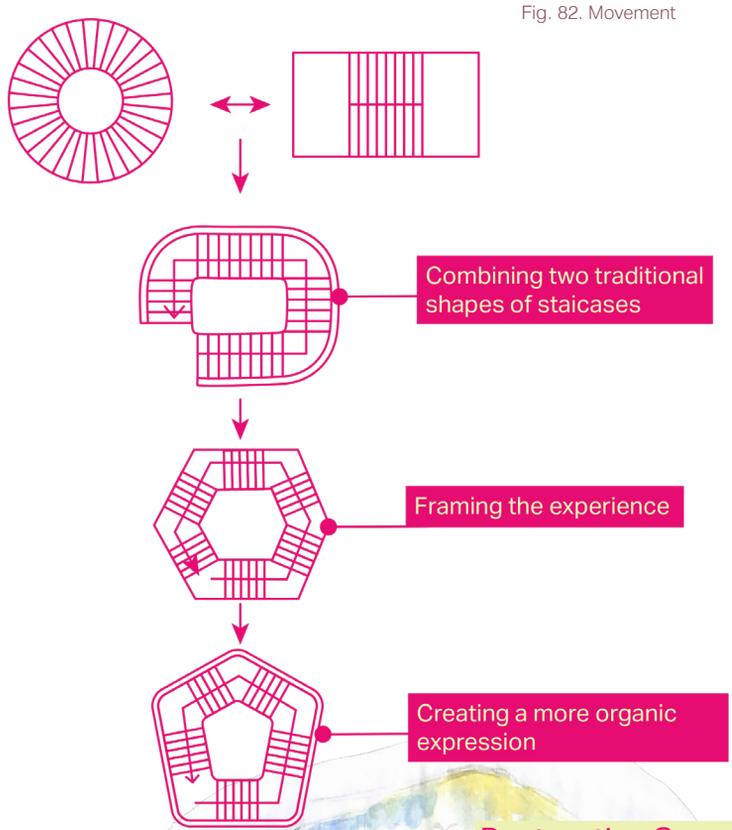
The Vertical Experience

The central movement

The design process of the heart begins by merging the geometries of two traditional staircases, referring to familiar forms while seeking new spatial qualities. This fusion evolves into a hexagonal shape, which anchors the core of the building, offering a visually engaging experience as the women moves upward though the building.

To soften the expression and introduce a more organic flow, the form is transformed into a rounded pentagon, allowing movement to feel more intuitive and less rigid. The interior is shaped in direct dialogue with the staircase, creating a continuous spatial sequence where each retreat and transition feels naturally connected. Finally, the outer façade is sculpted as a reflection of the inner flow, allowing the building's exterior to echo the rhythm and softness of the spaces within.

Fig. 82. Movement



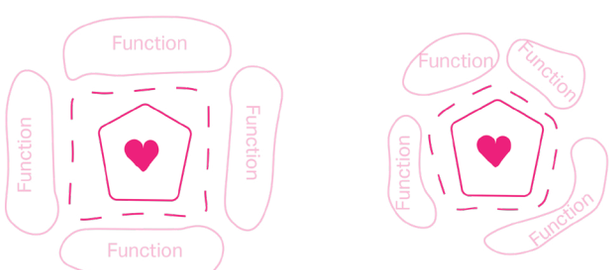
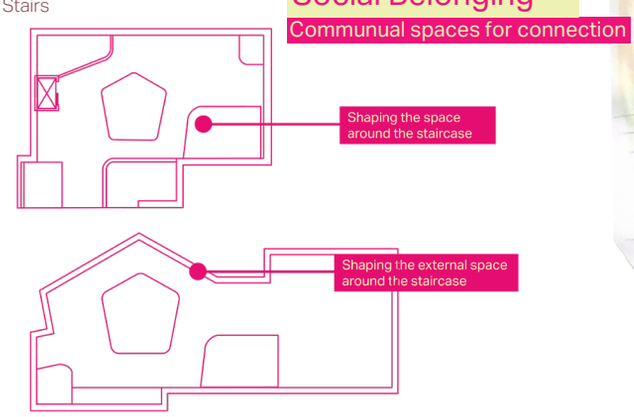


Fig. 83. Movement
Central Stairs



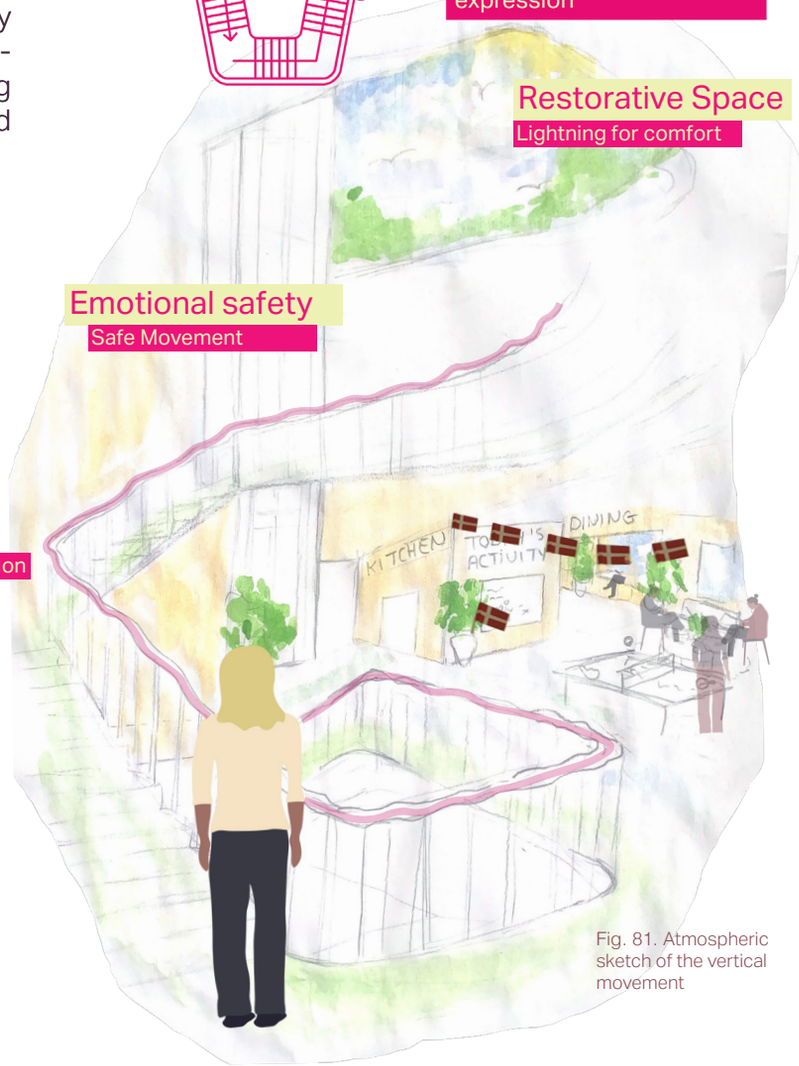


Fig. 81. Atmospheric sketch of the vertical movement

The Horizontal Experience

Fig. 84. Atmospheric sketch of the horizontal movement

The horizontal movement

When designing for women with trauma, it is essential to address a range of needs that support a mental state of security—an important foundation for long-term healing.

Key spatial elements such as clear sightlines contribute to emotional safety by reducing uncertainty and allowing women to anticipate their surroundings. This insight has informed the use of soft, rounded shapes throughout the building, which feel more calming and welcoming. Additionally, the rooms must not feel unpredictable. A consistent and coherent layout across the building helps foster a sense of orientation and control, contributing further to the feeling of safety.

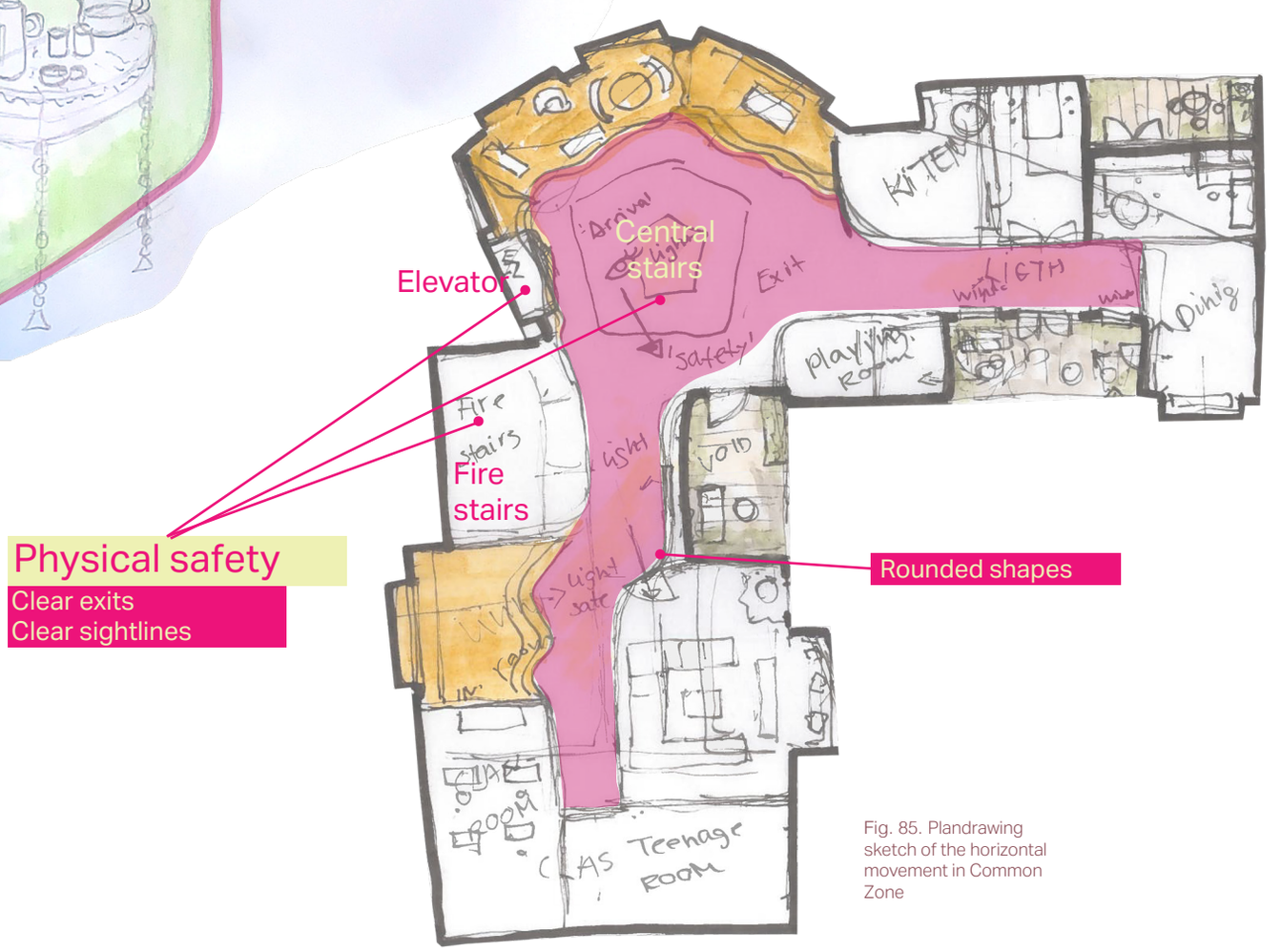


Fig. 85. Plandrawing sketch of the horizontal movement in Common Zone

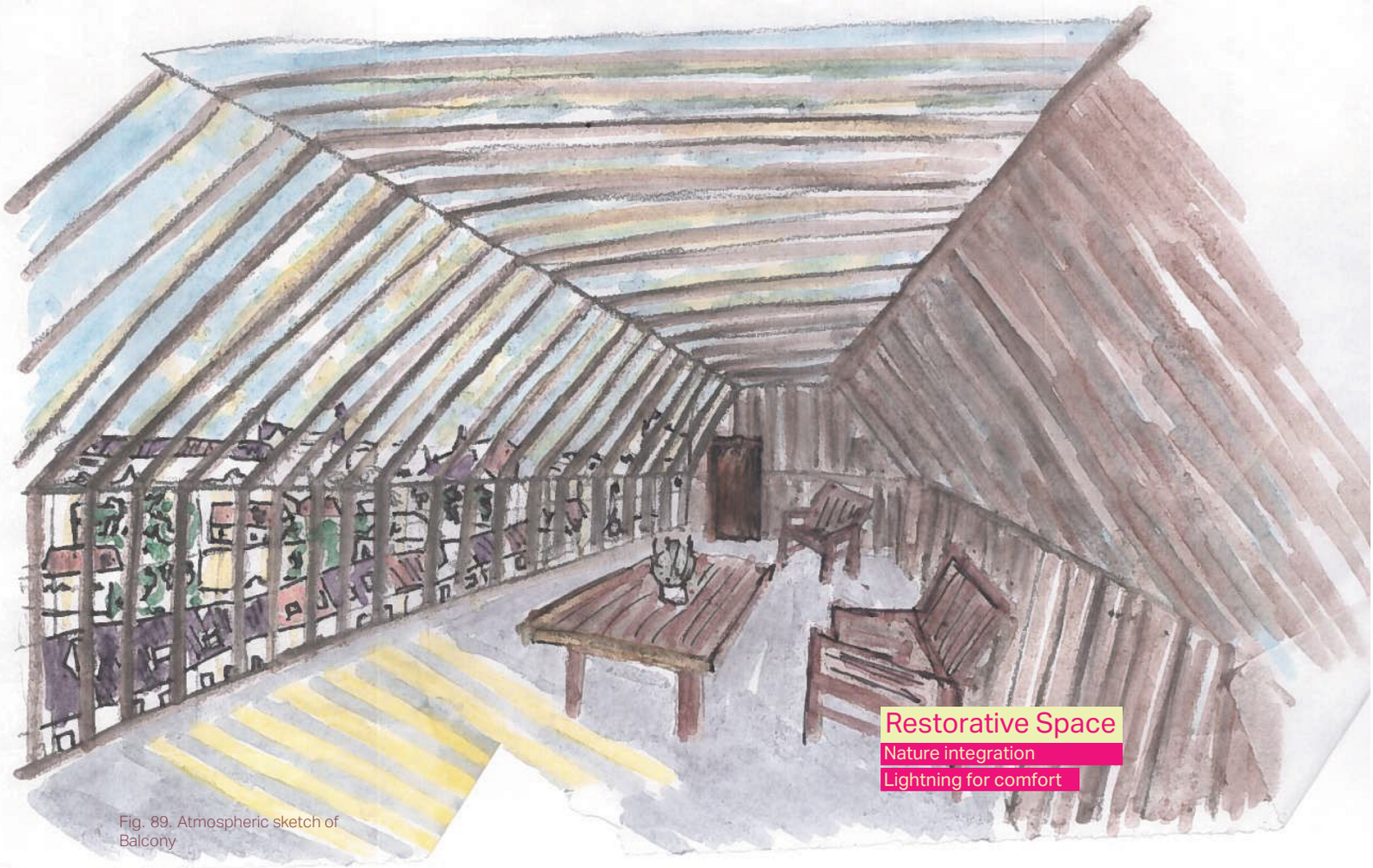
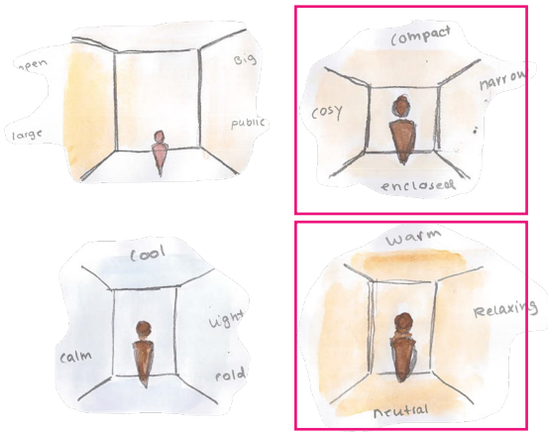


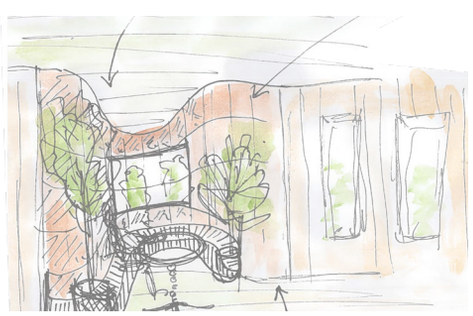
Fig. 89. Atmospheric sketch of Balcony

Emotional safety

Soft and warm lightning
Lowered ceiling
Noise insulation

Fig. 88. Room size and color tones



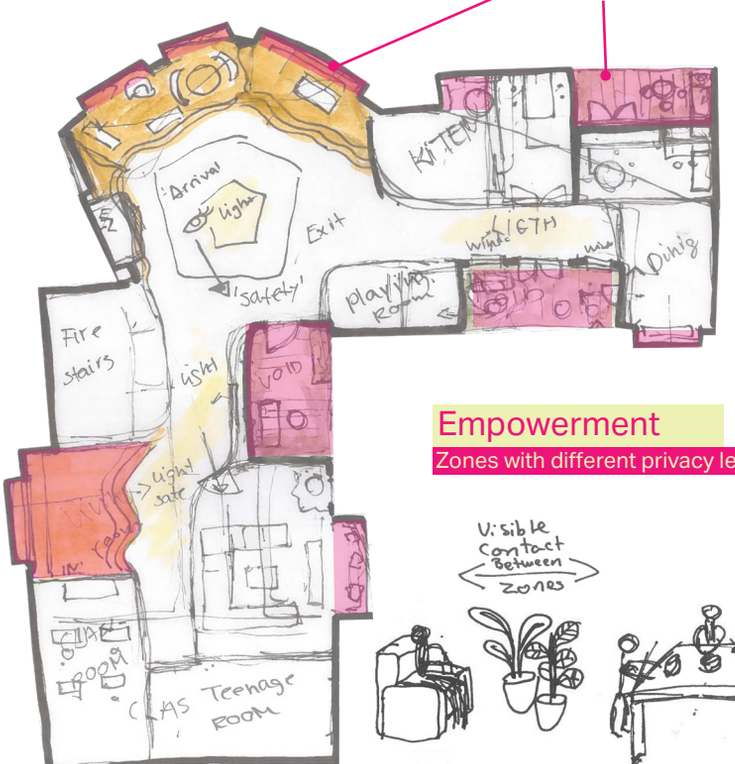


Emotional safety

Accessible withdrawal space
Calming Environments
Small retreats - Window nooks, balconies, comfortable seating

Fig. 87. Retreats in Common Zone

View to Nature



Empowerment

Zones with different privacy levels

Fig. 86. zoning barrior to enhance privacy

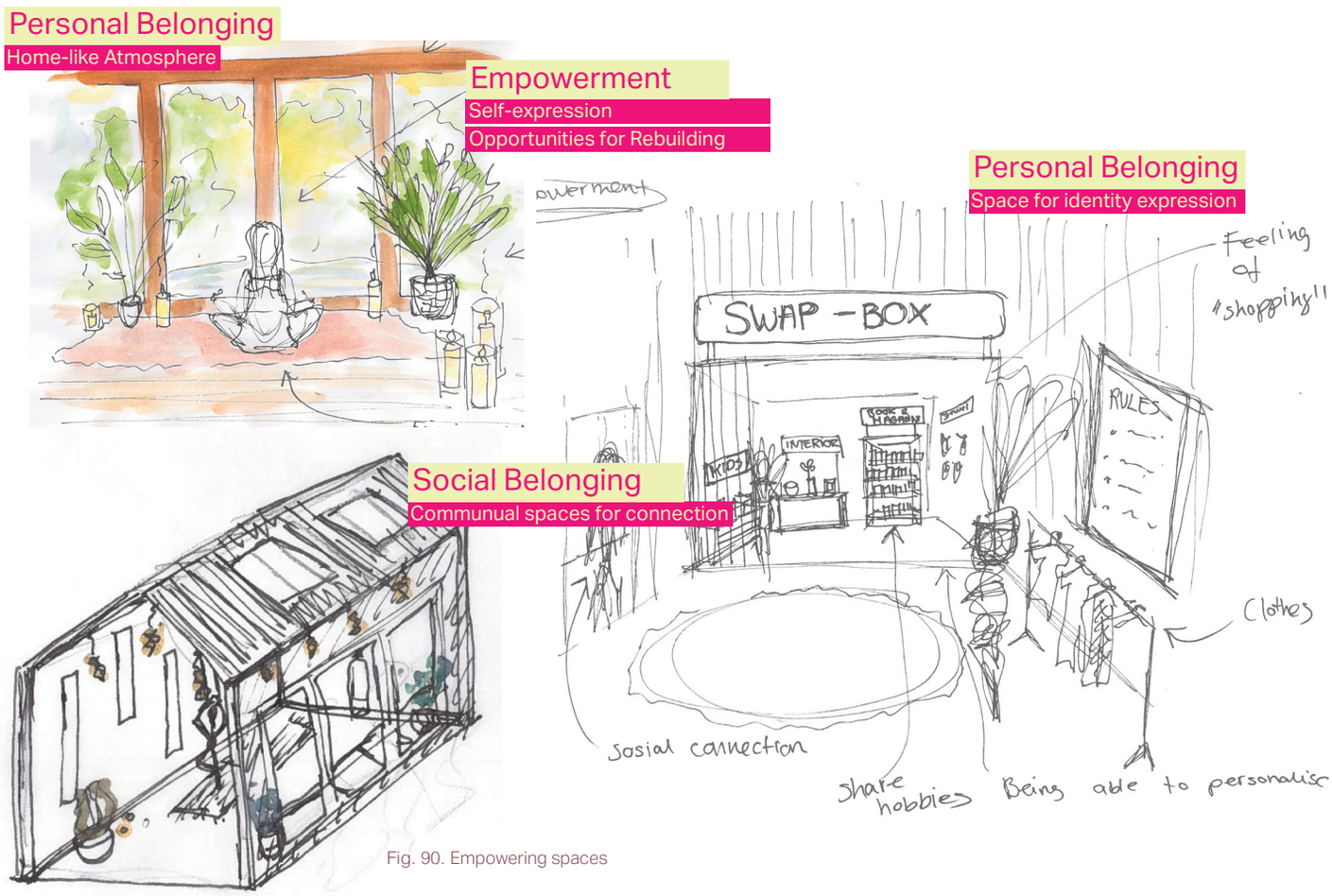


Fig. 90. Empowering spaces

The Retreats

The retreats are conceived in the layout throughout the building to ensure emotional safety. This is an important parameter to meet the women's needs and provide them with refuge when they feel overwhelmed. Various studies have been conducted on lighting, form, materiality, and ceiling height. To support emotional safety, the design can incorporate lowered ceilings, warm lighting, natural materials, and organic forms.

Social Belonging

Social belonging plays a significant role in the healing process. Different iterations have been developed for activities and spaces that accommodate a variety of needs. Elements such as swap boxes and yoga areas can foster empowerment and help create a sense of community.

Acoustic
Studies - Sound insulation

Emotional Safety

Sound insulation between bedrooms

The insights from the user studies highlight sound experience as a critical factor. Several women from the workshop and interviews emphasized how stressful noise can be – for instance interviewee Laila explained that sounds felt amplified because she was constantly in a state of high alert, reflecting how auditory sensitivity is heightened in trauma-affected individuals.

Addressing sound conditions is therefore essential in supporting emotional safety, particularly in bedrooms, which serve as private retreats for rest and recovery.

This study explores how internal wall constructions between bedrooms can be optimized to improve sound insulation. Three different wall compositions will be investigated with the aim of achieving an Rw value of 60 dB, as recommended in BR18 (see Program section: Acoustics and Noise Control).

As the bedrooms are located on the quiet, private side of the building - away from street-facing facades - external traffic noise is not considered critical. The focus is therefore on improving the acoustic performance of internal partition walls.

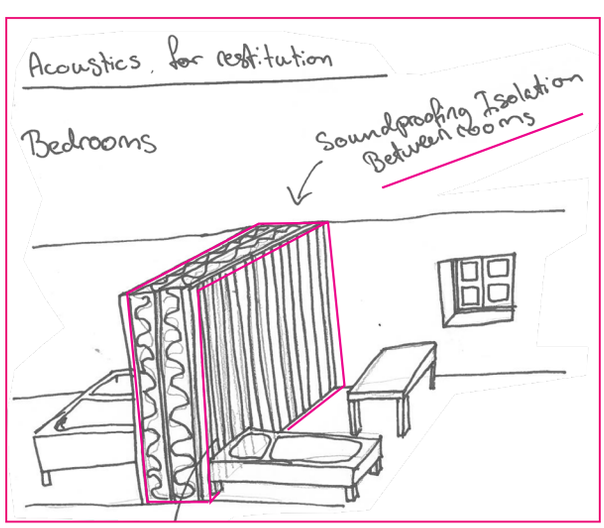


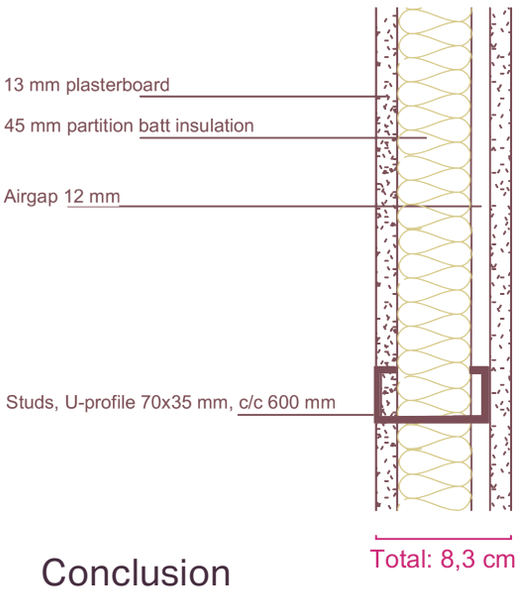
Fig. 91. Preliminary sketch exploring acoustic solutions

BR18 Recommendation
Between dwellings, common areas or noisy rooms.: *≥ 60 dB (Sound Reduction, Rw)*
(Acoustics and Noise Control in Program Section)

> *When you're in a crisis situation, sounds become amplified. Simply because you're constantly on high alert.*
>
> *- Program section: Laila Interview*

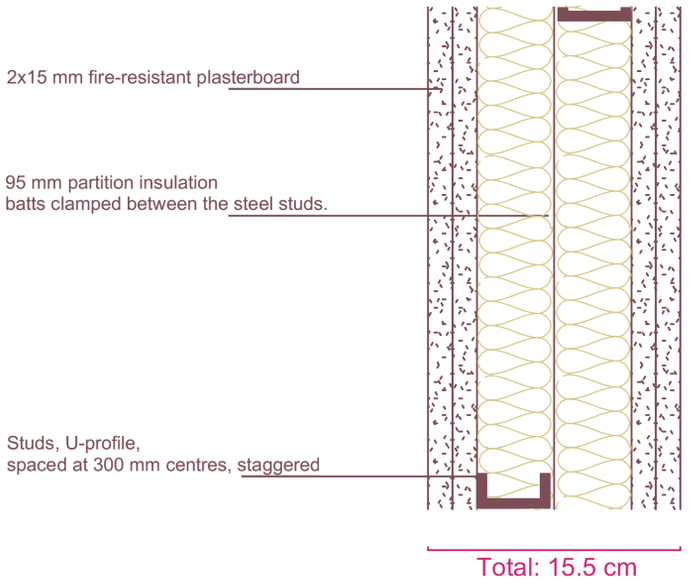
Type 1: Plasterboard

Rw: 43 dB



Type 2: Plasterboard thick

Rw: 58 dB



Conclusion

Type 2 optimized

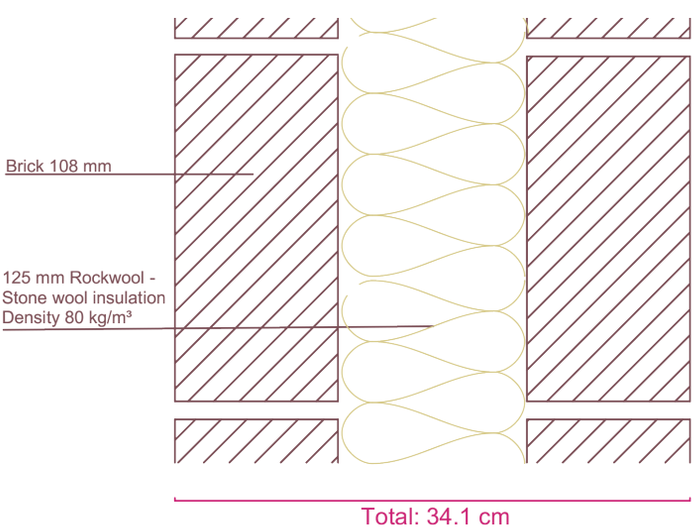
The three wall types studies demonstrate varying levels of acoustic performance. Type 1, with a total thickness of 8.3 cm including plasterboard, insulation and an air gap, had a relatively low Rw value of 43, which is insufficient to meet recommended standards. Type 2, with double plasterboard and insulation, performed better (Rw = 58) but still falls short of the 60 dB goal. Type 3, made of brick and insulation bats, reaches Rw 60 dB but results in a much thicker wall.

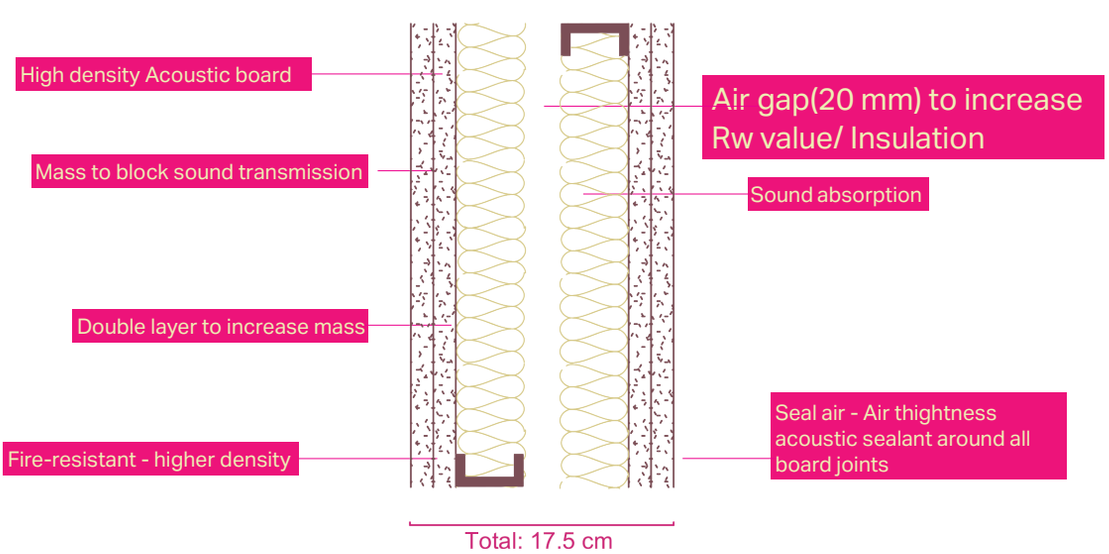
Type 2 offers a more space-efficient solution while maintaining high acoustic insulation. By combining its double plasterboard and insulation with an air gap as in Type 1, the design can likely achieve the desired Rw value of 60 dB.

Type 3: Brick

Rw: 60 dB

Fig. 92. Vertical sections of three types of wall construction iterations for optimizing acoustic insulation (scale 1:5) (Bygningers lydisolering, 1997





Acoustic
Studies - Reverberation time

Emotional Safety

Reverberation time
Dining Area

Insights from the user workshops highlight that many women find the common rooms overwhelming at times especially when having a difficult day. The noise in these common rooms is a significant factor contributing to this feeling of overwhelm.

Since common rooms tend to have many sources of noise, it is especially important to explore strategies for managing the sound environment to better support a sense of emotional safety, so the women can have environments that support restitution and healing.

Reverberation is when sound reflects multiple times off surfaces in a room after the sound source has stopped. The reverberation time depends on the size of the room and the material properties of its surfaces. It is defined as the amount of time (in seconds) it takes for the sound to decay or disappear (Lydisolering i bygninger, 2013).

In this study, the reverberation time in the dining room will be calculated under three different scenarios, ranging from minimal to extensive implementation of sound management strategies, using Sabine's formula, with the goal of achieving BR18's recommended value of less than 0.6 seconds.The choice of materials and the resulting data are analyzed to determine the most effective acoustic solutions.

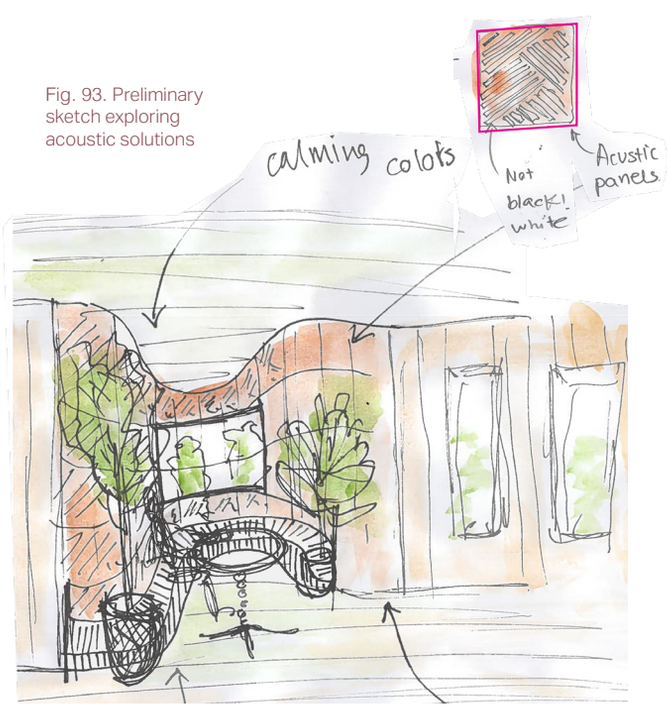


Fig. 93. Preliminary sketch exploring acoustic solutions

Sabine's Formula

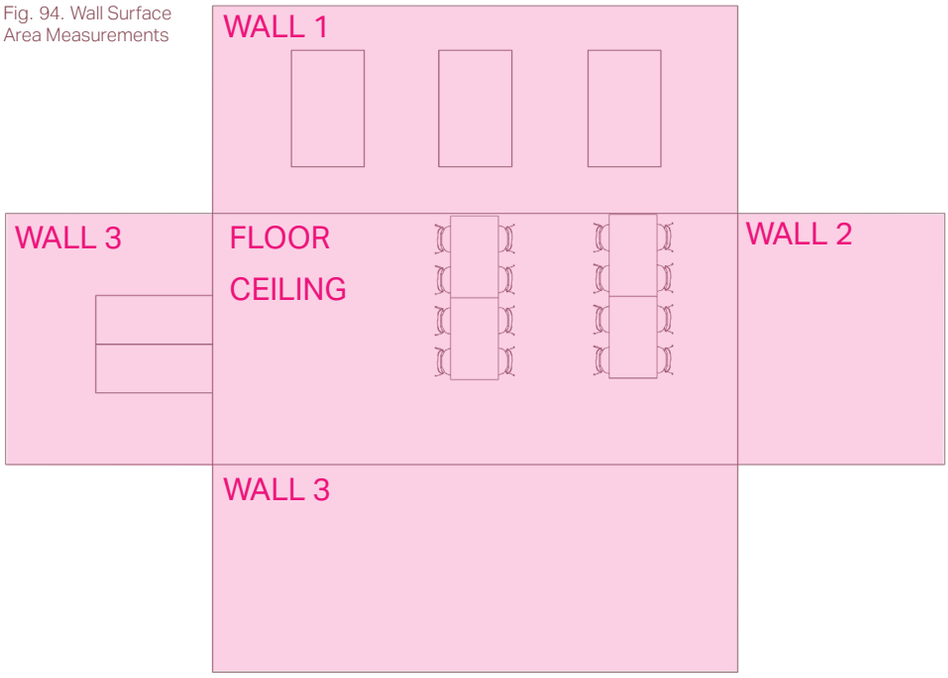
$$T = \frac{0{,}161 * V}{A}$$

T = Reverberation time in seconds
V = Volume of the room in m^3
A = Total equivalent absorption area: $\sum(\alpha \cdot S)$
α = Absorption coefficient
S = Surface area in m^2

BR18 Recommendation

Common areas: *≤ 0,6 s (frequency range 250-4000 Hz)*
(Acoustics and Noise Control in Program Section)

Fig. 94. Wall Surface Area Measurements



WALL 1
Wall area: 9m(Length)*3.55m(height) = 32 m²
Windows area: 32m² - 2,5m²*3 = 7,5 m²
Wall excl. window= **24,5 m²**

WALL 2
Wall area: 4,3m*3.55m = **15,3 m²**

WALL 3
Wall area: 9m*3.55m = **32 m²**

WALL 4
Wall area: 4.3m*3.55m = 15,3 m²
Door area: 1.7m* 3.55m= 6 m²
Wall excl. door = 15,3 m² - 6m² = **9,3m²**

FLOOR
9m*4.3m = **38,7 m²**

CEILING
9m*4.3m = **38,7 m²**

Type 1: Low

Fig. 95. Three Iterations with Updated Surface Areas in Each Step

Surface	Material	Area (m²)	α	(*A*=α × S)	Total: A= ∑(α·*S*)
Wall 1	Plasterboard	24,5 m²	0,06	1,47	1.47+0.92+1.92+0.56+3.21+2.32 = 10,4 m² Sabin
Wall 2	Plasterboard	15,3 m²	0,06	0,92	
Wall 3	Plasterboard	32 m²	0,06	1,92	
Wall 4	Plasterboard	9,3 m²	0,06	0,56	
Floor	Wood	38,7 m²	0,083	3,21	$T = \frac{0{,}161 * 137{,}39\ m^3}{10{,}4\ m^2\ Sabin} = 2{,}13\ s$
Ceiling	Plasterboard	38,7 m²	0,06	2,32	

Type 2: Medium

Surface	Material	Surface Area m² (S)	α	(*A*=α × S)	Total: A= ∑(α·*S*)
Wall 1	Plasterboard	24,5 m²	0,06	1,47	1.47+0.92+1.92+0.56+3.21+32.89 = 40,97 m² Sabin
Wall 2	Plasterboard	15,3 m²	0,06	0,92	
Wall 3	Plasterboard	32 m²	0,06	1,92	
Wall 4	Plasterboard	9,3 m²	0,06	0,56	
Floor	Wood	38,7 m²	0,083	3,21	$T = \frac{0{,}161 * 137{,}39\ m^3}{40{,}97\ m^2\ Sabin} = 0{,}54\ s$
Ceiling	Troldtekt	38,7 m²	0,85	32,89	

Type 3: High

Surface	Material	Surface Area m² (S)	α	(*A*=α × S)	Total: A= ∑(α·*S*)
Wall 1	Plasterboard	24,5 m²	0,06	1,47	1.47+0.92+1.92+9,3+3.21+32.89 = 49,71 m² Sabin
Wall 2	Plasterboard	15,3 m²	0,06	0,92	
Wall 3	Plasterboard	32 m²	0,06	1,92	
Wall 4	Acoustic Wood panels	9,3 m²	1	9,3	
Floor	Wood	38,7 m²	0,083	3,21	$T = \frac{0{,}161 * 137{,}39\ m^3}{49{,}71\ m^2\ Sabin} = 0{,}44\ s$
Ceiling	Troldtekt	38,7 m²	0,85	32,89	

“The common areas can be overwhelming on bad days, so they retreat to the bedroom”

(Workshop 3 in Program Section)

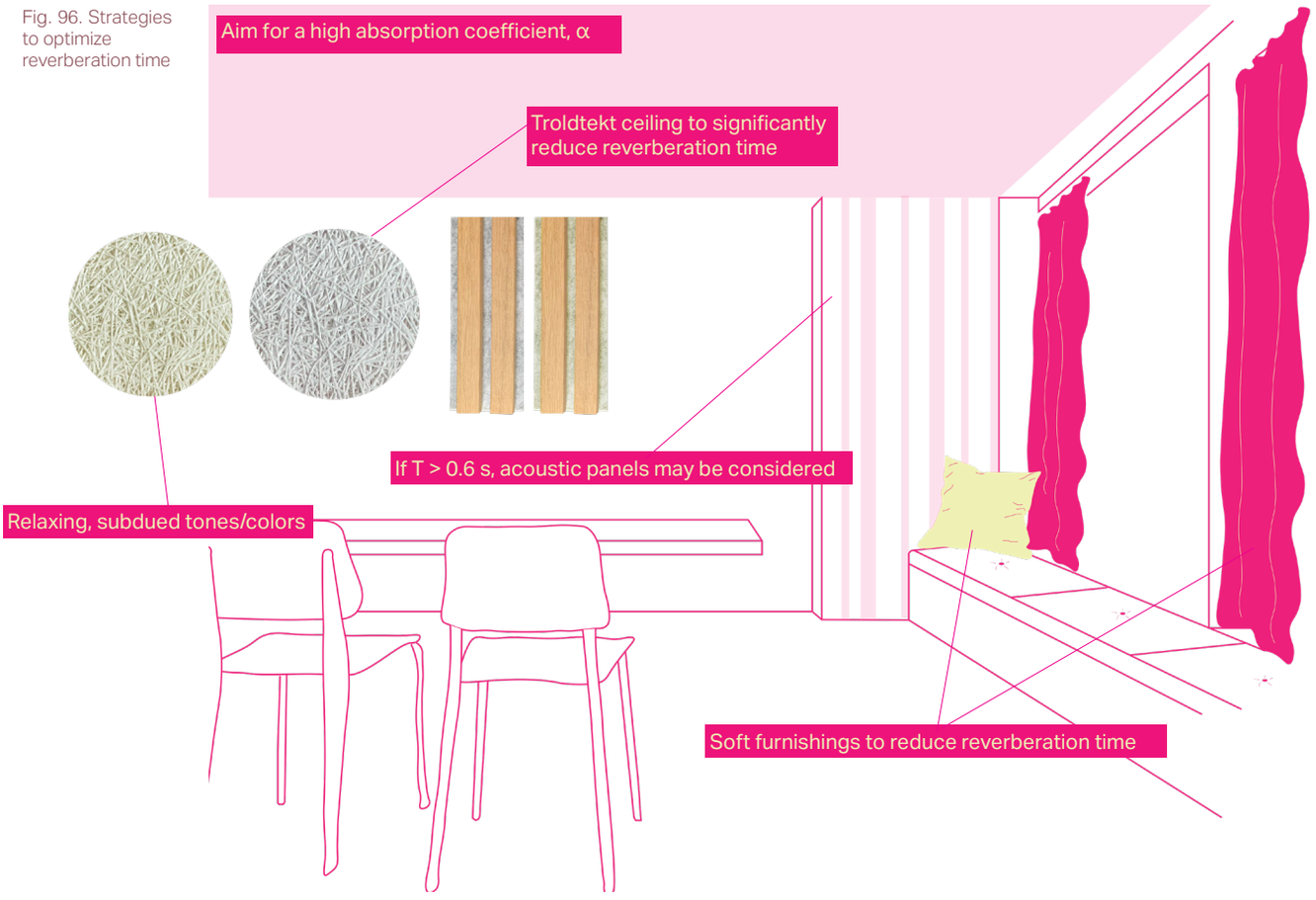


Fig. 96. Strategies to optimize reverberation time

Conclusion

Type 2: Medium

The results from the study show a significant decrease in reverberation time when changing wall and ceiling materials – especially the ceiling. In Type 1, where all walls and the ceiling were made of gypsum, the reverberation time was 2.13 seconds. In Type 2, replacing the ceiling with Troldtekt panels—which have a high absorption coefficient (α) of 0.85—reduced the reverberation time to 0.54 seconds. Adding one wall with wooden insulated panels further lowered the reverberation time slightly to 0.44 seconds.

This indicates that applying Troldtekt panels on the ceiling, as in Type 2, meets the BR18 recommendation of a reverberation time under 0.6 seconds. Therefore, in this case, additional solutions such as applying sound-absorbing panels to other surfaces are not necessary. The results highlight that the ceiling has the most significant impact on reverberation time, likely due to its large surface area. However, if these numbers are not sufficient in other scenarios, it may be necessary to apply acoustic panels on some wall areas as well.

When choosing materials, it is important to consider their absorption coefficient(α), where a higher value means greater sound absorption (with 1 representing total absorption). Additionally, furnishings, especially upholstered furniture, can also absorb sound and positively influence reverberation time and acoustic comfort.

To further support a calming environment, acoustic panels can be selected in natural, soothing colors or subtle tones, as preferred by The Women (see Program section, Workshop 4: Materials and Tactility).

> *High-intensity daylight in the morning (>2500 lux) improves sleep quality and reduces nighttime awakenings (Liu et al., 2022)*

Daylight
And temperature studies

Restorative space

Daylight and circadian rhythm regulation

Glass type:
SHGC: 0,49%
VLT: 69%

Orientation:
South-southwest

Glazing Properties and Their Impact on Daylight Performance

The study is based on windows using the same type of glazing, which is varied in the table (see Appendix 5). This particular glazing has a g-value of 49% and a visible light transmittance (VLT) of 69%.

The g-value indicates the total solar energy transmittance, ranging from 0 to 100%, where 100% represents the maximum amount of solar gain. On south-facing windows, this value can advantageously be reduced to limit overheating.

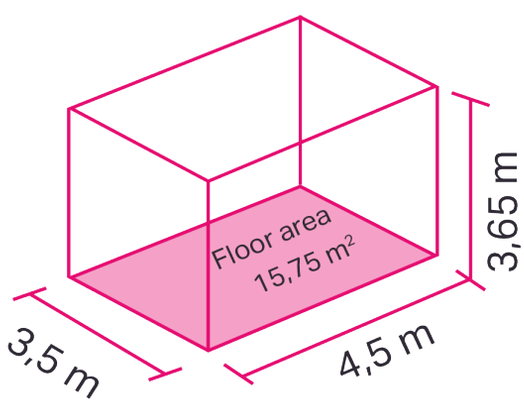
Transmittance measures the percentage of visible daylight that penetrates the window. A high transmittance value results in a greater amount of daylight entering the room and contributes to good visual comfort.

Spatial Daylight Autonomy and Useful Daylight Illuminance

Spatial Daylight Autonomy (sDA) and Useful Daylight Illuminance (UDI) are two key metrics used to evaluate daylight performance in buildings. sDA measures the percentage of occupied floor area that receives at least 300 lux of daylight for 50% or more of the occupied hours, indicating where daylight alone is sufficient for typical tasks.

UDI provides a more nuanced view by categorizing daylight levels into four ranges: insufficient (<100 lux), supplemental (100–300 lux), optimal (300–3000 lux), and excessive (>3000 lux), helping to assess both daylight sufficiency and the risk of glare or over-illumination.

Fig. 97. Bedroom size



Daylight and temperature study

Simulations were conducted on five different south-facing windows of different sizes to examine daylight conditions in a room intended to imitate the size and orientation of the final bedroom. The aim is to create a well-lit space with elevated light levels near the window to support circadian rhythm. Additionally, the average 24-hour temperature in the room without solar shading is assessed.

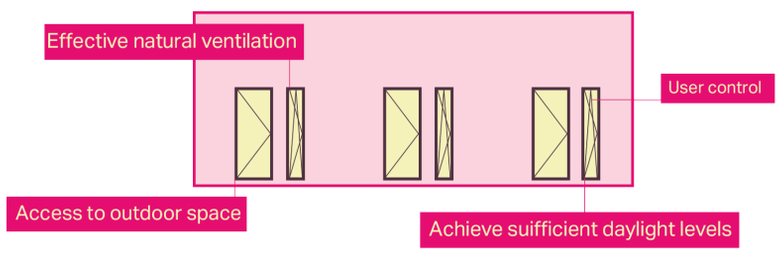
Despite variations in window size, room 1-3 show moderate daylight autonomy (sDA 41–56%), while rooms 4 and 5 perform better at 73%. Useful Daylight Illuminance (UDI_a), indicating optimal daylight levels during occupied hours. Average illuminance ranges from 624 to 1118 lux, with the majority of the space falling between 250–450 lux, considered a pleasant and comfortable range. In the window zone, levels reach 1400–3000 lux, which can have a therapeutic effect when experienced in the morning, this can be moderated with shading if needed.
Larger windows increase both lighting levels

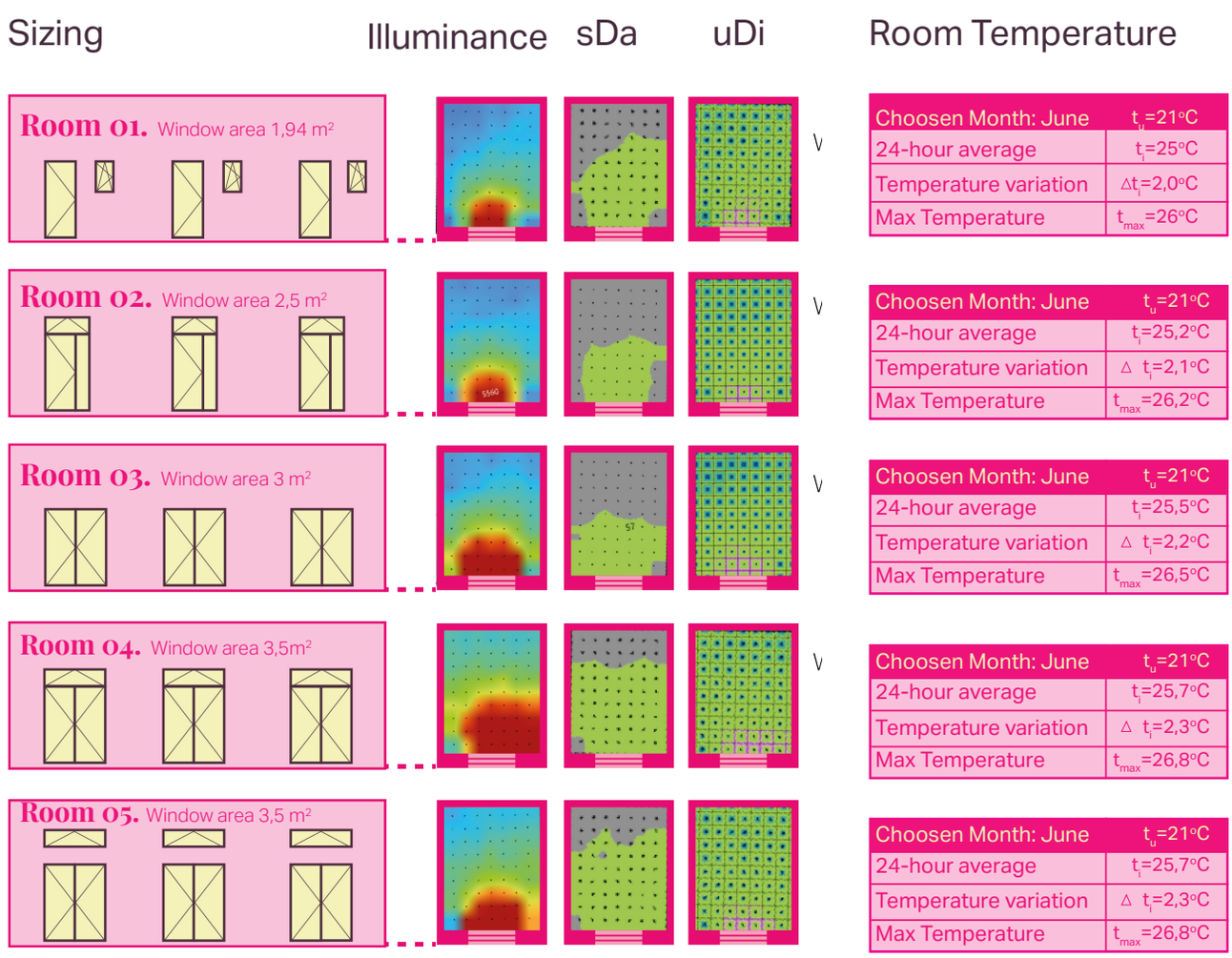
as well as temperatures, but reduce the level of privacy, contrary to the women's needs for the space. Even smaller window openings provide satisfactory daylight, while thermal comfort can be supported with external shading. High-placed, bottom-hinged windows also promote natural ventilation, allowing warm air to escape while preserving privacy and offering users a sense of control.

The findings highlights the need to balance daylight, thermal comfort, and privacy. A combination of the broader window layout from room 1 and the vertical placement from room 2 proves effective—spreading light more evenly, supporting ventilation, and enhancing user control over the indoor environment.

Fig. 98. Daylight study bedroom

ID	Avg. Lux	sDa	uDi_a	uDi_s	uDi_f	uDi_e
Room 1	749	56%	50%	23%	25%	2%
Room 2	624	41%	47%	26%	25%	2%
Room 3	763	46%	45%	25%	26%	4%
Room 4	1118	73%	55%	18%	21%	5%
Room 5	933	73%	55%	19%	22%	4%





HER Choice - Storytelling

The (Safe) *Vertical* and *Horisontal* Experience

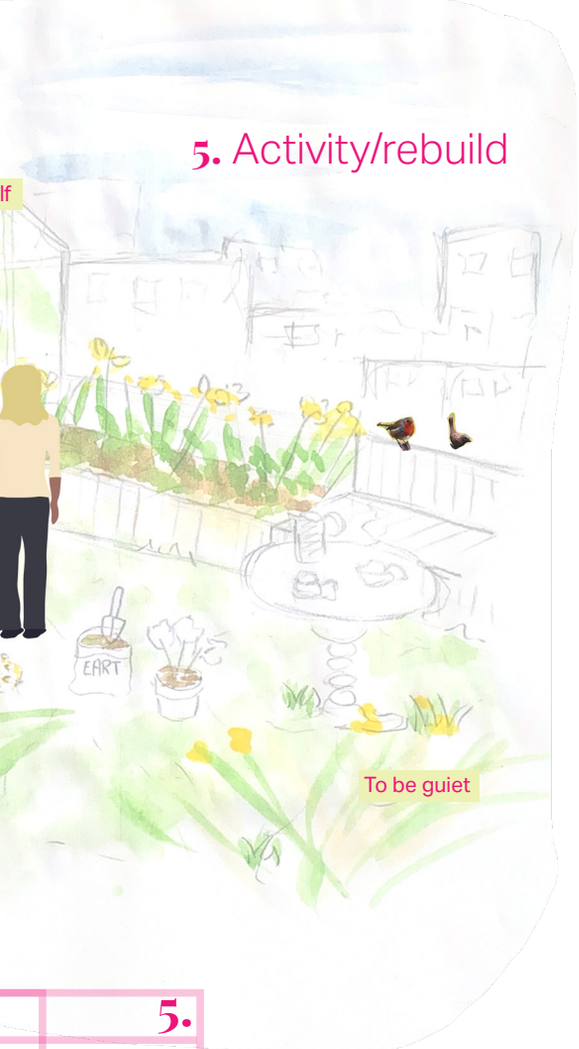
1. Arrival

	4.
	3.
2.	
	1.

2. Treatment

Fig. 99. Storytelling sketches depicting Mary Jane's experience navigating the crisis center, incorporating words and illustrations from the user workshop

5. Activity/rebuild



	5.
•	
•	
•	

3. Community

This storytelling is a to-be scenario of Mary Jane's experience in the crisis center. It illustrates the beginning of her journey - the moment she arrives.

It tells the story of her encounter with the building and the emotional atmosphere it creates, shaped by the strategies embedded in the design. From the very first impression - a safe, welcoming entrance - the center offers Mary Jane a moment of calm, gentle pause before stepping into her new chapter.
As she enters, her journey unfolds vertically through the heart of the building. A central calm staircase winds upward through soft light penetrating from above guiding her gently and calmly through the building. Each step is at her own pace, reflecting her rhythm and tempo. Step by step, Mary Jane explores the horizontal floors. She catches glimpses of what each level offers - spaces for social connection, quiet rooms for rest, areas for reflection. Each floor is a possibility - she can choose her path. Whether to engage, to retreat, or to simply observe. Every pause, every step, every decision is part of her recovery. It's all HER Choice.

Built area: 470m^2
Crisis Center 179 m^2
Public funtions 291m^2
Brutto area: 2416 m^2
Outdoor area: 343 m^2

DESIGN

—

PROPOSAL

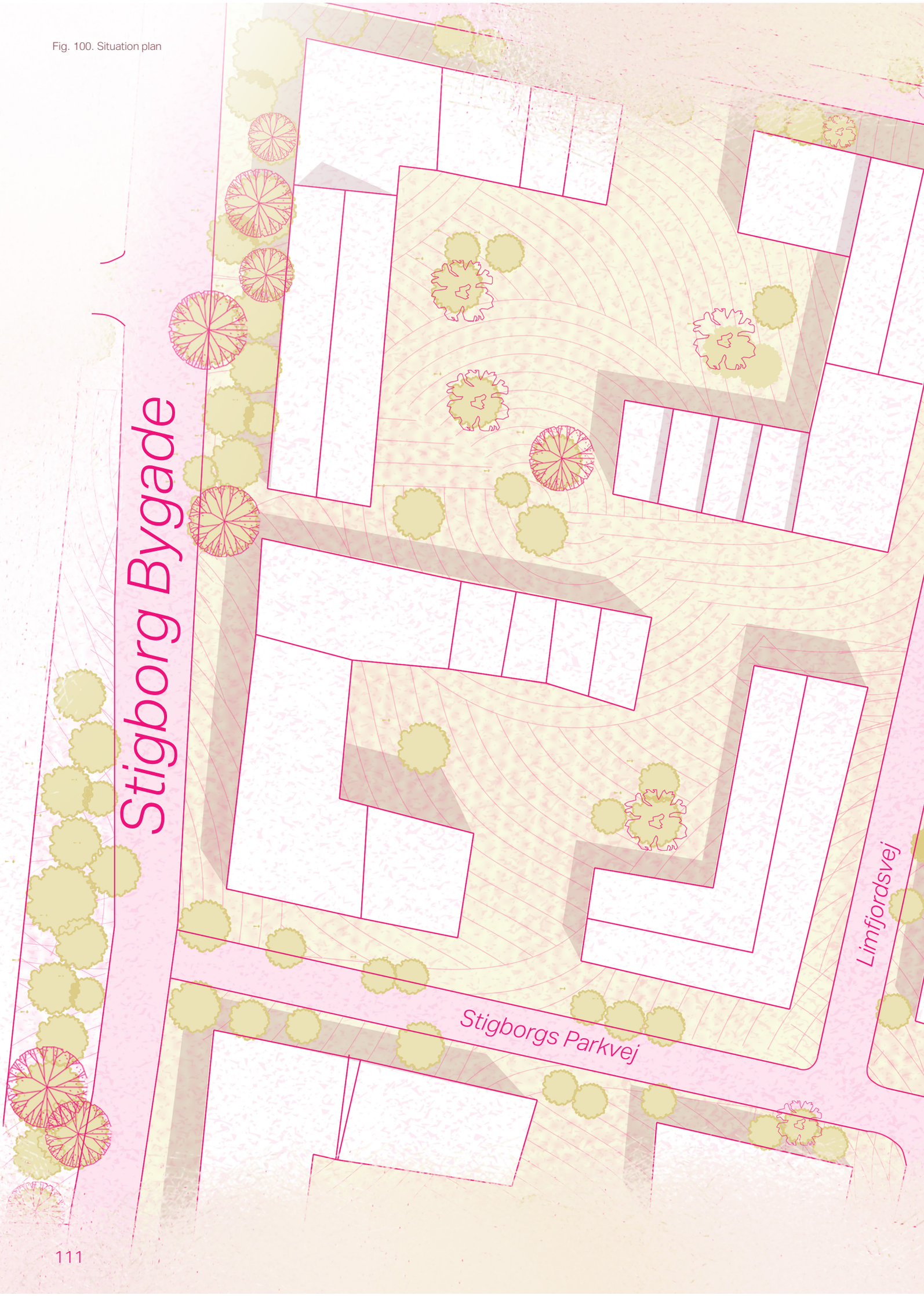
04.

HER Choice

The following section introduces Stigborgsbrygge Crisis Center – A center for women affected by violence in intimate relationships. The proposal reflects the application of the strategies and methods developed through this research (see Design Guideline) and serves as an example of how these can be implemented in practice when creating a crisis center.

The proposal is introduced through a storytelling format, following the fictional persona Mary Jane as she arrives at the center and moves through each floor - each one unfolding a chapter in her recovery—a process not just of healing, but of reclaiming power. This is Her Choice.

Fig. 100. Situation plan




Stigs Park Area
Park promenade
1:500
N

Arrival Crisis Center

Arrival Zone
Crisis Center

A Safe Entrance

Stigsborg Brygge in Nørresundby is a vibrant, central neighborhood. Nearby the Crisis Center lies Stigsborg's town street, lined with inviting public functions. As you arrive, the atmosphere feels welcoming. People come and go from a lively social club and Café. Through its windows, you glimpse individuals sharing coffee, reading, and engaging in social events. The street is enriched with greenery and seasonal flowers, and just beyond, a promenade opens to serene natural views - setting the tone for calmness, before stepping inside the Crisis Center.

Fig. 101. Isometric view illustrating the functional hierarchy, heart spaces, voids, and retreat areas

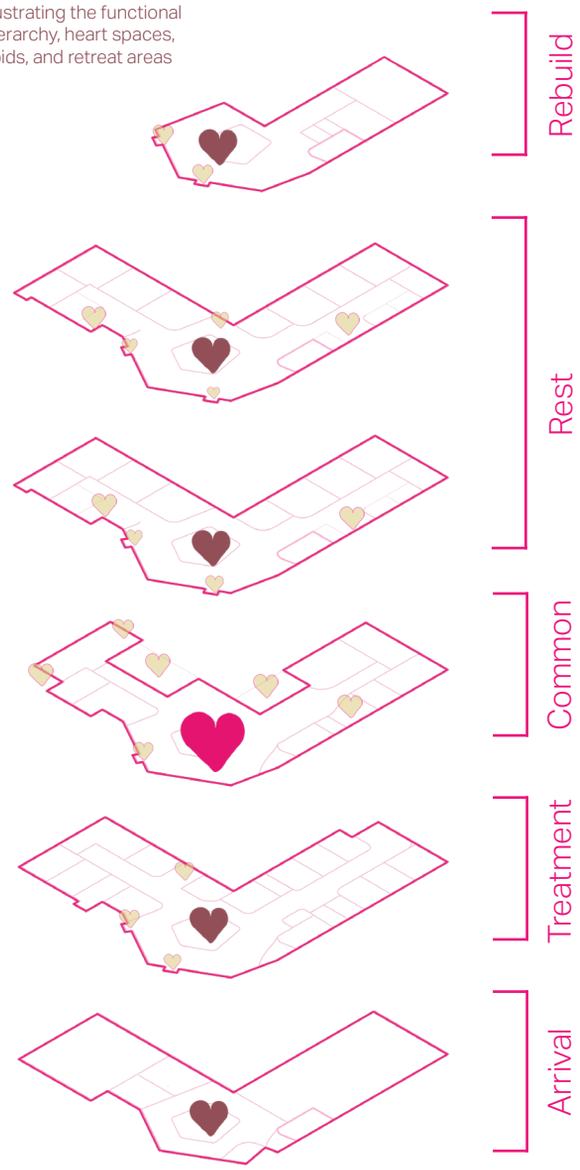
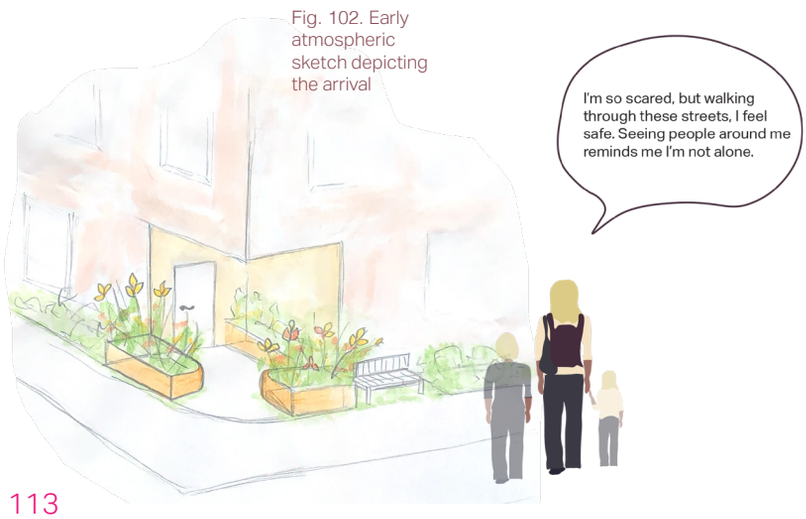


Fig. 102. Early atmospheric sketch depicting the arrival



Limfjordsvej

Fig. 104. Arriving at The Crisis Center Detail West-North-west 1:100

Fig. 103. Facade drawing West-northwest 1:200. (Randers Tegl, N.d.), (Meye, N.d.), (Nonscandi-navia, N.d.)

West-northwest Facade 1:200

Groundfloor : *Arrival*

Limfjordsvej

Entering
The Crisis Center

Fig. 106. Early sketch capturing a warm welcoming entrance

Warm welcome

The entrance to the crisis center marks the women's very first encounter with their new surroundings both on the day they arrive and every time they return during their stay. In this moment of vulnerability, it is crucial that they are met by an atmosphere that feels both safe and homely. The entrance must therefore find a delicate balance, it should be warm and welcoming, yet discreet and anonymous, protecting their privacy while inviting them in.

North-northeast facade 1:200

Fig.105. Facade drawing North-northeast 1:200 (Randers Tegl, N.d.), (Meye, N.d.), (Nonscandinavia, N.d.)

Arrival zone: Groundfloor 1:200

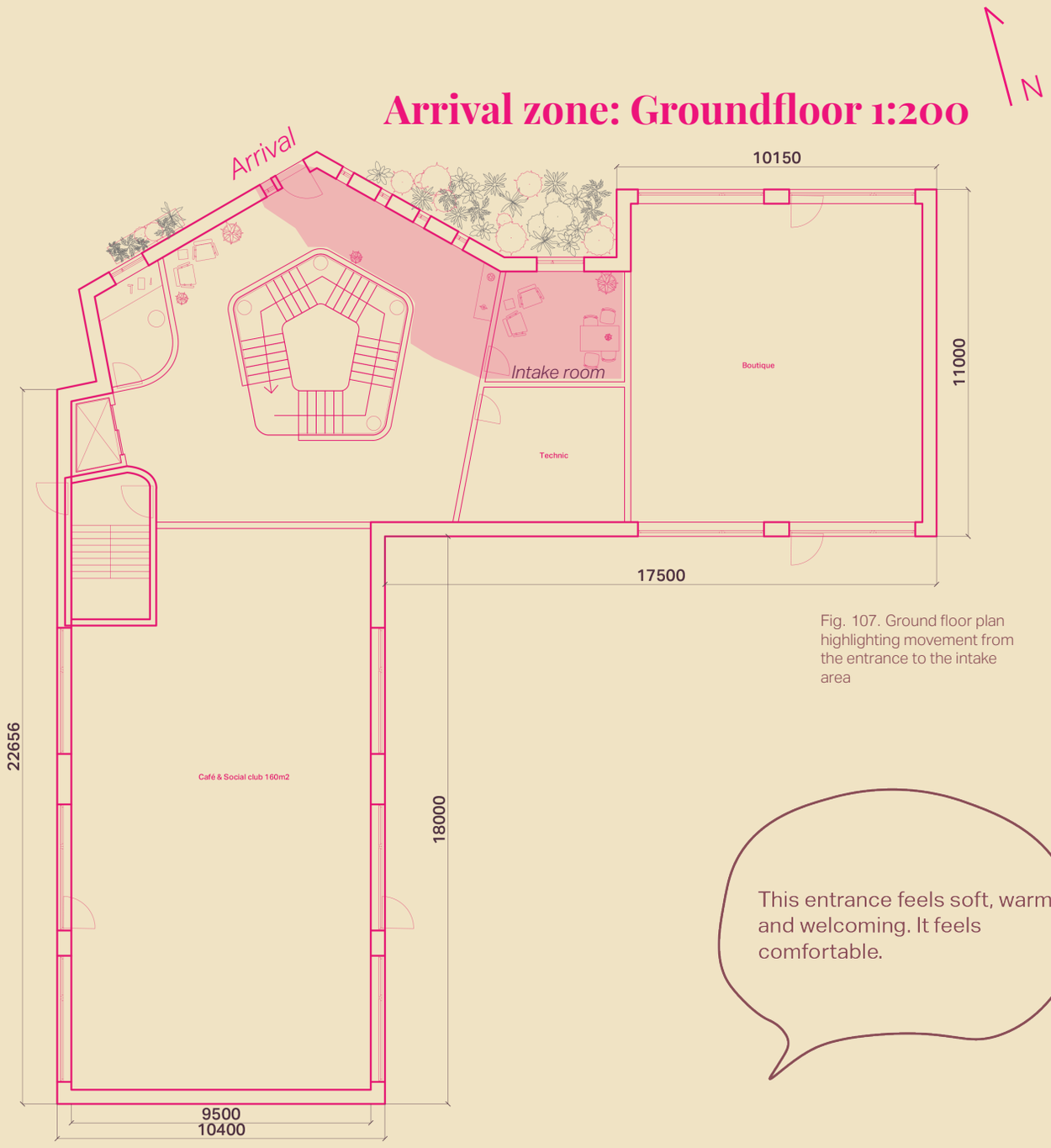


Fig. 107. Ground floor plan highlighting movement from the entrance to the intake area

This entrance feels soft, warm, and welcoming. It feels comfortable.

Upon entering, women are welcomed by a staff member and a cozy coffee station, where they can enjoy a warm drink before heading to the consultation room. There, a window offers a peaceful view of nature, providing calm and privacy.

The building's layout features clear sightlines to promote emotional safety. Both residents and ambulatory visitors benefit from intuitive navigation. A left turn from the entrance leads directly to the stairs and elevator, ensuring easy movement for staff and guests.

Fig. 108. Storytelling: Mary Jane's experience and feelings upon entering the crisis center

Treatment Zone

I appreciate having comfortable seating options. Sitting in this window seat makes me feel calm—I like how the comfort wraps around me

Upon arriving on the first floor, the women are met by a spacious, open atrium. At its heart, a raised plateau features a coffee station and a comfortable lounge area, offering a calm retreat with views toward nature, where they can pause and reflect before or after consultations or treatments.

The section illustrates how women are offered a variety of seating options, accommodating different needs and emotional states. A more secluded retreat with views toward Stigsborg Park provides a soothing atmosphere, a space to exhale when discussing vulnerable and difficult topics.

Fig. 109. Early sketch: Mary Jane's experience and feelings in the consultation room

East-southeast facade 1:200

Fig. 110. Facade drawing East-Southeast 1:200 (Randers Tegl, N.d.), (Meye, N.d.), (Nonscandinavia, N.d.)

Treatment zone: 1. floor 1:200

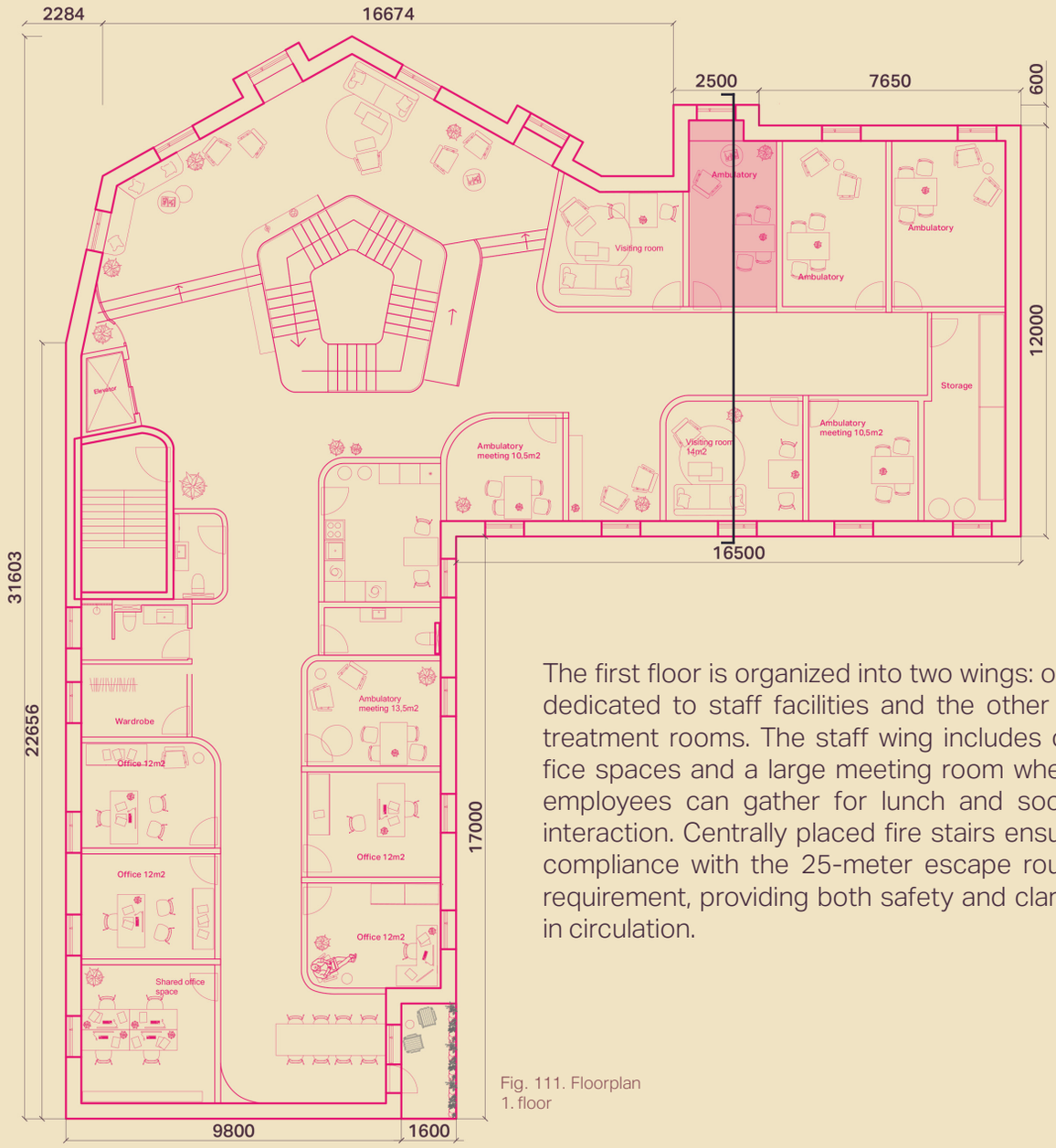


Fig. 111. Floorplan
1. floor

The first floor is organized into two wings: one dedicated to staff facilities and the other to treatment rooms. The staff wing includes office spaces and a large meeting room where employees can gather for lunch and social interaction. Centrally placed fire stairs ensure compliance with the 25-meter escape route requirement, providing both safety and clarity in circulation.

Fig. 112. 1:100 section through the 1. floor showing the consultation room with window retreat and view to Stig's Park.

The atrium, encircled by a sculptural staircase, forms the heart of the building — a central space where community can arise. As women move upward, they are introduced to different facilities through framed views and open connections. The shape of the stairs and surrounding rooms gently guide them toward spaces for activity, retreat, or reflection

Common Zone

Fig. 113: Fig. 113: View into the central heart of the community within the Common Zone, highlighting spatial safety and opportunities for retreats and social connection

Common Zone: 2. floor 1:200

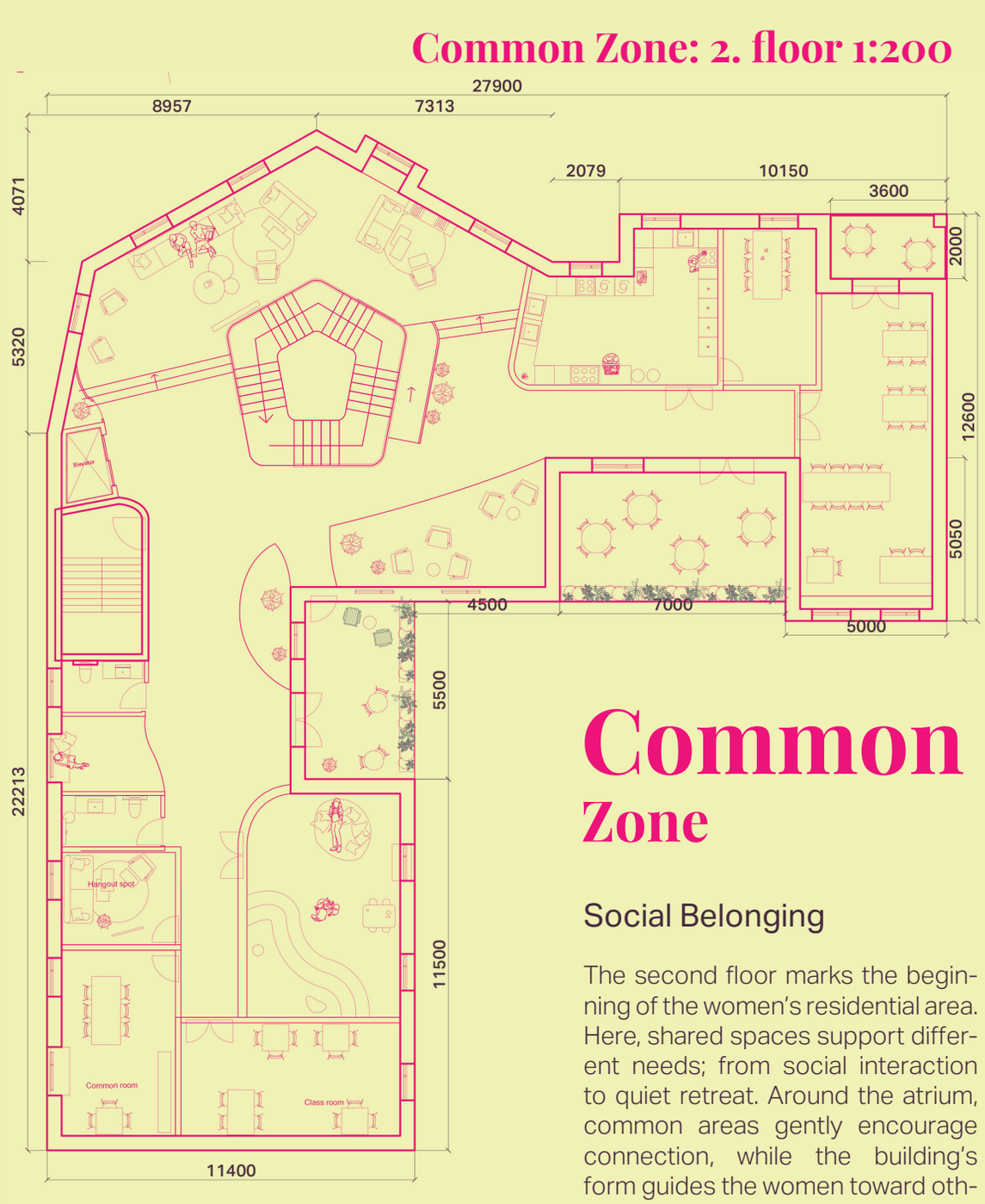


Fig. 115. Floorplan
2. Floor

Common Zone

Social Belonging

The second floor marks the beginning of the women's residential area. Here, shared spaces support different needs; from social interaction to quiet retreat. Around the atrium, common areas gently encourage connection, while the building's form guides the women toward other functions. Throughout, views and privacy are carefully balanced to ensure safety and comfort for both women and children.

The space feels calm and safe. I see clear exits, glimpses of greenery, quiet spots to retreat, and women chatting gently as I walk down the hall. It feels safe.

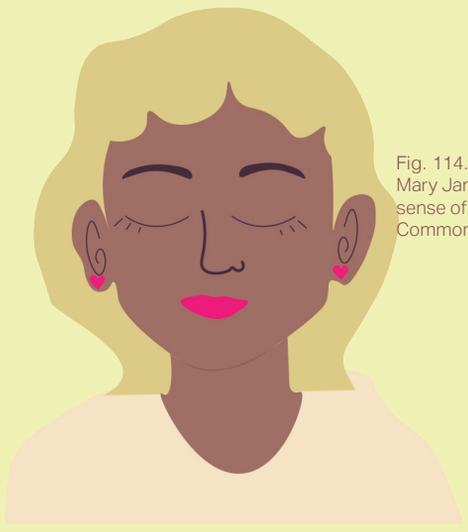


Fig. 114. Storytelling: Mary Jane's journey and sense of safety in the Common Zone

Fig. 116. Early sketch illustrating safe movement into the Common Zone

Safe movement

Throughout the building, clear sightlines and easily identifiable exits are essential to creating a sense of safety. The architecture is designed to guide movement in a calm and intuitive way, allowing the women to navigate the space with ease and confidence.

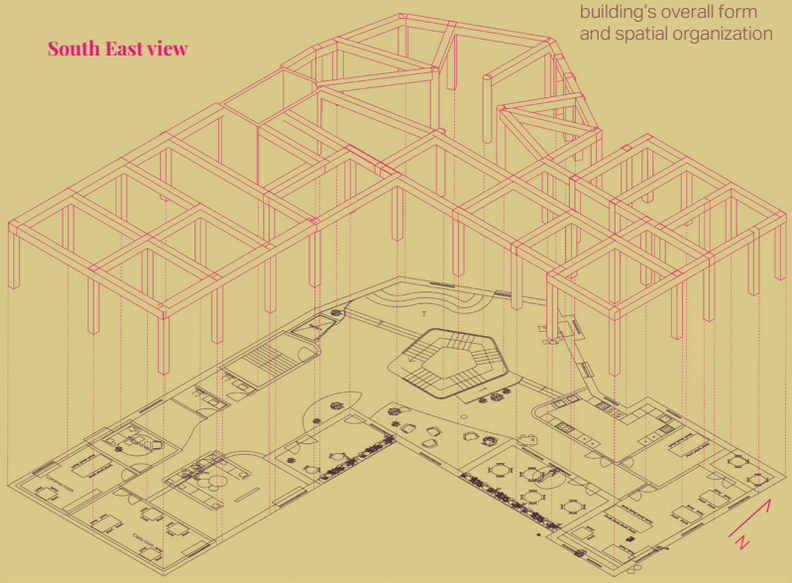
Construction

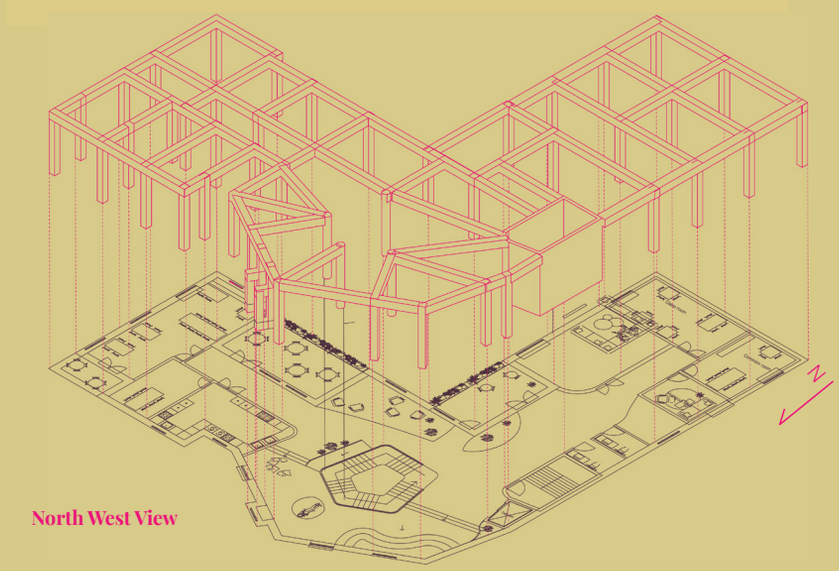
The structural principle of the building is based on a wooden grid system, composed of 400 x 400 mm columns spaced approximately 4 meters apart and connected by 400 x 400 mm beams. The timber structure serves as the primary load-bearing system.

To support emotional safety through clear sightlines, columns are strategically integrated into walls, minimizing visual obstructions. Where larger spans are required, steel beams are introduced to maintain openness and visibility. Fire stairs with a concrete core provide additional structural support.

Fig. 117. Common Zone: Overview of the structural principle guiding the building's overall form and spatial organization

South East view

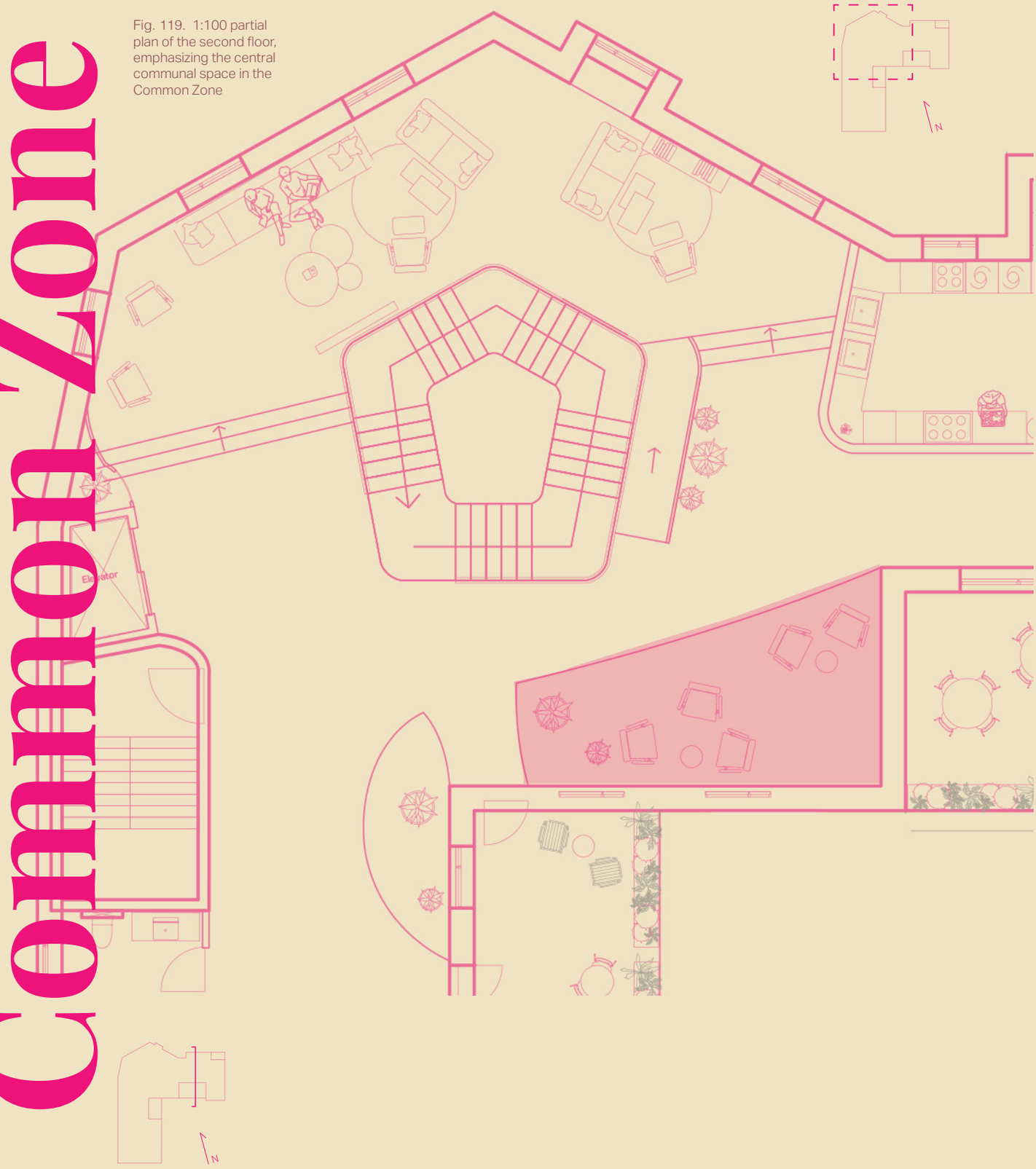




North West View

Common Zone

Fig. 119. 1:100 partial plan of the second floor, emphasizing the central communal space in the Common Zone



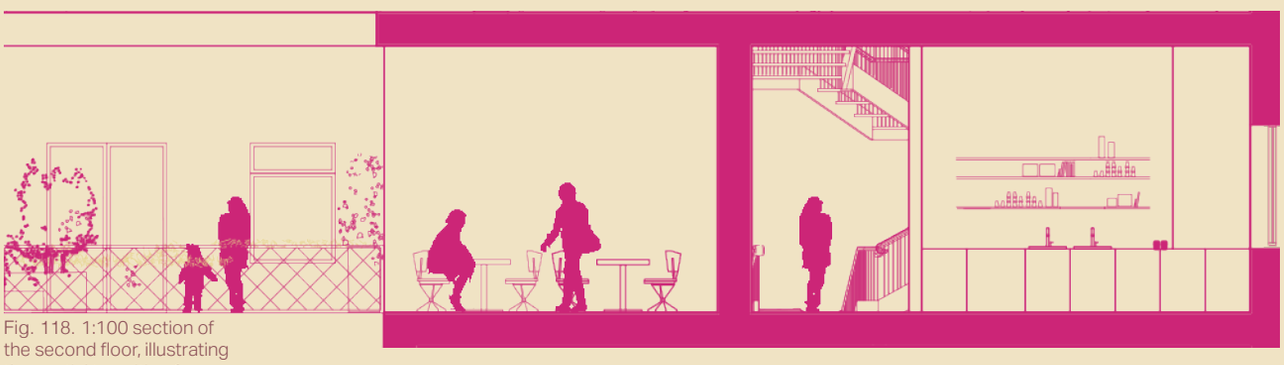


Fig. 118. 1:100 section of the second floor, illustrating the spatial transition from inside to the balcony retreat

Fig. 120. View into the central heart space, where softly defined retreats offer a sense of privacy and calm, with smooth transitions leading out to the balcony

By offering good lighting conditions, comfortable seating, greenery, and art, the design creates a welcoming and calming community room where women can seek connection and build relationships.

In the dining area, particular attention has been given to creating a calm and comfortable atmosphere. The reverberation time has been carefully calculated and optimized to support social interaction without overstimulation. With the use of acoustic ceiling panels, the reverberation time has been reduced to 0.54 seconds, below the required standard, ensuring a pleasant and supportive acoustic environment.

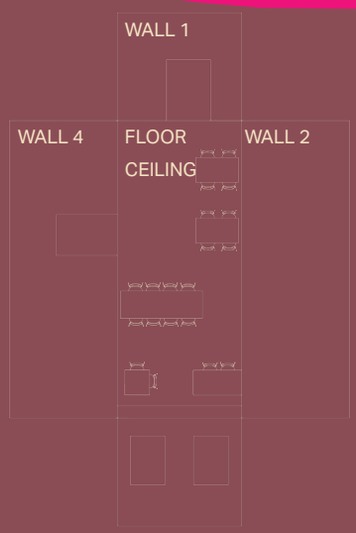
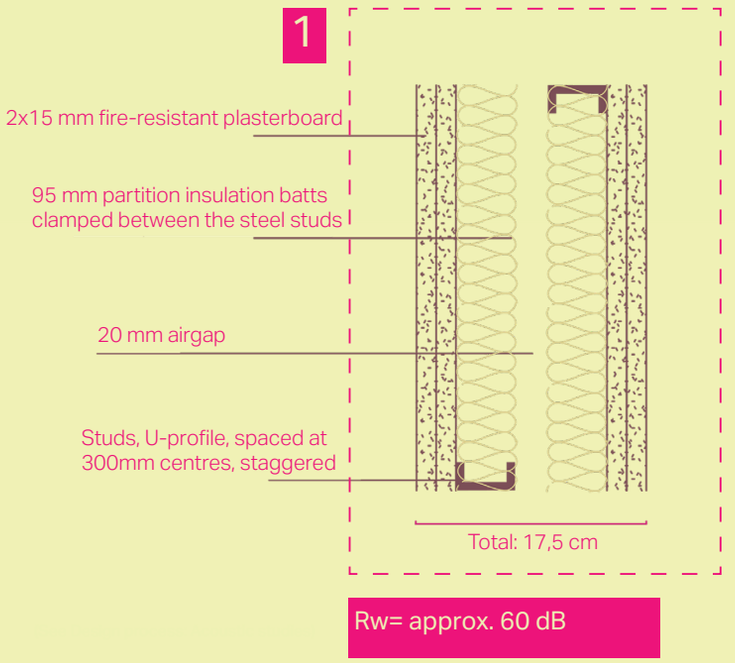


Fig.121. Wall Surfaces Dining Area

Surface	Material	Surface Area m^2 (S)	α	(A=α × S)	Total: A= ∑(α·S)
Wall 1	Plasterboard	11,6 m^2	0,06	0,7	0,7 + 2 + 0,67 + 1,93 + 3,32 + 34,15 = 42,77 m^2 Sabin
Wall 2	Plasterboard	34,8 m^2	0,06	2	
Wall 3	Plasterboard	11,1 m^2	0,06	0,67	
Wall 4	Plasterboard	32,2 m^2	0,06	1,93	
Floor	Wood	40,18 m^2	0,083	3,32	$T = \frac{0{,}161 * 142{,}6\ m^3}{42{,}77\ m^2\ Sabin} = 0{,}54\ s$
Ceiling	Troldtekt	40,18 m^2	0,85	34,15	

Fig.122. Reverberation time: Dining Area(Appendix 6)

Fig. 123. Wall insulation
beween bedrooms 1:5



Emotional Safety

To ensure emotional safety, the internal walls have been carefully designed and optimized. The total wall thickness is 175 mm, consisting of two individual wall constructions separated by an air gap. This separation prevents sound waves from traveling between rooms. The solution achieves a Weighted Sound Reduction Index (Rw) of 60 dB, contributing to a quiet and supportive environment where the women can feel safe and undisturbed.

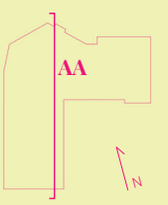


Fig. 124. Section AA

Section AA: 1:200

Rest Zone: 3. floor 1:200

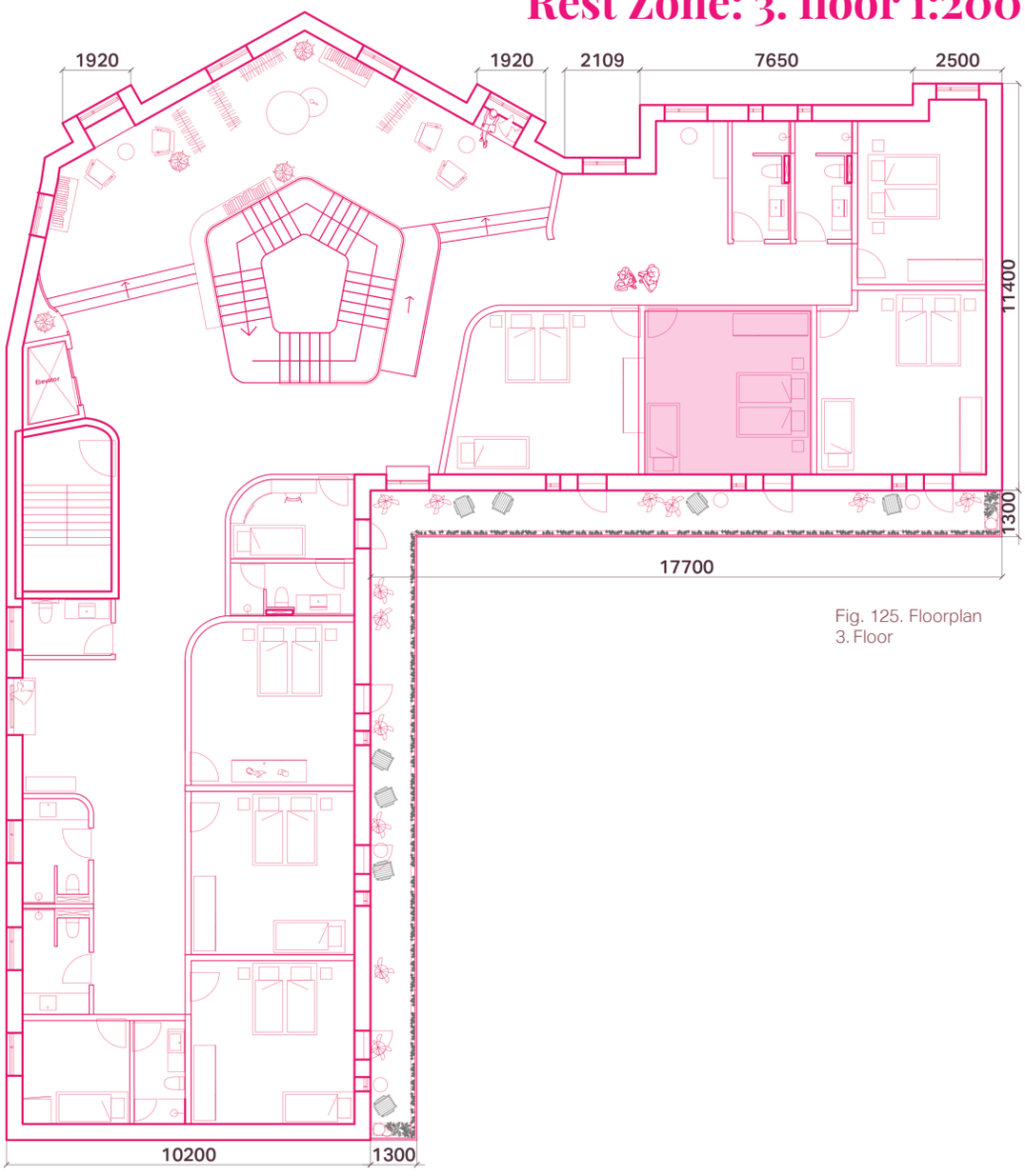


Fig. 125. Floorplan
3. Floor

Rest Zone

Each woman is provided with a private bedroom with enough space for herself and any children. Every room has access to a south-facing balcony, allowing morning sunlight to support the natural circadian rhythm and offer a quiet moment of calm.

Rest Zone

At the heart of the fourth floor, a green nest is created, along with a view to Stigsborg Park the women can surround herself in planting and greenery. Here, women who may not feel able to access the outdoor areas can still find calm in nature while remaining protected within the crisis center. By pulling back the bedroom façades, balconies are formed, offering space for informal encounters and easy access to greenery, supporting women who may feel powerless with a gentle invitation to step outside.

Rest Zone: 4. floor 1:200

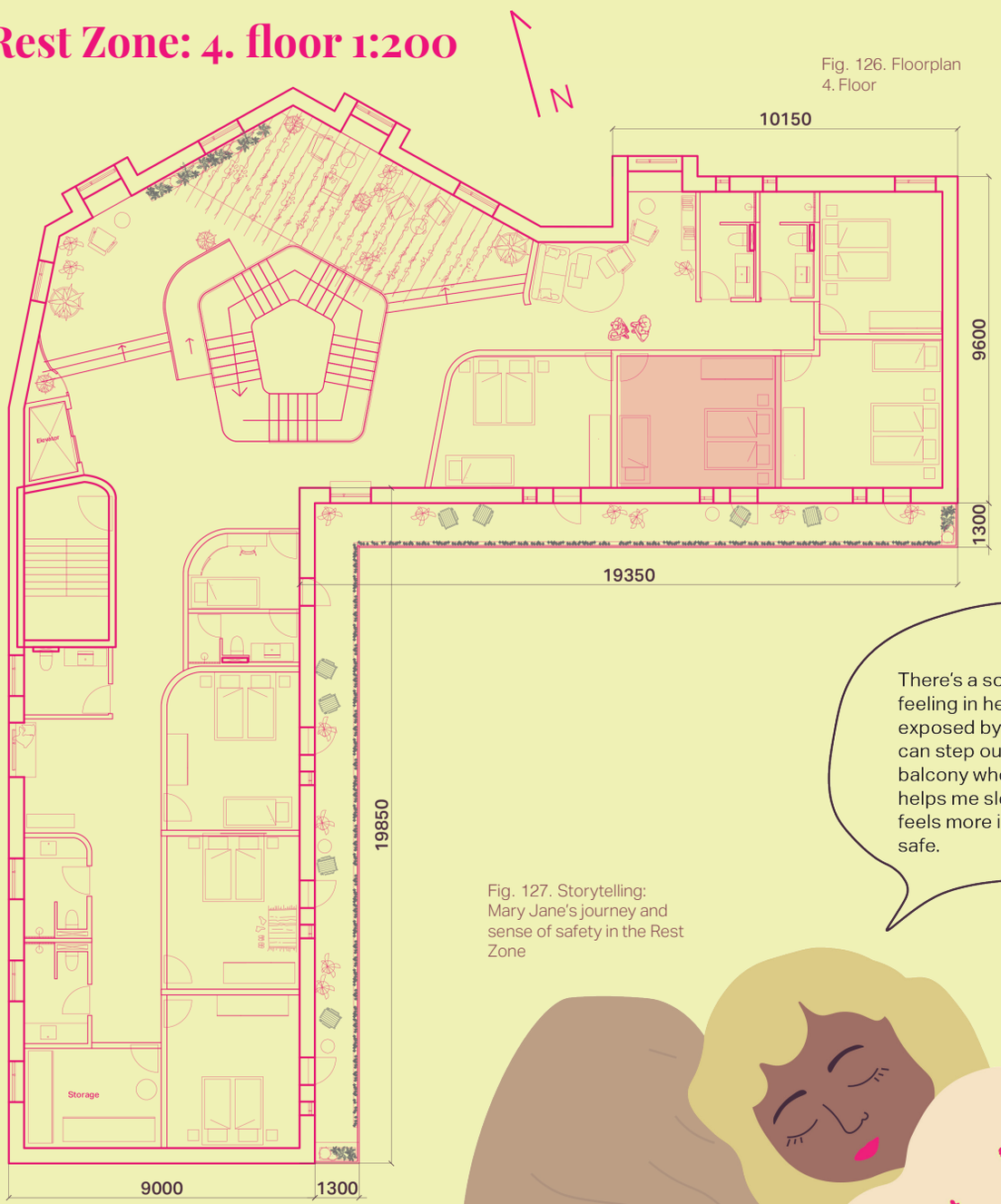


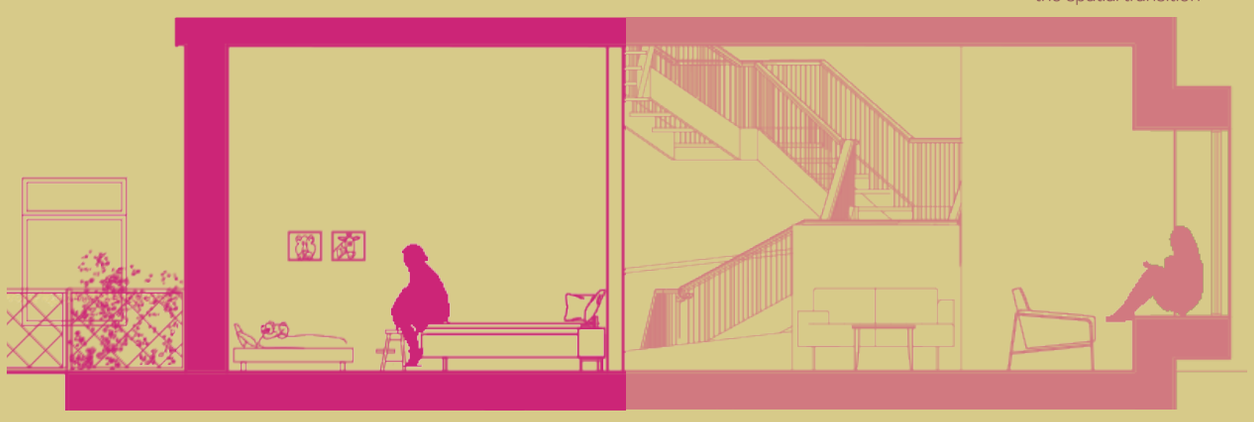
Fig. 126. Floorplan
4. Floor

Fig. 127. Storytelling:
Mary Jane's journey and sense of safety in the Rest Zone

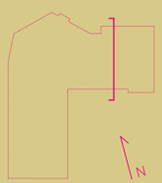
South-Southwest Facade 1:200

Fig. 128. Facade drawing South-South-west 1:200. (Randers Tegl, N.d.), (Meye, N.d.), (Nonscandinavia, N.d.)

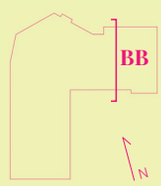
Fig. 129. 1:100 section of the Rest zone, illustrating the spatial transition



Bedroom and Balcony

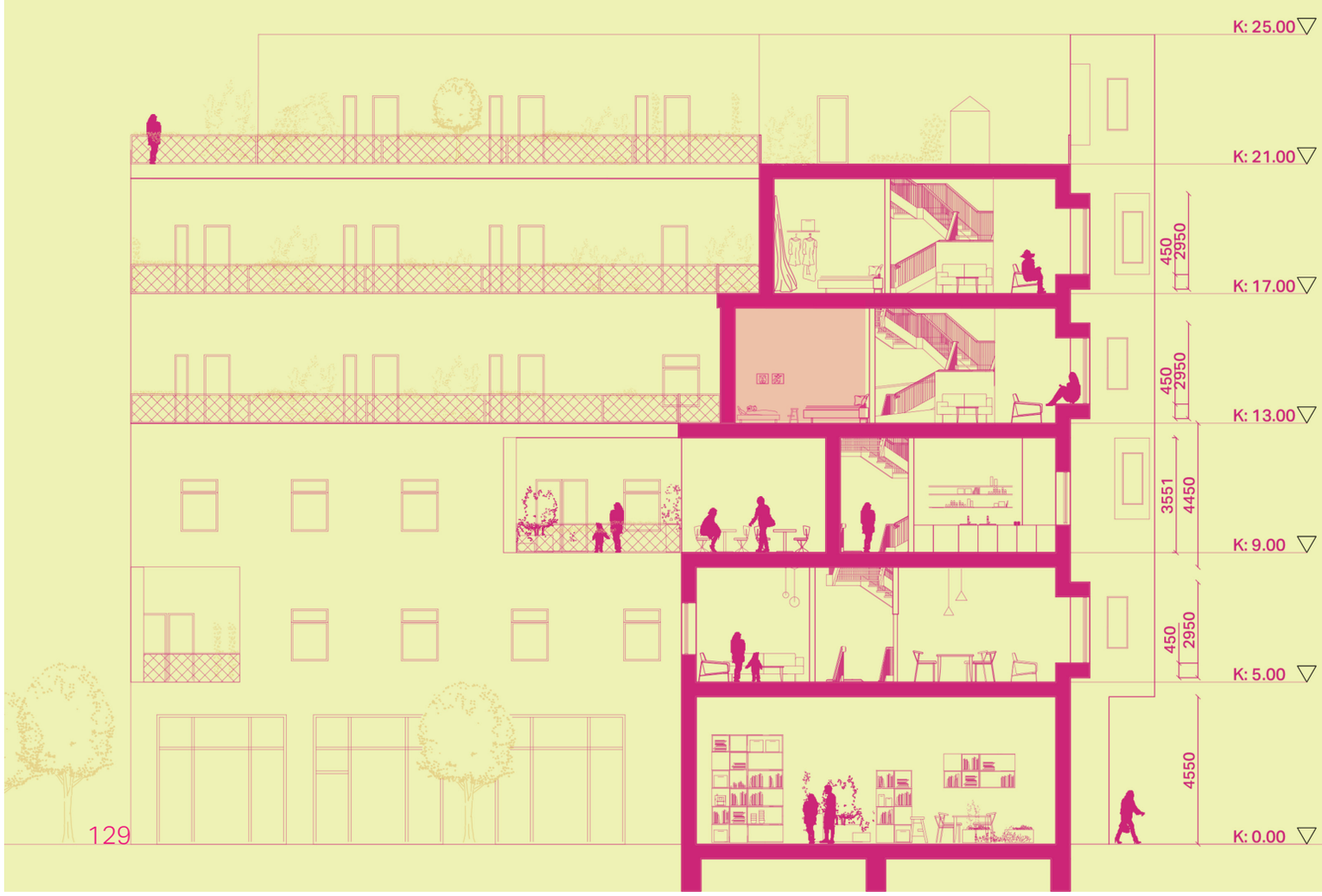


Daylight



Section BB: 1:200

Fig. 130. Section BB



Simulations

Fig. 132. Daylight results bedrooms

ID	Avg. Lux	sDa	uDi_a	uDi_s	uDi_f	uDi_e
Room 1	794	78%	56%	21%	21%	3%
Room 2	823	85%	57%	20%	20%	3%
Room 3	862	91%	59%	19%	20%	3%
Room 4	771	60%	51%	22%	25%	2%
Room 5	825	68%	52%	21%	24%	3%
Room 6	692	46%	49%	24%	25%	2%
Room 7	88	3%	4%	29%	68%	0%

Daylight simulations were conducted on the final window layouts for the various bedrooms, located in different parts of the crisis center. The simulations were evaluated using Spatial Daylight Autonomy (sDA) and Useful Daylight Illuminance (UDI) as performance metrics.

The window configurations were adapted to the room orientations: bedrooms facing southeast required more access to indirect sunlight, while southwest-facing rooms needed solar shading to prevent glare and overheating. As a result, rooms 1–3 were designed with one additional narrow window to supplement the daylight.

The sDA results indicate that all rooms, except room 7, achieve good daylight conditions, with values above 50%. This means they receive more than 300 lux for over 50% of the occupied hours, aligning with recommended daylight standards.

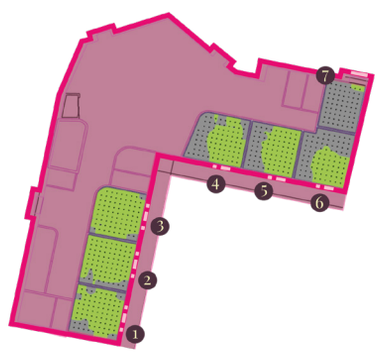
The UDI results show that rooms 1–6 maintain useful daylight levels (300–3000 lux) for 49–59% of the occupied hours. However, artificial lighting is still required between 19% of the time (room 3) and up to 29% (room 7) to supplement daylight.

It is evident that room 7 performs poorly in both daylight parameters and does not meet the requirements. The room's orientation has a significant negative impact, and while improvements could be made—such as adding a window in the gable wall or increasing the size of the existing window—these changes would compromise privacy, which is not desirable in this context.

Fig. 131. Daylight results bedrooms

Illuminance

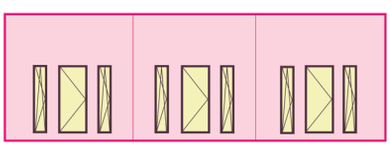
sDa



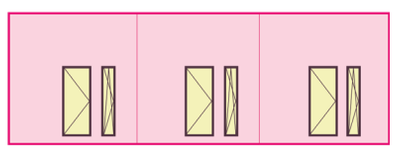
uDi

Sizing

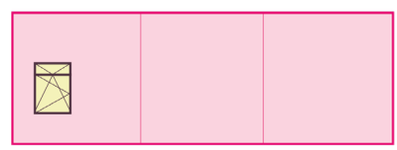
Room 1-3 : 2,7 m²



Room 4-6 2 m²



Room 7 : 1,5 m²



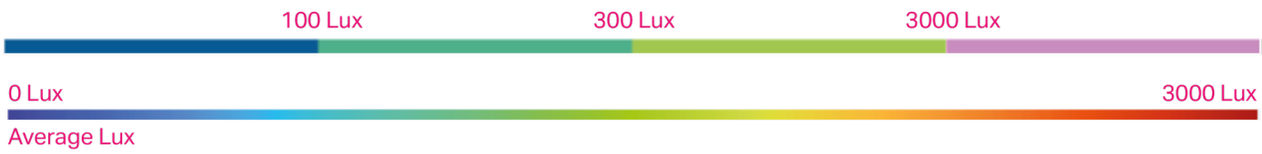


Fig. 134. Outdoor space in the rebuild zone

Activity Zone: 5. floor 1:200

Fig. 135. Floorplan 1:200
5.Floor

Activity Zone

Empowerment

On the fifth floor, women are encouraged to engage in different activities that support a sense of empowerment. A dedicated activity room offers facilities for spinning and yoga, while a calm outdoor retreat, set apart from the children's playground, provides a quiet space for reflection and restoration. In the opposite corner, a larger outdoor area includes a playground, an orangery, and various seating spots, all with views overlooking the expansive green space of Stigsborg Park and the surrounding area.

I like having a place where I can rebuild myself. It makes me feel empowered—a space to grow and explore what interests me.

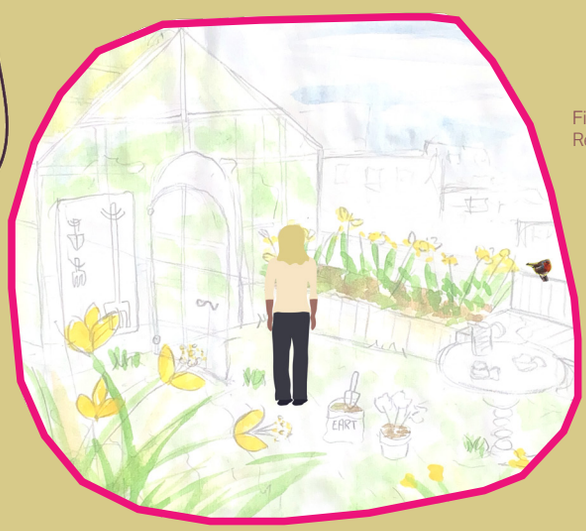
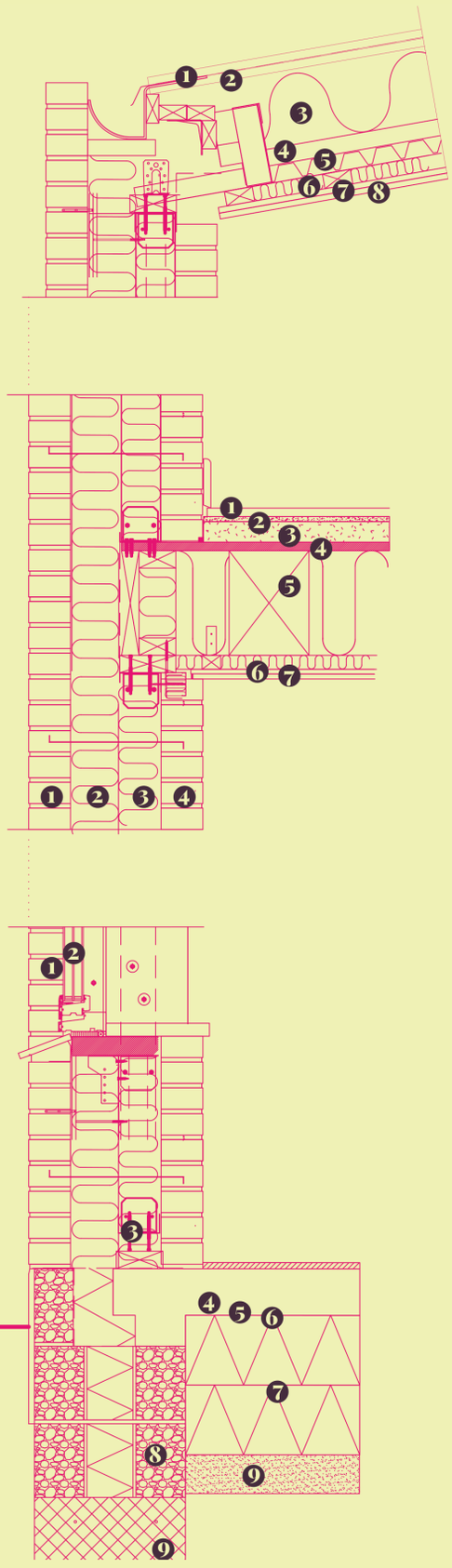


Fig. 136. Storytelling:
Rebuild Zone



Roof construction

1: Sedum mat
2: Roofing Felt
3: Rockwool Hardrock Energy insulation
4: Vapor barrier
5: Steel decking
6: Insulation and structural timber
7: Plasterboard
8: Acoustic panels

Timber floor deck

1: Floationg floor
2: sandlayer
3: Wood-based impact sound insulation board
4: plywood
5: Timber joists with insulation between
6: Plasterboard
7: Acoustic ceiling cladding

External wall

1: Brick
3: Isulation
4: Wooden column
4: Brick

Timber floor deck

1: Brick wall
2: Window
3: Support for wooden column
4: Concrete slab
5: Radon Barrier
6: Thermal Barrier
7: Isulation to ground
8: Leca
9: Foundation

Fig. 137. Section of construction's layers 1:20

Construction

The building is constructed with a double brick external wall, supported by a load-bearing timber structure to minimize the use of concrete.

The roof slopes at a 15% incline and meets a concealed gutter. A sedum mat is laid on top, contributing both technically and aesthetically to managing rainwater and integrating the building into the natural surroundings.

Fig. 138. Outdoor space in the rebuild zone

Epilogue

05.

Spaces for Recovery

A Concluding Perspective

This thesis set out to explore how architectural strategies can be developed to support women affected by domestic violence, with particular focus on symptoms such as heightened alertness, low self-esteem and sleep difficulties. The aim was to design spaces that contribute to healing and emotional recovery, specifically within women's crisis centers.

A set of nine strategies was developed into a design guideline handbook, grounded in empirical research, including workshops, interviews, and observational studies with women who have experienced violence. These were supported by evidence-based and theoretical research. The process emphasized user-centered thinking, placing the women's needs, emotions, and behaviors at the core of the design.

One of the central strategies, emotional safety, emerged as essential. The research revealed how critical it is to design predictable and calming movement through the building — reducing anxiety and supporting a sense of control. Design methods such as atmospheric sketching, persona-based storytelling, and functional diagramming were used to translate emotional insights into spatial experience. A central staircase was introduced as a vertical connector and symbolic heart of the building, accompanied by voids and retreat spaces in each floor, representing different stages of a healing journey. Soft and warm materials, curved transitions, and recreational breathing spaces were all carefully integrated to support emotional regulation and autonomy.

The strategy social belonging also played a key role. Many women emphasized the importance of feeling seen, heard, and connected. This was addressed through shared spaces for informal gathering and collaborative activities, creating opportunities for safe social engagement.

Stigsborg Brygge served as a testing ground for applying and refining these strategies through methods such as physical and digital modeling, narrative thinking, and spatial planning. The process allowed for methods to evolve from abstract insights into applicable design tools.

Ultimately, this thesis highlights the importance of working closely with users and recognizing the emotional dimension of architecture. It shows how trauma-informed design, rooted in empathy and evidence, can empower women and support their recovery — giving voice to their needs through spatial language. The resulting design guideline offers a practical and human-centered approach for architects seeking to create safe, restorative environments for women impacted by violence.

Designing with Empathy

A Reflective Perspective

At the beginning of this thesis, we set out with a deep interest in the typology of women's crisis centers and the human experience within them. Our goal was to work closely with women affected by domestic violence to understand their behaviors, needs, and emotions — and to translate this into architecture that supports healing and safety. We were aware of the sensitivity and vulnerability of the user group and approached the research process with great care.

Gaining access to qualitative data was challenging. After reaching out to several crisis centers, we were fortunate to establish a collaboration with Aalborg Krisecenter. We engaged with women who had previously lived there (approximately one year ago), as current residents would be in too vulnerable a state for participation. We also expanded our reach through digital platforms and conducted interviews with two additional women. In total, we engaged with five women and four staff members. While this offered valuable insight, it's possible that additional or more diverse input — from different types of crisis centers or current residents — could have enriched our findings further. Most of the user input was gathered during the discovery and empathy phases and we didn't include Women's feedback in the design process - Which potentially created a gap between user feedback and the final spatial solutions.

The primary goal of the thesis was to create a design guideline — a practical design tool for practitioners grounded in research and user experience. While we conducted site testing at Stigsborg Brygge to translate strategies into design methods, our ambitions for detailed exploration at smaller scales, such as materiality and the architectural expression of voids, proved too broad for the scope of the project.

We found particular value in the design of central communal areas (supporting the strategy of social belonging) and retreat spaces (supporting emotional safety). The central staircase served as a connective heart across floors, but its large scale and multiple voids raised questions about space efficiency and potential unintended effects — could too much open space actually hinder social interaction? Additionally, while vertical connection continuity supported emotional safety, it also risked compromising privacy in areas between the treatment zone and the communal zone.

We also prioritized daylight in bedroom areas to support circadian rhythms and mood regulation, aligning with strategies for restoration and sleep. However, more extensive daylight studies in shared spaces would have strengthened the project's focus in supporting restorative environments.

Throughout the process, we've learned to listen — not only to words, but to spatial needs, behaviors and emotions. This thesis taught us that architecture can be a tool for care, empathy, and empowerment. It has deepened our understanding of socially sustainable design and shaped how we think about working with users, not just for them.

Bibliography

Akustiske beregninger et eksempel | BYG-ERFA (no date). Available at: https://byg-erfa.dk/bonus-side_99-010302 [Accessed: 14 May 2025].

Akustik Guide, (no date). [online] Available at: https://www.decodemp.com/akustik-guide/ [Accessed: 14 May 2025].

BiteSize Learning, 2025. Double Diamond Design Process Explained. [online] Available at: https://www.bitesizelearning.co.uk/resources/double-diamond-design-process-explained [Accessed 12 March 2025].

Blume, C., Garbazza, C., Spitschan, M., 2019. Effects of light on human circadian rhythms, sleep and mood. Somnologie 23, 147–156. [online] Available at: https://doi.org/10.1007/s11818-019-00215-x [Accessed: 20 April 2025]

BR18 (2025). Available at: https://www.bygningsreglementet.dk/tekniske-bestemmelser/17/krav/ [Accessed: 25 April 2025].

BR18 (2025). Available at: https://www.bygningsreglementet.dk/tekniske-bestemmelser/18/krav/ [Accessed: 20 April 2025].

Burgess, H.J., Rizvydeen, M., Huizenga, B., Prasad, M., Bahl, S., Duval, E.R., Kim, H.M., Phan, K.L., Liberzon, I., Abelson, J., Klumpp, H., Horwitz, A., Mooney, A., Raglan, G.B., Zalta, A.K., 2024. A 4-week morning light treatment reduces amygdala reactivity and clinical symptoms in adults with traumatic stress. Psychiatry Research 342, 116209. [online] Available at: https://doi.org/10.1016/j.psychres.2024.116209 [Accessed: 20 April 2025]

Bygningers lydisolering (1997). Available at [online] Available at:: https://edu.anvisninger.dk/anvisninger/p-anv172-bygningers-lydisolering-nyere-bygninger [Accessed: 13 May 2025].

Bødker, S., Dindler, C., Iversen, O.S., Smith, R.C., 2021. Participatory Design. Springer, Cham, SWITZERLAND.

Center for Care Innovations (2024). Infographic: 6 Guiding Principles to a Trauma-Informed Approach. [online] Available at: https://careinnovations.my.site.com/community/s/article/Infographic-6-Guiding-Principles-To-A-Trauma-Informed-Approach [Accessed: 7 May 2025].

Danmarks Statistik. (2023). Kvindekrisecentre. Available at: https://www.dst.dk/da/Statistik/emner/sociale-forhold/social-stoette/kvindekrisecentre [Accessed 4 Feb. 2025]

Danner (n.d.). Viden om vold. Available at: https://danner.dk/viden-om-vold/ [Accessed 20 Feb. 2025].

Dansk Standard (2019). DS/EN 16798-1:2019. Bygningers energimæssige ydeevne – Ventilation i bygninger – Del 1: Indeklima-parametre til design og vurdering af bygningers energiydeevne med hensyn til luftkvalitet, termisk miljø, belysning og akustik. Charlottenlund: Dansk Standard.

Dokkedahl, S., (2024). Kvinder på kvindekrisecenter. Ph.D. thesis. Syddansk Universitet, Danmark. [online] Available at: https://danner.dk/wp-content/uploads/2024/07/Kvinder-paa-kvindekrisecenter_SDU_sarah_dokkedahl.pdf [Accessed 13 Feb. 2025].

Feminisme og kvindebevægelsens historie, n.d. . Faktalink. [online] Available at: https://faktalink.dk/emner/feminisme-og-kvindebevaegelsens-historie [Accessed 3 May. 2025].

FibroTech Proff-Signatur, Akustikpanel, lys eg, 22x605x3000 mm - Køb Akustikpaneler online (no date) https://www.silvan.dk. [online] Available at: https://www.silvan.dk/produkt/fibrotech-proff-signatur-akustikpanel-lys-eg

-22x605x3000-mm-8400-2122779 [Accessed: 14 May 2025].

Forenede Care. (2024). Tårnbyhus LGBT+ Krisecenter. [online] Available at: https://www.forenedecare.dk/social/tarnbyhus/ [Accessed 5 Mar. 2025].

Fynbo, L., Berger, N.P. and Frøslev-Thomsen, J. (2022) Viden om traumebevidste tilgange i indsatser til socialt udsatte voksne: en vidensafdækning og skitsering af en prototype. VIVE.

Google Maps. (2025). Aftenvej 25, Aalborg. [online] Available at: https://www.google.dk/maps/place/Aftenvej+25,+Aalborg/ [Accessed 4 March 2025]

Google Maps. (2025). Kong Georgs Vej 16–26, 9000 Aalborg. [online] Available at: https://www.google.dk/maps/place/Kong+Georgs+Vej+16-26,+9000+Aalborg [Accessed 4 March 2025]

Google Maps. (2025). Lars Dyrskøts Vej 21, 9400 Nørresundby. [online] Available at: https://www.google.dk/maps/place/Lars+Dyrsk%C3%B8ts+Vej+21,+9400+N%C3%B8rresundby/ [Accessed 4 March 2025].

Google Maps. (2025). Limfjordsvej 25, 9400 Nørresundby. [online] Available at: https://www.google.dk/maps/place/Limfjordsvej+25,+9400+N%C3%B8rresundby/ [Accessed 4 March 2025].

Kern, L., 2021. Feminist city: claiming space in a man-made world. Verso, London New York.

Kronstrand, K., 2023. Èt krisecenter er fyldt, et andet er ikke - men begge er enige om én ting [online]. www.nordjyske.dk. Available at: https://nordjyske.dk/nyheder/hjoerring/flere-kvinder-bruger-krisecentre/4608912 [Accessed 3 May. 2025].

Landsorganisationen af Kvindekrisecentre (n.d.). LOKK. [online] LOKK. Available at: https://lokk.dk/ [Accessed 20 Feb. 2025].

Landsorganisationen af Kvindekrisecentre (n.d.). Viden om vold. [online] LOKK. Available at: https://www.lokk.dk/viden-om-vold/ [Accessed 20 Feb. 2025].

Landsorganisationen af Kvindekrisecentre (2016). Årsstatistik 2016: Kvinder og børn på krisecenter. [online] LOKK. Available at: https://www.lokk.dk/viden-om-vold/arsstatistikker/ [Accessed 20 Feb. 2025].

Landsorganisationen af Kvindekrisecentre (2019). Årsstatistik 2019: Kvinder og børn på krisecenter. [online] LOKK. Available at: https://www.lokk.dk/viden-om-vold/arsstatistikker/ [Accessed 20 Feb. 2025].

Landsorganisation af Kvindekrisecentre (LOKK). (2012). 25 years of fighting for women and children exposed to violence. Available at: https://www.lokk.dk/media/4pid3c5g/25-%C3%A5r-i-kamp-for-voldsudsatte-kvinder-og-b%C3%B8rn.pdf [Accessed 5 March 2025].

Light Bureau. (n.d.). Maggie's Centre. [online] Available at: https://lightbureau.com/projects/maggies-centre/ [Accessed: 8 May 2025].

Liu, C.-R., Liou, Y.M., Jou, J.-H., 2022. Ambient bright lighting in the morning improves sleep disturbances of older adults with dementia. Sleep Medicine 89, 1–9. Available at: https://doi.org/10.1016/j.sleep.2021.10.011 [Accessed: 29 April 2025]

LOKK - LOKK (no date). Available at: https://lokk.dk/ [Accessed: 07 Februar 2025].

Lydisolering i bygninger (2013). Available at: https://edu.anvisninger.dk/anvisninger/p-anv245-lydisolering-i-bygninger-teori-og-vurdering [Accessed: 29 April 2025].

Maggie's. (n.d.). Architecture and Design – Yorkshire. [online] Available at: https://www.maggies.org/about-us/how-maggies-works/our-buildings/yorkshire/ [Accessed 6 May 2025]

Marcus, C.C., Sachs, N.A., 2013. Therapeutic Landscapes: An Evidence-Based Approach to Designing Healing Gardens and Restorative Outdoor Spaces. John Wiley & Sons, Incorporated, Newark, UNITED STATES.

Meye. (n.d.). Home. [online] Available at: https://meye.dk/ [Accessed 21 May 2025].

Nonscandinavia. (n.d.). Silhouettes. [online] Available at: https://www.nonscandinavia.com/silhouettes [Accessed 21 May 2025].

Randers Tegl. (n.d.). Home. [online] Available at: https://www.randerstegl.dk/ [Accessed 21 May 2025].

Pallasmaa, J., 2014. Space, place and atmosphere. Emotion and peripherical perception in architectural experience. Lebenswelt. Aesthetics and philosophy of experience. Available at: https://doi.org/10.13130/2240-9599/4202 [Accessed: 30 April 2025].

SAMHSA's Concept of Trauma and Guidance for a Trauma-Informed Approach | SAMHSA Publications and Digital Products (2014). Available at: https://library.samhsa.gov/product/samhsas-concept-trauma-and-guidance-trauma-informed-approach/sma14-4884 [Accessed: 5 March 2025].

Staff, C.B.H. (2023). Domestic Violence PTSD: Causes, Symptoms, and Treatment. [online] Compassion Behavioral Health. Available at: https://compassionbehavioralhealth.com/domestic-violence-ptsd/ [Accessed: 5 March 2025].

Trauma-Informed Care | Texas Health and Human Services (no date). Available at: https://www.hhs.texas.gov/providers/behavioral-health-services-providers/behavioral-health-provider-resources/trauma-informed-care [Accessed: 5 March 2025].

Troldtekt® akustik Plus 25 (no date). Available at: https://www.troldtekt.dk/troldtekt-plus-fleece/ [Accessed: 14 May 2025].

Ulrich, R.S., 1984. View Through a Window May Influence Recovery from Surgery. Science 224, 420–421. Available at: https://doi.org/10.1126/science.6143402 [Accessed:29 April 2025].

United Nations (n.d.). What Is Domestic Abuse? [online] United Nations. Available at: https://www.un.org/en/coronavirus/what-is-domestic-abuse. [Accessed 19 Feb. 2025].

Workshopper, 2025. Guide to Design Thinking. [online] Available at: https://www.workshopper.com/post/guide-to-design-thinking#toc-what-is-design-thinking- [Accessed 12 March 2025].

What Is Design Thinking? An Overview (2020). Available at: https://www.youtube.com/watch?v=gHGN6hs-2gZY (Accessed: 28 May 2025).

Zumthor, P., 2006. Atmospheres: Architectural Environments - Surrounding Objects. Basel: Birkhäuser.

Årsstatistikker - LOKK (2017). Available at: https://www.lokk.dk/viden-om-vold/arsstatistikker/ [Accessed: 07 Feb. 2025].

Figure List

Figures developed from the authors' own ideas, drawings, and photographs are not included in the list below. Only figures created by the authors that are based on or adapted from external sources are referenced.

Holding Space for

Her.

A Handbook

Design *Guideline*

Design Strategies for Women's Crisis Center

Designing healing spaces for Victims of Violence

01

Reader's *Guide*

What you will find in this Design Guideline

This design guideline presents concrete strategies and methods for creating healing environments for women staying in women's crisis centers, aimed at supporting the recovery of women affected by violence.

The strategies are grounded in empirical research, including user-centered studies with women who have been in violent relationships, as well as theoretical and evidence-based knowledge on the topic.

A fictional site proposal at Stigsborg Brygge, Nørresundby, served to test and refine the strategies into practical methods. These are illustrated throughout the guideline with examples from that project.

Who is it for?

This Design Guideline is for designers, architects and stakeholders involved in developing women's crisis centers or others interested in the topic. It offers a clear understanding of designing for women's needs. The focus of this guideline is on key themes such as safety, empowerment, anonymity, sensory and restorative spaces, daylight, acoustic comfort and trauma-informed care.

Visual Markers

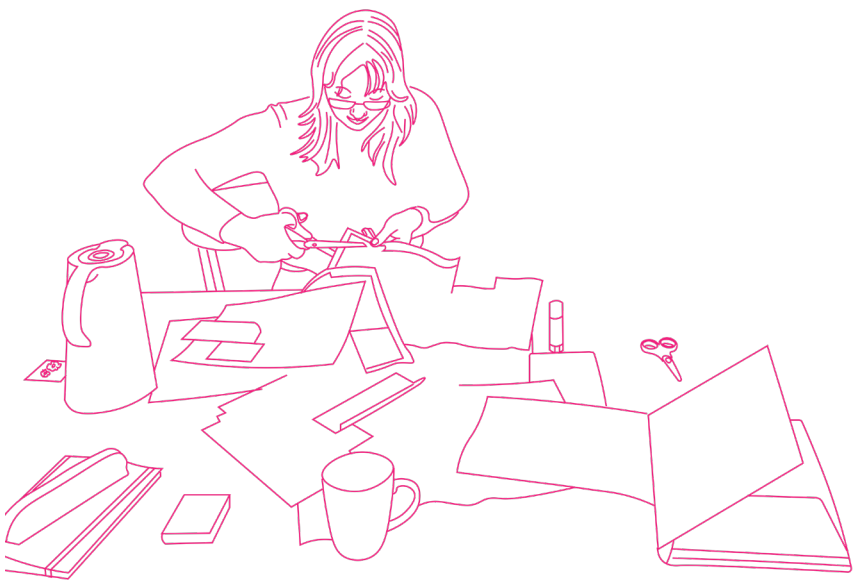
Each capture begins with an overarching strategy, indicated by a yellow box, which outlines the primary goal. Sub-strategies, shown in smaller yellow boxes, detail specific ways in which that goal is addressed. Design methods, highlighted in pink boxes, represent the spatial interpretation/ solutions to the strategies. Colored hearts are used in the drawings to illustrate examples of the strategies used.

Overarching Strategy

Sub- Strategy

Design- Method

Visual material and references are drawn from the master's thesis: Her Choice (Poulsen & Ungstrup, 2025), listed in the bibliography. All of the figures is own production.
Note that the figures shown are not in scale.



Content

04 05 06

Physical Safety Personal Belonging Social Belonging

10

Space for children

Strategy:

Choosing The Site

Why?

The location of a crisis center is crucial for safety, comfort, and access to support. A well-chosen site should offer nearby facilities, a sense of safety through visibility, and a restorative environment to support the women's recovery.

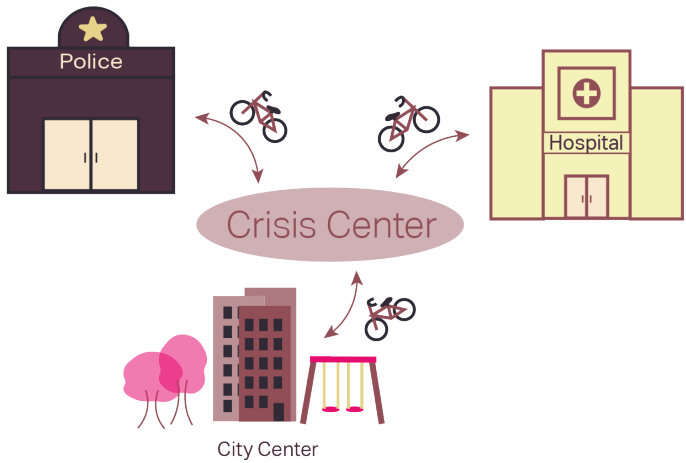
Sub-
Strategies:

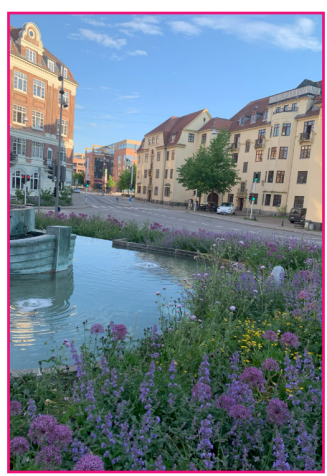
- Central and Accessible Location
- Visual or physical access to nature
- Safe and Passive Surveillance

Design-
Methods:

- Select sites near hospitals, police stations, and public services
- Ensure good access to public transport
- Prioritize sites with views of greenery, water or natural elements
- Choose sites near public life (cafés, schools, libraries etc.) for natural surveillance
- Avoid isolated areas

02





Strategy:

Emotional Safety

Why?

Designing environments that support emotional safety allows women to let their guard down, reduce anxiety and hypervigilance, and feel secure enough to begin processing trauma. This sense of safety is essential for healing and recovery.

Sub-
Strategies:

- Predictable and safe movement through the building
- Calming environments for emotional comfort
- Accessible withdrawal spaces for retreat and emotional support

Design-
Methods:

- Clear, easily readable floorplans with simple circulation and intuitive navigation
- Safe and calm transitions between spaces
- Soft and warm lighting, colors and textures
- Calming views toward nature or private-facing windows to reduce exposure to public surroundings
- Noise insulation between bedrooms/noisy/private areas (Rw of 60 dB)
- Sound-absorbing materials like Troldtekt or panels to keep reverberation time under 0.6 seconds
- Small retreat like window nooks, balconies, lowered ceiling and comfortable seating options

loor

03

♥ Retreats for emotional comfort

♥ Curvy Walls - Safe Movement

Intuitative navigation and simple circulation

♥ Pushed back facades (bedrooms) reducing exposure to public

Tilted windows reducing exposure to public

Soft and warm lightning, colors and textures

Strategy:

Physical Safety

Why?

Physical safety is especially important to ensure that perpetrators cannot enter the crisis center. It's about creating physical conditions that help women feel protected from external threats, so they can begin to feel safe and focus on healing.

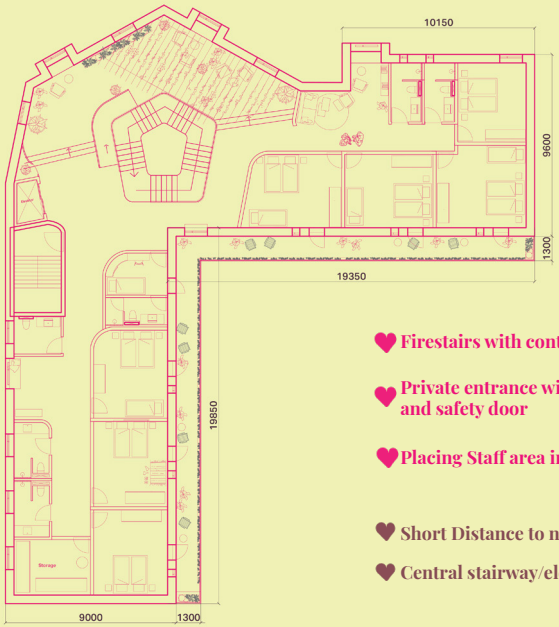
Sub-
Strategies:

- Secure and controlled access
- Visibility, lightning and access to safety

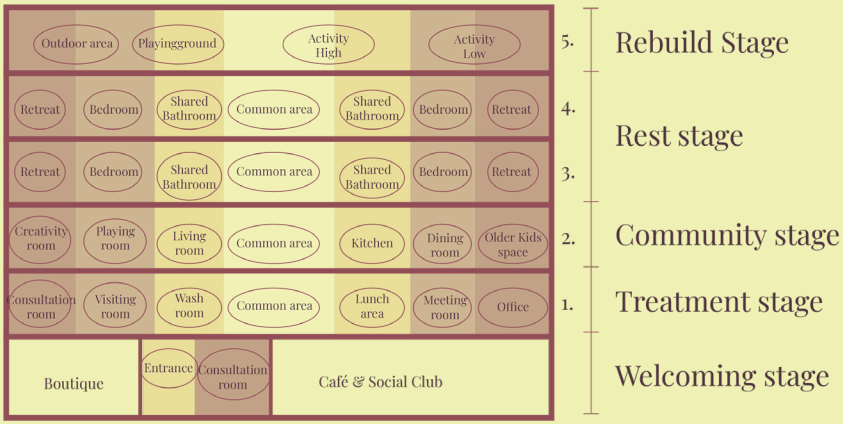
Design-
Methods:

- Limit public access without making the women feel imprisoned
- Use safety doors, outdoor fencing, and discreet surveillance to ensure protection without causing fear
- Well-lit spaces with smooth transitions; avoid harsh contrasts, especially at night
- Visible paths/sightlines to exits or safe areas
- Design with short distances to exits points or staff areas

04



- **Firestairs with controlled access**
- **Private entrance with controlled access and safety door**
- **Placing Staff area in 1. floor for physical protection**
- **Short Distance to nightwatch from bedroom**
- **Central stairway/elevator with clear pathways**



Strategy:

Personal Belonging

Why?

Personal belonging helps the women feel at home, valued, and seen. It allows them to express themselves and reclaim a sense of identity. For women who have fled their own homes, supporting that deep need for 'home' is essential to healing and restoring stability.

Sub-
Strategies:

- Spaces for identity expression
- Home-like atmosphere
- Inclusive and accessible environments

Design-
Methods:

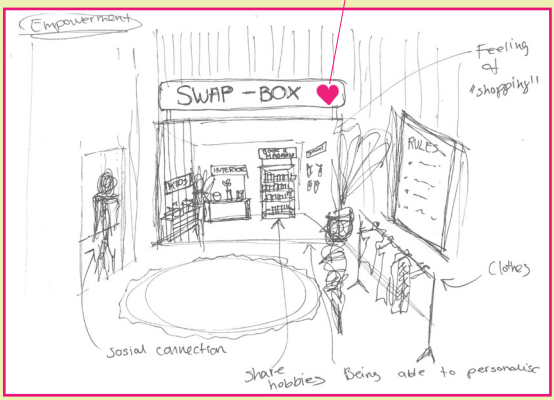
- Allow personalization in private room – shelves, frames, pinboard to display pictures and objects
- Shared areas like "swap-box" to exchange clothes, books or small objects, encouraging identity expression and connection.
- Use warm lighting, muted colors, soft materials, and comfortable furniture to create a calming environment. Avoid strong or clinical colors, as they may feel distressed
- Layouts that support different physical and emotional needs while keeping connection to the group like circular layout or semi-private areas/retreats.

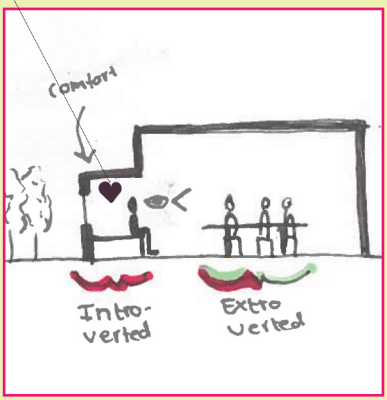
05

Warm and muted colors

Supporting different needs

Encouraging identity expression





Comfortable and enclosed area

Strategy:

Social Belonging

Why?

A sense of social belonging helps the women feel seen, connected, and less alone in their experience. Shared spaces and everyday encounters support trust, storytelling, and community-building - laying the groundwork for healing through inclusion and mutual support.

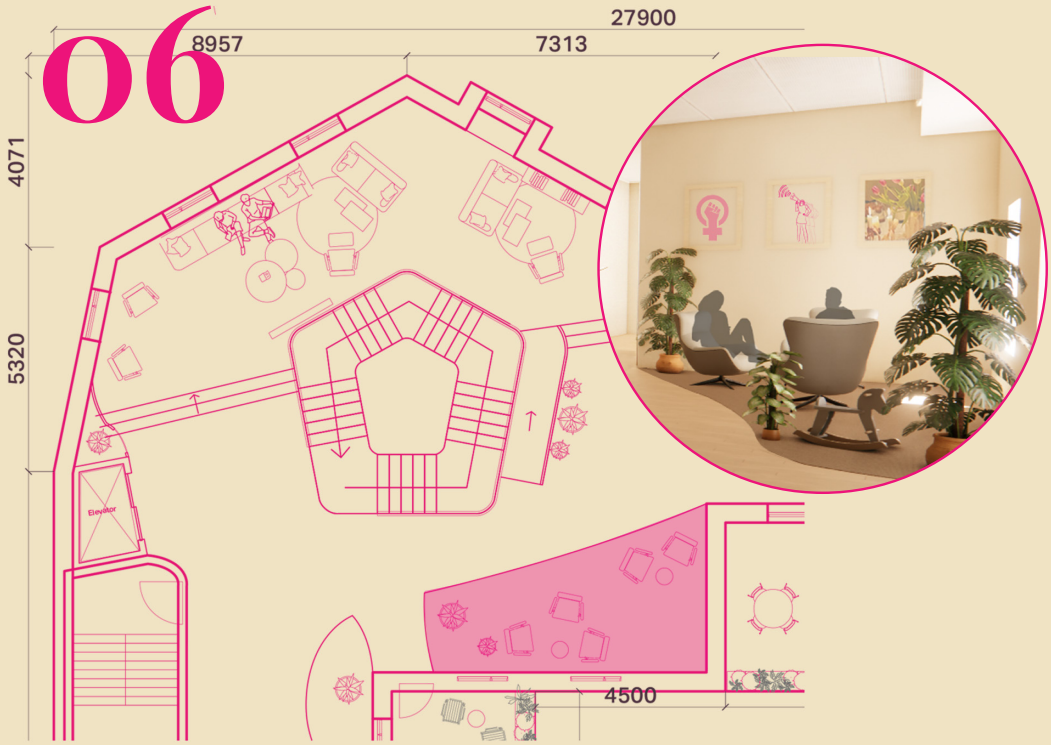
Sub-
Strategies:

- Communal spaces for connection
- Collaborative spaces for shared activities
- Informal spaces for everyday encounters

Design-
Methods:

- Shared spaces with flexible seating/activity to support conversation
- A central "heart" space as a social meeting point
- Kitchens, dining areas, and living rooms with adaptable layouts to encourage interaction
- Multi-use rooms/central shared spaces for group activities like crafting, knitting, workout or reading circles
- Semi-open zones like hallways, balconies, and shared bathrooms with soft transitions/openings to encourage everyday interactions.

06



- **Informat Gatherings semi-open zone**
- **Shared space for group activities**
- **Central meeting point**
- **Shared space and flexible seating**
- **Adaptable layouts for different interactions**

Strategy:

Empowerment

Why?

Empowerment helps women regain control, rebuild confidence, and restore self-esteem. By allowing them to make choices about how they use and move through the space, the environment supports autonomy and gives voice back to the women -helping them take part in their own healing process.

Sub-
Strategies:

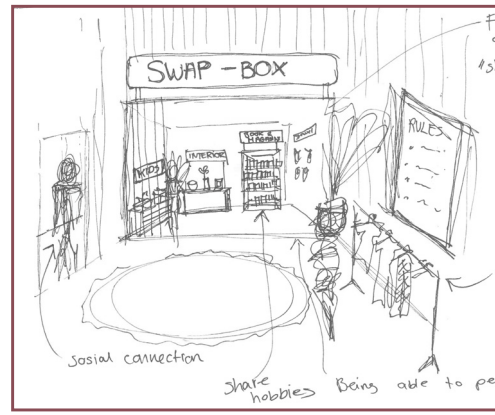
- Autonomy and choice
- Self-expression
- Opportunities for Rebuilding

Design-
Methods:

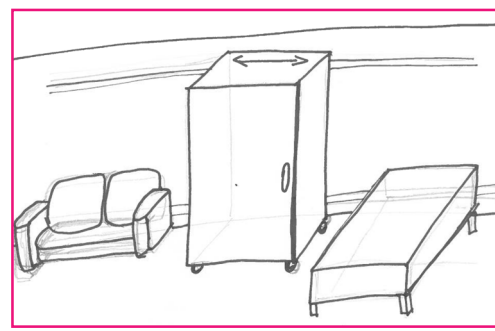
- Movable furniture and flexible layouts for personal control and needs
- Zones with different privacy levels to support choice
- Options for lighting, temperature or curtains
- Co-creation walls or communal art/zones for shared expression
- Empowering Low/high level activity areas for strenghtbuilding like Self-defence class, Art, Workshops, yoga, writing or gardening

07

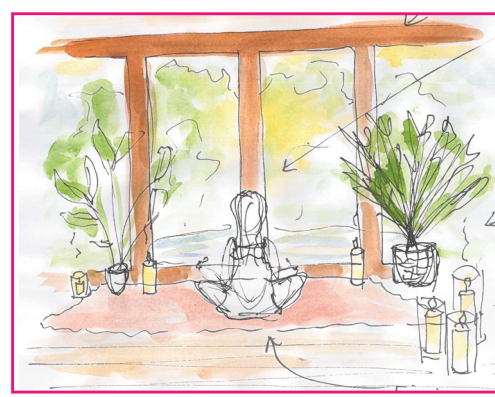
♥ Zones for shared expression



♥ Moveable furnature for personal control



♥ Activity for strenghtbuilding



Strategy:

Anonymity

Why?

Anonymity is vital for both safety and dignity. It protects women from being found or recognized and helps them feel unobserved and in control of their identity. Being able to enter and leave without exposure is essential for building trust and supporting recovery.

Sub-
Strategies:

- Privacy and identity protection inside/outside
- Control over personal exposure
- Safe and passive surveillance

Design-
Methods:

- Avoid hidden entrance
- Building should blend into the surrounding architecture
- Discreet or covered parking areas
- Place private functions facing non-public sides
- Direct views inward, away from public streets or neighbors
- Offer retreat options such as shielded balconies, angled windows, curtains, or semi-private nooks
- Locate near active surroundings like cafés, shops, or parks
- Public-facing entrance that feels safe

  Soft lighting and greenery to enhance a safe, welcoming atmosphere

08

Strategy:

Restorative Space

Why?

Restorative spaces help calm the nervous system and support emotional regulation. Integrating daylight, sunlight, and nature helps stabilize circadian rhythms, improve sleep and mood, and foster a healing environment that supports recovery.

Sub-
Strategies:

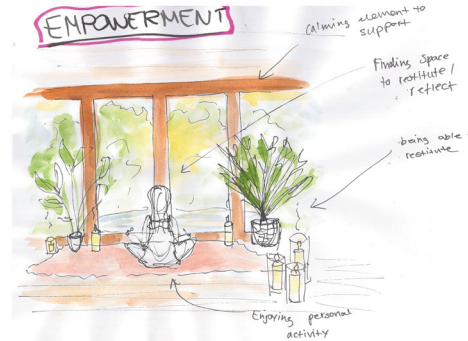
- Nature integration
- Daylight and circadian rhythm regulation
- Lightning for emotional and visual comfort

Design-
Methods:

- Window niches or balconies with nature views
- Gardens, courtyards, indoor plants or flowers
- South-East-facing bedroom windows for natural w[illegible]ng
- Morning light exposure (>2500 lux for 60 mins)
- South-facing windows in dining/common areas
- Skylights and reflective surfaces to enhance daylight
- Blue light (400–500 nm) during the day to boost wakefulness
- Warm, dimmable evening lighting for relaxation/sleep (600–700 nm)
- Ensure at least 10% of floor area receives 300 lux for half the daylight hours

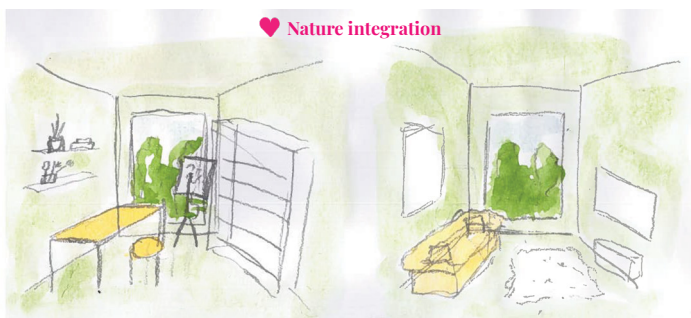
09

♥ Nature integration



♥ Window Niches with nature view

♥ Nature integration



Strategy:

Space for Children

Why?

Many women bring their children to the crisis center, so it's important to create supportive spaces for different ages. This provides normalcy and stability, helping children recover from trauma by processing emotions through play and creative activities.

Sub-
Strategies:

- Age-Appropriate Zones
- Safe and supervised play
- Outdoor Activity play

Design-
Methods:

- Playroom for 0–7 years with soft surfaces, sensory toys and calming atmosphere
- Playroom for 8–12 years with interactive and creative play elements
- Hangout space for 13–17 years with seating areas for socializing, games, comfort and study-friendly zones
- Visual contact/passive supervision to allow children to play freely
- Child-friendly materials creating a warm and inviting atmosphere
- High- and low-activity zones
- Flexible and adaptable spaces to accommodate different needs

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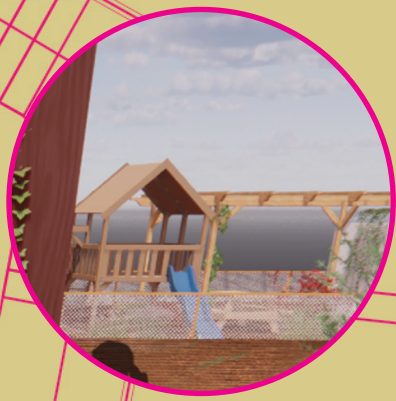
10



Bibliography

All of the research is based on our master's thesis highlighted below in pink. The research is also based on the following Bibliography.

Poulsen, L.J. & Ungstrup, N.B., 2025. Her Choise. Aalborg Universitet. Tilgængelig via: https://kbdk-aub.primo.exlibrisgroup.com/discovery/search?vid=45KBDK_AUB:DDP-B&lang=da [Accessed: 14 May 2025].

Akustiske beregninger et eksempel | BYG-ERFA (no date). Available at: https://byg-erfa.dk/bonus-side_99-010302 [Accessed: 14 May 2025].

Akustik Guide, (no date). [online] Available at: https://www.decodemp.com/akustik-guide/ [Accessed: 14 May 2025].

BiteSize Learning, 2025. Double Diamond Design Process Explained. [online] Available at: https://www.bitesizelearning.co.uk/resources/double-diamond-design-process-explained [Accessed 12 March 2025].

Blume, C., Garbazza, C., Spitschan, M., 2019. Effects of light on human circadian rhythms, sleep and mood. Somnologie 23, 147–156. [online] Available at: https://doi.org/10.1007/s11818-019-00215-x [Accessed: 20 April 2025]

BR18 (2025). Available at: https://www.bygningsreglementet.dk/tekniske-bestemmelser/17/krav/ [Accessed: 25 April 2025].

BR18 (2025). Available at: https://www.bygningsreglementet.dk/tekniske-bestemmelser/18/krav/

[Accessed: 20 April 2025].

Burgess, H.J., Rizvydeen, M., Huizenga, B., Prasad, M., Bahl, S., Duval, E.R., Kim, H.M., Phan, K.L., Liberzon, I., Abelson, J., Klumpp, H., Horwitz, A., Mooney, A., Raglan, G.B., Zalta, A.K., 2024. A 4-week morning light treatment reduces amygdala reactivity and clinical symptoms in adults with traumatic stress. Psychiatry Research 342, 116209. [online] Available at: https://doi.org/10.1016/j.psychres.2024.116209 [Accessed: 20 April 2025]

Bygningers lydisolering (1997). Available at [online] Available at:: https://edu.anvisninger.dk/anvisninger/p-anv172-bygningers-lydisolering-nyere-bygninger [Accessed: 13 May 2025].

Bødker, S., Dindler, C., Iversen, O.S., Smith, R.C., 2021. Participatory Design. Springer, Cham, SWITZERLAND.

Center for Care Innovations (2024). Infographic: 6 Guiding Principles to a Trauma-Informed Approach. [online] Available at: https://careinnovations.my.site.com/community/s/article/Infographic-6-Guiding-Principles-To-A-Trauma-Informed-Approach [Accessed: 7 May 2025].

Danmarks Statistik. (2023). Kvindekrisecentre. Available at: https://www.dst.dk/da/Statistik/emner/sociale-forhold/social-stoette/kvindekrisecentre [Accessed 4 Feb. 2025]

Danner (n.d.). Viden om vold. Available at: https://danner.dk/viden-om-vold/ [Accessed 20 Feb. 2025].

Dansk Standard (2019). DS/EN 16798-1:2019. Bygningers energimæssige ydeevne – Ventilation i bygninger – Del 1: Indeklima-parametre til design og vurdering af bygningers energiydeevne med hensyn til luftkvalitet, termisk miljø, belysning og akustik. Charlottenlund: Dansk Standard.

Dokkedahl, S., (2024). Kvinder på kvindekrisecenter. Ph.D. thesis. Syddansk Universitet, Danmark. [online] Available at: https://danner.dk/wp-content/uploads/2024/07/Kvinder-paa-kvindekrisecenter_SDU_sarah_dokkedahl.pdf [Accessed 13 Feb. 2025].

Feminisme og kvindebevægelsens historie, n.d. . Faktalink. [online] Available at: https://faktalink.dk/

emner/feminisme-og-kvindebevaegelsens-historie [Accessed 3 May. 2025].

FibroTech Proff-Signatur, Akustikpanel, lys eg, 22x605x3000 mm - Køb Akustikpaneler online (no date) https://www.silvan.dk. [online] Available at: https://www.silvan.dk/produkt/fibrotech-proff-signatur-akustikpanel-lys-eg-22x605x3000-mm-8400-2122779 [Accessed: 14 May 2025].

Forenede Care. (2024). Tårnbyhus LGBT+ Krisecenter. [online] Available at: https://www.forenede-care.dk/social/tarnbyhus/ [Accessed 5 Mar. 2025].

Fynbo, L., Berger, N.P. and Frøslev-Thomsen, J. (2022) Viden om traumebevidste tilgange i indsatser til socialt udsatte voksne: en vidensafdækning og skitsering af en prototype. VIVE.

Kern, L., 2021. Feminist city: claiming space in a man-made world. Verso, London New York.

Kronstrand, K., 2023. Èt krisecenter er fyldt, et andet er ikke - men begge er enige om én ting [online]. www.nordjyske.dk. Available at: https://nordjyske.dk/nyheder/hjoerring/flere-kvinder-bruger-krisecentre/4608912 [Accessed 3 May. 2025].

Landsorganisationen af Kvindekrisecentre (n.d.). LOKK. [online] LOKK. Available at: https://lokk.dk/ [Accessed 20 Feb. 2025].

Landsorganisationen af Kvindekrisecentre (n.d.). Viden om vold. [online] LOKK. Available at: https://www.lokk.dk/viden-om-vold/ [Accessed 20 Feb. 2025].

Landsorganisationen af Kvindekrisecentre (2016). Årsstatistik 2016: Kvinder og børn på krisecenter. [online] LOKK. Available at: https://www.lokk.dk/viden-om-vold/arsstatistikker/ [Accessed 20 Feb. 2025].

Landsorganisationen af Kvindekrisecentre (2019). Årsstatistik 2019: Kvinder og børn på krisecenter. [online] LOKK. Available at: https://www.lokk.dk/viden-om-vold/arsstatistikker/ [Accessed 20 Feb. 2025].

Landsorganisation af Kvindekrisecentre (LOKK). (2012). 25 years of fighting for women and children exposed to violence. Available at: https://www.lokk.dk/media/4pid3c5g/25-%C3%A5r-i-kamp-for-voldsudsatte-kvinder-og-b%C3%B8rn.pdf [Accessed 5 March 2025].

Light Bureau. (n.d.). Maggie's Centre. [online] Available at: https://lightbureau.com/projects/maggies-centre/ [Accessed: 8 May 2025].

Liu, C.-R., Liou, Y.M., Jou, J.-H., 2022. Ambient bright lighting in the morning improves sleep disturbances of older adults with dementia. Sleep Medicine 89, 1–9. Available at: https://doi.org/10.1016/j.sleep.2021.10.011 [Accessed: 29 April 2025]

LOKK - LOKK (no date). Available at: https://lokk.dk/ [Accessed: 07 Februar 2025].

Lydisolering i bygninger (2013). Available at: https://edu.anvisninger.dk/anvisninger/p-anv245-lydisolering-i-bygninger-teori-og-vurdering [Accessed: 29 April 2025].

Lydisolering i bygninger (2014). Available at: https://edu.anvisninger.dk/anvisninger/p-anv245-lydisolering-i-bygninger-teori-og-vurdering [Accessed: 29 April 2025].

Marcus, C.C., Sachs, N.A., 2013. Therapeutic Landscapes: An Evidence-Based Approach to Designing Healing Gardens and Restorative Outdoor Spaces. John Wiley & Sons, Incorporated, Newark, UNITED STATES.

Pallasmaa, J., 2014. Space, place and atmosphere. Emotion and peripherical perception in architectural experience. Lebenswelt. Aesthetics and philosophy of experience. Available at: https://doi.org/10.13130/2240-9599/4202 [Accessed: 30 April 2025].

SAMHSA's Concept of Trauma and Guidance for a Trauma-Informed Approach | SAMHSA Publications and Digital Products (2014). Available at: https://library.samhsa.gov/product/samhsas-concept-trauma-and-guidance-trauma-informed-approach/sma14-4884 [Accessed: 5 March 2025].

Staff, C.B.H. (2023). Domestic Violence PTSD: Causes, Symptoms, and Treatment. [online] Compassion Behavioral Health. Available at: https://compassionbehavioralhealth.com/domestic-violence-ptsd/ [Accessed: 5 March 2025].

Trauma-Informed Care | Texas Health and Human Services (no date). Available at: https://www.hhs.texas.gov/providers/behavioral-health-services-providers/behavioral-health-provider-resources/trauma-informed-care [Accessed: 5 March 2025].

Troldtekt® akustik Plus 25 (no date). Available at: https://www.troldtekt.dk/troldtekt-plus-fleece/ [Accessed: 14 May 2025].

Ulrich, R.S., 1984. View Through a Window May Influence Recovery from Surgery. Science 224, 420–421. Available at: https://doi.org/10.1126/science.6143402 [Accessed:29 April 2025].

United Nations (n.d.). What Is Domestic Abuse? [online] United Nations. Available at: https://www.un.org/en/coronavirus/what-is-domestic-abuse. [Accessed 19 Feb. 2025].

Workshopper, 2025. Guide to Design Thinking. [online] Available at: https://www.workshopper.com/post/guide-to-design-thinking#toc-what-is-design-thinking- [Accessed 12 March 2025].

Zumthor, P., 2006. Atmospheres: Architectural Environments - Surrounding Objects. Basel: Birkhäuser.

Årsstatistikker - LOKK (2017). Available at: https://www.lokk.dk/viden-om-vold/arsstatistikker/ [Accessed: 07 Feb. 2025].

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