

Living with Autism Spectrum Disorders

A study on group accommodations for people with ASD

Myrra Carlsson

Chalmers school of Architecture, Department of Architecture & Civil Engineering

Master's thesis 2024

Examiner: Johanna Eriksson

Supervisor: Susanne Clase



Living with Autism Spectrum Disorders

A study on group accommodations for people with ASD

Master's thesis 2024: Architecture and Advanced Programmes

Myrra Carlsson

Chalmers school of Architecture

Department of Architecture and Civil Engineering

Examiner: Johanna Eriksson

Supervisor: Susanne Clase



CHALMERS
UNIVERSITY OF TECHNOLOGY

Student background

Myrra Carlsson



I started my worklife- and education journey within the fields of health care and nursing. This is where I started to learn about how much the environment affect us humans and how much architecture can do to improve people's well-being. In healthcare, well-planned architecture can facilitate the caregiver's work and increase the care recipient's independence. But architecture planned with a lack of knowledge might also make life harder for people, especially for people with cognitive disabilities. This is why I decided to learn more about how architecture affects people with autism spectrum disorder.

2022-2024	Master's program in Architecture and Urban Design, Chalmers University of Technology
2024	Master's thesis in Architecture: Architecture and advanced programmes
2023	Erasmus exchange, Norges teknisk-naturvitenskapelige universitet
2023	Light and Lighting
2023	Architectural Design with Light and Colours
2023	GIS as a Planning Tool
2023	Future visions for healthcare, housing and work 2: Housing inventions
2023	History, theory and method 1
2023	Architectural competitions
2022	Future visions for healthcare, housing and work 3: Healthcare architecture
2022	Sustainable development and the design professions
2019-2022	Bachelor in Architecture, Chalmers University of Technology

Abstract

Karlskrona municipality has a goal to build one new group accommodation every year, but they often see a problem with the a lack of knowledge among architects about how physical environments meets the needs of people with intellectual disabilities. This Master thesis provide suggestions on how they could develop their brief for LSS group accommodations, that will be used as a guide for architects designing new group accommodations within the municipality.

Based on literature studies, interviews and study visits at two different group accommodations in Karlskrona municipality, this thesis has developed suggested changes to the brief. Research was done on how the brief can be updated to increase the architect's understanding of the subject, including knowledge of how to promote autonomy and social life among people with ASD living in group accommodations. The results and the new brief was tried out in the design of a group accommodation in Bastasjö, Karlskrona.

Research shows that a person feels safer if there are possible escape routes and escape spaces to retreat to in case of sensory overload. Two of the analysed briefs suggested to avoid dead ends, but none of the briefs mentioned escape spaces. To make it easier for the residents to avoid unexpected social interactions and to be able to escape situations in case of sensory overload, additions are proposed to Karlskrona's brief on possible overviews and escape spaces.

The two main concepts of the design proposal was to increase the residents autonomy and to improve the residents possibilities for a social life. These were solved by design strategies such as dividing rooms according to function and the amount of sensory stimuli, connect the design to surrounding environment, design to increase the feeling of a home and providing overviews of the common areas, escape routes and escape spaces to give the residents a choice which social interactions they would want to participate in or not.

Keywords:

Autism spectrum disorder, Group accommodations

Content

Discourse 6

- 1 Purpose 7
- 2 Research questions 9
- 3 Background 10
- 4 Abbreviations & word definitions 13
- 5 Method & thesis structure 14
- 6 Delimitations 15

Research 16

- 7 Theory 17
- 8 Analysis of briefs 21
- 9 Study visits & interview 32

Changes to the brief 42

- 10 Reflections and conclusions 43
- 11 Results 49

Design proposal 52

- 12 Concept 53
- 13 Site analysis 55
- 14 Design proposal 60
- 15 Discussion 78

- References 80

Appendix 82

- Reference apartments 83
- Interview setup 86
- Colour study 88

Discourse

Purpose - Research questions - Background - Abbreviations & word definitions - Method & thesis structure - Delimitations

The discourse gives an introduction to the subject and the purpose of this master thesis. The structure of the thesis work are explained.

1 Purpose

The purpose of this master thesis is to develop a brief that can guide architects when designing group accommodations for people with autism spectrum disorders. The thesis will also try out the brief by using it in the design of a group accommodation in Bastasjö, outside of Karlskrona.

Karlskrona municipality has a goal to build one group accommodation every year. One problem they have met when hiring different architects for the job is the lack of knowledge among architects (Fredrik Löfgren, personal communication, November 20, 2023). Most often they need to educate the architects before starting the planning. As a help they have made "Funktionsprogram för bostad med särskild service enligt LSS" for the architects to follow. This brief is a document with information and requirements which guides the architects in the designing of new group accommodations. The brief is originally made in 2009 and is in need to be updated. This master thesis provides suggestions for the development of this old brief based on new research and shortcomings noted in analysed outcomes of the old brief.

Two different group accommodations in Karlskrona municipality that has had the old "Funktionsprogram för bostad med särskild service enligt LSS" as a guideline for the design will be analysed. Perspectives from the administration for functional support, staff and residents will be analysed.

1.1 Background of the purpose

The purpose of "Funktionsprogram för bostad med särskild service enligt LSS" is to "simplify collaboration between client and contractor" (Karlskrona kommun, 2009). The purpose of the group accommodations that are designed with help of this program is to be suitable, safe and secure living environments (Karlskrona kommun, 2009).

The brief (Karlskrona kommun, 2009) addresses the goals set by LSS for group accommodations. The group accommodation should "promote equality in living conditions and full participation in community life" (Karlskrona kommun, 2009). It should give a opportunity for the residents to live as others. This includes having a private home and to feel safe and

thrive in one's home (Karlskrona kommun, 2009). The architecture could contribute to increased autonomy, guide in activities of daily living (ADL) and integration with the context and the community.

The brief describes that the residents have the right to a fully adequate residence which according to BBR includes space for rest, space for cooking and eating and space for personal hygiene (Karlskrona kommun, 2009). The residents should also have the opportunity to furnish by themselves (Karlskrona kommun, 2009). The architecture can contribute to this feeling of ownership of one's own private residence.

The accommodation should be adapted for people with cognitive, mobility, communicative and orienting disabilities, according to the brief. It should also be adaptable for residents changed conditions and have space for possibly necessary appliances (Karlskrona kommun, 2009). The building should be individualized and adaptable to possible changes in the future.

The brief also states that the residents life should include meaningful activities, well-being, social inclusion, autonomy, confidence, self-esteem and security. The environment should prevent challenging behaviour that is related to stress and over-stimulation (Karlskrona kommun, 2009).

1.2 Purpose of master thesis based on the brief

As the goal of the brief is to simplify and accelerate the communication between the administration for functional support and the architects this thesis will aim to make sure that the brief includes information that gives the architect a higher understanding of the subject.

Based on the purpose of the brief this thesis will focus on promoting autonomy and social life among people with ASD living in group accommodations.

1.2.1 The architect

This thesis aim to investigate how well the brief provide the architect with information that facilitates the architects understanding of the subject.

1.2.2 Autonomy

To promote autonomy this master thesis facilitates for individual needs and interests, the feeling of security, self-esteem, confidence, activities of daily living and the feeling of ownership.

This thesis aim to investigate how architecture affects everyday life and activities of daily living. By reflecting on ADL the thesis investigates how the self-esteem, confidence and security in various activities are affected.

This thesis also aim to investigate how architecture can support individual needs and interests among people with ASD. It could be activities the residents appreciate as well as sensory impressions.

Ownership and the feeling of a home is important for people's feeling of autonomy. This thesis aim to look into what residents with ASD in group accommodation perceive as their own and what they are most proud of in their home.

1.2.3 Social life

To promote social life this thesis will focus on social inclusion in the community, communication between residents, communication between residents and staff and to socialize in one's own terms.

This thesis will explore how architecture can affect and support how and when people with ASD interacts with each other and staff in a group accommodation.

This thesis will further explore safe and unsafe places in group accommodations. The feeling of safety in a place may affect how a person interacts with others and effects the risk to trigger challenging behaviour.

This thesis also aim to investigate how architecture can affect people with ASD's inclusion in society, with a focus on the local environment. How can the architecture influence how integrated the group accommodation becomes in society?

2 Research questions

Can Karlskrona municipality's "funktionsprogram för bostad med särskild service enligt LSS" be improved to better ensure that the architects get the information they need to plan a group accommodation for people with autism spectrum disorders?

How can architecture support the social life and sense of community for people with autism spectrum disorders?

How can a group accommodation be designed to promote autonomy and individualization for people with autism spectrum disorders?

3 Background

3.1 Autism spectrum disorders

Autism Sverige describes autism as "a developmental disability that manifests itself in how a person perceives the outside world and interacts and communicates with others." (Autism Sverige, n.d.-a) Autism is often described as a spectrum because of its diversities in symptoms and degree of symptoms.

Autism Sverige (n.d.-a) describes two main characteristics for persons with autism spectrum disorders (ASD). The first one is limitations in social interaction and communication. This makes it hard for people with autism to understand "invisible" rules for social interaction and read facial expressions, body language and other unspoken communication. The speech could be developed late or never (Autism Sverige, n.d.-a). The second characteristics of ASD is repetitive patterns in behaviour, interests or activities. This could be repetitive motoric movements, one-sided speech or one-sided use of things. People with autism do also tend to dislike changes in routine and the environment (Autism Sverige, n.d.-a).

The second characteristics also include over-sensitivity or under-sensitivity for sensory impressions. Under-sensitivity could be seen as a strong interest for certain impressions such as tactile materials. Over-sensitivity often causes stress and anxiety by for example certain kinds of sounds or scents. It is hard for a person with ASD to take in a lot of sensory impressions at the same time, which is a big reason for stress in everyday life (Autism Sverige, n.d.-a). Hereafter over-sensitivity will be mentioned as hypersensitivity and under-sensitivity as hypo-sensitivity.

3.1.1 Hypo- or hyper-sensitivity

People with ASD tend to have abnormal responses to sensory impressions (Gaines, Bourne, Pearson & Kleibrink, 2018). This means that people within the spectrum are more sensitive to their physical surroundings. When people with ASD have trouble understanding and adapting to the environment it most often results in a abnormal behaviour. This behaviour connected to hypo-sensitivity could be described as an attempt to generate their own sensory experience. The behaviour connected to hypersensitivity is instead explained as an attempt to maintain control over a situation after having a sensory overload (Gaines et.al. 2018). People with hypersensitivity

easily get overwhelmed by sensory impressions and the surroundings can feel terrifying for them. People with hypo-sensitivity on the other hand often appear under-responsive to sensory information (Gaines et.al. 2018).

3.2 LSS, Act concerning support and service for persons with certain functional impairments

In the 20th century, people with disabilities were referred to live in various types of institutions. Beginning in the 1960s, the institutions were replaced with smaller, more homelike group accommodations. In 1986, the Care Act, 1985:568, came into force, which assured those covered by the law a home in a group accommodation. The act concerning support and service for persons with certain functional impairments, 1993:387, entered into force in 1994 (Socialstyrelsen, 2018).

LSS overall goal is to ensure the possibility for people with disabilities to live like others. This means that the resident's right to self-determination and integrity must be respected and that the resident himself should have the right to influence his efforts given according to LSS (Inspektionen för vård och omsorg, 2023). Socialstyrelsen (2018) state that "According to § 5 LSS, operations must according to the law, promote equality in living conditions and full participation in social life for the persons covered by the law's provisions."

3.2.1 Group accommodations within LSS

Group accommodations for people with autism spectrum disorders is in Sweden a support effort within LSS. LSS offers three different types of services for housing, service housing (servicebostad), group accommodations (gruppboende) and specially adapted housing (särskilt anpassad bostad). The group accommodations has continuously permanent staffing and is unlike the other two forms of housing, a few houses or apartments that share common areas. Group accommodation is a permanent housing alternative for persons that need extensive supervision and care (Autism Sverige, n.d.-b).

The amount of people living in a group accommodation should according to Socialstyrelsen (2018) be around 3-5 people. 6 people groups can be approved as long as good living conditions can be ensured. This number is because of the fact that some people with ASD have trouble with having a too big number of contacts in the immediate environment. The group should not be larger than the resident can have a social role in the group. This means that for some people with ASD it is especially important to have a smaller group to share common spaces with (Socialstyrelsen, 2018). For people with communication difficulties, it is easier to make themselves understood in a smaller group, than in a larger one, where many people may be talking at the same time (Socialstyrelsen, 2018). A smaller group accommodation is also easier to integrate in the housing area around (Socialstyrelsen, 2018).

A group accommodation is a home and therefore the general laws for housing in PBL (Swedish plan and building law) is also valid for these accommodations. But, individual needs is also needed to be considered (Socialstyrelsen, 2018). In socialstyrelsen's (2018) document "Bostad med särskild service för vuxna enligt LSS" it appears that the regulations that apply to ordinary housing must also apply to the apartments in a group accommodation. This means that the apartment must be suitable for its purpose as a residence and home and an institutional character should be avoided.

3.3 Group accommodations in Karlskrona municipality

The group accommodations in Karlskrona municipality are operated by the administration for functional support. The administration for functional support offers support, assistance and service for some people with physical and mental disabilities. They work by the Act on support and services for certain disabled persons (LSS), the Social Services Act (SoL) and the Health and Medical Services Act (HSL) (Karlskrona kommun, 2023).

Catrin Brissmalm (Personal communication, February 12, 2024) explained that they had quite a long queue for many years. Around 20-25 people waiting for a place in a group accommodation. Which people

are in the queue and which apartments that are free often determines who end up in which group accommodation, but the administration for functional support also try to match the residents ability to cope with living in each group accommodation. There are some group accommodations in which only people with autism live, but often they try to vary the group of residents to make the staffs work easier and more varied and to get together a group of residents that are as similar in age as possible (Catrin Brissmalm ,personal communication, February 12, 2024)

Today there are 32 group accommodations within Karlskrona municipality (Fredrik Löfgren, personal communication, March 27th, 2024) and the municipality has a goal to strongly increase this number within the upcoming years as they want to build one more group accommodation every year (Fredrik Löfgren, personal communication, November 20th, 2023).

The administration for functional support in Karlskrona municipality have developed "Funktionsprogram för bostad med särskild service enligt LSS" to facilitate communication with architects who are to design new group accommodations in the municipality (Karlskrona kommun, 2009). Many municipalities in Sweden has this type of briefs to give architects the knowledge needed to design new LSS group accommodations. Karlskrona municipality's brief is a document that includes the purpose of the brief, information about LSS group accommodations, overall requirements and goals with the new group accommodations, desired functions and spatial connections and some information on details, light, acoustics, colours and materials and how they affect people with disabilities (Karlskrona kommun, 2009). Currently, the municipality is updating the brief from 2009. The municipality see lack of knowledge as a problem when hiring different architects to design new group accommodations and sees a possibility of a updated brief that can give the architects the knowledge needed so that the administration for functional support doesn't need to educate the architects every time they are to build a new group accommodation (Fredrik Löfgren, personal communication, November 20, 2023).

4 Abbreviations & word definitions

LSS: The Swedish act concerning support and service for persons with certain functional impairments. 1993:387

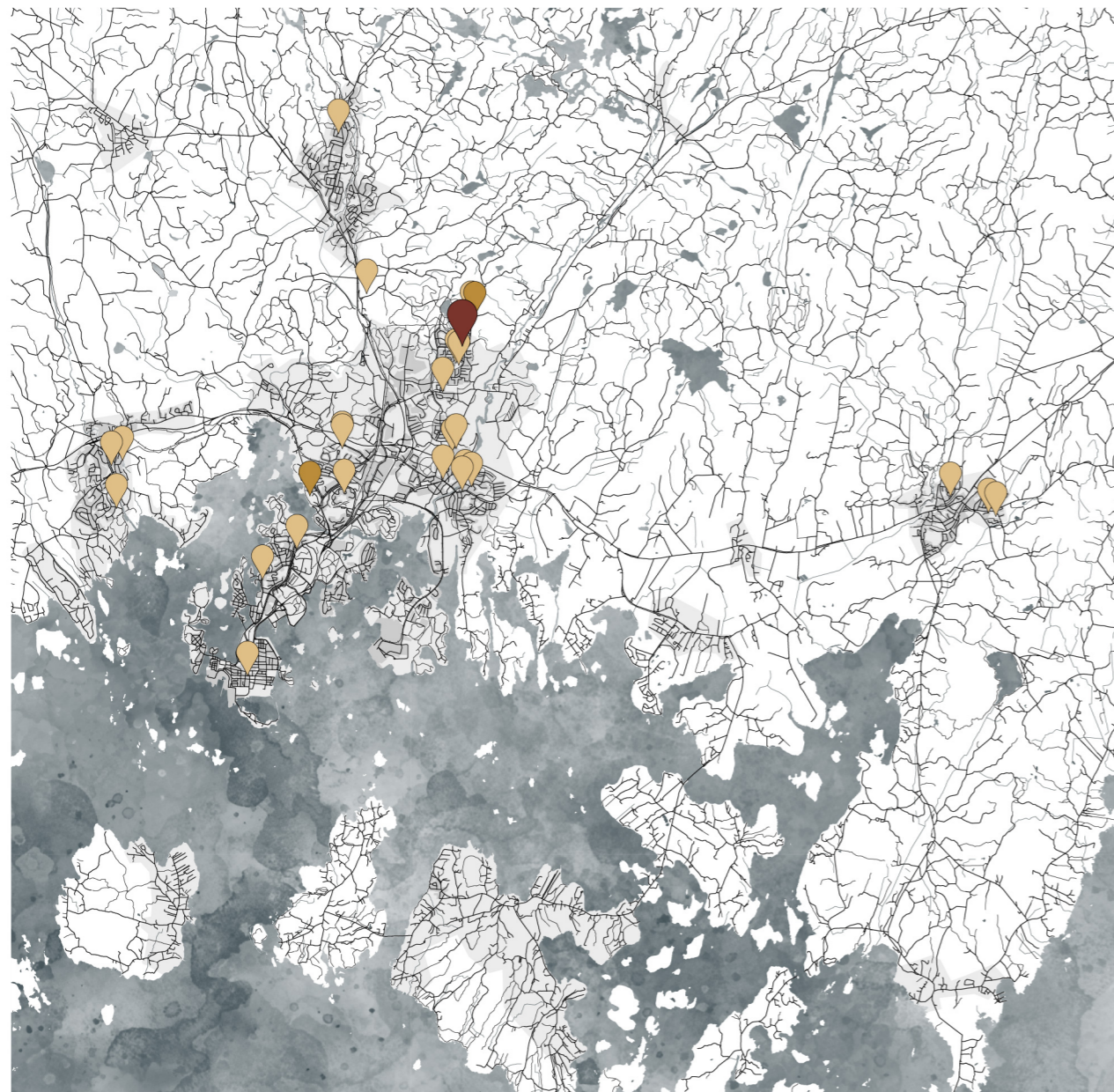
ASD: Autism spectrum disorders.

ADL: Activities of daily living. Basic self-care tasks such as bathing, feeding oneself and using the toilet (Wikimedia foundation, 2024).

Brief: Funktionsprogram för bostad med särskild service enligt LSS. A document that includes guidelines and requirement for functions, spatial connections and materials and details in new group accommodations.

Daily activities: "Daglig verksamhet" is an effort according to LSS for people of working age. One goal of the effort is to develop the individual's opportunities for work and provide stimulation and meaning in everyday life. The daily activities may contain habilitation activities or production-oriented tasks (Socialstyrelsen, 2022).

Challenging behaviour: The behaviour is an effect of how a person with severe learning disabilities react when their needs are not being met. The person may harm himself or others or react with other destructive behaviours (Challenging behaviour foundation, n.d.). In Swedish group accommodations might the staff use the word "affekt" to describe this reaction. This could be described as a intense emotional reaction (Psykologiguiden, n.d.).



Group accommodations in Karlskrona municipality

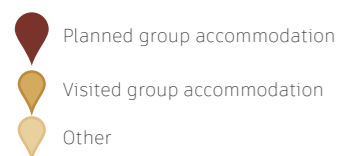


Figure 1: Scale 1:150 000. Adapted from Karlskrona kommun. (2023). Funktionsstödsförvaltningen. (<https://www.karlskrona.se/kommun-och-politik/sa-fungerar-kommunen/organisation/funktionsstodsforvaltningen/>). Created from Fastighetskartan Hydrografi latest (shp), Fastighetskartan Kommunikation latest (shp) and Fastighetskartan Bebyggelse latest (shp) © Lantmäteriet

5 Method & thesis structure

The research done in this master thesis focuses on “Funktionsprogram för bostad med särskild service enligt LSS”, the brief from Karlskrona municipality, to see how it can be improved to better correspond to the thesis research questions.

Two different group accommodations in Karlskrona municipality were analysed from the perspectives of residents, staff and the administration for functional support. In addition to the analysing of the group accommodations, literature studies was done to compare Karlskrona municipality’s brief to other Swedish city’s briefs and research within the field.

The results from the research were then used to make suggestions for changes to the brief. The developed brief was then tried out in a design proposal of a new group accommodation.

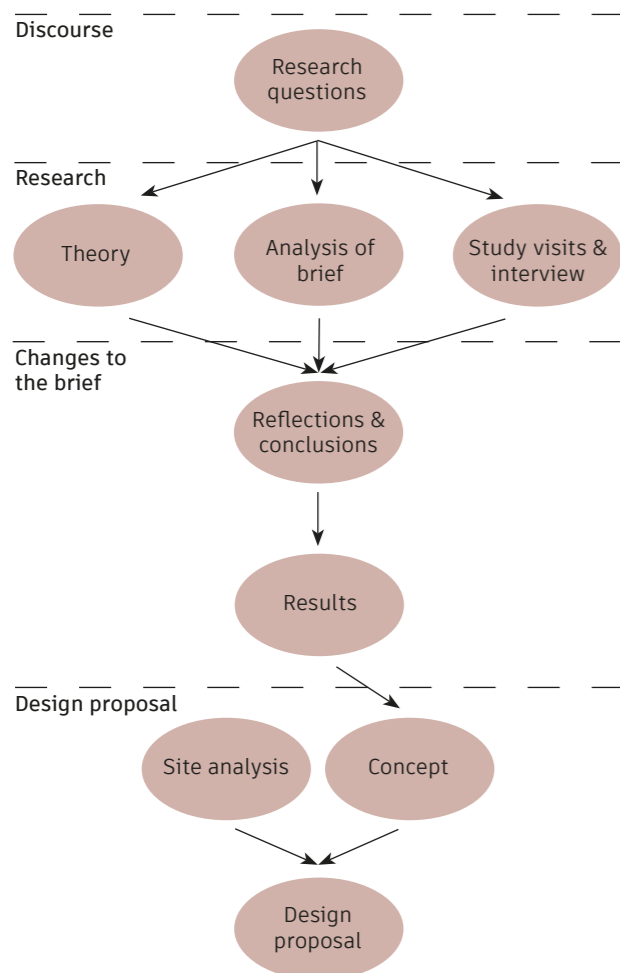


Figure 2: Structure of the thesis

5.1 Analysing of group accommodations

The analysing of the group accommodations started with a study visit and a tour guided by a resident. During the tour interview questions were asked to the residents. After the tour interviews were done with the staff at the group accommodation.

After the study visits, an interview were done with Catrin Brissmalm at the administration for functional support in Karlskrona municipality to see their thoughts on the design of the group accommodations and their plans and purpose of new group accommodations within the municipality. For more information about the interviews see appendix.

5.2 Literature studies

The content of “Funktionsprogram för bostad med särskild service enligt LSS” in Karlskrona municipality was compared to similar briefs from Borås and Gothenburg. The focus was on analysing the functions included and their connections to each other, the purpose and information about LSS group accommodations and special requirements for materials and details.

Literature studies was also done, with a focus on the goals set for the purpose of the master thesis.

6 Delimitations

There is a wide range of intellectual disorders. To be able to go into the depth of knowledge, this thesis will focus on autism spectrum disorders.

This thesis will focus on a group accommodation for adults with autism spectrum disorders and will not address living situations for children or other types of living situations for adults with ASD.

Research and changes to the brief will primarily focus on the residents living conditions. Consideration will also be given to the staff’s working environment in the design proposal, although the main focus is still on the residents.

As the autism spectrum disorders have very wide range of symptoms and levels of the disorder, this thesis will mainly focus on persons who fits in to the requirements to live in a group accommodation according to LSS. These are the people that need care by permanent staffing in their everyday life.

Study visits, interviews and analyses will be done only at group accommodations within Karlskrona municipality that has connections to “Funktionsprogram för bostad med särskild service enligt LSS”.

For reasons of time, only two other briefs were selected to be compared with Karlskrona’s brief, a brief from Gothenburg and a brief from Borås. Both briefs have recently been updated and contain requirements that Karlskrona’s brief lacks.

Research

Theory - Analysis of briefs - Study visits & interview

Research have been done by studying different theories from the results of other research studies, analyses and comparisons between different briefs and through study visits and interviews in Karlskrona municipality.

7 Theory

Research has shown that the physical environment affect people with autism spectrum disorders mental well-being (Nguyen, d'Auria, & Heylighen, 2022). Nguyen et al. (2022) writes that a well-designed environment can enhance motivation, confidence, independence and self-esteem.

Since the symptoms of autism spectrum disorders vary so much it is hard to come up with guidelines for concrete spatial interventions (Kinnaer, Baumers, & Heylighen, 2015). The theories behind the guidelines some times even counteract with each other.

7.1 Sensory intergration theory

The theory of sensory integration is based on the hyper- or hypo-sensitivity to stimuli. Gaines et.al. (2018) describes this theory as the processing of sensory information that makes a person interact with their environment. Sensory integrative dysfunction is a reason for self-injury and self stimulation. With other words, the rigid and repetitive behaviour is often caused when the sensory input is not organized in the brain (Gaines et. al., 2018). Brand & Gheerawo (2010) mention this theory instead as a way of reducing triggers of agitation and anxiety. But after all designing the most sensory protected environment possible might not be the best choice either as it leaves the person with ASD unprepared for the world outside (Gaines et. al., 2018).

7.1.1 Escape spaces

A space to escape to after an sensory overload can be needed for the person to calm down and win back control over the situation (Gaines et. al., 2018). Just the knowledge of the presence of these escape spaces can reduce the anxiety of individuals with ASD in an environment (Mostafa, 2021). Apart from being close to risk zones for sensory overload, escape spaces could also be needed inbetween high and low sensory stimulus zones, for example in circulation routes and as a break space to understand the next step (Love, 2022).

Mostafa (2021) describes how the escape spaces should be a neutral sensory environment with minimal sensory stimulation. But it should also be able to be customized to bring the user necessary sensory input. The escape space can in this way help the person with ASD to learn to be better at sensory filtering through slowly allowing less enclosure and more sensory input. These spaces can also help provide proprioceptive and vestibular input to support the sense of physical orientation (Mostafa, 2021).

An escape space should preferably have good sound insulation and have customizable lighting. A full body tactile stimulation from a soft furniture can provide great support when a person is sensory overloaded (Mostafa, 2021).

An escape space could be a smaller room, but also a corner in a room. Kinnaer et al. (2015) describes how a person with ASD used a corner behind an armchair as escape space. Mostafa (2021) describes how the escape spaces at a university can have many different forms and scales, but are most often in a more intimate scale, suitable for 1-5 persons. An escape space is often for one person, but it could also be used as a safe and calm space for two or more persons to have social interactions (Mostafa, 2021). Some examples of escape spaces that Mostafa (2021) mentions are chairs with closable shielding, seating around water features, swinging hammocks alcoves in circulation spaces and sensory areas.

7.1.2 Sensory zoning

Brand & Gheerawo (2010) mentions also the importance of separating rooms with high stimulus from rooms with low stimulus as closeness to high stimulus areas can be distracting. Mostafa (2021) describes that organizing spaces after their sensory similarities could be to prefer before organizing spaces by their usable similarities.

Love (2022) describes how transition between spaces can be hard for people with ASD and that sudden sensory changes should be reduced. For example the transition between outside and inside could be softened. Inbetween spaces with high- and low sensory stimuli there should be a transition zone according to Mostafa (2021). These zones helps that person with ASD to recalibrate their senses when they move between the different levels of sensory stimuli. A transition zone can be a distinct feature that indicate the shift or a full sensory space. It could also be a sensory neutral escape space (Mostafa, 2021).

7.1.3 Sensory rooms

For people with hypo-sensitivity, that is sensory seeking, a special place for sensory integration can be a way to engage the senses (Gaines et. al., 2018). This makes the person less likely to try to engage the senses in a less safe way elsewhere (Gaines et. al., 2018).

The purpose of a sensory room is to offer sensory stimulation and relaxation in an undemanding environment where the person himself can influence the type and degree of sensory stimulation (Region Stockholm, 2019). The goal for the design of the sensory rooms at Lagunen Habiliteringscenter in Stockholm is to arouse curiosity and offer choices in a safe environment. Some examples of details in the sensory rooms at Lagunen are a waterbed that follows the persons movement, mood-creating music, swings that attract movement, fiber threads with light and dots of light that move in the room, a sea of balls that change colour to music and different materials to explore the tactile sensation (Region Stockholm, 2019).

A sensory room could also be provided outside as Love (2022) describes a sensory garden that could contain of non-toxic plants with different textures, colours and scents that could be orderly arranged or wildly grown.

7.1.4 Auditory

Auditory sensitivity is the most common trigger for people with autism spectrum disorders. People with hyper sensitivity overreact and are often disturbed by sounds. They can react to sound as if it is a threat. Just a slight variation in decibel might cause this person to panic. A person with Hyper sensitivity may also have trouble communicating when there is background noise (Gaines et. al., 2018).

For people with auditory hyper sensitivity it is good to minimize echo effects and background noises (Mostafa, 2021). Sound insulation, sound absorbents and quiet ventilation are important (Gaines et. al., 2018). Sound absorbent materials and soft finishes are good to use (Mostafa, 2021). Doors that line up in a corridor create a tunnel for the noise and are not suitable in a group accommodation (Gaines et. al., 2018).

People with hypo sensitivity can on the other seem oblivious to surrounding sounds. They do not respond to sound, which could be a risk for their own safety. These persons may constantly create sounds to stimulate themselves (Gaines et. al., 2018).

7.1.5 Tactile

In general people like shiny surfaces that look rich and clean. Smooth metallic surfaces are preferred before rough metallic surfaces. Among personal belongings, soft materials are preferred (Gaines et. al., 2018). Deep touch as from weight vests or blankets have a calming effect (Gaines et. al., 2018).

People with hyper sensitivity to touch, dislike being touched and avoid strong tactile elements such as shower jets. These people may develop tactile defensiveness, which may lead to over-stimulation, which leads to trouble concentrating and developmental delays (Gaines et. al., 2018).

Mostafa (2021) describes that natural materials in general are the preferred choice for people with ASD and that the textures of the materials should be as natural as possible. When choosing textures she suggests to start with a neutral base and then add more sensory textures as it is easier to add sensory stimuli later on than it is to take away if the stimuli is causing discomfort.

People with hypo sensitivity to touch on the other hand, do not seem to notice when they are being touched, do not understand the concept of personal space and have a very high pain threshold. For these people, craft rooms could be good to add (Gaines, et. al., 2018).

7.1.6 Visual

Although visual sensitivity is not as common as auditory and tactile, individuals with autism spectrum disorders may have hypo- or hyper sensitivity to visual stimuli (Gaines et. al., 2018). Mostafa (2021) suggests that the sensory environment should be as neutral as possible.

In general, people dislike too saturated or monotonous colours. Likewise, places with too little colour are disliked. Warm, neutral and natural colours are preferred (Gaines et. al., 2018). Highly saturated colours and contrasts should only be used when needed for functional use as legibility or defining boundaries (Mostafa, 2021).

People with hypersensitivity notice everything. For example, they are easily interrupted by bright light. For these people, glare and lights that flicker can be a strong disturbance (Gaines et. al. 2018). The best lighting in an environment for people with autism is natural lighting, otherwise LED-lights are the most suitable (Mostafa, 2021). It is good to have minimal ornamentation or other visual distractions (Mostafa, 2021) such as patterns that can be disruptive in the environment (Gaines et. al., 2018).

The lighting-level is preferable customizable for different activities (Mostafa, 2021). Blinds, louvres, adjustable screens and dimmable lighting could be used to adjust the light level. Dramatic shifts in light-levels from one room to the other should be avoided (Mostafa, 2021).

A person with hypo-sensitivity on the other hand, can almost be taken for having a visual impairment. They disregard people and objects and enjoy looking at bright lights and colourful objects (Gaines et.al., 2018). Colours can be used for way-finding, and in this case contrast of the colours and the amount of colours have a larger impact than what colour that is used (Gaines et.al., 2018). People with hypo-sensitivity to visual stimuli may use light as a source for self stimuli, for example the sunlight shining through the branches of a tree or the moving shadows of people (Mostafa, 2021).

7.2 Predictability and consistence theory

A person with ASD may see the world as chaotic and unpredictable as it is hard to understand the environment (Kinnaer et al., 2015). A person with ASD describes the hard way of getting back to focus as "When my fixed pattern is interrupted, life suddenly gets harder. I can't even remember how to do the simplest things" (Kinnaer et.al., 2015). The preferred environment for people with autism spectrum disorders is a predictable, consistent, controllable and comprehensible environment (Kinnaer et.al., 2015).

Each space should have a clear purpose (Kinnaer et. al., 2015). Mostafa (2010) describes that this can be made by boundaries or groupings of furniture. She also explains that sequencing places for activity can help making the routine simple to follow without getting disrupted.

To big rooms and a lot of people could feel unpredictable for a person with ASD. A space for shelter to run to when a situation gets overwhelming is one way of making a place and situation more controllable (Kinnaer et. al., 2015).

8 Analysis of briefs

In this chapter, briefs from Karlskrona, Gothenburg and Borås will be analysed and compared.

8.1 Brief, Karlskrona municipality

The purpose of "Funktionsprogram för bostad med särskild service enligt LSS" in Karlskrona municipality is to "simplify collaboration between client and contractor" (Karlskrona kommun, 2009). The purpose of the group accommodations that are designed with help of this program is to be suitable, safe and secure living environments (Karlskrona kommun, 2009).

The brief (Karlskrona kommun, 2009) addresses the goals set by LSS for group accommodations. The group accommodation should "promote equality in living conditions and full participation in community life" (Karlskrona kommun, 2009). It should give a opportunity for the users to live as others. This includes having a private home and to avoid an institutional feeling (Karlskrona kommun, 2009).

The residents' life should include meaningful activities, well-being, social inclusion, autonomy, confidence, self-esteem and security. The environment should prevent challenging behaviour that is related to stress and over-stimulation (Karlskrona kommun, 2009).

8.1.1 Requirements for materials and details

"Funktionsprogram för bostad med särskild service enligt LSS" contains extra requirements for daylight and lighting, acoustics and colours and materials (Karlskrona kommun, 2009). The requirements are designed so that the group accommodation is adapted for people with cognitive and physical disabilities.

For the daylight and lighting, the disturbance from sensory impressions should be minimized. For example large windows and glare should be avoided and light sources should be dimmable. The windows should be placed so that a sitting person can look out.

The requirements for the acoustics is also about avoiding disturbing noise. For example should all technical devices be quite, echo effects should be avoided and there should be good sound-insulation between the apartments.

Colour- and material choices should be made to enhance a homelike feeling and orientation in the group accommodation. It is also important to use contrasts in colour to adapt for people with visual impairment and to avoid patterns that could be disturbing.

7.4 Independence and self-esteem

Gaines et.al. (2018) writes about legibility, coherence and complexity of the environment. Legibility is how easy the environment is to understand and remember and it could be used for way-finding (Gaines et.al., 2018). For example Kinnaer et al. (2015) Mentions Lynch's theory to use landmarks to make the way-finding easier. Coherence is features that helps directing a persons attention to easier understand the environment (Gaines et al., 2018). This is important since a person with ASD find it hard to sometimes see the whole image, as they tend to focus on pieces that grab their intention instead. Gaines et al. (2018) describes the complexity of an environment as the degree of visual information, for example the level of detail.

7.3 Refuge and safety theory

As autism spectrum disorders may cause a risk for the persons safety it is important to make an environment that support in situations that might be a danger to the person. Kinneer et al. (2015) for example mention how forgetfulness when interrupted can result in a stove being left on, hypo-sensitivity could be a risk as one not feels pain and some people with ASD has trouble estimating distances. The environment should be robust, tolerant and easy to clean (Brand et. al., 2010).

A place feels safer if there is a possibility for refuge. If necessary it should be easy to escape a situation, either to hide or to have a clear escape route (Gaines et. al., 2018). But one could also feel safer to enter a room if it is possible to survey the environment before entering (Gaines et. al., 2018). To avoid unexpected close face to face situations soft corner could be used (Mostafa, 2021).

People with ASD, as well as others, desires a sense of community and belonging as well as a possibility to make individual choices and have a sense of control (Nfuyen et.al., 2022). Kinnaer et al. (2015) states that having your own apartment or house is an important sign for independence. To increase the sense of community by integration to the neighbourhood Brand et. al. (2010) suggest that the group accommodation building should have similar size and scale as buildings in the context. They also suggest that the group accommodation should be close to public transport, health care services, shops cafés and workplaces to also increase independence.

What is perceived as home-like can vary from person to person, but in general, own furniture, gardens and fireplaces are reminiscent of a home, while medicine carts and long corridors are reminiscent of an institution. Colour scheme, materials and decor affect interior homeliness, while scale and context affect exterior homeliness (Wijk, 2014).

To enhance motivation and self esteem Brand et al. (2010) suggest to make the environment encourage exploration and to help develop skills and meet up with personal interests.

Kinnaer et.al. (2015) describes how a person with ASD can feel closer to object, in this case ones garden, than they do to their own family. These objects are very important to the persons sense of identity (Kinnaer et. al., 2015).

Some people with autism spectrum disorders may take ownership of a specific space and they may not like when others occupy that space. Love (2022) suggests to provide two options for the most important common spaces. People with ASD may also have discomfort when people are sitting to close. Love (2022) suggest to use a arm-length inbetween furniture.

Summary of rooms and functions according in the brief by Karlskrona municipality.

Content:	Notes:
<ul style="list-style-type: none"> o Group accommodations: <ul style="list-style-type: none"> o 3-5 residents ■ All apartments on one floor. 	<p>An available, safe and secure environment adapted for people with physical and cognitive disabilities.</p>
<p>The apartment:</p> <ul style="list-style-type: none"> ■ About 45m² o Wardrobes, cleaning-, medicine- and valuables cabinets. ■ Two doors to every room o Private entrance <ul style="list-style-type: none"> o Storage for shoes and outdoor clothes. ● Door to common corridor o Kitchen <ul style="list-style-type: none"> o Fully equiped o Prepared for smaller dishwasher. o Living room o Bedroom <ul style="list-style-type: none"> o Bed 90-105cm o WC and shower <ul style="list-style-type: none"> o Possibility to have washing machine and dryer. ● Patio when built on ground floor. 	<p>Support own interests and activities of daily living. Possibility to furnish according to own choice.</p> <p>Safety for staff and residents.</p> <p>Most meals are prepared in the private kitchen.</p> <p>Bed placed along wall or so that staff can help from both sides. Space for shower bed and two staff to help.</p> <p>Patio placed in seclusion with minimum disturbance from others.</p>
<p>Common areas:</p> <ul style="list-style-type: none"> o Common entrance. <ul style="list-style-type: none"> ■ Toned down o Possibility for visitors to hang outdoor cloths. o Corridor o Common area <ul style="list-style-type: none"> o Sofa group and TV. o Dining area o Kitchen <ul style="list-style-type: none"> o Cabinetry in full height, fridge and freezer, stove and oven, micro, dishwasher and sink. o Laundry room <ul style="list-style-type: none"> o Washing machines, dryer and drying cabinet, sink, storage and bench surfaces. 	<p>Supporting meaningful activities, social interactions and well-being.</p> <p>Focus on private entrances.</p> <p><u>Short corridors that are easy to overview and orient oneself in.</u></p> <p>Only for residents and 3-4 working staff.</p> <p>Space for residents and staff to bake and cook together.</p> <p>Residents wash and fold clothes together with staff.</p> <p>Ensure that no disturbance comes to the apartments.</p>

<p>Staff areas:</p> <ul style="list-style-type: none"> ■ Extra bed o Break / lunch room <ul style="list-style-type: none"> o Pentry with fridge/freezer, sink, dishwasher, cabinets and storage. 2 microwaves. water boiler and coffee machine. o Seating area by table or sofas. o Bedroom <ul style="list-style-type: none"> o Bed and 2 wardrobes o Office <ul style="list-style-type: none"> o 2 workspaces for computer work. o Key locker o Printer o Storage o Safe o Dressing room <ul style="list-style-type: none"> o Bench and mirror o Lockers for 10 persons. o Collection of used work clothes for laundry o WC with shower 	<p>About 3-5 staff at the same time</p> <p>Temporary overnight stay.</p> <p><u>Staff lunch/dinner and meetings for 8-12 persons.</u></p> <p>Sleeping staff at night.</p> <p>Administration and planning.</p> <p>Sometimes staff needs work clothes or to change before work.</p>
<p>Other areas:</p> <ul style="list-style-type: none"> o Cleaning room o Indoor storage <ul style="list-style-type: none"> o Common storage o Medicine storage o Recycling room o Outdoor storage <ul style="list-style-type: none"> o Private storage o Common storage o Storage for outdoor wheelchairs. 	<p>About 3m². Locked, only for staff.</p> <p>About 8m². Materials, cleaning stuff, work clothes etc.</p> <p>About 2-3m². Tube feeding, incontinence aid etc.</p> <p>In a separate building, that can also contain outdoor storage. 10m from main building for fire safety.</p> <p>Outdoor furniture, tools etc.</p> <p>About 3m². Indoor temperature of About 10° C.</p> <p>About 8-10m²</p> <p>Indoor temperature of About 10° C.</p>
<p>Outdoor environment:</p> <ul style="list-style-type: none"> o Common patio <ul style="list-style-type: none"> o Seating for residents and staff o Maybe a walking path around the building. o Drop of zone <ul style="list-style-type: none"> o With seating area. o Parking lots o Bicycle parking 	<p>Fika, do garden work and play games.</p> <p>For visitors, staff and one minibus.</p> <p>With roof.</p>

Table 1: Summary of "Funktionsprogram for bostad med särskild service enligt LSS" by Karlskrona kommun. (2009).

8.2 Brief, Gothenburg municipality

The purpose of this brief is to support all persons involved in pilot studies, design and construction of group accommodations. The brief should provide knowledge about group accommodations and how it affects different physical and technical solutions (Göteborgs stad, 2018).

The described purpose of the group accommodations is to provide an opportunity for people with disabilities to live like others and to live as independently as possible (Göteborgs stad, 2018). The group accommodation should be adaptable for different disabilities as well as ages, religions, ethnicities etc. Since it is the resident's permanent home, Boverkets byggregler applies to a fully adequate home (Göteborgs stad, 2018).

The brief (Göteborg stad, 2018) describes two different types of apartments. One with normal accessibility and one with increased accessibility.

In addition to the brief "Ramprogram, Bostad med särskild service" (Göteborg stad, 2018) Gothenburg municipality also has a special brief with more details on the room-functions for every project and "Tekniska krav och anvisningar" with overall requirements. "Tekniska krav och anvisningar" is a common brief for group accommodations, elderly care, schools and offices in the municipality and only some of the requirements are specifically made for group accommodations (Göteborg stad, 2023).

8.2.1 Requirements for materials and details

The brief from Gothenburg didn't contain so much about extra requirement. It mentions dimmable lighting, sun screening and sound classifications. The brief mention that different structures, colours, mirrorings detached pipings and materials can affect the residents, but do not mention how (Göteborgs stad, 2018).

The garden should be easy to care for and have asphalted or stone paved walking surfaces. Any garden plants should be considered due to allergies and the garden should have artificial lighting (Göteborgs stad, 2018).

"Tekniska krav och anvisningar" (Göteborg stad, 2023) adds som extra information that are specific for group accommodations. For example should the windows be placed so that a person could look out both from standing, sitting and laying down and handles on cabinets should be easy to grip and contrast in color with the cabinet door itself (Göteborg stad, 2023).

Summary of rooms and functions according in the brief by Gothenburg municipality.

Content:	Notes:
<ul style="list-style-type: none"> o Group accommodations: <ul style="list-style-type: none"> o 3-5 residents (Max 6) o All apartments and common areas on one floor. 	
<p>The apartment:</p> <ul style="list-style-type: none"> o Wardrobes, medicine cabinets. <ul style="list-style-type: none"> ■ 2 types of apartments o Private entrance <ul style="list-style-type: none"> o Storage for shoes and outdoor clothes. o Kitchen <ul style="list-style-type: none"> o Fully equipped. <ul style="list-style-type: none"> ■ Table and chairs. o Living room <ul style="list-style-type: none"> ■ Dining table ■ Social space o TV o Bedroom <ul style="list-style-type: none"> ■ Could be sleeping alcove o WC and shower <ul style="list-style-type: none"> o Storage for hygiene products o Patio or balcony 	<p><u>One type with standard availability, one with increased availability.</u></p> <p>To provide the feeling of a private residence. From outside or internal corridor. <u>The doors should not be openable directly to other doors.</u></p> <p>To cook dinner for one self and guests.</p> <p><u>Can be furnished in different ways.</u></p> <p>Space for eating and being social.</p> <p>In the calm part of the apartment. <u>Alcove is okay if apartment is between 35-55m².</u> Adapted for physical disabilities.</p> <p>Placed in seclusion with minimum disturbance</p>
<p>Common areas:</p> <ul style="list-style-type: none"> o Common entrance <ul style="list-style-type: none"> o Outdoor bench o Corridor o Common area <ul style="list-style-type: none"> o Sofa group and TV. <ul style="list-style-type: none"> ■ Storage o Kitchen. <ul style="list-style-type: none"> o Cabinetry in full height, fridge and freezer, stove and oven, micro, dishwasher and sink. o Dining area o Laundry room 	<p>A connecting spot for the residents. Big enough for all residents and staff to take part in the activity.</p> <p>For social activities. <u>Sometimes seperatable.</u> Acoustics are important. Could be connected to kitchen.</p> <p>Preparing and eating meals.</p> <p>There are most often a common laundry room.</p>

<p>Staff areas:</p> <ul style="list-style-type: none"> ■ Lockers ○ Break / lunch room <ul style="list-style-type: none"> □ Pentry with fridge/freezer, sink, cabinets, storage, microwave, water boiler and coffee machine. □ Place to eat and take a break. ○ Bedroom ○ Office <ul style="list-style-type: none"> □ 2 workspaces for computer work. □ Key locker □ Printer □ Storage □ Safe ○ WC and shower 	<p><u>Sound insulation against common areas.</u></p> <p>Depends on number of staff.</p> <p>Eating and resting.</p> <p>Accessible. For staff working sleeping nights.</p> <p>With washing machine if there are no common laundry room.</p>
<p>Other areas:</p> <ul style="list-style-type: none"> ○ Storage <ul style="list-style-type: none"> □ Office-, hygiene- and cleaning material. □ Wheelchairs, lifts and outdoor furniture. ○ Private storage ○ Recycling room 	<p>Size depends on the residents. Both indoor and outdoor storage.</p> <p>About 1-2m². Insulated. Could be outdoors.</p>
<p>Outdoor environment:</p> <ul style="list-style-type: none"> ○ Common outdoor environment <ul style="list-style-type: none"> □ Common patio □ Grass area and walking paths. ○ 2-3 parking lots ○ Bicycle parking ○ Disabled parking 	<p><u>Relaxation and activity. Space for all residents and staff.</u></p>

Table 2: Summary of "Ramprogram Bostad med särskild service - egenproduktion" by Göteborgs stad. (2018).

8.3 Brief, Borås municipality

Borås stad (2021) uses this brief when they places an order for a new group accommodation. It contains of requirements for construction and proposals for technical solutions in addition to general regulations for fully adequate residences. The goal for the group accommodations mentioned in the brief (Borås stad, 2021) is to provide a fully adequate home to the residents.

8.3.1 Requirements for materials and details

The brief (Borås stad, 2021) has, like Karlskrona municipality, an extra section for requirements, but also adds extra requirements to most of the room descriptions. They rarely mention why they want specific requirements. A lot of Borås stad's (2021) requirements are for increased accessibility, such as, for example, that thresholds and level differences should be avoided, and the program contains common standard measurements for assistive devices.

The lighting should not have motion sensors and it should be dimmable. Borås stad (2021) also mentions that shadow-making should be avoided. The windows should be low enough for a person in a wheelchair to see out, but never go from floor to ceiling. Colours and light can be used to help understand a space. The colours should be in calming, dull shades. Patterns and reflective materials should be avoided (Borås stad, 2021).

Sound insulation is important, especially insulation around the laundry room and the ventilation should be quiet (Borås stad, 2021).

Borås stad (2021) also mentions other details that may be linked to sensory sensitivity, such as underfloor heating before radiators and how sockets and wardrobes should be hidden or built-in.

Borås stad (2021) has also described a number of other spatial requirements such as for example that all residents must have their own entrance so that they do not have to pass through common spaces, avoid doors opening towards each other, one function per space, avoid dead ends and cramped spaces where users and staff can feel cramped and have glass doors to common areas.

Summary of rooms and functions according in the brief by Borås municipality.

Content:	Notes:
<p>Group accommodations:</p> <ul style="list-style-type: none"> ■ 5-6 apartments □ Preferably apartments, common areas and staff areas on one floor. 	
<p>The apartment:</p> <ul style="list-style-type: none"> □ Wardrobes, cleaning and medicine cabinets. <ul style="list-style-type: none"> ■ Minimum 4 wardrobes or larger closet. ○ Private entrance <ul style="list-style-type: none"> □ Storage for shoes and outdoor clothes. <ul style="list-style-type: none"> ■ Possibility to sit down. ○ Kitchen <ul style="list-style-type: none"> □ Fully equipped □ Prepared for smaller dishwasher. <ul style="list-style-type: none"> ■ 2 sinks ○ Living room <ul style="list-style-type: none"> □ Sofa and TV. ○ Bedroom <ul style="list-style-type: none"> □ Bed <ul style="list-style-type: none"> ■ Minimum 3 wardrobes. Desk, armchair or bureau. Prepared for TV. ○ WC and shower <ul style="list-style-type: none"> □ Sink, cabinet, toilet, shower and unbreakable mirror. □ Prepared for washing machine. ○ Balcony or patio. 	<p>Space for the resident and minimum 2 staff to work.</p> <p>Designed as a standard kitchen.</p> <p><u>Possibility to screen of from kitchen.</u></p> <p>Cut of from the rest of the apartment. Resting. Space for staff to help from both sides of bed.</p> <p>Space for staff to help from 2 sides of shower chair and toilet.</p>
<p>Common areas:</p> <ul style="list-style-type: none"> ○ Common entrance <ul style="list-style-type: none"> ■ Possibility for separate goods entrance ■ Seating both indoor and outdoor. ■ Indoor mailboxes. ○ Corridor <ul style="list-style-type: none"> ■ Places to sit. ○ Common area <ul style="list-style-type: none"> □ Sofa group and TV. <ul style="list-style-type: none"> ■ Minimum 2 day beds. ○ Kitchen <ul style="list-style-type: none"> □ Cabinetry in full height, fridge and freezer, stove and oven, micro, dishwasher and sink. <ul style="list-style-type: none"> ■ A sink by the entrance. ■ Dining area, preferably 2 smaller tables. ● Possibly a activity/sensory room ○ Laundry room <ul style="list-style-type: none"> □ 2 washing machines, dryer and drying cabinet, sink, storage and bench surfaces. 	<p>Centralized, light and spacious, clear and visible.</p> <p>As short as possible. <u>No doors opposite each other.</u></p> <p>For all residents and staff. Easy to find. <u>Could also be used for staff meetings.</u> The TV should be placed in a calm space. Place to rest lying down. Only needed for people with severe physical disabilities. Big enough for all residents to help active or passive with preparing food and eat together.</p> <p>Discussed before every project. Could be movement training, sensory room, massage room, music room etc.</p> <p>Place for residents and staff to do laundry.</p>

<p>Staff areas:</p> <ul style="list-style-type: none"> ○ Break / lunch room <ul style="list-style-type: none"> □ Table and seating area. Small kitchen. ○ Bedroom <ul style="list-style-type: none"> □ Bed and 2 wardrobes <ul style="list-style-type: none"> ■ 1 armchair and prepared for TV. ○ Office 1, base staff <ul style="list-style-type: none"> □ 2 desks, printer, armchair, storage ● Office 2, certified staff and unit manager <ul style="list-style-type: none"> ■ 1 desk, armchair, storage, work bench, sink, medicine locker and medicine fridge. ● 2 smaller dressing rooms <ul style="list-style-type: none"> □ Lockers and place to hang outdoor clothing. ○ WC with shower ● WC 	<p><u>No passage to other rooms.</u></p> <p>For night-working staff. Separable from other spaces.</p> <p><u>One of the dressing rooms could be exchanged for the larger WC or the bedroom if they are close.</u></p>
<p>Other areas:</p> <ul style="list-style-type: none"> ○ Cleaning storage ○ Storage <ul style="list-style-type: none"> □ Storage for stuff used in common areas □ Staff clothing □ Wheelchair storage □ Cold storage □ Private storage □ Medicine storage 	<p>Cleaning stuff for common areas Do not specify if the storages are outdoor or indoor.</p> <p>Outdoor</p> <p>Incontinence storage needed for people that have severe disabilities.</p>
<p>Outdoor environment:</p> <ul style="list-style-type: none"> ○ Common patio <ul style="list-style-type: none"> ■ Open area to play kubb or boule. ■ Fence around garden might be necessary. ■ Preferably grow boxes. ○ 6 parking lots ○ Bicycle parking 	<p><u>Protected from view and weather.</u></p> <p><u>Especially in accommodations for people with ASD.</u></p> <p>High enough for people in wheelchairs.</p>

Table 3: Summary of "Lokalplan för gruppbostad enligt LSS i Borås Stad" by Borås stad. (2021).

8.4 Summary of the briefs

All the briefs contained a list of the rooms and functions desired in a group accommodation. Karlskrona municipality's brief (2009) was a little more detailed about the desired room connections and clearer that the functions should be in separate rooms. The brief from Göteborg stad (2018) was the least careful with room connections and functional divisions in separate rooms. Among other things, this brief approved that the bedroom could be a sleeping alcove and the kitchen and living room could be in the same room.

Two way rooms is something that the brief from Karlskrona kommun (2009) is clear about in the apartments, but does not mention in the common areas. The brief from Göteborg stad (2018) mentions that it is important that the laundry room has two doors, but does not mention it for more rooms. The brief from the city of Borås stad (2021) instead mentions that dead ends should be avoided in general, but does not give exact areas where the two-way solution is particularly important.

The brief from Göteborg stad (2018) described two types of apartments with normal and increased accessibility, and the brief from Borås stad (2021) mentioned some functions that were only needed if a resident had severe physical disabilities. Karlskrona kommun's brief (2009) does not mention any differences in accessibility for different projects.

All the briefs are clear that the apartments must have private entrances. Göteborg stad's brief (2018) also describes that a private entrance can be located facing a corridor. In Borås stad (2021) and Karlskrona kommun's (2009) briefs, these private entrances should preferably be connected directly from the outside.

Borås stads' brief (2021) contains the most rooms for staff and is also the most accurate with the connections between the staff areas and the rest of the accommodation. Among other things, the brief wishes that the entire accommodation should be located on the same floor and not just apartments and common areas. The brief from Karlskrona kommun (2009), on the other hand, is the only one that suggests a patio for the staff.

Illustration of functions and room connections in the brief by Karlskrona municipality.

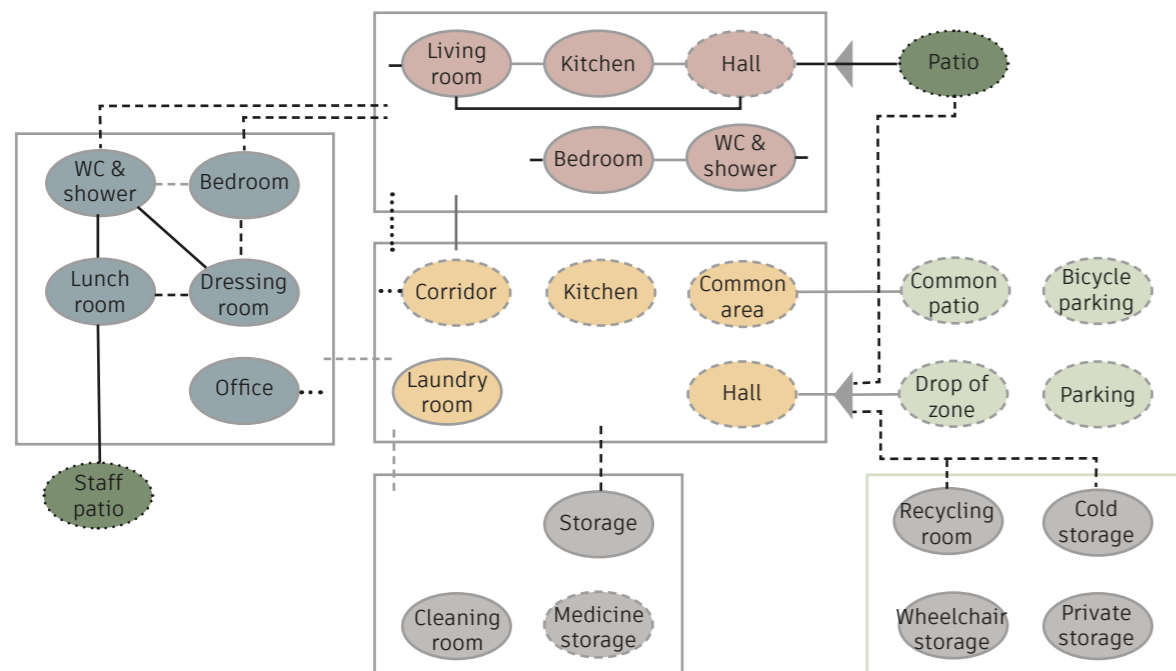


Figure 3: Illustration of "Funktionsprogram för bostad med särskild service enligt LSS" by Karlskrona kommun. (2009). Parts marked with darker colours are unique for this brief.

Illustration of functions and room connections in the brief by Gothenburg municipality.

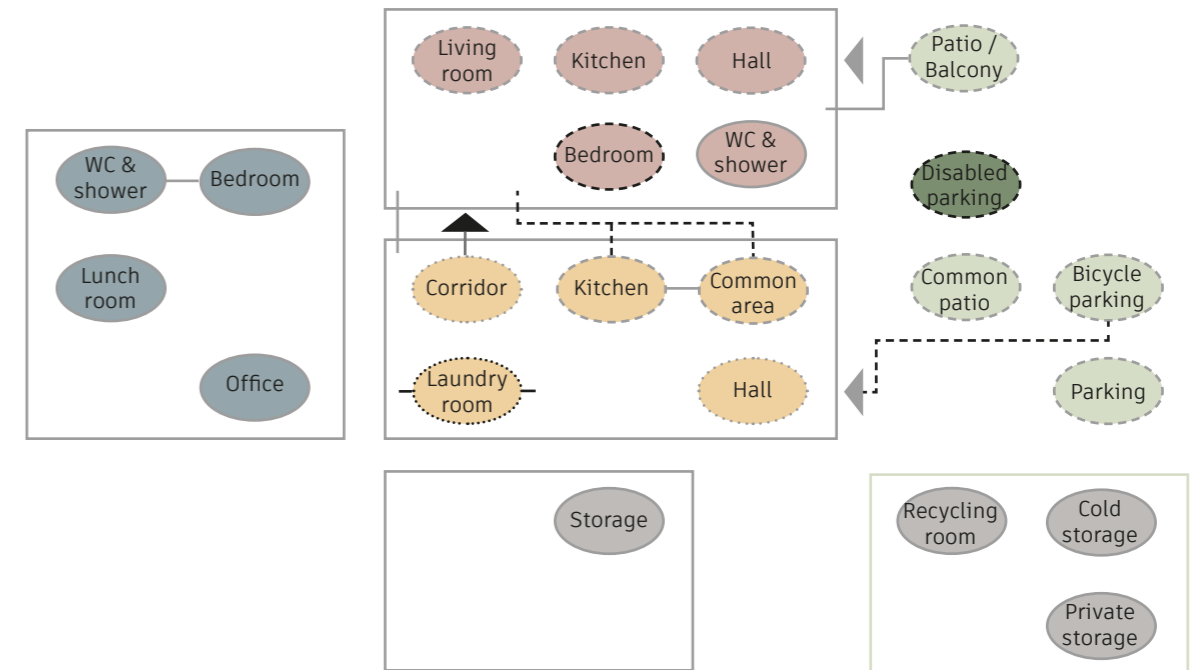


Figure 4: Illustration of "Ramprogram Bostad med särskild service - egenproduktion" by Göteborgs stad. (2018). Parts marked with darker colours are unique for this brief.

Illustration of functions and room connections in the brief by Borås municipality.

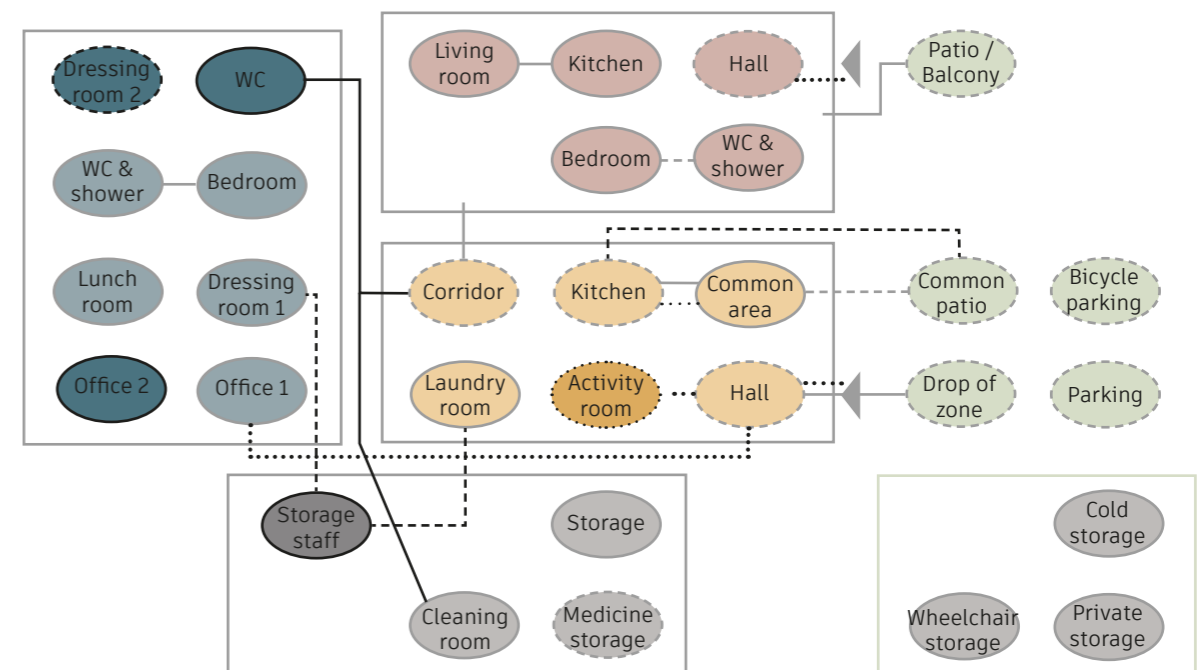


Figure 5: Illustration of "Lokalplan för gruppbofast enligt LSS i Borås stad" by Borås stad. (2021). Parts marked with darker colours are unique for this brief.

- Apartment / Unique to this brief
- Common areas / Unique to this brief
- Staff areas / Unique to this brief
- Outdoor / Unique to this brief
- Other / Unique to this brief
- Closed room / Unique for this brief
- Can be part of room / Unique for this brief
- Optional / Unique for this brief
- Directly connected / Unique for this brief
- Preferably close to / Unique for this brief
- Sightlines / Unique for this brief

9 Study visits & interview

Study visits and interviews have been conducted in two group accommodations in Karlskrona municipality, Vikvägen and Bastasjövägen. On Vikvägen is all functions gathered in one house body. On Bastasjövägen, the apartments are spread out in townhouse-like buildings around a central building that contains the common area, staff spaces and daily activities.

9.1 Vikvägen

Vikvägen is one of Karlskrona municipality's newest group accommodations. The resident who was interviewed has an intellectual disability and has lived in the home since it was completed in 2022. Before that, he had lived at home with his parents. The resident is 61 years old and is generally very satisfied with living in the group accommodation.

9.1.1 Interview with resident

The residents apartment felt like an ordinary apartment. The residents can decorate their apartments themselves. The resident interviewed was very proud of his apartment.

In all the rooms there were sliding doors instead of swing doors. It is something that the brief asked for because it takes less place and is flexible when large aids are used. The resident preferred sliding doors, prior to swing doors. Staff has criticized the sliding door for not being able to centre the TV in the living room.

A large bathroom was connected to the bedroom in the apartment. The resident said that he needs some support from staff in the bathroom, for example when showering, but he could do some stuff himself, for example putting on the laundry machine. The bathroom almost felt too spacious.



Figure 6: The large bathroom had space for drying clothes.

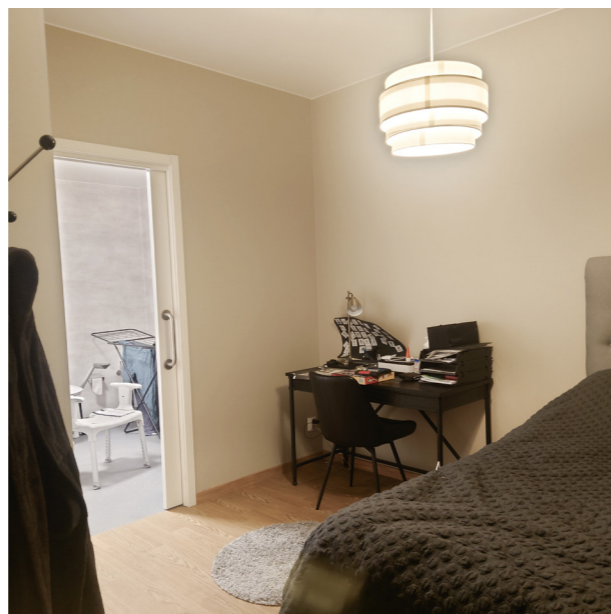


Figure 7: The bathroom is entered through the bedroom.

In the living room, the resident often sits and watches TV, more often than in the common area, he says. The living room is connected to a private patio. Right now he had a training bike in front of the door to the patio. But he says that he likes to sit on the patio and drink coffee when it's warmer outside. He likes to sit by himself on the patio, but it is okay if others wants to join him.

The kitchen has two entrances to the living room and hall, which the resident always has open, but he says it is good to be able to close them. Both openings are used. In the kitchen, the resident helps to prepare food. Due to the quite large openings in the kitchen, it almost felt like it was an open plan solution connected to the living room.

The resident eats his meals at a small dining table in the living room. As it is furnished in the apartment, a maximum of 3 people can eat at the dining table. He usually eats by himself, but has sometimes invited a neighbour and is sometimes visited by his sister. He rarely receives visits from several people at the same time, so the small dining table has been enough. The resident prefers the neighbour to visit him, than to visit the neighbour. He doesn't really like being in someone else's apartment, it feels better to be in his own. He prefers to eat with others and would have preferred to be accompanied by staff or to eat in the common area.

The resident says that he likes to be in the common area where they usually play games. He says that he is often there in the mornings. He likes being in the TV room with staff, but doesn't think the other neighbours need to be there when he is there. But they can be there.



Figure 8: The hall from the living room with the two entrances from the kitchen visible.



Figure 9: The view out towards the lake from the living room. The bike is in the way of the patio door.

9.1.2 Interview with staff

The staff interviewed didn't think the group accommodation was fully adapted to the people who live here. Half of the residents still prefer to play, they explain. The staff think that the outdoor environment in particular is not suitable for the residents. More space is needed for activities. If they do activities outdoors with the residents, they leave the group accommodation.

Outside of the group accommodation is a parking lot which they think is boring, and bushes and rock formations which they say are not appreciated by the residents. It is too close to the street outside the group accommodation. Outside the patio there is a flowerbed, but since it is straight out from the patio, residents often walk right over it.

The apartments suit some residents, but not suit others. They tell about a resident who previously had a bedroom, a playroom and a dining room. Now it is difficult to get the resident to eat properly in the living room, as it is also the playroom.

The staff say that LSS accommodation needs a lot of space. It can be good to have rooms for different activities that the residents have at their workplaces. If they had similar arrangements at home, the residents would have recognized themselves and had an easier time understanding. In this group accommodation, the staff feels like there is a lack of space for activities.

There is an upper floor for the staff, but it is very rarely used as they say they cannot leave the residents. They would rather have everything on the same level. If they go up to the office, they have disappeared for the users. They also mention that toilets must be close so that they don't have to run so far from the users if something happens. There is a meeting and rest room on the upper floor, but the staff usually have meetings in the common area as they find it difficult to leave the residents.

The common area is often used by some of the users, while some only go there to find the staff. The staff say that the residents seem to have appreciated when they have eaten in the common area and told about a common barbecue, for all residents, that even the residents who keep more to themselves seemed to have appreciated this summer.

The kitchen and TV room felt quite small and there was no door between the rooms. The staff didn't think the residents thought much about the kitchen, but some get distracted. One of the staff points out how well we hear in the TV room when a kettle was started in the kitchen. The residents may be disturbed when it gets loud in the common area.

Previously, they had problems with an apartment being opposite the common area, which gave that resident a quick way out into the common area to disturb other residents who were there. They also question the location of the main entrance opposite a resident's apartment. It can make a lot of noise when there are visitors, which bothers this resident.

They say that residents find it difficult to understand the boundary between yours and mine and that residents like to take things with them between their apartment and the common area.

One of the staff says that he has worked on Bastasjövägen and thinks that the accommodation feels better adapted because it is more divided. But something that is positive here compared to Bastasjövägen is that this is close for residents to get to the common area. On Bastasjövägen, the users have to go out between their apartment and the common area, which has resulted in the common area not being used as often there. The staff feels that the residents are more attached to their apartments there and believe that the residents can also feel that way. In this accommodation, it is a security for the residents to be close to the staff.

Plan drawing of Vikvägen group accommodation

Scale 1:150

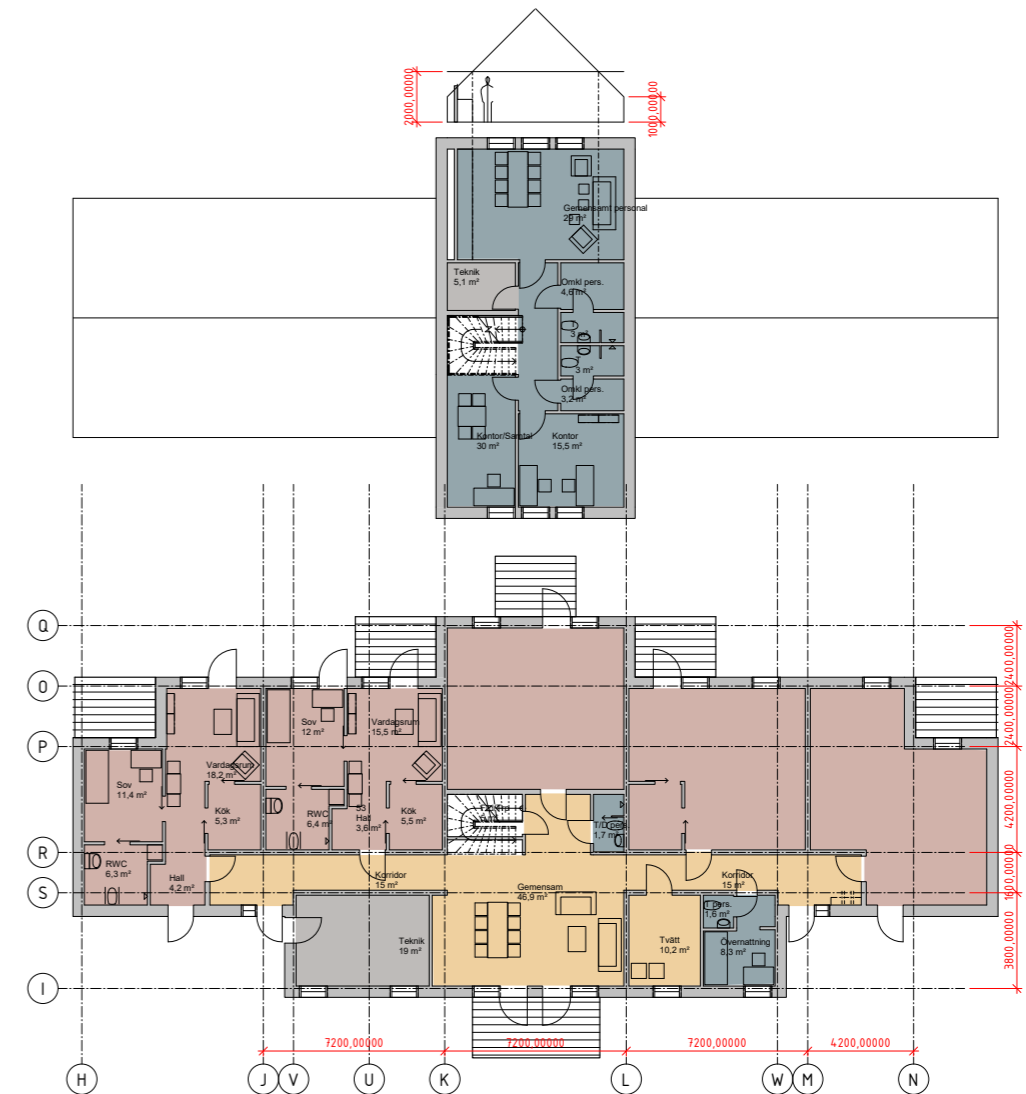


Figure 10: Edited version of plandrawing retrieved from Fredrik Löfgren, Karlskrona funktionsstödsförvaltning (personal communication), drawn by Krook och Tjäder.

- Apartments
- Common areas
- Staff areas
- Other

9.2 Bastasjövägen

The group accommodation on Bastasjövägen was built in 2010 and was intended to be specially adapted for people with autism spectrum disorders. The group accommodation is slightly outside of a residential area, in a quieter environment, and the residents live in separate buildings from the common area. The resident who was interviewed has ASD and ADHD. The resident is 36 years old and moved directly to this group accommodation from her parents home when the group accommodation was ready in 2010. She said that at first she felt worried about the move, but today she feels good in the group accommodation.

9.2.1 Interview with resident

At the time of the study visit, the resident was actually on daily activities, but she cheerfully told me that she worked from home. She found it easier to concentrate at home. The resident has difficulty with too much sounds. She is disturbed by it and finds it difficult to control her emotions.

Since we entered directly from the outside to the residents apartment, we had to hang our outdoor clothes in the resident's hall. It felt a bit homely and really like you were visiting someone's home. The resident likes to have her own front door and always has it locked, both when she is at home and when she is not.

The resident has decorated the apartment herself. She loves horses and a lot of the decor was horses. She rides every week.

The kitchen felt quite cramped, but the resident said there were no problems. Later, staff would describe being careful not to get in the way while working.



Figure 11: The bed with stuffed animals that the resident was very proud of.

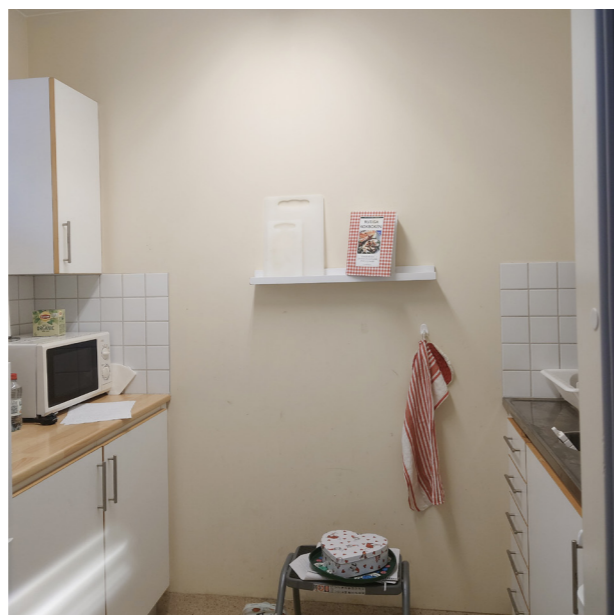


Figure 12: The small kitchen

In the living room there are a lot of things for different activities. She says that she sits at her computer, writes and watches TV in her living room. From the living room, she looks out towards the yard. She likes the view. Here, people can walk past to get between apartments and the common area. She says she likes to film people walking by.

The resident eats by herself or with staff. It doesn't really matter if she is alone or with company. She enjoys eating in her living room as much as eating in the common area.

The resident seems to like the common area and would like to be there more often. Now she is only there on weekends. When asked if she thinks it's hard to go out to go to the common area, she answers yes, because then she might meet a neighbour she doesn't like. She doesn't seem to think the weather is as important. She wants to be in the common area with staff and one of the neighbours she likes, but does not want more of the neighbours with her.

She gets visits from many different relatives, but it seems that they usually come one by one. Then they often go somewhere else or sit on the sofa and talk.

The resident likes to be outside and often walks around the yard and some distance towards the nearest neighbours. She says she goes alone, but staff say they are with her.



Figure 13: The living room with the view towards the yard and the building with the common area.



Figure 14: The dining table in the living room with a view towards the backyard.

9.2.2 Interview with staff

The staff describe the difference between this accommodation and others as that this one has its base in the common area and that in other group accommodation you feel as if everyone is at home with everyone. The staff describe that in other group accommodations it feels a bit like the office is in the kitchen and that here they are more targeted for every effort. My interpretation is that the staff here work a little more like in the domestic service, where you start from a staff office and go home to residents to make an effort.

If the residents go to the common area on their own, they usually look in and knock on a glass door in the common living room. The staff tries to teach the residents to take the route via the hall instead, but has not succeeded.

There are those residents who do not go to the common area themselves, but the staff think that the resident knows how to get there. For this resident in question, the staff thinks that they would perhaps feel better in the other type of group accommodation where the staff are closer, as it is the only resident who the staff feel is limited by the fact that the common area is not in the same building. The staff describe the resident who could fit in the other type of accommodation as “she could have her door open”.



Figure 15: The common room with the glass door that the residents prefer to use.

The residents have their own evenings in the common area when they cannot manage to be there together. They don't like each other. Everyone has their evenings at weekends and the staff describe that they rarely want to be there on weekday evenings. When they are in the common area with the residents, they usually play games or watch movies.

One of the users has an activity track in the yard and they also use the yard when they pack firewood.

The staff describe that the residents often start a challenging behaviour at the daily activities, when they meet in a narrow corridor or when their routines clash into each other. They usually get challenging behaviour when they are disturbed by each other. The staff feel that it is easiest to calm the residents down in their own apartment.

At the daily activities, the residents have their own work rooms. The work rooms have glass windows on the doors, but the residents get disturbed by each other too much when they walk by, so they have put up a plastic film on all the windows so that the residents don't see who is walking by.



Figure 16: One of the doors in the daily activities that has a plastic film.

Sketch of Bastasjövägen group accommodation.



Figure 17: Sketch of Bastasjövägen group accommodation. Scale 1:500

9.3 Interview with Catrin Brissmalm

Below are comments and excerpts from an interview with Catrin Brissmalm at the administration for functional support in Karlskrona municipality, sorted according to different topics, relevant to the purpose of this thesis and conclusions from the interviews, and brief analysis.

9.3.1 Comments on Bastasjövägen

I think Bastasjövägen was finished in 2009. I don't remember exactly. We built it based on the experiences we had from Bastasjö gård. Bastasjö gård is built like Vikvägen, all of the functions are in one building. There we noticed that the residents were so disturbed by each other.

So we built in a different way. We said that we do the common area and daily activities in a separate building and we build six apartments. The common area is a little special on Bastasjövägen. Everyone has access to the common parts. It's their living room. It's great that the common area is in group accommodations, you should have the right to it, but not everyone needs it, they don't want it, they'd rather be in their own apartment.

Between the apartments we built a storage room because the sound was the thing that bothered the most for these residents with autism spectrum disorders at Bastasjö gård.

When we built Bastasjö gård, it was finished in 1999, we struggled a lot to provide the residents their own front door. You should have your own front door, you shouldn't come to the entrance and meet everyone when you come home tired from daily activities and can't stand a lot of people. You should feel that this is my home. Relatives also do not have to enter the whole group accommodation. They should really be able to feel that they have come to their adult child. We took that thought with us and we wanted it even a little further away from the common area.

At Bastasjö gård and Bastasjövägen, it is built in such a way that it suits people who have difficulty with the executive functions of getting from one point to another. Where the transitions are difficult. Then you should find it easy to get to your workplace. These are

our only group accommodations where we have daily activities and the accommodation so close to each other. What we failed at was that the daily activities are far too narrow. The staff have done a fantastic job there by planning and organizing so that these residents who find it difficult to meet, they don't meet.

The residents for whom Bastasjövägen is primarily planned are those who live there. People with severe autism and an intellectual disability. Those who need a lot of support. You should be able to go outside your door and to your daily activities without being in traffic or being among neighbours. So you can be this spontaneous and be able to feel safe. And then we also need accommodation in a rural environment, not everyone wants to live in the city. So to sort of have that environment close to nature. And there are many people with autism who have that need. Because they are overloaded perceptually, then it becomes too much for them. Then it is good to have easy access to nature. (C. Brissmalm, personal communication, February 12, 2024).

9.3.2 Comments on Vikvägen

Vikvägen was a 19th-century house, which burned down. It had two floors, which we were going to have a group accommodation in. It took six and a half years, from the time I was looking at that site until the residents could move in. Then we built a two-story house. So the staff got plenty of space to have a break, change, etc. on the second floor.

We started building in 2017, maybe 2018. Then we had a few more years of experience than at Bastasjövägen. There is a shortage of premises in the municipality and a shortage of money in the administration. They wanted to squeeze as much as possible into this incredibly beautiful site. So then we decided to build two group accommodations next to each other. It is perhaps close to an institution, that ten people should live a bit outside the community.

I struggled a lot with the fact that we should not have 6 apartments in these group accommodations, but 5. In the LSS it says 3-5 apartments. We don't have a single group accommodation that only has three apartments, but we have a few that have four. There we see that there are far fewer worries, because the residents have fewer social relationships to keep track of.

Here I also wanted them to have their own front doors, but I couldn't get that through. But I got through two entrances. So there is one at each end. The common area is in the middle and there is also a patio door there. It is also so that the residents do not have to be confronted. Because it is about confrontation and because they do not understand the needs of the other residents. With autism, it is very difficult to think how other people feel. Then we took those who have the most difficulty meeting other people and let them live in the outer apartments.

When you enter Vikvägen, there is very good insulation. In the construction project, we had a person who knows this with sound insulation. She said that we shouldn't isolate too much, then you won't hear if something happens. So some parts are more isolated. The apartments are a little less insulated. The stairs to the second floor, it is completely soundproof.

On Vikvägen, we had come so far that we started renovating the old house. And then it burned down. Then we wanted to keep the foundation. We had a landscape architect who was involved in this to make rooms in the garden. Like barbecue area, rest area and such. Very cool he did it, but it later turned out that the stones were so destroyed by the fire, that it could not be kept. Now there is a barbecue area. Then they built a walking path around the back of the house we were in. It's a short walking trail, if you have major disabilities and just want to go for a short walk, you should be able to do it at home. It's a fantastic environment, it is culturally marked.

The people for whom this group accommodation should be suitable for are somewhat the same as at Bastasjövägen. When I say that we should build the group accommodations so that those who need the most support can manage to live there, it does not mean that only people at an early developmental level and who have severe autism should be able to live there, but everyone. It will be created for all people who want to live in such an environment. But at Bastasjö gård and Bastasjövägen, it is even more niche that only people with severe autism live there. On Vikvägen, we have mixed the group a bit more. It also depends on who is in our queue (C. Brissmalm, personal communication, February 12, 2024).

9.3.3 Comments on functional room divisions

What I'm thinking about are these people who have difficulty with spatial perception, both those who are at an early developmental level and those with autism. I have worked in another group accommodation where it was an open plan where there was a person with autism who when we were cooking would rather watch TV when he saw the TV and the sofa.

The organization of the room is so important for clarifying pedagogy. So that when you are in the kitchen, you are in the kitchen. If you are a person who then has difficulty with too much impressions, then we close the doors. On Vikvägen, we made sliding doors so that it does not take up space. Then you can't hang things wherever you want on the walls, but it's probably more important to be able to concentrate. This is to collect the impressions. The fact that we have two entrances to the kitchen has to do with the work environment. Staff must be able to leave (C. Brissmalm, personal communication, February 12, 2024).

Changes to the brief

Reflections & conclusions - Results

Reflections and conclusions from the theory, the analysis of the briefs and the study visits and the interview are used as a background for the changes to the brief.

10 Reflections and conclusions

10.1 The two different group accommodations

None of the briefs (Borås stad, 2021; Göteborg stad 2018; Karlskrona kommun, 2009) describe different types of group accommodations that are planned for different types of support needs. Karlskrona municipality's (2009) brief does not mention anything about the different types of group accommodation, but still it was clear that they had two different types in mind when they planned the group accommodations. The two group accommodations that were visited were characteristic of the two different types of group accommodations that exist in the municipality. At Vikvägen all functions are closely linked in one building, while on Bastasjövägen the common parts are in one building and the private apartments in separate buildings.

During the study visits, staff described differences in working at the different residences. It can be interpreted as that they work closer to the residents at Vikvägen and are always there to provide support to the residents. While the residents at Bastasjövägen receive more targeted support for specific efforts. The residents can easily reach the staff here as well, but they also have more personal space.

When a member of staff described a person who lived at Bastasjövägen, but who could be comfortable at Vikvägen, he mentioned that the resident in question could have had the door open. One interpretation of that is that the resident would enjoy being closer to staff and neighbours, that she is comfortable with other people close by and is happy to let others into her apartment. A staff at Vikvägen describes that it is a security for the residents there to always have staff that close.

Catrin Brissmalm (personal communication, February 12, 2024) did not want to clearly specify a specific group of residents that the different group accommodations were intended to. Instead, she was clear that they build group accommodation for the people who have the greatest need for support. But she also mentions that Bastasjövägen is better suited for people with severe autism who need more support in social interactions (C. Brissmalm, February 12, 2024).

A conclusion after the study visits and interviews can be that Vikvägen is suitable for people who need support from staff who are constantly nearby, while Bastasjövägen is suitable for people who require greater support in social interactions and are more easily disturbed and distracted by each other.

Illustration of functions at Vikvägen.

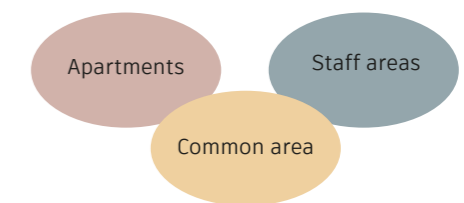


Figure 18: All functions are gathered in one house body.

Illustration of functions at Bastasjövägen.

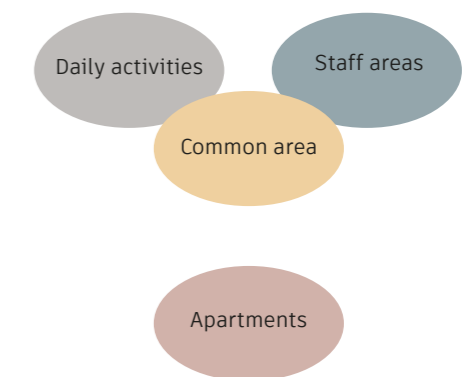


Figure 19: The apartments are separated from the other functions.

10.2 Fully adequate home and homelike feeling

The various briefs mention that the apartments must be fully adequate housing according to LSS (Borås stad, 2021; Göteborg stad 2018; Karlskrona kommun, 2009).

An important detail that has been used in Karlskrona municipality to increase the feeling of a home and reduce the institutional feeling is that the apartments should have private front doors (C, Brissmalm, personal communication, February 12, 2024). In Borås' program it is also desired that the corridors should be as short as possible.

On Vikvägen, the modern slightly beige colour scheme and the own furniture greatly influenced the feeling of home. The bare corridor on Vikvägen, on the other hand, gave a faint feeling that it could be an institution. Corridors were avoided on Bastasjövägen as the residential entrances went directly out onto the yard. In both cases, the hall was a big part of increasing the sense of home. Especially at Bastasjövägen where the visit started with us hanging our outdoor cloths in the hall, just like you usually do when you visit someone's home.

Karlskrona municipality has chosen to prepare for increased accessibility and aids that may be needed in the future (C, Brissmalm, personal communication, February, 2024). They have not built in special aids such as handles or wheelchair-accessible kitchens from the beginning, which is supported by Wijk's (2014) description that medical objects increase the sense of institution and reduce the sense of homeliness. Catrin Brissmalm (personal communication, February 12, 2024) also described how a resident had become annoyed that his apartment had several aids that he did not need. The preparations for increased accessibility meant that the rooms needed to be larger. The bathrooms in the apartments felt especially oversized, and there you got more of a sense of an institution.

10.3 Number of apartments

In Karlskrona's and Gothenburg's briefs, 3-5 apartments are recommended, while Borås's brief recommends 5-6 apartments. During an interview with Catrin Brissmalm (personal communication, February 12, 2024), it emerged that the number of apartments in Karlskrona's brief may be increased in the future.

Catrin Brissmalm (personal communication, February 12, 2024) describes personal experiences that there are fewer concerns in the group accommodations that only have 4 apartments than those with more apartments. There, the residents get a smaller social network to keep track of. This means both fewer neighbours and a smaller workforce. Research also supports Catrin Brissmalm's thesis (Socialstyrelsen, 2018).

The municipal board in Karlskrona presumably wants to increase the number of residents per group accommodation for financial reasons. But is it really sustainable to increase the number of residents per group accommodation if it means a worse standard of living for the residents and more stressful working conditions for the staff?

10.4 Functions and spatial connections

10.4.1 Overview, escape spaces and two way rooms

Although research shows that a person feels safer if there are possible escape routes and escape spaces to retreat to in case of sensory overload (Gaines et.al., 2018), none of the briefs mention escape spaces, nor did I see any clear places to retreat to in the common areas during study visits. At Vikvägen, it became clear that not all residents used the common area and at Bastasjövägen, the residents had special times to be in the common area. Perhaps this is because the residents do not feel safe in the common area or because they easily become stressed when other users are in the common area and then have nowhere to escape.

Karlskrona kommun (2009) wants double entrances to rooms such as kitchen and bathroom, while Borås stad (2021) requires to avoid dead ends and cramped spaces. These requirements give the users an escape route and can therefore create security. Two way rooms give residents a possible escape route and a choice to engage or not in social interactions. Since the common area is the place where the residents meet the most people at the same time, escape routes should also be requirements here. At Bastasjövägen, a resident also describes how she finds it difficult to go to the common area as she might bump into a neighbour she dislikes on the way there. The same person also works at home from the daily activities because she finds it difficult to meet other residents in the narrow corridor at the daily activity (C, Brissmalm, personal communication, February 12, 2024). Perhaps these situations could be avoided if there was a choice to take a different route to the terminus.

Unexpected meetings often take place in corridors, when residents come directly out of closed doors. To prevent the residents from disturbing each other too much, Borås stad (2021) has a requirement that no doors should open directly towards each other in the corridors.

On Bastasjövägen, staff described that residents would rather choose to go through the glass door where they can see straight into the common area than to go through the main entrance on the other side of the building when going to the common area. This behaviour is supported by how Gaines et.al. (2018) describe how a person can feel safer entering a room if it is possible to get an overview of the room in advance. The overview gives the person a chance to choose whether they want to participate in the activity in the room or not.

Overview

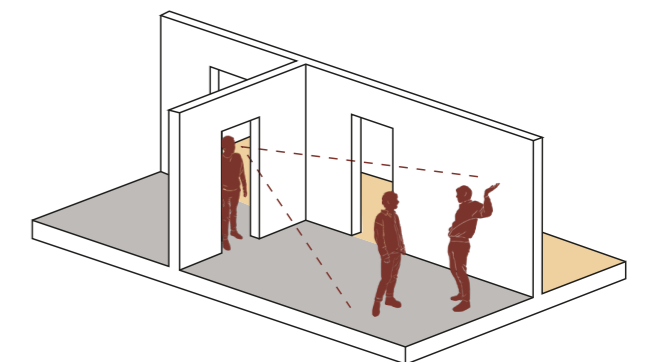


Figure 20: An overview from an other room.

Two way rooms

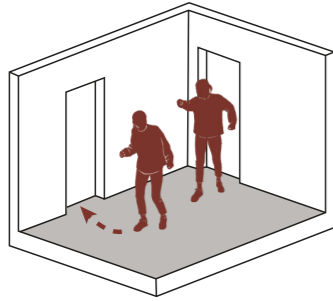


Figure 21: A person can always escape a room, even if there is another person who blocks one door.

Escape routes

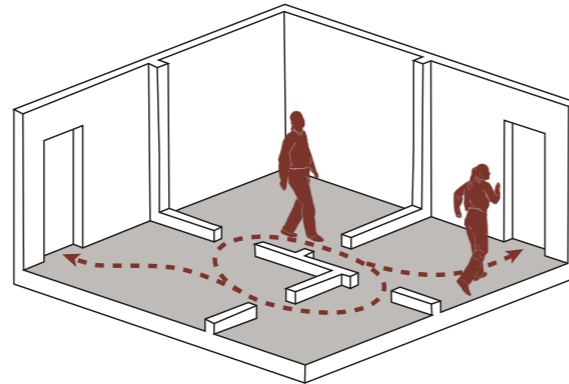


Figure 24: In an apartment with no dead-ends, there is always an escape route.

Escape space 1

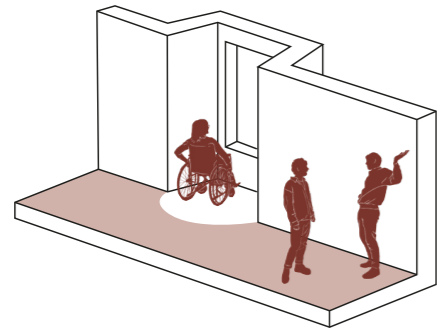


Figure 22: A protected corner with a calm view.

Escape space 2

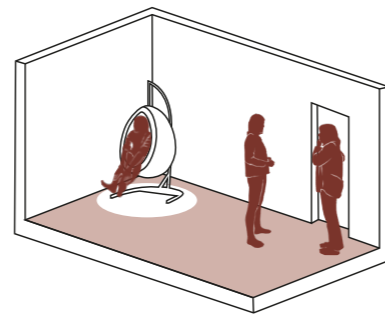


Figure 25: Cocoon chairs give a wholebody coverage.

Escape space 3

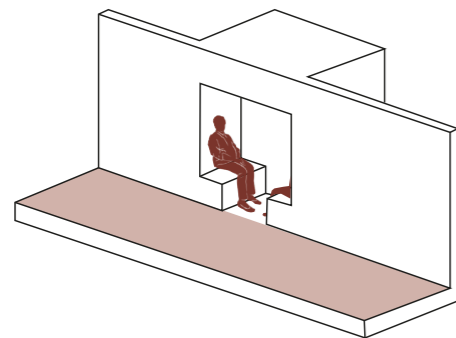


Figure 23: A two person escape space can provide a calm area for social interactions.

Escape space 4

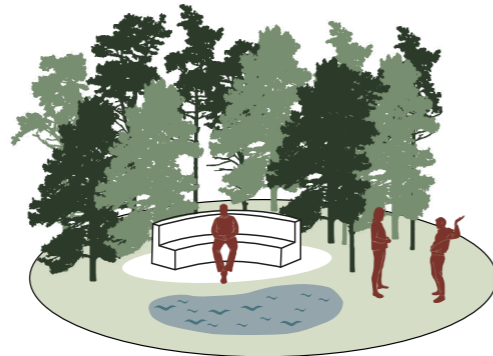


Figure 26: Outdoor escape space by calming waterfeature.

10.4.2 Activity/sensory room and outdoor activity space

The brief from Borås stad (2021) also includes a room for activity or a sensory room if needed. It is not something that is mentioned in either Karlskrona kommun's (2009) or Göteborg stad's (2018) briefs. Both Borås stad's (2021) and Göteborg stad's (2018) briefs required space for outdoor activity, while it is not mentioned in Karlskrona kommun's (2009) brief. At Vikvägen, staff mentioned that several residents still like to play. They felt that there was a lack of space for activity, especially outdoors. In this case, perhaps an extra room for activity would have been preferable. At Bastasjövägen, there was plenty of space outside and the resident who was interviewed there also seemed to be outside a lot more. Here there were also more rooms in the common area and the daily activities. I didn't feel like there was any great need for an extra activity rooms here.

This activity room could be a sensory room for people with ASD. For a person with hypo-sensitivity, a special place for sensory integration would be able to provide a safe way to explore sensory stimuli (Gaines et. al., 2018).

Sensory room

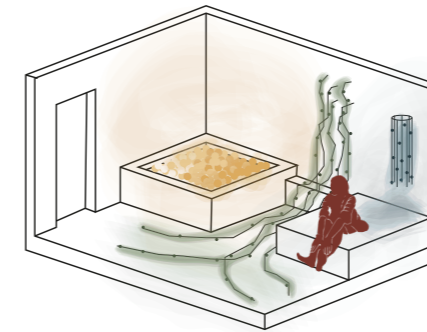


Figure 27: A sensory room to explore the senses in a safe way.

10.4.3 Clear functions and roomdivisions

In Karlskrona kommun's brief, it is clear that the bedroom, living room and kitchen should be separate rooms, and Borås stad's brief also mentions that a place should have a function. This is to make it easier for residents to stay focused on the task, explains Catrin Brissmalm (personal communication, February 12, 2024). She tells about a resident who had difficulty staying focused on cooking when the TV was in the same room. A similar case was described by staff at Vikvägen, where they have difficulty getting a resident to focus on eating when the dining table is in the living room.

To give each space a clear function and to sequence spaces can make it easier for people with ASD to stay focused and carry out activities of daily living without having to be interrupted (Mustafa, 2010).

Function sequencing and division of function into different rooms

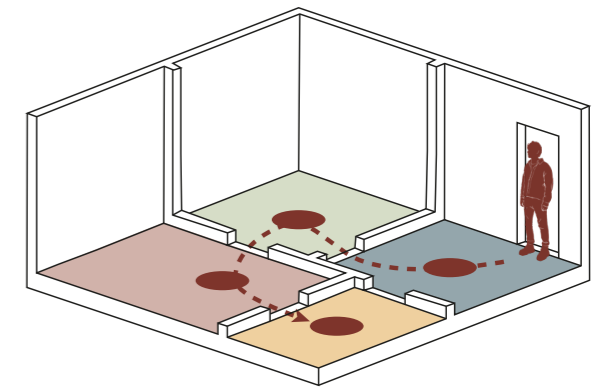


Figure 28: Logical sequencing of function and one function in one room.

Sensory zoning

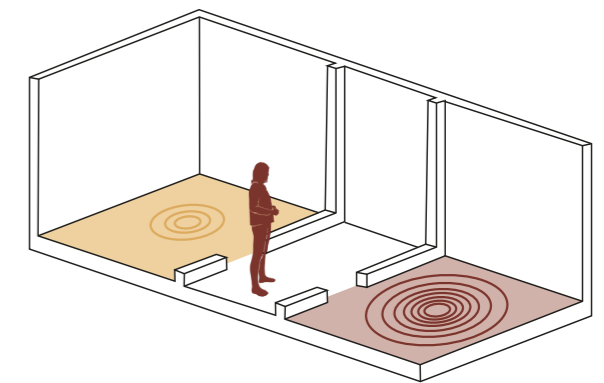


Figure 29: Separating high and low stimulus areas with a transition zone inbetween.

10.5 Details and materials

The hypo- and hyper-sensitive among people with ASD affects how the persons interact with their environment (Gaines et. al., 2018). Details and materials therefore affect people with ASD differently than they affect others.

10.5.1 Auditory

All the briefs (Borås stad, 2021; Göteborg stad, 2018; Karlskrona kommun, 2009) address the difficulties of disturbing noise in group accommodations and advocate good insulation, especially between noisy rooms and quieter rooms. Catrin Brissmalm (personal communication, February 12, 2024) says that they have thought a lot about sound insulation both at Vikvägen and Bastasjövägen. At Bastasjövägen from 2010, they had mostly focused on dampening all sound and she did not think they had succeeded completely, while she was more satisfied with how they had worked with the sound insulation at Vikvägen from 2022. There they had also focused on which sounds were needed as it may, for example, be important for the staff to hear if a resident needs help (C, Brissmalm, personal communication, February 12, 2024). Staff at Vikvägen, on the other hand, did not think that the sound insulation always worked. In the common area, they pointed out how much it sounded when you turned on a kettle in the kitchen next door.

The interviewed resident at Bastasjövägen said that she was very afraid of her smoke alarm. The same person also had difficulty staying in the same room as other residents. Maybe it was due to her auditory hyper sensitivity.

To facilitate communication, soundproofing should be planned so that background noise is minimized (Gaines et. al., 2018) in the social parts of the group accommodation. For this reason, it is also important to have quiet ventilation and other technical equipment that all the briefs (Borås stad, 2021; Göteborg stad, 2018; Karlskrona kommun, 2009) mention.

To avoid that the residents are disturbed by each other, Borås stad (2021) requires in its brief that doors in corridors should not open directly towards each other, which is supported by Gaines et. al. (2018) description of how it creates a straight path for sound

to travel. Sound insulation between apartments and around particularly noisy rooms such as the laundry room is also something that the briefs (Borås stad, 2021; Göteborg stad, 2018; Karlskrona kommun, 2009) address.

10.5.2 Light and lighting

People with hyper sensitivity are easily interrupted by bright light (Gaines et. al., 2018) and all the briefs (Borås stad, 2021; Göteborg stad, 2018; Karlskrona kommun, 2009) address solutions to avoid residents being disturbed by light. All briefs (Borås stad, 2021; Göteborg stad, 2018; Karlskrona kommun, 2009) require dimmable lighting. Borås stad (2021) also wishes to avoid shadow-making, motion sensors, and reflecting materials. While Karlskrona kommun (2009) wishes to avoid glare and excessively large windows.

10.5.3 Colours and materials

All the briefs (Borås stad, 2021; Göteborg stad, 2018; Karlskrona kommun, 2009) mentioned colours. Borås stad (2021) and Karlskrona kommun's (2009) briefs wanted dull, toned-down colours that can have a calming effect. Karlskrona kommun (2009) also wishes to increase the sense of home in the group accommodation through colour and material choices. All the briefs (Borås stad, 2021; Göteborg stad, 2018; Karlskrona kommun, 2009) avoid strong patterns that according to Gaines et. al. (2018) can be disturbing for a person with visual hyper sensitivity.

Borås stad's (2021) brief also mentioned how colour can be used to clarify room divisions and Karlskrona kommun (2009) mentions that colour can be used to facilitate orientation in a building. Karlskrona kommun (2009) also describes how contrast can be used to support orientation in the building for people with impaired vision. This is also something that according to Gaines et.al. (2018) can be helpful for people with visual hypo sensitivity.

Borås stad (2021) wants built-in or hidden electrical outlets and wardrobes. During a visit to Vikvägen, Catrin Brissmalm described how people with autism can be very disturbed by the sockets in the ceiling which was placed in disarray.

11 Results

Summary of rooms and functions according in the brief by Karlskrona municipality with new suggested changes.

Content:	Notes:
<ul style="list-style-type: none"> o Group accommodations: <ul style="list-style-type: none"> o 3-5 residents ■ All apartments and common areas on one floor. Staff areas preferably on the same floor. 	<p>An available, safe and secure environment adapted for people with physical and cognitive disabilities.</p>
<p>The apartment:</p> <ul style="list-style-type: none"> o About 45m² o Wardrobes, cleaning-, medicine- and valuables cabinets. <ul style="list-style-type: none"> ■ Two doors to kitchen and bathroom o Private entrance <ul style="list-style-type: none"> o Storage for shoes and outdoor clothes. o Door to common corridor o Kitchen <ul style="list-style-type: none"> o Fully equipped o Prepared for smaller dishwasher. o Living room o Bedroom <ul style="list-style-type: none"> o Bed 90-105cm o WC and shower <ul style="list-style-type: none"> o Possibility to have washing machine and dryer. ● Private patio or balcony 	<p>Support own interests and activities of daily living. Possibility to furnish according to own choice.</p> <p>Safety for staff and residents.</p> <p>Most meals are prepared in the private kitchen.</p> <p>Bed placed along wall or so that staff can help from both sides.</p> <p>Space for showerbed and two staff to help.</p> <p>Patio placed in seclusion with minimum disturbance from others.</p>
<p>Common areas:</p> <ul style="list-style-type: none"> ■ Add escape spaces and divide room into smaller parts. ■ Two way rooms o Common entrance. <ul style="list-style-type: none"> o Toned down o Possibility for visitors to hang outdoor cloths. ■ Indoor and outdoor seating o Corridor o Common area <ul style="list-style-type: none"> o Sofa group and TV. o Dining area ■ Overview o Kitchen <ul style="list-style-type: none"> o Cabinetry in full height, fridge and freezer, stove and oven, micro, dishwasher and sink. o Laundry room <ul style="list-style-type: none"> o Washing machines, dryer and drying cabinet, sink, storage and bench surfaces. ● Activity room/sensory room <ul style="list-style-type: none"> ■ Movement training, bathroom, sensory room, massage room, music room etc. 	<p>Supporting meaningful activities, social interactions and well-being.</p> <p><u>For safety and refuge.</u></p> <p><u>For refuge and possibility to choose to join social activities or not.</u></p> <p>Focus on private entrances.</p> <p><u>To wait for transportation services.</u></p> <p>Short corridors that are easy to overview and orient oneself in.</p> <p><u>Doors should not be openable towards other doors.</u></p> <p><u>Could also be used for staff meetings.</u> Only for residents and 3-4 working staff. <u>Sometimes separable.</u></p> <p><u>Possibility to get an overview.</u></p> <p>Space for residents and staff to bake and cook together.</p> <p>Residents wash and fold clothes together with staff.</p> <p>Ensure that no disturbance comes to the apartments.</p> <p><u>Investigate before every project planning.</u></p>

<p>Staff areas:</p> <ul style="list-style-type: none"> o Extra bed o Break / lunch room <ul style="list-style-type: none"> o Pentry with fridge/freezer, sink, dishwasher, cabinets and storage. 2 microwaves. water boiler and coffee machine. o Seating area by table or sofas. o Bedroom <ul style="list-style-type: none"> o Bed and 2 wardrobes o Office <ul style="list-style-type: none"> o 2 workspaces for computer work. o Keylocker o Printer o Storage o Safe o Dressing room <ul style="list-style-type: none"> o Bench and mirror o Lockers for 10 persons. o Collection of used work clothes for laundry o WC with shower 	<p>About 3-5 staff at the same time Temporary overnight stay. Staff lunch/dinner and <u>meetings for 8-12 persons if not possible to have in common area.</u></p> <p>Sleeping staff at night.</p> <p>Administration and planning.</p> <p>Sometimes staff needs work clothes or to change before work.</p>
<p>Other areas:</p> <ul style="list-style-type: none"> o Cleaning room o Indoor storage <ul style="list-style-type: none"> o Common storage o Medicine storage o Recycling room o Outdoor storage <ul style="list-style-type: none"> o Private storage o Common storage o Storage for outdoor wheelchairs. 	<p>About 3m². Locked, only for staff.</p> <p>About 8m². Materials, cleaning stuff, work clothes etc. About 2-3m². Tube feeding, incontinence aid etc. In a separate building, that can also contain outdoor storage. 10m from main building for fire safety.</p> <p>Outdoor furniture, tools etc.</p> <p>About 3m². Indoor temperature of About 10°C. About 8-10m² Indoor temperature of About 10°C.</p>
<p>Outdoor environment:</p> <ul style="list-style-type: none"> o Common patio <ul style="list-style-type: none"> o Seating for residents and staff o Maybe a walking path around the building. • Activity space o Drop of zone <ul style="list-style-type: none"> o With seating area. o Parking lots o Bicycle parking 	<p>Fika, do garden work and play games.</p> <p><u>Open space to play kubb, have a trampoline etc.</u></p> <p>For visitors, staff and one minibus.</p> <p>With roof.</p>

Table 4: Developed summary of "Funktionsprogram för bostad med särskild service enligt LSS" by Karlskrona kommun. (2009). Changes are marked in with darker dots and underlining.

Illustration of functions and room connections in the brief by Karlskrona municipality.

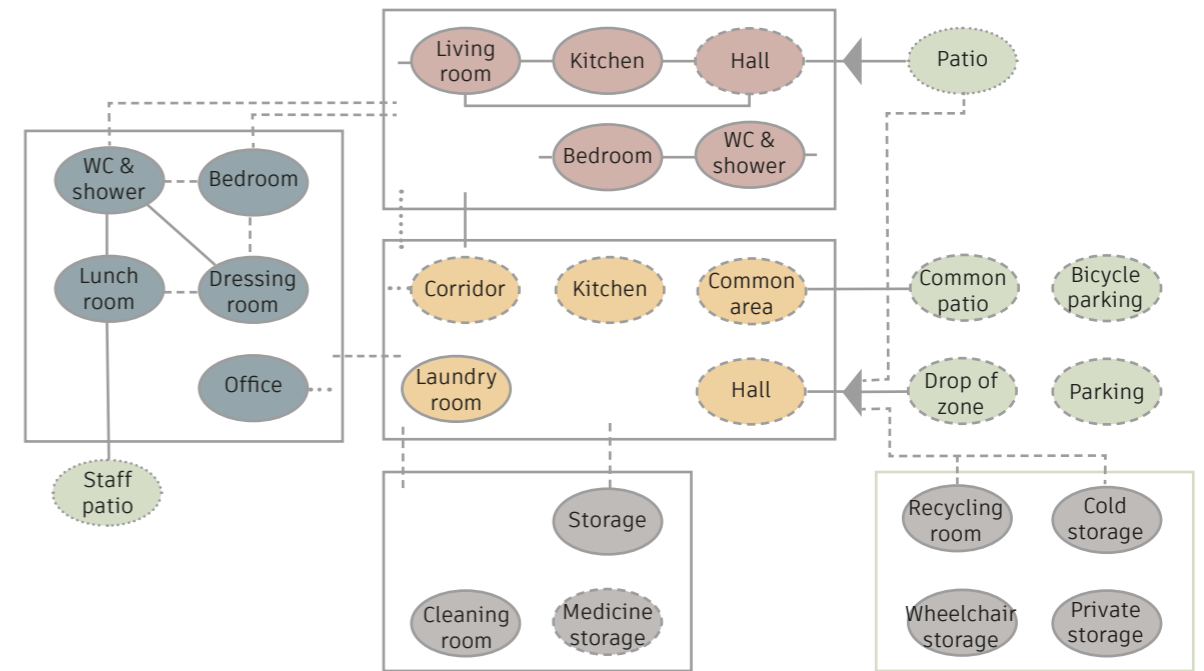


Figure 3: Illustration of "Funktionsprogram för bostad med särskild service enligt LSS" by Karlskrona kommun. (2009).

Developed illustration of functions and room connections in the brief by Karlskrona municipality with new suggested changes.

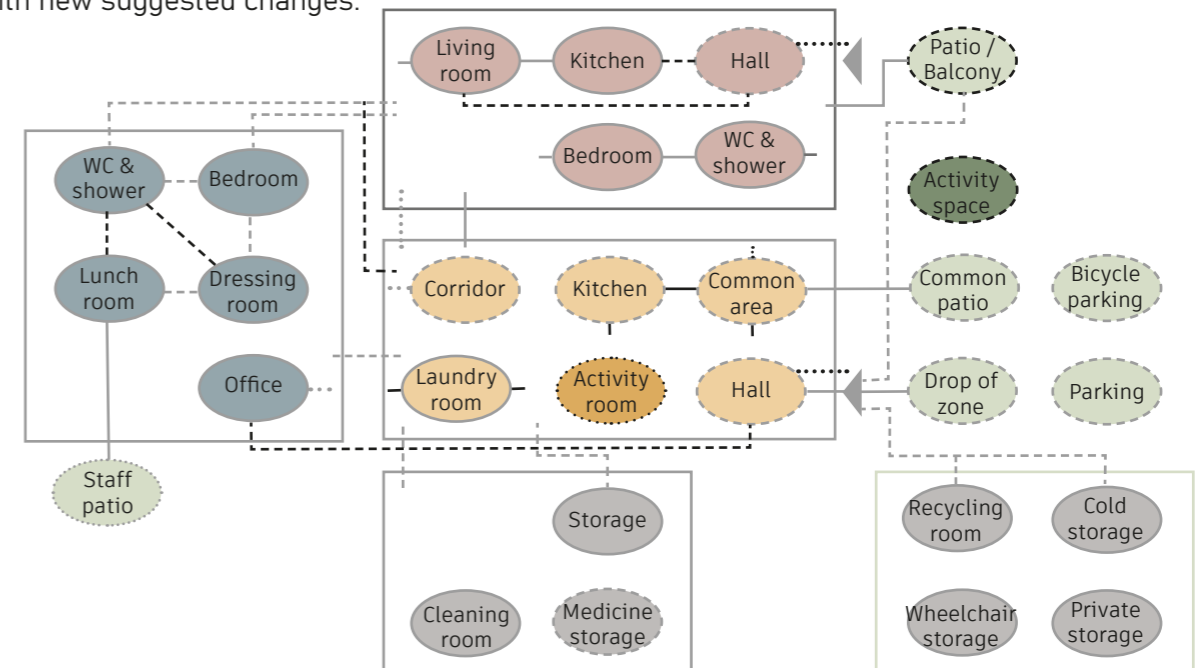


Figure 30: Developed illustration of "Funktionsprogram för bostad med särskild service enligt LSS" by Karlskrona kommun. (2009). Changes from the original brief are marked with darker colour.



12 Concept

The concept for the design proposal is based on the purpose of the thesis and is therefore focusing on the two main themes, to promoting autonomy and social life. Strategies to solve the main questions of the master thesis and the concept of this design proposal is described in figure 31-32.

Some of the main ideas is to separate functions, to provide and escape route and to provide escape spaces. But it is also important to provide the residents with choices to enter a social situation or not, either with an overview or with different route choices.

Design proposal

Concept - Site analysis - Design proposal - Conclusions

The results of the pre-study and suggested changes to the brief is in this master thesis tried out in a design project. The aim is to design a group accommodation at a given site in Karlskrona municipality.

Autonomy

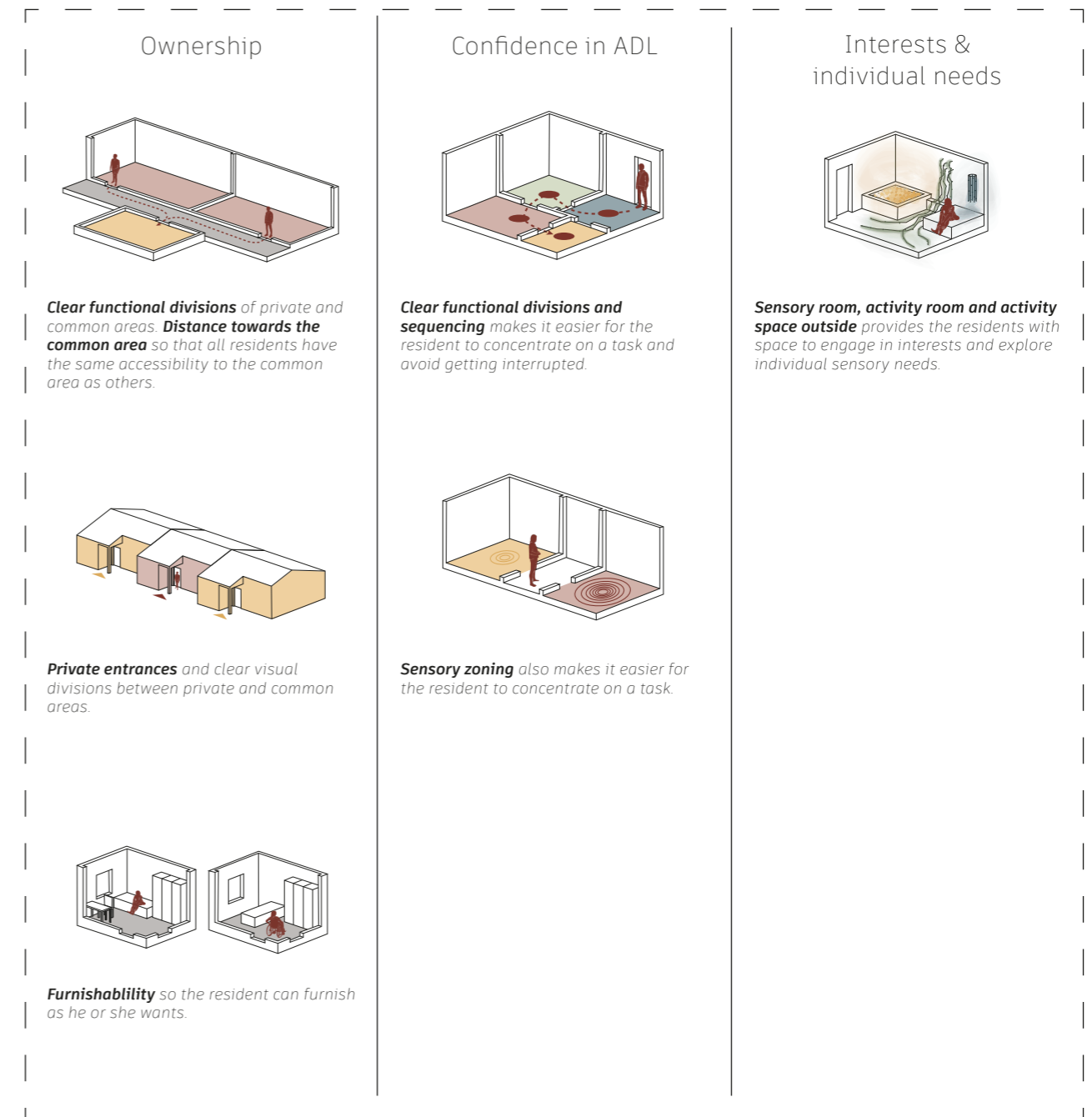


Figure 31: Concept Autonomy.

13 Site analysis

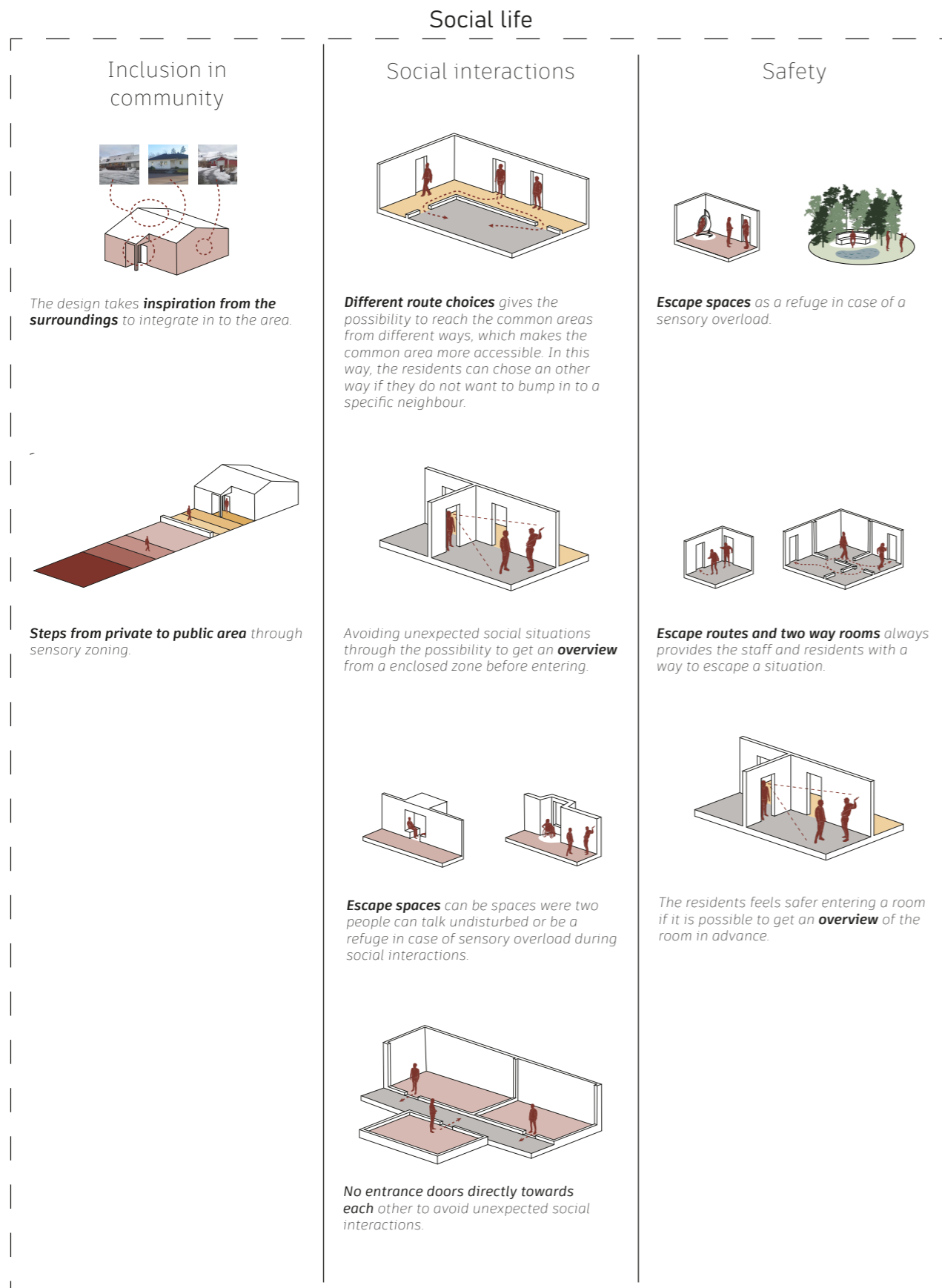


Figure 32: Concept Social life.

The project site is located in Bastasjö, about 8 km from the center of Karlskrona. The site is chosen as there has already been planning for a group accommodation on the site so that the project can have a real connection, even though it wont be built.

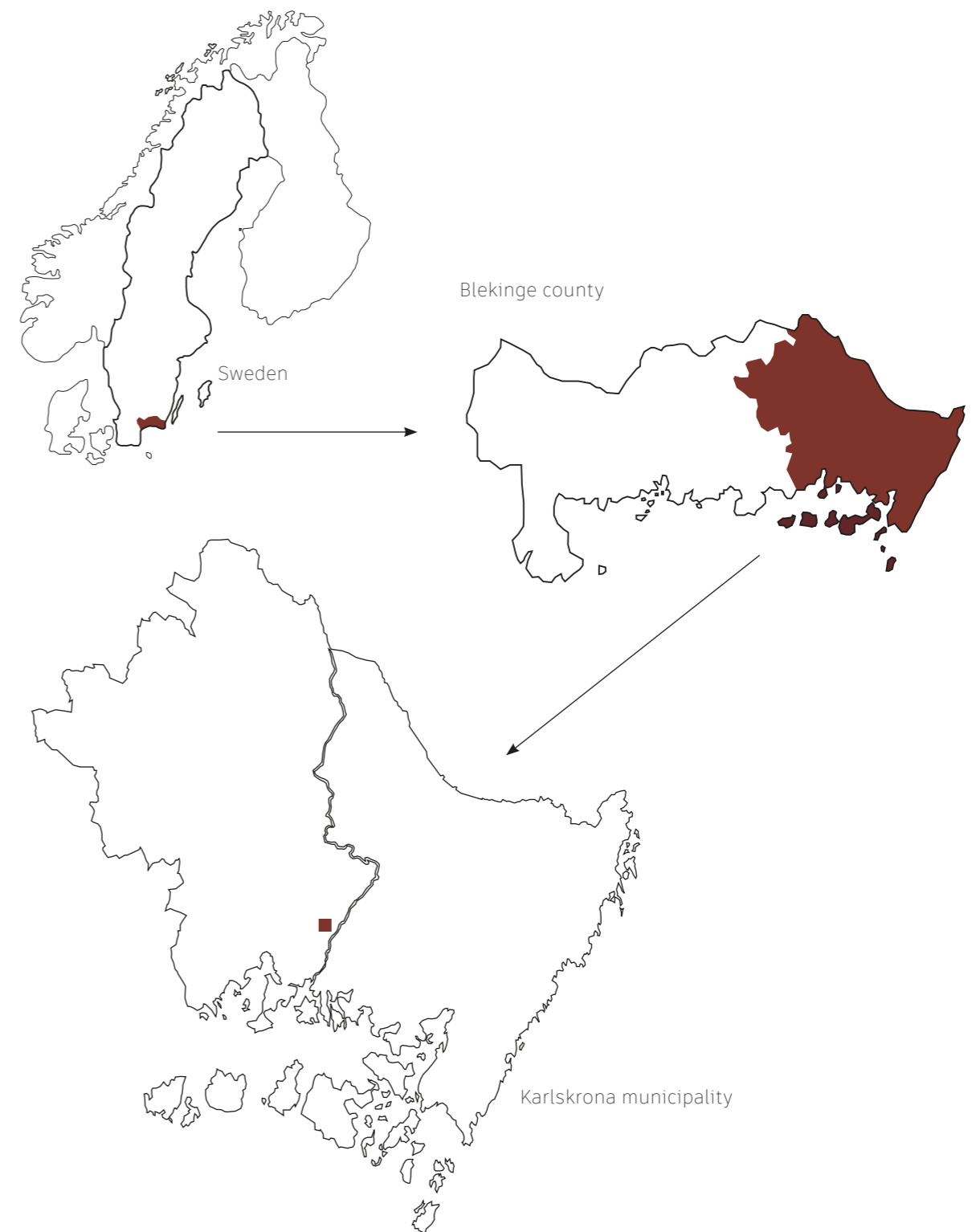


Figure 33: Location of the site.

The area is a residential area with good communication options to Karlskrona and Lyckeby shopping area. Two smaller grocery stores are within cycling distance and a recreation area is located just outside of the residential area.

The villa area is calm and there are plenty of cycle paths and quiet residential streets for those who enjoy cycling. The proximity to the recreation area provides the opportunity for longer walks and swimming. To get to Karlskrona city centre, they can take the bus from the stop right outside the site or the group accommodations own car.

Situation plan, scale 1:15 000



Figure 34: Created from Fastighetskartan Hydrografi latest (shp), Fastighetskartan Kommunikation latest (shp), Fastighetskartan Markdata latest (shp), Terrängkartan latest (shp) and Fastighetskartan Bebyggelse latest (shp) © Lantmäteriet

The roads closest to the site are busy, but have a speed limit of 40 km/h or are calmer residential streets. Noise from the streets is therefore not that loud. Despite the speed limit, the busy street can become a barrier for the residents that they may not be able to cross themselves.

To the east from the site there is a preschool. Children can make a lot of noise that can disturb the residents.

Today there is a small wooded area on the edge of the plot closest to the preschool. During a site visit in January, they had started to prepare for a group accommodation to be built on the site. The plot was then flooded and the forest area that remained appeared to be marshland.



Figure 35: The site from southwest corner.



Figure 37: Forest area with marshland.



Figure 36: Walking path north of site.



Figure 38: The site from south east.

13.1 Façade study

Most of the area called Hässlegården, south of the site, is built in the 80s while the houses north of the site are built in 2008.

The colours in the area are mostly grey in different shades, with some hints of brighter colours in darker red and lighter yellow (see Colour study in appendix).

Map of the facade colours in the area.



Figure 39: Scale 1:5000. Created from Figure 34: Terrängkartan latest (shp) and Fastighetskartan Fastighetsindelning latest (shp) © Lantmäteriet

13.2 Diagrams of building on the site

Figure 40-45 describes the main factors that have affected the building position on the site and the building shape. These are the things that could be the most disturbing factors and the current situation on the site.

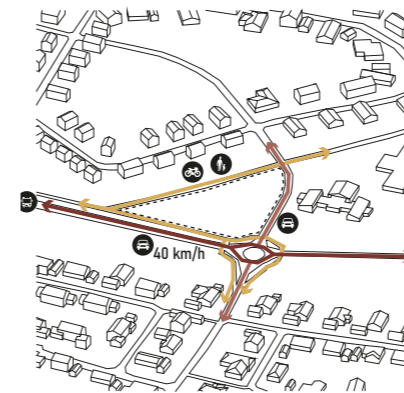


Figure 40: There are car roads on two sides of the site, with the most busy road to the south. There are a calmer walking path to the northwest.

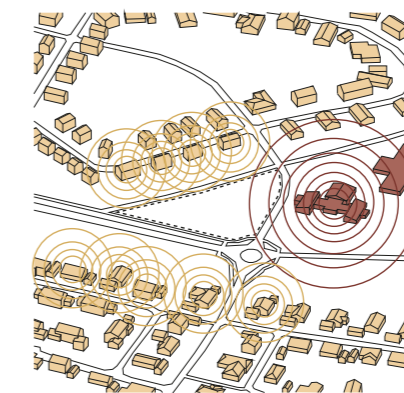


Figure 41: The site is situated in a quite calm residential area showed in yellow. To the east from the site is a kindergarten, shown in red, that could be disturbing for the residents.



Figure 42: Today there are a small forest/marsh area on the site.



Figure 43: The forest could be preserved towards east to protect from noise coming from the kindergarten.



Figure 44: The building is indented to create a distance to the road in the south and the path in northwest.



Figure 45: The entrance are placed towards Karlskrona city center and the bus stop and the common outdoor area are placed towards the forest at a calm and enclosed place.

14 Design proposal

14.1 Situation plan

This group accommodation is a mixture of the two different types of group accommodation that were visited in Karlskrona municipality. All functions are in one building body, but the residents also have private entrances. Seen from the outside, the accommodation is scaled down to mimic town houses facing south and north-west.

The main entrance, with turning area, drop of zone and parking is to the south-west. From there you pass through gates to reach the semi-private area with the private entrances located along a walkway that runs around the property. The common patio is protected and enclosed by the house-body and the forest area to the east.



Figure 46

14.2 Façades

Almost all the buildings in the area are single-family houses, which means that a group accommodation in a larger building easily stands out. In order to increase the housing's connection to the area, the parts of the building that are visible from public streets and paths around the building imitate smaller townhouses.

The private entrances are recessed like several of the houses in the area. Recessed entrances are found both in the buildings from the 00s and from the 80s (see figure 50-55). The pushed back entrance situation also creates a private outdoor patio belonging to each apartment.

Almost all the buildings in the area also had gable roofs and therefore the townhouse part of the group accommodation is also covered by a gable roof. The less visible part of the residence that can only be seen by the nearest neighbours in two-story houses has a flat sedum roof.

The facade colours are inspired by the area's colour palette. The most common main facade colours in the area were grey, but there are also elements of red and yellow façades that are reinforced in the group accommodation façades. The colour choices also help to divide the building according to function. The yellow and red parts are private apartments, the dark grey part is staff areas and the light grey part is common areas.



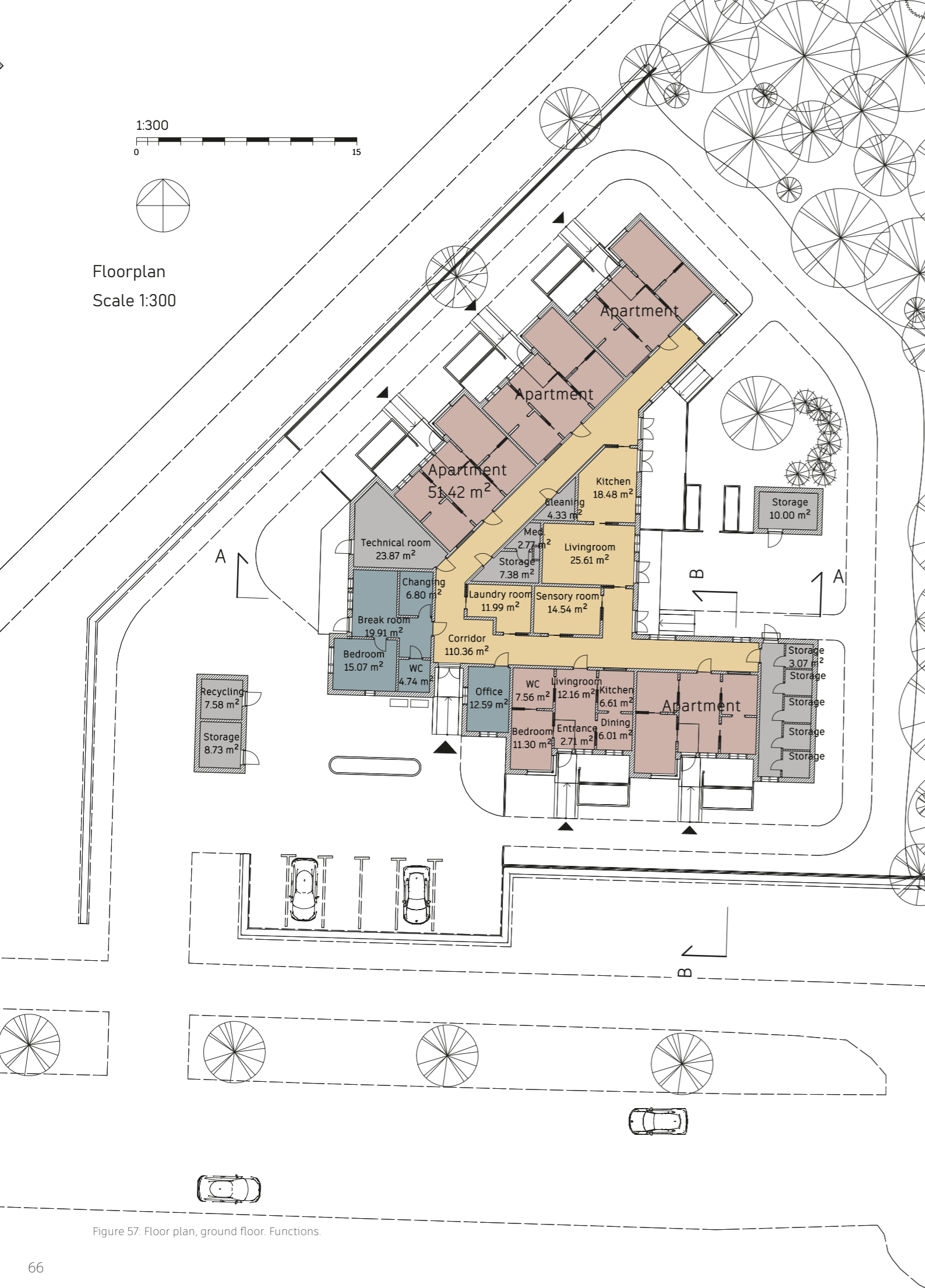
Figure 47-49. Façade drawings.



Figure 50-55. Pictures of buildings in the area. Many of the houses in the area have tilted roofs and indrawn entrances. Almost all houses are in wood.



Figure 56. Perspective of private entrances.



14.3 Plan

As previously mentioned, this group accommodation is a mixture of the two accommodation types visited. Private entrances from the outside increase the feeling of home and all functions collected in one house body make the common areas more easily accessible for the residents.

At Bastasjövägen, the outdoor space between the apartments and the common areas gave the residents different options for choosing a route. The residents could feel secure in being able to choose a path and thus choose which social situations they wanted to participate in. The common part never becomes inaccessible simply because a path is blocked by a situation in which the resident does not want to participate.

In this group accommodation, it is the corridor that connects all functions. To reach the common area, the residents can choose between two routes in the corridor. The corridor is 2m wide and no apartment doors opens directly towards another door to reduce the risk of unexpected social situations arising. Participating in social situations must always be voluntary and therefore the residents must be able to stand at a distance and decide whether they want to participate or not. It can be very difficult for a person with autism spectrum disorder if a social situation comes as a shock.

Illustration of functions and room connections in the project.

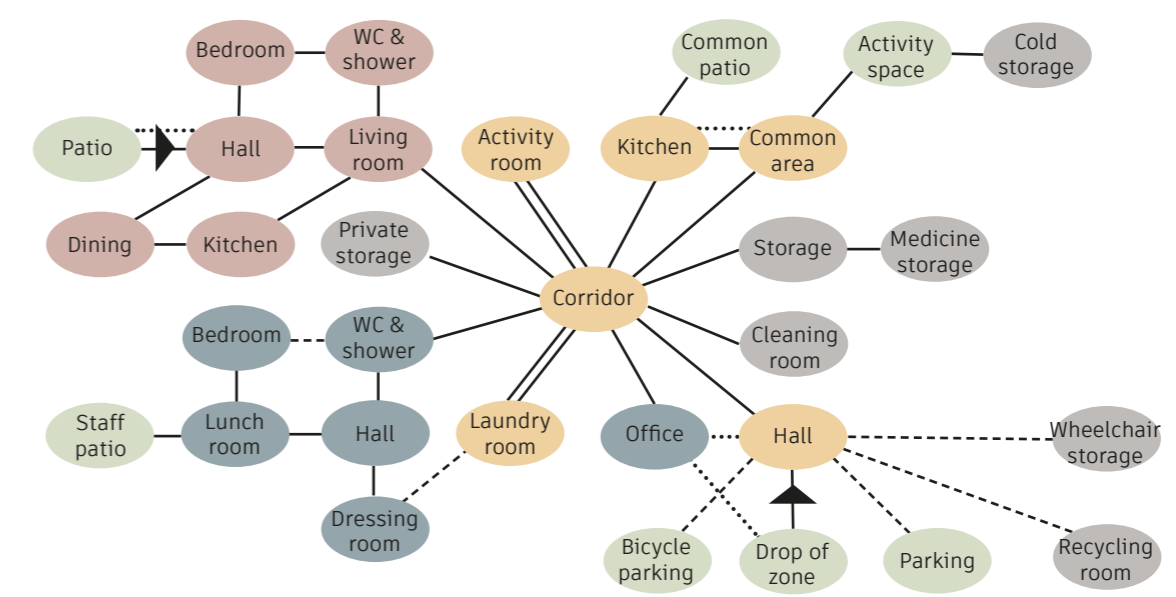


Figure 58: Illustration of functions and room connections in the project.

- Apartment
- Common areas
- Staff areas
- Outdoor
- Other
- Directly connected
- Close to
- Sightlines

14.3 Plan

The common area is centred in the group accommodation. In the corridor outside the common area, small rooms are created where people can stand a little more protected to get an overview of the common areas before entering the rooms in order to, as previously mentioned, give the person a choice to participate or not in the activity that takes place in the common areas.

The common area is also divided, which means that the different rooms can be used for different activities at the same time. For example, one of the rooms can be used for staff meetings or rented by a resident to be able to receive more than one visitor at the same time, without the entire common area being closed off to other residents.

The common area also have a activity-/sensory room for the residents to explore sensory stimuli or to engage in personal interests. This room is general designed so that the function might change when residents move or when interests or needs change.

The staff part consists of an office that has a direct view of the main entrance and a part with the other staff areas. A group accommodation is a small workplace where the staff always needs to be available. Therefore, it is often only one of the staff who has a break at a time. A too large staff room would therefore feel very empty and therefore the staff part is designed as a smaller apartment. Allowing all the functions that a staff member wants to be able to access during their break to be connected can also be beneficial for the staff to be able to distance themselves from work during the break.

The floor plan of the apartments has been based on Karlskrona municipality's (2009) example apartment (see appendix) and developed so that the apartments are more functionally divided. The dining area is separated from the living room so that the resident can more easily focus on eating by avoiding sensory interactions from the living room.

All rooms in the apartments, like the rooms in the common areas, have two entrances so that there is always an escape route.

Floorplan, scale 1:200

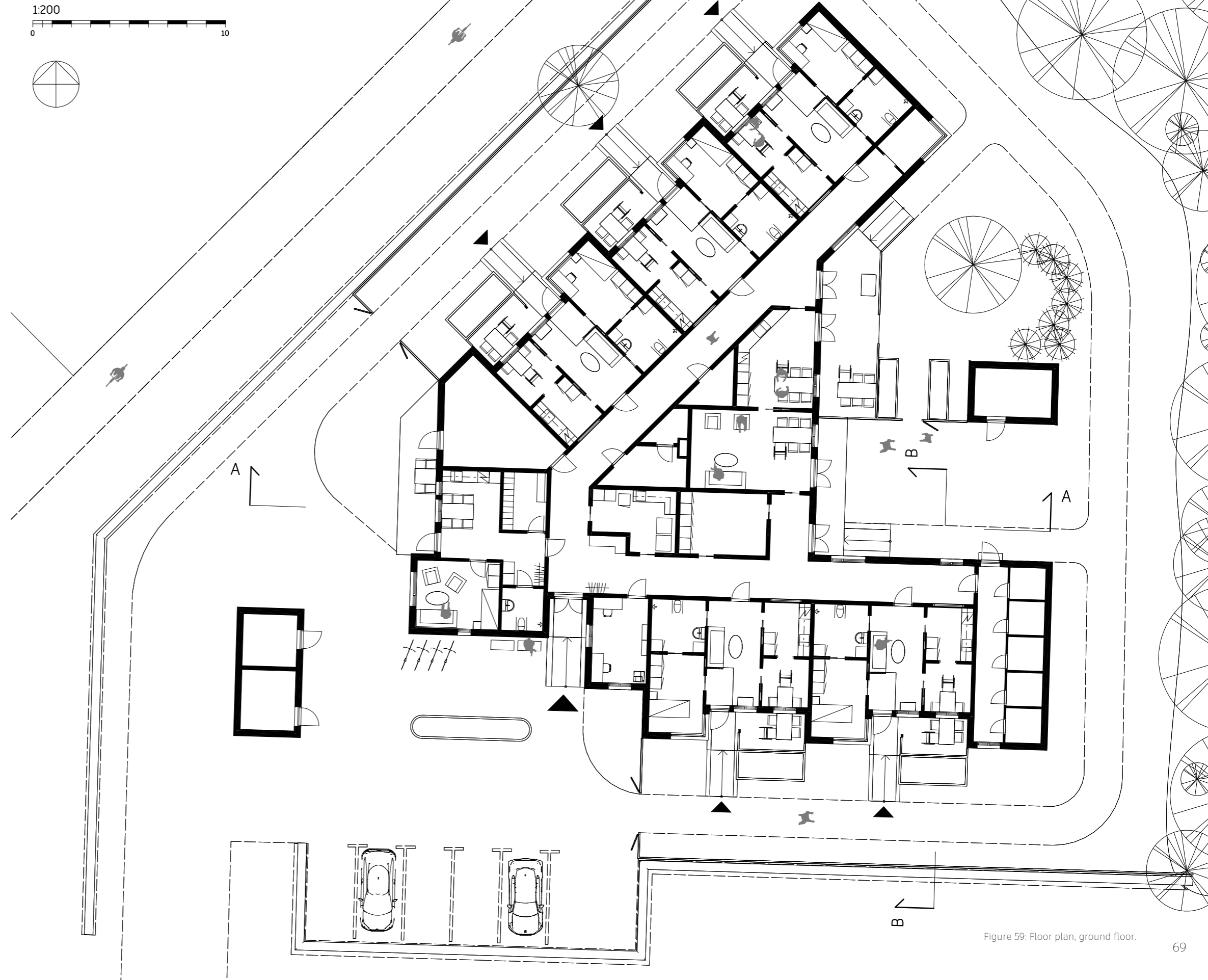


Figure 59: Floor plan, ground floor.

Axonometric view of apartment



Axonometric view of common area.

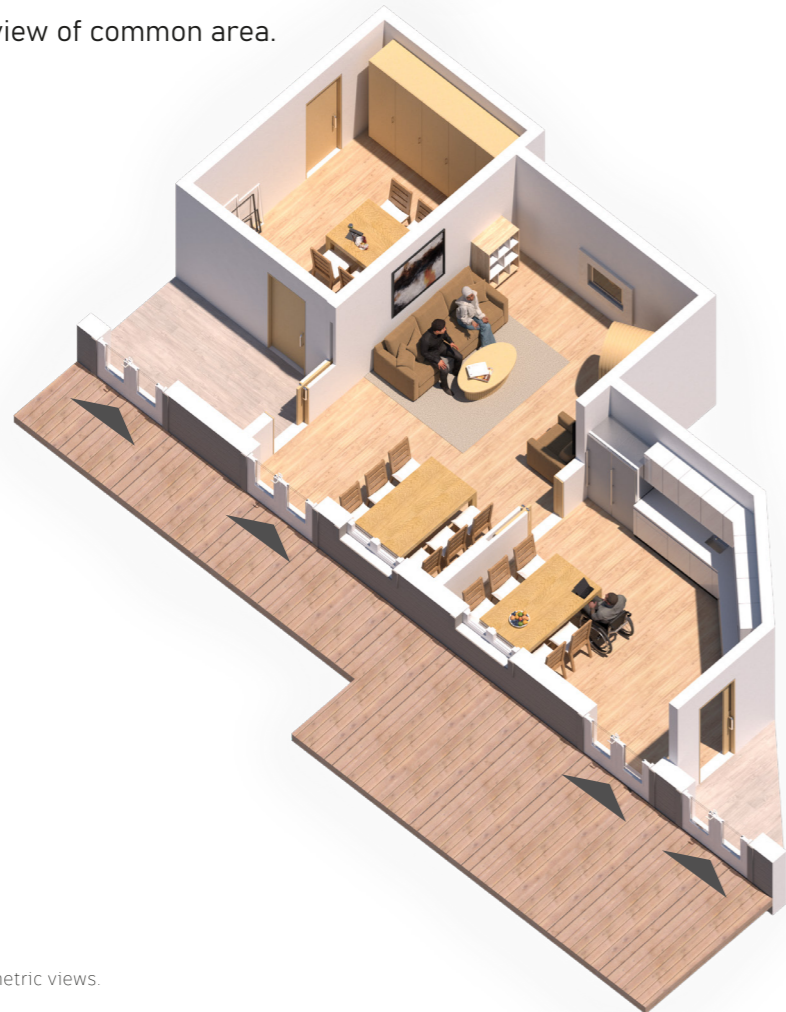


Figure 60-61: Axonometric views.

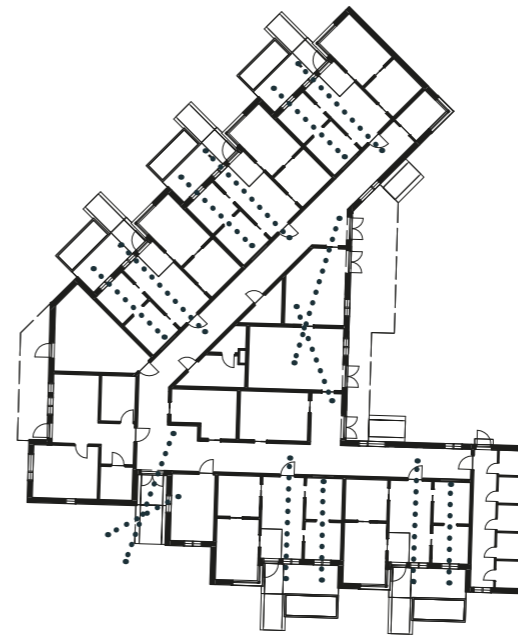


Figure 62: Overview



Figure 64: Escape routes



Figure 63: Sensory zoning

- High stimulus area, outdoor
- Medium stimulus area, outdoor
- Low stimulus area, outdoor
- High stimulus area, common area
- Medium stimulus area, common area
- High stimulus area, private apartment
- Medium stimulus area, private apartment
- Low stimulus area, private apartment
- Other
- Escape spaces

14.3 Sensory zoning

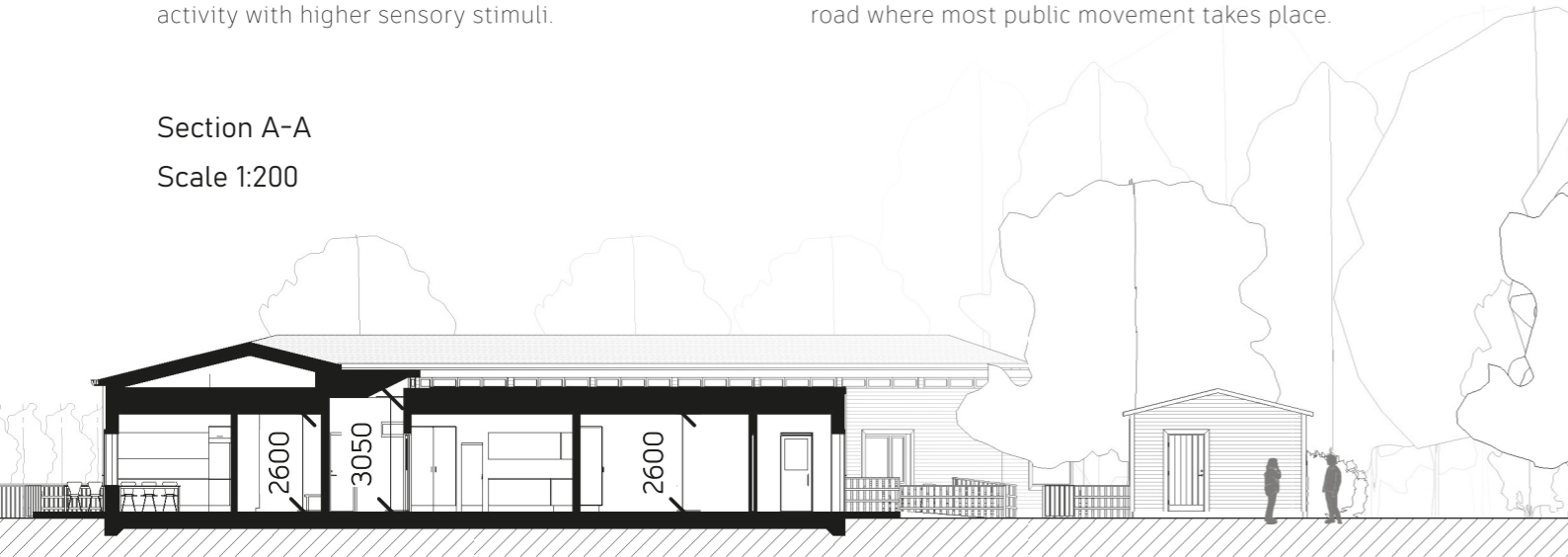
Figure 63 shows how the building is divided according to higher and lower sensory stimuli. Rooms with lower sensory stimuli are usually rooms where a higher level of focus is required by the resident, while rooms with higher stimuli can be rooms for more free activities and where several people can stay at the same time.

For a person with ASD can the transitions between the zones be really hard. To avoid sensory interactions from room with higher sensory stimuli, rooms with high sensory stimuli are rarely placed directly next to rooms with low sensory stimuli. For example, only the living rooms in the apartments have connections to common parts with higher sensory stimuli. In the common area, the kitchen, which may require greater focus from the residents, is connected to the quieter outdoor area with lower sensory stimuli, while the living room is connected to the outdoor area for activity with higher sensory stimuli.

In this group accommodation, the corridor and the area outside the private entrances are used as transition zones between areas with high sensory stimuli and low sensory stimuli. The transition zones have fairly low sensory stimuli of their own, an overview of the places with higher sensory stimuli and contain so-called escape spaces if there is a risk of over-stimulation.

From the private entrances towards the public road, the area is divided so that the area closest to the entrances is more protected and sheltered, and the private patio here could therefore have functioned as an escape space before the resident goes out into the common part of the yard. A path runs around the house and outside of it there is a grass area, a fence and a hedge which clearly shows where the public area begins. Outside the hedge there is another grass area that increases the distance to the bike path and the road where most public movement takes place.

Section A-A
Scale 1:200



Section B-B
Scale 1:200

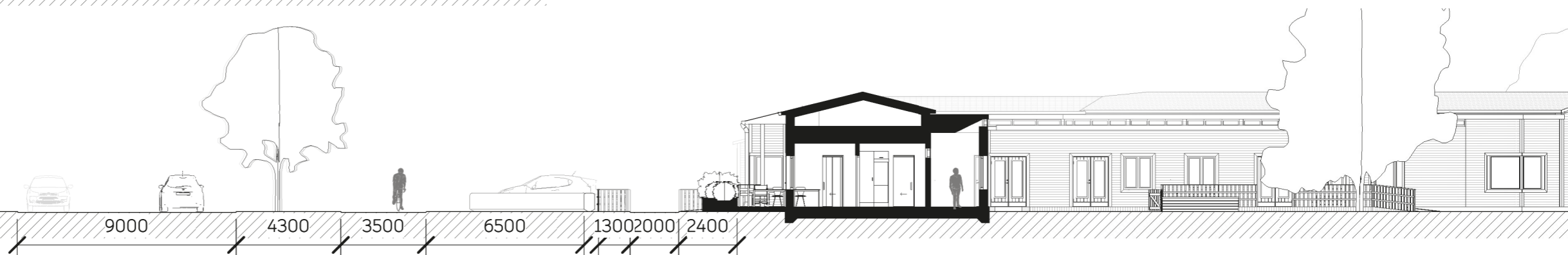


Figure 65-66. Sections.



Figure 67. Perspective of main entrance.

14.4 Escape spaces

Figures 68-71 show different escape spaces. The escape spaces are areas with low sensory stimuli that are enveloping and somewhat separated from the rest of the room. The escape spaces are located in transition zones, where a break may be needed before the resident enters a zone with higher or lower sensory stimuli and in common rooms where there is a risk of over-stimulation.

14.5 Top light in corridor

To make the corridor brighter, top windows have been inserted (see figures 68 and 70). The top window is vertical so that rain noise is avoided and the ceiling is tilted to meet the window so that the light spreads more evenly. From the top windows, daylight can reach the private kitchens via tall windows (see figure 66).



Figure 68: Escape space in the end of the corridor. The escape space can be adapted by shutting the curtains over the windows to minimize sensory stimuli.



Figure 70.: Escape space by the main entrance.



Figure 69: Common area with escape space as an enclosing armchair.



Figure 71. Common patio with an hammock as an escape space. Swinging in a hammock can help with getting a sense of physical orientation by proprioceptive and vestibular stimulation

15 Discussion

15.1 Design of group accommodation

Designing for people with autism spectrum disorders is complicated. Not least because of the risk of hyper- or hypo-sensitivities. What I landed on during the master thesis work was to design for hyper-sensitivity at the base and then add options so that even a hypo-sensitive person can get the desired sensory stimuli. Overall, I ended up with clear possibilities for making your own choices was very important.

Choices are also important when it comes to social interactions. I focused a lot on introducing social interactions not to come as surprises, the residents should be able to see that they have a choice if they want to participate or not. The residents must be able to leave or go away if they feel they need to. It is something that creates security for the residents and makes the entire accommodation more accessible for everyone.

The escape routes are good for security reasons, but the two-way solutions in all the rooms also have a disadvantage. They become more difficult to furnish. I noticed that the furnishability, especially in the private living rooms, became limited. In order to increase the furnishability and at the same time retain important functions such as the two-way solution and the functional division, I would have had to increase the size of the apartments a lot, which did not feel financially sustainable.

The functional division also made it harder to get enough daylight into the apartments. With more rooms and only daylight from one direction, the kitchens in particular became dark. It was partly solved by top windows in the corridor, but I am aware that the kitchens became darker than would have been optimal.

15.2 Segregation from society

During the master thesis work I have thought a lot about how to create a feeling of a home in a building that suffocates a lot of accessibility adaptations and which in its function still stands out from the usual type of residence, without staff on site. Being inspired more by the regular housing than by other group accommodations could be a solution to get away from the feeling of an institution.

The fact that a group accommodation is not similar in function and often not in design to ordinary homes means that they easily stand out. This can increase the view of others that those who live in the group accommodation stand out, and therefore the group accommodation and the people who live there are at risk of being segregated from society.

When I walked around the project site, I chatted a bit with the people who lived there and discovered that several were sceptical that a group accommodation would be built in the middle of the village and opposite a kindergarten. People are often intimidated by what they don't know and what is different. The architecture can help show that those who live in the group accommodations are also people and also belong to the community. The exterior design of a group accommodation can create cohesion with adjacent buildings and give the impression of being a regular home.

Also the fact that group accommodations are often built on the outskirts of the community and that they are often surrounded by high fences increases the barriers to the community. A high fence can symbolize that there is something to be afraid of, something that must be closed in. Changing the design of the fence so that it looks more like the fences that surround ordinary residential buildings could reduce the feeling that there is something dangerous inside.

15.3 The architects understanding

I realized during the master thesis work that I have benefited a lot from practical experiences from having worked for a summer in a group accommodation. From there I gained a better understanding of how the business works. If it had been possible for all architects to gain practical experience from the business, it would of course have been the best. But that time does not exist. And that is why I think that study visits and discussions with those who work at the facilities and perhaps also the residents are so incredibly important. In order to create conditions for the architects to design the best adapted group accommodations, I would therefore recommend that the municipalities always invite the architects to study visits. Study visits to both successful and less successful accommodation can be important because there is always something to learn from it.

The briefs that I have read were all quite detailed and contained many requirements for the accommodations. But I would have liked the briefs to be more structured so that the architects would get a greater understanding to be able to make decisions based on their architectural competence and then be more free to find new innovative solutions for future group accommodations. For example, the briefs were clear with exactly which materials were required. These materials have been chosen because they fulfill a certain function. But if the brief would instead explain the desired function of the material, the architect could use his knowledge to find a suitable material. This could be useful as new materials are constantly being developed and the architect probably has a pretty good grasp of the new materials.

In my opinion, the best brief would give the architect the knowledge he or she lacks, in this case about the specific needs that the residents have and specific knowledge about how the operations in a group accommodation work, while giving the architect enough freedom to be able to use the knowledge in architecture that the architect already has. To go further into exactly what the architects feel like they are missing in briefs it would have been great to have interviews with architects who have worked with this briefs before, but unfortunately I had to deprioritize that because of lack of time.

15.4 Sustainability

The main focus of this master thesis's work was not on sustainability. Despite that, I would like to describe several of the design choices as sustainable. A business that works well is a business that will last in the long run. If the residents have great well-being and can handle as much of everyday life as possible by themselves, the workload on the staff is reduced and the staff enjoy their work better.

The choice to stick to five apartments in the group accommodation, even though Karlskrona municipality wants to increase the number to six apartments, comes from the fact that I believe it is more sustainable to build smaller group accommodations. In larger group accommodations, I think there is a risk that it will be too noisy and stressful for the residents and the staff. This may mean that a group accommodation built for six residents is only used by five residents in the future. There will be far too many social contacts for the residents to keep track of, which results in the residents finding it more difficult to cope with their everyday lives and therefore needing more support from the staff. The residents can more easily become overstimulated and then start a challenging behaviour, which can lead to a higher sound volume and damage to both the resident and the home. In this case, I therefore do not think it is sustainable to build more densely.

In the same way, knowledge and understanding of the business is also something that increases the lifespan of the building. A well-functioning business stays longer in its premises.

Karlskrona municipality's choice to build the apartments so that they can be easily adapted to increase accessibility also feels very sustainable. That anyone can move into any apartment feels sustainable as the percentage of people who need increased accessibility will not always be at the same level and therefore all apartments can be filled regardless of what the need looks like at the moment. It is also sustainable that you can stay in your apartment even if your own needs change.

References

- Autism Sverige. (n.d.-a). *Autism*. Autism Sverige. <https://www.autism.se/om-autism/autism/>
- Autism Sverige. (n.d.-b). *Insatser enligt LSS*. Autism Sverige. <https://www.autism.se/stod-och-rattigheter/lss-vad-ar-det/insatser-enligt-lss/>
- Borås stad. (2021). *Lokalplan för gruppboende enligt LSS i Borås Stad*.
- Brand, A., & Gheerawo, R. (2010). *Living in the community: Housing Design for adults with autism*. Helen Hamlyn Centre.
- Challenging Behaviour Foundation. (n.d.). *What is challenging behaviour?*. <https://www.challengingbehaviour.org.uk/understanding-challenging-behaviour/what-is-challenging-behaviour/>
- Gaines, K., Bourne, A., Pearson, M., & Kleibrink, M. (2018). *Designing for autism spectrum disorders*. Routledge, Taylor & Francis Group.
- Göteborgs stad. (2018). *Ramprogram Bostad med särskild service - egenproduktion*.
- Göteborg stad. (2023). *Tekniska krav och anvisningar*.
- Inspektionen för vård och omsorg. (2023). *Att inte få rätten att leva som andra*. <https://www.ivo.se/globalassets/dokument/publikationer/rapporter/rapporter-2023/ivo-att-inte-fa-ratten-att-leva-som-andra.pdf>
- Karlskrona kommun. (2009). *Funktionsprogram för bostad med särskild service enligt LSS*.
- Karlskrona kommun. (n.d.). *Boenden och korttidsverksamheter för personer med funktionsnedsättning*. <https://www.karlskrona.se/hitta-verksamheter/boenden-for-personer-med-funktionsnedsattning/?filterOpen=true&Query=&textFilters%5B0%5D.Key=7073&textFilters%5B0%5D.Value%5B0%5D=Gruppboende&textFilters%5B0%5D.Value%5B0%5D=&textFilters%5B0%5D.Value%5B1%5D=&textFilters%5B0%5D.Value%5B2%5D=>
- Karlskrona kommun. (2023). *Funktionsstödsförvaltningen*. <https://www.karlskrona.se/kommun-och-politik/sa-fungerar-kommunen/organisation/funktionsstodsforvaltningen/>
- Kinnaer, M., Baemers, S., & Heylighen, A. (2015). Autism-friendly architecture from the outside in and the inside out: An explorative study based on autobiographies of autistic people. *Journal of Housing and the Built Environment*, 31(2), 179–195. <https://doi.org/10.1007/s10901-015-9451-8>
- Love, J. S. (2022). Sensory spaces: *Sensory living – studio teaching the design of autism-friendly adult accommodation*. *Archnet-IJAR: International Journal of Architectural Research*, 16(3), 595–619. <https://doi.org/10.1108/arch-11-2021-0321>
- Mostafa, M. (2010). Housing adaptation for adults with autistic spectrum disorder. *Open House International*, 35(1), 37–48. <https://doi.org/10.1108/ohi-01-2010-b0004>
- Mostafa, M. (2021). *The autism friendly university design guide*. Dublin city university. ISBN: 978-1-5272-8598-9
- Nguyen, P., d'Auria, V., & Heylighen, A. (2022). Residential design for adults on the autism spectrum: A scoping review. *Open House International*, 48(3), 636–663. <https://doi.org/10.1108/ohi-12-2021-0254>
- Psykologiguiden. (n.d.). *Psykologilexikon*. <https://www.psykologiguiden.se/psykologilexikon/?Lookup=affekt>

Region Stockholm. (2019). *Verksamhetsbeskrivning: Center för sinnestimulering 2019*.

Socialstyrelsen. (2018). *Bostad med särskild service för vuxna enligt LSS*. <https://www.socialstyrelsen.se/globalassets/sharepoint-dokument/artikelkatalog/handbocker/2018-6-12.pdf>

Socialstyrelsen. (2022). *Daglig Verksamhet, LSS*. <https://www.socialstyrelsen.se/kunskapsstod-och-regler/omraden/funktionshinder/daglig-verksamhet-lss/>

Wijk, H. (2014). *Vårdmiljöns betydelse*. (VOL. 1:4). Studentlitteratur.

Wikimedia Foundation. (2024). *Activities of Daily Living*. Wikipedia. https://en.wikipedia.org/wiki/Activities_of_daily_living

Figures

Figure 1: Karlskrona kommun. (2023). *Funktionsstödsförvaltningen*. <https://www.karlskrona.se/kommun-och-politik/sa-fungerar-kommunen/organisation/funktionsstodsforvaltningen/Lantmateriet.GET>, URL: <https://herkules.slu.se/get/>, [downloaded 2024-02-02]

Figure 3: Karlskrona kommun. (2009). *Funktionsprogram för bostad med särskild service enligt LSS*.

Figure 4: Göteborgs stad. (2018). *Ramprogram Bostad med särskild service - egenproduktion*.

Figure 5: Borås stad. (2021). *Lokalplan för gruppboende enligt LSS i Borås Stad*.

Figure 34: Lantmäteriet. *GET*, URL: <https://herkules.slu.se/get/>, [downloaded 2024-02-02]

Figure 39: Lantmäteriet. *GET*, URL: <https://herkules.slu.se/get/>, [downloaded 2024-02-02]

Tables

Table 1: Karlskrona kommun. (2009). *Funktionsprogram för bostad med särskild service enligt LSS*.

Table 2: Göteborgs stad. (2018). *Ramprogram Bostad med särskild service - egenproduktion*.

Table 3: Borås stad. (2021). *Lokalplan för gruppboende enligt LSS i Borås Stad*.

Appendix

Reference apartments - Interview setup - Color study

Reference apartments

Example floorplan of apartment in the brief by Karlskrona municipality.

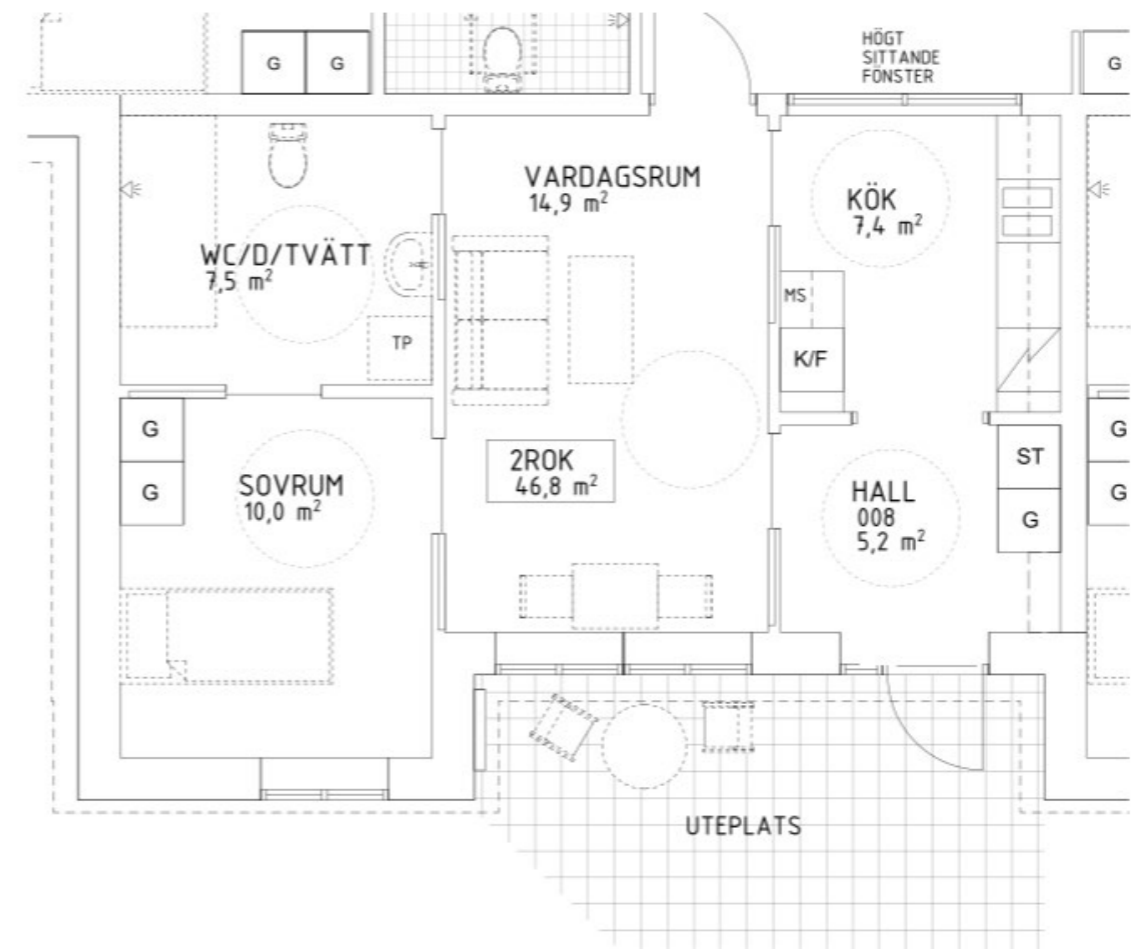


Figure 72: From "Funktionsprogram för bostad med särskild service enligt LSS" by Karlskrona kommun. (2009).

Example floorplan of apartment with normal accessibility in the brief by Gothenburg municipality.

Typlägenhet

Vanlig tillgänglighet utan schakt
BOA: 42,8 kvm

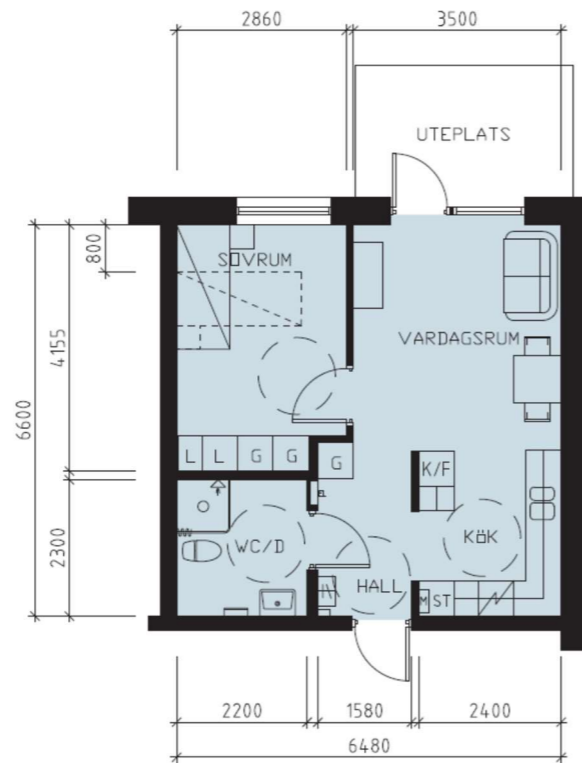


Figure 73: From "Ramprogram Bostad med särskild service - egenproduktion" by Göteborgs stad. (2018).

Example floorplan of apartment with increased accessibility in the brief by Gothenburg municipality.

Typlägenhet

Förhöjd tillgänglighet
BOA: 50,3 kvm

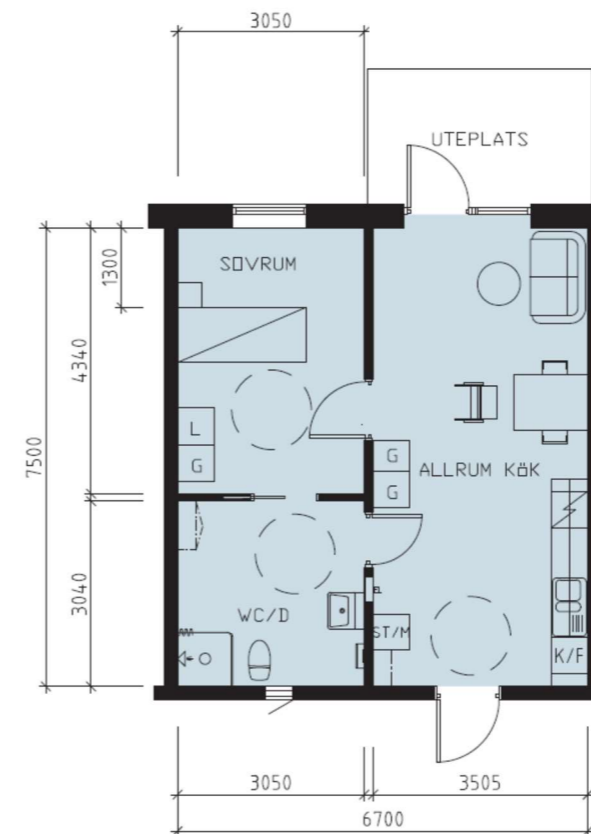


Figure 74: From "Ramprogram Bostad med särskild service - egenproduktion" by Göteborgs stad. (2018).

Interview setup

Two study visits were carried out at two different group accommodations and one interview were done with a person at the administration for functional support in Karlskrona.

Study visits:

The visits began with a tour by a resident in the group accommodation and then staff were interviewed. The goal for the study visits were to understand the everyday life of the residents. How they managed different tasks, if they felt safe in the group accommodation, how they could explore their personal interests, what activities were taken outside of the group accommodation and how they felt ownership and connection to their apartment and the common areas. An other goal for the study visits were to explore social interactions between the residents and staff, the resident possibility to choose to engage in social activities or not and when and where a challenging behaviour could appear.

Tour by resident:

During the tour, questions were asked, for example:

- What do you do in this room? What is this room used for?
- Do you want to be by your self when you do this activity or do you want somebody else to join you? Who do you want to join you?
- Do you think it's nice here? Do you like this room?
- What is your favourite thing in your apartment?
- Do you have any interests? Where do you do them and how do you get there?

Interview with staff:

After the tour, some questions were asked to the staff. Some of the questions was about the residents' answers and some questions was about how the staff thought that the group accommodation was suitable for its' purpose. Some example questions:

- Where and when do the residents contact the staff? When and where is it harder/easier to communicate with the resident?
- Where does the resident most often engage in challenging behaviour, in which situations? Where do the resident go to calm down?
- When and how is the common area used?
- Can you compare this group accommodation to the other type of group accommodation in the municipality?

Interview with Catrin Brissmalm:

The interview with Catrin Brissmalm at the administration for functional support was after the study visits and after the analysis of the various briefs, so the interview was therefore very much based on what emerged from these. With my questions, I wanted to understand why they had made certain design choices in the group accommodations and understand certain points in the brief better.

Interview questions:

- What is the goal and purpose of the brief "Funktionsprogram för särskild service enligt LSS"?
- How are the residents placed in the different group accommodation? How do you think when you decide who will live where? What do you think about mixing age and gender in the group accommodations?
- Why do you have two types of group accommodations in the municipality? Could you describe them? What are the differences in design? For whom is each type of group accommodation best suited?

- The brief suggests 3-5 residents in each group accommodation, why not 6?
- The brief from Karlskrona only wants private patios if the group accommodation is built on the ground floor. The other briefs want balconies if the apartments are on the upper floor. What do you think about that?
- Borås stad also introduces activity rooms or sensory rooms when necessary. What do you think about that?
- The other briefs also had space for outdoor activities such as kubb or boule. What do you think about that?
- The brief describes that all apartments must be on one floor, why not also common areas and staff areas on the same floor?
- Göteborg stad has two types of apartments with standard or increased accessibility. Why doesn't Karlskrona have that?
- Göteborg stad approves sleep alcove. Why should the bedroom be a separate room? Also kitchen and living room?

Colour study

These are the facade colours registered in the area and put into NCS colour wheel and colour triangles for red, yellow, blue and green.

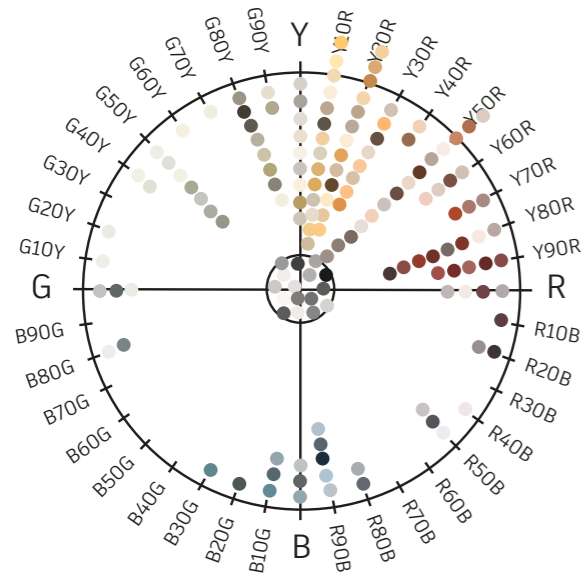


Figure 75: NCS colour wheel. Most of the colours in the area is either neutral or in between red and yellow hues.

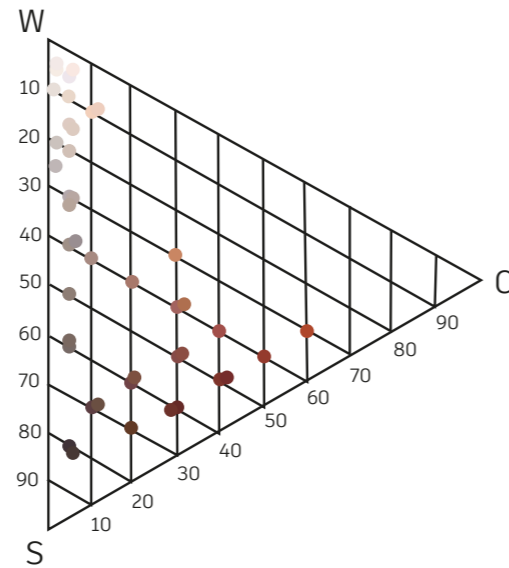


Figure 76: NCS colour triangle. The red colours in the area has either quite low saturation or a bit higher saturation in darker shades.

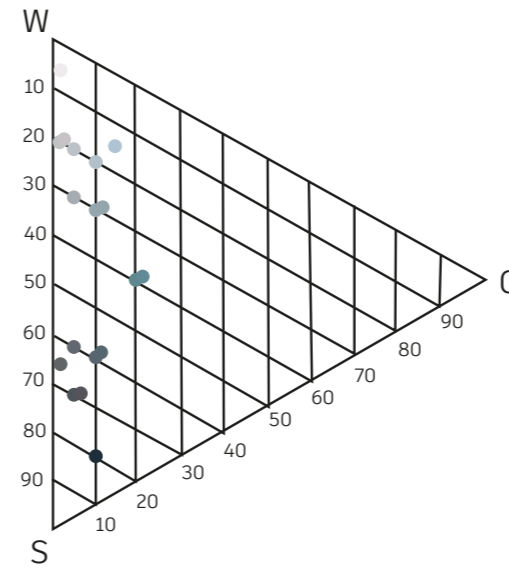


Figure 78: NCS colour triangle. The blue colours in the area are mostly low saturated, in both darker and lighter shades.

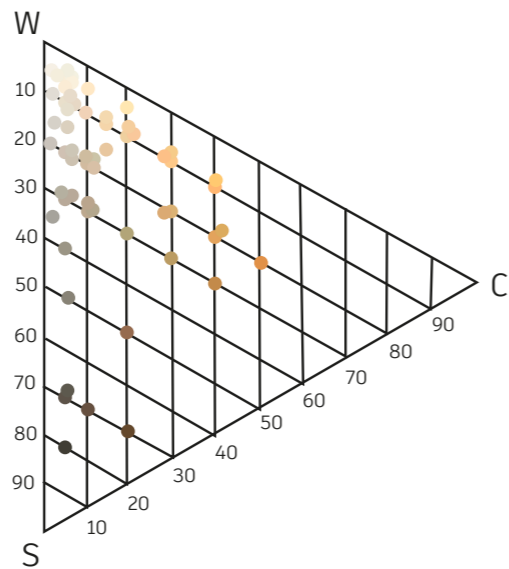


Figure 77: NCS colour triangle. The yellow colours in the area has either quite low saturation or a bit higher saturation in lighter shades.

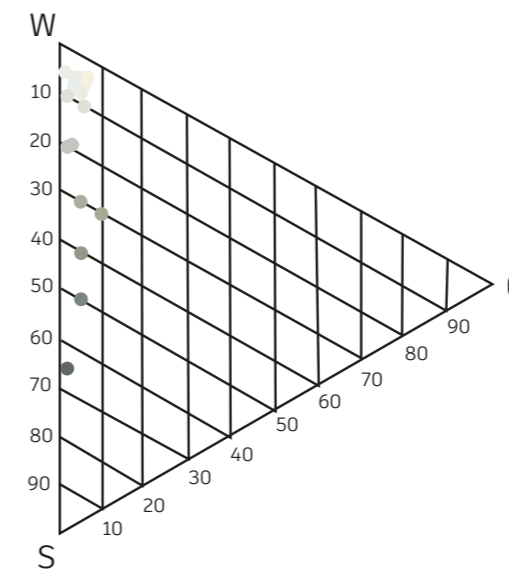


Figure 79: NCS colour triangle. The green colours in the area are mostly low saturated and often in more lighter shades.

Thank you!

*I would like to thank my supervisor Susanne Clase
and examiner Johanna Eriksson for all the support
and supervision during the thesis work.*

*I would also like to say a big thank you to Fredrik
Löfgren and Catrin Brissmalm, at the administration
for functional support in Karlskrona municipality, who
have helped to solve study visits, analysis material
and a project site for the master thesis.*



Living with Autism Spectrum Disorders

A study on group accommodations for people with ASD

Myrra Carlsson

Master's thesis 2024: Architecture and Advanced Programmes

Chalmers school of Architecture

Department of Architecture and Civil Engineering