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Inside the Jury-Room:

A Report on the Theory and Practice of Selecting of a Winning Design

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Inside the Jury-Room: A Report on the Theory and Practice of Selecting a Winning Design

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Abstract

This report discusses and theorizes the selection of winners in two architectural competitions held by the City of Norrköping in a format known in Sweden as “design developer competitions.” The City organized the competitions in cooperation with Architects Sweden (a trade union and professional organization) and researchers affiliated with Chalmers University of Technology and Halmstad University. The first was an invited competition that included four design teams selected after prequalification by the organizer. The second was an open competition among six design teams. In both, the public organizer sought design proposals with climate- and energy-smart architecture, flexible layouts, and affordable costs. To achieve these objectives, the competitions were intended to serve as professional laboratories and experimental arenas that would support creativity and new thinking in architecture and construction.

The aim of this is to critically reflect and theorize about how qualified jurors have succeeded in identifying the best design solutions in the two Norrköping competitions. Through a close reading of transcribed field notes from meetings inside the jury room, the authors propose a judging theory that shows how professional jurors choose winning designs. Some of the fundamental dilemmas that confront jurors are highlighted. The idea behind this theorizing is that professionals making qualified assessments must go through certain critical steps for ethical reasons. In this model, finding the best solution is influenced by four factors: (a) context and policy, (b) design proposals and competition site, (c) judging process and competition program, and (d) selection of the winner in the jury report. The theorizing describes and explains how professionals act in fulfilling their assignment of identifying a winner. The theory represents a model of general interest for jury work in architecture and urban design competitions.

Key words:

Design developer competition, judging proposals, winning design, finding the best solution.

INTRODUCTION

This report presents findings from an investigation inside jury rooms of how winners were selected in two design developer competitions, a special form of architectural competition developed in Sweden. The modern architectural competition has developed from a tool for education into a professional practice and a field for research. Prior to the design developer competition, there was a long history of architectural competitions in Europe, starting in the eighteenth century in the design studios of the French Royal Academy of Architecture. By 1763, competitions were being used in training the school's young designers in the academic ethos of architecture. According to Bergdoll (1989), the academy was dedicated to debating and judging students' competition entries. With the French Revolution came the first "free" competition in 1793, which was open to anyone qualified (Wearn, 1996). In the mid-nineteenth century, the architectural competition became a professional practice in the growing industrial society. To compete for assignments became important. The competition was seen as a democratic institution in a market economy (Tostrup, 1999), and winning designs were expected to express the new era.

Varied competition formats gradually stabilized around generally accepted rules supervised by the professional associations of architects in Europe. These required there be (a) a program describing the task and its condition, (b) designers producing proposals, and (c) jurors judging the submissions. The selection of winners and financial compensation for participating designers are issues that are still being debated today. Now a hundred years later, architectural competitions have become a topic of research at universities. The first thesis on competitions in architecture and urban design was published in the Nordic countries in the 1980s. Also, in 1980s municipalities in Sweden began holding design developer competitions. This format is a product of deregulation and expanding market thinking in the construction industry; however, private companies need access to land for construction, and municipalities are huge landowners in Sweden. The design developer format is controlled locally by municipalities, and so far there are no national guidelines or standards approved by the participating companies because of deregulation. As a result, this competition format has taken on multiple faces and is widely varied in execution.

Two design developer competitions were held by the City of Norrköping in 2022 as a part of an R&D project financed by Vinnova in search of future-oriented design solutions to the housing challenges of tomorrow.¹² A growing population, now 145,000, is driving plans for new housing. Two competition formats were used: invited competition and open competition. The invited competition included four design teams selected after invitation and prequalification.³ The open competition had six competing design teams.⁴ Thus, jurors had to evaluate ten proposals in all and select a winner in each competition. This paper focuses on how the jury members examined the competition proposals, ranked their qualities, weighed the criteria in the program, and motivated their findings in a jury report.

The R&D project is a joint venture between a *public authority* (the City of Norrköping as organizer of the competitions), *academia* (research support from Chalmers University of Technology and the University of Halmstad), and the *private sector* (design teams made up of architects, engineers, and developer/builders). The competitions were intended to serve as professional laboratories and experimental arenas to support creativity and new thinking in architecture and construction. In the two competitions in Norrköping, the organizer sought multidisciplinary design teams to address complex and future-oriented challenges. The global objective was to promote proposals with the following characteristics: (a) provide housing of high architectural quality that fits in well on the site; (b) produce more renewable energy than it uses; (c) reduce CO₂ emissions by 40 percent compared to regular

housing; (d) support circular resource management in architecture and construction; (e) support social sustainability through flexible-plan apartments that meet a diversity of needs and households that grow and shrink over time; (f) affordable to rent or own; (g) offer housing qualities, functionality, and experiences of beauty in everyday life; and (h) address challenges facing the local community through creativity and new thinking in design, construction, and housing management.

The organizer specified the task in two competition programs that included descriptions of the purpose, competition sites, judging criteria and jurors, delivery requirements, and information about the detailed plans for development. These programs were produced by the municipality in collaboration with Chalmers University of Technology, Halmstad University, and Architects Sweden (a trade union and professional organization for architects and urban planners). The two programs and their conditions were approved by Architects Sweden. Thus, the competitions may be seen as a combination of professional practice and research expertise from scholars who specialize in competitions, housing, and construction management. The researchers involved (Braide, Koch, and Rönn) participated actively in developing the programs for the two design developer competitions.

The municipality was seeking architecture that would provide flexible apartment layouts, affordable housing, energy-positive solutions, significant reduction in CO₂ emissions, circular resource management, and innovation. One motive behind the competition was to test how CO₂ emissions could be reduced through early steering in design and construction. According to the Swedish National Board of Housing, Building and Planning, the construction and real estate industry in Sweden is responsible for 21% of the total emissions of greenhouse gases.⁵ The average level of CO₂ emissions for residential buildings in Sweden has been set at 318 kg CO₂e/m² GFA (gross floor area) for the construction of multifamily residential buildings in Modules A1–A5 in Sweden (Malmqvist et al, 2021). The objective in the competitions was a 40% reduction, which translates to maximum emission of 191 kg CO₂e/m² GFA in the design proposals. Together with the energy-positive requirement, emissions reduction was a major reason behind the search for multidisciplinary design teams that could find good solutions to “wicked” design problems (Rittel & Webber, 1973). The R&D project addresses the need for climate-smart architecture, flexible apartments (Braide, 2023), socially sustainable housing (Braide, 2019), and innovation. Flexibility was identified as a design strategy that can respond to the needs of households and families that grow and shrink over time.

Objectives and Questions

This report intends to produce knowledge about how juries in design developer competitions select an overall best solution. The findings are developed out of one case study that includes two competitions. The investigation takes an explorative research approach. The specific purpose is to show, understand, theorize, and critically reflect on how design proposals are evaluated.

Key data from the competitions are: (a) objectives, (b) judging criteria, and (c) delivery demands in the competition programs; (d) assessment materials (design proposals, jury reports, expert reports, detailed development plans, and municipal guidelines); and (e) observations and (f) field notes from inside the jury room. The following four aspects and research questions will be investigated:

- **Objectives and judging criteria:** How have the design proposals been ranked by the juries in relation to the competition objectives, judging criteria, and assessment materials?
- **Judging design proposals:** What kind of values, qualities, and shortcomings in the design proposals have been identified, reviewed, and compared by the jurors?

- **Assessment process and working method:** How have the juries been organized, and what were the critical steps observed when they were selecting an overall best solution to the task?
- **Jury decision and report:** How were the winning designs chosen, and how did the juries motivate their judgments in their public jury reports?

Case Study and Action Research

This investigation is a case study involving two competitions. They must be understood in both a local context (Groat & Wang, 2002) and in a more general one of contests in architecture, construction, and urban design (Flyvberg, 2006). The jury work is presented as a *thick description* to maximize the learning (Stake, 2000; Geertz, 2008). The research group (Braide, Koch, and Rönn) participated in preparations for the competitions and played an active role in designing the competition programs and their appendices. The group has been actively developing and testing the design developer competition as a municipal toolbox for eliciting innovative proposals. For design teams, the competition can be a professional laboratory and experimental arena for supporting creativity and new thinking in the search for solutions to complex design challenges. Based only on a competition program, the competitors produce design proposals for the task at hand. Their interest is focused on producing a single scheme. There is no supervising or demanding client for the designers to manage. Nor can jurors intervene in the design process when the submissions must be presented anonymously. These conditions provide a kind of freedom that allows professionals to test fresh design ideas and visualize new concepts. Thus, the competition may serve as a professional laboratory and experimental arena for developing innovative proposals that respond to challenges in the competition program.

Methods

With reference to Nigel Cross (2006), the research methods can be described as follows:

- **Interviews with the winning design teams:** Professionals in two winning design team were interviewed. Their fields are architecture, landscape architecture, energy, climate footprint, ecological sustainability, circular resource management, and implementation. The team includes project developers and builders. Altogether, 16 interviews were conducted with professionals on the design teams.
- **Field notes and observations:** The research group took part in the jury meetings. The jury work was observed inside the jury room and documented through field notes. These notes proved important in understanding the jury's evaluations. The jury needed four to five meetings for each competition to examine the design proposals, identify the winning design, and agree on the wording of their jury reports.
- **Action research methods in designing the competition program:** The active involvement by the research group in the competitions can be seen as *engaged scholarship* (Van de Ven, 2007) and as an example of *action research* approaches (Carlsson & Koch, 2014). This participation requires a distance to the research object, a need for critical reflection on the findings, and an awareness of the researcher's role in R&D projects when findings are identified and results are presented.
- **Testing the competition formats:** This study is a part of the research group's efforts to test the design developer competition as a municipal tool to promote innovative thinking and support creative solutions to housing needs. Seen from the competitors' perspective, the competitions in Norrköping may serve as professional laboratories and experimental arenas for new ideas. The organizer provides both a challenging task and a professional jury for the evaluation.
- **Reflecting and theorizing about the evaluation of design proposals:** The collected data was used to describe the assessment of design proposals in steps that are necessary for a professional jury that must select a winner in a credible way. The juror needs to identify, see, and reinforce differences in

the solutions presented. They compare and rank the designs, identify the values they perceive in each contribution, and finally justify their choice of winner in a public statement. It is important for jurors that the competing design teams, their colleagues, and elected officials in Norrköping all accept their choice of winner.

Empirical Work

The accumulated data, information, and knowledge comprise primarily documents from the City of Norrköping, interviews of professionals on the winning design teams, field notes and observations from the jury meetings, and information on websites. The competition documents consist of competition programs and their appendices, ten design proposals, the jury reports, and expert evaluations regarding energy solutions and carbon emissions. The entries have been presented in drawings, illustrations, spreadsheets, digital models, and written descriptions of the design ideas. The submissions for the two Norrköping competitions include site design, buildings, apartments, and construction methods, as well as appendices that account for rent level, energy usage, and climate impact.

Local Guidelines

The design objectives, judging criteria, and delivery requirements were established in the competition programs. In addition, the juries relied on several complementary documents in their evaluations: detailed development plans for competition sites (*detaljplaner för tävlingtomterna*), *Guidelines for Municipal Land Allocation in the City of Norrköping* (*Riktlinjer för kommunala markanvisningar i Norrköpings kommun*), *Action Plan for Land Allocation for Housing Construction* (*Handlingsplan för marktilldelning vid bostadsbyggande*), and *Architecture City Norrköping* (*Arkitekturstaden Norrköping*).

Inside the Jury Room

The most important and critical data in this study of how juries reviewed competition entries were the research team's field notes and observation from the jury meetings. These data provide firsthand experience of how design proposals are evaluated, showing how the juries conducted their work and illuminating the process by which winners were selected. The research team followed the jury's work inside the jury room in both competitions. The jurors had four or five meetings per competition for identifying a winning design and agreeing upon the jury report. The final editing of the reports was made by an exchange of email among the jury members.

LEARNING FROM PRACTICE AND RESEARCH

This section presents professional advice. Professional organizations publish guidelines for running competitions in architecture and urban design. They have a complex relationship to the companies in the construction industry. Their advice seems to be both an attempt to share lessons learned from practice and an attempt to advocate for competitions and marketing their competition services. We will begin by commenting on recommendations provided by associations of architects in the United States, Sweden, Norway, Denmark, and Finland. These guidelines offer advice about how to conduct a qualified assessment of entries and how a jury should report its ranking of design proposals. The guidelines can be seen as a global commitment to a fair and professional competition in architecture and urban design. *The Handbook of Architectural Design Competition*, published in 1982 by the American Institute of Architects, has a special section on the function and composition of a jury, member commitment and obligation, jury reporting, etc. The paragraph starts by stating that the function of a jury is to examine submissions (design proposals) with respect to the competition program and its requirements. The client (organizer) gets support in a competition from a jury for its evaluation and the "selection of the best

solution should be made by experts in the appropriate field” so the competitors “can be confident in the ability of juries to judge their work fairly and fully. The quality of the jurors thus helps determine ... the quality of submitted designs” (p. 19).

In the American handbook, the jury work is described as demanding (“the task of judging numerous architectural designs is extremely demanding”), and the jury needs two to five meetings to choose a winner (p. 19). This corresponds to the jury meetings in the Norrköping competitions. Furthermore, the juries “must have a commitment to the competitions process and an interest in the subject that calls forth a particular competitive effort” (p. 19). The jury “should regard the competition program as a contractual document binding equally on them as it is on competitors and sponsor” (p. 19). The competition program defines the design problem the competitors should respond to. The jury’s ethical obligation is to apply the competition program in judging all submitted work. Anyone who accepts a position on a jury also approves the competition program. In the Norrköping competitions, the proposals had to be presented anonymously to the jury. This requirement reflects ideas of fair play and equal terms. The jurors in competitions requiring anonymity must make the following promises:

- Have no contact with any of the competitors,
- Devote themselves fully to the task of evaluating entries on the days established for judging,
- Respect and maintain the anonymity of the submissions,
- Abide by the requirements of the competition program in evaluating the competitors’ entries,
- Refrain from interjecting considerations in addition to or contrary to those specifically described in the program,
- Make every effort to arrive at a consensus regarding the selection of a winner,
- Submit a report explaining their decision(s).

The American handbook suggests that jurors should be appointed by the organizer (sponsor/client) in consultation with a professional advisor. Although the expertise needed depends on the task, the handbook recommends that “a majority of jury members in an architectural competition should be architectural professionals with substantial knowledge and skill” (p. 20). This will ensure that “informed judgements are made regarding the merits of the competitors’ proposals,” and “architects are in the best position to understand the drawings and visualize the finished product indicated in the graphic material submitted by other architects” (p. 20). Experienced architect jurors are presumed to be able to determine if a particular design is buildable technically and economically. In the two Norrköping competitions, the jurors included outside as well as in-house architects, engineers, and a public servant charged with energy issues.

Evaluation: Judging Design Proposals in the United States

The American Institute of Architects describes the working method for evaluation in design competitions as follows: “A jury’s selection of award winners is made by a progressive elimination of entries” (p. 22). Decisions on excluding submissions from further evaluation may be made in consensus or by vote, depending on how many proposals the jury must examine. More important than how eliminations are made “is the exchange of views that takes place during a jury’s deliberations, for the decisions a jury makes grow out of the dialogue that members have with one another” (p. 22). After a complete review, the remaining design proposal will now be the focus of the jury’s attention.

Some criteria are more difficult to apply than others. Design criteria typically have an open character and must be interpreted in the specific context. Towards the end of the evaluation, there are only a

limited number of good design proposals left in the competition as possible winners. At this point, according to the guidelines, the design review sometimes become more demanding. When the jury has agreed on a winner, the result is presented in a report describing the competition process, the work of the jury, the submissions, and how they have been ranked. The jury comments on the merits and shortcomings of each. Finally, the jury justifies its selection of the overall best solution to the task. The jury statement can also address ambiguities in the winning proposal that need to be processed further in the next stage. According to the AIA, the jury report has three basic functions:

- It is written evidence to competitors, sponsor, and public alike that the evaluation and selection proceedings were fair and careful, thus conferring both a procedural and aesthetic legitimacy on the prize-winning designs;
- It is an educational document that describes criteria for evaluating design, stimulating thought for competitors, professionals, end-users, and the public; and
- It is an historic document that lists the winners and explains why a specific design was chosen, thus elucidating the values attendant to the creation of a structure at a particular time and place.

The jury report serves several ethical considerations. The jury informs competing colleagues, organizing bodies, decision makers, and professionals in related associations about its assessment. But it also addresses local neighbors and stakeholders and the wider community who are likely to be affected by the competition and the implementation of the winning design. They have a right to be informed. Professional jury members may feel a long-term responsibility. Implementation reaches beyond the contemporary requirements of the competition at hand, and the long lifespan of the buildings affects future generations.

The Nordic Model for Competitions: Judging Design Proposals in Scandinavia

The professional organizations for architects in the Nordic countries market competition services on their websites and produce guideline for jurors and clients. They have special divisions that sell competition services to potential organizers. The advice they offer for jury work is much the same as the recommendations of the American Institute of Architects. In Finland, the basic conditions for jury work can be found in the description of roles for architectural competitions. Although there is a common core among the Nordic countries, the execution of competitions shows some cultural differences. In Sweden, there are two guidelines published by Architects Sweden: *Arranging an Architecture Competition (Att anordna en arkitekttävling*, 2021) and *A Publication on Jury Work and Assessment (En skrift om juryarbete och bedömning*, undated). Corresponding information can be found on the association's website.⁶ The advice can be summarized in nine points:

- ***Read the competition program carefully:*** The program defines the conditions for both the jurors and the competitors. The program is as an agreement and may not be changed afterwards.
- ***Jury at work:*** A careful analysis of the program is required for the correct evaluation of the design proposals. There are lessons to be learned in all the proposals.
- ***The beginning of the assessment:*** Start by reading each proposal. Avoid hasty prioritization.
- ***Checklist:*** A good way to review the proposals is to use a checklist (criteria) that has been adapted to the particular competition. This facilitates comparison among the contributions.
- ***Ranking:*** Experience shows that grading designs with points is of limited value. A summation of points easily gives a misleading result. Make an overall assessment based on qualities.
- ***Qualities and values:*** A part of the assessment is to analyze which characteristics are most decisive for a good solution. These qualities and values should be given special attention.

- **Interests:** Different interests and skills are usually present in the jury. Listen to each other—avoid territorial surveillance. A complex task cannot be solved through suboptimization.
- **Fundamental ideas:** Assessment should focus primarily on the driving ideas of the proposals, not how free of error in detail they are. The details can be improved in the next stage.
- **Balance:** The assessment often involves a weighing of costs versus qualities in design proposals. Quality should be valued first.
- **Ethical considerations and fairness:** Only members of the jury, its secretary, and consulting experts shall be present during the assessment. Jurors must attend all meetings. When judging anonymous proposals, jurors must not make assumptions about the author. The competition administrators may not be present at the judging, since they may know the identity of the competitors.

In the Norrköping competitions, the initial plan was for the division of Architects Sweden that handles competitions to act as jury secretary and guide the evaluation. However, they withdrew because that division was not enthusiastic about researchers examining the design review, which partly can be explained by the recommendation that no “outsiders” should be present inside the jury room.

The Norwegian recommendation for planning competitions from 2018 is called *Competition Guide* (Konkurransveileder) and has been published by the National Association of Norwegian Architects and the Association of Consulting Architects in Norway. This guideline is more comprehensive compared to the recommendation by Architects Sweden. Another difference is that the Norwegian guide clearly highlights the relationship between the juror’s expertise and the quality of their assessment. The jury must be both broadly composed and contain a variety of skills. However, no less than one third of the jury members must be architects in design competitions. This demand follows the EU regulation for project competitions. Furthermore, the Norwegian guide emphasizes the importance of having architects with recognized talent and good reputations in the jury, which in turn is assumed to enhance the attractiveness of the competition. That would presumably encourage architecture firms to invest more resources in design proposals. Thus, a jury of expert professionals is considered to motivate participation in the competitions. In addition, the Norwegian guide argues for the importance of the developer (client/organizer) being well represented on the jury. Both the organizer and developer need to feel ownership of the winning design and contribute to a trouble-free implementation.

The Norwegian guide comments on two support functions in the competition: the secretary and the competition administrator. Jury secretary is described as a qualified role and should be treated as a separate function. The recommendation is to select an architect to serve as secretary in design competitions. The secretary should not be a regular jury member. The reason is the challenge of combining the responsibility for taking notes and minutes while also assessing the pros and cons of each proposal. The competition administrator is to be a point of contact, receiving and registering submissions and checking whether the proposals meet the requirements in the competition program. It is also the competition administrator who handles the communication between the jury/organizer and competitors to preserve their anonymity. The competition program usually has some unforeseen shortcomings or demands that need to be clarified. Questions from competitors need to be answered. It is the competition administrator who sends the organizer’s replies to the competitors.

The secretary should summarize the competition in a report and coordinate the jurors’ opinions of the design proposals. The Norwegian guide argues that the jury must make a well-developed statement. Firstly, the report must present the important advice from the jury as to the next step in the process and indicate how the winning proposal should be further developed. This advice is aimed at the client, the organizer, and the competitors. Secondly, the jury report is regarded as feedback to the participants in

the competition. The competing design teams must be able to see that the jurors have done a thorough and serious job and found the best proposal in the competition. Thirdly, the benefit of the competition must be made visible according to the guidelines. The jury's statement should therefore present professional learnings from the competition and provide an exchange of knowledge. Even the competitors who were not highly ranked should benefit from their participation in the competition.

In 2020, the Danish Association of Architects, in cooperation with the Danish Association of Architectural Firms, published *Guidelines for Project Competitions: 7 Good Tips (Vejledning til projektkonkurrencer – 7 gode råd)*. This is also a comprehensive guideline for planning and organizing competitions. The target group is the developer/client and their advisors. The focus is on the project competition, which in turn includes the production of architectural concepts as well as building design and planning activities. The background to the guidelines is a survey of transaction costs in competitions. The study was carried out on behalf of the Danish Association of Architects and the Danish Association of Architecture Firms. According to the survey, it is too costly for architects and developers to produce design proposals. The overall recommendation, therefore, is to simplify the competition program and select the best design concepts. The developer should trust advice from professional consultants. To evaluate the pros and cons of design proposals, a skilled eye is needed. The Danish guidelines' seven good tips for the client can be summarized as follows:

- ***Apply good advice:*** Hire professionals for the planning of the competition process and the development of the competition program. They can contribute knowledge about both the program and the process and will make sure that every step of the competition is executed in a good way.
- ***Simplify the competition program:*** Even if the competition task is complex, no extensive program is needed. Simplify the needed documents. This will liberate resources on both sides of the table and create space for good ideas.
- ***Use professionals in the jury:*** Always include professionals on the jury. They can convey the architectural qualities of the submissions and ensure that the client receives a qualified evaluation.
- ***Focus on ideas:*** The competition should result in a clear architectural scheme that fulfils the competition program. The submission requirements should be limited to necessary visualizations, drawings, models, and descriptions. The proposal should be submitted as digital presentations.
- ***Pick the most robust project:*** The winning design should be selected based on fundamental ideas, originality, and robustness. The design will later be weighed against financial issues. A robust project can be altered without losing its qualities. Details can be resolved later.
- ***Budget:*** There must be an overall budget for implementing the winning design. The financial costs for the realization of the project must be detailed in the next step.
- ***Be an ambitious developer:*** The competition creates a foundation for the project. Success is dependent on the client's ambitions. Therefore, assemble a strong team of experts to assess the design solutions submitted for the competition task.

The Danish guidelines try to mitigate the high transaction costs of architectural competitions for design teams and developers/clients. This format is used when the intent is for the winning submission to lead to a design commission and ultimately implemented and built. The high cost in the early stage is the reason for simplifying the execution of project competitions. The guidelines also include an overview of the project competition to inform potential clients about the process. This paragraph presents typical steps such as planning the competition, prequalification (for invited competitions), programming the competition task, competitors designing proposals, assessment, jury report, and negotiating the design commission and signing a contract.

In summary, four conditions stand out in the Nordic and American guidelines. Firstly, the guidelines are embedded in a professional culture that is rooted in the history of architecture. It is the architects' interests that are highlighted. The contribution of other actors is minimized. Secondly, the guidelines are published to promote the specific competition format approved by architects' professional organizations in the Nordic countries. This format is marketed on the organizations' websites as to a tool for creativity and new thinking that produces qualities and values for clients as well as society. Thirdly, there are only minor references to research in the *Handbook of Architectural Design Competition* by the American Institute of Architects. Its advice seems to be founded on the professional experiences of architects and public organizers. The Danish guidelines are being revised to address a recognized problem in competitions: the burden of comprehensive programs and the high cost of generating a proposal. Simplification is intended to mitigate these barriers while safeguarding the benefits. Fourthly, the guidelines published by Architects Sweden have not influenced the jury work in the two Norrköping competitions. None of the jurors referred to these guidelines as they organized the assessment and discussed how the evaluation should be carried out.

Theory and Research on Competitions

The academic research on competition in architecture and urban design has developed out of scientific conferences and research projects presented in anthologies, theses, and articles (Anderson, Bloxham, Zettersen & Rönn, 2016). This body of academic knowledge can be divided into two overall categories: (a) architectural competition seen from an architectural history perspective and (b) architectural competition as a contemporary phenomenon of modern society. Important conferences on competition have been held in Princeton (2005), Stockholm (2008), Copenhagen (2010), Montreal (2012), Helsinki (2012), Delft (2014), Leeds (2016), Amsterdam (2017), Vilnius (2018), and Checciny (2018).⁷ Besides these conferences, several scientific journals have published thematic issues on competitions in architecture and urban design: *Journal of Architectural Education* (No 1984-2), *Journal of Architectural and Planning Research* (No 1990-2), *Nordic Journal of Architectural Research* (No 2010-2/3 and No 2012-1), *Scandinavian Journal of Management* (No 2011-1), *Geographic Helvetia* (No 2011-2), and *FORMakademisk* (No 2013-4 and No 2014-1). A new research area seems to be emerging. The academic research on competitions is young, but there is an increasing number of scientific articles on competitions in architecture and urban design. Laryea and Watermeyer (2020), for example, have identified 359 articles in the Scopus database. A closer examination shows that the authors could have found many more scientific articles by searching in other databases. Nevertheless, few studies have focused on jury work in competitions.

Some scholars have studied evaluation by jurors in architectural competition looking for sustainable design solutions (Goubran, 2021; Cuccuzella, 2020). The transformation of objectives from competition briefs to proposals evaluated by jurors can be understood as design, critique, or translation. Chupin (2011) regards the judging of entries in competitions as a design process and consequently interprets comments from jurors as a matter of re-design. Architecture critique is probably a much better way of understanding how design proposals are evaluated by professionals (Attoe, 1978; Lundequist, 2002; Lymer 2010). Students of architecture are trained to present projects and review design qualities by the practice of architectural critique (Murphy, Ivarsson & Lymer, 2012; Oh, et al, 2013). Architecture critique may also be found in three aspects of the Norrköping competitions: (a) as a method used by jurors in judging design proposals, (b) as written statements in the jury reports, and (c) as comments made by coworkers at the office on their design responses to the competition briefs.

A handful of articles show how design proposals are reviewed by juries inside the jury room. Some examine the evaluation of juries in dialogue competitions. In these studies, competitors have presented

drafts and discussed their design ideas with jurors in face-to-face sessions (Lans & Volker, 2008; Kreiner, 2010; Silberberger, 2011; Cucuzella, 2011; Kreiner, Jacobsen & Jensen, 2011; Kreiner, 2012; Memon & Vanderburg, 2014; Meyer, 2016; Jacobsen & Kamstrup, 2017). However, the conditions for evaluating drafts in dialogue competitions differ from judging anonymized proposals. In the Norrköping competitions, the jury and the competitors were not allowed to communicate with each other. The public organizer required anonymized entries. For the competitors in such cases, designing solutions becomes a kind of “shadow dancing” with an absent partner. The idea behind anonymity in competition, a common demand in competition rules and briefs, is that the jurors shall make assessments without knowing the authors behind the submissions. Anonymized proposal is assumed to promote fair play and equal terms. Juries are obligated to identify and review qualities that can be found in the design proposals without external considerations about the design team.

Leif Östman (2012) reports on the jury work in an idea competition in Finland that included four design proposals. The competition objective was to find ideas for a county center in a publicly organized competition. Östman was a member of the jury and made field notes during the evaluation. The jury consisted of twelve individuals: five elected officials, four leading administrators from the county, and three external professional jurors, one of which represented the Finnish Association of Architects. The judging in competitions approved by the architect’s association is kept secret from outsiders, according to Östman. For this reason, there are few studies on the judging processes inside the jury room. Kreiner (2020) also concludes that the jury work in competitions is one of the best-kept secrets: “Juries are seldom accessible for observation, and many jury members appear surprisingly unaware of the intricacies of assessing the competing design proposals” (p. 31). Östman reports that the evaluation, as expected, started with formalities and a short presentation of the jurors followed by an examining of the contributions. During the second meeting, one of the professional jurors pointed out a proposal as inadequate within the urban structure at the site, “Suddenly, we all saw and accepted this conclusion” (2012, P. 132). This was the first strong statement in a series of judgements in the evaluation process that are not clearly noted in the meeting minutes. In the third session, the chairperson wanted the jury to single out a winner. The meeting began with a discussion of the difficulties of finding a best solution, and the jurors were not certain how to proceed. Although the assessment was clearly constructive, it became obvious to Östman “that the two of the lay jurors and I as a professional jurors favored” one solution, in contrast to the other jurors, but there was no strong antagonism between the different opinions (2012, p. 138). However, the conflict inside the jury room was not bridged. The professional jurors decided to select two entries as joint winners. Having two winning designs is rare in competitions and can be seen as a failure. This may happen in ideas competitions, since their organizers don’t promise in the competition program that they will lead to a commission and implementation.

Charlotte Svensson (2008) has investigated the evaluation of contributions inside the jury room in two Swedish architectural competitions that were approved by Architects Sweden. Both competitions were organized by small municipalities. The first case was an invited competition with four entries by competitors selected after prequalification (Svensson, 2009). The objective was to rebuild a school building and make space for an extension. The jury consisted of nine members: two architects, three local elected officials, two teachers and two directors from the local administration. In this case, public opinion influenced the evaluation of design proposals inside the jury room: another school had to be closed, which caused debate among citizens and put pressure on the local jurors. Svensson identified two separate strategies for judging and decision-making among the jurors. She described them as evaluation through architecture critique (Attoe, 1978) versus ranking by transforming qualities into scored characteristics with differentiated values for counting the outcome as points, which represents a rational decision-making process (Bazerman, 2006). The assessment turned into a positioning in the jury room

between architects and design laymen. After three meetings, the jury identified a winner. Financial issues and the need to have a qualified architect who was willing to cooperate became crucial in choosing the best proposal.

In the second case study, Svensson (2012) examined how the jury selected a winner in an open architectural competition by following the review inside the jury room. The organizer was looking for a cultural building suitable for the town's annual song festival. The mission for the jury was to choose a winning design proposal from among 94 entries. The submissions had to be sorted into different design principals to make sense. The jury comprised eight individuals: four architects (including the city architect), two local elected officials, and two professionals representing musical arrangement and festival. The jury secretary, from Architects Sweden, acted as counselor in the evaluation process. The first meeting lasted two days and started with discussion of the assignment and of how the proposals could be sorted preliminarily and judged in steps. The jurors then reduced the 94 entries to 47. In the next step, they further reduced the field to 15 strong design proposals. Now the jurors studied the entries in more detail. In the following session, each juror had to pick five favorites. However, no obvious best solution could be seen, and a negative attitude began spreading among the jurors.

The final jury meeting opened in a doubtful condition. The jurors started the review by placing physical scale models of the entries into a larger town model of the competition area. One by one, each of the proposed buildings was put into the town model. This created a new opportunity to evaluate the competing contributions visually, and Svensson observed that enthusiasm returned to the jury room. There was a winner. The jurors all saw that one of the design proposals fit best into the site. The members were convinced by what they saw with their eyes, and this bridged the differences between architects and layman. In their prior discussions, the design favored by the laymen had the visual appearance of a guitar. The facade was easy to read and related clearly to the competition objective of a cultural building for music. The architects, on the other hand, disliked this scheme. They preferred another that had a complex design with a modernist expression of vertical strips and glass in the facade. These two entries had different types of architectural rhetoric. The assessment generated a learning process that produced knowledge about the entries and their pros and cons. The comparison of the proposals created a foundation for ranking design qualities that combined reason and feelings. The power of the visual dimension, shown in the model, became obvious in the final decision. Svensson concluded that the jurors identified a winner by looking at the model, as was later pointed out in the jury report.

One of the lessons learned from the case studies in Finland and Sweden is that, in several meetings, jurors representing different interests struggled to choose a winner. Differences must be bridged in the final decision for a project competition intended to implement a winning design. This is the case in Svensson's articles. Judging proposals appears to be a question of identifying values and visualizing qualities. Professionals can demonstrate options that can be seen in the proposed schemes. The designs are judged by eye. Another important lesson is that the world outside the jury room influences the judging, even if design proposals are presented anonymously. However, the reported jury processes in Finland and Sweden exhibit exceptions in terms of outcome, different from our research on design developer competitions. The number of submissions differ. Open architectural competitions in Finland may have from 30 to 250 proposals (Kazemian, Svensson & Rönn. 2007). To single out a winner among 94 submissions has never been the case in a design developer competition, to the best of our knowledge. In Sweden, this competition format has seldom more than 20 contributions. The learnings of these cases are therefore somewhat limited and underline a gap in the research.



Juror at work inside the jury room in the Norrköpings-competitions. Photo: Magnus Rönn

CASE STUDY: THE TWO DESIGN DEVELOPER COMPETITIONS

There were a total of ten design proposals to be assessed by the jurors in the two Norrköping competitions. The invited competition received four submissions. Only rental housing was required. The site has a suburban location. The price of the competition site is 3,500 SEK/m² RFA (residential floor area). The neighborhood includes a pre-school, playground, detached houses, and semi-detached houses. The master plan is open and allows housing in three stories (Appendix 1).

The open competition generated six design proposals. The site is part of a large transformation of the port into a new downtown district. The price of the competition site is SEK 4,800 SEK m² RFA. The detailed development plan stipulated that the land be used for housing with ground-floor commercial space. Residential buildings could be up to seven stories high. The competition program left it up to the design team to choose between rental and ownership of the apartments. The detailed development plan gave a lot of specific regulations steering the design and use of the site (Appendix 2). In addition, there a special aesthetic program developed for the transformation of district was to be applied in the competition.

The two competitions were similar in purpose, assessment criteria, submission requirements, and jury composition. Both competitions presented a complex challenge for design teams. The organizer was trying to create housing that (a) had high architectural quality and fit into the context well; (b) produced more renewable energy than it used; (c) reduced CO₂ emissions by 40% compared to the average multi-story building (191 kg CO₂e/m² GFA); (d) promoted circular resource management in architecture and construction; (e) contributed to social sustainability through flexible apartments that met a diversity of needs, including allowing households to grow and shrink over time and providing space for communal activities; (f) had affordable rent/costs and simultaneously fulfilled demands for climate-smart and ecologically sustainable housing; (g) supported housing qualities, functions, and experiences of beauty; and (h) addressed challenges in the local community with creative solutions and innovation in design, construction, and management.

The competition programs had five appendixes. The objective was to support the design teams in their production of design solutions. The five appendixes focused on: 1) design strategy for flexibility in

housing, 2) template for energy management describing how energy should be reported, 3) template for climate declaration describing how CO emissions should be presented, 4) template describing circularity in architecture and construction, and 5) template describing how innovation can be understood in design developer competitions.

Jury and Assessment Criteria

The jurors for each of the two competitions consist of seven people, five appointed by the municipality and two external members chosen by the research group. Their task was to rank the contributions and identify a winner. The jurors had to judge the design proposals by weighing eight criteria of equal importance:

- Architectural quality
- Energy use
- Climate footprint
- Circular processes
- Social sustainability
- Affordable rent/cost
- Innovation
- Developability

The criteria for energy, climate, and affordability were measurable and could be quantified. The other five criteria had soft characteristics and dealt with quality, which is typical in architecture and urban design competitions. The jurors were to interpret and clarify these soft criteria while assessing the submissions.

Submission Requirements

The design proposals were to be presented on five posters in A1 format. The submissions had to be anonymously presented and include all required drawings, illustrations, models, descriptions, and three appendices. The requirements can be summarized as follows:

- Site plan at scale 1:400 showing the buildings in their setting as well as the site design and zones.
- One perspective illustration showing the design proposal in its context.
- One illustration showing the courtyard design.
- Two sections at scale 1:400 of the residential buildings and landscaping.
- Complete facade drawing at scale 1:400 indicating materials and colors.
- Detailed drawings at scale 1:50 showing material transitions, eaves, balconies, windows, and entrances.
- Apartment layouts at scale 1:200 of varying sizes to fit different households, with one solution furnished.
- Digital model of the buildings.
- A brief description of architectural qualities and fundamental ideas, design strategies, energy management, circularity, innovations, and construction methods.
- Appendix 1: A summary of energy management according to a provided template.
- Appendix 2: A climate declaration reporting CO₂ emissions according to a provided template,
- Appendix 3: A report on the number of apartments and rent cost.

The energy solutions and the climate declarations from the competing design teams were evaluated by two independent external experts. They reported their findings to the jurors in written statements.

Case 1: The invited competition

In the first case, the jury needed four meetings to choose a winner from among the design proposals. They conducted two face-to-face meetings, one online meeting, and one hybrid meeting with jurors both in person and online. The evaluation started on October 4, 2022 with a two-day meeting. The jury was informed that one submission was missing a digital model, and they notified the design team that they must send in the model within one day. The organizer had prepared hard copies of the proposals and presented them in the jury room. The jury administrator handed out a template with the judging criteria for scoring. This tool was intended as an aid in ranking the proposals. The administrator also gave a general overview of the future of the area and put the competition site in a planning context. The jurors presented themselves and the researcher's role as observers was clarified. After this introduction, the evaluation began with a presentation of the design proposals.

Round 1: An overview

Jury meeting October 4, 2022. One of the jurors from the organizer acted as session leader and presented the main characteristics of the design proposals one by one. The presentation of the submissions was accompanied by descriptive comments from jurors, evaluative judgments and questions about solutions that seemed to be unclear. The review created a first overall understanding of the submissions.

Round 2: Testing innovation

This round was a test of how the proposals responded to the criterion of innovation. Under this heading, the design teams were asked to declare the kind of new thinking and creativity they put into their submissions. The session leader started by reading the paragraph for innovation. This concerned different topics such as housing finance, design for reuse, waste management, working with circular resource management, hybrid panels for electricity and heating, refinement of solutions in design and construction, construction components of clay and straw, digital services, community garden on the site, etc. The review generated question about the concept of innovation. The jurors commented that statements of new thinking in design under this heading seemed to be missing in some of the submissions.

Round 3: Planning and individual opinions

Jury meeting October 5, 2022. The session began with a discussion of the coming jury meetings and the structure of the jury report. By the next meeting, everyone was to have read the proposals individually and formed an opinion as to which of the entries might be the best solution from an overall perspective. The jury report would have to express a shared vision about the knowledge created through the jurors' review of the proposals. The jurors highlighted that all design teams deserved to feel they had been seen in the assessment.

Round 4: Circularity

The jury continued with a review of circularity. Again, the session leader read the paragraph in proposals expressing their support for circular resource management, such as re-designing proven solutions, design strategies for re-cycling, methods for reducing use of resources, and collaboration on reuse of materials with the City. Circularity should also be achieved by cooperation with companies whose business model was reuse, alternative materials, extending the life of materials, etc. The jurors noted that the proposals were about developing reuse. This raised questions regarding the credibility and implementation of recycling.

Round 5: Social sustainability and architectural quality

In this round, the jury examined social sustainability and architectural quality. The session leader read these two paragraphs in the proposals. The responses to social aspects and flexibility could be charac-

terized as diversity of housing types, combinations of room units, variation through autonomous space and change of housing boundaries, movable walls, transformation of uses, parallel entrances, shared space for social activity, and outdoor environments with private and collective zones. The jury's comments on architectural quality issues touched on design expressions, volumes, scale and variety of the buildings, relationship to the street, roofs, facades, materials and color, balconies, entrances and stairways, the location of service buildings, space for gardening, playground, and the access to parking for cars and bicycles. There was no clear focus on review, but the jurors tried to understand the design ideas of the proposals.

Round 6: Energy and climate footprint

Jury meeting October 21, 2020. This was an online session. The session started with a discussion of the proposals' climate declarations and energy solutions and calculations. All four submissions presented calculations showing energy-positive solutions that could reduce CO₂ emissions by more than 40 percent. Their goals were fulfilled. For jurors, the uncertainty had to do with the credibility of the solutions and calculations. The jurors had to rely on evaluations by the external experts for energy and climate footprint.

Round 7: Preliminary ranking

Now the jurors made a first preliminary ranking of the proposals by giving them numerical grades. This was done to show which entries had the potential to win. Three proposals became top-ranked. However, the scoring of the criteria varied. No proposal received the highest grade for all judging criteria. The jurors noted that design represented different time perspectives: the solutions had both short-term impact and long-term effect with uncertain outcome. The entries contained technologies that were available on the market as well as design solution that could be expected to become available in the future.

Round 8: Circularity revisited

This round focused on circular resource management. The jurors compared the description of circularity in the proposals to how solutions were expressed in the design. Several jury members found the criterion to be both difficult to judge and an important future-oriented challenge. How should reuse be handled in building permits? One of the proposals stood out in the discussion as particularly interesting, with an architectural framework visualizing the reuse of materials in the facade. This design team requested that the city administration play an active role in the development of circular processes in architecture and construction.

Round 9: Social substantiality and housing

During the review of social sustainability in the proposals, the two external jurors expressed a strong opinion that had a significant impact on the selection of the winner. Access to daylight and design for flexibility became crucial. They pointed out clear differences in the quality of the apartments' layouts in the drawings. After this, only two proposals remained as possible winners.

Round 10: Innovation revisited

This round was a discussion of innovation. The jurors began their examination by reading how the concept of innovation was defined in the appendix to the brief. The competition administrator showed the proposals for the jurors, and they saw different degrees of innovative solutions for energy supply, recycling, and construction. The jurors also found hidden innovations in some submissions. Not all design teams had highlighted the novelty or creativity of their solutions. Once again, it was the apartment layouts that made difference. The proposals showing flexible solutions for housing won the jury's

appreciation. A summary of the preliminary scoring confirmed the final assessment. The task for the next session was to finalize the jury report.

Round 11: Preliminary draft and final ranking

Jury meeting October 28, 2020 was a hybrid session with jurors both online and in person. Prior to the meeting, the session leader had sent a draft of the jury report to be discussed. The mission this time was to adjust the wording of the report and rank the submissions from one to four. In particular, the ranking between the second and third positions needed to be clarified. At first, the jurors had different favorites for second place. The organizer wanted to know which proposal should be in this position as a guarantee that would allow them to proceed with the implementation if the winner for some reason chose to cancel the winning entry and returned the site to the municipality.

Round 12: Structuring the jury report

After the ranking was clarified, the wording of draft took center stage for the discussion. The two external jurors again had strong opinions. They recommended a summary of the learning outcome at the beginning of the jury report followed by a paragraph describing qualities of each submission with respect to the judging criteria. Shortcomings didn't need to be pointed out. One final issue to sort out was if the report should recommend some improvement of the winning design. The jurors chose to focus on the motives supporting their statement and recommended only minor changes in the scheme. The common space at the entrance could be better if some apartments were deleted. The session leader then finalized the jury report according to the discussion, and the members signed it.

The Jury Report

The jury report states that the competition has shown that it is possible to build climate-smart, socially sustainable, and innovative housing at approximately the same rental cost as ordinary residential buildings. This statement is supported by rental costs reported by Statistics Sweden. The jury motivated its choice of winner as follows:

After completing the assessment, the jury has concluded that BoroBoro is the proposal that most convincingly combines architectural quality and the high goals of the competition and recommends the proposal for further processing and implementation. The proposal is an exciting design concept including reuse, with a strong character of its own. Getting the calculated climate impact to be this low, it is necessary to implement these solutions or climatically equivalent design in future phases of the project. The jury is aware that a great deal of humility about reuse is required. The industry is facing a forthcoming journey in this area, which places demands on the continued process, but it is nonetheless important that reuse become a fundamental starting point in the development of innovative climate-smart housing. (Jury report, 2022, p. 4)

The winning design proposal was produced by a multidisciplinary design team made up of professionals in architecture, engineering, and project development. The team included four companies: an architecture firm (Spridd) that is a member of the association Building Architects, a landscape architecture firm (Nivå Landskapsarkitektur), an engineering firm (Inocoord), and a small project development firm (Kvarnstadén), which later was replaced in the land allocation agreement by Livi Fastigheter. Spridd and Livi Fastigheter are acting as developers in the contract (Appendix 3).

Case 2: The open competition

In the second case, the jury had to conduct five meetings to identify a winner among six design proposals. They had three face-to-face meetings and two online meetings. The evaluation started on December

7, 2022 with a two-day meeting. The organizer had prepared hard copies of the proposals and presented them in the jury room. This jury had the same structure as the previous one, with seven professionals. However, the members were not all the same. A new competition administrator had been appointed by the organizer. One major difference this time was that two new external jurors took part in the jury work. They were selected by the research group. The jurors appointed by the organizer were the same. The two external experts for reviewing energy solution and climate footprint were also the same as in the previous competition. After the presentation of the members of the jury and a short introduction, the evaluation started with a discussion about how to organize the jury work.

Round 1: Introduction

The first question was whether the upcoming jury meetings should be in person or online. The consensus was that either method could work. The competition administrator informed the jury that all six proposals fulfilled the delivery demands, although one design team needed to add material to their submission. The number of apartments, rent level/housing cost, and form av tenure were to be summarized for the next meeting. The jury administrator also handed out a template with the judging criteria for scoring the entries, and it was similar to the template used in the previous competition. The digital models would be presented at next meeting, due to an error in the supporting system.

Round 2: General overview

This session started with finding space to display the submissions in the jury room. They were presented in five posters. The jurors walked around and familiarized themselves with the proposals individually. They then began to review how the different entries designed the ground floor, outdoor milieu, stairways, and space for service and business. This evaluation resulted in comments about visibility into apartments, corridors, entrances and their relation to street and yard, housing combining work area and space for business, space for social activities, flexibility and ceiling height, the ability for desired vegetation, and parking. Gradually the discussion came to include the scale of the building and its relationship to its surroundings, roof terraces, the number of apartments and their size and character, design for recycling, CO₂ emissions, and energy solutions.

Round 3: Examining the models

This session focused on the digital models and how they visualized the design. The session leader put the models on a screen and presented them. The jurors tried to understand the entries by carefully looking and experiencing them as built environments. The jurors commented on the designs both in detail and overall. The jurors examined and commented on the posters in an effort to understand the underlying design ideas. The discussion was oriented toward how architectural quality could be seen in the models. The jurors noted pros and cons in the street interface, facade, roof landscape, scale, variation, material and colors, balconies, corners, portico, access to garden, sunlight, private and common zones, etc.

Round 4: Circularity

In this session, the criterion of circularity took center stage. The jurors reflected on the suggestions of circularity in the proposals and their credibility. The suggestion was in two different groups—one with substantial solutions involving choice of materials, the other proposing a process and an organization to produce solutions. The design teams also emphasized two different strategies in organizing—on one hand internal expertise in circularity, and on the other hand access to strategic partners with business models for recycling materials and components such as brick, sheet metal, porcelain, windows, doors, etc. They all had plans for reuse and promises that were difficult to assess. The jurors found that two of the design teams presented a more developed strategy for circularity than their competitors.

Round 5: The model revisited

The jury meeting of January 15, 2023 was an online session. The jurors returned to the digital models for the design review of proposals. The session leader showed the digital models on a screen, asking for individual opinions and a preliminary scoring of the submissions and began to “walk” around in the six models, simultaneously commenting on the architectural design. The many requirements in the detailed development plan resulted in extensive questions about the intention behind regulations. One of the in-house jurors was given the task of the detailed development plan. The organizer jurors also pointed out that the aesthetic program for the area was included in the detailed develop plan, which was a complementary way of steering design. When the jurors were asked to give their own personal judgments, they reported the pros and cons they saw in the digital models. At the end of the session there were still four possible winners. It was agreed that for the next meeting each juror should choose two favorites.

Round 6: Need for finding important differences

The jury meeting of January 20, 2023 was an online session. The competition administrator started the session by showing an overview of rent level and housing costs together with the juror’s preliminary scoring based on that criterion. The in-house energy expert on the jury showed a comparison of the energy usage, and all but one proposal achieved a good outcome. However, they did not have energy-positive solutions when household energy use was included. After lunch, the jurors focused on the five best entries in the competition. In their review, the jurors identified differences in terms of architectural quality, expression of facades, design of apartments, parking, climate footprint, innovation, novelty, and relation-ship to surroundings/park. After this evaluation, three design proposals were still in the race as possible winners.

Round 7: External impact

The next jury meeting, on February 2, 2023, was also held online. The purpose was to rank the favorites. The session leader started the ranking by asking the jurors if they had seen something new in the design proposal. Some of jurors wanted to point out and support new thinking, innovation, and experimental approaches. The facade toward the park with recycled material was highlighted. From this perspective, one submission stood out, although its many small apartments could be seen as a drawback. This statement by jurors was strongly affected by knowing the plan for the surrounding buildings in the area.

Round 8: Renewed ranking

This session ended in two possible winners for further evaluation. The jury discussion oscillated between the details and the whole of each design proposal. Examples of aspects that were re-evaluated include the design of the ground floor, the size of apartments, access to flexible rooms and common spaces, outdoor design, ideas about the target groups for the homes, rent level and costs, climate footprint, circularity, space for recycling near the site. They also discussed how the reuse of materials in architectural design could affect the review of applications for building permits.

Session 9: Identifying a winner

In the next session, the jury focused on finding the overall best solution. After comparing the two remaining contributions and making valuable judgments about the design, the jurors returned to their digital models for a final review. They examined room heights on the ground floor and basement, use and flexibility, space for social gatherings, plans for vegetation, access to sunlight, degree of openness to the surroundings, and the architectural facades. After some hesitation, the jury finally agreed on a winning design based on a balance of qualities and values. The great number of small apartments in the winning entry could contribute to diversity by attracting young adults, and it might make the area accessible to small households.

Session 10: Motivation and reasoning

The task this time was for the jury to produce a statement that reported its evaluation. The statement would contain comments on how the winning proposal should be further developed. In addition, the jury also had to determine which five submissions would receive financial compensation. This was clear and did not raise any discussion. The session leader aimed to present a preliminary statement at the next session. The jury scheduled a final meeting to discuss the wording of their report. The winner would therefore be presented to the elected officials who decide upon the land allocation.

Session 11: Structuring the judgments

The jury meeting of March 3, 2023 was conducted online. The jurors were given the names of the authors behind the design proposals. The jury report—its structure, content, and argumentation—were the focus of the session. A draft had been distributed prior to the meeting. The session leader read the preliminary text, which was discussed, revised, and supplemented by the jurors. The wording should be consistent and logical in its argumentation. The review took longer than expected, so the jury had to complete the work online.

Session 12: Finale statement

The session leader had revised the jury report based on email comments from the jurors. There seemed to be only a few details remaining to clarify in the wording. The jurors had no difficulty agreeing upon the wording, and they all signed the report even though some minor errors remained. This would probably have been solved if the jury had conducted a proper online meeting. The only adjustment of the winning design recommended by the jury in the final report was to include some larger apartments in the project.

The Jury report

The statement summarized the jurors' experiences of the open competition. According to the report, the competition task was a challenge that resulted in innovative and climate-smart housing. Conditions for achieving climate goals in the built environment seemed to be good. Two proposals achieved a strong reduction of CO₂ emissions. The jurors further noted that the design teams had solved the task in different ways and responded to varying degrees to the needs for circularity, affordable housing, and energy-positive buildings. Since the competition site had such a visible location in the city, its relationship to its surroundings was an important part of the competition. An attractive design of the ground floor, mixed uses, and space for business took on greater importance because of the location. The jury explained its decision to select as winner the entry with a lot of small apartments in combination of collective space for social activities, which might attract young residents into the area, was motivated as follows:

After completing the assessment, the jury has concluded that Ramverket is the proposal that most convincingly combines architectural quality and the high goals set in competitions and recommends the proposal for further processing and implementation. The proposed framework is an exciting concept with an important point of departure in recycling, with a strong character of its own. In order to get the climate impact to be as low as calculated, it is necessary that the climate-smart solutions are implemented in the coming stages of the project. Great humility is required around recycling. The industry is facing a huge journey in this area, which places high demands on the continued process, but it is nevertheless important that recycling can become a key point of departure in the development of innovative climate-smart homes. (Jury report, 2023, p. 4)

The winning design proposal was produced by a multidisciplinary design team made up of professionals in architecture, project management, and construction. The team comprised five companies: an architecture firm (Kaminsky Architecture), a landscape architecture firm (Mareld landskapsarkitektur), two small development and management firms (Preservia and Kian Propertied) and one construction company (Moelven Byggmodul). Preservia served as developer for the land allocation agreement. (Appendix 4)

UNDERSTANDING THE JURY WORK

This section of the paper presents a theory model showing how juries composed of professionals choose winners in design developer competitions. Although the model is based on data from only two case studies, the judging theory presented here is of general importance and shows crucial steps in evaluating design proposals in architecture and urban design competitions. The basic assumption is that professionals making a qualified assessment must go through certain steps, regardless of whether those steps are outspoken and clearly expressed or embedded in evaluation processes and hidden in statements. The steps are necessary for the professionals to justify their choice of winner and to explain their assessment to colleagues and the competing firms. The jury work is conducted within a strong ethical framework.

The entries must be assessed in a fair and unbiased way. The jurors are professionally and morally obligated to find an overall best solution by applying criteria described in the competition program. The design review is a process that operates in four categories with specific steps. The categories don't follow a specific timetable in the design developer competition. Instead, they may influence the judgement at several phases of the competition process. The categories can be summarized as follows:

- ***Context and policy:*** external factors such as legislated guidelines, detailed development plans for the competition area, the selection of jurors, and ethical conditions.
- ***Design proposals and the competition site:*** how these particular design proposals respond to the competition task, visualize ideas, show qualities, express values, and fit to site.
- ***Judging process and competition program:*** the organization and structure of the evaluation process and how jurors understand the mission, competition objectives, judging criteria, and delivery requirements described in the competition program.
- ***Selection of winner in the jury report:*** the need for jurors to evaluate entries, rank, compare, and evaluate entries and to explain, motivate, and justify the selection of a winner in a public report distributed to competitors, colleagues, and the decision-makers providing the land to the developers.

This four-category theory describes, shows, and explains how professional jurors act in carrying out their assignment, and can be understood from their perspective. The complex influence on judgements in the design developer competition can be described as follows below.

Context and policy

Two types of documents played a governing role for the competitions in Norrköping: the policy for land allocation and the detailed development plans. The policy for land allocation should be understood as legislated guidelines for competitions that have been built into the competition programs. The jury took this guidance for granted. The two competition formats, invited and open competition, had no major impact on the jury work, which may be explained by the small difference in the number of submissions. The organizer chose to hold the competitions on sites that had already been regulated in detailed development plans. These plans steered the degree of exploitation at the site, the design of buildings, and the land use for housing and business. These prerequisites had a direct impact on the assessment in

terms of how the proposals fit the sites. In particular, the open competition had a detailed plan with many detailed rules that forced the organizer's juror to check how the entries met the requirements. This is a context influence on judging in competitions on sites regulated in detailed development plans. Another governing precondition in the competitions was the location and characteristics of the competition sites.

The invited competition had a site in a suburban location surrounded by nature and buildings. A pre-school had been built on the neighboring property. The qualities of the site and its potential were developed by the design team and commented upon by jurors in their examinations. The jurors also visited the site to get a better understanding of how the proposals addressed it. The open competition, on the other hand, had a site in a central urban location that was part of the establishment of a new district of great public interest. In this case, the site had to contain both residential and ground-floor commercial space. The exploitation of land had been made possible by the relocation of port operations to another site. The only historical remnant of the wharf on the site was a set of railroad tracks. The competition site was to be surrounded by new buildings. The adaptation of the design to the site was to be based on documents describing how the area was supposed to look in the future. Differences in master plans and site plans strongly affected the jury's evaluation. Context and policy both matter in design developer competitions. They produce different conditions for the jury work. The impact of information and action outside the jury room may be seen as controversial by the organizer, competitors, and jurors. However, surprising new conditions cannot be foreseen. Holm Jacobsen, Tryggstad & Harty (2021) show how formats allowing a dialogue between jurors and competitors during the design process have the potential to change the rules of the game in terms of both how submissions are judged and how solutions are developed.

The jurors were experienced and had the necessary professional expertise for the assignment. In addition, they were supported by external experts in evaluating energy solutions and climate declarations. The jurors appointed by the research group had professional expertise as practicing architects as well as experience in research. Jurors appointed by the organizer were experts in architecture and urban design, land surveying, and energy. They could be assumed to have strong positions in the City administration. More interesting is that the jury reflects the division of roles and power in design developer competitions between elected officials and civil servants in the City administration. There were no elected officials serving on the jury to bridge this gap. The winners were appointed by civil servants, but it was elected officials who decided on the land allocation in Norrköping, according to the jury reports.

The proposals were presented anonymously for the jurors to ensure equal terms. The ethical considerations in competitions can be summarized as fair play. The idea of fairness is a fundamental principle in competitions, although there are no specific competition rules or national standards for design developer competitions. Lampel et al (2012, p. 76) remind us of the crucial sense of fair play: "At the heart of the competition is the assurance to participants that all performances will be judged impartially, without allowing competitors' previous reputation or economic clout to influence assessment. This means creating a governance structure where rules are fair and unambiguous, and communicating this governance structure as clearly as possible."

Design proposals and the competition site

Design is by nature future oriented (Lundequist, 1992). Both juries and design team produce knowledge about the future. The jury produces architectural knowledge through their design review and selection of a winner. The design team produces knowledge of possible futures by designing solutions in response

to competition tasks. The entries are models that show how the built environment could look on the site. Therefore, professional jurors mentally enter the models and partly experience them as a built environment. Design proposals do not seek scientific facts about the reality. Instead, they are models of possibilities. Jurors must formulate well-informed judgments of what they see as excellent, appropriate, or unclear in the schemes presented (Rönn, 1995) to the best of their ability. Lehtonen (1991) has investigated the relationship between architecture as a model and the built environment in competitions. People in drawings and illustrations are not real individuals but fictional persons. Despite that, professional jurors can read the proposals and make credible assumptions about how the environment can be experienced. Lehtonen claimed that competent jurors are able to make qualified judgments in competitions. The prerequisite for making credible predictions is that the model provides a sufficiently realistic picture of the future on the site. This is the background to the submission requirements in the competition programs regarding drawings (site plan, section, facade, details, apartment layout), perspective illustrations, and digital model. Delivery demands must also reflect the financial compensation for producing design proposals, as noted by Architects Sweden in its approval of the competition programs.

The target group for housing in the competition programs is very different in the two winning proposals. In the invited competition, the winning design has flexible apartments that meet the needs of households that vary in size over time. The response is both a changeable structure and apartments that facilitate changes in layout. Their orientation towards families appears appropriate due to the pre-school and playground close to the site. The open competition, on the other hand, has no clear target group in the program. Different forms of rent/own tenure were made possible. The jury therefore found it more difficult to assess how the six proposals suited the site. The winning proposal combined a lot of small apartments with collective space for social activities. This design was at risk of being seen as a hotel rather homes. In this scheme, flexibility is expressed in three ways: (a) through illustrations of small apartments showing varied types of furnishing and use of living space, (b) through apartments on the ground floor that integrate space for living space with commercial space, and (c) through a garage in the basement that could be converted to other uses and was accessible from the courtyard. The jury found that this proposal would likely contribute to diversity in the new district. The small homes should attract single-person households and young people looking for a central location. The other housing in the new district is made up of larger apartments for an established middle class. The conclusion is that the degree of precision and freedom in the competition program and the location, external conditions, and surroundings of the site have influenced the assessment of proposals in the Norrköping competitions. The study shows that the judging criteria are interpreted by jurors based on the context. The proposals visualize new dimensions of the task, and by reviewing the solutions they expand their understanding of the competition.

Judging process and competition program

The design review in both competitions started without the selection of a chair, reporter, or secretary for the jury report. Those roles became clarified through praxis. One of jurors appointed by the organizer acted as session leader, presented the proposals, and finalized the jury report. From this perspective, the structure for evaluation differs from the guidelines published by Architects Sweden and may have caused some confusion in the beginning of judging process. Also, the presence of researchers inside the jury room differs from the professional association's recommendation. According to fieldnotes, all the jurors were attracted to the idea of fair play. The competition programs were understood as an ethical agreement among the organizer, jurors, and design teams. All the entries took part in the competition. They fulfilled the delivery demands. Based on the fieldnotes, the jury's work may be divided into eight steps, which are typically required to select a winner in competitions:

- **Step 1: *A positive atmosphere.*** The jurors started the review by getting to know the design proposals, judging criteria, and planning the evaluation. The task was exciting. The jury had to choose a winner. For the design teams, the competition was now over and they had to wait for the outcome. The jurors reflected on two kinds of criteria at work in the competition programs: hard and soft criteria. Energy, climate footprint and affordable rent/cost are criteria that can be converted into quantities and become measurable by numbers. The outcomes are “hard facts” for qualifying submissions. Architectural quality, circular processes, social sustainability, innovation, and developability represent soft criteria. These kinds of criteria are open to interpretation, though they can be used for judging design. The jurors found that developability in particular was a criterion that could be understood in different ways, and they chose to apply this concept at the end of the evaluation. There was a sense of curiosity and excitement among the jurors in the room, reported in the fieldnotes. The design proposals were in front of them. The organizer was no longer shadow dancing with absent partners. The jurors could at last meet the design teams as partners in the competition, and they began to communicate with the competitors, although not directly because of the demand for anonymity, but rather by posing questions to their submissions and perceiving responses from them.
- **Step 2: *Conditions outside the jury room influence the evaluation process.*** This impact from the external world had two faces. Firstly, the planning of new buildings on the competition sites influenced the jury’s assessment in terms of values and qualities the proposals could be assumed to bring to the site. Entries cannot be seen as separate from sites and their surroundings. Secondly, the assessments may also be affected by technical experts with access to measurable systems. The strong demand for energy solutions and for minimizing CO₂ emissions was important in the two design developer competitions. Cucuzzella (2016) has observed in competitions organized in Canada that risk management tools such as environmental certification appear to be attractive for their predictive power. Outcomes are regarded as facts. Ranking designs becomes the result of rational deliberation, which in turn gives environmental experts a dominant role in jury work. Instead of being part of the jury, Cucuzzella therefore suggests that technical experts should be outside the jury room and provide the jurors with reports to help in their assessment of proposals.

Östman (2016) has a partially different view after studying a competition in Finland with sustainability requirements. The winner was announced by an expert jury including several architects. Sustainability was evaluated by an external expert. However, it appears that sustainability had no impact on the selection of the winner. No one inside the jury room took much notice of the expert report. For this reason, Östman argues that sustainability criteria must be better integrated into the review of proposals. External statements are not enough, even if these are seen as valuable by the jury. In the Norrköping competitions, the tension between expertise outside and inside the jury has been bridged by the organizer in three ways: (a) by appointing an in-house expert on energy as a juror, (b) by having two external experts outside the jury reviewing energy use and climate declaration, and (c) by approving proposals that fulfil measurable goals for ranking by quality. Only climate-smart architecture was competitive in their evaluations.

- **Step 3: *Developing individual and collective opinions.*** This kind of learning from practice is typical in professional jury work. The competition calls for jurors to quickly come to an understanding of the submissions, and this is a recommendation in the guidelines published on the website of Architects Sweden: “start by reading each proposal.” The advice aims to make several voices heard and create a dialogue between perspectives among professionals inside the jury room. In this case, the jurors had to read the proposals individually at home and return with opinions about them. This was required in both competitions. Individual judgments gradually transformed into collective judgements during the ses-

sions. The jurors saw critical aspects in the competition the more they learned about the submissions by reviewing them. At first it seemed easy to provide useful evaluations of entries and make clarifying comments on the proposed solutions. It was only at the end of the assessment, when the entries needed to be ranked, that differences among the jurors become visible inside the jury room. These difficulties were bridged by the ethical obligation to choose a winner.

- Step 4:** *Sorting design ideas and solutions into sense-making patterns.* The juries divide or sort design proposals into categories based on fundamental ideas identified in the submissions (Rönn, 2019). The purpose is to find, express, and show important differences between the contributions. The categorization is a method for creating meaningful patterns as a starting point for the design review. The more proposals jurors must assess, the greater the need for sorting. The recommendation from the architecture associations of the Nordic countries to juries is that the evaluation should focus on design ideas in the proposals. As there were only a handful of proposals in each of the Norrköping competitions, the jury did not need to divide the proposals into several categories. However, sorting made sense later, when the competitions were compared. At first the juries could review design ideas in the proposals by looking at how they tried to solve the task. In the invited competition, the winning contribution showed an architectural framework that visualized recycling in the facade. The idea was that the frame would be filled with reused materials. Flexible housing was designed for families that grow and decrease over time. The winner of the open competition was also designed as a framework for recycled sheet metal and windows. This time the facade had a uniform and elegant character. Another major difference was the target group. The many small apartments were intended to attract single-person households and young adults. This organization of the proposals into different patterns must make sense when they are viewed on the competition site. The winning designs are individual solutions showing different ways of solving a common challenge. The jurors are responsible for seeing the bigger picture across the various possibilities illustrated by the entries and offered to the organizer— the salient features that show differences in design qualities among the proposals. (Kreiner, 2020).
- Step 5:** *Comparing design proposals in relative autonomy.* The jurors compared the proposals in four different ways. Firstly, they compared them based on the judging criteria stated in the competition programs. Secondly, they compared them as overall solutions to the competition task. Thirdly, they compared the entries in design details. Fourthly, they compared them as digital models. Comparison is a useful method when there are several solutions to the same design problem. This is typical in competitions in architecture and urban design. The organizer usually wants to make space for surprises and be able to embrace unforeseen proposals. The aim of comparison in competitions is to identify similarities and differences among the design proposals, which in turn form the logical basis for ranking. Drewry (1939) regards comparison as a key concept in valuation. But it is not only the character of designs that are made visible through comparisons; the juror's comparison of contributions in the Norrköping competitions also showed that none of them had the best solution on all eight judging criteria. For this reason, the jurors needed to be able to make an overall assessment of the proposals (Rönn & Koch, 2022). The competition programs in Norrköping provided this freedom of action for the jurors.
- Step 6:** *Partial ranking of proposals into better and worse.* The method for ranking contributions in design developer competitions is a combination of architectural critique and transforming qualities into numbers. Without ranking design as good, better, or worse, professional juries cannot choose a credible winner. Some contributions must be seen as better than their competitors. Ranking is thus a mandatory task in competitions. Proposals in design developer competitions are often ranked in terms of both criticism and numbers because the jurors are made up of architects and engineers. Rational decision-

making for engineers is achieved by weighted and scored criteria in competition programs. The proposal that gets the most points in the ranking wins (Bazerman, 2006; Svensson, 2009). Architects Sweden recommends that jurors avoid grading design by points. The reason is probably that architects are trained in judging design through architectural critique (Lundequist, 2002; Lymer, 2010). All eight judging criteria in the Norrköping competition were given the same value, in accordance with advice from both the research group and Architects Sweden. For the organizer, this also became a way to bridge potential conflicts in advance by using both measurable and assessable criteria. The organizer provided the jurors with a simple tool for scoring, which was perceived as a support for their ranking. The scoring operated as a check of the ranking done through architectural critique. Another reason for ranking design via scoring in Sweden is that the allocation of municipal land to companies is not seen as a task for in-house physical planning, architecture, and urban design; instead, it is typical for land-use and development authorities to handle land allocations through competition, tenders, and direct allocation (Rönn & Koch, 2023). This is also the case in Norrköping. The degree to which the outside development companies collaborate with the City's departments for physical planning, architecture, and urban development depends on how strong the focus is on architecture in competitions. Thus, the ranking of design proposals is influenced not only by the objectives, criteria, and requirements of the competition program but by local land allocation policies.

- **Step 7: *Seeing differences and expanding their importance.*** At this stage of the evaluation process, jurors are trying to assess the pros and cons of various qualities shown in the proposals. The jurors need to identify differences in design quality among the proposals, make them visible, and then expand their importance for the final ranking. Especially at the end of the assessment, when the best proposals compete against one another, small differences in solutions become clearer for jurors if they are magnified. Examples of differences that took on decisive importance for the final selection of the winner in the invited competition were the design of flexible apartments and the way circularity was shown in the architecture. These two aspects were highlighted as a future-oriented perspectives. In the winning design, the jurors highlighted circularity as (a) a design strategy, (b) recycling of materials, and (c) collaboration with the municipality. The flexible housing solutions were perceived as credible and innovative. In the open competition, the outcome of the final assessment was determined by the jury's interpretation of the proposals' architectural qualities. This time the jurors had more difficulty seeing differences in quality that could be expanded and explained by ranking. The facade facing the park came to be determinative. The site had an important urban quality. The recycled sheet metal in the facade in the winning proposal gave the residential building an elegant and impressive expression. This was appealing to the jurors. According to the design team, a collaboration had been established with a contractor who had sheet metal recycling as a business model. This gave credibility to the design of the proposal.
- **Step 8: *Point out design ideas, qualities, and values demonstrating mission accomplished.*** The advice from the professional architectural associations in Sweden, Norway, and Denmark seems very clear: focus on ideas. The jurors should look for fundamental design ideas in the proposals. Drake (1979) called them primary generators because of their driving force in design processes. Jurors are advised to pay special attention to identifying strong ideas, qualities, and values rather than looking for errors in details. In the Norrköping competitions, the juries expressed judgments and exchanged comments during the evaluation of submissions in a manner that is common in architectural competitions (Svensson, 2013). Al-Qaysi (2018) regards judgment as a basis for selecting the best solution. The preferences, choices, and reasoning of individual jurors in the evaluating processes ends in a coordinated statement justifying the outcome. The jurors did manage to select a winner by following most of the fundamental principles in the Nordic guidelines. By examining the design proposals individually and collectively,

they exchanged comments in several rounds until they were united in their choice of winner. In each competition, one proposal was considered to have captured crucial values and qualities better than its competitors. Theory is hidden in the practice of judging design.

The Value Handbook (2006), published by the Commission for Architecture and the Built Environment (CABE), reports six categories of values in architecture and urban design: (a) exchange value, (b) use value, (c) image value, (d) social value, (e) environmental value, and (f) cultural value. Exchange value represents commercial aspects in the handbook, which are influenced by the market, location, design, etc. User value stands for how well the design fits its purpose according to end-users, housing management, owners, and the local community. Image value is the scheme's ability to express messages and communicate ideas by design. According to CABE, social value arises when architecture and urban design encourage people to connect to the environment, promote mutual understanding, and support cooperation. Environmental value depends on how projects manage materials for design and construction, how the land is used and occupied, and the resources required for building operations and maintenance. Cultural value, broadly speaking, provides a sense of identity and belonging to contemporary living and puts people in a historical context.

The jurors in the Norrköping competitions identified and reviewed the values and qualities in the design proposals according to the judging criteria set out in the competition programs. Values and qualities were understood as something good in their discussions. Exchange value could be measured by the price developers were willing to pay for the site in Norrköping and how the proposals met demands for affordable housing. There was a fixed price for the land in both competition programs, allowing the design teams to compete on the quality of the design in their proposals. Use value and social value in the competitions were judged in relation to the criterion of social sustainability and identified by the jurors as the proposal's target group and expected inhabitants, the flexibility of the apartments and construction system, and access to common space and services. Furthermore, use value and social value were also important in the review of outdoor design in terms of private space, public land, and social activities. Environmental value was measured quantitatively as energy use and CO₂ emissions. Circularity as an environmental value was assessed on the solutions presented by the design teams. Cultural value played a role in the review of the proposals in the open competition. The railroad tracks on the competition site was regarded as having culture value and reminding local residents, the surrounding community, and visitors that the area is a former harbor with an industrial legacy. Image value was expressed by the winning design in facades in two different ways. The winner in the invited competition presented climate-smart architecture designed as a frame that featured recycled material in the façade, demonstrating diversity by incorporating reused material. The winner of the open competition also featured a climate-smart architectural frame supporting recycled cans, sheet metal, and other materials. However, in this case, the jury saw the facade as elegant with a unified expression for a location of civic importance.

Selection of winner in the jury report

The jury report is the outward expression of the design review that takes place inside the jury room. The competition outcome is a result of both steering design schemes in advance and evaluating them after submission through jury deliberations. Judging becomes a combination of *ex-ante* and *ex-post* positions (Rönn, 2013). The two positions influence each other. *Ex-ante* stands for early steering, done in the Norrköping competitions by prequalifying competitors and through the competition programs' description of the task, objectives, and judging criteria, including delivery demands. *Ex-post* represents steering the design of solutions by evaluation of the submitted entries. The jurors' search for values and quality can only start after the proposals have been submitted to the organizer. Expressions in design

proposals are transformed into impressions inside the jury room. The choice of winners in the Norrköping competitions seems to have been the result both of gradual growth of learning among the jurors (about the proposals and the competition) and of forcing insight at the end in selecting one good solution as the overall best entry. The jury had already decided upon the winner before working to finalize its report (Kreiner, 2020). That conclusion is supported by the fieldnotes from the jury work. However, that decision needed to be justified, explained, and described in the jury report. Several ethical aspects had to be considered when the outcome was presented. The jurors knew their report might be read by professional colleagues, competing companies, administrators in the city planning department, and elected officials, as well as being announced in the press. The jury report could be assumed to have a broad target audience. In this case, competition programs, design proposals, and jury reports have also been presented publicly on the Architects Sweden website for competitions, the City of Norrköping website, and the Chalmers University of Technology Center for Housing Architecture website. The people of Norrköping could see the design proposals in an exhibition at the local museum and at the same time read the jury report.

For jurors, the reasoning behind their selection of a winner became a matter of framing their selection in a way that seemed ethically correct, fair to design teams, logical, and the result of differences in value and quality among the design proposals. The jurors succeeded in picking two good proposals as winners. They fulfilled their task. Mission accomplished. The two jury reports are typical cases of architectural critique. Their structure and wording include an introductory overview, a description of the proposals, comments, and evaluative judgments. Seen in this perspective, the reports are in line with the standard and recommendations from Architects Sweden. The judging of the design proposals was a form of architectural criticism in action, though influenced by the organizer's desire to see qualities transformed into measurable properties. This division between "good quality" and "right quality" is much stronger in design developer competitions than in the typical architectural competition approved by Architects Sweden. The explanation is that a design developer competition is part of municipal land allocation policy and is run by departments responsible for land use and development in Sweden (Rönn & Koch, 2022). Picking the winner in design developer competitions is more art than science. It is a model of a forthcoming built environment—expressed in drawings, illustrations, words, numbers, and visualizations—that jurors have identified as a winning design for further development in the two Norrköping competitions. Neither has been implemented yet. Judging a design in its early phases will always be attended by uncertainty and doubt in the search for the best solution to a competition task. The jury reports must bridge the lack of certainty about the future, justify the selection of a winner, and clarify the evaluation process. The wording in the jury report therefore became a final important assignment for the jurors in their selection of the winner.

Concluding remarks

The answers to research questions in this study are complex and point in several directions. Our intention has been to combine theory and practice. Still, the design proposals are at the center of the judging in a competition. The assessment criteria provide a starting point. The anonymous presentation of submissions compels the jurors to direct their design review towards the proposals offered and their solutions to the task rather than the reputation and talent of the competing design teams. The fieldnotes from the Norrköping competitions show that comments on qualities and values, pros and cons in design, played a decisive part in the evaluation. They allowed us to identify and theorize the critical steps taken in identifying the best solution and agreeing upon a winner. Jurors can be assumed to investigate competition submissions to the best of their ability. The study shows that the jury report's description of the process of selecting a winner was an after-construction that cloaks the judging in an explanatory and sense-making pattern intended to give legitimacy and credibility to the decision.

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¹ See: <https://www.vinnova.se/en/p/design-developer-competition-as-tool-for-climate-adaptation-in-building--innovative-solutions-for-dwellings/>

² See: <https://www.vinnova.se/p/markanvisningstavlingen-som-verktyg-for-klimatanpassning-av-byggd-miljo---innovativa-losningar-for-bostader/>

³ See: <https://norrkoping.se/arbete-och-naringsliv/lokaler-mark-och-byggande/marktilldelning/inbjuden-tavling--framtidens-innovativa-boende-bjorkalund>

⁴ See: <https://norrkoping.se/arbete-och-naringsliv/lokaler-mark-och-byggande/marktilldelning/oppen-tavling---framtidens-innovativa-boende-inre-hamnen>

⁵ See: <https://www.boverket.se/sv/byggande/hallbart-byggande-och-forvaltning/miljoindikatorer---aktuell-status/vaxthusgaser/#:~:text=Bygg%20och%20fastighetssektorn%20svarade%202019,store%20utsl%C3%A4pp%20utomlands%20genom%20importvaror>

⁶ See: <https://www.arkitekt.se/tavlingar/om-tavlingar/>

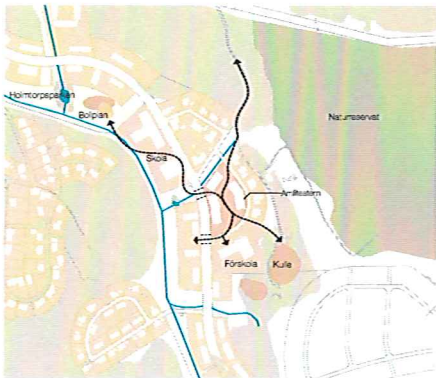
⁷ See: <http://tehne.com/assets/i/upload/2022/competition-culture-in-europe-2017-2020.pdf>

APPENDIX



Vy längs med huvudgatan

Byggnadernas placering och utformning syftar till att stärka huvudgatus rum. Murarna som ramar in förgrundsplanen skapar en tydlig avgränsning mot trottoaren. Entréet blir en liten offentlig plats i anslutning till gatan.



Övergripande platsanalys

Stadsbyggnad och platsens möjligheter

Kvarteret Amfiteatern är beläget mellan förskola och skolgården och i dess förlängning Holmtorpsparken. Kvarteret gestaltas som en delvis öppen gårdsmiljö som länkar samman dessa mötpunkter både rumsligt och funktionsmässigt. Dessutom förstärker kvarteret kopplingar till stigarna ut i skogen och ångskogen. Promenaden genom gårdsummet börjar och slutar vid små gestaltade torgbildningar. Genom denna typ av stadsbyggnad får kvarteret en naturlig plats och funktion i lokalsamhället, vilket borgar för social hållbarhet.

Innovationer

Boroboro visar en processinnovation för hur framtidens hållbara bostäder kan projekteras och byggas. Processen består av tre delar: flexibel planering och konstruktion från första början, innovativt samarbete med kommunen samt en genomtänkt process för hur husen kan förändras över tid.

Parallellt med projekteringen av husen bevakas marknaden för återbrukat material i syfte att inventera vad som finns tillgängligt samt vilken kvalitet materialen håller. En särskild organisation tillsätts i tidigt skede för att arbeta med detta.

I samarbetet mellan kommunen och exploatören utforskas om effektivare och kostnadsbesparande lösningar för logistik, lager och dokumentation kan tas fram. Ambitionen med detta är att hitta ett systematiskt sätt att utvärdera och inkludera en högre grad av återbruk i allt framtida byggande.

Vid projekteringen av husen ligger fokus primärt på att återbrukat material ska kunna användas vid nybyggnation. Vidare finns en stor potential och ambition att också använda återbrukat material vid framtida underhållsarbete, eller vid en förändrad gestaltningen av husen i takt med utvecklingen. Under projekteringsfasen upprättas en checklista för återbruk som stäms av och uppdateras allt eftersom.

Sociala innovationer har en stor och betydande roll i konceptet Boroboro och finns med i såväl planeringsfasen som förvaltningen av byggnaderna. Att kunna förändra lägenheten i både funktion och storlek gör det möjligt för familjekonstellationer att bo kvar även när dessa förändras. Resultatet av detta förväntas bidra till att boende kan planera mer långsiktigt avseende bostaden. Tryggheten i att inte behöva flytta ifrån ett område de tycker om ökar engagemanget i närmiljön och mötesplatserna utanför bostaden.

Utformningen av gården är skapad för att liksom husen vara föränderlig över tid. Det finns möjlighet för individen att var med och påverka gårdsummet. Naturliga mötesplatser i närmiljön skapar förutsättningar för fler sociala möten. I förlängningen förväntas också det sociala engagemanget att öka.

Boroboro

Förslaget med måttet Boroboro föreslår ett bostadsprojekt som möter programmet krav på låg energiförbrukning, stor flexibilitet i användandet över tid och många sociala möten. Med en stor gård och tydliga kopplingar till landskapet utformning av projektet enligt en tydlig gränssnitt. Gården blir en trygg plats för lek och gemensamt samvaro kring vatten, återbruk, odling och lek.

Boroboro, ett japanskt uttryck för något som är skett och läst. Det är uttrycket för Boroboro-textilernas namn - lagade och läpade kläder där återbrukade textilier används för att ge plagg en längre livslängd med tydligt redovisade lagor och sömmar som förklarar och berättar plaggens uttryck samtidigt som det är både kostnads- och resurseffektivt.

Arkitektoniska kvaliteter

Kv Amfiteatern ligger i ett naturnära läge i Norrköpings södra utkant. Det är en plats nära förskola, skola och mataffär. Familjer i olika konstellationer kan bo och leva lokalt i överkomliga, ljusa och flexibla lägenheter. För att skapa generösa gemensamhetsytor för lek och utövande på platsen förslås lägenheter i tre tydliga trevåningsbyggnader något som minimerar byggnadernas fotavtryck och ger plats för en omhändertagande grön gård i mitten av bebyggelsen.

Husen har relativt breda huskroppar med stora nästan platta tak och få uppstickande installationer för att klara högt ställda krav på såväl låg energianvändning som plats för produktion av förnybar el. Arkitekturen tar utgångspunkt i träkonstruktionens möjligheter till energiflexibilitet och flexibel byggande - ett flexibelt system som, under projekterings- och byggfaser, kan anpassas till olika krav på lägenhetsfördelning och användning över tid. En välisolerad huskropp omges av utanpåbyggande fristående balkonger och terrasser. Det bildas ett lager runt huskroppen som ger extra rum och fler rörelsemöjligheter till alla lägenheter, ett beklädnadslager som kan skräddarsys och anpassas till återbrukade byggmaterial på ett flexibelt sätt. Det är också ett lager som skyddar för inregn och sol, när det är som varmest, och det skapar en halvprivat zon mellan gård, gata och de enskilda rummen.

Den repetitiva strukturen ger plats för många olika sätt att leva och bo. Husets gestalt präglas av återbrukat material som har bearbetats så lite som möjligt efter att det demonterats från tidigare byggnader. Inifrån och ut används material där det passar in och uppfyller nödvändiga tekniska krav i den flexibla gestaltningsprincipen. Det är en inkluderande och tillåtande arkitektur som ger plats för liv ensam och tillsammans i lägenhetens privata sfär, halvprivata terrasser och uterum eller i gemensamma rum och utomhusytor på gården. Ytor för lek är centrala liksom lösningar som underlättar cykling och odling på gården.



Situationsplan i skala 1:400



Esch Sintel



Abrahä Achermann



Raumlabor



Lendanger Gro

Referensbilder för byggnadernas utformning

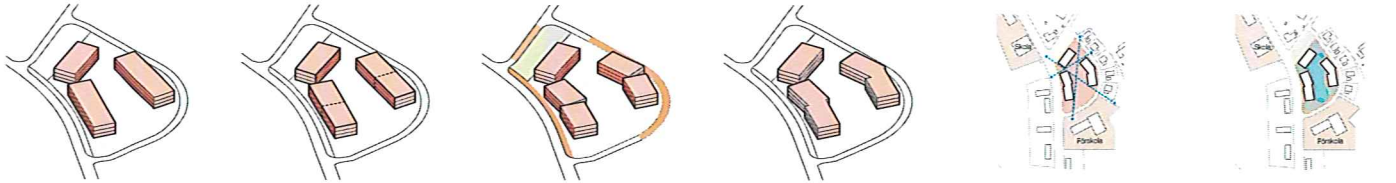


Boroboro



Gårdsrummet

Genom att ta tillvara på tomtens naturliga höjder skapas ett gårdsrum med en långsäckande svacka. Dagvattenuppsamling i kombination med återbrukade betongblock och stenar skapar en naturligt inspirerande lek miljö för barn i alla åldrar.



1. Utgångspunkten är effektiva, rumsbildande huskroppar med god formfaktor

2. Byggnaderna delas upp i fem st unger för lika långa fasader

3. Huskropparna roteras för att anpassas till gaturummet och tomtens geometri. Även naturrummet på tomtens norra del får en fond.

4. Resultatet är ett gårdsrum som får en spännande form och riktning och byggnader med en volymetrisk artikulation trots kraven på god formfaktor

Tack vare byggnadernas placering skapas ett gårdsrum som är genomskiktligt och förstärker redan existerande siktlinjer på platsen. Samtidigt skapas en tydlig rumslig definition när man befinner sig inom gården.



Gård med fokus på barnlek och familjeliv

Platsen och landskapet

De tre nya bostadshusen bildar, tillsammans med en topografiskt urskälld mittendel, ett starkt samlande gårdsrum med stora rumsliga kvaliteter.

Genom gården och vidare ut mot landskapet leder tydliga stråk, till attraktiva målpunkter i omgivningen som Vrinneviskogens naturreservat i norr, Holmtorpsparken, Ensjön i sydöst och det omgivande åker- och beteslandskapet. Försäls- och skolgård med lek och spel kan med fördel samutnyttjas på helger och utanför skoltid.

Dagvatten från husen leds in mot gårdens mittendel och utgör möjligheter både till bevättning av vegetation, öppna vattenstråk med yttlig fördörning med infiltrering som renar dagvattnet. Vid stora skyfall kan gården ta hand om stora mängder vatten som slutligen, via rännor och ledningar, leds till det angränsande befintliga diksystemet i norr. Vattenrännor, dammen och dammar bjuder in till lek av olika slag med rika estetiska upplevelsevärden samtidigt som det förbättrar platsens luft och temperatur.

Gården kommer att upplevas grönskande och frodig innehållande naturinriktad lek, med kor, bänksk, bror/sjågar och spännande stigar. En generös vegetation inriktad på fukt-föredragande växter, som exempelvis alträd, pilträd och buskar, ormbunkar, klättraväxter och diverse vattenväxter. Husens uteplatser kopplas till gården och omringande gaturum med en fri inramning bestående av låga tegelmurar, häckar, friväxande buskar, gräs och perenner.

Markmaterialen är återbruk av exempelvis stenmjöl, marktagel, betongplattor och återanvända betongblock som "stepping stones" i vattenstråken. Sammantaget ett förädlat mark-lappställe i samspel med fasadernas uttryck. Klättraväxter på husen, gröna balkonger och uteplatser stärker ytterligare samspillet mellan inre och ute - hus och landskap.

Gården har ett fritt och öppet formspråk som bjuder in de boende till att vara med och forma nya uttryck och funktioner, de kan vara med i skötsel och planering av förändringar i framtiden. I förslaget finns växthus, återbrukspalms för cykelreparation, grillplats, attraktiva sittplatser och lekstigar. Gården är tänkt att vara processinriktad så att möjligheter hela tiden finns att lägga till aktiviteter som exempelvis odling, ytterligare lek, hängstolar, bänkskrin.

Parkeringar görs med gräsmering på parkeringsytorna och förbereds för multianvändning för tex basket och landband. Cyklar parkeras utomhus och i husets entréer för att vara så tillgängliga som möjligt.



Kopplingen till landskapet

Kvarteret möter villagatan och dess lägre skala med förgårdsmark, uteplatser och entréer. De avlånga huskropparna med sammanhållen takfotshöjd samspejar med det vidsträckt landskapet



Referensbilder för gårdens utformning



Hus A Typplan
Skala 1:200



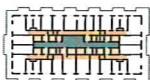
Hus A Entréplan
Skala 1:200



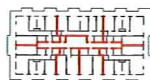
Hus B Typplan
Skala 1:200



Hus B Entréplan
Skala 1:200



Byggnadens kärna och kommunikationszoner är tydligt organiserade, vilket skapar förutsättning för flexibel lägenhetsfördelning över tid



Föreslagen lägenhetsfördelning i plan ovan

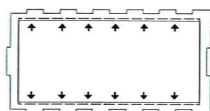


En av lägenheterna (3 rök) delas itu på förberedd plats och två av hörnlägenheterna växer.



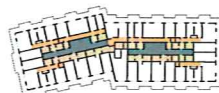
En av lägenheterna (3 rök) delas itu på förberedd plats och en av hörnlägenheterna tar över ett rum från en 2 rök.

Flexibilitet över tid i byggnadens skala



Flexibelt husdjup i planeringsskedet

Planlösningarna är utformade för att fungera med ett varierat husdjup. Skillnaden i planlösningen är helt enkelt rumsdjupet på bostadsrummen närmast fasaden. Vinsten med detta är att lägenhetsstorlekarna kan justeras under planeringen av projektet.



Byggnadens kärna och kommunikationszoner är tydligt organiserade, vilket skapar förutsättning för flexibel lägenhetsfördelning över tid



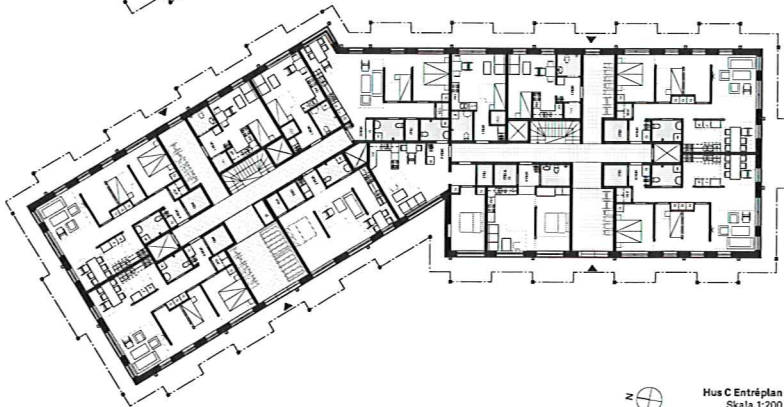
Föreslagen lägenhetsfördelning i plan ovan



Lägenheter kan växa samman för att skapa större bostäder på olika vis



Hus C Typplan
Skala 1:200



Hus C Entréplan
Skala 1:200

Designstrategier

Husens inre har generösa entréer, de flesta genomgående, där man kan mötas. Lägenheternas flexibilitet ger plats för en mångfald av familjekonstellationer.

Hustypen är gjord för att ha energieffektiva lägenheter kring en accesskorridor och rum med goda ljusförhållanden med stora fönster och öppningar mot balkongen. Det är en tydlig, repetitiv struktur som tar till vara platsens kvaliteter för att skapa ett varierat grönt, hållbart liv.

Entrékorridoren ger möjlighet att lägga till fler entréer till lägenheten vid förändrad lägenhetsfördelning. I många fall kan förrådet omprogrammeras till en ny entré. Lägenheterna präglas av stora möjligheter till varierad funktion som kommer av en rad med badrum och förråd närmast trapphuset, en neutral korridor mellan denna rad och rummen som har neutral förvaring i garderober. Rummen är indelade med väggar som har ett skjutparti mot fasaden. På detta sätt kan de användas neutralt i relation till varandra eller förbindas via öppningen som skjutdörren möjliggör mot fasad och det utomhusrum som finns i förlängningen av rummet utanför på balkongen. Lägenheten kan möta varierade boendebehov över tid utan stora ombyggnader, rum kan avknoppas och införlivas med grannlägenheten eller så kan rum adderas vid behov.

Rumsfilen kan stängas med en konstruktion som ljudisolerar mer än en vanlig innerdörr vilket skapar goda förutsättningar för att rummen kan användas parallellt.

Projektet kommer att genomföras med ett stort mått av realism när det gäller ekonomi. En medveten strategi för att hålla ner hyran i tider av bostadsbyggande med relativt höga tomtkostnader, räntor och avsaknad av stöd kommer att prägla projektet. Stigande bygg- och finansieringskostnader behandlas över tid i projektet och lägenhetsfördelning och exakt husdjup kan optimeras inom systemet så nära in på byggstart som möjligt.



Boroboro



Energihushållning

Husens inre har generösa entréer, de flesta genomgående, där man kan mötas. Föreläget Boroboro är ett plusenergihus. Lägenheter i flerfamiljshus ger bästa lösningen för ett energieffektivt liv [TK1] [JT2]. Husen formges med en formfaktor som ger liten omslutande area (i förhållande till Atom) för låga värmeförluster. Formen ger energieffektiva byggnader trots relativt stora fönster. Lägenhetsbunden parat med generösa gemensamma utrymmen i liten yta yttervägg och låga ytebehov för varje lägenhet. Lägenheterna gränsar till andra lägenheter på flera sidor och kan vara mindre i storlek när vissa funktioner tillgodoses i gemensamma utrymmen. Delade ytor och små lägenheter ger effektiv energianvändning.

En träkonstruktion med lätta element undviker köldbryggor på ett effektivt sätt. Det finns inga bärande delar som bryter klimatskalet. Balkongerna är en fribärande [JT3] konstruktion för att undvika genomgående konstruktionsdelar.

Balkongen medger fasta fönster på flera ställen för att få så låga U-värden som möjligt. Såväl tak som ytterväggar förses med låga U-värden tack vare effektiv isolering. Kantbalk på bottenplattan isoleras extra mycket.

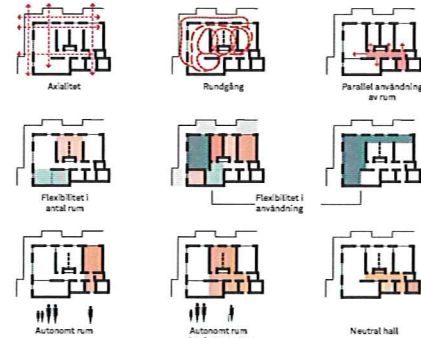
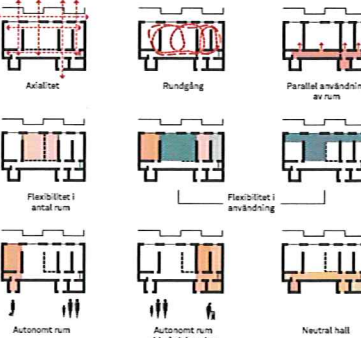
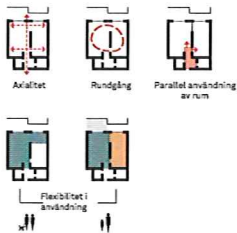
Installationerna har optimerad drift, behovsstyrning används. Genom att nyttja lägenhetsvis 7TK-aggregat med roterande värmeförlustare kan luftfödet styras på CO₂ och fukt, både fäktenergi men också uppvärmningsenergi av luften hålls nere. Värmeledet understiger ej 0,5 oms/h. Fastigheten utförs med en bergvärmearranging med värmepump. Husen förses med golvvärmsystem för att få en gynnsam temperatur för bergvärmens att arbeta mot så en COP (effektivitetskoefficienten) kan hamna över 4,0 och för att minska kulvertförlusterna, låga temperaturskillnader ger lägre effektförluster.

Golvvarmesystemen styrs individuellt i varje rum med egna temperaturreglerare. När man nyttjar lägenhetsvis aggregat är risken för luktöverföring låg och då tillåts användningen av roterande värmeförlustare som inte har behov av att avfrostas. Detta skänker både energianvändning men även toppseffekten på husets värmeförbehov då den höga temperaturverkningsgraden kan nyttjas även när det är som kallast.

VVC-förlusterna hålls nere med centrala tappvarmvattenstammar i trapphus som utförs med så kallad VVC-v-system för att yttermera minska VVC-förlusterna så nära in på byggstart som möjligt.

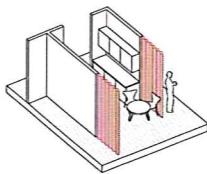
Kopplingar till omgivningen

Där grusvägen mynnar ut i skogsbyrten öppnar kvarteret upp sig bjuder kvarteret in till vidare promenad genom gården



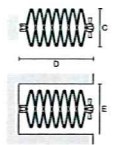
2 ROK 43-47 kvm

Den typiska tvärrummen drar stor nytta av lösningen med viddörr till samman med rumslupet. När den stora dörröppningen står öppen skapas ett flytande rum längs fasaden, där vardagsrumsdelen lånar ljus och rymd från den främre delen av sovrummet och användningen kan blandas vara fri i önskad grad. Samtidigt finns förutsättningar för parallell användning och möjlighet att smita ut under pågående zoomöte tack vare sovrummets två dörrar.



3 ROK 77-83 kvm

Trean är lite mer generös och är förberedd för att kunna delas av i två mindre lägenheter eller så kan den bli en ytteffektiv fyrrummare. Arbetsköket ligger i anslutning till entrén, badrummet och ett av sovrummen vikat ger möjlighet till autonomi. I den här lägenheten är korridoren möjlig att avgränsa med viddörrar (för parallell användning av rum), men kan också bli en del av vardagsrummet. Placeringen av förådet är också genomtänkt för att underlätta avdelning eller önskan om två entréer inom samma lägenhet.



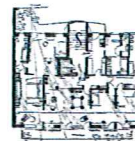
Viddörr

Viddörrar som vi har använt oss av är en produkt från Saxi, med anor från 1950-talet. Under vidare projektering kan även andra alternativ undersökas. Dörren klarar samma ljudreducering som en vanlig innerdörr (20dB), och tillsammans med välisolerade mellanväggar skapas goda förutsättningar för separat användning av rummen, såväl som öppna rumssamband.

4 ROK 83-88 kvm

Fyrrummen är ytteffektivt planerat med inbyggd flexibilitet. Matrummet kan enkelt bli ett ytterligare rum och de två små sovrummen kan omvandlas till ett större rum. När viddörrarna står öppna skapas en rumslig och fri sikt längs fasaden - när de står stängda fungerar rummen som vanliga, separata celler. Den som inte vill dra nytta av rumsligheten kan helt enkelt ha viddörrarna stängda och möblera framför den som om den vore en vanlig vägg. Korridoren får indirekt dagljus via överljus. Även köket planeras med överljus vid den avdelande väggen för att matplatsen skall kunna delas av.

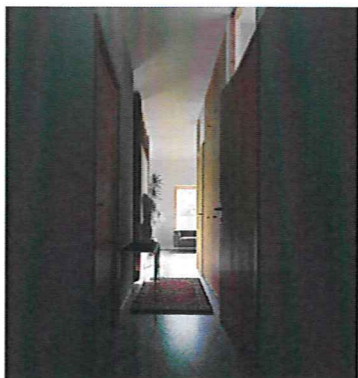
Köket med matplats kan hållas öppet mot vardagsrummet för att skapa ett öppet rumssamband, eller stängas till vid behov. Alla rum kan användas parallellt eller så kan den "offentliga" vardagsrumszonen fylla ut i de andra rummen.



Inspiration från Gio Ponti

Den italienska arkitekten Gio Ponti egen lägenhet har varit en inspiration för lägenhetslösningarna. Sovrummen och vardagsrummen har ett ordentligt rumsdjup, vilket i kombination med viddörrarna ger skapar en flexibel rumsson längs med fasaden där rummen lånar ljus och rymd av varandra.

Referens: La Casa Ponti i Via Dezza, Milano



Vy från korridor



Vy längs med fasaden



Vy längs med fasaden 2 rok

Boroboro



Boro boro-fasad

Närbild fasad som visar en kombination av återbrukat fasadmateriäl. Balkongracket växlar mellan öppna och täta delar och de täta delarna kan vid gynnsamma lägen bytas till solpaneler.



Entrétorget

Vot huvudgatan skapas ett litet entrétorget och blicken leds vidare in i kvarteret

Teknisk beskrivning

De tre byggnaderna ska uppföras i en lätt träkonstruktion av typen Masonite Beams eller liknande. Det är en konstruktion som har stora fördelar i det att den minimerar mängden konstruktionsvirke och effektivt utnyttjar allt skivmaterial för stabilitet. Utöver låg materialåtgång har konstruktionen mycket goda isoleringsegenskaper och klarar alla ljudkrav mycket bra. Trä är ett lättarbetat och enkelt material som kan konstrueras i element som snabbt kan resas i en torr process. Byggnationen kommer att ske under våderskydd. Tanken är att isolering antingen utgörs av återbrukat material eller träfibersolering om det är möjligt. Vissa delar i glasfibersolering är att föredra framför sterull.

Fönster, dörrar, tätskikt, installationer och andra byggnadsdelar med högt ställda funktionsskriv kan vara svåra att utföra i återanvända produkter. Andra delar så som fasadmateriäl, isolering, betongplattor och återbrukas så långt möjligt. En stor vikt vid projekteringen läggs vid hur tex skivor, isolering och andra materiäl som skruvas i stommen gör det på ett sätt som möjliggör framtida demontering med en god planering för att minimera spill. Överlag används robusta materiäl i utsatta positioner som håller väl över tid.

Taket utförs med en låg lutning som upplevs som platt eftersom solceller på platta tak kan generera energi hela dagen, inte bara i en specifik vinkel. Alla genomföringar samlas och förläggs i förbindelse med hisschakter för att ge så stor orörd, platt yta som kan utnyttjas för solceller.

Grunden kommer att projekteras som en minimal betongkonstruktion som utförs i klimatförbättrad betong med tex återvunnet materiäl i ballasten och armeringståll klimatprofil.

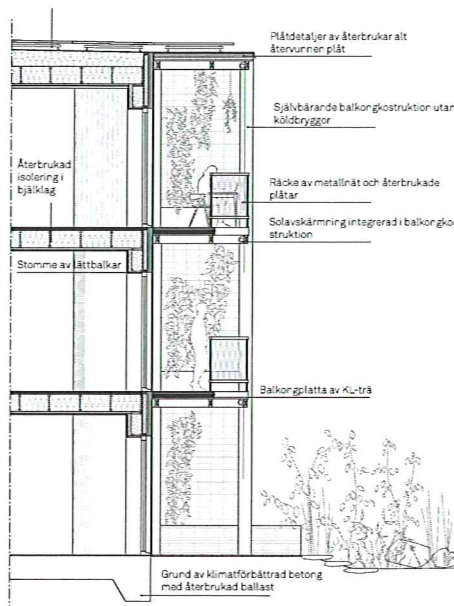
Om möjligt monteras solceller med återvunnet kisel.

Avskräden av radiatorer och bruket av glasullskanaler av typen Climate Recovery minskar mängden köpt stål i projektet. Materiäl stäms nogra av mot byggnadsbörnigen, tex förkro-made kopparrör undviks.

Klimatavtryck

Klimatavtrycket blir, med föreslagna konstruktion, mycket lågt. Vid beräkningen har vi använt skolkonservativ data från Boverkets databas samt EPD (Environmental Product Declaration) för de mest klimatpåverkande resurserna (materialen). Kravet i tävlingen är att projektet ska uppnå 40% av referensvärdet, d v s 190 kg CO₂e/m². Nedan vid ett första överslag utan EPD är när projektet under denna siffra men blir förstås lite högre med uppräknig till konservativa värden som Boverket kräver att man ska lägga på. Med irräkade data från EPD är för de mest klimatpåverkande resurserna hamnar projektet på den mycket låga klimatpåverkan 169 kg CO₂e/m². I dessa beräkningar kan man notera att solcellerna upptar hela 5% av totala värdet. Projektets idé om att använda så mycket återbrukat materiäl som möjligt kommer att innebära att klimatavtrycksiffran justeras efter hand.

Solceller på tak



Cirkulära processer

I husen på kv Amfiteatern föreslår vi en Boro-metod för cirkulärt tänkande kring husens byggnadsmateriäl.

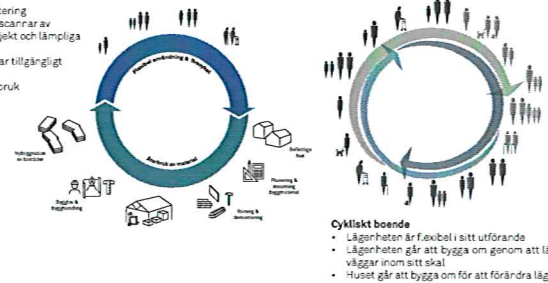
För att så långt möjligt använda cirkulära principer föreslås följande strategier:

- Maximera mängden återbrukat materiäl
- Utforska möjlighet att ta till vara på felbeställningar från andra projekt av varor med känsliga egenskaper, tex fönster
- Förlänga livslängden för den byggnad som projekteras och uppförs med tex flexibla planlösningar
- -Möjlighet att förändra över tid
- Göra det lättare att reparera och underhålla genom att tex undvika ingjutna installationer
- Projektera för att minimera spill av materiäl under produktion med bruk av standardiserade mått

För att maximera mängden återbrukat materiäl gestaltas husen och landskapet med en flexibilitet som anpassas till olika återvunna materiäl så som tegel, plåt, skivmateriäl, trä eller betong. Utbudet av återbrukat materiäl är begränsat. För maximal möjlighet till återbruk kan huset anpassas till flera olika typer av materiäl.

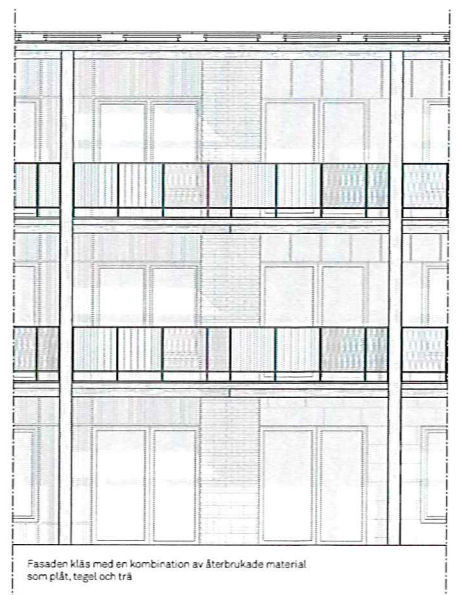
Rätt typ av materiäl vid rätt tillfälle säkras genom att en grupp med särskilt ansvar för söka upp återbruksmateriäl tidigt etableras. Materiäl från ett hus som precis ska rivas kan tas om hand. Ett materiälupplag kärva under en längre tid för en effektiv och smidig insamling. Ett nära samarbete med kommunen kring upplagsplats är viktig del i processen för kostnadseffektiva lösningar.

Trä i stommen är ett idealt materiäl för att kunna förlänga byggnadens livslängd. Trä gör det lätt att ändra och göra om i den nya byggnaden vid förändrade behov. Inte minst stor repetition av mått, moduler och konstruktionsdelar gör det lätt att förändra, lägga till och dra ifrån.



Cykliskt boende

- Lägenheten är flexibel i sitt utförande
- Lägenheten går att bygga om genom att lägga till och ta bort väggar inom sitt skal
- Huset går att bygga om för att förändra lägenhetsfördelning



Fasaden kläs med en kombination av återbrukade materiäl som plåt, tegel och trä

PLANBESTÄMMELSER

VEGETARIANISM

GRANISER

ANVÄNDNING AV MARK OCH VATTEN

Substrate polymer	Temperature (°C)	Time (min)	Yield (%)	Structure
PMMA	100	10	100	PMMA
PMMA	100	30	100	PMMA
PMMA	100	60	100	PMMA
PMMA	100	90	100	PMMA
PMMA	100	120	100	PMMA
PMMA	100	150	100	PMMA
PMMA	100	180	100	PMMA
PMMA	100	210	100	PMMA
PMMA	100	240	100	PMMA
PMMA	100	270	100	PMMA
PMMA	100	300	100	PMMA
PMMA	100	330	100	PMMA
PMMA	100	360	100	PMMA
PMMA	100	390	100	PMMA
PMMA	100	420	100	PMMA
PMMA	100	450	100	PMMA
PMMA	100	480	100	PMMA
PMMA	100	510	100	PMMA
PMMA	100	540	100	PMMA
PMMA	100	570	100	PMMA
PMMA	100	600	100	PMMA
PMMA	100	630	100	PMMA
PMMA	100	660	100	PMMA
PMMA	100	690	100	PMMA
PMMA	100	720	100	PMMA
PMMA	100	750	100	PMMA
PMMA	100	780	100	PMMA
PMMA	100	810	100	PMMA
PMMA	100	840	100	PMMA
PMMA	100	870	100	PMMA
PMMA	100	900	100	PMMA
PMMA	100	930	100	PMMA
PMMA	100	960	100	PMMA
PMMA	100	990	100	PMMA
PMMA	100	1020	100	PMMA
PMMA	100	1050	100	PMMA
PMMA	100	1080	100	PMMA
PMMA	100	1110	100	PMMA
PMMA	100	1140	100	PMMA
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PMMA	100	1230	100	PMMA
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PMMA	100	2160	100	PMMA
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PMMA	100	2220	100	PMMA
PMMA	100	2250	100	PMMA
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[illegible]

UTFORMNING AV ALLMANNA PLATSER

[illegible][illegible]

the five strongest legal systems for nonemployment-related tort lawsuits are Sweden and Switzerland, followed by Germany, France and the Netherlands. The five weakest legal systems for nonemployment-related tort lawsuits are the United States, Canada, the United Kingdom, Australia and New Zealand.

interference with the 18-year-old's sex and violence on television.

The conference was held at the University of California, San Diego, and was attended by a number of leading experts in the field of computer graphics. The conference was organized by the University of California, San Diego, and was held at the University of California, San Diego.

SE GRÄNSNINGAR AV MARKENS BILBYGGANDE.

[illegible]

probenkammer (siehe 4d) für mindestens 24 Stunden (für Temperaturerreichung) in einer kalibrierten (für Temperaturerreichung) in einer kalibrierten

JARKEINS ANORONANDE

dark soil vegetation
 growing as he plows the cornfields and my friends advise me

World Bank provided an additional loan to finance the government's and foreign private companies' investment in the sector.

10. *What is the most common cause of a urinary tract infection?*

PLACING, UTFORMING, UTFÖRANDE

grün für gesunde passagiere / falls ein vater sich dem gegenüber
bezieht es / bezieht es

[illegible]

Can you provide a link to the original source of the information?

metast 1.5 mmol/l. Alleviating the respiratory stress by placing the frog in a humid environment, allowing the frog to rest, and/or placing the frog in a warm water bath (30°C) will usually result in a rapid recovery. In addition, the frog should be kept in a warm, humid environment until the respiratory stress is completely resolved. If the frog does not recover, the frog should be euthanized.

videopersona senza averne alcuna idea (non aveva spazio, tempo) e che l'abbiamo fotografata. Viaggiamo in un'auto.

[illegible]

Illustration by: illustrations@penguin.co.uk or illustrations@penguin.co.uk

Die meisten der folgenden Aussagen sind richtig, eine ist falsch. Welche?

number

Highly qualified master class graduates

1

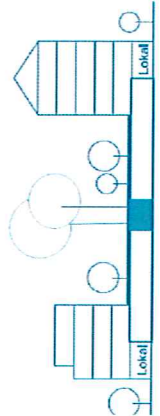
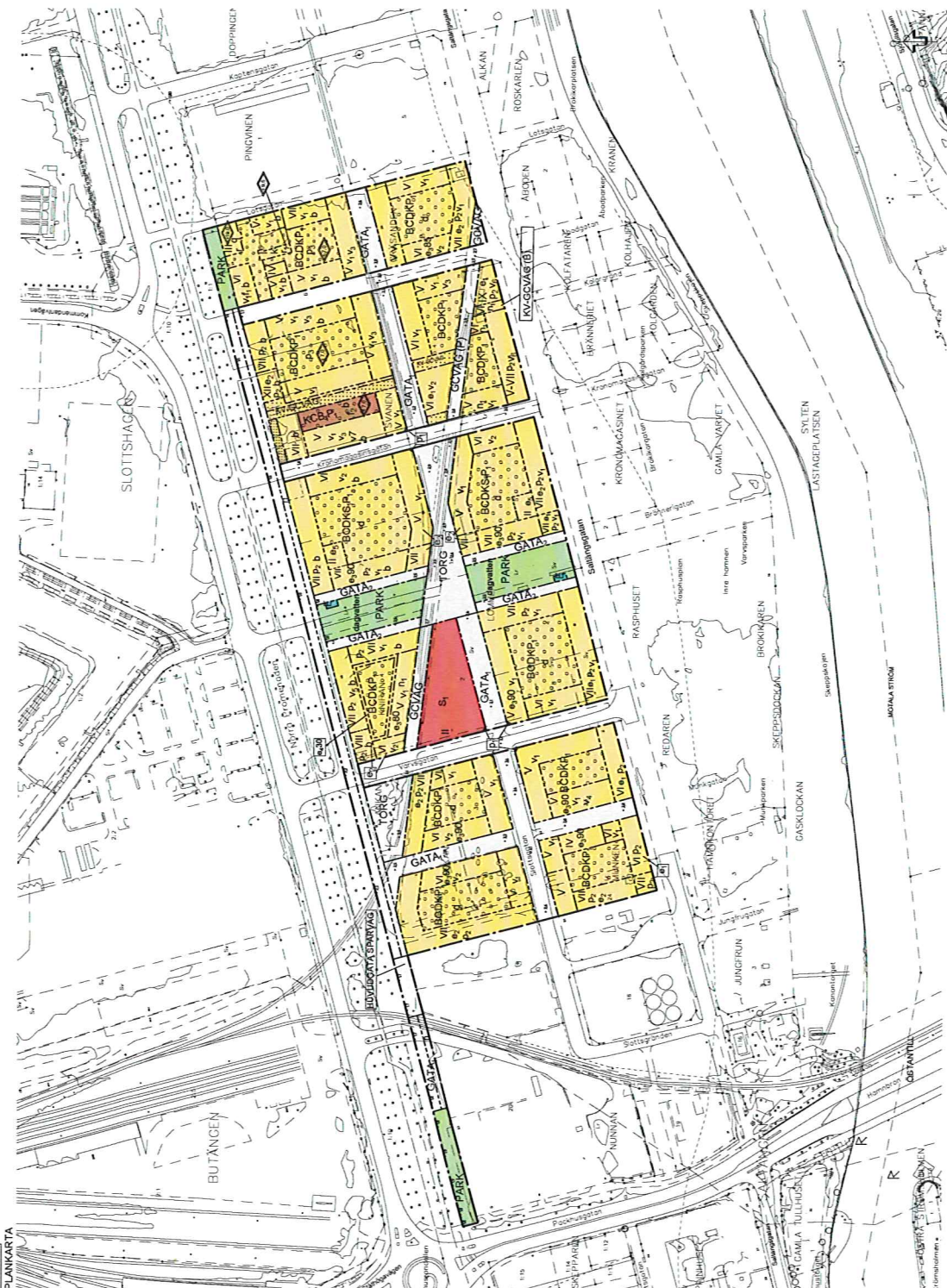
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Use the following information to answer questions 1–6.

1. Name of the person(s) who prepared the report: _____
 2. Date of the report: _____
 3. Name of the person(s) who reviewed the report: _____
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←



ILLUSTRATIONSBILD. EXEMPEL PÅ HUR GÅRDEN KAN UTFORMAS SÅ ATT 10 PROCENT AV GÅRDSYTAN PLANTERAS MED STORRE TRAD. FRÅNSTÄMMELE "RINGMARK" PÅ PLANKARTEN.

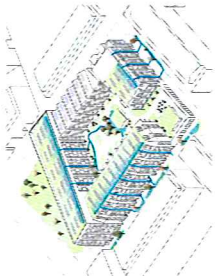
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GESTALTNING VÄLKOMMEN TILL KV. ANKAN!

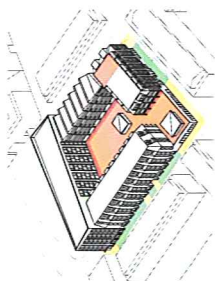
Dir Norra Promenaden möter Diagonalen öppnar stadsviden upp sig till en källormad parkyta. Ett gångstråk belyser det gamla industrispåret genom ett koncept av inspända armaturer som kopplas samman med konstverk i parkens lummiga grönska. Här reser sig kvarteret Ankans norra fasad som en fond bakom parken, med en lekfull fönstersättning och en återbrukad plåtfasad i varma kulörer. De breda fönsterarmarna påt förar med den gamla hamnens industriella karaktär och utv i den artikulerade sockelvåningen samsas bostadsentréer, verksamhetslokaler och gemensamma funktioner längs hela kvarteret, och bidrar till ökad trygghet i gatuplanet och varierad rörelse över dygnet. Inspirerat av Diagonalen ligger bostäderna, med möjlighet att välja funktion över tid - från kombinerad bostad och ateljé till butiksskarnhet med övernattningsmöjlighet. Bostädernas kreativa verksamheter kan spilla ut över industrispåret till parken för att bidra till och ta del av stadspulsen.

GRÖNBLÅ STRUKTURER



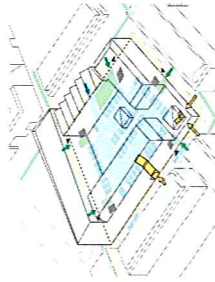
Dagvattenhantering och gröna kvaliteter.

ZONERING



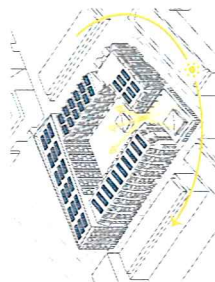
Semi-publik
Publik
Semi-privat
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MOBILITET OCH RÖRELSESTRÅK



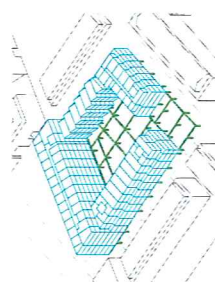
Gatuplanter och parkering
Cykelstråk och cykelparkering
Gångstråk och entréer till innergård

SOL

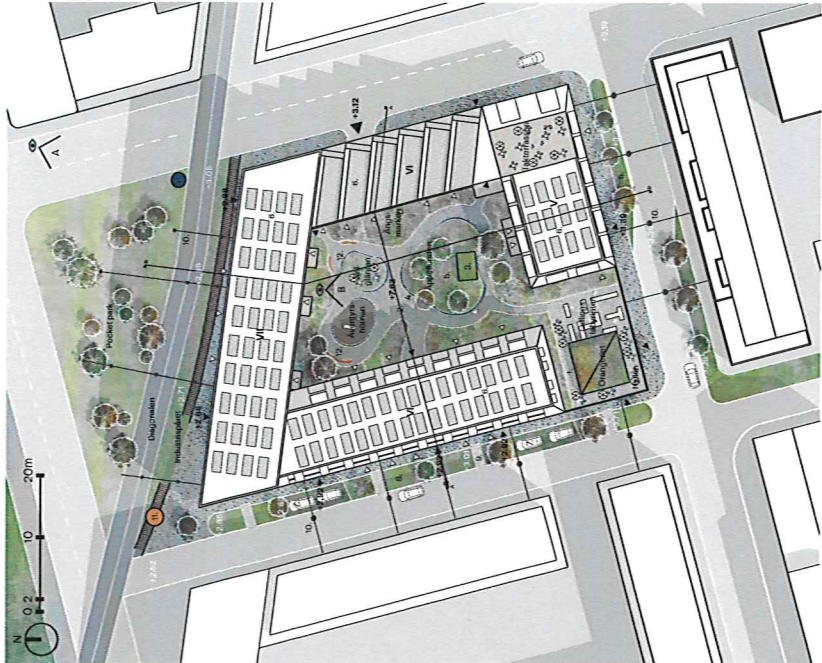


Slippt mellan volymerna på det sydöstra hörnet
åter solens strålar nå in på innergården.

BYGGSYSTEM



Prefab-balksystem i limträ möter
volymelement i lättbyggnadsteknik.



Situationsplan 1:400			
1. Återbrukad marksten motstret	5. Särskilt yta för ansamling av daggvatten	9. Hattbyggar över dagstugor	BIOLOGISK MÅNGFALD
2. Cykelstall med inre skottstall	7. Angöring med glasarmad betong	10. Skottstall	
3. Cykelstall med inre skottstall	8. Dagstugor	11. Skottstall	
4. Dagstuga		12. Skottstall	
GÅRDEN	GÅRDEN	GÅRDEN	GÅRDEN
Botenvårdning i lintra med gemensamma ytor	Naturlig aktivitet för alla åldrar	Äterutrymme för mönster	Insiktshotell
Bokaler med inbyggda entree	Ängsmark som buffertzon	Äterutrymme för mönster	Biopark med solceller
		Äterutrymme för mönster	



VÄLKOMMEN UPP!

Fån Munksgatan leder en genömd och uppbyggd portik upp till en utmanig inregränd med gångstråk i organiska svingar. Inne på gården finns olika zoner för olika måltider och behov. Ett cykelstall med bilar ligger på den låga skuggiga delen av gården medan en gemensam utrymme ligger där källarens ligger på som blått. Även i planeringen med klätterstegar kan användas både som lekplats och utrymme.

Den upphöjda gården skapar en semi-privat zon med hemkänslan för de boende, samtidigt som portiken och öppningen i sydöst skapar en välkommande glimt in i

TEKNISK BESKRIVNING & MATERIALVAL

BESTÄNDIG PALETT I TRÄ & PLÅT

Kvarteret består av fyra huskroppar på fem till sju våningar, med varierande uttryck och formspråk för att skapa liv och omväxling i gårds- och gatumiljön. Byggnaderna föröns av en gemensam upphöjd innergård som nås via den breda portiken från Munksgatan. På bottenplan samlas entree, lokaler och gemensamhetsytor ut mot gården, med ett gemensamt parkeringsutrymme under det upphöjda gårdspåslaget. Grund och gårdspåslaget består av klimatförstärkt betong. På gårdspåslaget ligger 500 mm jord för ett möjliggörande plantering på den upphöjda innergården. Entreeplan har en takhöjd på 3,2-4,2 meter för att hantera kvarterets två våningar. Våningen består av en bärande limträkonstruktion i form av limträpälare- och balkar med bala-bälrande innerväggar av limträpälstaket.

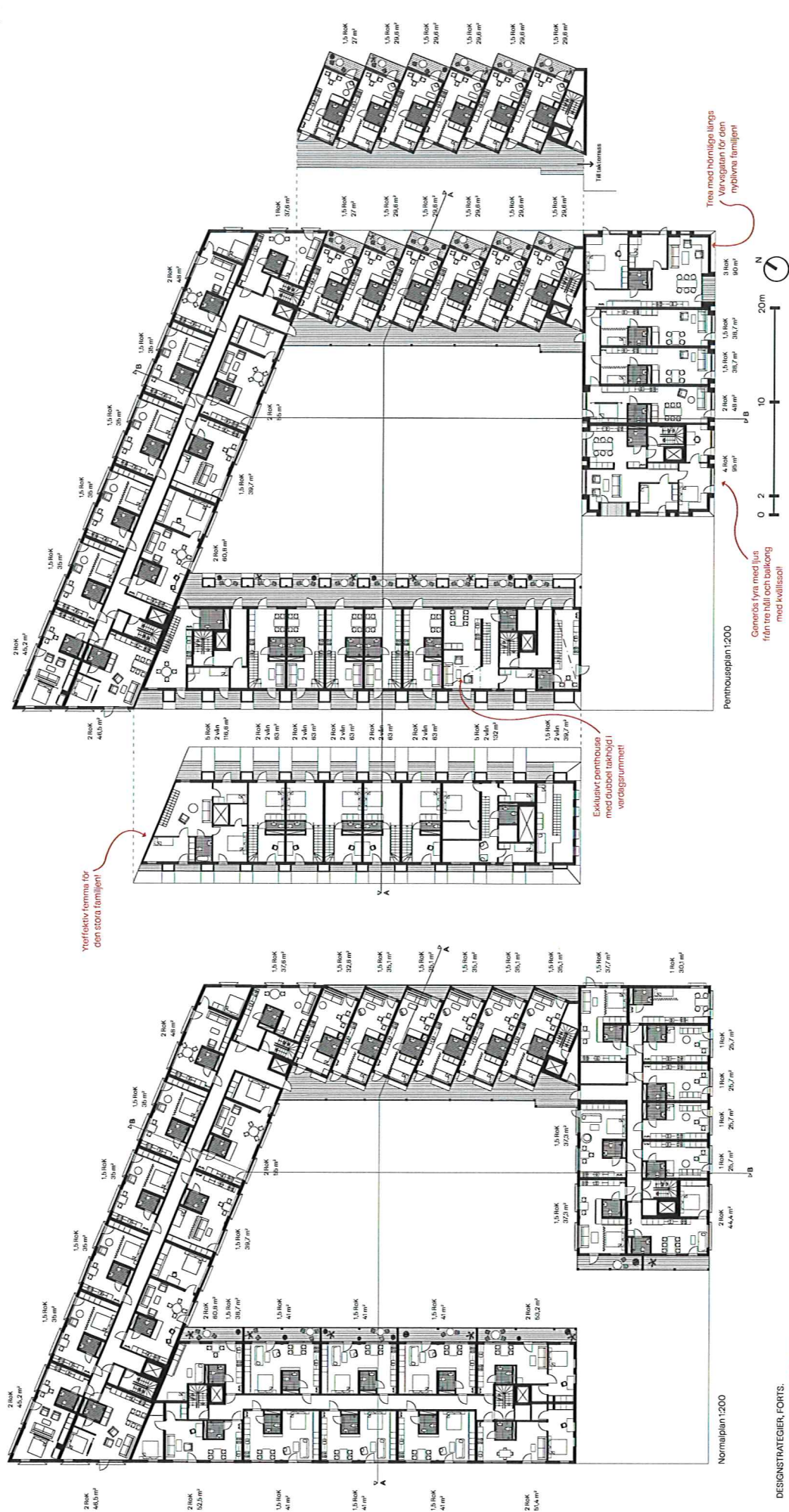
Beständighetsplaneringen är utformad som volymelement i trä – rationellt uttryckt för att minimera el- och rödnadning. Ytterväggar och liggenhetskällor väggar utöfns i limträpälstaket med konstruktionsvika mellanlimträpälstaket består av välgående bjälkar av konstruktionsvika och längsgående limträ. Samtliga

[illegible]

Bokalerna ger en flexibilitet över tid. När bostadsområden

är nybyggda är det viktigt att kundundersöket för lokaler inte är lika stort. Då kan boksluterna användas som basdata. I takt med att området blir mer inödat och erfarenhet efter bruket och efter flera ökar är det lätt att konvertera boksluten till en eller flera lokaler.

Ramverk fokuserar på att arbeta in i kulturella processer i en industriell produktion och skala. Att väva in återbrukade produkter och användning av spillmaterial i ett industriellt flöde kräver planering men ger också möjligheter att skala upp på riktigt – att gå från enskilda plotterspektiv till att skala arkitektur till en del av business as usual. Här ingår även arbetet med den återbrukade plantens resurser, här hela i förslagsmodellen och logistikdelen är realistisk och välplanerad, så att kombinerad pelar-balkkonstruktion länna på betongväggar och vjvymodul på bärga plan är att betongväggar står i uterum på bärga och bärga stegen

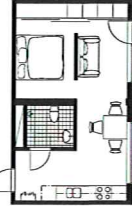


DESIGNSTRATEGIER, FORTS.

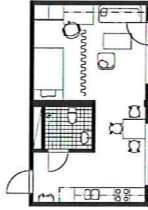
YTEFFEKTIVA BOSTÄDER MED STORA MÖJLIGHETER

Ramverk är en reaktion mot ett gendertätt och endast stora lägenheter i möbler, flexibla, och de också inbör en bostadsstrategi som inte alls är beredda att ta. Den stora utmaningen ligger i att göra en liten lägenhet med låg boendekostnad flexibel för olika behov och målsättningar. Våra lägenheter har en generös rumshöjd på 2,7 meter, som bidrar med en ymnig och inbör lägenheter. Lägenheterna har strategiskt placerade funktionsväggar, som möjliggör förvaring ovanför standard-SIS-höjd på 2,1 meter till hela rummets höjd. Detta tillåter en mer centralt placerade badrumspaket och en generell fönsterplacering möjliggör en stor spännvidd av möjliga rumssamordningar och möblering, och skapar flexibilitet och autonomier för en rad olika bostadsstrategier. Utöver dessa yteffektiva planlösningar är alla lägenheterna också tillgängliga.

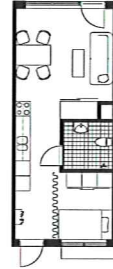
FLEXIBLA PLANLÖSNINGAR 1:100
Typ A, 1.5 Rok 35 m²



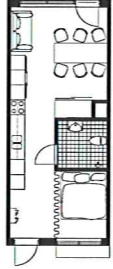
Det lilla pariet har precis flyttat och utnyttjar hela funktionsväggen för alla sina kläder och pysslor, och skapar ett litet rum för att skapa ett litet sovrum.



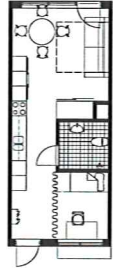
I hemmet har barnen sina egna kottar på entréplanen och en stor soffa i vardagsrummet. En klassisk placering som passar de flesta.



En liten soffa med gästen och en soffa och en klassisk placering som passar de flesta.



Det lilla pariet har precis flyttat och utnyttjar hela funktionsväggen för alla sina kläder och pysslor, och skapar ett litet rum för att skapa ett litet sovrum.



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Klimatavtryck

Rätt material på rätt plats

Vårt förslag för Rönneby är ett klimatavtryck på 144 kg CO₂e/m² BTA. Det är vi genom att använda ett material på rätt plats. Bostadsbyggnaderna byggs med trä i form av volymelement med lättbyggsystem. För att klara de höga värmegivningarna på entreprenörernas jobb vi får med ett peller-balksystem i limträ. Det upphöjda glädsbalksystemet och grunden behöver klara högre belastningar och hantera en del fuktaspekter varför vi valt att jobba med ett klimatförbättrat HÖF-balksystem i betong.

I klimatberäkningen har endast huvudbyggnaderna tagits i beaktning, elkomplementbyggnader i form av cykelförådd och växthus. Ambitionen är dock att ta till fallet till att testa andra mer innovativa och miljövänliga konstruktionsmetoder för dessa byggnader, inklusive återanvända material, då de har byggkostnaderna har lägre sådana krav på till exempel energi och brand.

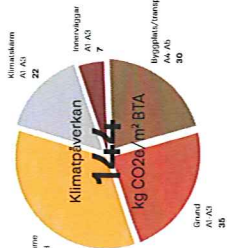
Vi kommer arbeta med en av Nordens ledande producenter av industriframställda volymelement i trä.

På det sättet kan vi optimera materialutgången och minimera byggavfall och spill. Genom att flytta majoriteten av bygget till fabriken kan vi få en mer klimatstarkt byggproduktion – vi minskar antalet transporter, vi förkortar byggtiden och dessutom driva fabriken till största del av ett värmevärmesystem som drivs av material från produktionen. Vår byggtentor och har Swen-licens, vilket är ett kvitto på deras låga energi- och vattenförbrukning och säkerställer användandet av miljövänliga och giftfria byggmaterial.

Då vi digitaliserat inte kan säkerställa vilka volymer av återvänt material vi kommer få tag på, är klimatberäkningen baserad på nya produkter. Klimatavtrycket från byggarbetsplatsen är beräknat på våra schablonberäkningar, som är ungefär dubbelt så högt per kvadratmeter BTA som tidigare har varit. Vi har därför valt att använda ett klimatavtryck som är dubbelt så högt som tidigare har varit.

NYCKELTAL

Totalt BTA [m ²]	10 958
Totalt BTA [m ²]	1585
Totalt BTA [m ²]	12 543
Antal 100	120
Antal 200	50
Antal 300	1
Antal 400	2
Antal 500	173
Totalt CO ₂ e [m ²]	8 181
Totalt CO ₂ e [m ²]	238



ENERGI- OCH RESURSHÅLLNING

DELAD GLÄDJE ÄR DUBBEL GLÄDJE

Taken i kvartären har bioprodukter, som fördröjer digressen och minskar stadens värmebehov. På taken skapas vi också en möjlighet med en bioproduktion som växer och ger en del av stadens resurser. Svagare i den sociala och ekologiska delen till att skapa ett varierat klimat på taken, för en biologisk mångfald av arter att trivas – vi kallar det 'no human zone'.

Byggnaderna är designade för en låg energianvändning. Klimatskålen är välisolerad och genomgått med energifaktiska fönster, dörrar och en effektiv ventilationslösning. För att ytterligare förbättra byggnadens energiprestanda arbetar vi med upptäckade utnyttjande av energier som inte punkter klimatet och därmed undviker onödiga köldbryggor. Även burskålen ligger utanför klimatskålen. I ett nästa skede önskar vi ytterligare undersöka förhållanden mellan daglig och förbrukar energi och energiproduktion för att få ett kvarter som uppfyller dessa krav på bästa sätt.

Vårt förslag uppmuntrar till en resurshållning genom delningskoncept. Den gemensamma 'toiletts'-lokalen

med verkstad och läroverk gör att inte vardagslivet behöver äga en bostad. Den gemensamma tvättstugan innebär upp till 30% lägre miljöbelastning jämfört med tvättmaskin och torkutmatning varje enskild lägenhet. Gemensamt finns en ölpool och ett stort cykelbarnställe i öst om läroverksamhet – kvaliteter som uppmärksammas vid användning av de boende men också bidrar till ökad energi- och resurshållning. Genom en gemensam kvartärsplan kommer de boende att kunna boka gemensamma utrymmen och resurser, som verktyg, tvättmaskiner, torkutmatning och tillfriskningsbänken. Appen ger också en möjlighet för de boende att få en överblick av sin el- och vattenanvändning, socialiserar produktion och till information om hur mycket energi som går till. Kvarteren kan också användas för att få information från burskålen och burskålen till gemensamma aktiviteter, och burskålen kan också restaurera sina fönster till de boende.

Vårt förslag skapar helt enkelt förutsättningar för att leva ett hållbart liv – vi gör kvartären ett hållbart Rönneby.