# BEYOND THE BELL

Reclaiming Closed Public Schools for Local Communities –
Reactivating Byplanvejens Skole through Transformative
Design Strategies and Identity Theory

**“Beyond the Bell” signals a shift from traditional school use toward new community-focused purposes. Where the “Bell” symbolizes the school and the function it has had in the past. “Beyond” is the transformation that happens which gives the school a new purpose for the future.**

Ill. 1 Byparkvejens Skole. Crediting, CC BY 4.0 Geodatastyrelsen

# Abstract

This thesis is a collaboration between architecture and urban design and focuses on reclaiming closed schools for local communities, using Byplanvejens Skole as the pilot site for working with transformational principles and methods.

By applying transformative design strategies and drawing on identity theory, this thesis explores how vacant schools can be reactivated to support social sustainability, foster local identity, and contribute to a more responsible and community-driven approach to urban development.

A general guide to the transformation of closed schools in Denmark has been developed based on the work with the transformation of Byplanvejens Skole. This suggests the steps to follow are Reveal, Respect, Reframe and Reinforce. Furthermore, the transformation from Byplanvejens Skole to the new area called Gygia is presented, and it shows which concepts have been in focus throughout this specific transformation.

# Architecture and Urban Design

This master thesis represents a joint academic collaboration between the disciplines of Architecture and Urban Design. Rooted in a shared interest of both transformation and sustainable development, the project is the result of the collaboration between these two disciplines. Drawing upon two different academic backgrounds, each field brings unique perspectives, tools, methods and methodologies, and academic learning objectives to a common goal: The reactivation of the former Byplanvejens Skole as a meaningful public asset for the local community.

While Architecture and Urban Design often intersect in practice, they each operate at different spatial and conceptual scales. Architecture typically engages with the design of buildings and their internal logic, materials and spatial qualities. Urban Design, by contrast, focuses on the relationship between buildings, public spaces, infrastructure and social dynamics within the broader urban fabric.

However, the interplay between these professions also often overlaps, strengthening and complementing each other. We see this interdisciplinary process between the fields of Architecture and Urban Design as an opportunity to further bridge the professions. This includes not only designing a spatial transformation of the school structure but also reimagining its role in the urban landscape and local identity. Working across the disciplines from the outset has allowed for a more cohesive and holistic approach, aiming to produce a context-sensitive design proposal.

The transformation of Byplanvejens Skole, therefore, becomes more than a physical intervention but also a demonstration of how disciplinary boundaries can and should be challenged to address complex spatial and societal issues. An interdisciplinary importances which, in our case, is shaped by our combined competencies and a shared commitment to socially sustainable development and identity theory.

## Reading guide

For the best reading experience, the report should be read as a spread if read online. The report is divided into sections of different colors representing different topics. These colors follow the chapters throughout and help clarify the shift from one topic to another. Furthermore, all maps are created with north facing upwards unless otherwise is stated. The reference method used is Harvard. .

## Expression of Gratitude

First and foremost, we would like to thank our academic supervisors, Tenna Doktor Olsen Tvedebrink (Architecture) and Tina Vestermann Olsen (Urban Design) for their consistent guidance, constructive feedback and encouragement throughout the entire process.

We also extend our sincere gratitude to Anette Kümpel and Martin Heide Løvstad from AaK Bygninger, Aalborg Municipality, for generously sharing their time, knowledge and materials related to the future plans for Byplanvejens Skole. Futhermore, special thanks are also due to Mathias, who provided us with access to the school grounds and took time to show us around the buildings and outdoor areas.

We would also like to acknowledge the broader community of Gug, whose ongoing engagement with the future of Byplanvejens Skole has inspired many of the ideas and priorities reflected in our work.

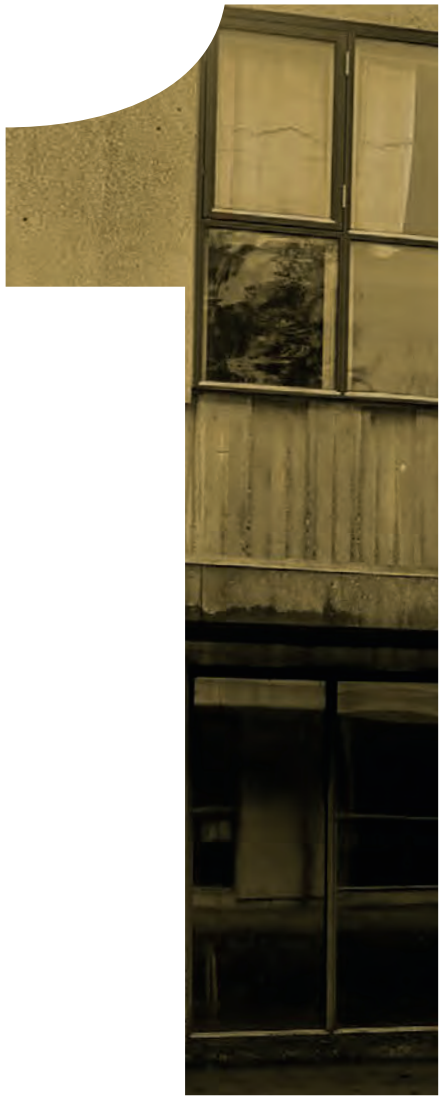
Lastly, thank you to everyone who contributed, directly or indirectly, to this project.

| | |
|---|---|
| **University** | Aalborg University, AAU – Denmark |
| **Field of Study** | Master in Arcitecture and in Urban Design |
| **Semester module** | MSc04 2025 – Thesis |
| **Project title** | Beyond the Bell |
| **Total pages** | 186 |
| **ARK supervisor** | Tenna Doktor Olsen Tvedebrink |
| **URB supervisor** | Tina Vestermann Olsen |
| **Project periode** | 03th February 2025 – 02nd June 2025 |
| **Examination date** | 20th June 2025 |

Jeppe Majland Skousbøll

Laura Krøgh Christensen

# Table of Content



# INTRODUCTION

This chapter introduces the background, motivation, and framework of this thesis. It outlines the problem of closed public schools in Denmark and presents the chosen case, Byplanvejens Skole, along with the initial problem, research questions and our methodological approach.

# The Story Behind

## Introduction

This master thesis is the result of an interdisciplinary collaboration within the fields of Architecture and Urban Design, to the amount of 30 ECTS.

Our initial master thesis explorations began in late 2024, during which we explored potential and relevant topics, identified a relevant case, formulated the assignment, gathered initial references. From the outset we were motivated by a desire to work with transformation and repurposement, and in collaboration we chose Byplanvejens Skole as the focus of our final master thesis.

## Motivation

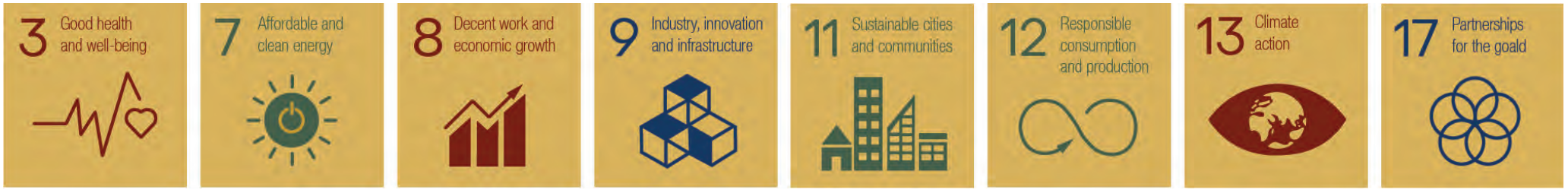
**Keywords:** *Relevant for today, Hands on/ Design orientated project, Transformation, Interdisciplinary*

Initially, there was some uncertainty regarding the theme of our master thesis project. We knew we were eager to work on a contemporary relevant topic manifested as a design orientated project. Furthermore, we were interested in a transformation focused project, with the outcome being a specific design proposal for an unused building mass and its urban area.

The motivation behind our choice of topic is rooted in our initial investigation of relevant societal issues in Denmark. We discovered an increasing number of public schools' closures within recent years. In 2024 alone, 34 primary schools closed in Denmark, four of which were located within Aalborg Municipality (Stanek, 2024). These closures have left many large and historically significant buildings vacant, raising questions about their future use. This societal development aligned closely with our academic interest and provided a strong foundation for a design orientated project.

Vacant school buildings represent the potential of untapped resources with the potential to be repurposed and beneficial for local communities. By transforming both the vacant buildings and their outdoor areas, we saw an opportunity to work interdisciplinary, address issues of social cohesion, provide new local amenities, and support sustainable urban development.

This project also reflects broader architectural trends. In response to climate crisis and the environmental impact of new construction, there is a growing interest in adaptive reuse. By working with an existing building mass, we aim to engage with these trends in a critical and creative way, uncover methods for advancing architectural and urban development and transform existing areas in a way that which is both forward-thinking and responsible.




**III. 3** Construction Industry Related SDGs

# Thesis Framework

The framework for this thesis is to develop a design proposal for the transformation of a vacant school. In recent years, there has been a shift in architectural and urban design discourse toward sustainability, adaptive reuse, and the preservation of cultural heritage. A growing number of young architectural studios, many of which has been founded within the past decade, are responding to global environmental challenges by focusing on circular design principles, prioritizing reuse over demolition, and embracing the transformation of existing structures as a central design strategy.

This tendency reflects not only a sustainable agenda aimed at reducing carbon emissions and construction waste, but also a cultural movement that values the historical and emotional layers embedded in the built environment. A new aesthetic is emerging and challenging our current idea of beauty. One that challenges the conventional notions of beauty and embraces imperfection, patina, and the narratives of existing buildings. (Dreyers Fond and Arkitektforeningen, 2024)

The transformation of vacant buildings, particularly those with strong social and historical significance such as schools, aligns with this evolving aesthetic and ethical stance. In the specific context of this thesis, the focus on a vacant school is also a response to recent educational reforms, which have led to the closure and merging of multiple institutions. As a result, numerous school buildings now stand empty, underused, or face the risk of demolition. This poses both a challenge and an opportunity for meaningful architectural intervention.

By proposing a design framework rooted in adaptive reuse, this thesis not only addresses a pressing urban issue but also contributes to the broader architectural discourse on sustainability, heritage, and the creative potential of transformation.

## Sustainability Tendencies

The building industry must embrace sustainability to create meaningful value both in Denmark and globally. Broader and more general sustainability goals exist, such as UN's Sustainable Development Goals (SDGs), which establishes an overall framework for sustainability, where effects and responsibility align. The goals that can be aimed at the construction industry are shown in illustration 3. However, in more recent years, regional and national sustainability certification systems have been the go-to of evaluating new developments, such as DGNB and Svanemærket, focusing on specific goals and aims to standardize built sustainability. (Bygherreforeningen, 2025)

By implementing a selection of the sustainable development goals, the aim is to lower the emissions of the building sector in the future. In 2024, the building and construction industry accounts for 40% of material and raw materials consumption, 30% of waste and causes 25-30% of the significant environmental damage in Denmark. (Bygherreforeningen, 2025)

This increased sustainability tendency has led many developers to look at existing building masses and how they can be transformed for new purposes instead of demolishing them to build new ones. However, this requires a new aesthetic compass and users to change their expectations of what architectural quality is. (Hodge, 2025)

The newer design studios work with an ambition for sustainability, reusing as much of a building as possible, respecting the soul and history of the place as they transform buildings and spaces. They celebrate the "ugly" buildings and run-down urban spaces, what has been discarded or overlooked and challenge our idea of beauty. (Hodge, 2025)

## Public Primary Schools of Denmark

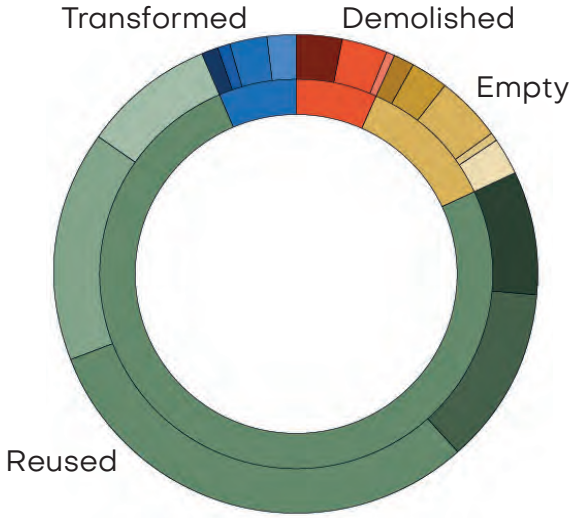
"Folkeskolen" is the public primary school of Denmark and consists of 10 mandatory school years, 0–9 grade. Originally built upon the fundamental ideas of solidarity, diversity and equality.

In 1814, the very first public school in Denmark was founded with the common thought that education was the task of the state. The public school's curriculum and framework is formed by the state and the parliament, and legislative changes and reforms regularly and continuously adjusted the functioning of the schools. Therefore, the public school of Denmark is by all means a school for the public. (Andersen A, 2018)

During the 1840s urbanization took off in Denmark. Before then, Denmark was still considered a predominantly agricultural society. A mere 20% of the population resided within cities but with industrializing this was to reverse. By the 1900s 42% of the population resided within cities (Andersen, 2018b). During the past 100 years, migration has increasingly been towards the regional main cities and nowadays 54% of the population resides within the 30 largest cities. (Sørensen, 2017)

The urbanization and the school for the public both contribute to the school structure which is present within Denmark today. The type of school depends on its geographical location. In 2024, the most present school types are village, central and city schools. (DAC, n.d.)

> Village Schools are often smaller schools, sometimes only offering 0–6 grade, due to a low number of pupils. Depending on context, it might only be the immediate village people which attend. Village schools are located in rural areas. (DAC, n.d.)
>
> Central Schools are similar to Village Schools in principle, but offers 0–9 grade, making the school a larger rural school. Students will be district and neighboring district children. (DAC, n.d.)
>
> City Schools are located within the city boundaries. The schools offer 0–9 grade and have a large number of students. In Aalborg, over 10 city schools are located. Cities will divide their areas into districts, each district refers to one city school. (DAC, n.d.)

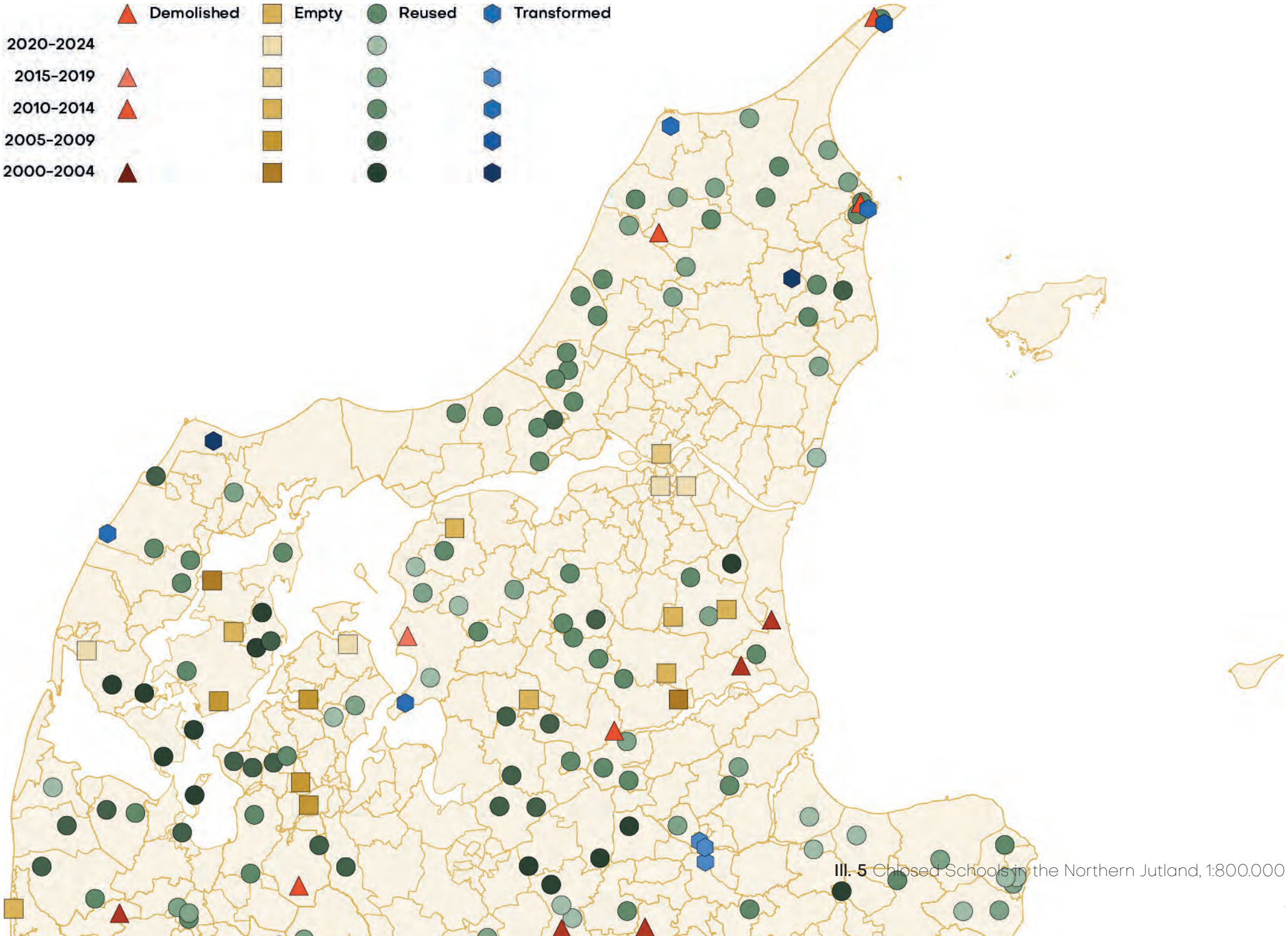



**Ill. 4** The Use of Closed Schools

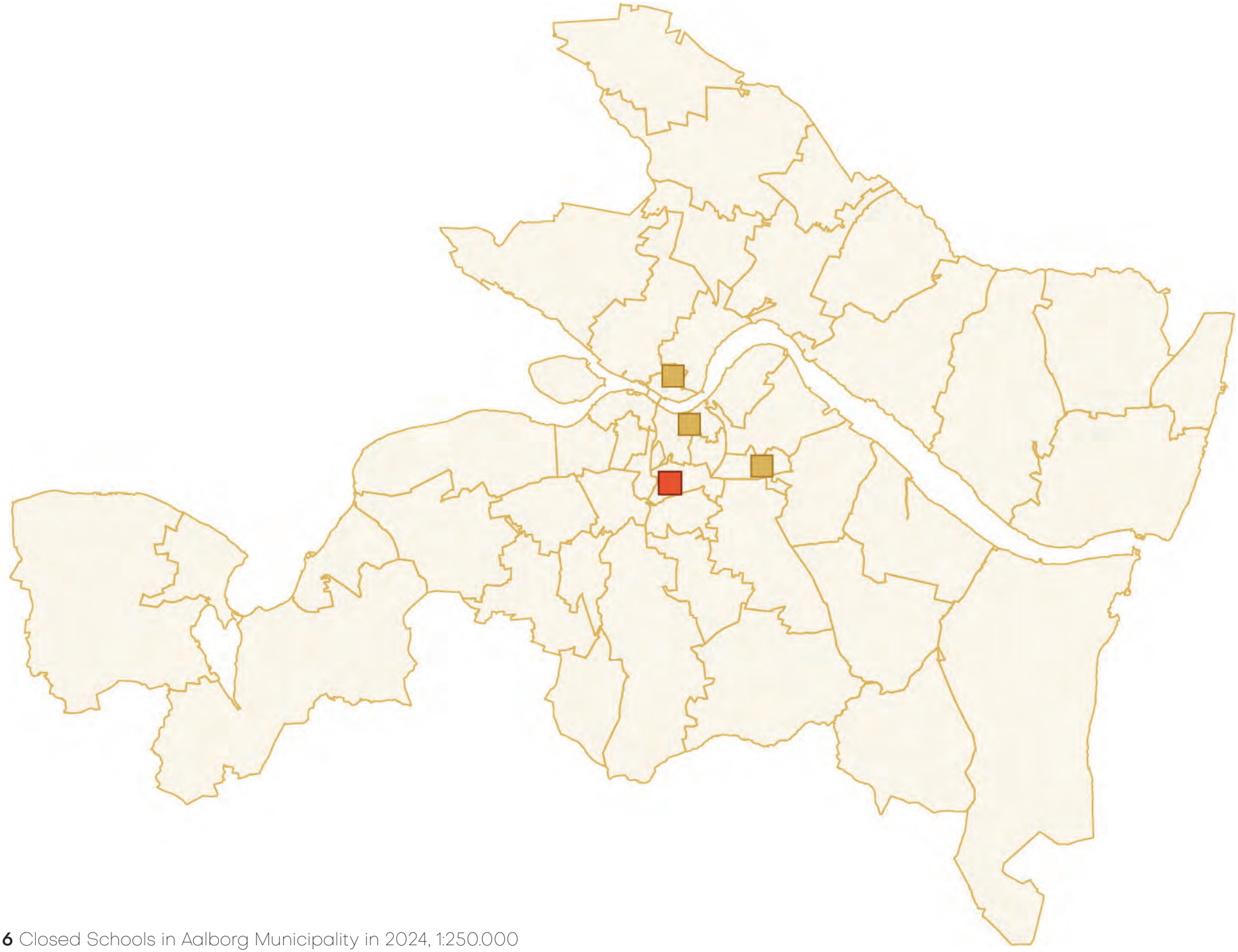
In Denmark, a total of 1082 public schools are active, but in recent years hardship has hit, especially among rural areas. Social aid from the government has been reduced and the lowest procreation rate since the 1980s, both contribute to the closure of schools (Tobiasen, 2023 & Danmarks Statistik, n.d.). In just one of Denmark's 98 municipalities, a total of seven out of 13 schools are proposed for closure in the coming years (Pedersen, 2024). A tendency of which has been common during the past decade.

Aalborg Municipality is struck by the same hardship, having shut down four schools in 2024, two of which are village schools. These students now refer to the regional central school. The remaining two schools are city schools within the city boundaries of Aalborg (Stanek, 2024).

Since 2000, 715 schools have closed in Denmark. Illustration 5 shows what has happened to the empty schools in the northern part of Jutland. It can be seen that they have worked with four ways of handling the schools: Demolishing, leaving them empty, Reuse and Transformation. Illustration 4 summarizes the distribution of these four handling methods. The vast majority of empty schools are more or less direct reuse. This is for example for independent schools or municipal use. A few are demolished or transformed for new use. These are for example cultural centers or apartments and the rest are left empty, some for many years now. (Styrelsen for IT og læring, 2025)




**Ill. 5** Closed Schools in the Northern Jutland, 1:800.000



**Ill. 6** Closed Schools in Aalborg Municipality in 2024, 1:250.000

## School Considerations

As previously mentioned in the motivation, interdisciplinary collaboration is central to this thesis. To reflect the competencies of both architecture and urban design, it was essential to select a case that presents challenges at both the building and city scale. In this context, city schools, unlike village or central schools, typically occupy larger sites, combining substantial building masses with expansive outdoor areas. This duality allows for engagement with challenges such as spatial transformation, structural reuse, and identity creation, while also addressing concerns such as site integration, accessibility, public function programming, and connections to surrounding infrastructure and green spaces.

In Aalborg, four schools were closed in 2024, as seen in illustration 6. Two of these were city schools, Tornhøjskolen and Byplanvejens Skole. While they share similar characteristics in terms of size, capacity (approximately 220 pupils as of 2024 (Stanek, 2024)), and physical layout, Byplanvejens Skole was selected due to its unique terraced terrain. The site's distinct topography adds complexity to both the redesign and the reintegration strategy, making it particularly suited for an interdisciplinary design exploration.

## Municipality Plans

In 2023, the city council of Aalborg decided to merge Byplanvejens Skole and Seminarieskolen, in the old facilities of Seminarieskolen. As a result of this, the council decided to sell off Byplanvejens Skole, due in 2027. However, they have chosen not to include the green area east of the buildings and the sport gymnasium as well as a small area around the building in the municipality's development plans. This is being done to preserve the green area as it is, and to ensure that the sports gymnasium can continue to be used as it is today. (Aalborg Kommune, 2024)

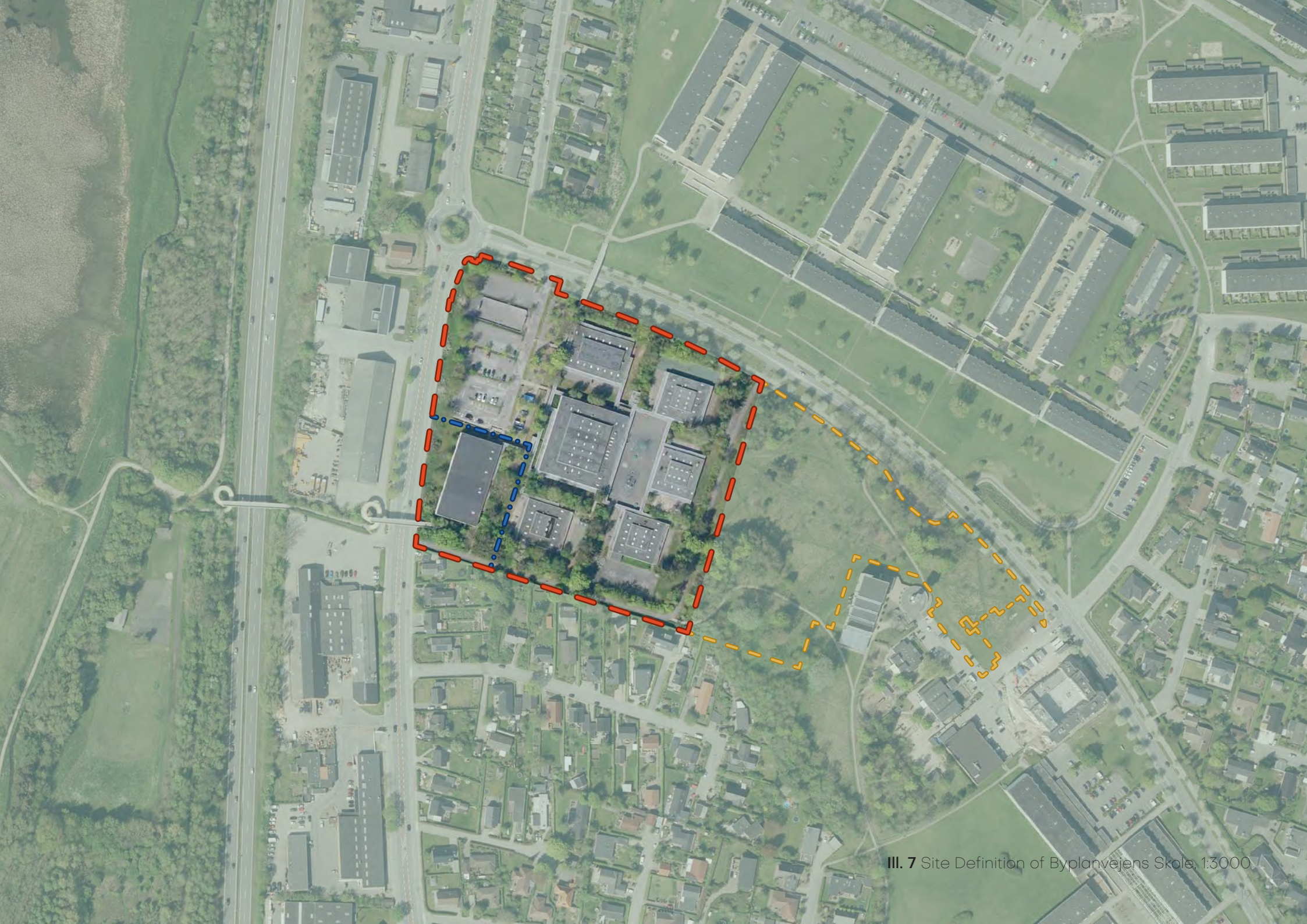
The municipality's expectations for the area are the development of apartments and/or also environmentally friendly city oriented commercial use, such as offices and public-oriented service industries. (Aalborg Kommune, 2024)

## Site Boundary

In our project, we propose a slightly modified site boundary compared to the municipality's outlined area, which is seen in illustration 7. While we respect the decision to preserve the green area to the east and do not intervene directly within it, we actively seek to integrate its spatial and ecological value by maintaining and enhancing existing path systems and visual connections. This helps ensure continuity between the school grounds and the adjacent natural landscape.

In contrast to the municipality's exclusion of the sports gymnasium, we have chosen to include it within our design boundary. The gymnasium is an important and active community facility, its inclusion ensures a more cohesive and unified design strategy that reflects how the site functions today and how it can evolve without disrupting existing public use. While we retain its current use, the surrounding design aims to support, enhance, and reconnect it to new programmatic and spatial layers introduced through the transformation.

Site Municipal boundaries Land Plot



**III. 7** Site Definition of Byplanvejens Skole. 1:3000

# Initial problem

After the creation of the framework for the thesis, a sense of wonder had begun to emerge. With an increasing number of public-school closures, once-vibrant buildings are now left empty. Can these closed schools be meaningfully transformed? What functions could be appropriate within the architectural and urban framework of a former school, such as Byplanvejens Skole?

Transformation is about more than just carbon savings, it also holds the potential to preserve cultural identity and heritage among local residents. Could Byplanvejens Skole become more than a memory of the past? Could it once again serve as a hub for community?

To accommodate functions which reflect contemporary needs and value, accessibility must be reevaluated. Does the current layout of Byplanvejens Skole meet modern standards of accessibility and inclusion? Can a transformative design embrace users of all ages, abilities and backgrounds?

These considerations point to a broader challenge, one that resides at the intersection of sustainability, identity and community development. This led to the development of the initial research question:

**How can the transformation of unused building masses, in the form of closed school buildings, strengthen the local community by contributing to social and environmental sustainability?**

Ill. 8 Byplanvejens Skole

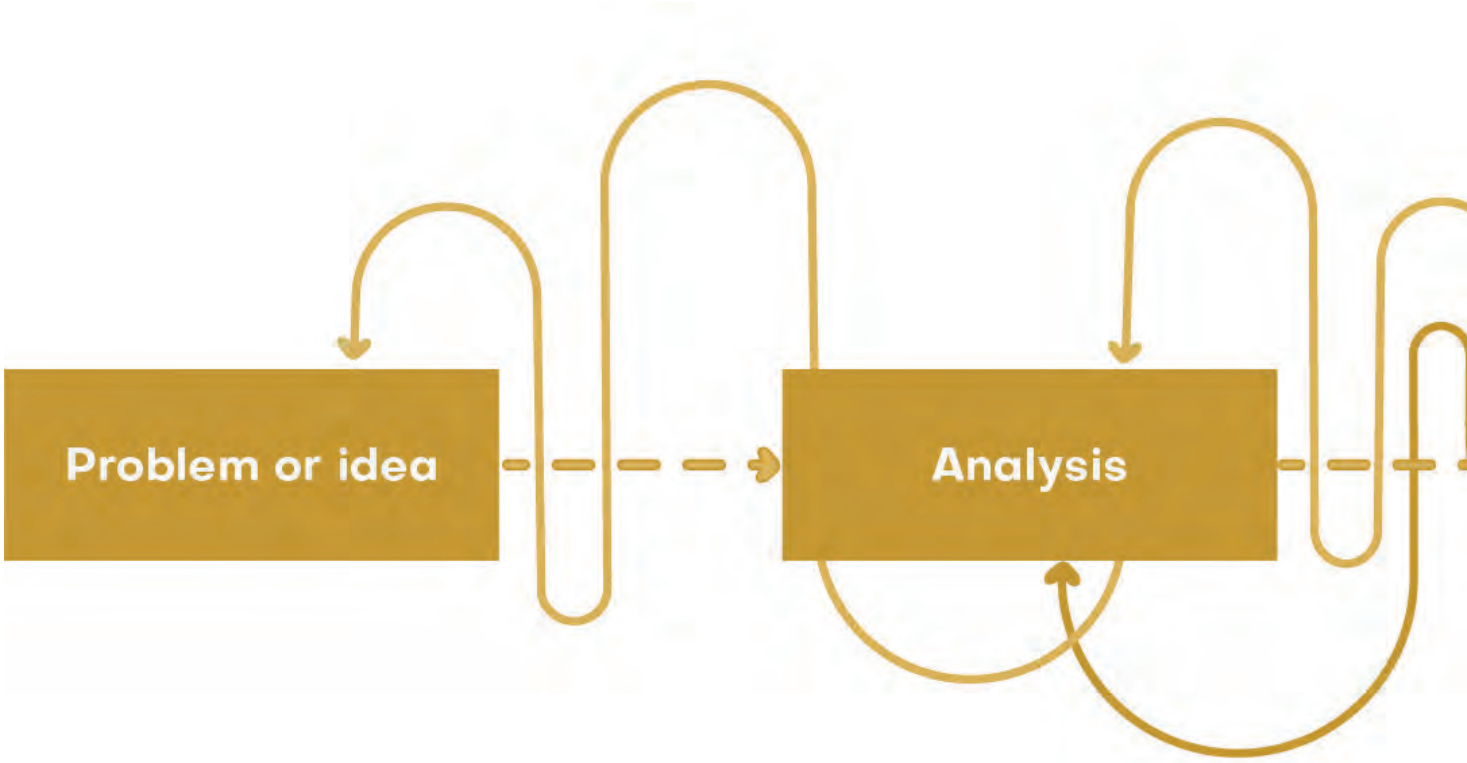
# The Approach and Methodology

The following chapter will introduce the approaches and methods used in the process to solve the identified problem. First the theories applied in this project will be explained. These are the Integrated Design Process (IDP) by Mary-Ann Knudstrup and Blik – Kast – Projekt by Nicolai Bo Andersen. These are not just methods but also serve as tools for facilitation of the design process. In the following section the methods employed will be explained and showcases how we, specifically, have worked with the different methods.

## The Integrated Design Process

The IDP consists of five phases: Problem, Analysis, Sketching, Synthesis, and Presentation. One of its strengths lies within its iterative nature, allowing for integration of new insights and continuous reevaluation. The designer is guided through repeated loops of these phases, promoting a dynamic and responsive approach to design (Knudstrup, 2004). Depending on the specific project, the phases which are revisited, and to which extent, can vary significantly. Illustration 9 is a representation of how complex, nonlinear and iterative the process can be.
The first phase, Problem or idea, focuses on defining the core challenge or idea of the project. This sets the framework of the subsequent process. (Knudstrup, 2004)

In the Analysis phase, information is gathered to inform the design. This may include site-specific factors such as microclimate, neighborhood, municipality plans or user needs, etc. The aim of which is to



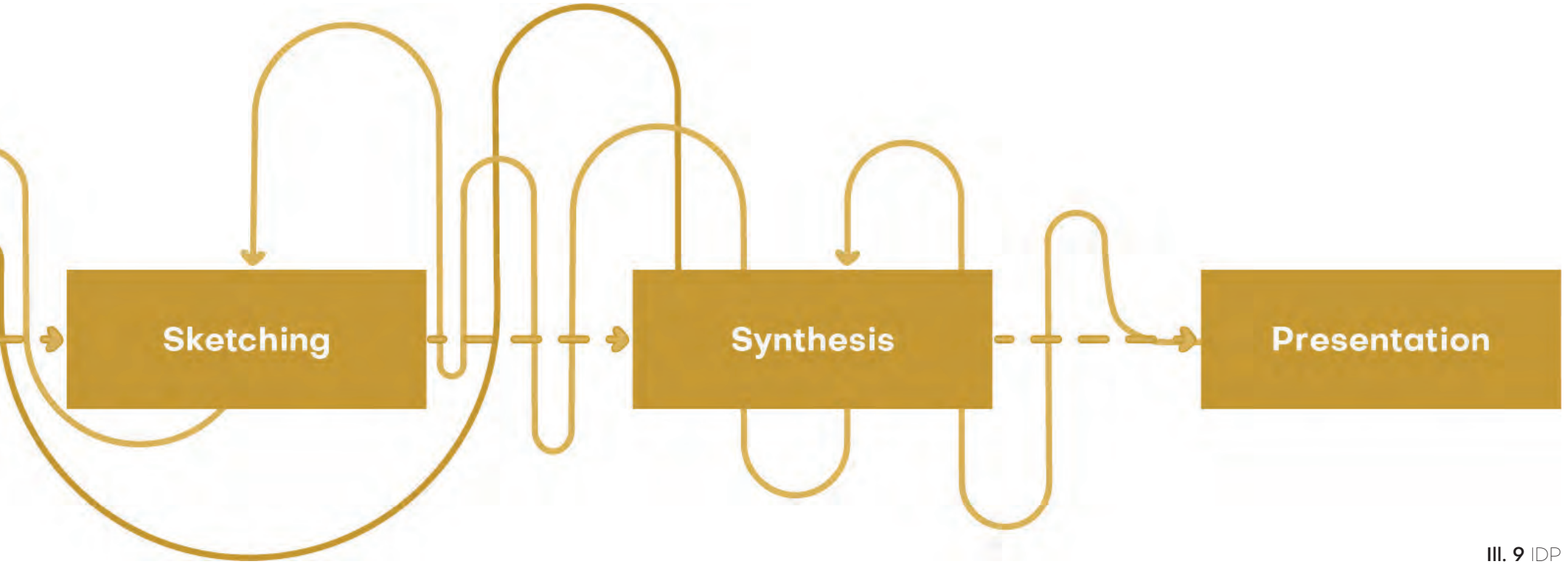
build a strong knowledge base that anchors the project. (Knudstrup, 2004)

Next is the Sketching phase, where a broad range of ideas and design proposals are developed. Sketches which serve different purposes. Some address specific problems, others test spatial arrangements or explore creative potentials. This phase demands a high degree of visual thinking, communication and capability to visualize – from mind to hand to paper or models. All of which inform the design process. (Knudstrup, 2004)

The Synthesis phase follows and is deeply connected to the sketching. Here, the various elements explored in earlier phases merge and form a synthesis. The design begins to take its final form, integrating technical, functional and aesthetic considerations into a cohesive whole which meets the project's overall goals. (Knudstrup, 2004)

Finally, in the Presentation phase, the project is communicated in a clear and compelling way, highlighting its qualities and demonstrating how it fulfills the original intentions. (Knudstrup, 2004)

This is a presentation of the five phases in chronological order. The IDP method is inherently nonlinear, and phases often repeat, overlap and inform each other in complex ways.




**III. 9** IDP

## Blik - Kast - Projekt Method

Blik – Kast – Projekt is a methodical approach for transformation, restoration, and cultural heritage work and can be seen in illustration 10. It structures the process into three phases: initial assessment, sketching, and planning. This method explores architectural history, building structures, and material properties to identify significant architectural features and preserve building and city qualities. The goal is to incorporate historical elements, spatial experiences, and material characteristics into a site-specific, nuanced architecture. (Andersen, 2015a)

Transformation work begins with pre-existing cultural or physical elements. What distinguishes transformational architecture is its commitment to gaining precise historical, phenomenological, and technical understanding across three scales before intervention. (Andersen, 2015a)

The first phase, Blik, involves registering, analyzing, and valuing the existing situation at city, building, and detail scales through "Technical – Historical – Phenomenological" characteristics. The registration includes archive reviews, identification and measurement of the existing situation. This ensures that all essential information is available. Subsequently, an analysis of technical, historical and architectural conditions will provide an overview of the information. Finally, a valuation based on the registration and analysis must describe what has quality and what does not. This valuation must identify the fundamental preservation values. (Andersen, 2015a)

The second phase, Kast, encourages temporarily setting aside constraints to develop creative solutions. Here, drafts synthesize historical, technical, and phenomenological intentions into a coherent approach. Different solutions can be tested, further developed or rejected. To align the approach with the project's questions, the use of "Landscape – Still life – Portrait" scale levels and the "Skin – Meat – Bone" technical divisions ensures parts interact as a unified whole. (Andersen, 2015a)

The final phase, Projekt develops and presents the intentions and sharpening the effects in a coherent architectural proposal, processed in scales of 1:500, 1:50 and 1:5. (Andersen, 2015a)

Blik – Kast – Projekt is a method that can be helpful when identifying and further developing existing architectural qualities. Furthermore, it helps to ensure that the building's conservation values are maintained throughout the process. (Andersen, 2015a)


**Ill. 10** Blik – Kast – Projekt

## Teknisk – Historisk - Fænomenbunden

The method Teknisk – Historisk – Fænimenbunden covers the general principles for registering, analyzing, and valuing existing structures. It emphasizes the importance of accurate technical and historical knowledge alongside experiential understanding. These perspectives enhance the process from initial recording through design and apply across all scales – from landscape to building to detail. The method focuses on understanding buildings as physical materials and drawings, analyzing them within historical context, and recognizing their sensory experience qualities. (Andersen, 2015a)

The technical angle examines building conditions. In sketching and design phases, it helps develop material qualities, constructive logic, and details as integral parts of the building's semantic order. (Andersen, 2015a)

The historical angle describes existing elements and places them within broader architectural and cultural-historical contexts, serving as inspiration for future development. (Andersen, 2015a)

The phenomenon-bound approach addresses the building's sensory and experiential qualities, including shapes, colors, proportions, textures, spatial atmosphere, and light conditions. (Andersen, 2015a)

## Landscape – Still life – Portrait

Landscape – Still life – Portrait is a method which emphasizes the importance of working simultaneously across three scale levels. This method ensures architectural interventions consider the large landscape scale, building scale, and detailed level, allowing projects to develop in connection with their context while maintaining a human scale. (Andersen, 2015a)

The 'Landscape' level examines the building's relationship to its surroundings and urban context. At 1:500 scale, architectural interventions address facade rhythms, movement patterns, and settlement structures. (Andersen, 2015a)

'Still Life' focuses on the building scale, including volume, space, and construction. At 1:50 scale, this level explores the building's spatial character and atmospheric qualities. (Andersen, 2015a)

'Portrait' concentrates on details: material qualities, tectonic elements, and assembly methods. At 1:5 scale, this level describes and develops material properties, component syntax, and constructional relationships. (Andersen, 2015a)

## Skin – Meat – Bone

The method Skin – Meat – Bone views a building as a tectonically constructed whole comprising three interdependent elements: skin, meat, and bone—also referred to as facade, plan, and section. (Andersen, 2015a)

'Skin' addresses the membrane between interior and exterior. As the most visible part of a building, it holds significant expressive potential. The building's longevity in sustainable architecture depends on cultural recognition by occupants and appreciation by passersby. As a concept, 'Skin' describes facade drawings that present the building's face to the world. (Andersen, 2015a)

'Meat' represents the building's volume, figure, and internal spatial organization. It concerns the building's gestalt and coherence, room relationships, and individual atmospheric qualities. 'Meat' can refer to floor plans showing human movement through space. (Andersen, 2015a)

'Bone' focuses on the building's construction and structure, which can either be a character-defining element contributing to the space and atmosphere or a more neutral structural component. 'Bone' can refer to sectional drawings showing how the building transfers gravitational forces to the ground. (Andersen, 2015a)

# Methods Employed

A series of different methods have been applied to investigate the challenges and opportunities at Byplanvejens Skole. Each method has been selected and employed to gather essential insights with the aim of informing the solution and design process effectively.

## Desktop Analysis

Desktop analysis involves researching existing data, documentation, and information without being present at the project site. This includes reviewing existing maps, photographs, reports, and other available resources to gain an understanding of Byplanvejens Skole history, characteristics, construction etc.

This helped prepare us and give us a good understanding of the site before our site visits. Allowing us to be more efficient and know what to pay attention to when we were on site. These desktop analyzes have also made it possible to prepare data specific analyzes such as our microclimate analysis and have helped us gain a lot of knowledge about Gug in a short time.

Throughout the project, software's such as QGIS and Google Earth have contributed greatly to performing desktop analyses. Moreover, the website of Aalborg Municipality has provided a great deal of information regarding current plans and stakeholders. Online segmentation tools, such as ConZOOM, have provided a useful insight into the local community.

## Case Studies

Case studies involve researching similar projects to learn from past successes or failures. This includes analyzing other projects with a similar focus to identify practices and effective strategies.

In our project, case studies have been used specifically to explore how the three key theoretical frameworks Transformation, Identity Theory and Universal Design, can be applied across scales, from architecture to urban design. We selected case studies that feature comparable challenges, such as the transformation of distinctive building typologies and the reintegration of these into the urban fabric.

These case studies have informed both our conceptual and practical approaches, offering inspiration for how to preserve character, enhance identity, and ensure accessibility. They have also served as reference points in terms of spatial strategies, material transitions, and public space integration.

## Site Visit

A site visit involves physically visiting the project area to gain firsthand observations and insights. This includes recording current conditions.

In our case this method was applied several times throughout the process. With each visit, we gained new knowledge about the school and its area, as well as how it was connected to the local community of Gug. We used these visits to document the current state of Byplanvejens Skole in the report, as well as to get a sense of the area and whether the information we had gained from desktop analysis was equally valid when experienced on site. One of the site visits provided the basis for our valuation of Byplanvejens Skole, where we identified the characteristics and heritage of the site and another was to identify which trees on the site we wanted to preserve. These site visits also allowed us to see the site change with the seasons and thereby change character.

## Mappings

Mapping is the process of organizing and visualizing spatial information and data. This involves creating maps of the area's relevant factors to gain a more profound understanding of the site.
In our project, we produced a series of mappings focused on Gug and the characteristics of the city and the characteristics of Byplanvejens

Skole. These are mappings of the topography, functions, green structures, demographics and more. They are based on a mix of information from desktop analytics and site visits. Furthermore, we have worked with a form of selection of what information the different maps needed to communicate what we wanted them to communicate.

### IDP vs. BKP

The two methods offer distinct approaches to the design process. IDP is a flexible, iterative framework suited to a broad range of projects, guiding the designer through the five phases from problem to presentation. Its adaptability allows for ongoing refinement and encourages iterative creativity through sketching and synthesis.

In contrast BKP is rooted in transformation and heritage. BKP proposes a thorough analysis of existing technical, historical and phenomenological aspects, before progressing to creative exploration. This process emphasizes respect for existing architectural values and site-specific qualities, as a constant first step.

### Teknisk - Historisk - Fænomenbunden

The way we have worked with the method is especially when creating the valuation of Byplanvejens Skole. Here we examined the condition of the buildings and identified specific elements with a historical value for Gug. Furthermore, we noted materials, spaces, greenery and colors that help create sensory and experiential qualities.

Furthermore, we have also worked with Gug as a city and its development to understand the context in which Byplanvejens Skole is located and what it has meant for the city through time.

### Landscape - Still life - Portrait

We have worked with this method by examining Byplanvejens Skole and the immediate context in the different scales. We have not followed the specifically suggested 1:500, 1:50 and 1:5. We have, however, integrated the principles of different scales and adopted them to fit.

As an addition, we have added another scale that is larger than Landscape scale. This is done to better examine the broader context and how the site ties into the local community to ensure coherence.

### Skin - Meat - Bone

The way we have worked with this theory is in connection with our site survey. Here we have divided the investigation of the buildings into the three topics/scales Skin, Meat and Bone. This is done to ensure an in-depth analysis and understanding of the different layers the school buildings consist of.

### Theory Research

Theory research involves exploring relevant theoretical principles, approaches, and concepts within urban design and architecture.

Our theoretical foundation began with an interest in sustainability, where we explored different approaches to designing responsibly. This led us to the theory of transformation, which emphasizes sustainability through the reuse of existing buildings and materials. From working with existing structures, we arrived at identity theory, recognizing that buildings with a long-standing presence and specific societal functions develop a sense of identity among their users – an identity we had to acknowledge and engage with in the transformation process. Lastly, we incorporated the theory of universal design, as our aim was to give Byplanvejens Skole back to the community of Gug. This goal required us to consider a wide and diverse group of future users and ensure that the site could accommodate their needs in an inclusive and accessible way.

# THEORY

This chapter introduces the theoretical framework that supports the outcome of this thesis. These are listed in the order of greatest influence on the project. For each of the theories, there is an example of how it has been integrated in the case study of Maltfabrikken in Ebeltoft.

# 02

# Transformation

In this section, the main theory for this thesis project, namely transformation, will be presented. As an example of how the transformation theory can be utilized, a case study of Maltfabrikken is presented.

## Transformation Theory

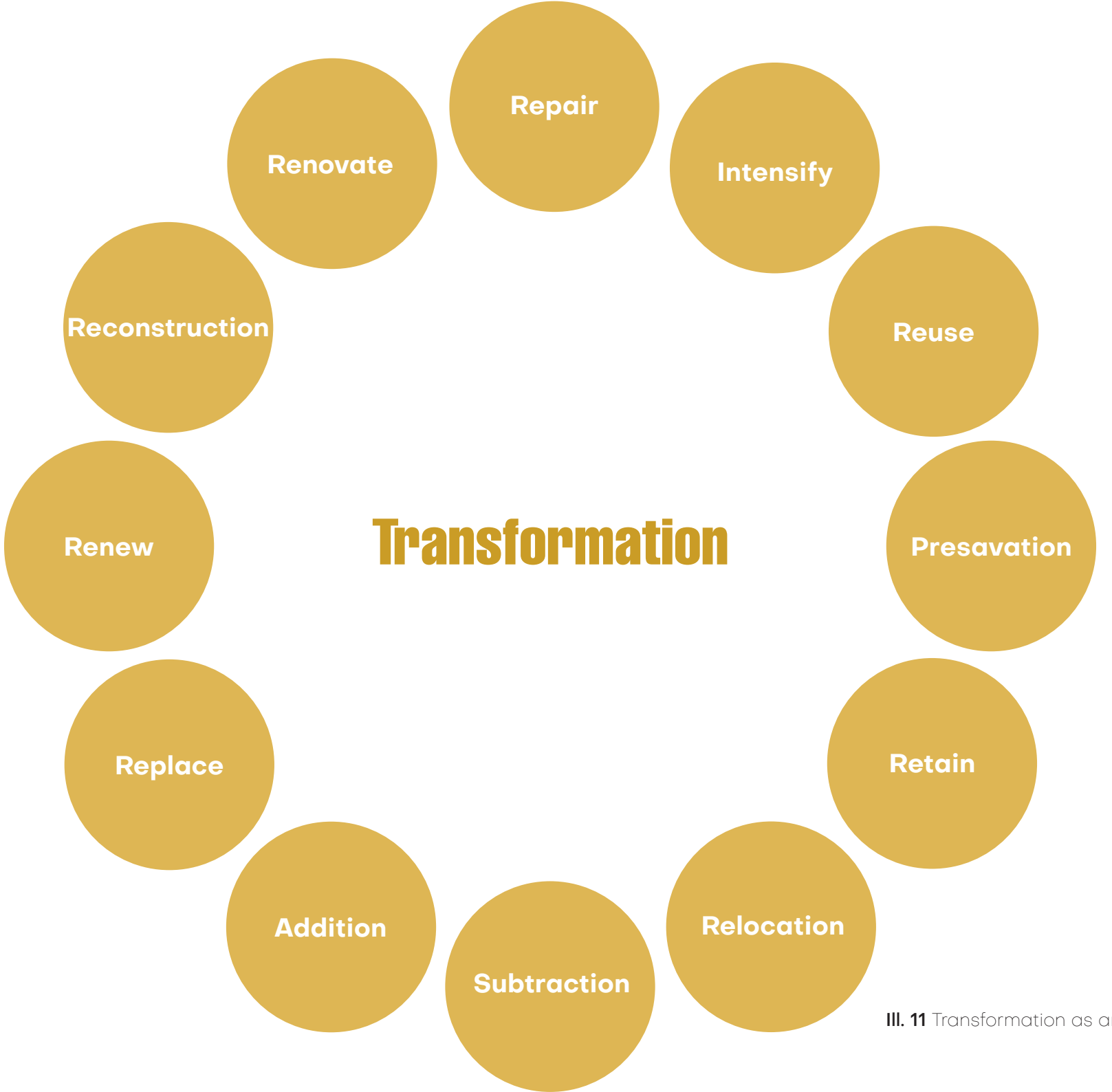
**Transformation**
/ˌtræns.fəˈmeɪ.ʃən/

a complete change in the appearance or character of something (...), especially so that that thing (...) is improved

(Cambridge Dictionary, 2019)

The word transformation is most often associated with the architectural heritage that exists in all scales. This will be challenged in the future due to the higher demands of sustainability and the need to change the function of empty buildings such as factories and schools. In this context, the word transformation refers to the process of change, a cultural object undergoes naturally or aided by humans before it perishes. This creates a need for architects who understand the cultural heritage of the place and are able to formulate a value proposition as a basis for transformation (Bock, 2011).

Although a transformation might not be so dire as to completely transform, transformation is in and of itself a means to improve upon. Therefore, the meaning of transformation is used as an umbrella term, encompassing various methods of changing an existing structure. (Designing buildings, n.d.) Methods of which can be seen in illustration 11.




**III. 11** Transformation as an Umbrella Term

Danish architect Nikolai Bo Andersen has highlighted some of these transformation disciplines and explained the distinction between them. This is: Subtraction, Reconstruction, Repair, Transformation and Addition, which can be seen in illustration 12. These can be placed on a scale where the architectural intervention at one end consists of removing material, i.e. subtraction. Reconstruction is about restoring something that was there before. In the middle of the scale, it's about repairing the existing building and transformation, which is a change of the existing. At the extreme end of the scale, the intervention consists of an addition, namely adding a new structure to an existing building, urban or landscape context. (Andersen, 2015a)

Subtraction – Reconstruction – Repair – Transformation – Addition is a method of architectural intervention. It applies to both classical restoration practice and the design of a new building in an urban or landscape context. The intention is for transformation, restoration and heritage to be understood as a natural integral part of an architectural practice, where the interest in working with the site-specific, culture-bearing and material is central. (Andersen, 2015a)

When transforming a building, you can choose to expand the existing building with an addition, as previously mentioned, the addition can relate to the old building in different ways. At one end of the spectrum, the addition can resemble the old building so much that you can not tell the difference, and at the other end it can stand on its own to such an extent that the two buildings have nothing to do with each other architecturally. However, a more nuanced understanding of the relationship between old and new is also needed. It can be seen as a range from a blend to a dialogue to a contrast. The addition can have a close architectural connection to the host building and at the same time be completely unique. An architectural relationship is about the degree of similarity and/or difference between the new and the


**Ill. 12** Transformation types

old, expressed through one or more elements. These elements can be found in categories such as geometric relationships, the interaction between geometric relationships and more complex entities. (Andersen, 2015b)

*"The houses look the way they do, not in spite of, but because of what was already there."*

(Andersen, 2015a, p. 83) Translated by authors

One of the central subject areas of transformation is the transformation of buildings emptied of its functions. There are various reasons for this: the building is worn out and in need of a general refurbishment, its identity is weak and needs to be strengthened, or the function changes and the building needs to be rebuilt. Finally, many transformations take place because the energy consumption is too high and the building needs energy renovation. Often it is a combination of several factors. (Andersen, 2015c)

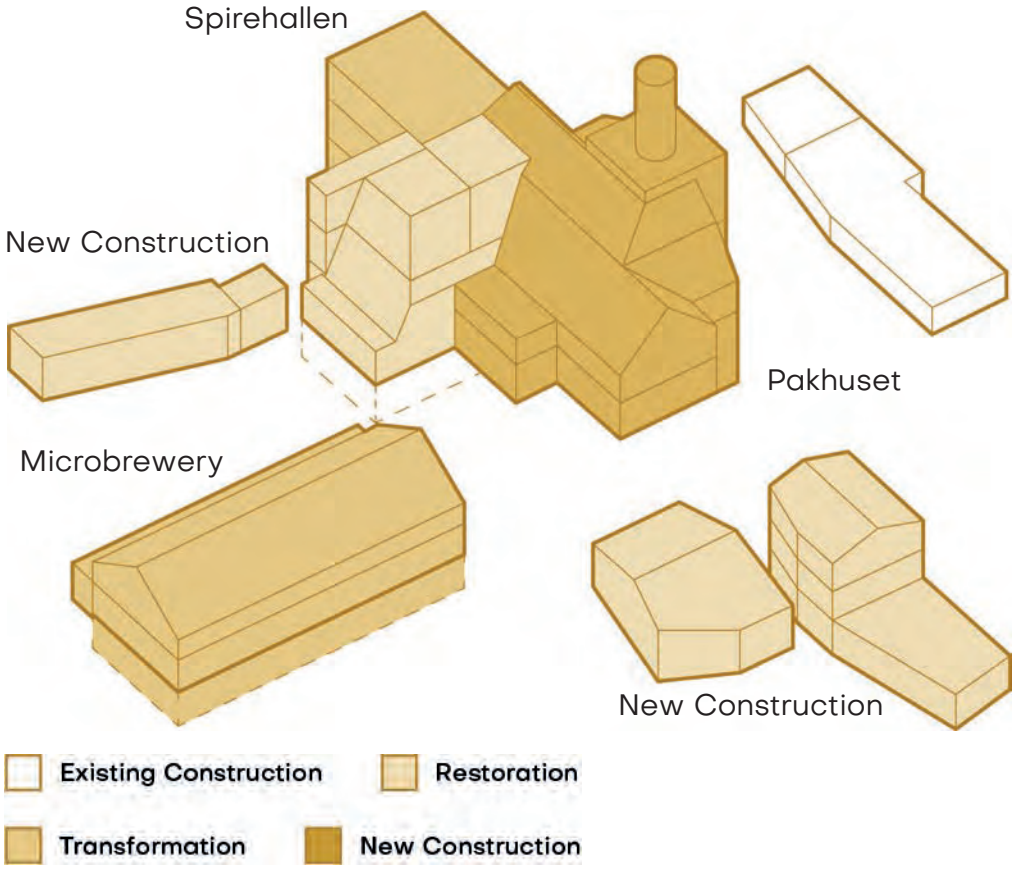
When diving into the transformation of a functionless building, there are three main issues. The first is that it can be difficult to make new program content meet the existing structure. What the building will be used for and how the functional requirements can be met. The second is for protected and heritage buildings, there is a challenge in how the transformation will change the existing buildings. Even though the transformation must meet new requirements and functional wishes, the intervention must never detract from the aesthetic qualities of the building. The third is that it can be a problem to meet the stricter requirements for the building's energy consumption. The challenge lies in meeting new technical requirements without compressing the building's heritage values. (Andersen, 2015c)

When looking at transformation through sustainability, attention shifts from the building as an object, bounded by time and place, to focusing on ensuring maximum significance for present and future generations. The understanding of preservation is thus not an act of freezing the past, but an ambition not to limit future possibilities. (Andersen, 2015d)

Transformation is most often used in the context of architecture, but the term can also easily be applied to urban design. Here, the work is on a larger scale and often involves comprehensive projects and strategies. A central urban space or a strategically selected building can act as a catalyst for the development of a larger area. This can sharpen a neighborhood's identity and become a new landmark and meeting point for locals, as well as a new destination for visitors. It's about seeing the opportunities in the bigger picture, highlighting the character of the place and making use of an existing structure, whether it's a unique geology or a local treasure. (Dreyers Fond & Arkitektforeningen, 2024)

Transformation in the urban area is working with strategically selected landscapes and buildings where the purpose is to utilize location or status to connect and create identity. This could be working with new cultural functions, gathering points and area markers or creating new experiences of an existing landscape. (Dreyers Fond & Arkitektforeningen, 2024)

## The Transformation of Maltfabrikken




**Ill. 13** The Transformation of Maltfabrikken

As a case study, Maltfabrikken is chosen as an example of how to transform old buildings with respect for them and their appearance. Likewise, how the transformation in function changes in this case the functions of industrial monument into cultural platform.

Between 2018–2020, buildings and outdoor spaces underwent transformation. The architects applied different approaches to renovating the factory buildings. The oldest section, Pakhuset (1847), was carefully preserved, while Spirehallen (1952) received major modifications including large windows replacing brick panels and an entirely new floor added on top. These additions represent a new historical layer to the building's evolution. (Eybye, 2020)

The new is clearly different from the old, but still forms a material unity. A former Spirehal has been demolished and a new extension has been built. In terms of shape and color, it adds to the preserved buildings, but with a contemporary expression in surfaces and materials. In addition, two new buildings have been built for artists-in-residence and a workshop. These are subordinate to the factory building in terms of scale and materials. Furthermore, they are clearly new, as elements from the other buildings are interpreted in their design language. These include the high dark plinth and the angular shapes.


**Ill. 14** Maltfabrikken Before

The overall expression is then a high readability of new and old, which maintains the authenticity of the buildings. (Eybye, 2020)

Furthermore, a former malt warehouse has been transformed into a microbrewery, dining and performance space. Here, the architects have opened up the building with large glass sections that strengthen the relationship between the building and the outdoor space. The exterior of the factory building and the malt warehouse have been restored so that the brickwork appears with a red lime plaster. (Eybye, 2020)

It is not just the buildings that are transformed, it is also the function of the whole area. Indoors, the new facilities include BMA (merged library/museum/archive), artists-in-residence, youth culture environment, workshops, microbrewery, work community, food workshop and much more. This may seem like a lot of different functions, but at Maltfabrikken it works because the building complexity has a character of something self-grown. in addition, the architects have managed to keep the balance between exposing the old and adding the new with a sense for both. (Maltfabrikken, Ebeltoft | Praksis Arkitekter og Maltfabrikken i Ebeltoft)

Three new courtyards have been established between the buildings. The main outdoor space, "Maltgården," lies between the factory building and malt warehouse, with direct access from Adelgade pedestrian street. Once bustling during malt production, it now serves again as a vibrant activity hub. Visitors can also enter via a wooden bridge through "Lundbergs Have," a garden-like space designed for tranquility near the studios and artist residences. The third outdoor area, "Grønningen," is located west of the factory building and caters to Ebeltoft's youth culture with features including a skate rink. These distinctively characterized outdoor spaces effectively complement the site's new functions. (Eybye, 2020)

Overall, the transformation and restoration of Maltfabrikken appears successful. The original buildings have been respected, and the factory's characteristic history has been continued in the new architecture. An unifying and homogeneous building mass is created that opens up to the surrounding courtyards and welcomes visitors. Through a limited yet distinctive material and color palette, the old and new buildings are tied together as a whole. (Maltfabrikken, Ebeltoft | Praksis Arkitekter)

| Room name | Size (kvm) | Amount of people | Usage |
|---|---|---|---|
| Støbesalen | 155 | 80 standing<br>50 seated | Book fair, exhibition, literary lounge, festivals, mini-fairs, open workshops, conversation salons, lectures, intimate concerts |
| Mødelokale | 20 | 6 | Small room with tea kitchen |
| Kulturloftet | 200 | 190 | Conferences, workshops, courses, lectures, exhibitions, receptions |
| Snedkeriet | 60 | 50 | Meetings, workshops, yoga, dance |
| BMA (Library,Museum,Archive) | 420 | - | Reading corner, storage, experience space, exhibition, preformance, communication zone |

**Ill. 15** Functions at Maltfabrikken

**Ill. 16** Maltfabrikken After

# Identity Theory

In this section, identity theory is presented. As an example of how identity theory can be utilized, a case study of Maltfabrikken is presented.

**Place Identity**
/pleɪs ʌɪˈdɛntɪti/

the fundamental process of identity formation
(...) in relation to a specific geographical area,
where any changes in the land can impact
an individual's sense of self

(Science Direct, n.d.)

The concept of place identity was discussed in the 1970s by environmental psychologists, who defined place identity as a substructure of self-identify, which is formed in relation to the physical environment. Arguing that place identity is a key concept in understanding how people relate to their environment, by being formed through the dynamic interplay between physical settings and human experiences, between the tangible and the intangible. Place identity emerges from what is seen in the built environment, like buildings, landscapes, materials, but also from what is felt, memories, cultural practices, personal associations, and collective meaning (Proshansky, 1978)

In the context of architectural and urban transformation, place identity becomes a critical lens. Changes to a site can affect the psychological and cultural ties that people hold toward a place. A successful transformation must therefore do more than alter form, it must engage with the site's history, material memory, and social narratives.

Seamon (2008) argues that Edward Relph distinguishes between authentic and inauthentic places. An authentic place is one where physical characteristics and social meaning are interwoven, creating a strong sense of place. When these qualities are ignored or erased during transformation, the result may be an inauthentic environment. An environment which is alienating or disconnected from local identity. (Seamon and Sowers, 2008)

Understanding place identity also involves recognizing its multi-scalar nature. It can reside in the detail of a brick wall, the memory of a daily route, or the collective use of a public courtyard. Therefore, transformation efforts must consider how identity operates across both architectural and urban scales.

## The Identity of Maltfabrikken

As a case study, Maltfabrikken is chosen as an example of how to work with identity theory when transforming old buildings and areas.

Centrally located in Ebeltoft, Maltfabrikken is a landmark with its tall chimney and characteristic red buildings on the edge between the town and the water. The old buildings bear witness to the city's industrial period and were an economic and social hub that provided many people with work in the old market town. (VMB, n.d.)

The history of the factory dates back to 1857, when S.B. Lundberg started malt production in a warehouse and later developed it into an actual factory in the late 1800s. This development was accompanied by a gradual expansion of the building stock. Maltfabrikken is the only remaining industrial plant in Ebeltoft and is one of only three preserved industrial monuments in Djursland (Eybye, 2020).

After production ceased in 1998, the factory stood empty for many years. It was close to being demolished, but a project group succeeded in buying it in 2013 with the aim of transforming the site for cultural and commercial purposes (Eybye, 2020).

As a prelude to the transformation of Maltfabrikken, a thorough registration, documentation and valuation of the site has been carried out. Building parts, production equipment and even later graphite have been valued and retained in the new project. These preserved elements convey both the story of different periods in the history of the buildings and malt production. The results of the extensive valuation are that the raw and complex atmosphere of the buildings is maintained through the dense detailing of traces. (Eybye, 2020)


**Ill. 17** Maltfabrikken

# Universal Design

In this section, the theory of universal design is presented. As an example of how Universal Design theory can be utilized, a case study of Maltfabrikken is presented.

Universal Design has the desire to make room for everyone and is about respect and equity over equality. It takes human diversity into account and targets all groups and their experience of, and participation in, society. It is about creating solutions which embrace diversity and benefit them to the greatest extent possible. (Dissing+Weitling, 2022) In illustration 19 the 8 Universal Design Goals are presented, these should be taken into account when designing. Universal design can be defined as:

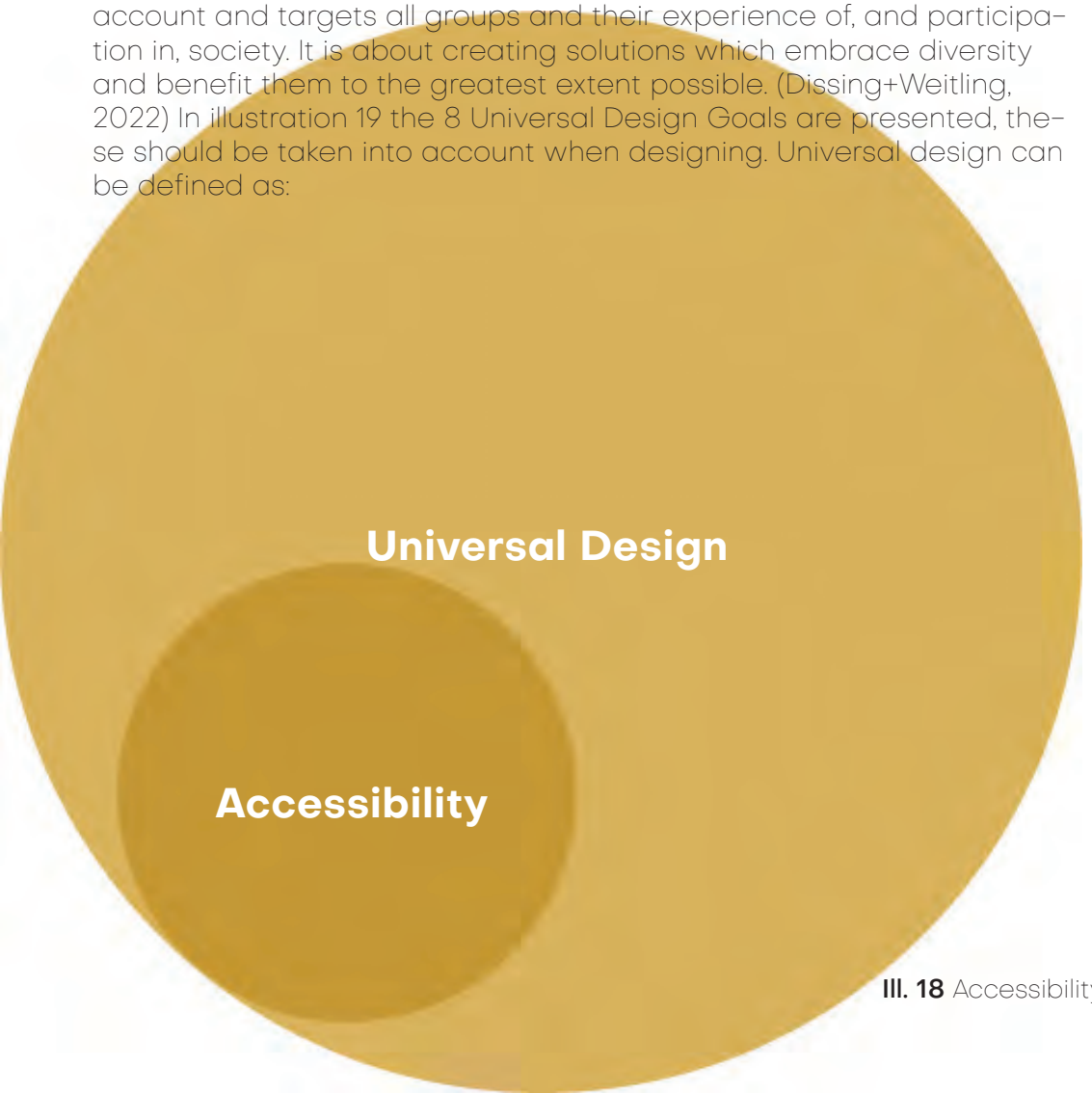
*"Universal Design is a process that enables and empowers a diverse population by improving human performance, health and wellness, and social participation."*

(Steinfeld & Maisel, 2012, p-29)

### Universal Design Compared to Accessibility

Universal Design is considered as an extension of accessibility. The two concepts both concern mobility and user comfort, but their approaches to social equity are different. Accessibility addresses access for users with disabilities and is therefore often equalized with handicap-friendly solutions. Universal Design on the other hand does not divide users into abled and disabled. Instead, it looks at the psychological and physical needs of all users. (Dissing+Weitling, 2022)

This means that in practice accessibility touches upon the legal and technical minimum requirements. The accessibility concept is about the physical obstacles in architecture and urban design and achieving legal accessibility. The Universal Design concept on the other hand has no predefined solutions or boundaries. It challenges the way we understand our surroundings and reaches beyond certifications. Universal Design questions the way we design and build for the average person, and thereby excludes a larger group of users. It examines the interaction between the environment and the users and investigates how their needs can be met and stimulated. (Dissing+Weitling, 2022)




**Ill. 18** Accessibility and Universal Design

## 1 Body Fit

Accommodates diverse body sizes and abilities by addressing dimensional aspects (height, width, length) of the body-space relationship. Considers spatial needs for different bodies, including those using equipment like wheelchairs or strollers, through environment layout and design. (Grangaard, 2022)

## 2 Comfort

Comfort ensures physical environmental demands remain within desirable body function limits, preventing strain. Addresses body-environment interaction regarding mobility and strength, with interior design, layout, acoustics, and lighting supporting comfort. (Grangaard, 2022)

## 3 Awareness

Facilitates easy perception of essential information through multi-sensory approaches, conveying important information to users in the most appropriate ways. Spatial qualities, construction elements, materials, and lighting can enhance wayfinding and guide area usage. (Grangaard, 2022)

## 4 Understanding

Promotes intuitive, unambiguous, and clear usability features, recognizing that cognition varies among individuals based on experience and cultural context. Users seek information in physical environments based on familiar elements like icons, shapes, and symbols. (Grangaard, 2022)

## 5 Wellness

Contributes to illness prevention, health promotion, and accident protection through good indoor climate and environment design. Nature and spaces designed for movement are health-promoting, while safety creates well-being and encourages physical activity participation, fostering user empowerment. (Grangaard, 2022)

## 6 Social Intergration

Emphasizes treating all groups with dignity and respect, focusing on participation opportunities beyond mere access. Creates dignified interactions between people and environments, operating at both individual and community levels by facilitating cross-group encounters. (Grangaard, 2022)

## 7 Personalization

Incorporates choice and individual preference expression. Offering options allows selection of suitable solutions or spaces, contributing to increased well-being through personal expression, varying by situation and design type. (Grangaard, 2022)

## 8 Cultural Appropriatness

Respects and strengthens cultural values and social/environmental contexts. Ensures buildings and spaces make sense within their environments and address user needs and contexts, particularly important in renovation and heritage projects. (Grangaard, 2022)

**Ill. 19** The 8 Universal Design Goals

## Universal Design at Maltfabrikken

design. When exploring Maltfabrikken, the 8 goals have been addressed in different ways. The focus has primarily been in the urban area, where they have had relatively free rein to start from scratch and integrate good universal solutions from the start.

There has been a lot of focus on how different bodies meet the environment, which is what the first two goals, body fit and comfort, within universal design are about. As a transformational project, goal eight, cultural appropriateness, has also played a major role in respecting and strengthening the cultural heritage of the area.

Maltfabrikken creates a new urban space for the city consisting of several smaller spaces, each with their own character, Maltgården, Lundbergs Have and Grønningen, which can be seen in illustration 20. As a building complex, Maltfabrikken consists of several buildings with entrances on different levels. As such, level access has been a main theme when designing the new areas around and between the old buildings. This has been a challenge and has been successful in many places. Furthermore, they have worked with paving that relates to the place and its spirit. (Grangaard, 2020)

The most central urban space is Maltgården. It can be accessed directly from the city, the walkways in Lundbergs Have or from the various parking lots. It's a cobbled courtyard that lies between and connects the scattered buildings. Here, brushed concrete paths have been used to create a driving-friendly surface in the cobblestone pavement. However, these are primarily placed along the buildings and their entrances and not in connection with the courtyard furniture. (Grangaard, 2020)

In Lundbergs Have there are walkways that invite both young and old to explore. They have worked with handrails by the stairs that emerge from the walkways, however, these are in a cold material and therefore not so pleasant to touch, but better than nothing. (Grangaard, 2020) They have also worked with a small edge along the walkways that can act as natural guidelines for blind people with canes.

Grønningen is composed of a number of terraces connected by a staircase without handrails, which could have been a great help for children and people with challenged balance or walking ability. However, the competition proposal was designed with a ramp winding up the hillside, which is a shame, was not implemented. At the top there are benches for sitting and enjoy the view, and two disabled parking spaces are also located here. (Grangaard, 2020)

Moving inside, there are also several levels to move between. Here, a lifting platform was installed to ensure level-free access between three levels with five steps between each level, as there was limited room for a ramp. The lifting platform is placed strategically, servicing all levels, with the stairs wrapping around it. (Grangaard et. Al., 2025) This means that people can still walk together in a group even if some use the lifting platform and others the stairs. In addition, there is an elevator that connects the different floors.

There have been many good intentions and ideas in the design of Maltfabrikken and its outdoor areas. However, important solutions have unfortunately been spared in the relaying of the project. As a case study, the good ideas regarding Universal Design will be incorporated into the development of Byplanvejens Skole to the extent possible.


**III. 20** Maltfabrikken

# Research Questions

After researching the three theories underpinning the project and the transformation of Byplanvejens Skole, new research questions emerged. These were more project specific and related to the theories presented.

**How can Byplanvejens Skole be transformed into a socially inclusive and accessible environment that accommodates both public and private use?**

**How can Byplanvejens Skole support the diverse needs of the local community, while also respecting and honoring the heritage and physical character?**

**How can the existing buildings be strategically reused through transformative design strategies**

# 03

# ANALYSIS

This chapter investigates Byplanvejens Skole in city, site and near scale, providing a thorough analysis of the factors with influence on the site. This is don to help inform the transformation from Byplanvejens Skole to the new community hub and cohousing community called Gygia.

# The Development of Gug

To gain an understanding of Gug town and thereby the broader context, the historical development of the town is explored.

The name Gug is thought to come from the Old Norse word “Gygia” meaning hollow or valley. Since it is believed that the oldest part of Gug is located approximately where Gugvej runs today, the town name must mean that it is the village in the hollow below the hill. (Brun, n.d.)

In 1785, the first map of “Sønder Tranders Sogn” was published. The parish covered both the towns of Sønder Tranders and Gug. The mapping was a direct result of the “udskiftningen forordningen”, which was an official ordinance meant to amass a farmer’s land and thereby disperse the farms from the cores of the villages. In a means to properly map the farmers’ lands a surveyor was tasked to do this. (Jensen, 2009)

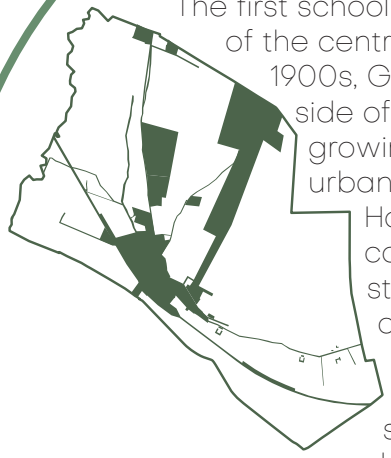
In 1787, a total of 294 people lived in the parish and by 1801, that number had only risen by 5, for a total of 299 people. Moving forward in time to 1949, the village of Gug had about 200 households, but grew to 483 households by 1960. In comparison, Sønder Tranders stagnated in the same period from 250 to 241 households. By 1962, Gug had grown to 1200 inhabitants. (Gug-Sønder Tranders Lokalhistoriske Arkiv, 2007)

In 1972, when Gug Church was built, there were approximately 3000 inhabitants, which over time steadily grew to a population of 9000. (Gug-Sønder Tranders Lokalhistoriske Arkiv, 2007, p.2 & Jensen, 2009)

## 1810 - 1900

Before 1795, all the lands were gathered in large, enclosed fields. The farms, houses and buildings were located more or less randomly along a straight called “gade” (street), which stretched from east to west. Post-ordinance time changed the towns structure from a densely populated village to a more dispersed settlement. (Gug-Sønder Tranders Lokalhistoriske Arkiv, 2007, p.2)

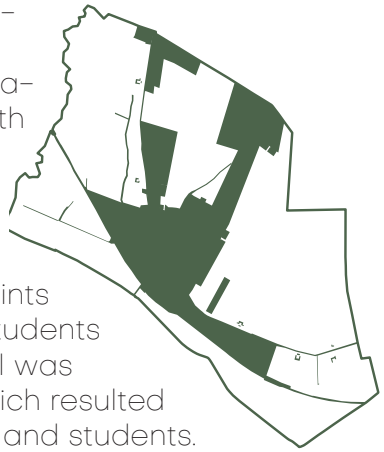
## 1900 - 1950



The first school in Gug was built in 1870, south of the central Gug School. By the early 1900s, Gug was still a small village outside of Aalborg, but it was gradually growing as a result of migration and urbanization. During this time, the Hadsund – Aalborg railroad was constructed, and with it came a station. The growing population, a new school was built in 1900, only 30 years after the first. In 1918, the parish council purchased a private “pogeskole” (preschool), reflecting the need for more educational opportunities as the population grew. (Pedersen, 1998 & Sørensen, 2011)

## 1950 - 1965

In 1953, Sønder Tranders Municipality adopted an urban development plan that primarily accelerated Gug's growth while Sønder Tranders remained mostly unchanged, positioning Gug as a desirable residential area. The school faced space constraints as enrollment reached 40 students by 1953. By 1962, Gug School was subject to an expansion, which resulted in rapid growth of residents and students. (Pedersen, 1998)



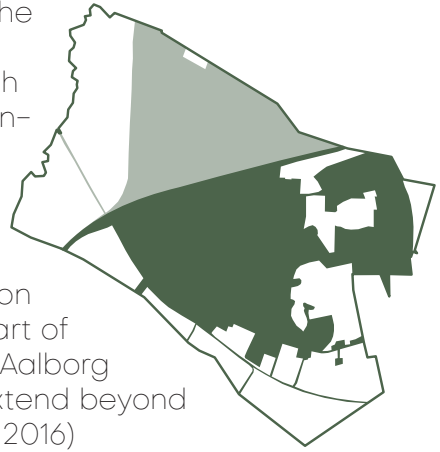
## 1965 - 2000

Around 1967, additional school buildings were built to accommodate the growing number of children in the district. By 1969, a new west wing and gymnasium were built. The number of residents continued to increase, and the number of pupils increased with it. (Pedersen, 1998)

From the 1970s and onwards, Gug grew significantly as part of Aalborg's suburbs, with more institutions and residential areas. One of those institutions was Byplanvejens Skole, which was built in 1972. Located in between Gug and Frydendal, the school helped reduce the load of the surrounding schools. At Gug Skole, a new east wing was built in 1977 and in 1986, Gughallen was built, creating better facilities for both school and leisure activities. (Pedersen, 1998)

## 2000 - Now

During the latter half of the 1900s, Gug became increasingly integrated with Aalborg City. While Byplanvejens Skole was originally situated in Gug, the district has since been divided by a highway. The northern section is now categorized as part of Grønlandskvarteret, and Aalborg City's boundaries now extend beyond Gug. (Aalborg Kommune, 2016)



## Now

In 2011, the school district of Byplanvejens Skole and Gug Skole had a total of 8556 inhabitants. By 2024, this had only risen to 9221, and prognoses indicate stagnation towards the end of the decade. This is likely due to a lack of available space, as Gug is nearing max capacity. In 2023, the population stabilization and decline in total fertility rate greatly contributed to the closure of the school. Future plans will distribute the school to the surrounding districts, mostly away from the Gug area. (Aalborg Kommune 1, 2023 & Aalborg Kommune 2, 2023)

**III. 22** Timeline

## Life in Gug Today

As the point of view of a life-long resident of Gug through the past few decades, Gug functions as a mature suburban district which is characterized by its residential stability, strong association life and access to both cultural and recreational amenities. In this section, the characteristics of Gug will be presented

Østerådalen, which creates Gug's physical barrier towards west, provides a key green infrastructure of the area. With its wetlands, open meadows and a modest bird watching tower, it is widely used for recreational purposes.

Architecturally, Villa Gug, designed by BIG, is a representative and reference point of the "new" area of Gug, "Gug Alper". An area of unconventional architecture in the context of Gug, fitted with highly prestigious buildings and lots of space – a direct opposite to most of Gug's historical residential areas.

Gug is partly known for its controversial brutalist Gug Church. Located directly above Byplanvejens Skole the church acts as a prominent landmark for Gug. While opinions differ on its aesthetics, the church serves as more than a religious space, functioning as a cultural node, hosting lectures and concerts.

University College Nordjylland, which hosts the teacher's educational programmes brings a younger demographic into the area. Students who contribute to the local atmosphere through their use of public transport, rental housing and a general participation in recreational and community activities.

Recreationally, Gug Hallen supports a broad range of activities and stands as the most prominent among several recreational venues throughout Gug. It functions as a central site for both youth and adult participation, reinforcing Gug's strong tradition of community organization and active leisure.

The borders of Gug have greatly been widened and with the establishment, and later the extension, of the highway E45 Gug has been physically divided

- Gug has reached its max expansion capacity
- The school function is no longer needed at Byplanvejens Skole
- Extensive recreational and community activities

# City Scale

This section presents the bigger context of Byplanvejens Skole. First looking at Aalborg City and some of the broader strategies for continual growth within Aalborg. Secondly, looking at the district of Gug and its characteristics.

## Aalborg

Gug is located on the edge of Aalborg City and the open landscape. When it comes to the open landscape, Aalborg Municipality has a couple of different strategies. Two of these are "Coherent nature and better conditions for outdoor life" and "More and better nature".

Coherent nature and better conditions for outdoor life deals with the continued development of nature and landscape connections to promote the quality of outdoor recreation and nature. The strategy is to expand the essential connections through nature restoration. This will be done through a network of important overarching green and blue wedges, creating connections between existing larger nature areas and connections from the open landscape to the city's green areas, as shown in illustration 23. This will both improve and benefit animal and plant life and increase the population's opportunities for recreational experiences. (Aalborgkommuneplan, 2013)

More and better nature is about promoting biodiversity. This is affected by our general behavior and the way we organize land use for urban development, infrastructure, facilities, etc. therefore we need to rethink and have a greater awareness of how we promote more nature and more quality in nature, not only for the sake of citizens but also for the sake of nature and animals. Increasing biodiversity is a major challenge and requires efforts in many areas, including nature restoration, communicating the value of high biodiversity to citizens, and establishing new nature to improve coherent networks of ecological connections in the municipality. (Aalborgkommuneplan, 2013)


**III. 23** Aalborg, 1:40.000


**Ill. 24** Gug, 1:15.000

# Gug

The district of Gug is located approximately 5 km south of the center of Aalborg between two of the larger green wedges in Aalborg municipality. One wedge containing Østerådalen and the other containing Golfparken and Indkildedalen, As shown in illustration 24. To the north, Gug has merged with Aalborg, but is bounded by the E45, otherwise the city is surrounded by open land. The highest point is the urban area, Gug Alper, where Villa Gug is located. From this high point, the terrain drops towards the valleys. (Christiansen and Kristensen, 2017)

Business functions in the town are primarily located along the main roads such as Gugvej, Indkildevej and Byplanvej, where Gug Church is located. The church is from 1972 and built in concrete, cast on site and with a free-standing tower, it has an almost industrial appearance. (Christiansen and Kristensen, 2017)

- Work strategically with green wedges and the connection between green areas in the city
- Gug is a suburb of Aalborg and in close connection to the city center

# Demography

To get an understanding of the composition of the citizens of Gug, a demographic analysis of the context around Byplanvejens Skole has been made. This was done to understand and clarify the potential users of the site.

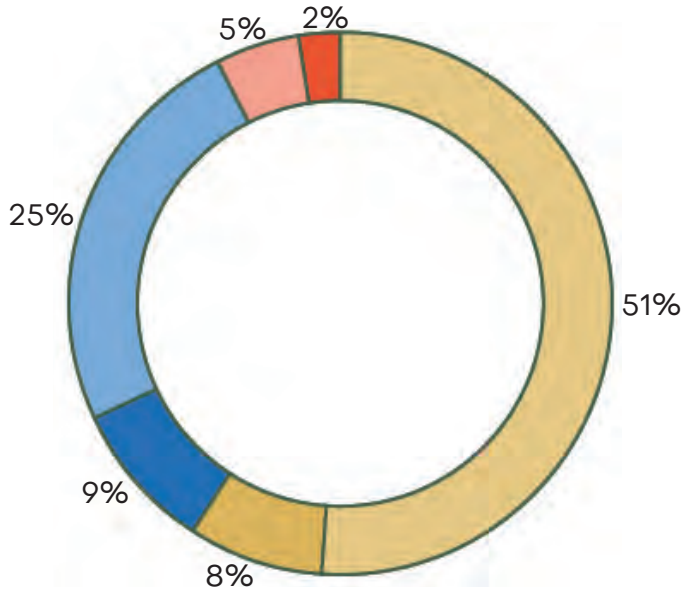
For this analysis the tool "ConZOOM" which is a data driven segregation model has been used. The segments are based on registers, official datasets and statistics and qualitative data. By utilizing a data driving segmenting model it is possible to classify the Danish population without identifying any one individual. The model classifies tendencies and traits, which provides an insightful understanding of each segment's consumer behavior, lifestyle and demographics. (Geomatic, n.d.)

By segmenting the immediate context into the ConZOOM consumer groups, it is evident that six of nine groups are represented. However, the distribution changes slightly from year to year due to general developments in society.

Six groups are present in the context. These are Affluent homeowners (A), Comfort and coziness (B), Affluent (D), Urban diversity (E), Seniors (G) and Youth on the move (H). The remaining three consumer groups, which are not present, are Country life (C), Wit and wealth (F) and Provincial life (I). (Conzoom, n.d.)

In Denmark, the two most prominent groups are A and E, with a share of 17,3 and 15,2 percentage points, respectively. Of the six groups locally present, the two groups A and E represent approximately 75% of the demographic in the site's immediate context, as seen in illustration 25. Therefore, the characteristics of these two groups will be explored.

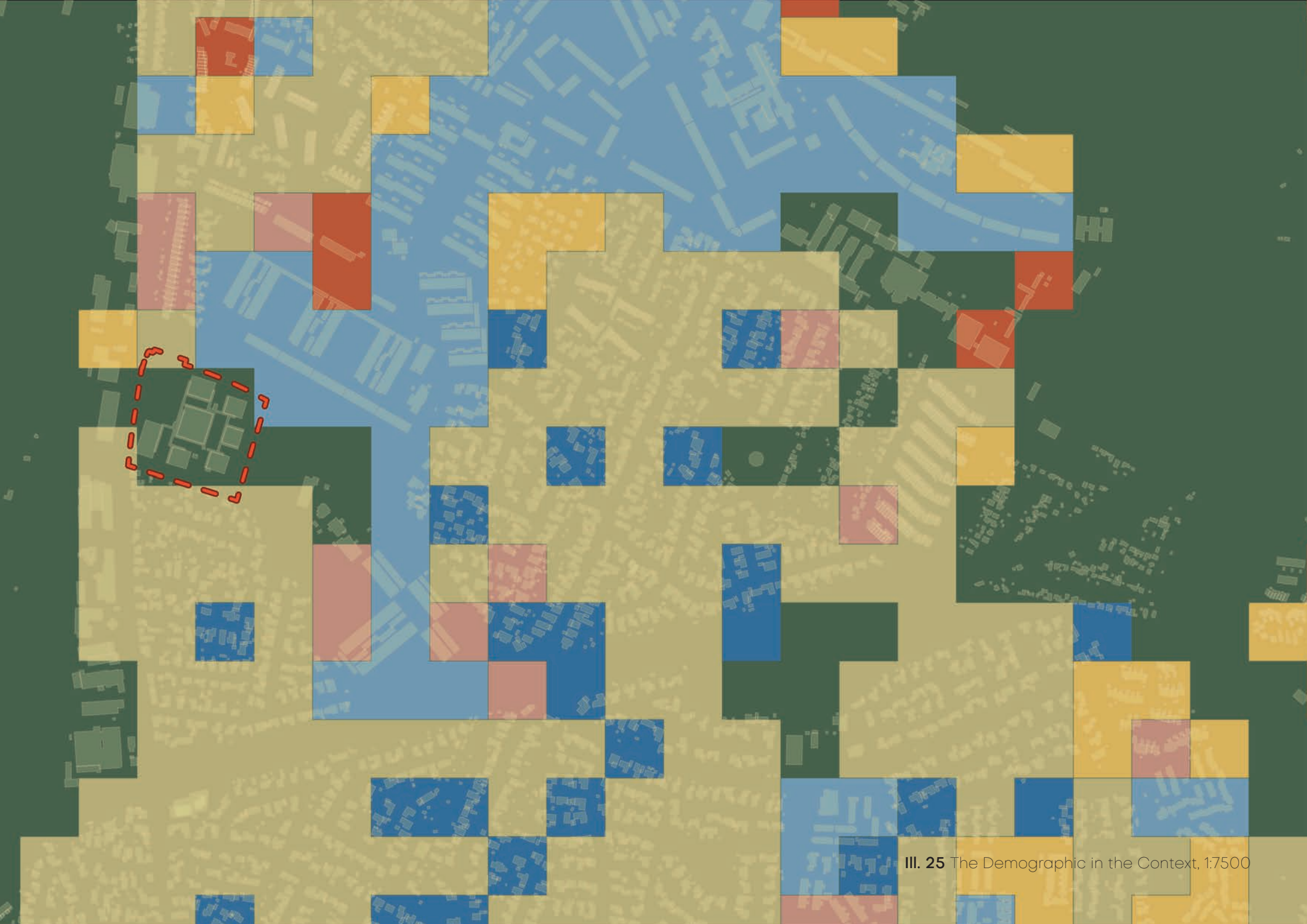
The Affluent Homeowners (A) represent the most prominent demographic segment. This group consists predominantly of well-educated couples between their 40s and 60s who own their residences, primarily single-family homes. Over 50% of these households include




children still living at home. These individuals enjoy a strong financial foundation with substantial purchasing power and take pleasure in spending their money. They prefer a hands-on approach to home improvement and gardening tasks and as regular readers of major newspapers, they maintain broad interests across various topics and current events. (Conzoom, n.d.)

Secondly, Urban Diversity (E) largely consists of singles who are still pursuing their education. They are predominantly renters, typically occupying apartments under 80 square meters in size. Members of this group belong to the middle and working classes, possessing few assets and earning below-average incomes. While they read fewer newspapers than other segments, they demonstrate heavy internet and social media usage. Their primary transportation is cycling and public transit. These individuals engage in both modern and traditional community activities. (Conzoom, n.d.)

- Half of the near context is Affluent homeowners (A)
- One quarter of the near context is Urban diversity (E)



**III. 25** The Demographic in the Context, 1:7500

# Users of Gygia

This segment presents the users of the new community hub Gygia, based upon the demographic of Gug.

The demographic of the local community is also potentially the most significant combination of stakeholders and users of the area. Therefore, by addressing their visions for the site, the most well-integrated functions and user groups can be effectively supported. Empty nesters and senior citizens, alongside segment A's and E's, exhibit characteristics that align with recreational or community-centered activities, making them key groups to consider.

The depletion of expansion potential in Gug creates a significant opportunity for strategic growth through the development of both apartment and low-rise buildings in an already functioning and centrally situated area of Gug. The range of users, which is already present in Gug and their needs creates a diverse site which is why this user group is relevant to the project.

We don't work with primary and secondary user groups but divide them into the two main functions: residential which is the private functions and cultural functions which is the public. The users are created with information from Conzoom, n.d.i

Residential
- Empty nesters
- Senior citizens
- Affluent homeowners
- Urban Living

Cultural Functions
- Affluent homeowners
- Urban Living

### Urban Living

Housing size: Rental apartments, 66% under 80 m2 and 33% under 60 m2
Characteristics:

- A higher number are immigrants or their descendants
- Bikes and uses public transportation
- Cares about climate, ecology and a vegetarian diet
- Consumer of cultural offers
- Practice a variety of sports, likes to go for a run
- Community oriented
- Likes to stream good movies and series

### Affluent Homeowners

Housing size: owner-occupied housing, more than 100 m2
Characteristics:

- Likes gardening
- Love DIY projects
- Active in boards and associations
- Own at least one car
- Take responsibility and contribute to the community

### Empty Nesters

Housing size: Owner-occupied housing, 80-100 m2
Characteristics:

- Children who have moved out
- Retired or about to retire
- Likes gardening

### Senior Citizens

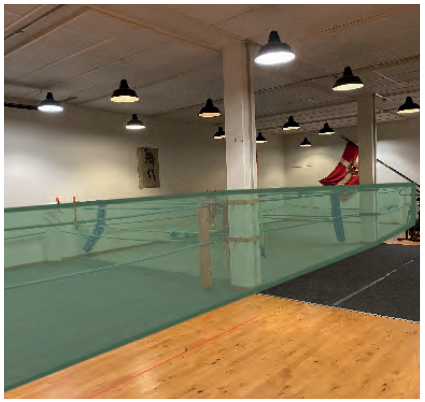
Housing size: 66% owner-occupied housing and 33% rental housing
Characteristics:

- Active for evening classes and lectures
- 66% still has a car
- Likes needlework
- Visits every week
- Have a lot of time on their hands

## The Sports Gymnasium

## Outdoor Sports Facilities

## The Boxing Association

**III. 26** Functions on the Site

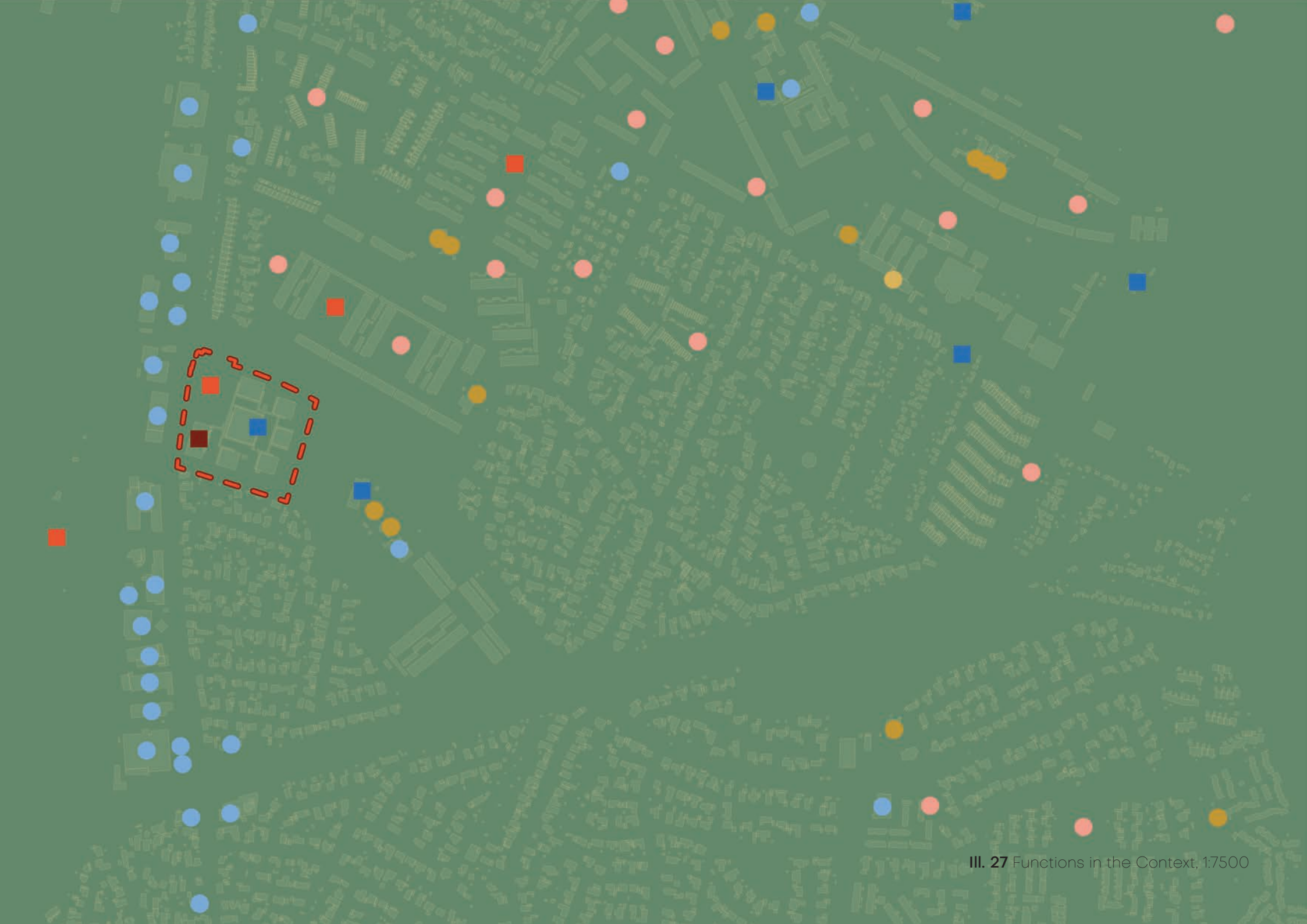
# Functions

When implementing new cultural functions, it is important to know which functions are already offered in the local community. This section will clarify that.

Looking at the functions in the context of the site, it consists of several offers for the local community. The different functions are primarily distributed in the northern context, as the southern part mainly consists of detached houses, as seen in illustration 27. Close to the site are both kindergartens, a grocery store, playgrounds, and outdoor sports facilities. Furthermore, there are cultural functions such as a church and different associations.

Currently, the site boosts functions such as outdoor sport facilities, a boxing association and an indoor sports facility, which is one of two within the local community. These can be seen in illustration 26. As previously mentioned, the gymnasium and its functions will be retained, where the other two functions will be reevaluated

- Most of the cultural functions are located north of the site
- On site functions should be reevaluated



**Ill. 27** Functions in the Context, 1:7500

# Functions Within Gygia

In this section a stakeholder investigation will be conducted. This will weigh every voice equally, by affording everyone the opportunity to express their opinion without prejudice. Opinions will therefore not be selected based upon name, affiliation or status, but upon the frequency of the comment. Furthermore, key takeaways from the analysis chapter will be revisited. By the end of this segment, the functions to be implemented on the site will be selected

### Involvement of the Local Community

Part of the democratic process of legislative proposals, such as developing a new local plan for the school's grounds, includes the hearing procedure. A process in which public organizations, among others, are given the power to comment on matters concerning the public. The process is established to ensure stakeholders are informed and involved in the development of the regulations which affect them. (Justitsministeriet, n.d.) These comments are readily available to the public, as a means to promote transparency in the legislative process (Civilstyrelsen, n.d.).

Gug Samråd, is the council of Gug, which represents the local community's clubs, associations, institutions and residents (Aalborg Kommune, n.d.), have voiced their opinions on the matter. Individual residents and institutions have also expressed their concerns personally. (Aalborg Kommune, n.d.) The most prominent concerns, opinions and opportunities which the local community voiced, includes:

- Housing for empty nesters
- Dense low-rise is preferable
- Repurpose the existing building masses
- At most, 3-4 stories strategically placed opposite of view-sensitive residences.

- Establish a hub for the local community, in the form of a cultural-, multiactivity-, health- or senior center.
- Maintain and strengthen the sports facilities on-site
- A continuation of the greenery of Østerådalen in west, through site and towards Gug Church in east.
- The area should maintain its green character by preserving the existing vegetation
- Establish a larger recreational gathering point, which integrate leisurely activities

## Revisiting Analyses

By revisiting the contextual analyses of the site, the function analysis indicated a potential shortage of cultural activities on or near the site, if the existing activities were to cease.

As per the demographic analysis, the most prominent user groups include affluent homeowners (A) and urban diversity (E). The characteristics of these groups are particularly relevant as they represent the vast majority of the local population.

In conclusion, the grounds represent a great potential for integration within the local context as a gathering hub, or local community center, with community-centered functions. Building upon and strengthening the already existing activities and recreational opportunities on-site. Moreover, Østerådalen could potentially support these actives, by means of function(s) and user group(s) on site, and vice versa.

The functions that have been chosen to work with and integrate into the site have been chosen from the involvement of the local community, the analysis and what we think the users of the site would want within the structure and framework of the buildings. These are the following:

Residential
- Different sized apartments
- Common areas
- Storage
- Bicycle parking
- Garden
- DIY space

Multiactivity Center
- Jyden (existing boxing club)
- Sports gymnasium (exiting)
- Dance studio
- Martial arts clubs
- Changing rooms
- Sauna
- Club rooms
- Running club

Culture Center
- Food making association
- Ornithological association
- Lecture hall
- Play area for small children
- Local archive
- Local history "museum"
- Cafe/coffee bar

# Topography

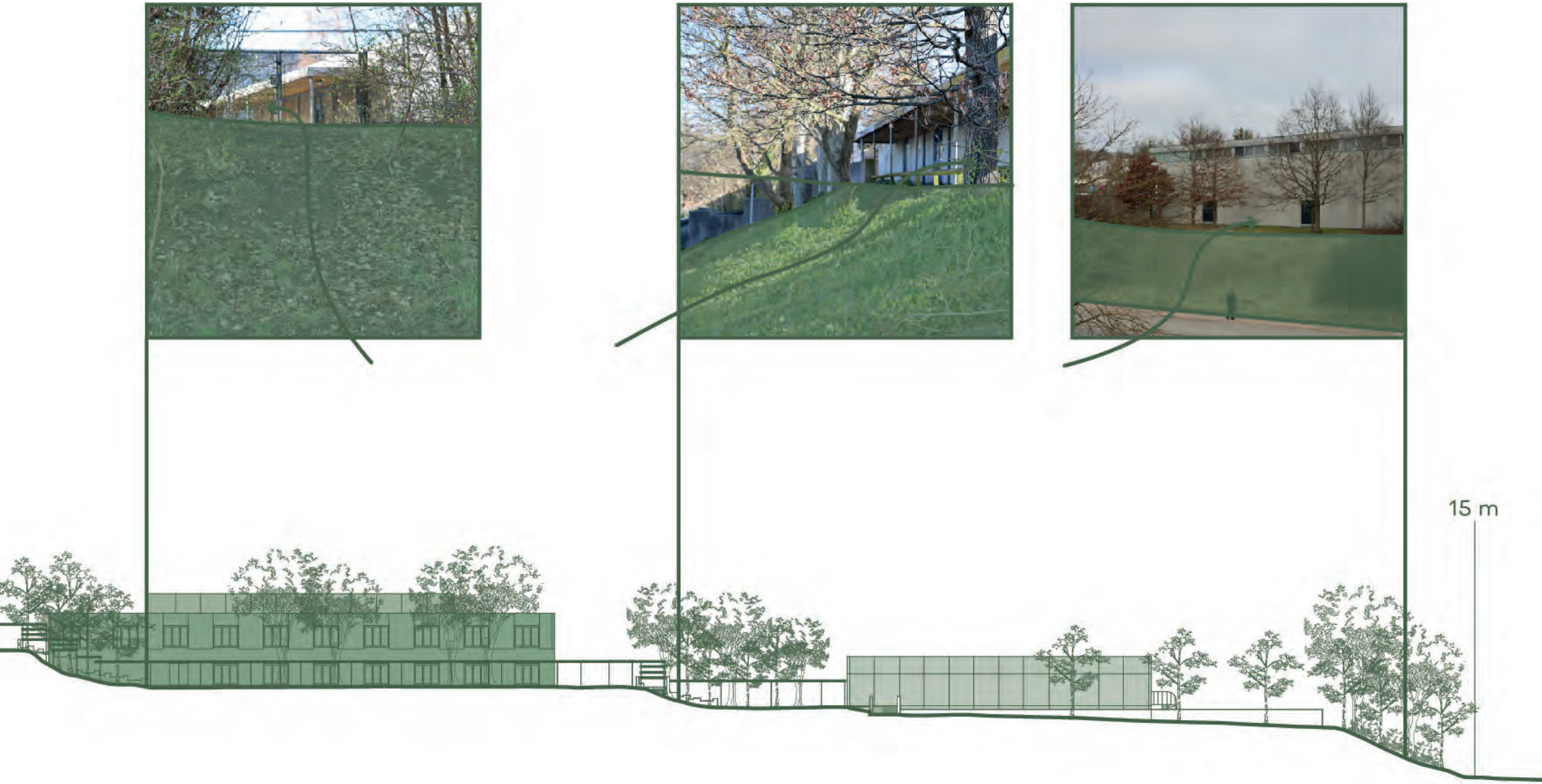
Knowing that Gug is located on a hill side we chose to explore the topography because it has a huge impact on the site.

As shown in illustration 28, Gug is located on a hillside, with the lowest point west of Byplanvejens Skole and the highest point to the east. The low point naturally limits the city's expansion in this direction, which is why the town developed uphill. The topography is very characteristic of the site and extends over 15 meters in height. Therefore, the site is divided into three terraces, originally defined by the location of the buildings.


**III. 28** The Topography of Gug, 1:15.000

At the site, the topography is quite noticeable, as one has to travel multiple flights of stairs when traversing the school's area. The connections between the terraces are emphasized by the many and large stairs and ramps located throughout the site. The walkways and stairs are all covered with loggias, which highlights the size of the school. The main building is placed within the hillside making it possible to enter it from two different levels, as shown in illustration 29.

- The site is divided into three terraces
- There is 15 meters change in height across the site
- The topography is characteristic for the site




**Ill. 29** Topography Section, 1:200


# Green Structures

In the context of Byplanvejens Skole, there is a major green structure located west of the site called Østerådalen, which is seen in illustration 31. This can be seen when standing at the site, furthermore, there is direct access to it from the site. Therefore, this is being explored with a greater future connection to the site in mind.

Østerådalen is a scenic area consisting of fields, a forest, large and small lakes and streams, as shown in illustration 30. The varied nature of Østerådalen forms the basis for a rich wildlife, with over 300 different plant species. One can experience a selection of different bird species, both breeding birds and migratory and winter birds, in the area or from the bird watching tower located next to the big lake in the northern part of Østerådalen called Lergraven. (Aalborg kommune, 2005)

- Direct access from the site to Østerådalen
- Østerådalen has a rich animal and plant life

**Ill. 30** Østerådalen Collage

Site | Green Structures | Tree Clusters | Lakes

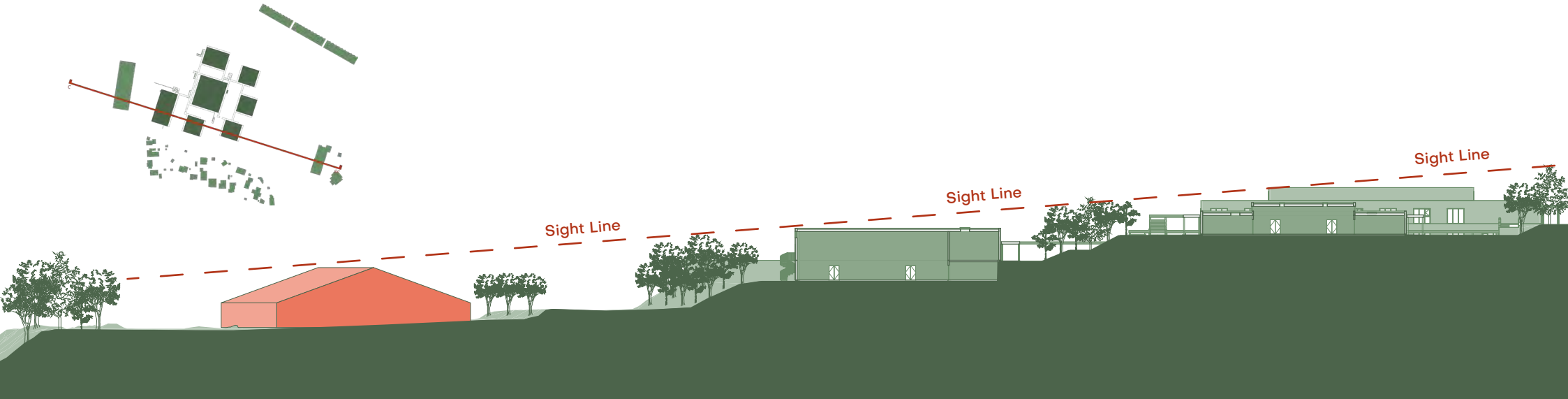
**Ill. 31** Green Structures in the Context, 1:7500

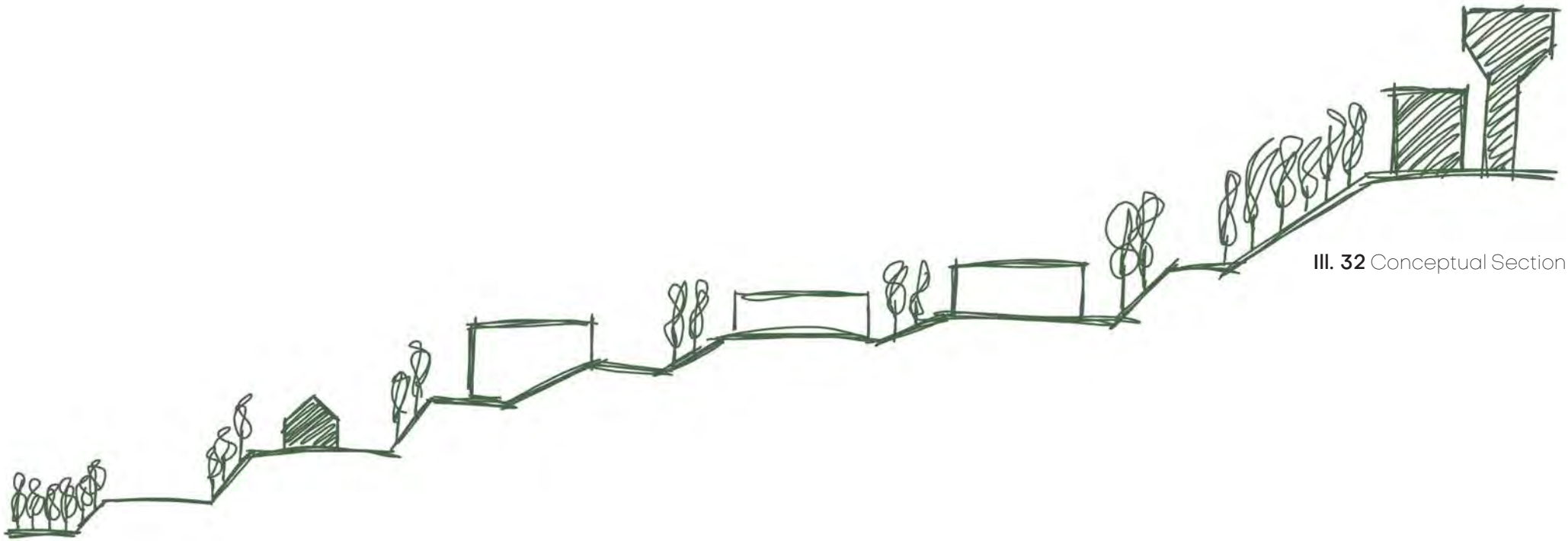
# Connections

When working in the middle of a city the site is already connected to its context. Therefor we wanted to explore these connections to understand what we were working with. To ensure that the transfor-mation from Byplanvejens Skole to Gygia fits into and relates to the context, the existing sightlines and building heights of the immediate context are examined.

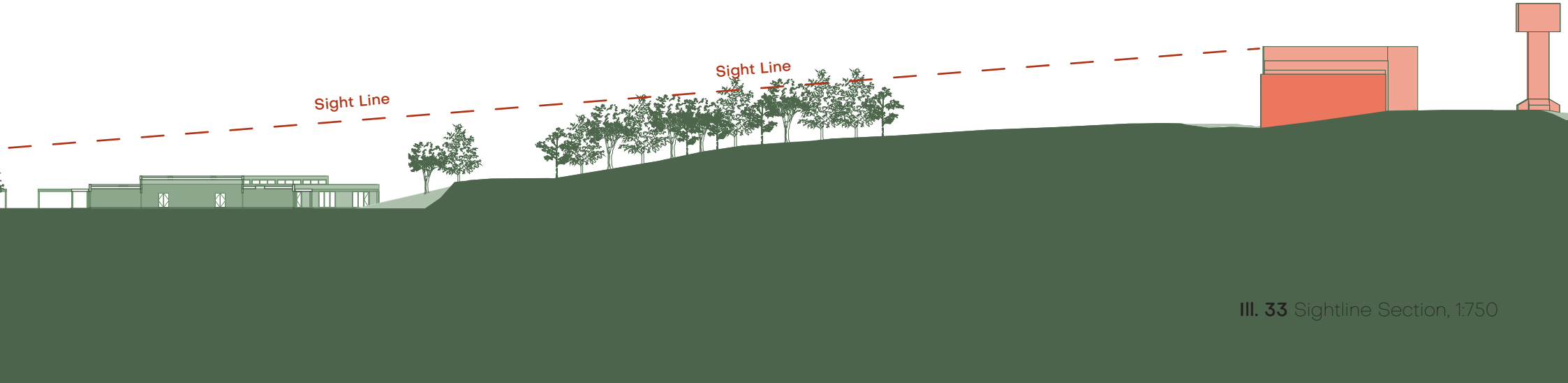
## Sightlines

At the top of the hillside towards the east, Gug Church is located. This has a significant sightline down across the site and out towards the green structure Østerådalen, as shown in illustration 33. This line of sight is heavily affected by planting and there is a desire for this to remain a feature after the transformation of Byplanvejens Skole.





**III. 32** Conceptual Section

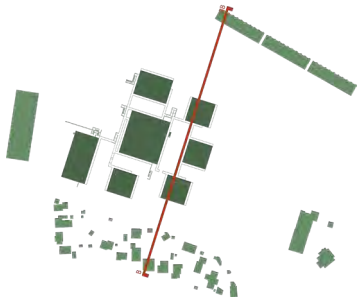


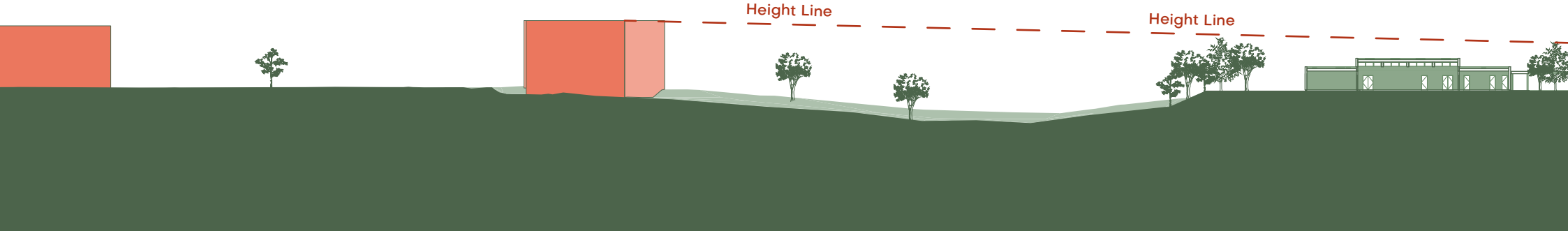

**III. 33** Sightline Section, 1:750

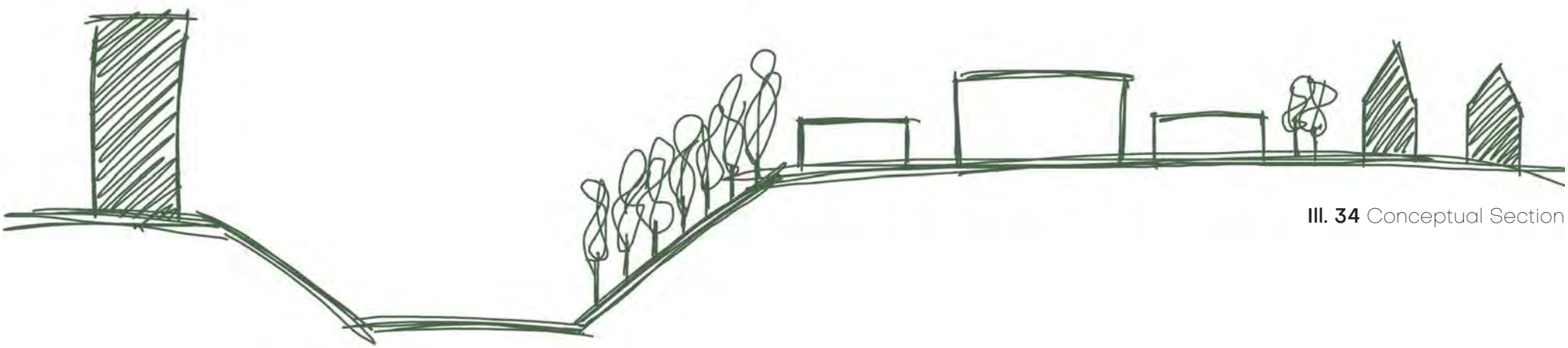
## Hights

Next to the site towards the south is a residential neighborhood, here the houses are one or two stories tall and set into the hillside. On the opposite side, towards the north, three-story tall blocks of flats are located. However, there is a road and open spaces between the site and these, making it spatially distant to Byplanvejens Skole, compared to the residential neighborhood of the south, as shown in illustration 35.

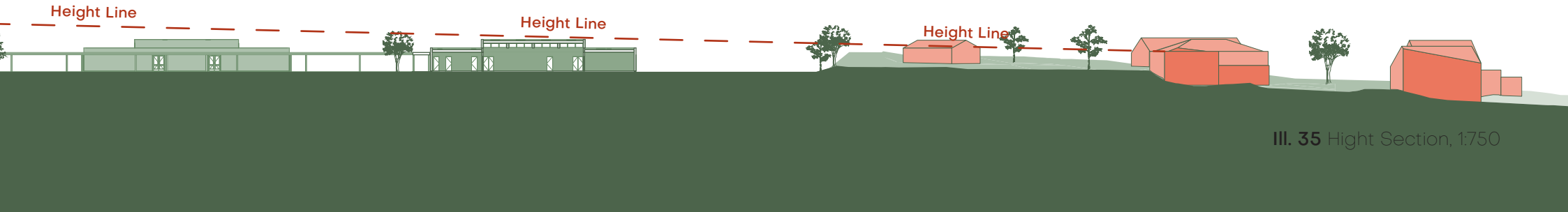
- Respect the green sightline of Gug Church
- Work with building heights which respects the context



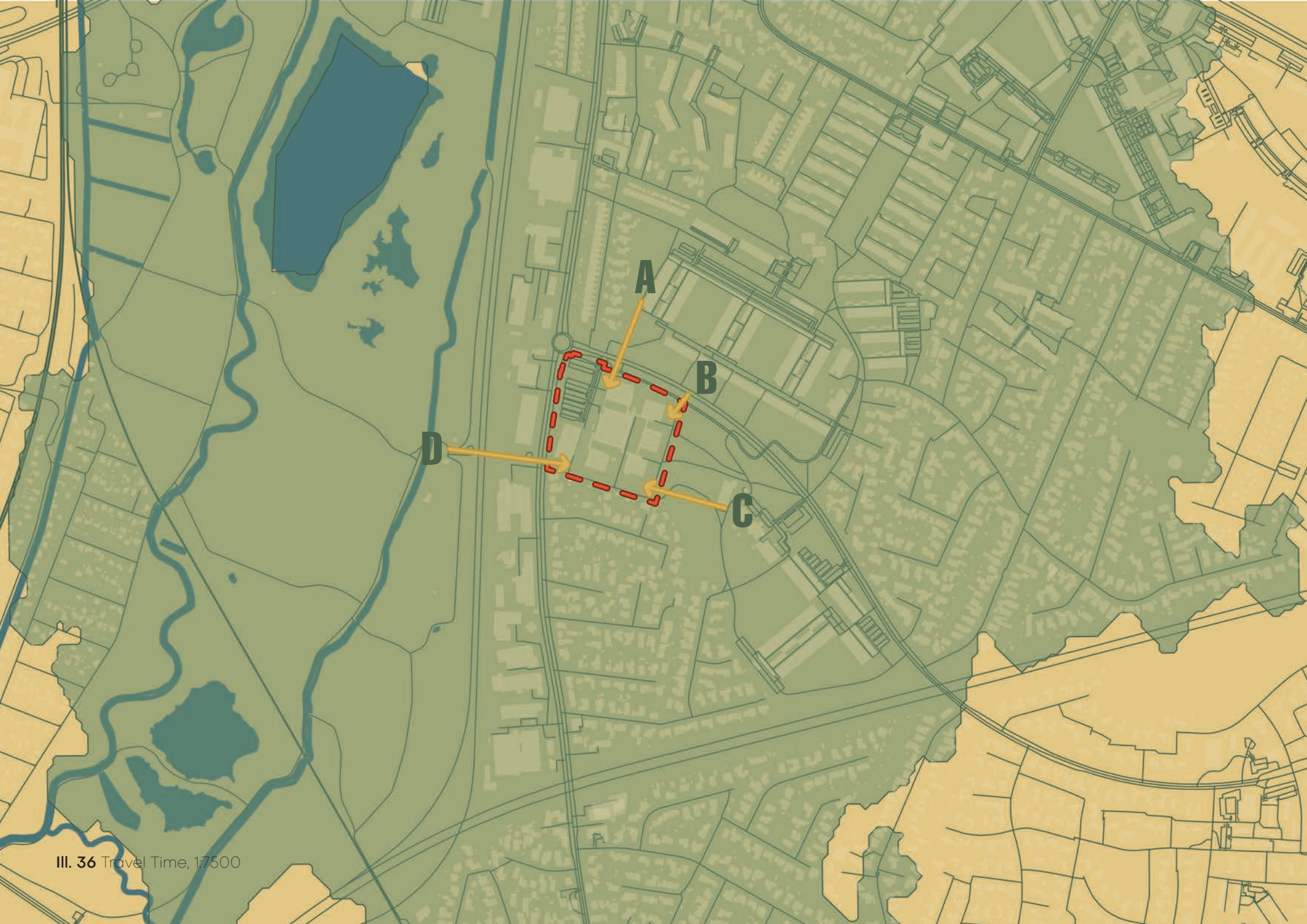




**Ill. 34** Conceptual Section




**Ill. 35** Hight Section, 1:750




**Ill. 36** Travel Time, 1:7500

# Reachability

Choosing to work with the local community, it is important to determine how far users are willing to travel to get to the site.

Looking at distances in relation to the site and how far and where one can go, it is estimated that as a pedestrian, you are willing to walk 1,6 km which proximately takes 20 minutes, similarly this is six minutes on bike. (Christiansen et. Al., 2023) The 1,6 km covers most of Gug and Østerådalen, which is seen in illustration 36. This means that most of the citizens of Gug is potential pedestrian users of the site. Furthermore, the map indicates that the users of the site is willing to walk to Østerådalen, connecting these two.

## Access

The site is open towards most of the context, with access points distributed along most of the perimeter. This makes the site well integrated into the context. All of the access points are for pedestrians and cyclists. These are connected to path systems for vulnerable road users, most of which also leads to greenery, such as Østerådalen. Exploring some of the entries, illustration 37 indicates how the users are met by the site.

- Potential pedestrian users from most of Gug
- Multiple entrances for vulnerable road users around the site
- Potential for connection between the site and Østerådalen



**Ill. 37** Entrances to the Site

**Ill. 38** Preservation Values for Byplanvejens Skole

# Valuation of Byplanvejens Skole

To be aware of the elements which characterize Byplanvejens Skole, a valuation of the entire school area has been carried out. The full valuation can be found in Appendix A – Analysis and valuation of buildings and their surroundings.

Byplanvejens Skole was built in 1974 with the purpose of being a school (Pedersen, 1998). It is built on a hillside, which is why the school area has been leveled out in three major terrain jumps. In addition, there is a parking lot that is also spread out over six smaller plateaus. The area is characterized by a green appearance, with many large trees which delimit the area and help to support the terrain changes of the site.

The complex consists of seven buildings, a two-story main building, a gymnasium and five buildings with mainly single-story classrooms. These are built in concrete sandwich elements of exposed aggregate with white stone or formwork pattern. Windows and doors are adapted to the concrete elements and are painted in a characteristic blue color which stands out from the white facade elements. The many scattered buildings create a variety of outdoor spaces and are connected by a loggia which leads from the classrooms to the main building.

The main preservation values for Byplanvejens Skole are:

- The terraced terrain
- The lodges that bind the area together
- The facades in exposed aggregate of white stone
- The blue windows and doors
- The very green character
- Car-free area
- The flexible supporting structure
- The variety of outdoor spaces

# Site Survey

To better understand the materiality of Byplanvejens Skole, a site visit is performed to survey and investigate the topography, the existing greenery, pavements, and the buildings and their materials. This survey is carried out with the preservation of existing materials in mind, as well as to get an overview of the materials used in order to select and add new materials which relate to the existing ones. In addition, the structural layout of the buildings is examined in floor plans and sections, to gain an understanding of the layout of the buildings and how it can be adapted to new functions

When examining Byplanvejens Skole, the site is divided into four main categories: topography, pavement, greenery and buildings.

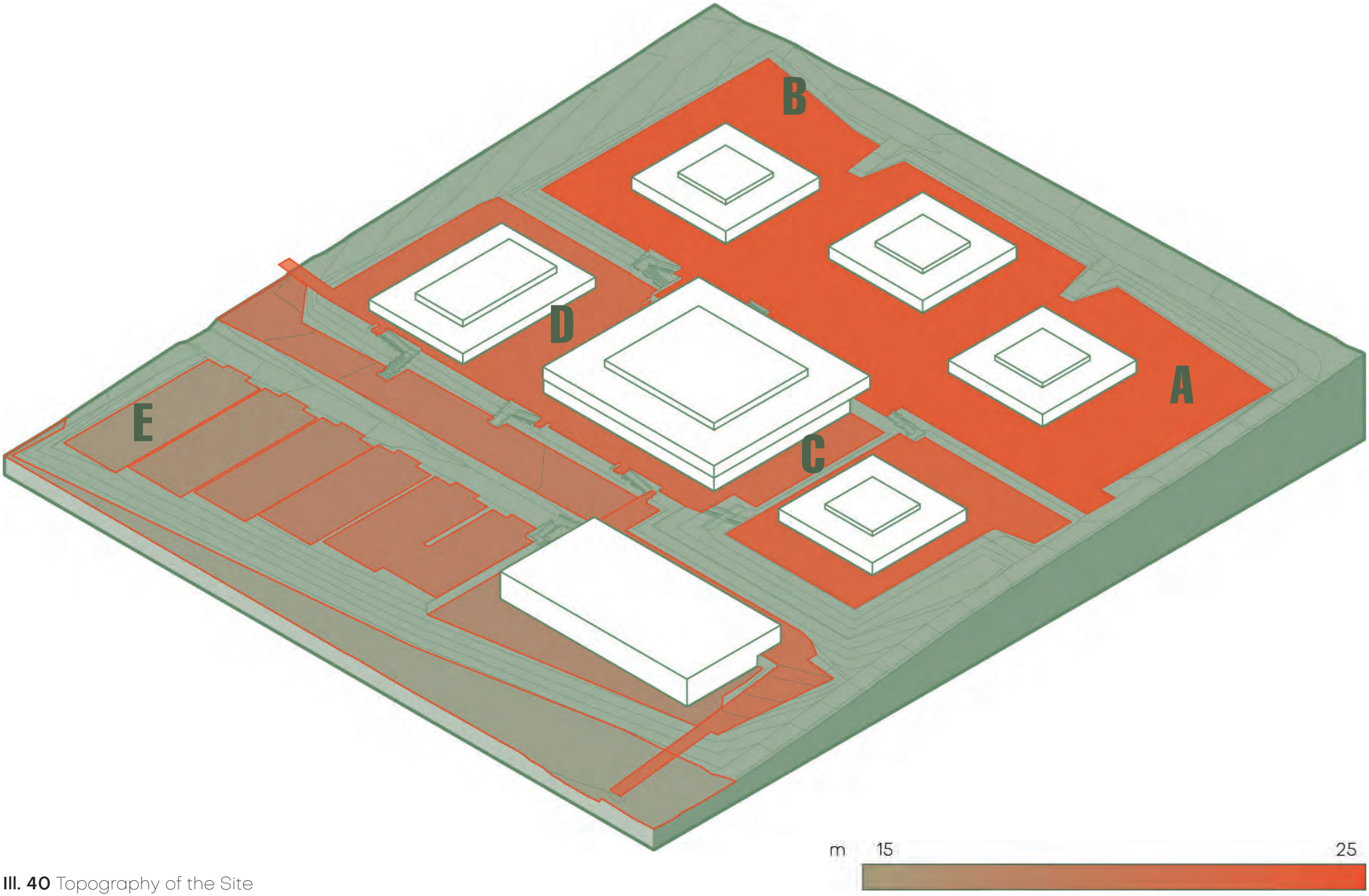
**Topography** is examined to preserve and alter to fit the new functions.

**Pavement** is examined with preservation or reuse for new purposes in mind.

**Greenery** is examined for different species and with a clear focus on preserving and adding new greenery.

**Buildings** are examined with the goal of preserving buildings and adding new building mass, as well as possibly drawing distinctive materials into the urban environment.

Ill. 39




**III. 40** Topography of the Site

## Topographic Reading of the Site

When being on the site and walking around, you clearly experience the many different levels it is divided into. Some level jumps are very steep while others are just small hills.

Standing at the southeast corner (A) feels like standing in a hole as the level is dug into the hill and the road around the site is located much higher. Whereas at the opposite end of the level (B), it goes straight to the road. Which testifies to the location of the hilltop southeast of the site itself. The level jump at the main building is clearly visible as this is one story high. The building is located towards the hill and thus interacts with both levels. South of the main building (C), one is standing in a recess as there is a new level jump on which the next building is located. On the same level on the other side of the main building (D), the jumps are felt at either end of the urban space. Finally, looking across the parking lot (E), this is also divided into many smaller levels along the entrance road that moves up a hill into the site, where it almost becomes the ridge on which the gymnasium is located.

A

B

C

D

E

## Pavement

When visiting the site we noticed some different types of paving. These could roughly be put in the four main groups: grass, tiles, asphalt and PIP rubber. In the following segment these four groups are elaborated.

### Grass

Most of the site is covered with grass or soil, corresponding to approximately 1690 m2. This is mostly in connection with the greenery and the hills between the different terrasses. This means that there are not that many places where you have an open space with grass.

### Tiles

There are mainly two types of tiles on the site. Some are shaped like crosses and some like squares, which are the most common ones at around 700 m2. The tiles are placed in aisle systems spread across the site and connecting the buildings with each other. Some places these spread out and become terrasses in connection with some of the buildings. In connection to the aisle system there are stairs and ramps as well as small ramps at the entrances to the buildings, which are cast in concrete.

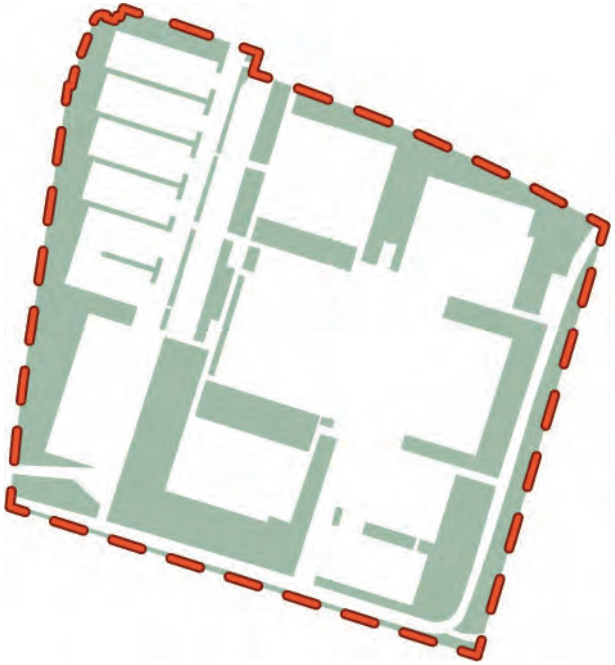
### Asphalt

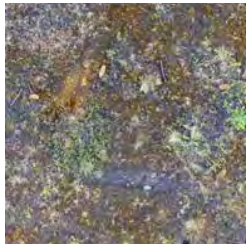
The asphalt is used for the parking lot, the main schoolyard and a small space with outdoor activities. This covers approximately 930 m2.

### PIP rubber

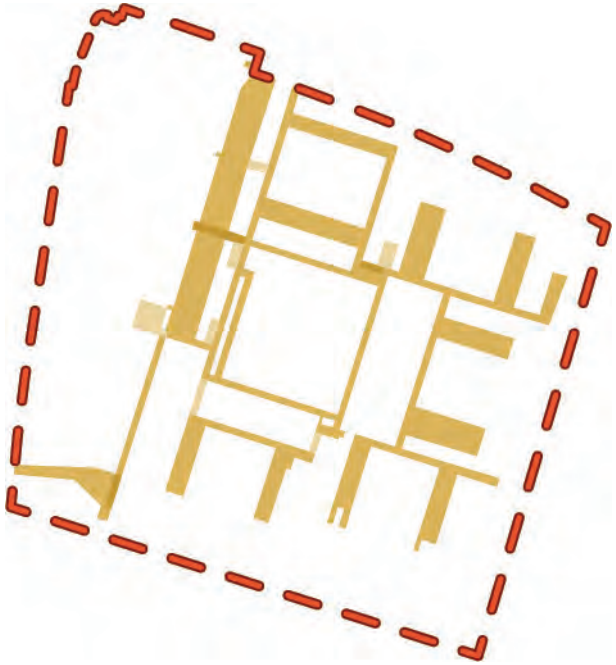
At last, there are a few spots covered with PIP rubber corresponding to 110 m2. This is two smaller sport fields, as weel as two spots in the main schoolyard. The spots in the schoolyard have been ruined due to climbing towers being removed.

**Grass**

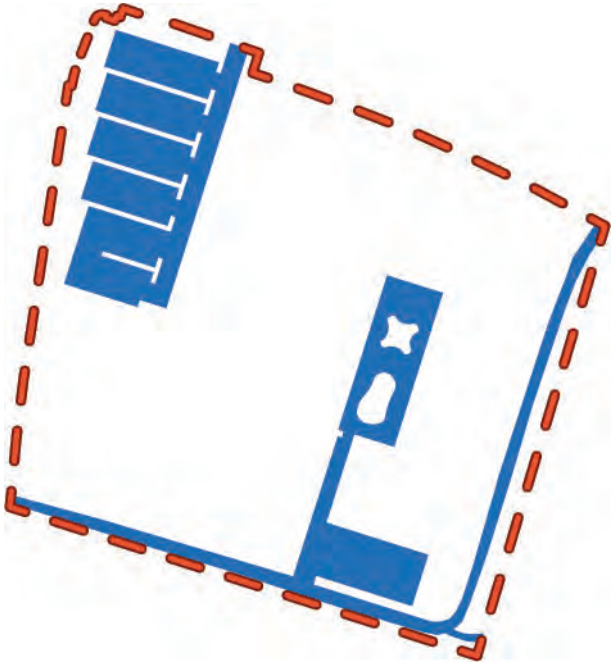




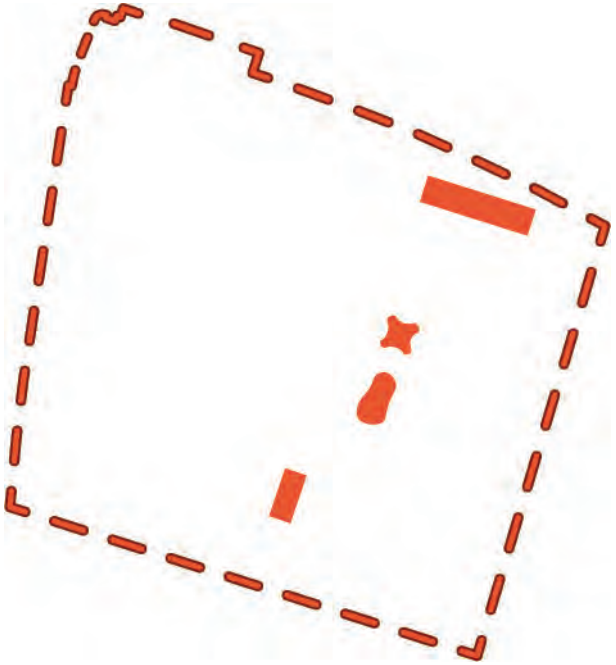
**Tiles**

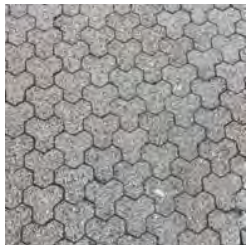


**Asphalt**



**PIP Rubber**



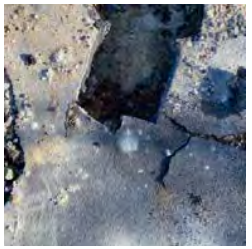










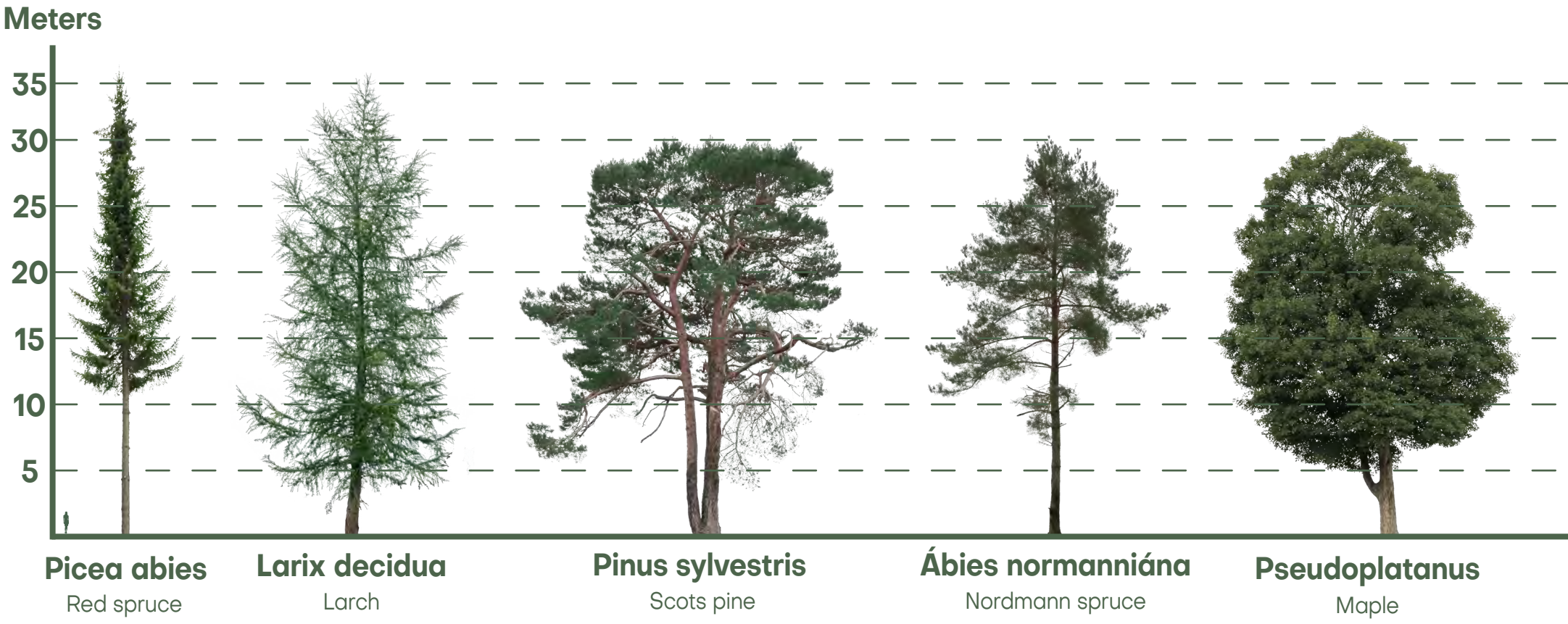



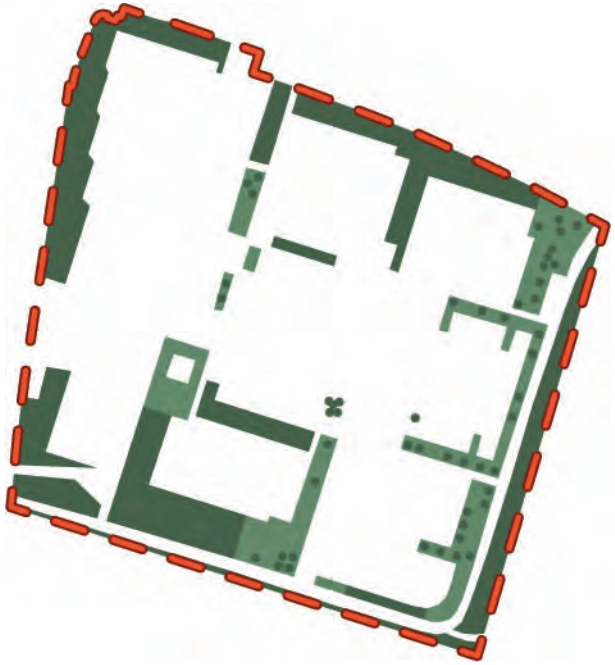
**Ill. 41** Materials on Site

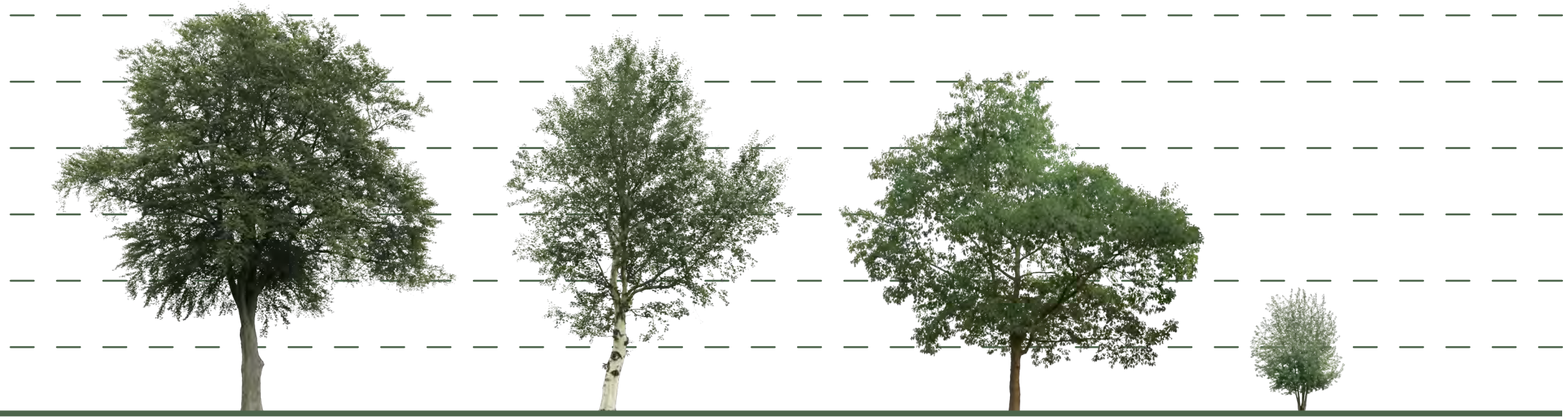
## Greenery

There is a lot of greenery at the site, which is one of its characteristics. This consists mainly of different types of trees as well as ivy. The different types of trees on the site today can be seen in illustration 42. It is a mix of deciduous, evergreen and fruit trees which make the site change character and color with the changing seasons. The evergreen trees help maintain the site's green character all year round.

During a site visit, we assessed and identified significant trees and tree groups which we thought should be preserved to ensure the green character in connection with the transformation of Byplanvejens Skole. These are marked in dark green on the map on the opposite page and are a mix of the many different tree types.







**Betulus**
Beech

**Betula**
Birch

**Quercus**
Oak

**Prunus cerasifera**
Mirabel

**Ill. 42** Tree Types on the Site

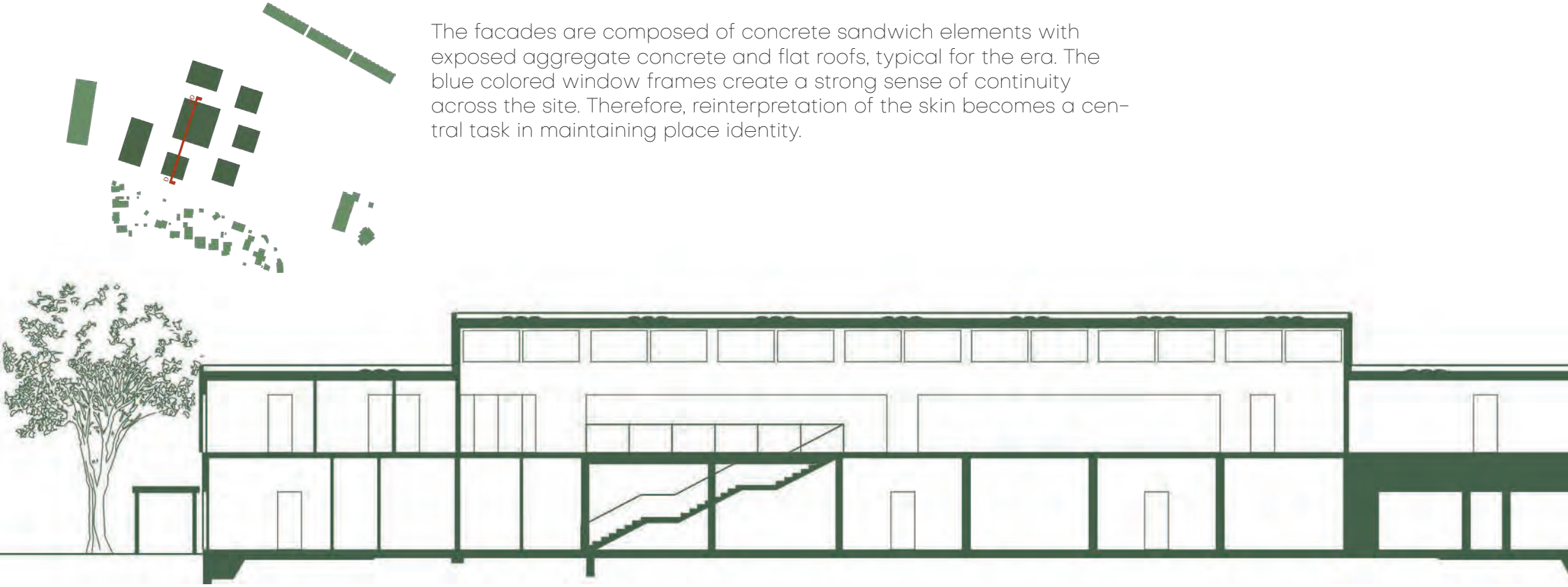
## Buildings

To understand the architectural potential of Byplanvejens Skole, the existing buildings have been analyzed using the methodology of "Blik – Kast – Projekt". Within this, the "Skin – Meat – Bones" method provides a layered reading of the built structures, helping to decode the building's physical and identity-forming components through three categories: facades, spatial division and load-bearing system.

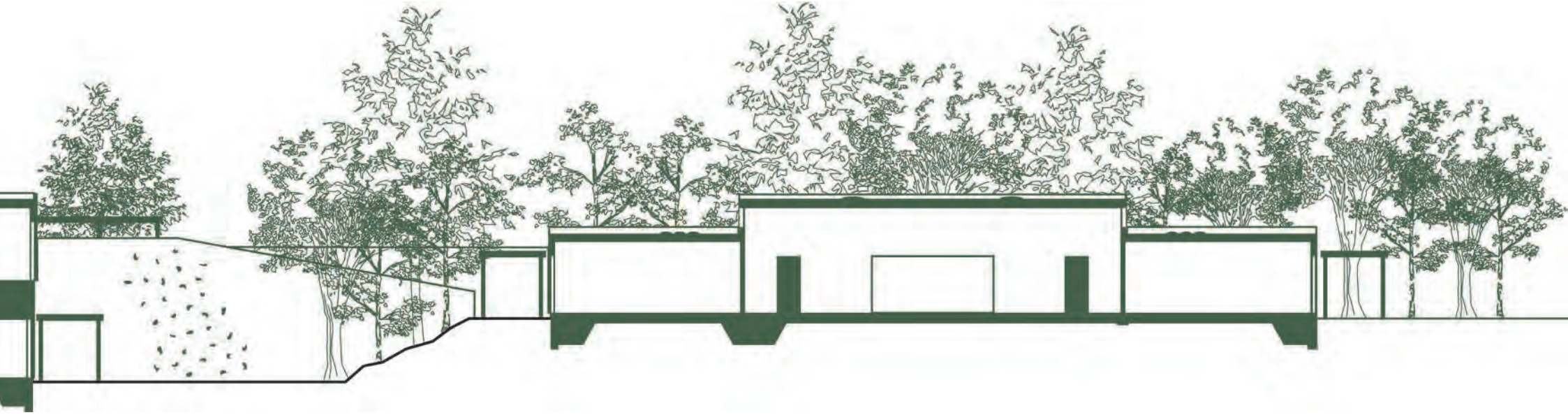
### Skin

The skin of the buildings refers to their surfaces, facades, materials and tactile expressions. Essentially the first impression the site presents. The materials found on the site can be seen on the opposite page.

The facades are composed of concrete sandwich elements with exposed aggregate concrete and flat roofs, typical for the era. The blue colored window frames create a strong sense of continuity across the site. Therefore, reinterpretation of the skin becomes a central task in maintaining place identity.



**III. 43** Structural Section 1:500



## Meat

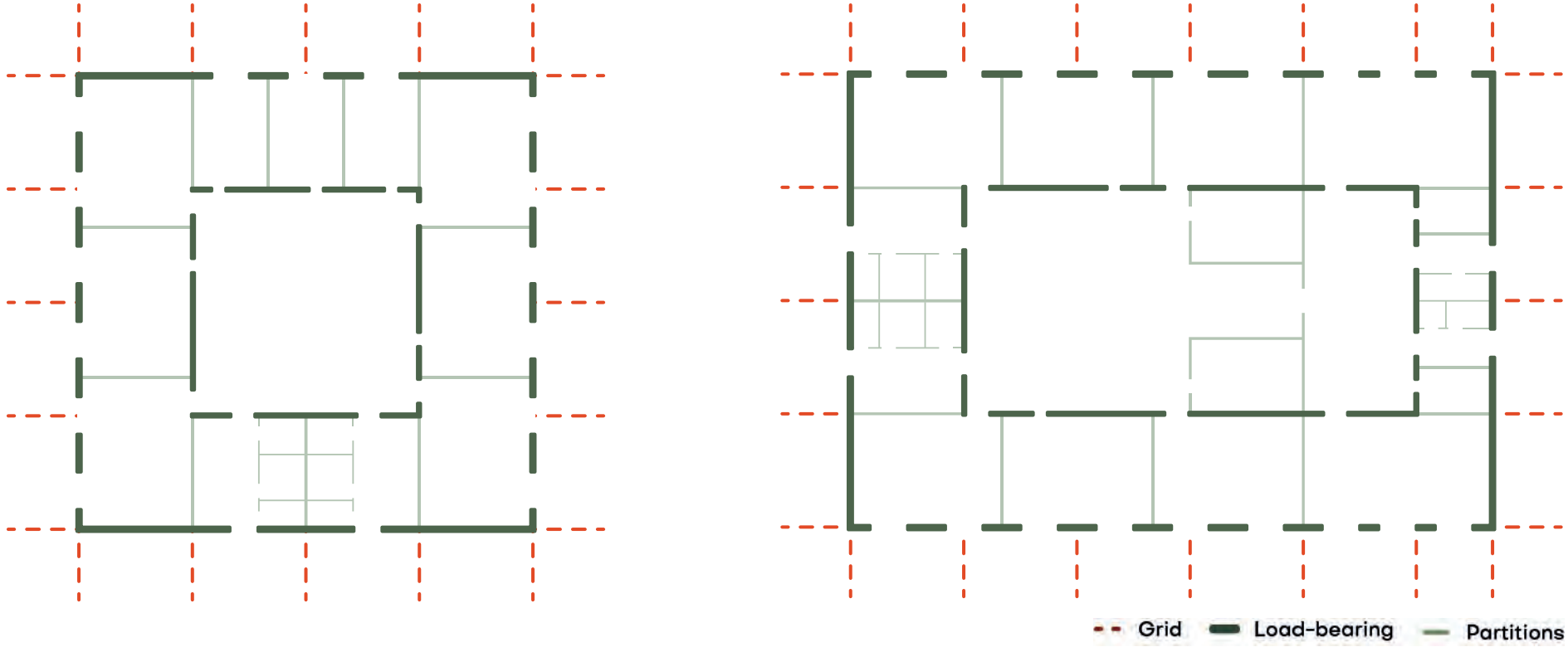
Meat refers to the functional core of the buildings, the rooms, volumes and daily use of the spaces. The school function was well integrated into the existing layout, where classrooms occupied the outer layer of the stamps, constructed around an enclosed common area, as seen in illustration 44. While some areas remain well-proportioned, others might face functional obsoleteness during transformation.

A similar layout was used for the main building, seen in illustration 45. On the ground floor, the focus is on placing subject rooms along the facades with windows, connecting into an elongated space. On the first floor, the subject rooms are placed around a large open space that once served as a library.

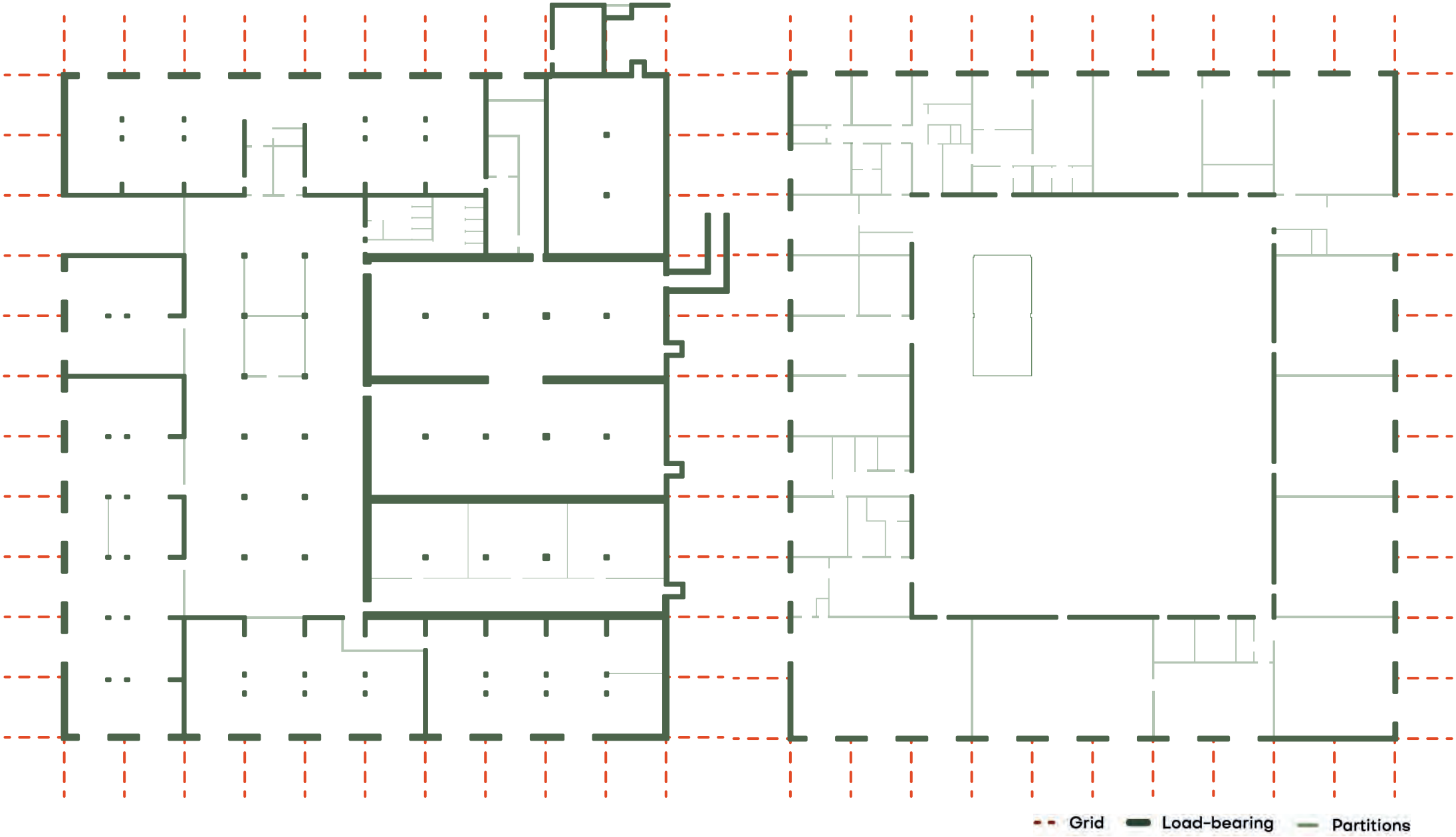
## Bone

The bones of the school, the structural system, reveal the most permanent and defining aspects of the buildings. Constructed primarily of loadbearing pillars, wall segments and concrete slabs, the buildings exhibit a robust and structured system. A rigid grid which must be honored to preserve existing elements. The structural system can be seen in illustration 43-45 marked with dark green.

- Maintain the general outline of the characteristic levels on the site
- Work to preserve existing pavements
- Preserve the green character of the site and specifically selected trees and tree groups
- Reinterpret the skin and maintaining the place identity
- Preserve the structural system and honor the rigid grid




**Ill. 44** The Classroom Buildings, 1:400




**Ill. 45** The Main Building's Ground (Left) and First Floor (Right), 1:400

# Microclimate

When working with Architecture and Urban design, it is important to know about the microclimate on the specific site. By understanding the conditions of the site one can better determine the optimal location for different functions, while simultaneously revealing any climatic issues which need to be addressed. All simulations are performed without the loggias.

## Noise

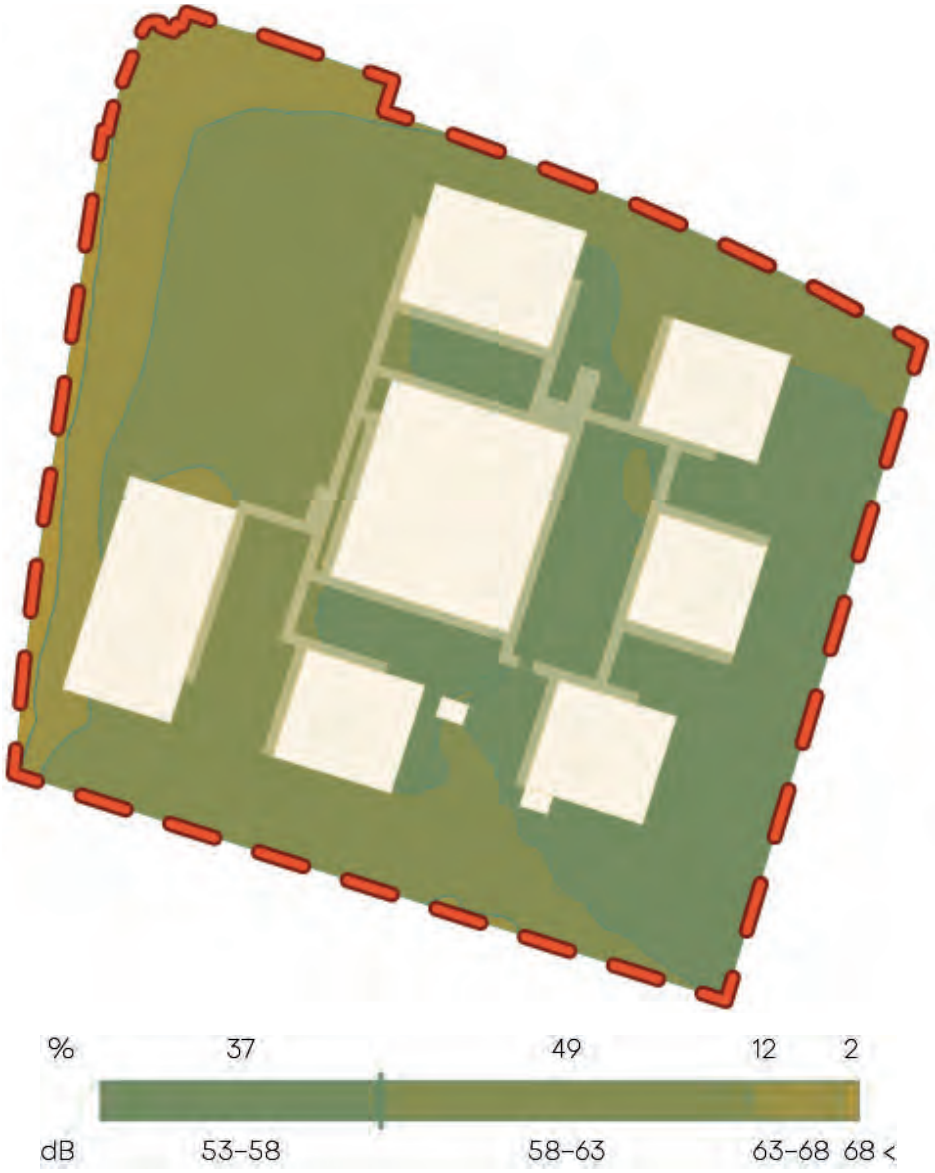
Being at the site we noticed some traffic noise from the surrounding roads. Therefore, the noise is analyzed to get a deeper understanding of it. A general study of road noise in Gug has been conducted and can be seen in Appendix B – Noise. Here you can see how the E45 highway has a major impact on Gug and to some extent also affects Byplanvejens Skole.

When simulating site specific noise, it is evident that the noise from the west is the most predominant, which is assumed to be caused by the highway access/ exit road. This simulation takes into account that the acoustic barriers have been installed along the E45. It is also noticeably visible that the noise level on the majority of the site is 53-63 dB. The limit for the amount of noise in an outdoor urban area is 58 dB, which makes it possible to have outdoor functions in the east and the area between the buildings. (Mst, n. d.)

Simulating the noise level at the facades of the buildings, the facades facing north and west are exposed to the highest noise levels of 58-63 dB. This is consistent with the fact that these are the facades facing the roads. However, when traversing the site, the presumed high noise levels are manageable and sometimes even unnoticed. The acoustics of the outdoor areas are well proportioned, having low echoing effects and overall sound sensitive properties..

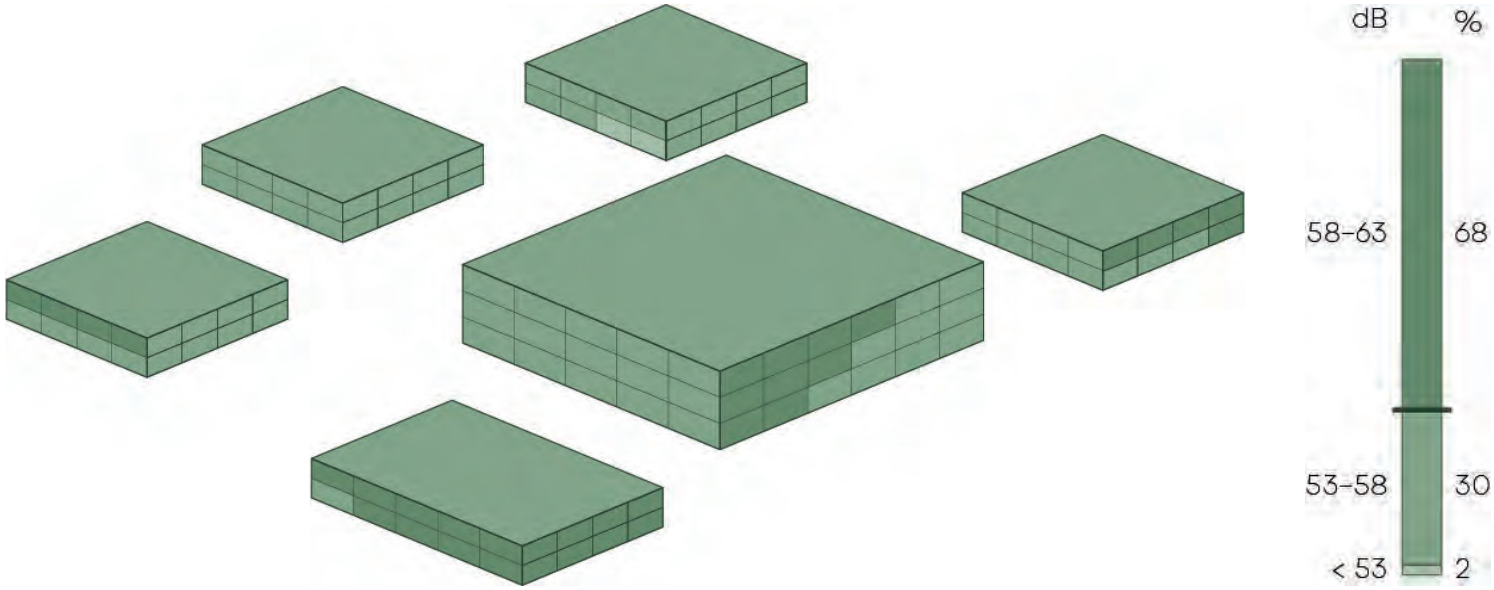
- Noise levels at 53-63 dB on most of the site
- Noise primarily from a western direction

**Noise on the Site**



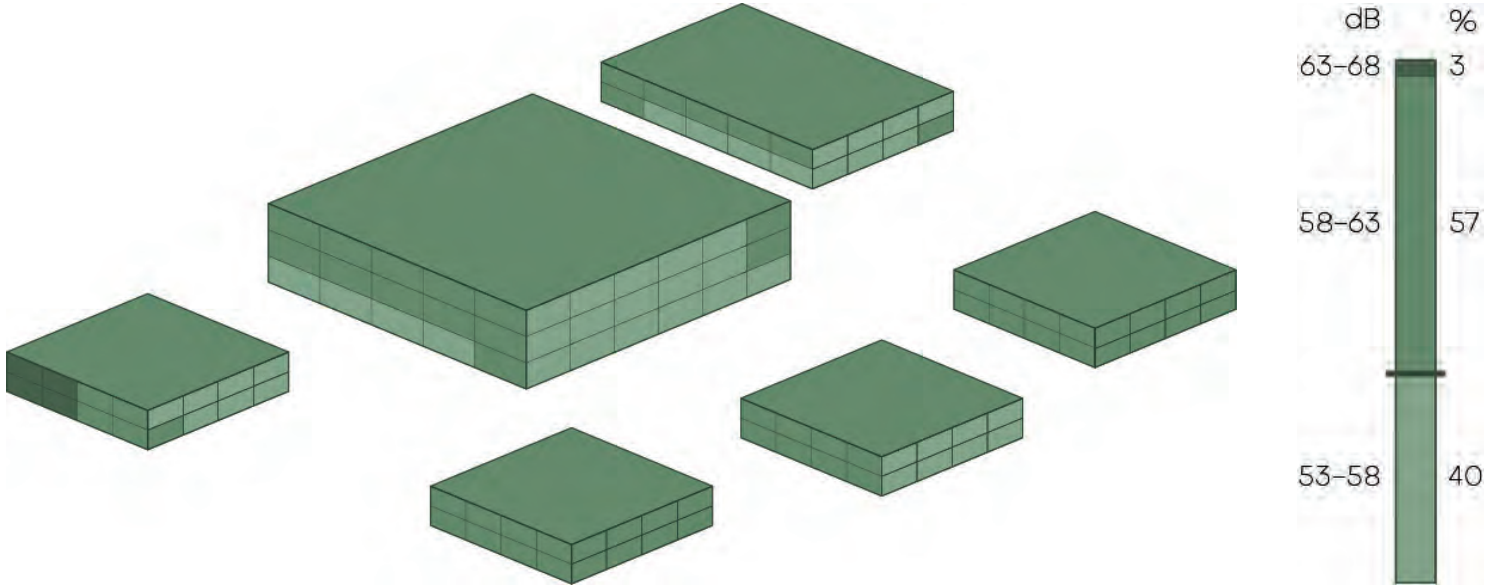

**Ill. 46** Noise on the Site, 1:2000

## Facade Noise Seen from Northwest




**Ill. 47** Noise on the Northwest Facade

## Facade Noise Seen from Southeast



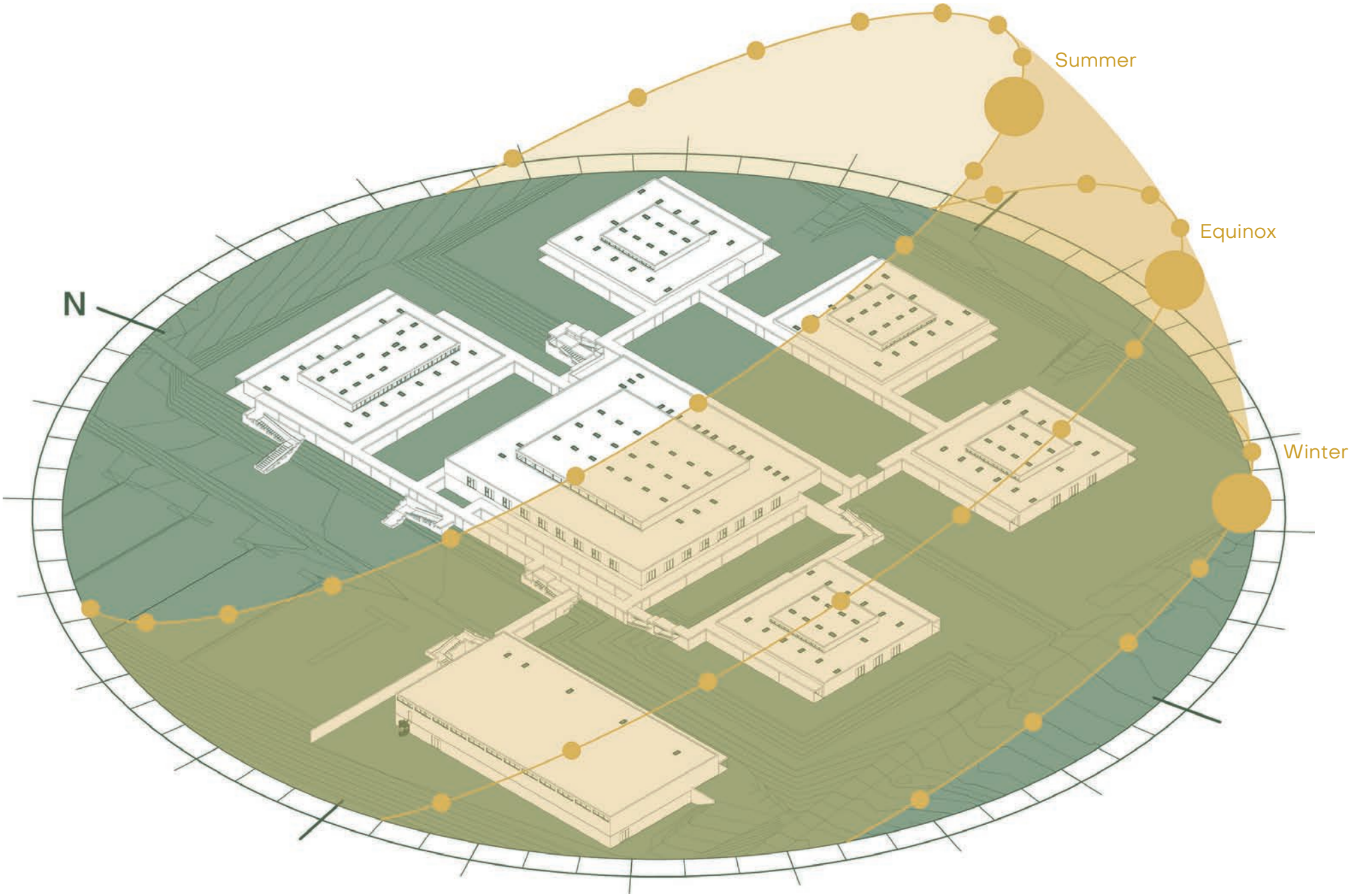

**Ill. 48** Noise on the Southeast Facade

## Sun

To better understand the current layout, a sun analysis is a great tool for showing the sun's position throughout the seasons. The changes in shadow formation on the site vary significantly throughout the year, therefore the shadow conditions on the site have been studied and can be seen in Appendix C – Sun and Shade. This shows how most of the site is illuminated in the summer and how it is the south facing and open areas which receives the most sun. It can clearly be seen in illustration 48 that the height difference of the sun is large from winter to summer and that larger parts of the site will therefore be illuminated in summer compared to winter. It is also the south-facing facades and urban spaces that will receive the most sunlight throughout the year.

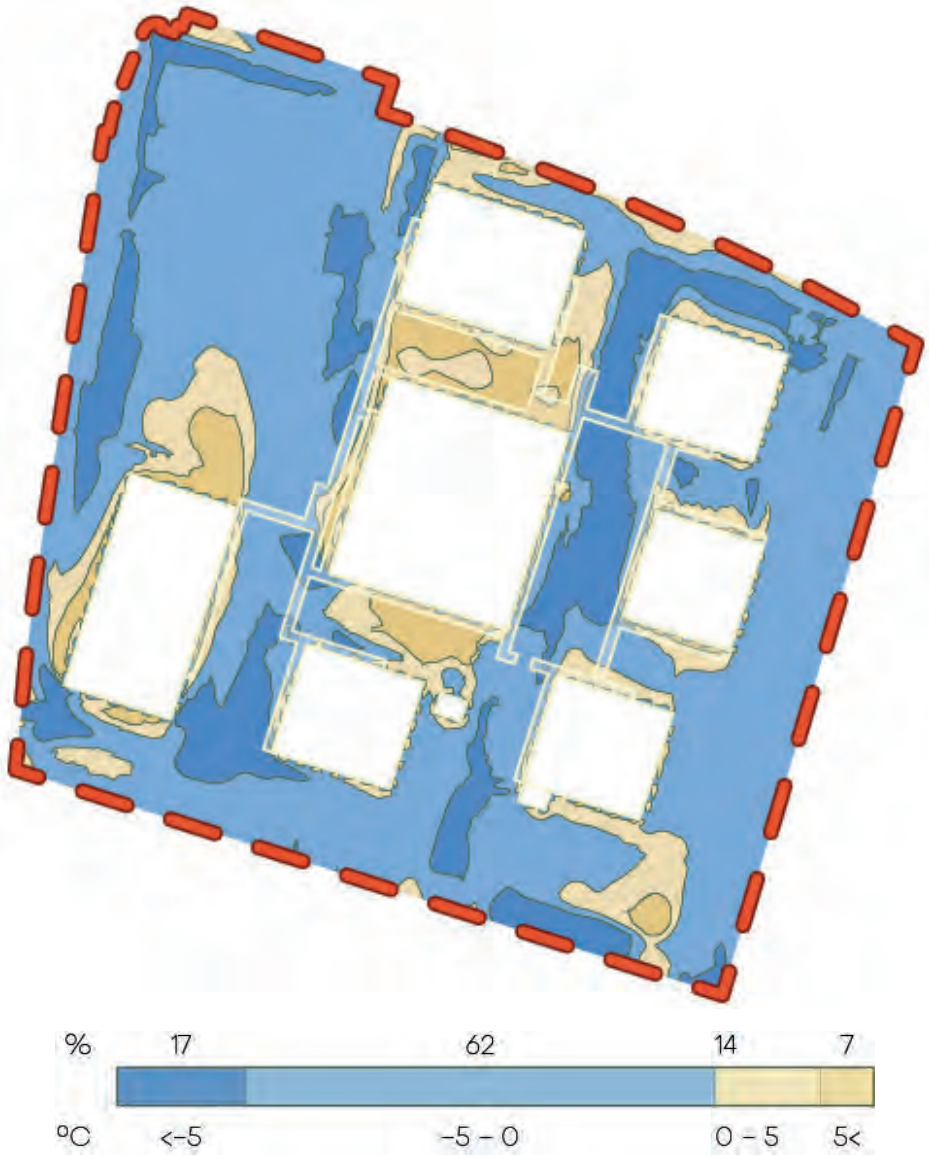
When experiencing the site, especially indoors, the site does however feel somewhat shadow cast, as the loggia alongside the buildings produces a large overhang and sunshade. Additionally, the rooms are deep, which makes it difficult for sunlight to penetrate through.

· Most sun on the south facing and open areas at the site



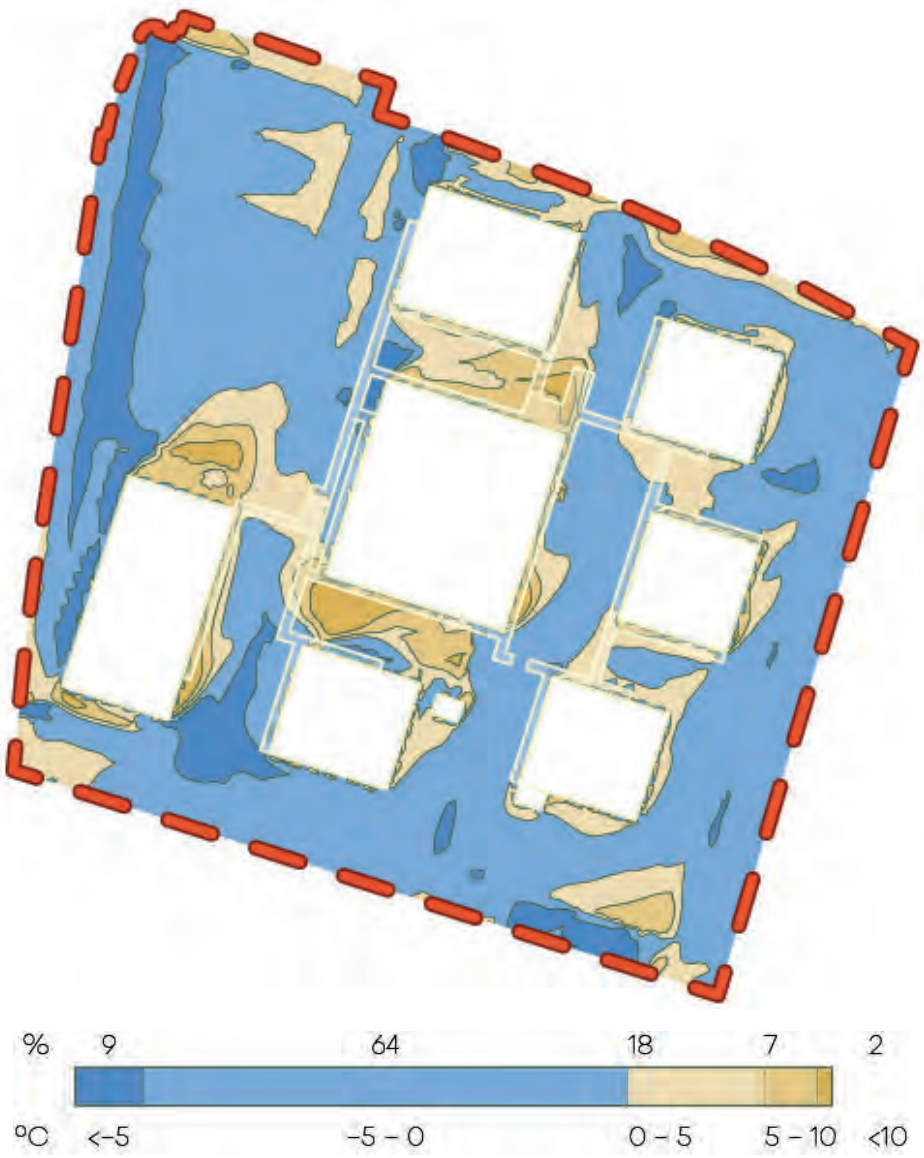

**Ill. 49** Sun Path

## Winter Solstice



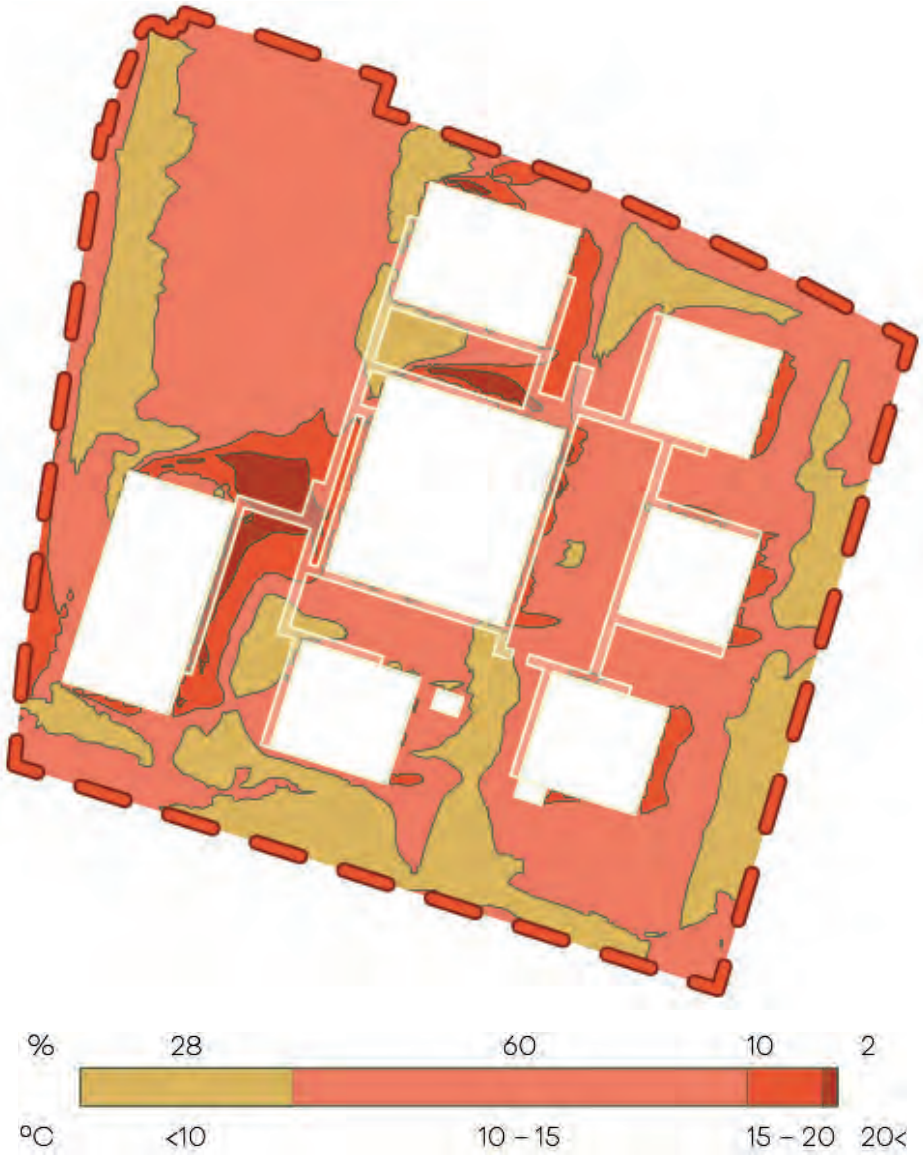

**Ill. 50** Winter Solstice, 1:2000

## Spring Equinox




**Ill. 51** Spring Equinox, 1:2000

**Summer Solstice**




**Ill. 52** Summer Solstice, 1:2000

## Thermal Comfort

When implementing outdoor functions of different activity levels, it is important to know where on the site the best conditions for stationery or active activities are. Therefore, the thermal comfort of the site is investigated.

Thermal comfort is best assessed by utilizing the Universal Thermal Climate Index (UTCI), which describes human thermal comfort by considering air temperature, humidity, wind speed and direction, and radiation. UTCI accounts for a generalized assumption of clothing adaptation, similar to how people naturally adjust clothing in response to temperature. (Climate ADAPT, n.d.) Wind conditions at the site can be seen in Appendix D – Wind, this shows that the most common wind direction at the site is from the west and southwest.

The three maps represent the winter solstice (December 21st), illustration 50, spring equinox (March 21st), illustration 51 and summer solstice (June 21st), illustration 52, all days are shown at 12:00 o'clock.

At the winter solstice, 21% of the site will experience slight cold stress, which is primarily along the buildings, and 79% will experience moderate cold stress. Simulating for spring equinox, experiences of no thermal stress is equal to 4% of the site, while 24% of it will experience slight cold stress. On the majority of the site, 72%, there will be moderate cold stress. However, considering the comfort of the summer solstice, there is no cold stress, as 99% of the site will experience no thermal stress and only 1% will experience moderate heat stress.

- Majority of the site is moderate cold stress in winter and spring
- No cold stress in summer

# Chapter Conclusion

Concluding the analysis, we now know that Gug is a suburb of Aalborg and is situated in close connection to the city center. That Gug has reached its max expansion capacity, which means that the site has big development potential, now that the school function no longer is needed at Byplanvejens Skole. As the school has been around for years, the site is well integrated into the local community with many entrances for vulnerable road users all around the site. The site is centrally located therefore users can potentially come from most of Gug. The majority of the demography in the near context to the site consists of Affluent homeowners and Urban diversity.

In the near context there are a lot of different functions, most of which are located north of the site and some on the site. Here you also find building heights that should be respected and an important green sightline from Gug church to Østerådalen. Østerådalen can be directly accessed from Byplanvejens Skole. This is a large green structure with rich animal and plant life, which is a big part of one of the green wedges in Aalborg and works as a connection between the open land and the city.

Looking at the specific site the topography changes 15 meters in height across the site, while divided into three main terrasses, which is quite characteristic for the site and should be preserved. The site also has a green character, which is characteristic for the site and should be preserved especially selected trees and tree groups. The loggias also carry a great preservation value as they bind the area together, and so do the facades in exposed aggregate of white stone, the blue windows and doors, the fact that it is a car-free area, the flexible supporting structure and the variety of outdoor spaces. In addition, work must be done to preserve existing pavements.

The microclimate on the site is generally good, there is mostly sun on the south facing and open areas at the site.  In the winter and spring, the majority of the site experiences moderate cold stress, but in the summertime the is none. The noise level is generally high on the site and comes from a westerly direction.

From this section it is known that public and private functions will be integrated at the new community hub Gygia. This takes the form of a multiactivity center, a cultural center, as well as housing.

# SYNTHESES

This chapter presents a general design guide for the work with transforming closed schools in Denmark. It also synthesizes key findings from the analysis in the form of design principles. Furthermore, the vision will be presented along with research questions that are site and building specific.

# 04

# Design Guide

In working with the transformation of Byplanvejens Skole, overall design principles have been developed to guide the design process when transforming closed schools in Denmark. These serve as a guideline for other transformation projects involving closed schools. These are the most important outcomes and must therefore be ensured in the process: reveal, respect, reframe and reinforce. Reveal covers the valuation of the school buildings and the urban area. It is in this process that the characteristics and identity of the buildings and the area are highlighted. This point also helps to determine what should be preserved. Respect is a list of the structures, functions, landscaping, flows, etc. that should be preserved on the site. Reframe is where the school buildings and urban areas are transformed to fit the new function. Finally, Reinforce is where you add more value to the project.

# 1 Reveal

## Uncover Identity and Value

- Conduct a site survey that uncovers both the tangible and intangible characteristics of the school and surrounding urban areas.
- Highlight valuable identity-forming elements

# 2 Respect

## Preserve what Matters

- Identify and retain key structures, spatial flows, materials and cultural features
- Ensure continuity by preserving physical and social links between the site and the local community

# 3 Reframe

## Transform with Purpose

- Transform buildings and urban spaces to accommodate new functions, guided by principles of universal design, inclusion and community integration.

# 4 Reinforce

## Add Layers of Value

- Introduce new uses and spatial programs which activates the site across time and season
- Add urban functions and landscape interventions that responds to microclimate, accessibility and local demand

# Vision

The vision for this project is to **return Byplanvejens Skole to the citizens of Gug** by transforming the site into an inclusive and vibrant community space that reflects local **diversity, cultural expression, and shared heritage**. Rooted in an identity and heritage theory's understanding of place, the project aims to preserve and reinterpret the school's **physical characteristics**, which allow the site to feel both like a home and a gathering point – a space to dwell, to pass through, and to connect. Through a sensitive and strategic transformation, the school becomes a meaningful part of everyday life in Gug.

**Return the site to Gug:** Refers to restoring the school's role as a public, community-serving place after a period of closure and vacancy.

**Diversity and culture:** The transformed site should reflect the multifaceted identities and needs of the local population through program, design, and atmosphere.

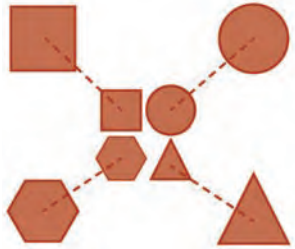
**Heritage:** Emphasizes an approach that respects the memories, meanings, and identity embedded in the site and its architecture.

**Physical characteristics:** The school's architectural features and spatial qualities are not erased but reinterpreted to support its new role in the community.

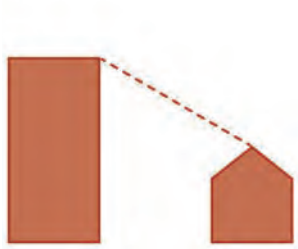
**Ill. 53** Byplanvejens Skole

# Design Principles

## Return the Site to Gug

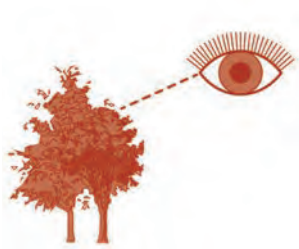


Place functions in relation to similar contextual functions



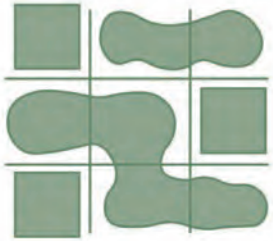
Respect the building heights of the context

Preserve existing access routes for soft mobility

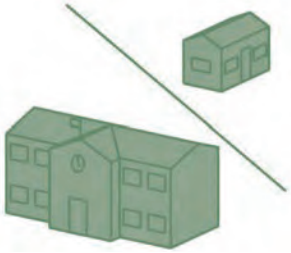


Respect the neighboring Church's visual line of sight

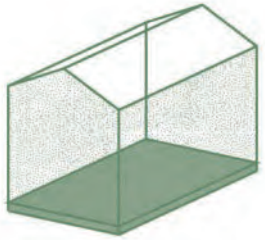
## Heritage



Relate the urban design language to the existing rigid grid



Reinterpret the public vs private character and the respective atmosphere

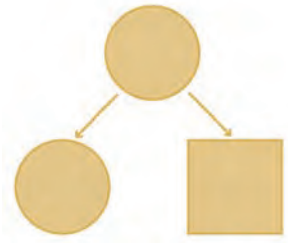


Maintain the building footprints and the aggregate concrete façades

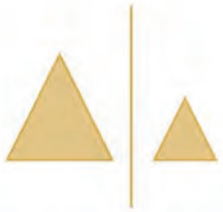
Preserve the green identity and retain significant tree structures

Preserve prioritization of soft mobility on-site

## Diversity and Culture



Preserve and rethink existing functions

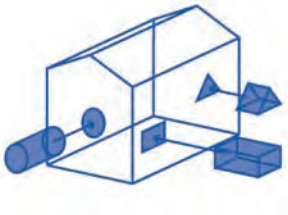


Incorporate outdoor and indoor spaces which reflects immediate surrounding functions

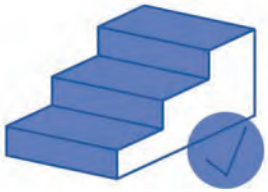
Design for diversity, both in the private and public domain

Create micro-communities within the larger community

## Physical Characteristics

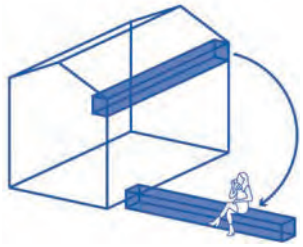


Evaluate functional spatial needs per building

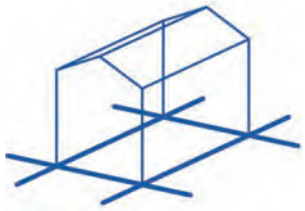


Preserve the characteristic level changes of the topography

Utilize sunlit courtyards



Resourceful reuse of characteristic material parts

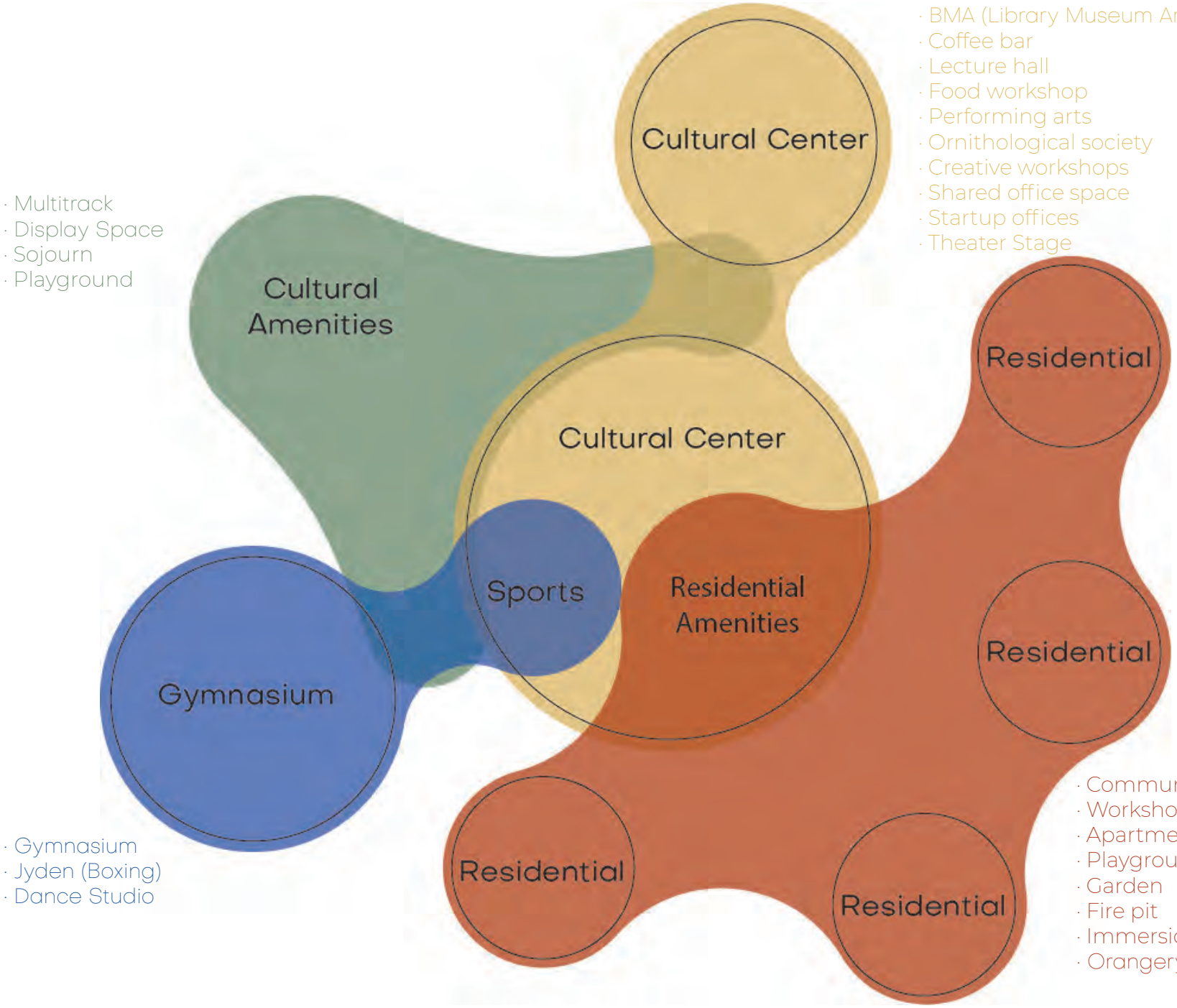


Retain the structural layout of existing floorplans

# Program

Based on analyses, users and functions, an overall program has been developed, which can be seen in illustration 54. Here, the desired functions are distributed among the existing buildings which are illustrated by circles with a black outline. The functions are divided into the four categories Culture Center (yellow), Cultural Amenities (green) Multiactivity Center (blue), and Residential (red). These four categories are distributed in and across the different buildings, creating an urban link between the inner functions, which the form of the colors illustrate.

In the following section, the focus has been on the detailing of the residential. Therefore, it is shown in actual plans, sections and visualizations, whereas the other categories are shown in a more conceptual way using hand sketches.




**Ill. 54** Program

# PRESENTATION

In this section, the transformation from Byplanvejens Skole to the community hub Gygia will be presented. This is in the form of plans, sections and elevations on a City, Site and Near scale. Furthermore, before and after situations will be shown.

# Gygia

The name Gygie has been chosen as a designation for the new community hub and cohousing community area. As mentioned earlier, Gug's original name is Gygia, which means city in the valley in Old Norse. This was chosen as the area will function as a small neighborhood located in the valley below the hill.

Gygia is Gug's new community hub and dcohousing community, offering citizens a place to engage in local associations, catch up with friends, practice sports, unfold creatively and much more. There is room for everyone, both big and small, old and young, here in the green link between the low-lying Østerådalen and the high-lying Gug Church. It's a place for life and play as well as contemplation and peace.

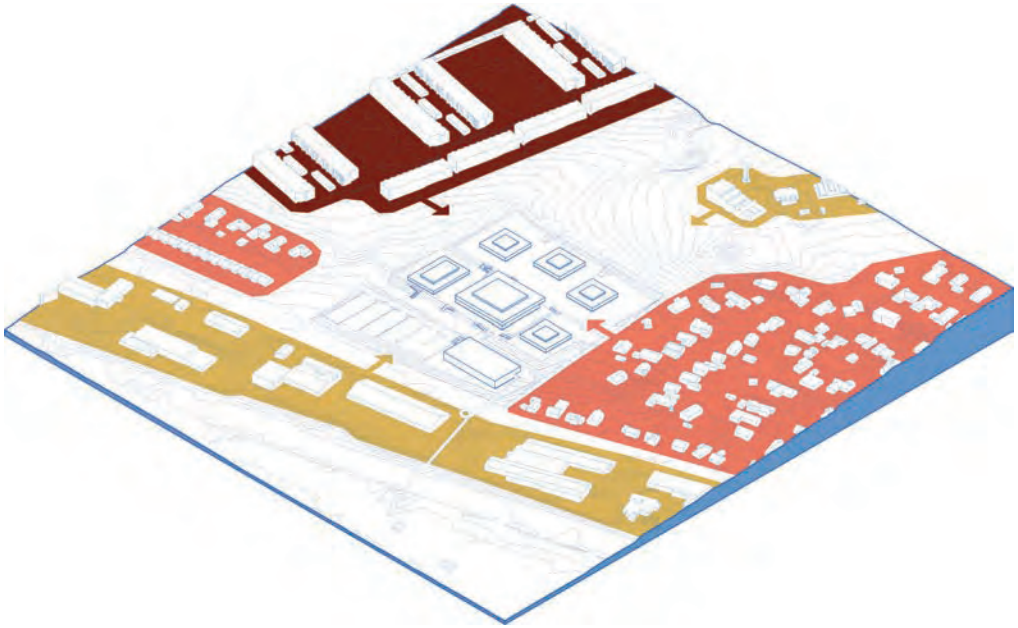
Ill. 55 Site Plan

# City Scale

When working with a site located in a well-established district like Gug, it's important to look beyond your own borders and ensure a good connection between the city and the site. Therefore, we have worked with concepts on a city scale which help to tie the site and the city as well as the local population together and ensure a si-te-specific design.

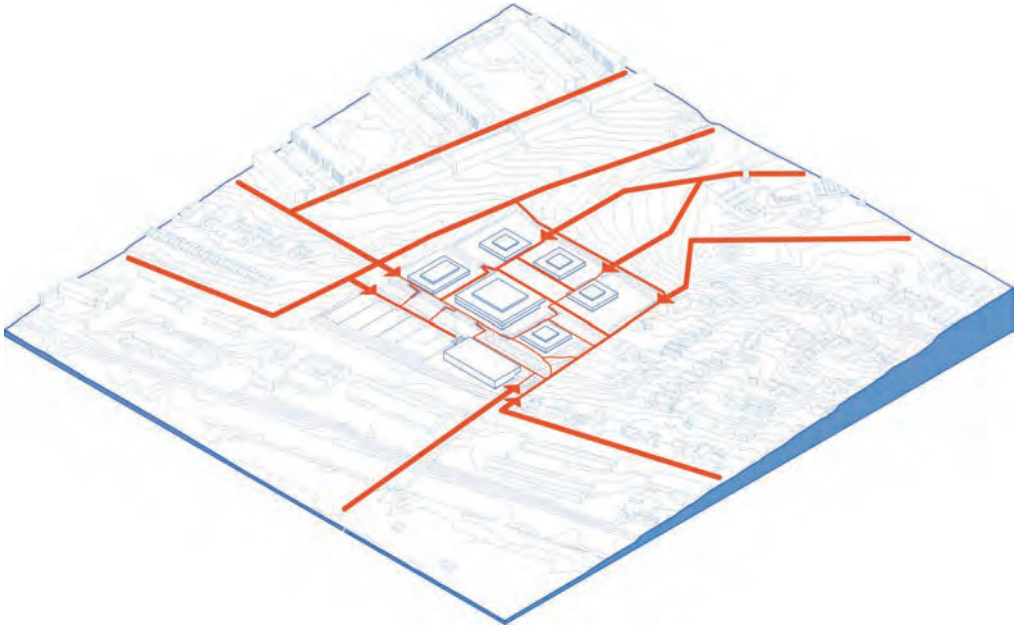
## Green Wedge

As stated in the section on Aalborg, Aalborg Municipality works with strategies for green wedges both municipally and locally. We are embracing this by working with green structures across the site to strengthen the green features that currently exist from Østerådalen and up to Gug church.



## Public and Private

In order for the site to fit into and reflect the context, we have worked with the placement of public (yellow) and private (red) functions. We have noted that there are different degrees of privacy in the context in the form of single-family house areas (light red) and apartment buildings (dark red) and will therefore carry this gradation into the site.

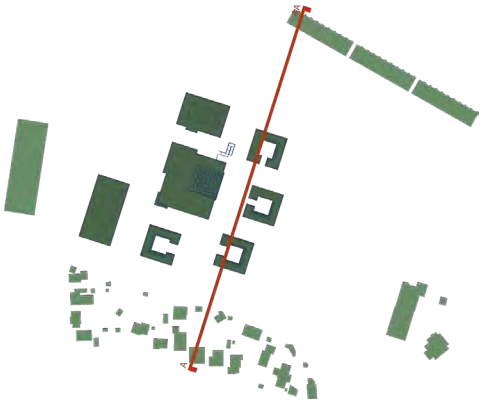


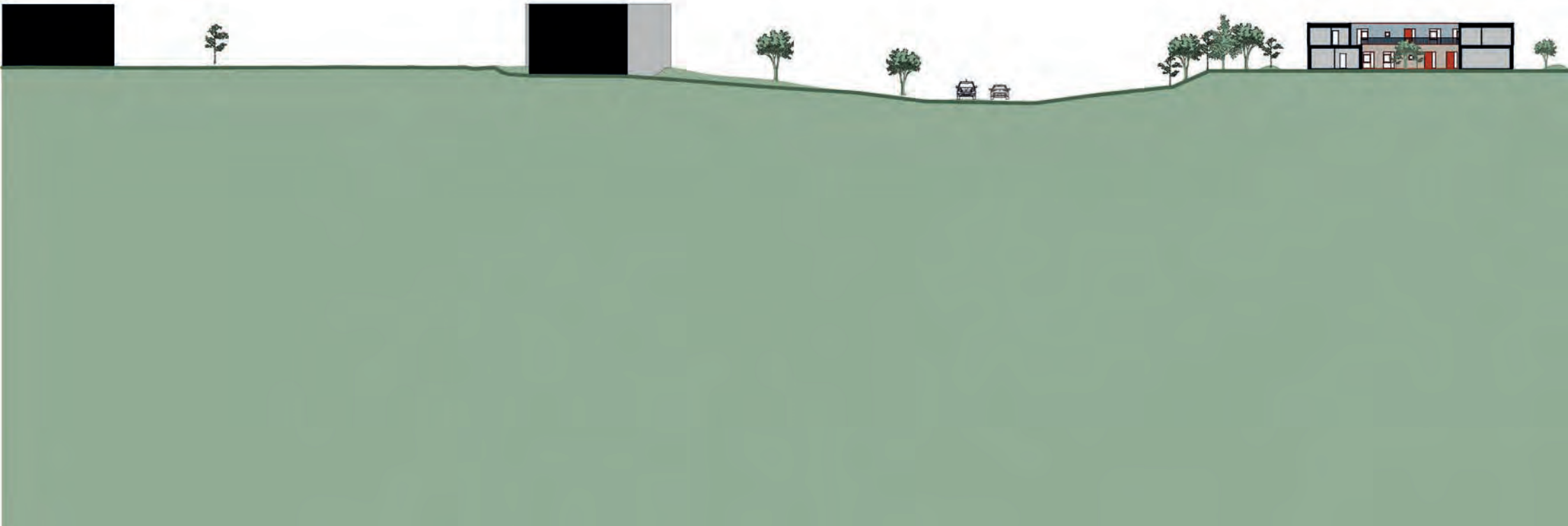
## Accesses

As the site used to be a school, it is already very well integrated into Gug's infrastructure, as it has been a place where citizens have had their daily routine. We want to preserve and support these well-integrated main flows and access routes with the site-specific flow.

As can be seen, Gygia becomes a green hinge between the large green structure Østerådalen to the west and the green area up the hill to Gug church to the east. It functions as a green community hub that extends out and grips Gug by means of the many roads and path systems. Furthermore, Gygia acts as an unifying link of the surrounding functions with its public activities and private housing.

**Ill. 56** Site Plan for Gygia, 1:2.000





The section shows how the cohousing area is located between the blocks to the north and the single-family houses to the south. A previous scenario can be seen in illustration 35 (page 72–73). It shows how the height of the buildings is matched to the heights of the context. Furthermore, you can see how the buildings are processed and still have a regid expression to the outside. Likewise, how they open up into a communal courtyard.

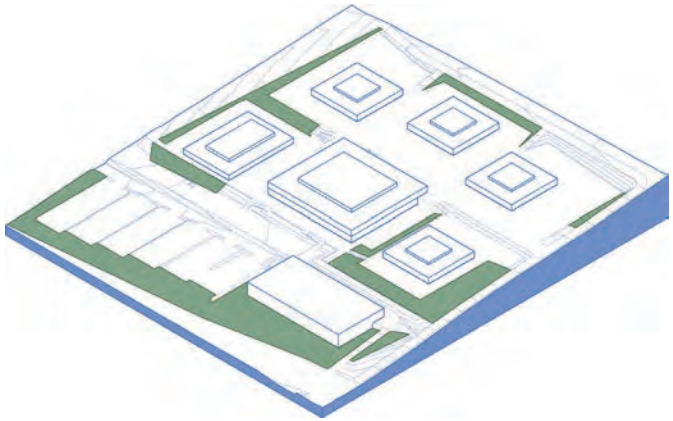
**Ill. 57** Contextual Section, 1:750

# Site Scale

Moving down in scale, we come to the site scale. This helps to ensure a coherent design across the entire site and can be linked to the major concepts from the city scale. Here the concepts become more site specific and are based on Byplanvejens Skole.

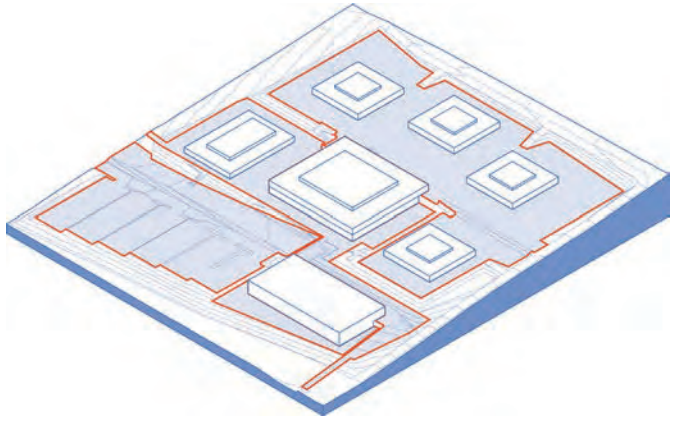
## Urban Concept

In the urban concept, we have worked with transforming the greenery and the characteristic levels. As well as preserving and creating new main flows across the site that help to divide the urban area into sections where functions can be added.



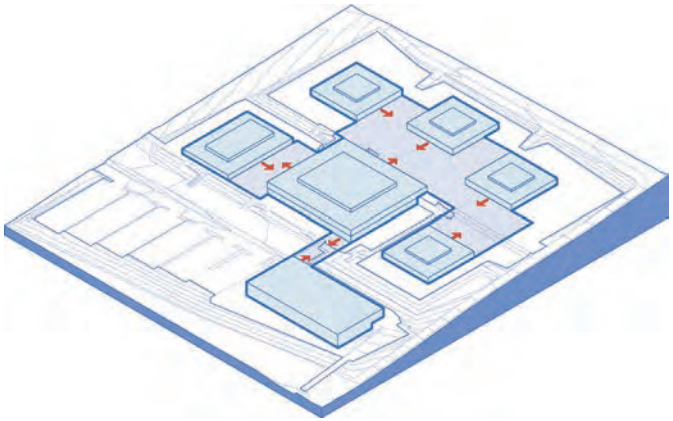
## Preserved Greenery

As part of the urban transformation, we have worked to preserve large parts of the greenery on the site. Furthermore, there are specific trees scattered around the site that we also preserved, which works as a contrast to the new vegetation that is added.



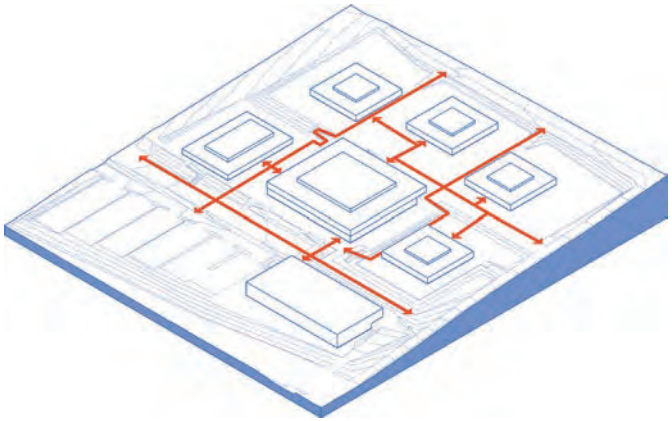
## Levels

The site is divided into multiple levels as it is today. Some of these we level out and gets three main levels, one for the private area and two for the public. This means that the levels helps to emphasize the division between private and public.



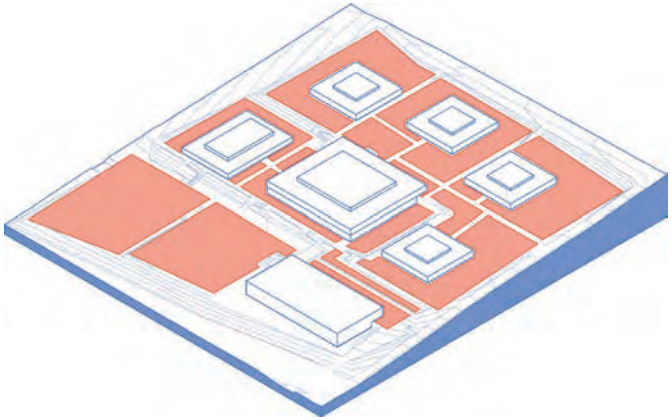
## Opens Up

We open up the buildings towards the urban squares to support these and the relationship between the buildings. This also clarifies what once was the main building still is the main building, as the other buildings connect to it, thereby maintaining several of the existing flows on the site.



## Main Flow

There are some main flows through the site and between buildings. These are identified and processed. In addition, there are smaller flows around the site between the functions. All these flows have helped provide the fra-mework for the urban spaces.

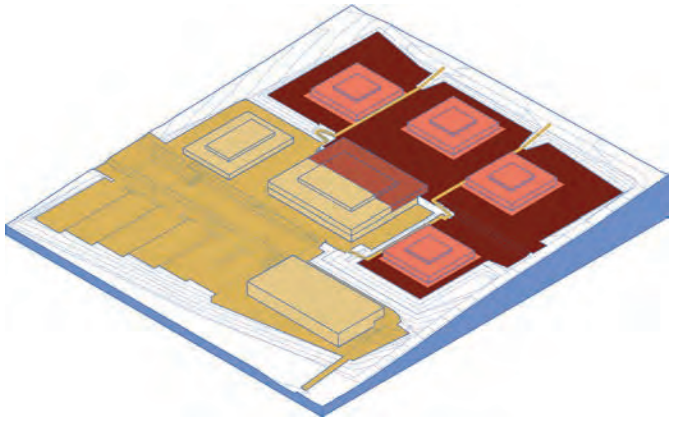


## Open Area

Between the flow lines, fields are formed where either functions or greenery can be placed. These vary in size and shape.

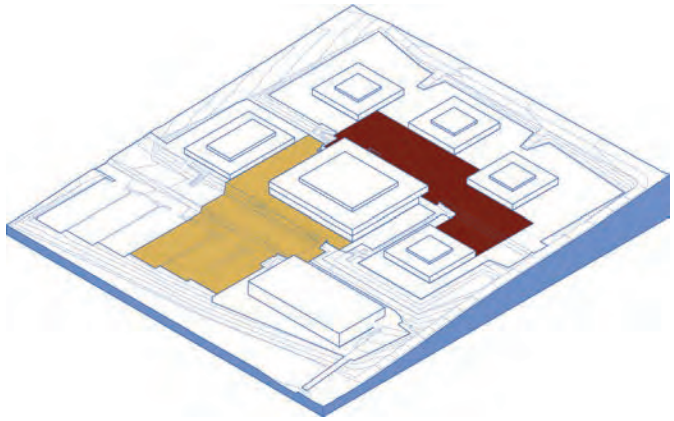
## Public and Private Concept

In the public and private concept we have worked with the division of the two areas, but at the same time how we create a unified expression across the site despite this division. We have worked with how the urban areas relates to the very rigid building structure by standing in contrast to it. Therefore, the design language is very organic and hilly, reflecting the topographical context in which Byplanvejens Skole is located and which was there before the site's topography was made into terracing.



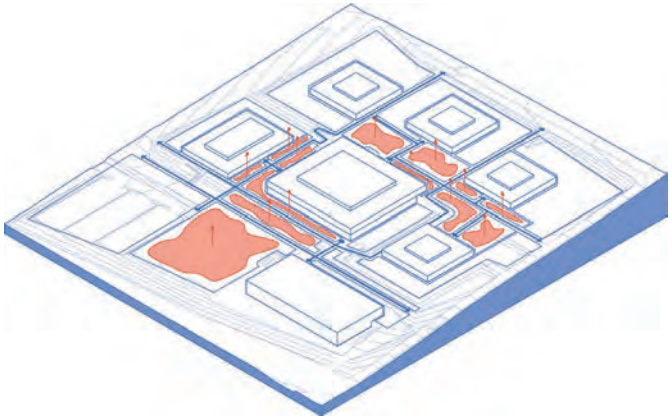
## Public and Private

Byplanvejens Skole is divided into two areas: public (yellow) and private (red). This is done based on the context's division from the city scale as well as previously conducted analysis. These two categories are further divided into degrees of private (light red), semi-private (dark red), semi-public (light yellow) and public (dark yellow).



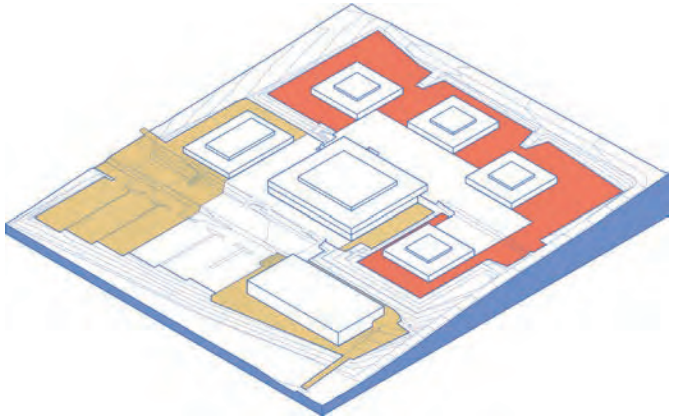
## Urban Squares

In each of the two areas, a main urban square is identified. These act as a link between the buildings in the public (yellow) and private (red) areas, as they are adjacent to all the buildings in the representative area. It is assumed that it is in these areas that the main flows will be across between the buildings.



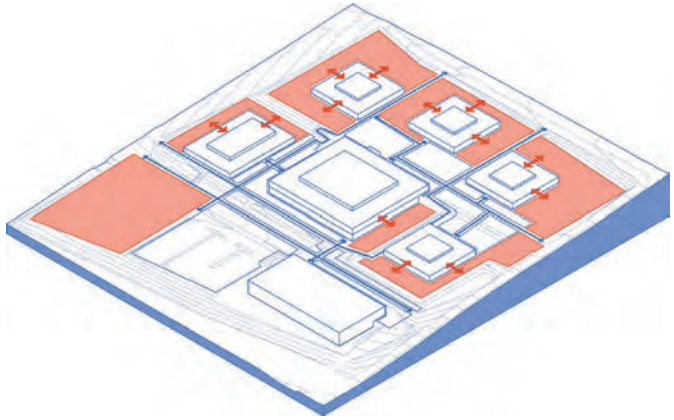
## Greenery

The greenery that is placed consists of beds or grass that is raised up in an organic hill landscape. This landscape helps create a playful and natural expression and divides the site into smaller spaces providing pockets for enjoying urban environment.



## Urban Functions

By identifying the main urban squares and thus the main flows between the buildings, the places where urban functions may be placed are also identified. These are again divided into public (yellow) and private (red) and are located at the edge of the site.



## Inside Outside Reflection

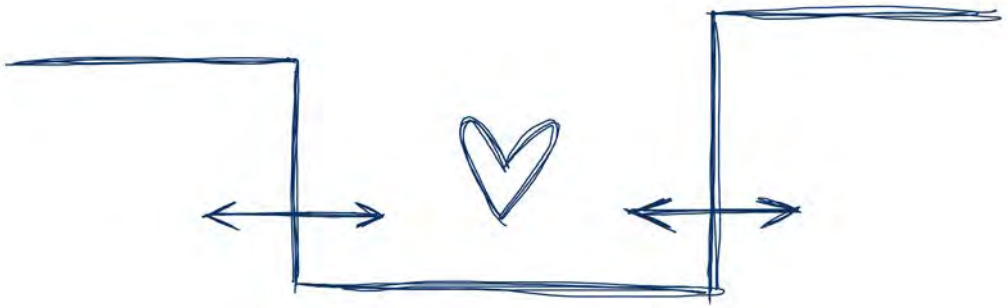
Functions are placed throughout the site, but larger or primary functions are placed at the edge of the site. The functions placed inside the buildings should be reflected or supported in the close urban context around the buildings. These functions help create transparency on the site and support the public and private expressions.

Gygia is an area that offers many different experiences and ways to unfold. The cultural area is divided into squares with different focuses. Here you can get your heart rate up or just sit and enjoy the area. The cohousing area is divided into smaller urban areas with more garden-like character and functions, such as a herb garden, playground, pétanque and more. The general feature of the entire site is the hilly landscape that can be seen spaciously in illustration 58. Resident parking is accommodated along the perimeter of the residential area with subsidiary parking, alongside the public parking, at the parking structure (Appendix F – Parking).

**Ill. 58** Urban Concept


**Ill. 59** Masterplan for Gygia, 1:1000

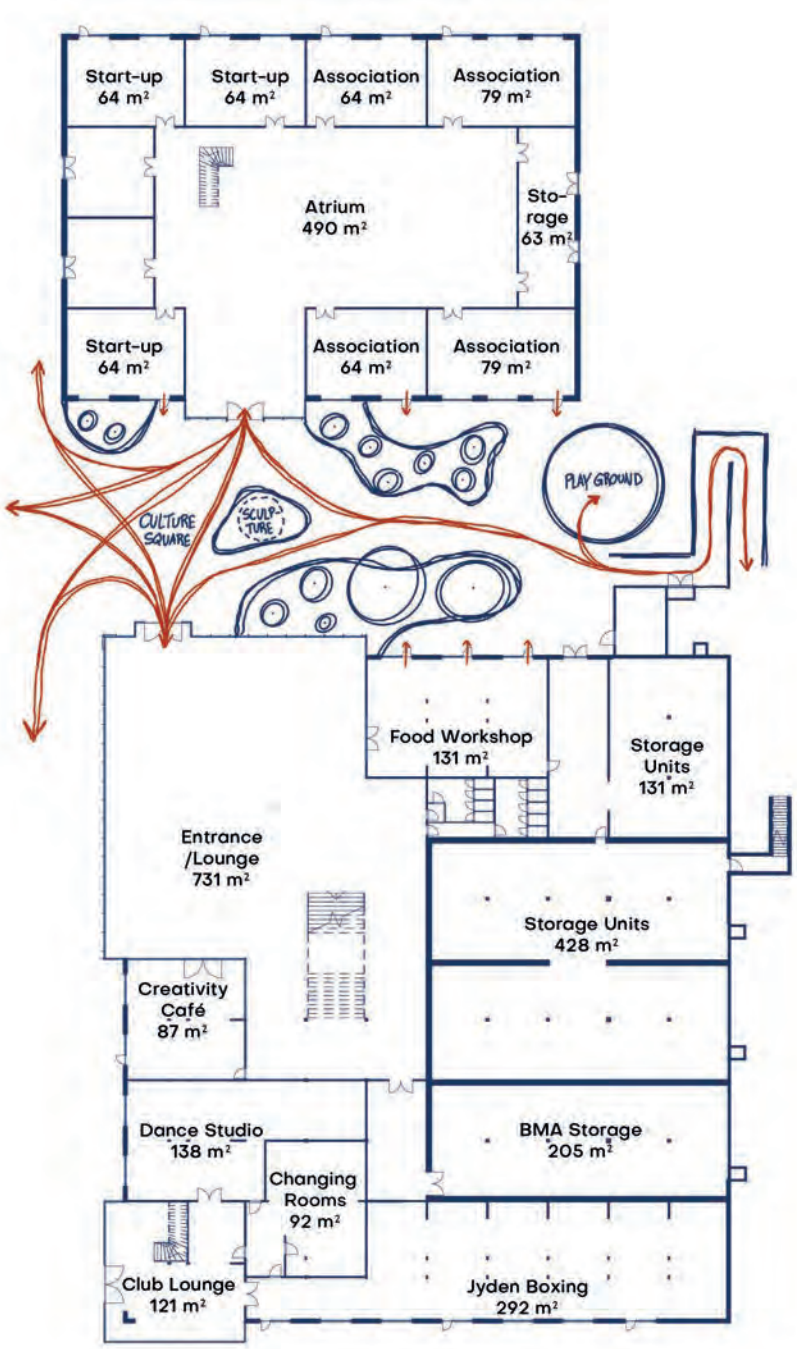
# Culture Coherence

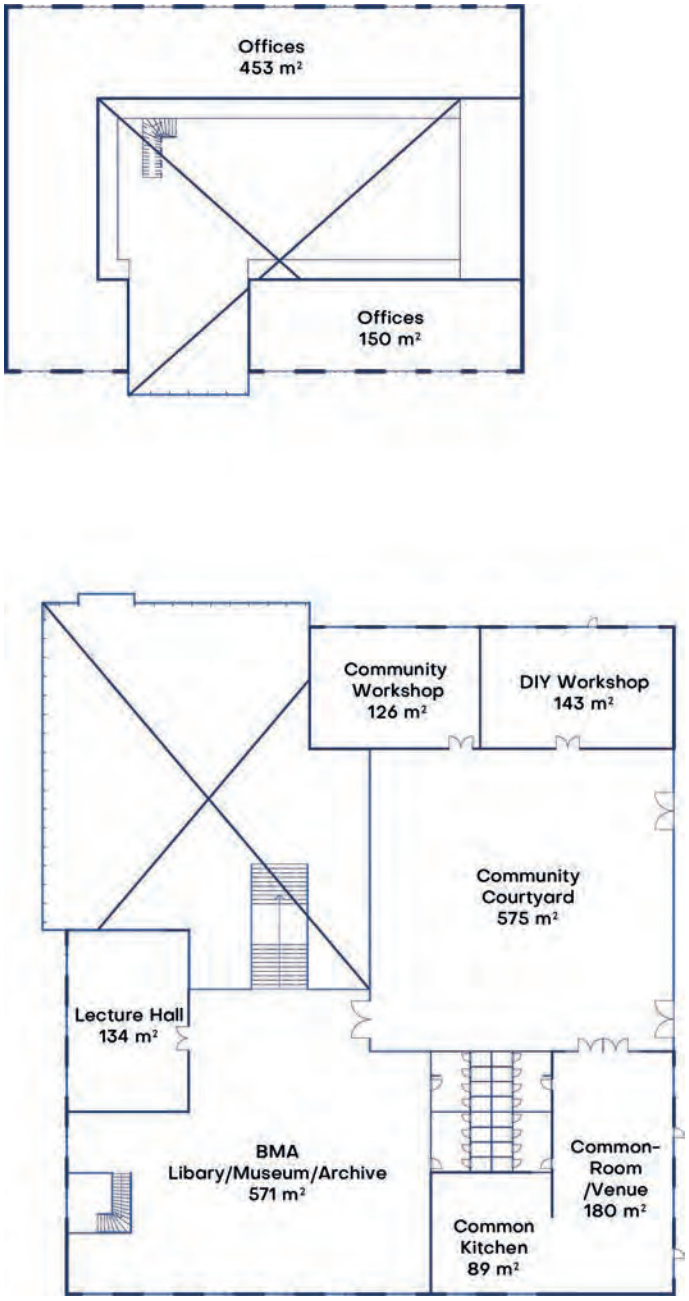


**Ill. 60** Culture Coherence

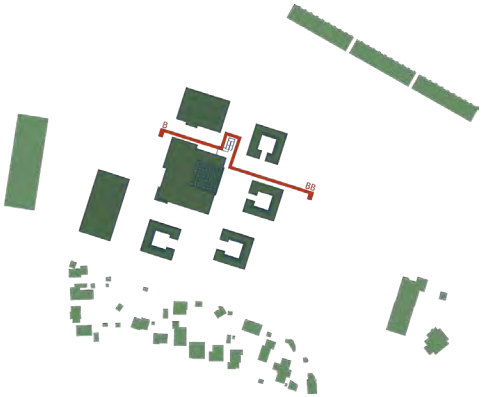
We have worked with the cultural at a conceptual level. There are two main ideas, the first is the idea of creating coherence across the two cultural buildings so that the function is reflected in what we have called the cultural square. Here we have worked with placing a hilly landscape in between to support the flow of the square. In addition, space has been given to the association rooms so that they have a small outdoor space where members can retreat.

The old main building still serves as a unifying point on the site. It offers cultural and activity purposes, as well as community spaces for cohousing.



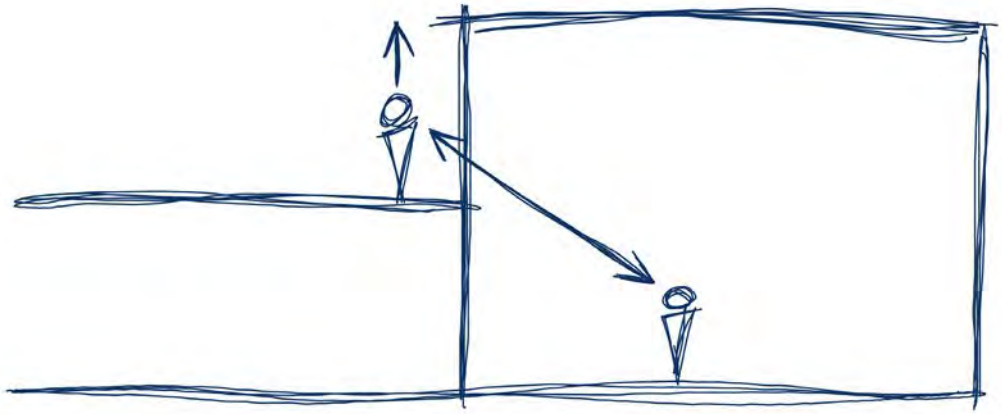




**III. 61** Cultural Center Ground floor (left) and First Floor (right), 1:600



**III. 62** Division of Culture and Cohousing Elevation, 1:250

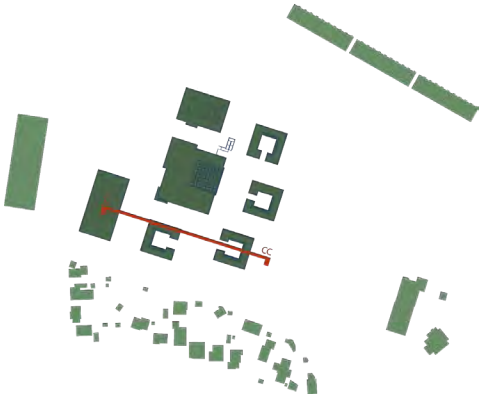
It is seen how the cohousing and the culture is divided by the characteristic level jumps. The fact that we have worked to preserve trees on the site also helps to support this division and make it clear. Furthermore, there is also a differentiation between the public and private by working with small private outdoor areas in the cohousing. To create a coherence throughout the site, an urban hilly landscape is used, which is consistent throughout the site.



**Ill. 63** Visual Connection

The second main idea is to create a visual connection inside the main building between the cultural hub and the cohousing. Furthermore, a connection is created across the two levels of the main building. This is done by creating a courtyard on the first floor for the cohousing that extends into the building and creates this visual connection between the foyer, BMA and the cohousing, as can be seen in illustration 64.

**Ill. 64** Visual Connection



Here you can see how we have worked to regulate the terrain on the site. A before scenario of the terrain can be seen in illustration 33 (page 70–71). The terrain has been pushed back towards the cohousing so that the slope is steeper down by the gymnasium to create a larger entrance to the site and to support and strengthen the connection to Østerådalen. The removed soil is filled in the cohousing area between the two buildings to level out the half level and create a greater connection in the private area.

A cut through one of the residential buildings shows the layout of some of the apartments. Here it can be see how the old entrances have been transformed into shared bicycle parking and a shed for the building.

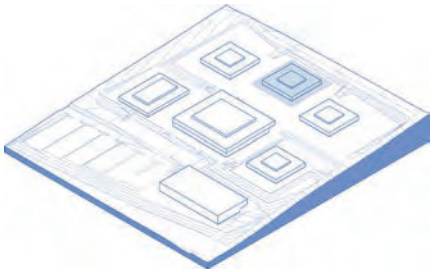
**Ill. 65** Section of Terrain Adjustment, 1:250

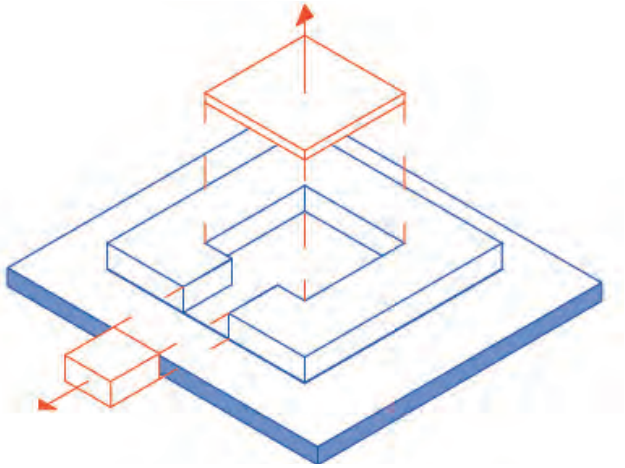
# Small Scale

Zooming further in, we come to the Small scale. This shows how we have worked with the transformation of the small buildings with classrooms and outer area to become residential. Here the concepts become verry specific, and with a focus on the very close outdoor areas.

Some general transformation principles are applied and helps to ensure a continuity in the transformation and thereby ensure the very rigid expression Byplanvejens Skole has today. The concepts are developed based on knowledge from theory and analysis.

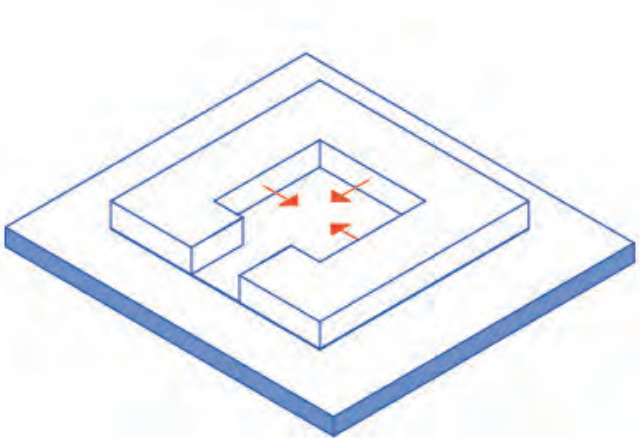
We have chosen a specific building for this example to show the exact transformation of it, as there are differences in the location and rotation of the buildings, which has an impact on the interventions. The building used is the middle one of the small buildings in the private area.





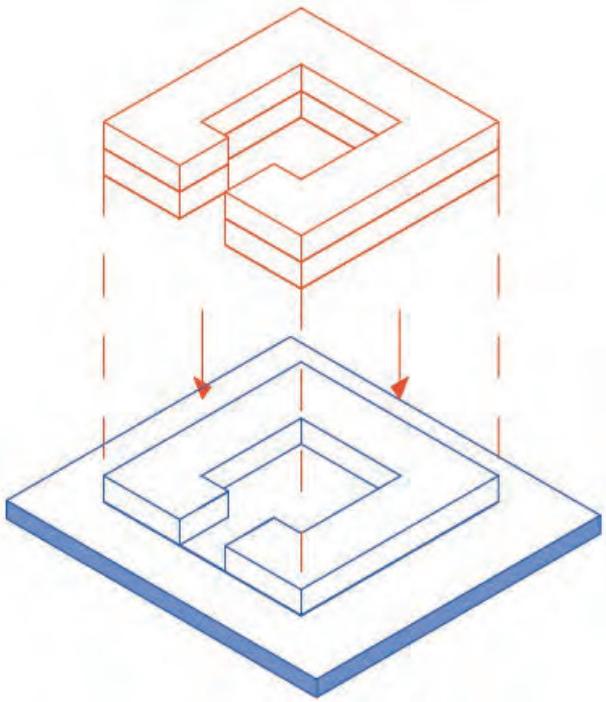
## Subtraction

To ensure good housing and living spaces, the center of the building that previously was used as a common room for students is removed. This space is turned into a courtyard for the residents. To create life and movement in it, the building is opened up towards the urban square and front doors are placed inside the courtyard.



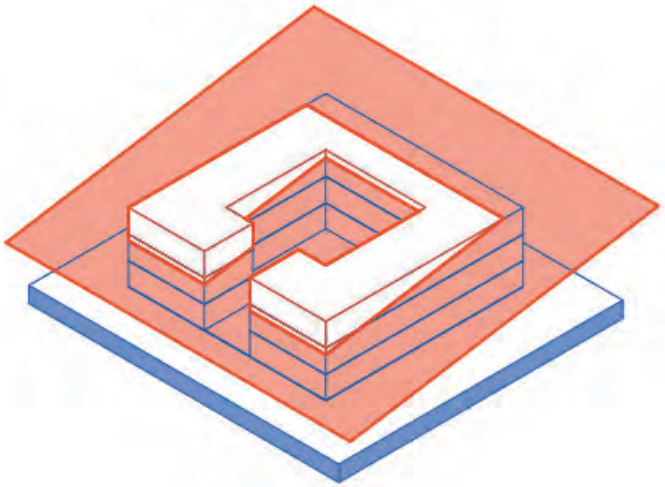
## Courtyards

By creating courtyards, we create a semi-private outdoor space for the residents of each building. We place front doors inside the courtyards to create a lively space with room for community and socializing. The courtyards will provide the opportunity to draw the private into the urban and create smaller communities within the larger.



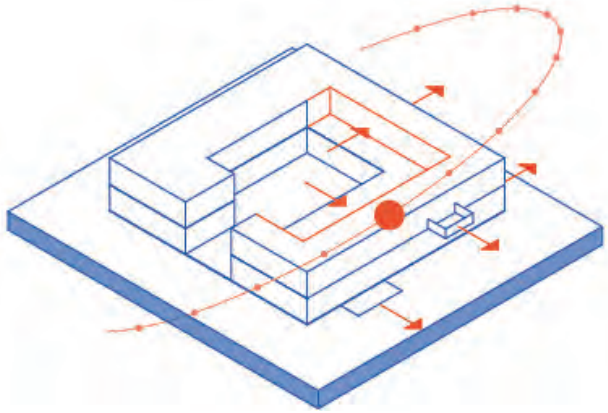
## Addition

To achieve a higher density in the private area, floors are built on top of the current buildings. They are built on top to preserve the urban spaces and divisions that exist today and thereby ensure the green expression.



## Hight- and Sightlines

To respect the city scale, we have previously identified building heights and sightlines in the context. These are respected and mean that the building can only have one new story on top, making a total of two stories.

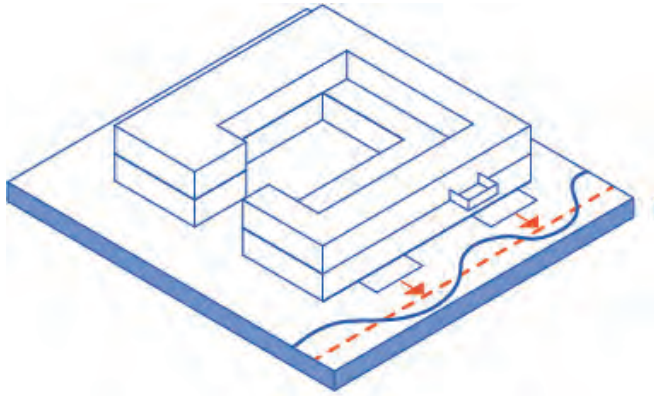


## Sun

By placing a floor on top, we risk worsening the microclimate of the courtyard. Therefore, we are working with shared balcony accesses on the first floor that push the building in and make room for more sunlight in the courtyard. These are placed against the path of the sun, which is primarily to the south.

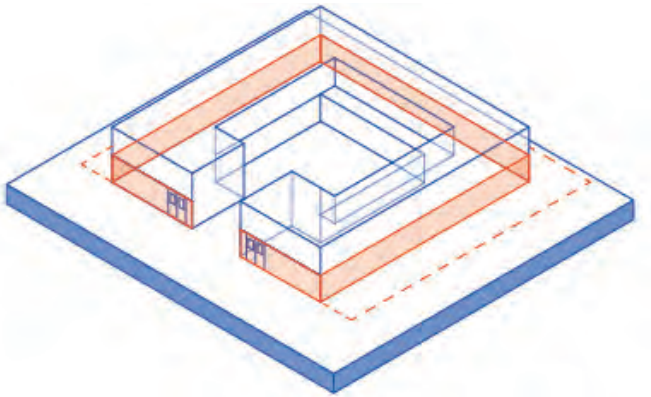
## Detailing

The detailing shows which concepts helped transform the small buildings with classrooms into apartments. Which structural elements should be preserved and which should be improved.



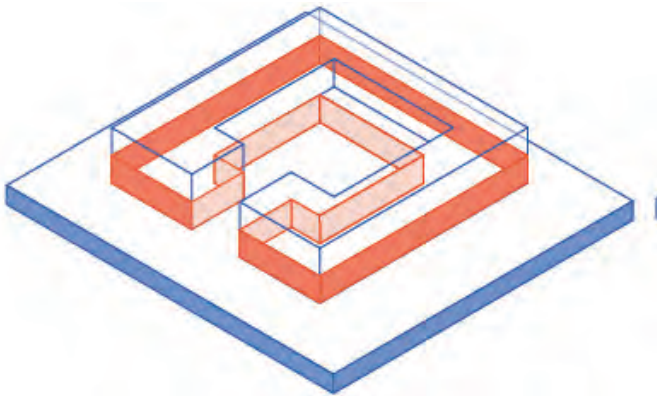
## Inside Outside Reflection

The small pathways that connect the urban functions are affected by the private spaces being brought out in the form of small terraces. This means that the pathway reflects and is shaped by where private outdoor spaces are placed.



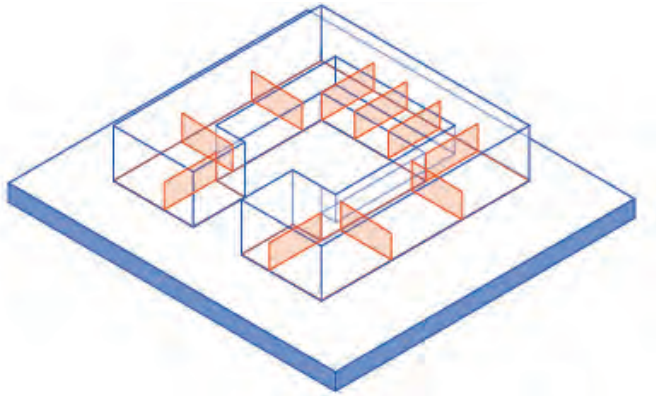
## Preserve Aggregate Facades

As previously proclaimed, the aggregate facades are very characteristic of the entire Byplanvejens Skole. Especially the facade with the former entrance and no windows to the small buildings are characteristic, which was seen on illustration 53. Therefore, we have chosen to preserve these as they are, after the intervention to open up the buildings towards each other has been made. This also means that the urban functions can only be placed against the three other facades.



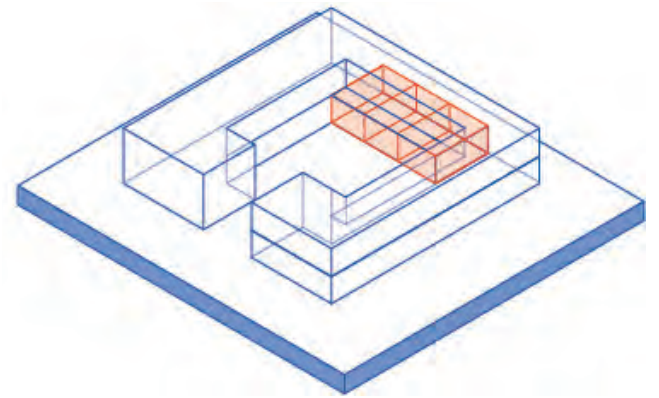
## Post Insulating

We have chosen to retrofit the buildings in different ways. In order to keep the facades as they are, we had to post insulate from the inside. The remaining facades will be insulated on the outside, as this reduces moisture problems in the construction and we also gain more square meters for living space.



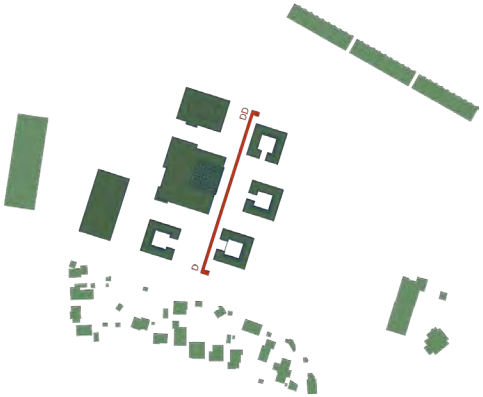
## Maintain Room Divisions

We have chosen to retain the existing room division to a large extent. This is so that you can sense the former use as a classroom and also allows us to use the load-bearing system, as this primarily consists of load-bearing walls.



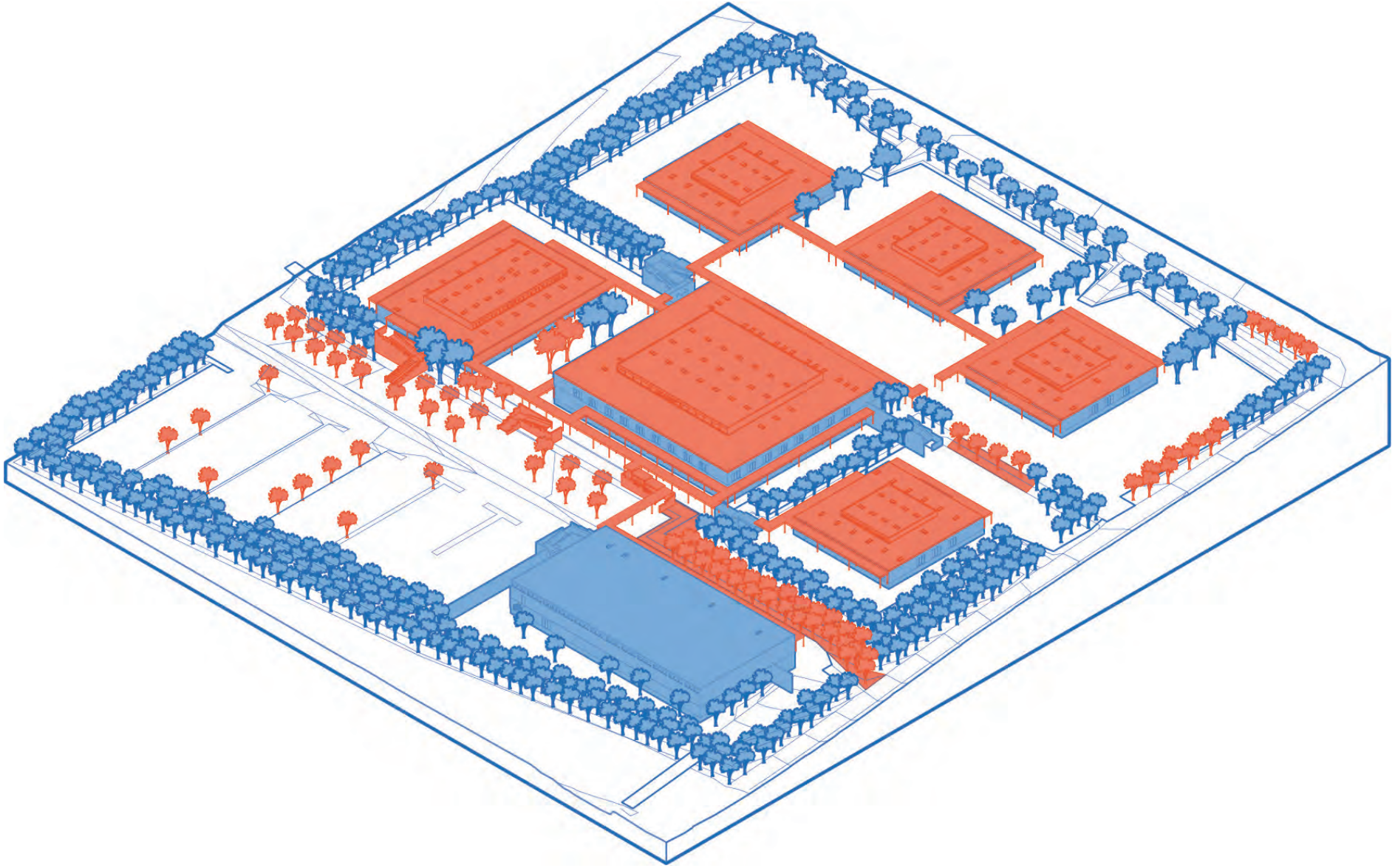
## Adaptable

In each of the small buildings there are three smaller rooms that have probably been used for other purposes than classrooms. Therefore, we see these as flexible spaces that can be added to the “classrooms” to give these apartments a larger footprint. These can vary from building to building.


D
D

It is clear how the buildings have been worked with in different ways. You can see how they are turned and opened up in different directions. Furthermore, the urban spaces created between the buildings have different character and utilization. You can also see how the new floor differs from the old one, but that a coherence is created in the placement of windows above each other and that the blue color is consistent throughout.

**Ill. 66** Elevation of the Cohousing, 1:250

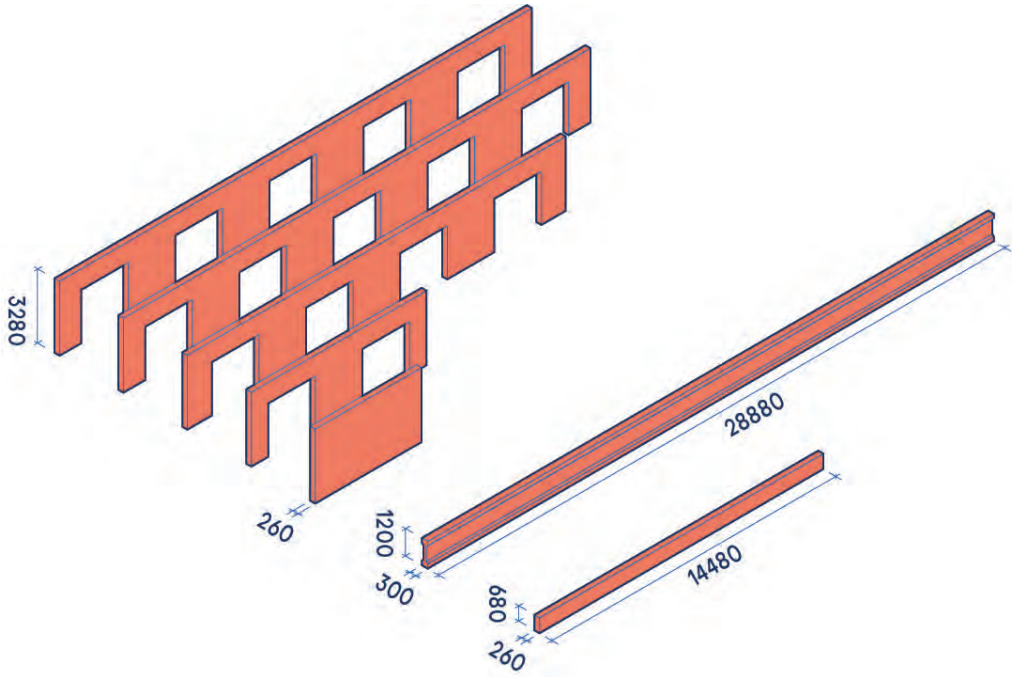


**Ill. 67** What is Preserved (blue) and what is Removed (red)

# Preserve and Remove

Since we have worked with the transformation concept of subtraction. This means that there has been a selection of which elements should be retained and which should be removed, either completely or have a new function. Illustration 67 shows what has been retained (blue) and what has been removed (red). The trees that have been removed have mainly been to make room for new functions, but work has been done to place functions in synergy with the trees on the site. What has been removed from the buildings has mainly been to make room for courtyards and entrances, as well as to create better lighting conditions inside the buildings.

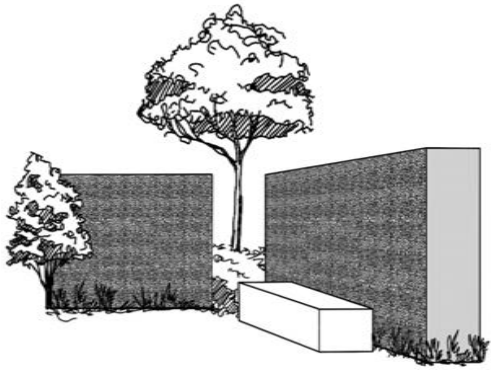
Illustration 68 shows the elements that have been reused and placed around the urban area with new purposes. There are two types of concrete beams – the short one comes from the small buildings' common rooms and there are 20 in total. The long ones come from the main building and there are 5 in total. The facade elements are the ones that have been cut away in connection with the cut-out for the courtyard, these are made in aggregate.




**Ill. 68** Materials that are Reused

## Resourceful Reuse

The recycled materials will be used in different ways in the urban spaces. The removed aggregate facades will be used for space dividers, the two kinds of beams will be used for bicycle parking, climbing play and benches. In addition, windows and doors will be replaced in all buildings and some of these will be used as orangeries.

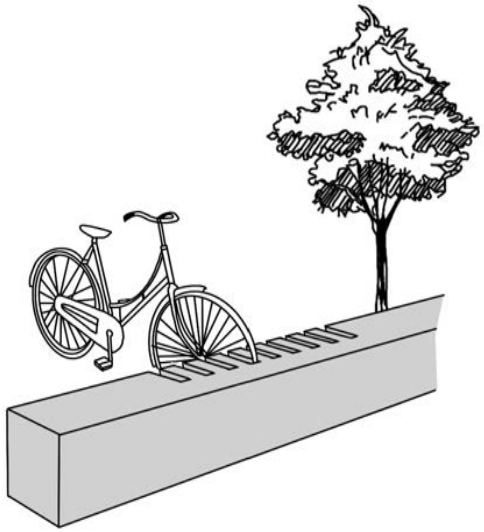


### Space Creating Elements

The space creating facade elements are cut in different sizes and placed in the sensory garden in the cohousing area. Here they are used to create smaller spaces and give the illusion of being alone as they shield longer sight lines.

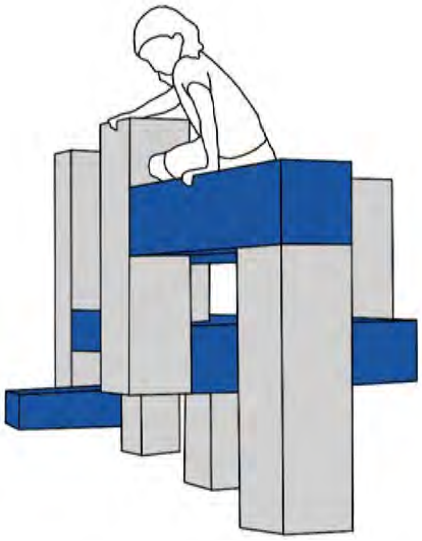
### Orangery

Two orangeries are located in the cohousing area. These are reserved for residents and can be used in the colder months for relaxation, as well as being used in connection with the herb garden and fruit orchard.



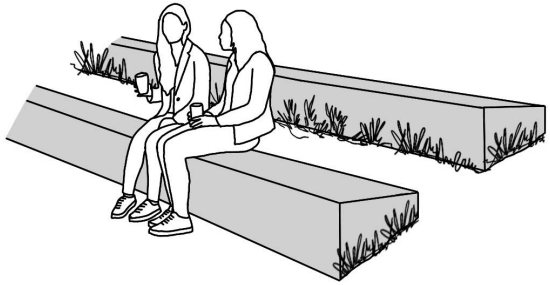
### Bicycle Parking

The bicycle parking is located around the cultural hub. This can be used both for bike parking and as benches when bikes are not parked at them.



### Climbing Fun

Some of the beams are cut into smaller pieces and assembled into a climbing frame placed in the activity square. This can be used by both children for play and adults for parkour and trai-ning.



### Benches

Some of the beams are used for benches. These are placed in the hill as audience seats at the performance area in the activity square. Here they help to support the change in level that divides the cultural area.

### Trees

In a way, some of the trees that have been preserved have also been given a new function. They help to support the division of the cultural hub and the cohouse area. Furthermore, the trees help differentiate between the history and age of the area and the new functional era.

**Ill. 69** Byplanvejens Skole Before

## Bricks

## Wood

## Concrete

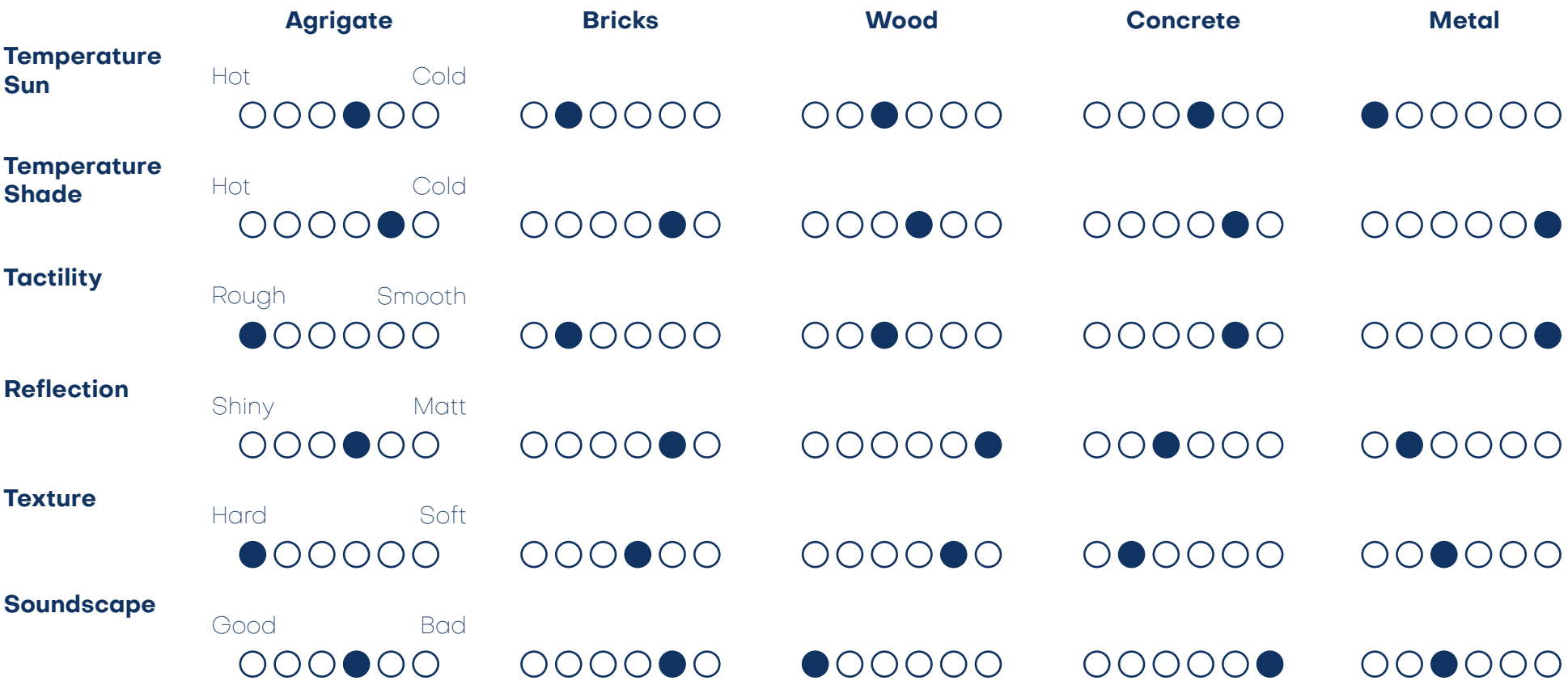
## Metal

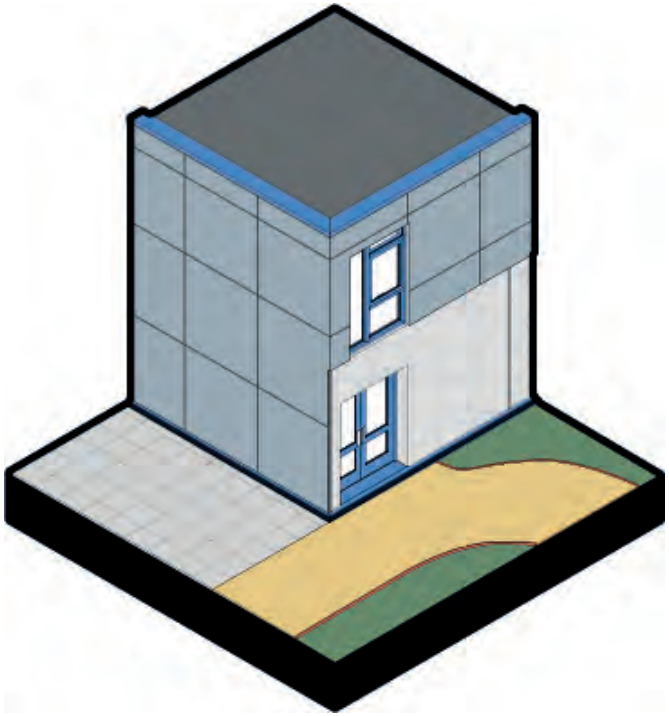
### Sun

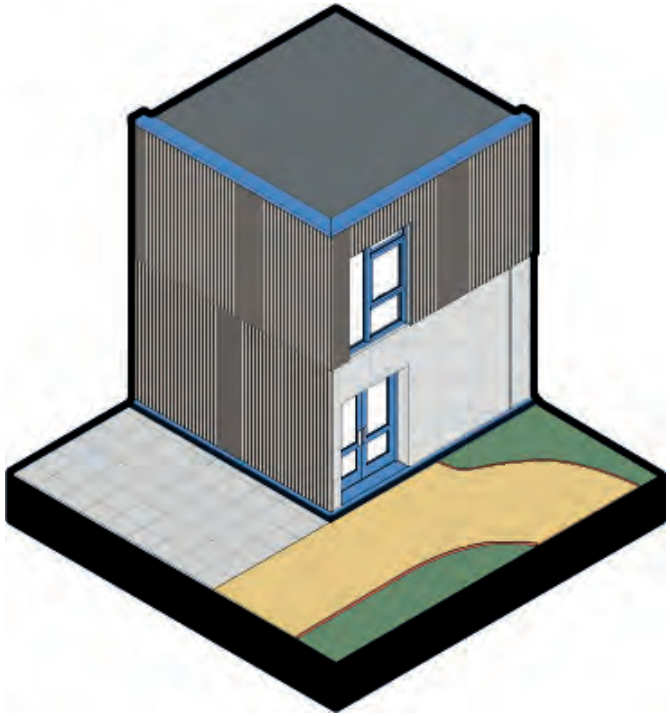
### Shade

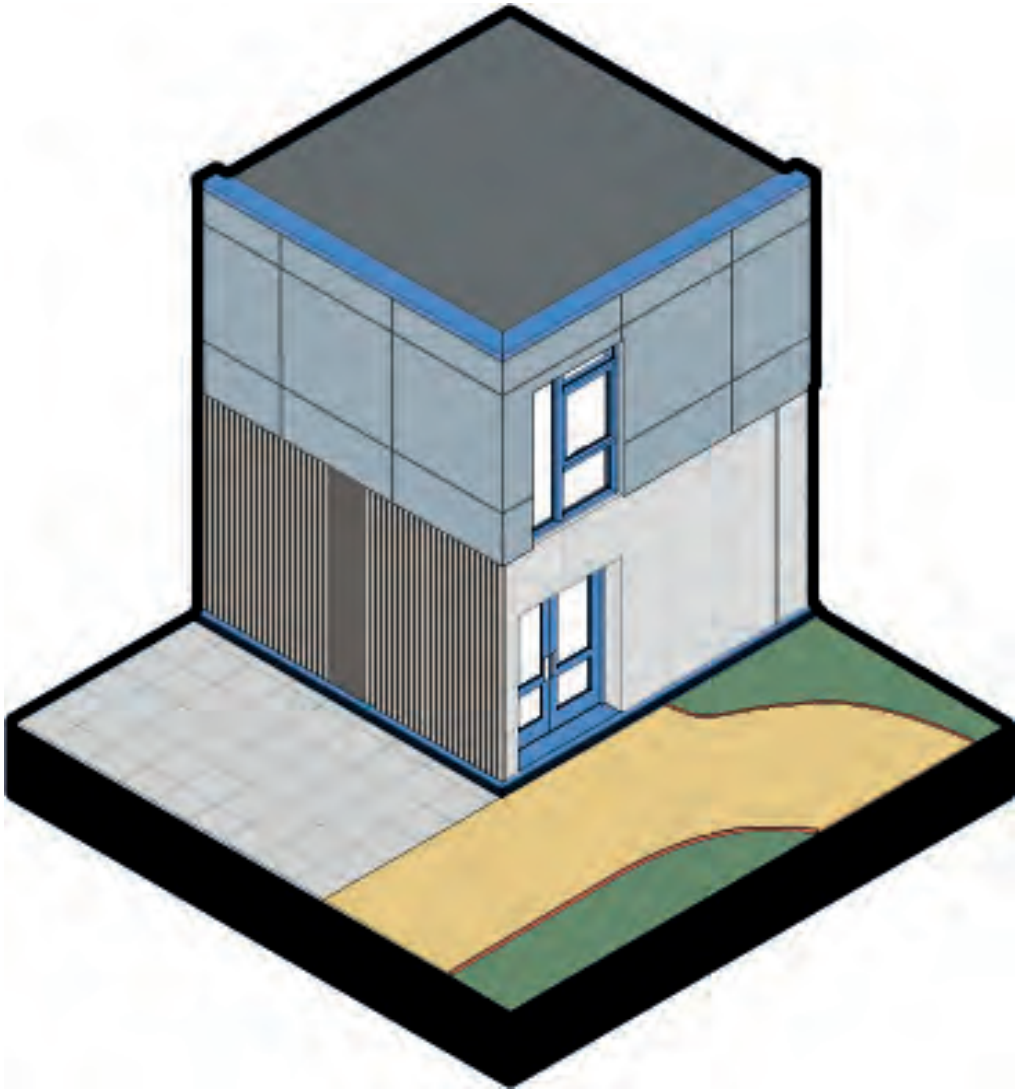
# Material Study

We have worked with addition in relation to the buildings, so we need to find a new facade material that goes well with the existing light concrete aggregate. This is materials for both around the buildings and inside the courtyards. As we want to make sure that the old facade is in focus, we choose to look at light materials in the form of brick, wood, concrete and metal. These four new materials are evaluated against the concrete aggregate and it is assessed that wood and metal complement the aggregate well in their own way. The wood contributes warmth and a good soundscape, whereas the metal contrasts with the hard and rough aggregate. Therefore, these two materials are taken forward for a study on material compositions.









## Material Composition

The two chosen materials and the existing aggregate are put together in different ways to achieve a conceptual understanding of the materials in interaction, both inside the courtyard and on the outside. We chose to go with a composition of metal sheets and aggregate on the outside of the buildings as the neutral and smooth appearance of the metal sheets brings out the texture of the aggregate. Inside the courtyards, we have chosen to incorporate the metal facade so that the entire first floor sits on top of the existing one like a metal band. As the courtyard should feel warm, inviting and homely and encourage people to stay, we chose to use wood on the facade on the ground floor. This should reflect the texture of the aggregate in the courtyard and also contrast with the metal panels.

**III. 71** The Courtyard

# Courtyard Identity

One of the biggest interventions we make is the creation of the courtyards in the cohousing area. As we have chosen to maintain the uniformity of the buildings and the blue color on the outside, we have worked to give them identity by using different colors on the inside. This means that each of the four buildings has its own color that is used for details such as doors, windows and common tables and chairs inside the courtyards. The colors chosen are green, yellow, orange and red, which were colors that were common inside the old buildings. The colors help to create a sense of belonging and identity for each of the buildings.

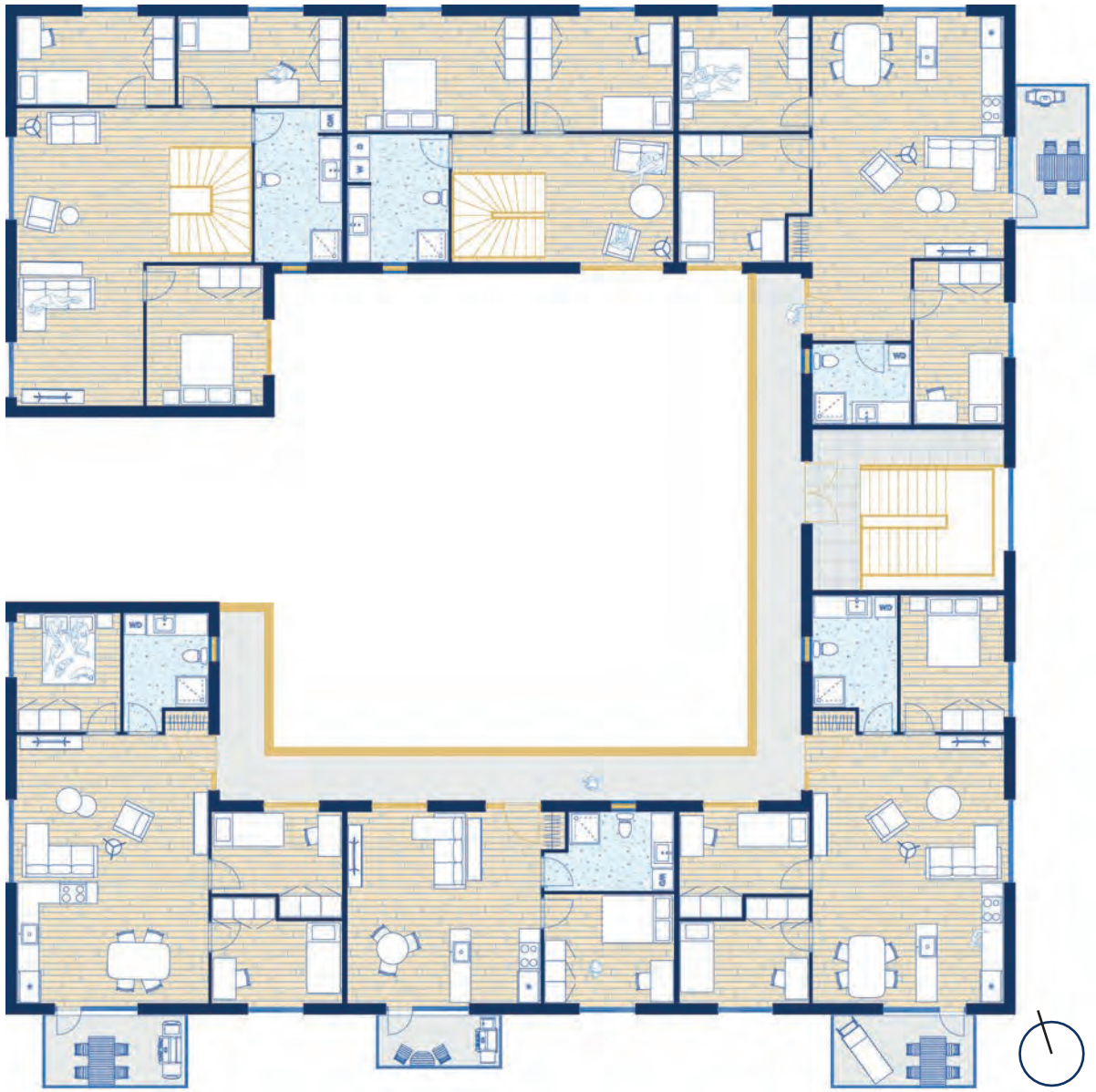
The housing units are centered around the large open-air courtyard, creating a communal and peaceful atmosphere. The courtyard brings natural light and ventilation to the surrounding units while serving as a shared social space.

There are six residential units, each features an open living and dining plan, and bedroom and bathrooms appropriate to size. Larger units even span across two stories. All apartments are fitted with either a private balcony or terrace.

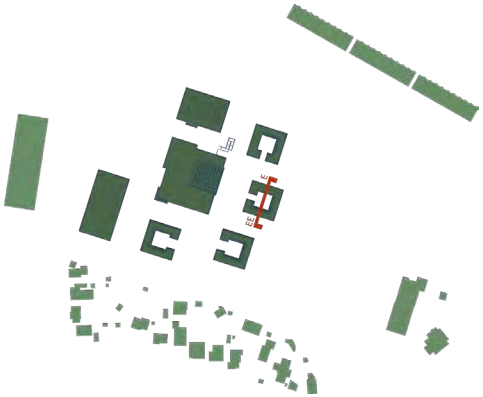
The stairwell is located inside the flexible rooms, and the shared bicycle storage in the old main entrances.

The layout supports a variety of residents, blending privacy with community-focused design.

**Ill. 72** Floor Plan, Ground Floor, 1:200

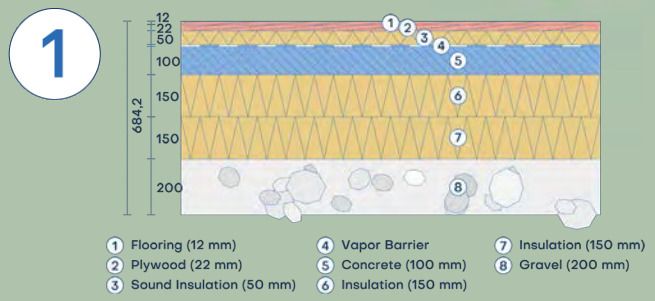


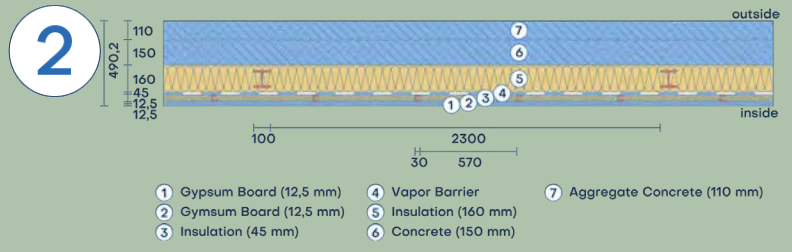
**Ill. 73** Floor Plan, First Floor, 1:200

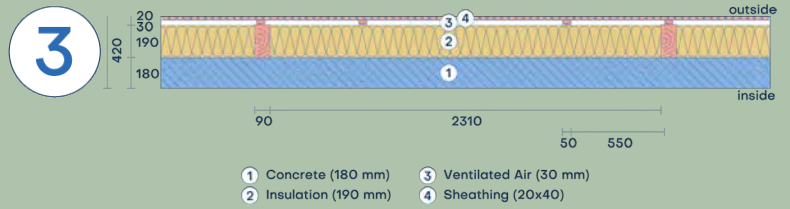


The structural system is based upon a beam and column system, which is supported by a retrofitting of a line foundation. The exterior facades are thermally retrofitted on the interior, and the courtyard facades on the exterior. Moreover, the foundation is retrofitted to a depth of 600mm (Appendix E – Construction elements).

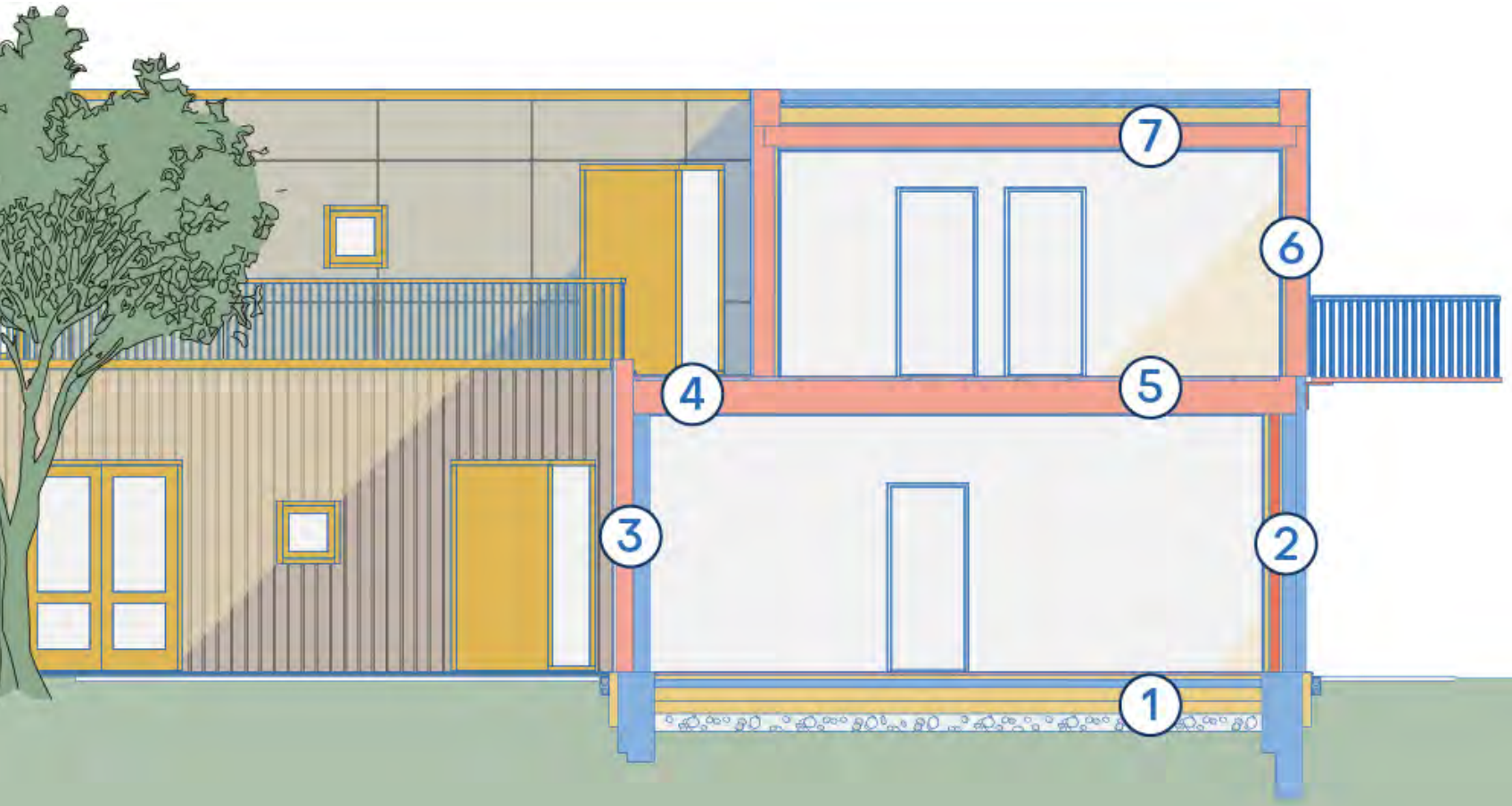




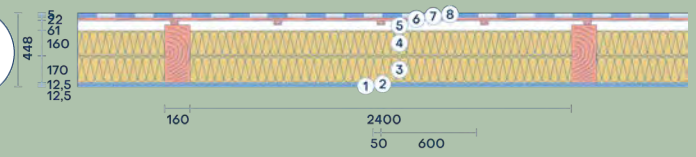




**III. 74** Construction Before and After, 1:75

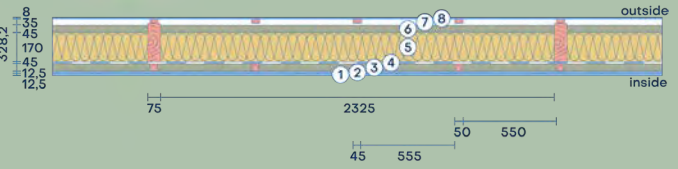



## 4



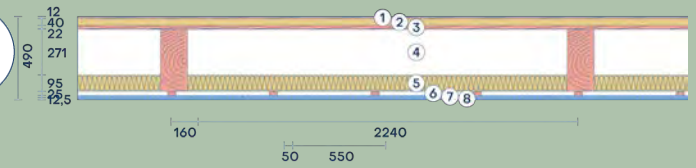

1. Gypsum Board (12,5 mm)
2. Gypsum Board (12,5 mm)
3. Insulation (170 mm)
4. Insulation (160 mm)
5. Ventilated Air (61 mm)
6. Plywood (22 mm)
7. Bitumen Bottom
8. Bitumen Top

## 6



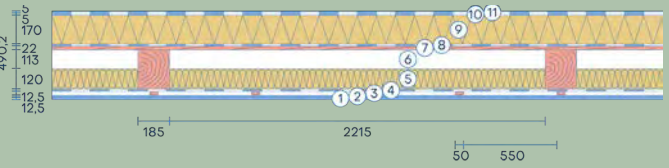

1. Gypsum Board (12,5 mm)
2. Gypsum Board (12,5 mm)
3. Insulation (45 mm)
4. Vapor Barrier
5. Insulation (170 mm)
6. Insulation (45 mm)
7. Ventilated Air (35 mm)
8. Sheathing (8 mm)

## 5




1. Flooring (12 mm)
2. Sound Insulation (40 mm)
3. Plywood (22 mm)
4. Stationary Air (271 mm)
5. Insulation (95 mm)
6. Stationary Air (25 mm)
7. Gypsum Board (12,5 mm)
8. Gypsum Board (12,5 mm)

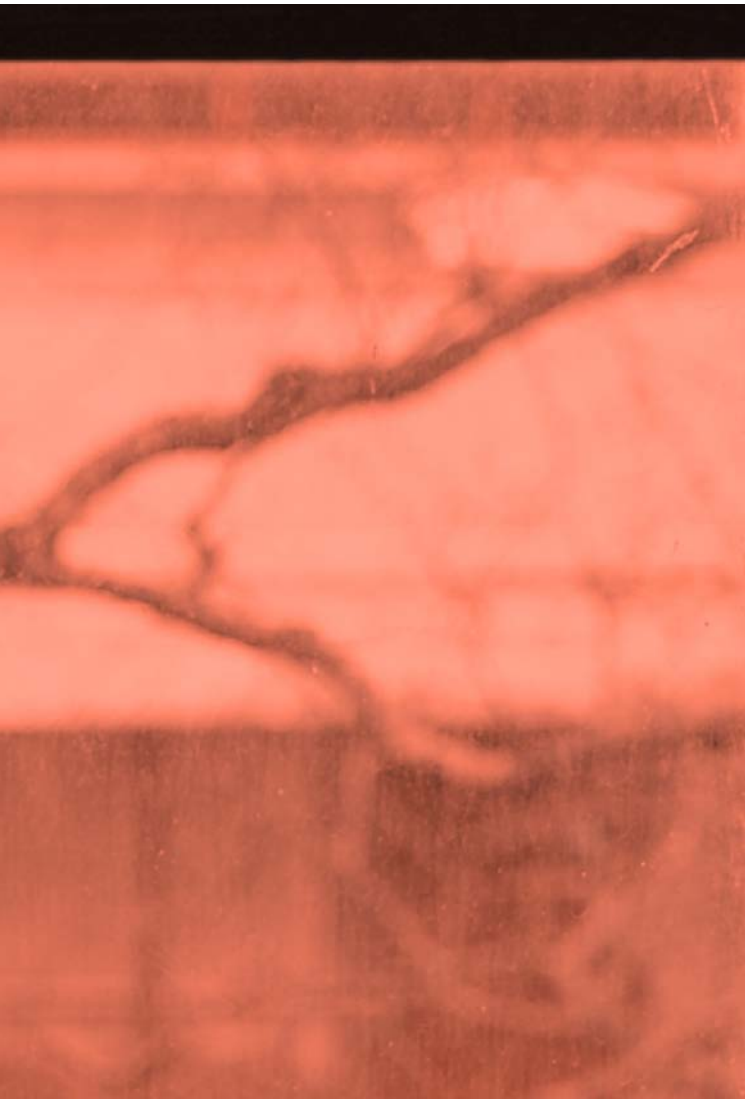
## 7




1. Gypsum Board (12,5 mm)
2. Gypsum Board (12,5 mm)
3. Stationary Air (25 mm)
4. Vapor Barrier
5. Insulation (120 mm)
6. Stationary Air (113 mm)
7. Plywood (22 mm)
8. Bitumen Bottom
9. Insulation (170 mm)
10. Bitumen Bottom
11. Bitumen Top

# EPILOGUE

In this chapter a discussion of the project will be made along with a conclusion and a reflection. Furthermore, it contains a reference and illustration list.



# 06

# Discussion

This chapter will set off by discussing the theories which we have implemented and how they contributed to the project, and our work with both sustainability, in this instance DGNB, and transformation of space identity.

## Working with Transformation Theory

Throughout our thesis, we adopted a critical and iterative approach to transformation theory. Rather than applying it as a technical intervention, we integrated it as a holistic design framework. The theory guided us in identifying architectural, historical, and social values worthy of preservation while allowing us to strategically introduce new functions and spatial logics. We wanted to move beyond a simplistic adaptive reuse and toward what Nicolai Bo Andersen describes as "transformative dialogues". A dialog where new and old architecture enter into a dynamic relationship. This was expressed through both subtraction and addition in our design of Gygia, balancing respect for the existing Byplanvejens Skole with the introduction of new public/private programs.

## Identity Theory as a Broader Disciplinary Framework

Identity theory served as an overarching concept in our work, framing the transformation in a socio-cultural context. While our engagement with it was not extensive, it allowed us to reflect on how built environments influence and are influenced by a community identity. We touched on ideas of place attachment, authenticity, and memory, but we recognize that identity theory is a vast academic field that we only introduced as a conceptual lens. Our approach was architectural rather than psychological, focusing on how spatial interventions can sustain or renew collective identity rather than analyzing the identities themselves in detail.

## Universal Design and the 8 Goals

While we did not work extensively with all eight Universal Design goals, we remained generally mindful of accessibility and inclusivity throughout the design process. Our engagement with Universal Design was primarily conceptual, informing discussions around spatial flexibility, level-free access, and sensory legibility. Of the eight goals, aspects such as Wellness and Cultural Appropriateness resonated most strongly with our transformation strategies, particularly in our efforts to preserve heritage and integrate nature to support well-being. However, the Universal Design framework was not systematically applied across the entire proposal, and its influence was more peripheral compared to our primary focus on transformation and identity theory.

## Positioning Relative to the DGNB Certification

Our project aligns well with several core principles of the DGNB certification system particularly in the categories of ecological quality, sociocultural and functional quality, and process quality. While we did not pursue a full DGNB certification framework, our transformation of Byplanvejens Skole into Gygia exemplifies many of its values, including lifecycle considerations, reuse of materials, user involvement, and accessibility.

## From Fully Public to Public/Private Space

One of the most delicate transformations involved shifting Byplanvejens Skole from a wholly public space into a hybrid public/private model. This transformation of site raised questions about accessibility, ownership, and inclusiveness, who belongs and when. Our design addresses this by trying to anchor public functions like community associations and outdoor zones near the vehicular node within the site.

# Conclusion

This thesis has explored how the transformation of a disused school building can serve as a catalyst for local identity, social cohesion, and sustainable development. Through the interdisciplinary lens of architecture and urban design, and informed by transformation theory, identity theory, and universal design principles, we developed a proposal for reclaiming Byplanvejens Skole as Gygia, a new hub for the Gug community, across community activities and cohousing opportunities.

Our approach highlights the potential of existing structures not solely as relics of the past, but as frameworks for future growth and inclusion. While we only scratched the surface of identity theory, our work demonstrates the importance of integrating theoretical, technical, and community-focused perspectives in spatial transformation projects. Gygia stands as both a physical intervention and a theoretical proposition: that architecture, when rooted in place and identity, can reknit urban fabric and revitalize community life.

# Reflection

Unlike previous assignments, this thesis was self-initiated, and no predefined brief guided us. This freedom enabled us to pursue a topic of deep personal and societal relevance, the transformation of closed schools. However, it also made the direction of the project more dynamic and uncertain at times. We had to repeatedly reassess and redirect our efforts to align with changing theoretical directions.

In previous semesters, we tackled projects of similar complexity with teams of 4–6 people. This time, being only two, we had to work more efficiently, distribute tasks differently, and rely more heavily on our complementary strengths. Therefore, efficiency and consistency of our working hours was paramount to keeping deadlines throughout the process. This same notion also resulted in the lack of development when one, or both, of us were indisposable.

Working with an existing building posed different challenges than designing on a "bare field." The preexistence of structure, memory, and urban context meant that our design had to negotiate history rather than build from anew. It required an attentiveness to constraints, but also enabled a richer, layered response grounded in real-world complexity. One strength of our transformation task was the urban context. Existing paths, functions, and social practices provided frameworks to anchor our design. This helped us navigate the complexity of programming and circulation.

This, being a joint master thesis meant that we brought different academic backgrounds to the table, one in architecture, the other in urban design. We worked extensively with bridging the scale gaps and disciplinary methods, producing a proposal that is both architecturally grounded and urbanistically strategic. A recurring challenge was operating across scales, from urban to architectural to detail. While we tried to apply scale-appropriate design principles, our processing of the largest and smallest scales remained less developed than our work at the intermediate scale. Future projects could benefit from more time or team members to ensure depth across all levels.

# References


Aalborgkommuneplan (2013). Det åbne land – Kommuneplan. [online]
Available at: http://www.aalborgkommuneplan.dk/Hovedstruktur/H_019_4
[Accessed May 9 th 2025].

Aalborg kommune. (2024). Fordebat for Kommuneplantillæg 4.084 Byplanvejens Skole. [online]
Available at: https://www.aalborg.dk/hoering-og-afgoerelser/detaljer?hid=198F7AB8-D602-4A98-A12C-80867F8AA5C5
[Accessed March 19 th 2025].

Aalborg Kommune. (2023a). Nyt skoleår, nyt kapitel: fire skoler bliver til to i Aalborg Kommune. [online]
Available at: https://presscloud.com/csp/vocast/message.csp?KEY=338729995913582
[Accessed February 26th 2025]

Aalborg Kommune. (2023b). Nøgletal og statistik. [online]
Available at: https://www.aalborg.dk/om-kommunen/oekonomi-og-statistik/noegletal-og-statistik
[Accessed February 26th 2025]

Aalborg Kommune (2016). Grønlandskvarteret – Kommuneplan. [online] Aalborgkommuneplan.dk.
Available at: http://www.aalborgkommuneplan.dk/kommuneplanrammer/oest-aalborg/groenlandskvarteret/default.aspx
[Accessed February 26th 2025]

Aalborg kommune (2005). Østerådalen Nord. [Online]
Available at: https://www.fredninger.dk/wp-content/uploads/2016/11/OsteraaDal_Nord_Aalborg.pdf
[Accessed March 7th 2025]

Aalborg Kommune. (n.d.a). Samråd. [online]
Available at: https://www.aalborg.dk/politik-og-indflydelse/bliv-hoert-og-faa-indflydelse/samraad
[Accessed March 11th 2025].

Aalborg Kommune. (n.d.b). Indkomne kommentarer. [online] Niras.dk.
Available at: https://aalborgkommune.viewer.dkplan.niras.dk/plan/18#/196328
[Accessed March 11th 2025].

Andersen, A. A. (2018a). Folkeskolen. [online] Faktalink.
Available at: https://faktalink.dk/emner/folkeskolen
[Accessed February 27th 2025]

Andersen, A. A. (2018b ). Urbanisering. [online] Faktalink.
Available at: https://faktalink.dk/emner/urbanisering
[Accessed February 27th 2025]

Andersen, N.B. (2015a). 'Arkitekturens transformation – fem metoder'. i C Harlang and A Algreen-Petersen (red), Om bygningskulturens transformation. GEKKO Publishing, Kbh., s. 72-87.

Andersen, N.B. (2015b). 'Forbindelser'. i C Harlang and A Algreen-Petersen (red), Om bygningskulturens transformation. GEKKO Publishing, Kbh., s. 266-275.

Andersen, N. B. (2015c), 'Fortsættelser '. i C Harlang and A Algreen-Petersen (red), Om bygningskulturens transformation. GEKKO Publishing, Kbh., s. 252-265.

Andersen, N.B. (2015d). Transformation og restaurering. i C Harlang & A Algreen-Petersen (red), Om bygningskulturens transformation. GEKKO Publishing, Kbh., s. 30-39.

Bock, L. N. (2011). Transformation. Arkitektur DK, (3), 4–7.

Brun, J. (n.d.). Gug – Ikke kun en forstad. [online] Gug Boldklub.
Available at: http://www.gugboldklub.dk/info/gug-by
[Accessed February 24 th 2025]

Bygherreforeningen (2025). Bygherrens arbejde med FN's verdensmål. [online]
Available at: https://bygherreforeningen.dk/viden/baeredygtighed/bygherrens-arbejde-med-fns-verdensmaal/#brug
[Accessed February 27 th 2025]

Cambridge Dictionary (2019). TRANSFORMATION | meaning in the Cambridge English Dictionary. [online] Cambridge.org.
Available at: https://dictionary.cambridge.org/dictionary/english/transformation.
[Accessed May 19 th 2025].

Christiansen, E. and Kristensen, U. (2017). Gug – Trap Danmark | Lex. [online]
Available at: https://trap.lex.dk/Gug
[Accessed May 9 th 2025].

Christiansen, L. B., Klein-Wengel, T. T., Koch, S., Høyer-Kruse, J. and Schipperijn, J. (2023). Recreational walking and perceived environmental qualities: a national map-based survey in Denmark. International Journal of Health Geographics. [Online]
Available at: doi:https://doi.org/10.1186/s12942-023-00339-2
[Accessed March 6 th 2025]

Civilstyrelsen (n.d.). [online] Hoeringsportalen.dk.
Available at: https://hoeringsportalen.dk/
[Accessed March 11th 2025].

Climate ADAPT (n.d.). Thermal Comfort Indices - Universal Thermal Climate Index, 1979-2020 — English. [online] climate-adapt.eea.europa.eu.
Available at: https://climate-adapt.eea.europa.eu/en/metadata/indicators/thermal-comfort-indices-universal-thermal-climate-index-1979-2019
[Accessed February 26th 2025]

Conzoom (n.d.). The 9 main groups and 39 conzoom types. [online]
Available at: https://www.conzoom.dk/en/denmark/segments
[Accessed February 24th 2025]

DAC. (n.d.). Forskellige skoletyper. [online]
Available at: https://dac.dk/viden/artikler/forskellige-skoletyper/
[Accessed February 28th 2025]

Danmarks Statistik (n.d.). Fertilitet. [online] www.dst.dk.
Available at: https://www.dst.dk/da/Statistik/emner/borgere/befolkning/fertilitet
[Accessed February 27th 2025]

Designing buildings (n.d.). Building transformation: concepts and definitions. [online]
Available at: https://www.designingbuildings.co.uk/wiki/Building_transformation:_concepts_and_definitions
[Accessed February 21st 2025]

Dissing+Weitling. (2022). Guide to Universal Design - A checklist to promote inclusion into the built environment. [online] Available at: https://issuu.com/dissingweitling/docs/dw_guidetouniversaldesign_uk
[Accessed March 11th 2025].

Dreyers Fond & Arkitektforeningen (2024). De forhåndværende søm. [Online]
Available at: Transformationspublikation-De-forhaandendevaerende-soem-.pdf
[Accessed March 13th 2025].

Eybye, B. T. (2020) Maltfabrikken: Hele historien. [online]
Available at: https://arkitektforeningen.dk/arkitekten/maltfabrikken-hele-historien/.
[Accessed April 11th 2025].

Geomatic (n.d.). Consumer Insights. [online] Geomatic.dk.
Available at: https://www.geomatic.dk/services/consumer-insights
[Accessed March 11th 2025].

Grangaard, S. (2020). Maltfabrikken – Rumsans. [online]
Available at: https://www.rumsans.dk/artikler/maltfabrikkens-udearealer
[Accessed March 31st 2025].

Grangaard, S. (2022). Introduktion: De otte mål i praksis – Rumsans. [online]
Available at: https://www.rumsans.dk/artikler/intro-otte-mal
[Accessed April 1 st 2025].

Grangaard, S., Lygum, V. L. and Bredmose, A. (2025). Synlig løfteplatform i eksisterende bygninger – Rumsans. [online]
Available at: https://www.rumsans.dk/artikler/lofteplatform-i-eksisterende-bygninger
[Accessed March 31st 2025].

Gug-Sønder Tranders Lokalhistoriske Arkiv (2007). Årbog 2007. [online] Gug-Sønder Tranders Lokalhistoriske Arkiv, p.2.
Available at: http://www.gugsoendertranders.dk/udgivelser/2007.pdf
[Accessed February 26th 2025]

Hodge, S. G. (2025). Transformation og den nye generation af arkitekter. [online]
Available at: https://arkitektforeningen.dk/kalender/transformation-transformation/
[Accessed April 16 th 2025]

Jensen, V.E. (2009). Gug Kirke gennem 800 år. In: Årbog 2009. [online] Gug-Sønder Tranders Lokalhistoriske Arkiv.
Available at: http://www.gugsoendertranders.dk/udgivelser/2009.pdf
[Accessed February 26th 2025]

Justitsministeriet (n.d.). 7. Offentlig høring | Lovkvalitet. [online] Lovkvalitet.dk.
Available at: https://lovkvalitet.dk/vejledning-om-administrative-forskrifter-2/7-offentlig-hoering/
[Accessed March 11th 2025].

Knudstrup, M.-A. (2004). Integrated design Process in Problem-Based learning – Integrated Design Process in PBL. In: The Aalborg PBL Model: Progress, Diversity and Challenges. Aalborg: Aalborg University Press.

Mst. (n.d.). Støjgrænser. [online]
Available at: https://mst.dk/erhverv/rent-miljoe-og-sikker-forsyning/stoej/stoejgraenser
[Accessed February 28th 2025]

Pedersen, H.M. (2024). Rapport kommer som bombe: Mere end hver anden skole skal lukke. [online] TV2 Nord.
Available at: https://www.tv2nord.dk/frederikshavn/mere-end-hver-anden-skole-skal-lukke
[Accessed February 27th 2025]

Pedersen, P.B. (1998). Træk af Gug skoles historie. In: Årbog 1998. [online] Gug-Sønder Tranders Lokalhistoriske Arkiv, p 3–12.
Available at: http://www.gugsoendertranders.dk/udgivelser/1998.pdf
[Accessed February 26th 2025]

Praksis arkitekter. (2021). Maltfabrikken, Ebeltoft | Praksis Arkitekter. [online]
Available at: https://praksisarkitekter.dk/maltfabrikken-ebeltoft.
[Accessed April 24th 2025]

Proshansky, H.M. (1978). The City and Self-Identity. Environment and Behavior, [online] 10(2), pp.147–169.

Realdania. (n.d.). Maltfabrikken i Ebeltoft. [online]
Available at: https://realdania.dk/projekter/maltfabrikken-i-ebeltoft.
[Accessed April 24th 2025]

Science Direct (n.d.). Place Identity – an overview | ScienceDirect Topics. [online]
Available at: https://www.sciencedirect.com/topics/social-sciences/place-identity.
[Accessed May 18th 2025]

Seamon, D. and Sowers, J. (2008). Place and Placelessness, Edward Relph. [online] ResearchGate.
Available at: https://www.researchgate.net/publication/251484582_Place_and_Placelessness_Edward_Relph.
[Accessed May 18th 2025]

Stanek, H. (2024). Skolelukninger 2024 – kommune for kommune. [Online]
Available at: Skolelukninger 2024 – kommune for kommune
[Accessed February 12th 2025]

Steinfeld, Edward, and Jordana Maisel. Universal Design : Creating Inclusive Environments. Hoboken, John Wiley & Sons, Inc, 2012.

Styrelsen for IT og læring (2025). Institutionsregisteret [CSV-format of 01/01/2025]
[Accessed February 26th 2025]

Sørensen, H.H. (2011). Degne og Substitutter, Skoleholdere og Lærere. Om skole og undervisning i Sdr. Tranders. In: Årbog 2011. [online]
Gug-Sønder Tranders Lokalhistoriske Arkiv.
Available at: http://www.gugsoendertranders.dk/udgivelser/2011.pdf
[Accessed February 26th 2025]

Sørensen, S.P. (2017). De største provinsbyer er groet stærkere end København. [online] momentum.
Available at: https://www.kl.dk/momentum/arkiv/2017/12-de-stoerste-provinsbyer-er-groet-staerkere-end-koebenhavn
[Accessed February 27th 2025]

Tobiasen, K.S. (2023). Skoler lukker på stribe: Derfor er landsdelen særlig hårdt ramt. [online] TV MIDTVEST.
Available at: https://www.tvmidtvest.dk/midt-og-vestjylland/skoler-lukker-paa-stribe-derfor-er-landsdelen-saerlig-haardt-ramt
[Accessed February 27th 2025]

VMB. (n.d.). Bygherre Nymalt. [online]
Available at: https://vmb-arkitekter.dk/maltfabrikken/?_gl=1
[Accessed April 24th 2025]

# Illustrations

AALBORG UNIVERSITET

# THESIS TITLE PAGE

This form must be submitted for all theses written in programs under the Study Board of Architecture and Design, and it should be placed at the beginning of the appendix section of the assignment.

A printed copy of the form must be submitted along with the printed copy of the thesis.

The information given in this form must also be available in PURE.

(All fields must be filled out)

| |
|---|
| **Program: Architecture, Master of Science (MSc) in Engineering and Urban Design, Master of Science (MSc) in Engineering**<br>**Architecture ☒ Industrial Design ☐ Urban Design ☒** |
| **This thesis was written by (full name):** |
| **Jeppe Majland Skousbøll** |
| **Laura Krøgh Christensen** |
| |
| **Title of the thesis: Beyond the Bell**<br>**Reclaiming Closed Public Schools for Local Communities – Reactivating Byplanvejens Skole through Transformative Design Strategies and Identity Theory** |
| **Supervisor´s name:**<br>**Tenna Doktor Olsen Tvedebrink**<br>**Tina Vestermann Olsen** |
| **Submission date/year:**<br>02/06/2025 |
| **Is the project confidential?**<br>**Yes ☐ No ☒** |
| **External collaboration***<br>**Yes ☒ No ☐** |
| **External collaboration partner (name of company/organization):**<br>**Aalborg Kommune, By og Land** |
| **Contact at external collaboration partner (title, name og email):**<br><br>**Landinspektør, Anette Kümpel**<br>**anette.kumpel@aalborg.dk** |

***What is an external collaboration? Read more here.***