



**KTH Arkitektur
och samhällsbyggnad**

Developer competition in Gothenburg:

A case study on architectural design, building and housing cost

Magnus Rönn



Kulturlandskapet

Skolan för Arkitektur och Samhällsbyggnad, KTH

Författare: Magnus Rönn

Title: Developer competition in Gothenburg:

A case study on architectural design, building and housing cost

Author: Magnus Rönn

Title: Developer competition in Gothenburg: A case study on architectural design, building and housing cost

TRITA-ARK-Forskningspublikationer 2016:5

ISSN 1402-7453

ISRN KTH/ARK/FP—16:05—SE

ISBN 978-91-7729-251-7

E-post: magnus.ronn@arch.kth.se

Address: Magnus Rönn

School of Architecture and The Built Environment

Royal Institute of Technology

100 44 Stockholm, Sweden

Phone: + 46-(0)8-790 8565

Kulturlandskapet

ISBN 978-91-981-51-29-9

E-post: magnus.ronn@kulturland.se

Adress: Magnus Rönn

Kulturlandskapet

Ekelidsvägen 5

457 40 Fjällbacka

070-5516007

Foreword

This paper present research findings from a developer competition organized 2013 in Gothenburg. The findings have been presented at the 6th International Scientific Conference on Architecture Competitions in Leeds, Leeds Beckett University, 27-29 October 2016. Maria Theodorou and Antigoni Katsakou organized the 6th conference on competitions in Architecture and Urban Design called *The Competition Mesh: Experimenting with and within Architecture Competitions*.

This version of the paper has gone through minor changes after comments by reviewers in the conference. The paper present and discuss experiences from a competition trying to realize housing with good living quality and low housing costs. The developer competition was in this case used as a professional laboratory by the public organizer.

Gothenburg,
December 2016

Magnus Rönn

Developer competition in Gothenburg:

A case study on architectural design, building and housing cost

Abstract

This paper examines a single developer competition in Gothenburg, 2013. This type of competition emerged as a professional practice with the deregulation in the 1980s. Developer competitions have been expanding and are nowadays much more common than traditional architectural competitions in Sweden.

The global objective is to contribute to knowledge about using developer competitions as a tool for designing, building and implementing a winning design. The political objective of the competition in Gothenburg is to create good housing with reasonable rent. Ten design teams delivered entries that fulfilled the requirement for maximum level of rent. The implementation of the winning entry became problematic. For this reason the following two research issues stand out as being important to investigate: 1) Planning, organizing and judging from the client's perspective. 2) Team building, competition task, design proposals and judgments seen from the design team's point of view? Both perspectives are crucial to the competition as a professional laboratory and a new tool for political ambitions.

Case Study Methodology is a comprehensive research strategy in this investigation of a single developer competition. Methods for the collection and analysis of data are:

- Archive Studies; Competition documents have been collected from local archives.
- Document analysis: Relevant documents have been studied through close reading.
- Interviews: Three key players (organizer, architects and developers) and 65 informants have been identified. Of these, 56 responded to a questionnaire with open questions.

From the collected data we get a good understanding of the competition as a whole. The findings can be summarized by eight conclusions: 1) Developer competition as a competition form; (2) Competition as a tool for political ambitions, (3) Information sharing, (4) Team building, (5) Demands in the brief as obstacles and inspiration, (6) Innovation, (7) Motives for competing and (8) Key players' perspectives and experiences.

Key words: Developer competition, design team, housing design, rent.

1. INTRODUCTION

Developer competitions are a new tool in Sweden for municipal work with planning, architecture and urban design which evolve after deregulation in the 1980s. There are no national competition rules. Municipalities regulated developer competitions locally in three ways; (a) politically with policies agreed to by the property board or the municipal council, (b) professionally through competition briefs which describe the task of the competition and appropriate provisions and (c) administratively through agreements drawn up after negotiations with the client (developer/promoter) behind the winning design. When the jury appoints a first prize winner the competition becomes a question of implementing the winning proposal.

In 2013, 19 of the 35 largest municipalities in Sweden had accepted policies for land allocation (Persson, 2013). Of those, 16 were approved after 2003. Thus the municipal regulation of land allocation by local politicians represents a new political area in Sweden. A closer study of the municipal land allocation policy reveals that the competition form is very undeveloped. The developer competition in Gothenburg is only dealt with in one sentence on the property board's home page: *"The developer competition is used where appropriate considering the preconditions of the project and other circumstances."*

Despite the fact that developer competitions have expanded and are now more common than architectural competitions in Sweden, research on this competition form is scarce. The search for literature clearly reveals that the research in this area is surprisingly limited (Stenberg, 2006; Lahdenperö, 2008, 2009). Apart from my studies on prequalification (Rönn 2012, 2014) in architectural and developer competitions, I have only found a handful of scientific papers on developer competitions in Sweden, Finland, The Netherlands and Austria. I have excluded research where developer competitions are only prize competitions on the plot without design proposals (Fisher, Robson & Todd, 2005). The first study in Sweden on developer competition including design proposals is an evaluation of a project in Malmö, the purpose of which was to provide cheaper housing (Hansson, 1988). Architects in the Netherlands express their concern about how the competitions are carried out. Véronique Biau (2002) notes that *"it is the growth of developer competitions for building public amenities organized by local authorities that most worries Dutch architects"* (p. 124). According to the criticism building assignments have been awarded locally without discernment and transparency resulting in "local nepotism". To come to terms with the problem Architectuur Lokaal has drawn up recommendations (Kompass 2) for negotiations.

Herbert Liske (2008) examined a developer competition for housing in Vienna. He summarizes the advantages and disadvantages in three points. First, the competition form facilitates innovations in projects combining architecture, economy and ecology. Second, the competition form is used to "lock" planning to specific questions, which can be both an advantage and a disadvantage in specific individual cases. Third, Liske emphasizes design and construction of housing at affordable costs through the competition.

Leif Östman (2014) examined developer competitions in Finland using Helsinki as an illustrative example. The first competition was organized by the city in 1985. It was not an immediate success. However, during the 1990s on the other hand there was a marked increase in the number of competitions. The same alteration in the market can be seen in Sweden after the deregulation. The typical features of the Finnish development are (a) land was offered at market prices, (b) standardization of the competition brief and jury assessment, (c) architectural quality used as competitive means for producing attractive design solutions, (d) real estate firms lead the design teams, (e) organizer sets requirements for the developer's organizational abilities and (f) the winner is given complete responsibility for realizing the design proposal.

Östman is cautious in his appraisal of how the competition form influences architecture and urban design in Helsinki.

Aim, research questions and methods

This article examines the 2013 developer competition for new housing in Gothenburg. My aim is to contribute to knowledge on the competition form as a tool for housing politics and a professional laboratory for architecture and innovation. Three questions will be explored:

- *Planning and execution:* Where did the initiative for the Gothenburg competition come from? What do the organizers wish to achieve with the competition? With what means will the jury transform qualities of the winning design into architecture, housing and politics.
- *Design teams' experience:* How did the target group get information about the Gothenburg competition? What made the competition attractive to firms in the consulting, building and real estate sectors? How was the team formed? How were the costs for developing the entries shared among the design team?
- *Key players' view of the competition as a professional laboratory:* How did architects and developers (constructors, building companies and real estate managers) respond to the competition task? To what extent did the competition support innovative concepts and new thinking? How do the key players view the competition as a means for creating good housing for reasonable rent?

The following methods have been used to collect and analyze data:

- *Study of archives;* The property department archives were examined in Gothenburg to get an overview of the organizer's competition documents. Additional documents from the City planning office were collected from the municipality's home page.
- *Analysis of documents;* The competition brief, competition proposals, jury report, judging criteria, decision, land allocation agreement and detail plan, were analyzed. By close reading of the documents, notions, words and sentences were highlighted.
- *Interview of key players;* in this case the key players are the representatives for the organizer (members of the jury and assessment team), developers (constructors, building companies, real estate managers) and architectural firm. Based on the competition document 65 informants were identified as key actors; 13 representatives for the organizer, 27 architects /consultants and 25 representatives for the developer. 53 informants (10 representing the organizer, 20 the architects and 23 developers) answered a questionnaire with ten open questions about the competition. The replies enable us to partake of their experiences and personal opinions.

Theoretical points of departure – competition as a professional laboratory

Architectural quality, intentions in design and objectives in competitions are for researchers in architecture what reality and experiment is for natural science. Without values it is not possible to find an overall best project that fits on the site. Design solutions are good or bad from a certain perspective. Architectural values and purposes are therefore embedded in competitions, both as research subjects and as a professional laboratory. During the competition process innovations can appear in the competition brief, design proposal, jury decision, and in agreements that regulate the execution of the winning design. There are four clearly delimiting stages in developer competitions, each with their own key players, which steer innova-

tions. In the initial planning stage the municipality, as the organizing body, lays the foundation for new thinking through the choice of jury, competition form, and requirements in the competition brief. At this point innovation might mean changing their own administration to a great extent by breaking with established routines and trying new suggestions (Forlati, Isopp & Piber, 2012).

In the second phase, the responsibility transfers to the design team. Their task is to find creative design solutions for the competition assignment. The responsibility is then transferred to the members of the jury who are accountable for judging the proposals and evaluating design solutions. The jury's task is to identify innovative solutions and point out the overall best design in the competition. In the fourth stage, the responsibility returns to the municipality, which answers for the implementation of the winning design proposal. The accounts show that innovations in developer competitions are a collective concern that swings back and forth between the organizer, design team and jury.

The theory of competition as a professional laboratory derives from the ability to support innovations and new thinking and to generate knowledge about future design. It is a future-oriented exploration of possibilities; the design team's proposals present several alternative answers to the competition's question. The organizer acquires knowledge about the future by way of presenting the competition task, inviting the design teams and then testing their design solutions (Katsakou, 2009; Andersson, Bloxham-Zettersten & Rönn, 2013; Guilherme and Rocha, 2013; Chupin, Cucuzzella & Helal, 2015). Seen in this way, the competition in architecture and urban design may be described as the archeology of the future – not as it is, but what could be found on the site if design proposals would turn into a built environment.

The jury together with the expert advisors have a key role when the competition is structured as a professional laboratory. They have to judge proposals and legitimize a winner in a process which has three stages: (a) The design teams' solutions are evaluated first with regard to the criteria in the competition brief, (b) The design proposals are then compared with each other, (c) Finally the proposal is tested against a "fictitious reality". This means that the jury sets themselves in the wall charts in order to experience the design team's solutions as built environments using drawings and illustrations produced by design teams. The ability of the jury members and the expert advisors to see the proposals as architecture depends upon their background, education, professional competence, experience, judgment and involvement. The theory of competition as a professional laboratory can now be summarized in a number of requirements to be fulfilled. There must be:

- A description of the competition's purpose (which may contain one or several goals),
- A list of criteria for judging the proposal (which can be open and assessable or specific and measurable),
- An explanation of the application requirements and competition terms (which the candidates must fulfill),
- A group of competent judges (who can be experts in architecture, building design and urban design or representatives for the planned enterprise and politicians),
- At least three suggestions from design teams (which can be made up of different professions and companies),
- A judging process which evaluates proposals, compares solutions and tests designs according to the submission requirements and criteria,
- An independent jury which makes decisions and motivates their choice in a statement.

The theoretical foundation of the competition as a professional laboratory may be illustrated by the following conceptual model which has three levels:

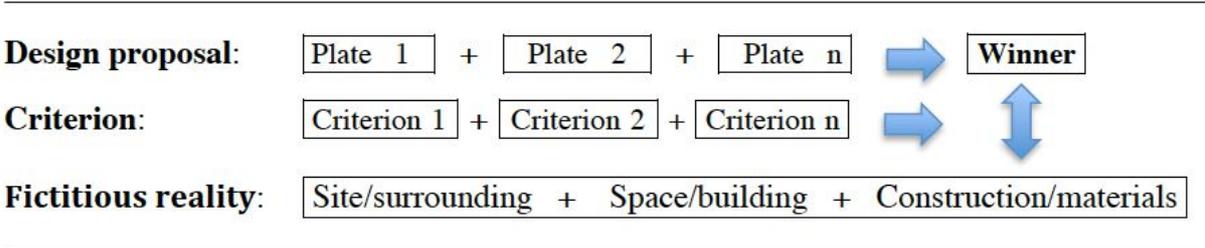


Figure 1: Competition as professional laboratory

At the first level of the competition, design proposals are presented with plates. The presentation differ depending on the task, but follow specific format. For the Gothenburg competition each design team was allowed a maximum of 6 plates in A3 format. The presentation should include the design of the area, the buildings, apartments and technical system. Information related to real estate management and rent levels should be included in a special appendix.

Level two of the model should include criteria for assessment. The jury’s competence in testing the proposals is closely linked to professional observation (Polanyi, 1966). The use of “soft” criteria for judging architecture and “hard” must-have demands for choosing design teams for competitions with limited participants is typical for competitions in architecture and urban design in Sweden (Rönn, 2011, 2014). The soft criteria have an open character which gives the jury a lot of room for interpretation. The organizer uses the must-have requirements to eliminate candidates lacking appropriate qualifications. A similar situation applied to the Gothenburg competition. Only the design proposals meeting the rent requirement were judged and ranked by the jury.

The criteria in the competition brief specify what the jury should scrutinize; their attention should be directed towards the most important aspects of the entries according to the organizer. By questioning the design proposals the jury acquires responses about how the competition goal may be reached (Svensson, 2012). A kind of dialogue is initiated which leads the jury to recognize the qualities, defects and uncertainties in the design (Svensson, 2009). The criteria make judging an educational experience in the competition. Judging is both learning and creating knowledge by interpreting the design. This can be seen in jury reports as architecture-critical statements. Critique is the basic foundation for assessments of architectural design (Attoe, 1978; Anthony, 1991; Lymer 2010; Rönn, 2012).

The third level of the model is called “fictitious reality”. This means that the competition procedure has an external evaluation object hidden in the brief, but which nevertheless influences the jury’s understanding of the competition proposal. It may sound strange but judging is about seeing the proposal as architecture and experiencing the design in three dimensions as if the site was already in use. The jury members put themselves “inside” the illustrations when they are trying to understand the design. The photographic exactitude of the computer representations enhances the jury’s experience of the design proposal as a built environment (Katsakou, 2013). Thus the jury explores the fictitious reality of alternative solutions. The point is that the jury compares the design team’s solution in three steps; first with the criteria in the program, then with each other and finally with the architectural experience created by the proposed designs as visualized models of the future. The proposals which gain the jury’s approval continue to the final appraisal (Rönn, 2012; Svensson, 2012; Östman, 2012). The

jury generally sees that one proposal suits the place better than its competitors. The eye will make the final decision rather than the cross sections and drawings edifying the construction.

2. CASE STUDY

The property board in Gothenburg called for a developer competition aimed at good quality housing and reasonable rent. The competition program described the task in 16 pages including the technical regulations. The goal for the competition was “*to realize housing with good living quality and low housing costs*” (Competition brief, p. 4). The location for the competition was described as attractive in proximity of the trolley cars, library, and a lively square with shops. According to the organizer the competition should “*demonstrate how you can design, build and maintain rentals everyone can afford while maintaining high quality*” (Ibid, p. 4).

The competition tasks are divided into three phases. First, the proposers deliver suggestions for housing on the competition site. The organizer estimates there is space for 100-125 housing. Secondly, the proposal should include various sizes of apartments. Third, the proposer should present the rental rate and long-term maintenance costs of housing available for rent. The average rent should not exceed 1 400 SEK per square meter and year, which corresponds to a rent reduction of 20-25 % compared with equivalent apartments.

The jury should make a deliberate judgment of the proposal based on three major criteria: 1) surroundings and housing environment, 2) design of housing; 3) execution, maintenance and economy. If the competition does not lead to any good solutions the organizer maintains the right to “*reject all competition proposals without compensation for the proposers*” (Ibid p. 9). There is no prize sum either for compensation to the design team for submitting an accepted proposal. The winner will get access to the competition site by a land allocation agreement.

The jury is made up of nine members; six politicians and three chief managers from the city of Gothenburg. To support the jury there is an assessment team with six municipal advisors, mainly from the property department and the City planning office. The jury’s composition reflects democratic decision-making and is used to anchor the choice of winner in the municipality. The politicians are laymen when it comes to architecture and it is thought they would reflect the citizens’ interests. The assessment team is made up of internal experts and these civil servants are called experts in the competition brief. The organizer hired an outside consultant from an architectural firm to act as secretary.

The competition proposals are presented anonymously under one motto. No contact is allowed between proposer and jury members or members of the assessment team. Anonymity is a way of guaranteeing that the judging is based on equality, objectivity and fairness. The one who delivers the best whole solution will be chosen as the winner. Kreiner (2013) describes the architectural work in the competition as “shadow dancing”. It is an apt description. The design team in Gothenburg invites an absent partner to dance by forbidding direct communication with the organizer’s representative in the competition.

Design team

The developer competition started 2013-06-19 and ended 2013-09-30 when the design proposals were submitted. Twenty-six requests for clarification of the competition brief were submitted from the design teams. The questions concerned access to parking spaces, garage, storage rooms, and conservatories as well as the supply of water, electricity, heat and the calculation of municipal fees.

Altogether 13 teams composed of architectural firms, construction companies, and real estate managers acting as clients participated in the Gothenburg competition. The formation of teams is in this case a self-organized process in the competition entailing three steps: (1) invitation, (2) establishing project organization and (3) collection of information and development of the design concept as a primary generator. The first step for forming a team means there must be a promoter who tries to find appropriate candidates and seek out their interest. Then the client draws up an organization for the assignment with a project manager, defining the roles and allocating the work tasks. In the third step the team analyzes the competition brief and gathers around a basic design idea, as a foundation for the development of the solution. (Darke, 1979). The teams can read the brief as an instruction and/or an inspiration for design. Some characteristics of successful design teams are (Weiss, 1993; Kazenbach and Smith, 2003):

- Mutual respect among the team members and commitment to the task
- Good communication and feed back among the team members
- Healthy disagreement during the development of the project
- Participation in the planning and execution of the project
- Consensus on the terms/contract for a continued assignment

Three of the design teams did not meet the rent requirement for the Gothenburg competition and were eliminated in the initial control of the entries. The remaining ten design teams presented approved proposals. Although there was no specific statement about the requirement for competence in the competition brief, the makeup of the design teams reflected a clear pattern. The proposals were drawn up by teams with qualifications in architecture, construction and facility management. The composition of the teams reflects a local touch with elements of firms with international assignments.

Developers in the design teams are both large construction companies with international assignments, regional promoters and small, local real estate managers. The majority of the companies are small construction companies and managers of housing with a distinct connection to Western Sweden. The architectural firms in the design teams show a similar variation in size and operational field. Well-known architectural firms with international assignments as well as small local design companies are to be found among the teams. White Arkitekter, which is Scandinavia's largest architectural firm, participates in three of the teams. However, the majority of architectural firms are smaller ones based in Gothenburg.

Design proposals

The design teams need to present their proposals in the most attractive way possible. The aim is to catch the jury members' eye and interest. It is crucial for the result that the presentations are convincing and impress the jury, especially in open competitions when the jury has to evaluate several design proposals. The design must speak for itself through drawings, illustrations and short descriptive texts.

Typical for competitions is that you can find different answers to the task described in the brief. There are usually many good solutions to the same design problem. The proposals in the Gothenburg competition include both detached housing in a park environment and settlement which are spatially organized in blocks and neighborhoods. Residential buildings include tower blocks, attached houses and lamel house with various apartment solutions. Roofs, colors and materials in facades differ (see appendix).

The design teams behind the winning proposal in the competition are Svanström Fastigheter, Almgren Fastighets AB and Okidoki Arkitekter. That is a Gothenburg-based team with local

clients. Their solution is based on a 8ompete8rhood structure with courtyards and 156 apartments with exterior corridors and attached houses. The jury's attention was caught by the open connection between the kitchens and living rooms which reduces the area. The average rent is about 1 399 SEK per square meter and year including heating.

The rent levels are as follows:

1 room and kitchen (64 apartments)	2995 SEK/month	26 m ²
2 rooms and kitchen (25 apartments)	5758 SEK/month	49 m ²
3 rooms and kitchen (14 apartments)	7403 SEK/month	63 m ²
4 rooms and kitchen (42 apartments)	9147 SEK/month	74 m ²
Attached house (11 units)	11025 SEK/month	92 m ²

The layouts plans of the apartments are as follows:

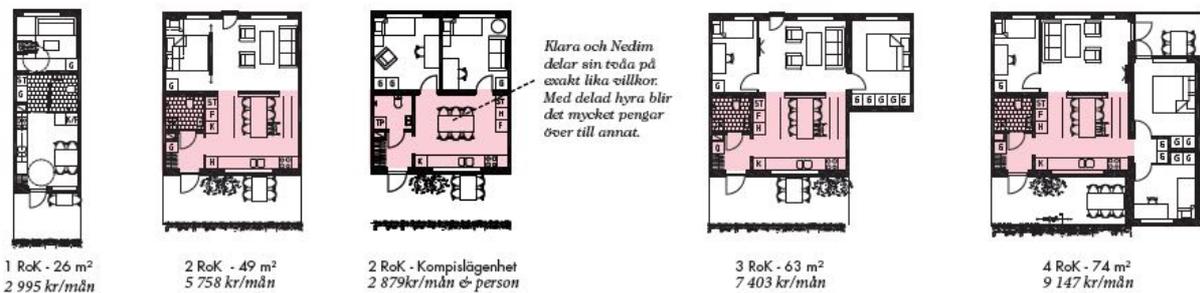


Figure 2. Apartments in the winning proposal. No 3 from left is a invention.

Exploitation of the competition site has increased compared with the competition brief. According to the design team the degree of development can be reduced without influencing the housing costs.



Figure 3. Façades and cross section of the winning proposal.

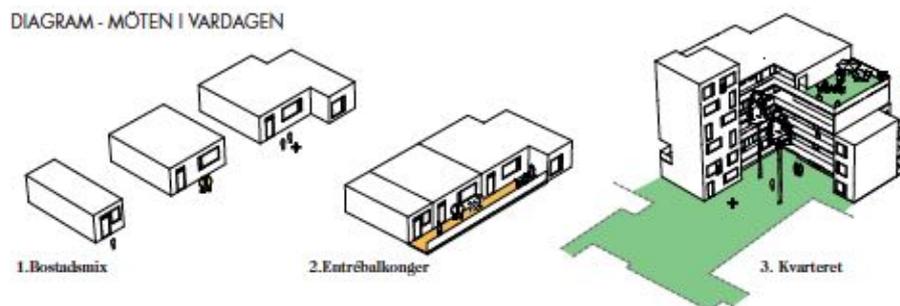


Figure 4: Design principles.



Figure 5. Overview of the winning design proposal.

3. RESULTS AND DISCUSSION

This final section consists of three parts: the introduction presents the design teams' experiences of the competition process with focus on developers and architects. Then there is a discussion about the experiences of the jury and assessment team. Finally the conclusions are summarized in eight points.

Competition information

The design teams learned about the Gothenburg competition through three major sources of information: (a) own coverage, (b) personal contacts, (c) digital flow. Developers as well as architectural firms actively search for information about land allocation. Advertising on the property department's home page was the major source of information about the Gothenburg competition combined with individual searches and established contacts. Access to a well-proven network of contacts seems to be a strategic resource in this context. According to the design team there has been no outreach on the part of the organizer to contact new players or attract potential candidates for the competition. Three enlightening answers to the question about how the firms came to know about the competition are:

We continuously monitor the larger municipalities. For us it is obvious that we must be informed about what is happening in the larger cities. (Developer)

Our office was approached by promoters since we have had long-standing cooperation with them and developed their concept for housing construction. (Architectural firm)

I obtained information about the competition through the digital flow, Facebook and the subscriptions we have. Then I was aware of the policy in Gothenburg. The municipality is keen to have smaller players on the building market and I contacted the company. They were interested and wanted to participate. (Architectural firm)

Structure of design team

There were two very different ways of structuring the design team for the Gothenburg competition; first, there was the well-organized team with specific roles and then, on the opposite side, there was an informal constellation put together to draw up a competition proposal. A common factor for both was that the team was made up of a core of persons who already

knew each other very well and had the necessary competence for the task. Only two teams in the 10 competition described themselves as new players.

It is apparent from the informants' replies that the team formation was based on positive memories from earlier cooperation on similar projects. However, good experience from previous architectural projects is not enough. A promoter must also be present, a driving force to recruit the teams. It was mainly a person from the developer (client) who made the initial contact for the Gothenburg competition. Three informants describe the formation of the design team as follows:

For me it is obvious to both direct, listen and develop a project together with the best architects. For my part it is important that they have the same interest in sustainable, long-term and environmentally friendly building with minimum emission impact. (Developer)

Because the economic requirements were so tough we had an internal discussion about the possibility/likelihood of achieving a result. For us it meant thinking about a new concept... and bringing together people with knowledge about "cheap" construction. (Developer)

I took the initiative for the design team... One of the real estate firms was an "old" contact and one was a "new" client. The company had enough experience to join the design team and was still curious enough to test something new. (Architectural firm)

Compensation and assignment with prize

The design team competed at its own expense without compensation from the organizer. The requirement for own input from the architectural firms' side corresponds to an informal promise of assignment with an eventual prize. The chance of future assignments seems surer if the team partners share the development costs. A developer that pays for architectural work entirely on their own expenditure is less apt to promise a design contract when winning a prize.

There were different constellations for remunerating the architects' work in the Gothenburg project: One was that the constructors and the real estate company were the client and paid for the design of the competition proposal according to a fixed rate, budget or current accounts. The other was that the partners in the design team shared the development costs. Two answers which illustrate the first principle where the developer acts as the client and pays for the architectural costs are:

We agreed on a price for the architectural work. The construction company paid for 50 % and the entrepreneur paid for 50 %. Then the architectural work took a number of extra hours which the architectural firm had to accept themselves. (Architectural firm)

We were given a budget which I think was 150 hours and kept almost within that framework. (Architectural firm)

The following example illustrates the principle of shared costs for the development work:

The design team in the competition had three partners who shared the costs for the competition proposal according to the principle of 33% + 33 % + 33%. We debited a third of our costs for the architectural work. The remainder of the costs would be billed if there was a prize. (Architectural firm)

The question of continued work if there was a prize was dealt with in an informal way by the design team in the Gothenburg competition. Even a team sharing the development costs for

the design only has an oral promise if a prize is awarded. Two typical answers to the question on future assignment are:

That question was never raised. It was understood that the architects would continue their cooperation after an eventual prize. (Developer)

There was no further remuneration after the prize, but a promise to draw the project at the going rate. (Developer)

Motives for participating in the competition

Answers from the design teams indicate that there is a series of motives behind the decision to participate in the Gothenburg competition. Taking part in the competition is motivated by (a) the possibility of accessing the land, (b) the position of the site, (c) the competition assignment, (d) the desire to try something new, (e) hope for a new assignment and (f) a will to appear as a responsible player on the local market. The motives interact and reinforce each other. But there are also different aspects of the motivation picture depending upon the various roles in the design team. Above all the competition is motivated by the developer who stresses the need for buildable land and a wish to be established on the housing market in Gothenburg. Two answers illustrate this:

We are looking for land for rentals in Gothenburg... (to) increase our property portfolio, there is no other possibility of acquiring municipal land. (Developer)

The design team which motivated competing because of the attractive site and exciting competition assignment gave the following explanation:

The land and site were appealing... land allocation is almost always interesting with an attractive site such as this (competition site) had. (Developer)

I was tempted by the “sociopolitical” nature of the project which combined good architecture with low housing costs. I saw several possibilities in this brief. The challenge was to combine architectonic ambitions with the requirement for low rent. (Architectural firm)

Our contribution is an attempt to think in new terms... We wanted to be creative and think “outside the box” to build cheaply and even maintain this cheap rent in the future. (Developer)

The design team that motivated competing in order to secure future assignments replied:

We participated with the hope of designing more housing as we want to increase our presence in this market. And it was an attractive project with good conditions. (Architectural firm)

Innovations

The design team gives a complex image of the Gothenburg competition as a professional laboratory for developing innovative solutions. When asked if the competition inspired creativity and renewal three somewhat contradictory points of view emerged. The first group of design teams felt that the brief's requirements resulted in a design process just to perfect standard solutions. The second group maintained that the competition encouraged creativity and therefore resulted in innovative solutions to the competition question. The architects above all see innovations in the design proposals. A third group felt that the brief was a deterrent to new

thinking. Objections come mainly from the team that felt too locked in by the requirement for low rent. Two such replies are:

No, (the competition) was hardly original... The cost demands as predicted led to solutions with outer corridors... Unfortunately it turned into a standard house from the intended builders. (Architectural firm)

No, not for our proposal. The building industry has made... prefabricated construction systems which they want to get out on the market... There is very little for us architects to gain with these systems. The competition's focus on cost led promoters to choose that solution. (Architectural firm)

Two of three design teams felt the competition encouraged new thinking and the improvement of standard solutions. Answers from the architects indicate that the competition has a considerable potential for innovation. Three replies illustrating these innovative possibilities are:

The demand for low rent encouraged new thinking about possible housing arrangements ... our solution was based on several persons sharing a larger apartment to reduce the rent per square meter. (Architectural firm)

The cost per square meter dominated the discussions and sketches lead to the type of apartment we suggested. The different preconditions enabled us to test the boundaries and step "outside the box". At the same time it was restrictive and an "excuse" to build as simply as possible. (Architectural firm)

We learned a lot about eliminating cost-driving factors in new production and at the same time build for very low energy consumption. We had long and interesting discussions about how to create housing quality in compact houses with relatively small window areas. That knowledge seems highly relevant today when there is such a critical lack of cheap apartments. (Architectural firm)

Tools for political ambitions

The Gothenburg competition resulted in ten proposals which fulfilled the requirement for reasonable rent. The organizers received good decision-making material. From the municipality's point of view there was good reason to see the competition as an effective tool for housing politics. The design teams are also positive towards this form of competition. For the client the competition is a means of obtaining buildable land. Criticism concerns the game rules changing afterwards since the municipality only regulates the initial rent at the time of occupation. The requirement for long-term lower rent disappeared. Three comments on the developer's positive attitude towards the competition form and the need for the organizer to adhere to the demands of the competition program are:

I think developer competitions are good since they give us smaller companies the chance to expose ourselves; otherwise it is easy for the municipalities just to use companies they already know. (Developer)

Exposing developers to competition is good where municipal land allocation is concerned. That competition form can be further developed and working as a team to present rental rates together with quality and design is also good. (Developer)

Municipalities should work with different forms of land allocation. Competitions are one form.. Municipalities should increase this practice and vary developer competitions, sometimes for design and performance, sometimes to set rent levels.. I think it is both good and bad (with developer competitions), good in that everyone can participate. Bad, because a lot of resources are used in vain. (Developer)

The basic attitude of architectural firms towards the competition is likewise positive combined with critical thoughts about the planning and execution of the Gothenburg competition. Examples of replies reflecting the architect's position towards competitions as a political tool for housing are:

I think (competitions) are a good tool. It is enjoyable to work with the builder from the beginning and a good way to avoid laying the whole competition effort on the architect and at the same time reap the positive effects of a competition. Innovation and lust. We do however notice the unsettling trend of using money as the driving force. That is a mistake on the part of the municipality. Demands should also be made on the design and esthetics. (Architectural firm)

Developer competitions are a good tool, but should be expanded. Most important is that the competition form has a professional framework with a good program, good jury and good evaluations... Then it is very important that the organizer (municipality) supports the architectural solutions in the winning proposal so the competition doesn't turn into a construction project. That is a risk with developer competitions since only the constructors and real estate managers are included in the land allocation agreement. (Architectural firm)

The competition is a good method when you have good cooperation with your client, but depending upon the level of requirements there can be a lot of proposals with wide-ranging quality. The client takes a risk, but so do we since more participants mean less chance of winning. (Architectural firm)

Developer competitions are good because you get realistic/economical solutions since the client assumes the cost for the proposal (of course you must calculate "correctly") and since it is a competition, the creative level can be kept high. (Architectural firm)

Competition as a process

From the time a proposal is submitted until the winner is chosen the design team lives in uncertainty and tense anticipation. It is only afterwards that the design team gets to know how the competition brief turns into concrete solutions which are ranked by the jury. The jury's statement can either clarify the competition assignment, increase how the design team understands the appraisal or be understood as unfair with an unexpected result.

Half of the design teams answered that the competition was carried out as planned. Those answers are short and contain words like "normal", "no oddities", or "no" when questioned about surprises in the competition. The other half noted with surprise the lack of quality guarantee for the rent requirements. The winner wants to renege on the rent level and long-term administration. Some design teams see the organizer's difficulty in guaranteeing the rent demands as a change in the game rules. Two replies which reflect former disappointments are:

Yes, surprisingly in the end it just became a design evaluation. We strongly question the lack of competence in how the evaluation of long-term sustainability was made based on management, operation, maintenance and rent compensation. The competition was just hot

air in our eyes, unfortunately. A good inquiry, but not a keen evaluation; the assessment shows a lack of competence in management aspects. (Developer)

We were very surprised by the design of the winning proposal since in our opinion it could not live up to the promised budget/rent level (small apartments, expensive solutions, rather costly material etc.)...We had a lot of discussion about whether or not the municipality had the right to impose demands on the price per square meter, but thought nevertheless that it was an interesting means of testing the branch. (Architectural firm)

Experience of the jury and assessment team

There are three important reflections in the jury's statement. The jury noted that ten design teams fulfilled the rent requirement of 1 400 SEK per square meter and year. In this sense the competition is an effective tool for the design and construction of good housing for reasonable rent. It was noted that there is no connection between architecture, urban design and low housing costs. Good design and low rent can be coordinated with great variation in the configuration of buildings and town plan. Focusing on standard housing units to keep rental costs low has no empirical support in the competition. The jury also notes that it is difficult to guarantee the long-term rent requirements specified in the competition and ensure that the quality of the winning solution is transferred to the administration. That question was already brought up in the 1988 evaluation of the developer competition in Malmö (Hansson, 1988).

In their application the companies behind the winning solution in Gothenburg paints an alluring picture of its capabilities using words such as "new thinking" and "pioneer in industrial construction". The two developers in the design team say they conduct "*long-term management in Gothenburg and intend to own and maintain the new housing during the foreseeable future*". (Competition proposal, p. 6). However, The Swedish property federation took part in the negotiations as advisor to the developers in order to prevent agreement on rental cost. Even if the organizer must be partly dissatisfied with only regulating the initial rent, the land allocation agreement may be seen as an innovative attempt trying to guarantee quality assurance of the rent. This rent control from the 2013 contract reads as follows:

The firm plans to follow the points in the competition so they intend, when the housing is rented out for the first time, to charge an average rent for all apartments of maximum 1 400 SEK/m²/BOA . Thereafter the rate will be adjusted according to common practice. (Land allocation agreement, p. 2)

The organizer does nothing to retain the entire design team during the continued work with planning, projecting and housing construction. The municipality is only concerned with its contract partner, the property firm. This attitude can be questioned in competitions which aim to combine architectural design with low rent and efficient housing production.

Competition and municipal practice

The jury and assessment team are positive towards the developer competition as a tool for politics, architecture and building. Only one informant is negative. The other 14 members of the jury and assessment team are attracted by the competition form and would like to see more developer competitions. Three such answers are:

I think there should be more developer competitions...I believe they increase the quality of town planning and design in general as compared with the overall level. They can also provide possibilities for new companies to demonstrate their competence for the municipality which can contribute to increased competition. However, competitions demand a lot of resources and should not be overused. (Jury member)

I think developer competitions are a good tool for the municipality. Competitions make the market and the partners' skills for drawing up proposals visible. It is good for politicians to be able to influence the market through developer competitions. It is the officials who have problems realizing the goal of the competition. (Jury member)

This type of competition which combines design and economy is interesting for the property department and property board. Competitions are interesting in general and promote development if they present a complicated question which needs to be answered and illustrated. (Jury member)

Conclusions and discussion

The planning and execution of the developer competition in Gothenburg may now be summarized in eight comprehensive conclusions:

1. *The first conclusion is that developer competitions are an undeveloped competition form which is steered by experience-based praxis and lacks clearly-defined regulations. The competition has many faces in Sweden. Praxis varies since there are no national regulations for developer competitions. Local policies used by the municipalities treat the competition form in a very simplified way. Politicians in Gothenburg should draw up and test regulations for developer competitions. The municipality should even involve developers and architects in producing these regulations. The regulations should include economic compensation from the organizer to the design team which submits the approved proposal.*

The case study shows there is a need for generally accepted and recognized game rules for developer competitions. The lack of regulations gives the competition brief strategic importance for the outcome of the competition process. The brief lays the foundation for the design team's understanding of the competition goal and steers their solution to the organizer's challenge. In addition, the jury's choice of winner is decided by the judging criteria and requirements which the proposal should fulfill. Averting ambiguities is an important procedure for quality assurance and demands careful scrutiny of the brief before it is published and invitations are extended. Participants must have the opportunity to request clarifications from the organizer.

2. *The second conclusion is that the developer competition in Gothenburg, in spite of the lack of clear regulations, was an effective tool for generating competition proposals which fulfilled the goal of good housing with low rent. From this point of view the competition was a success. There was a good response to the organizer's main goal with the competition: to encourage the design of low-rent housing. This meant that the rent should not surpass 20 % of the tenant's income. That political initiative came from the property board. The local politicians wanted to challenge the market. The choice of competition form, competition site, judging criteria, jury and technical competition rules were drawn up by officials in the organizing body. The course of the competition was established with politicians and internally with the property department. Thus it was a coordinated organizer who invited the competition participants.*

As ten design teams were able to deliver proposals with an average maximum rent of 1 400 SEK per square meter and year, the competition may be seen as a successful tool for housing politics. On the other hand, the organizer did not find an effective way to ensure fulfilling the goal during the administrative phase. Only the initial moving in rent could be regulated in the land allocation agreement. Adaptation of the detail plan to the winning proposal is a means of pressure which works only under the condition that the promoter carries out the project for the

rent cost promised in the offer. Another critical point for implementation is how the municipality treats companies in the design teams in different ways. The developer is the sole contract partner in the Gothenburg competition, not the architectural firm. The municipality did nothing to retain the design team in tact as an insurance for the quality of the competition proposal.

3. *The third conclusion is that circulation of information about developer competitions is based on active searching for projects on the part of companies in the consulting, building and property sectors.* No active searching efforts were made by the organizers to attract new developers to the city. The municipality spread information about the Gothenburg competition mainly through the property department's home page. The number of participating teams probably could have been higher if there had been an active dissemination of information from the involved managers; property department and city planning office. The major source of information for the design teams has been the property department's home page. Both developers and architectural firms regularly follow the municipality's advertising about land allocations. Besides their own monitoring and information via digital flow, personal contacts in the branch are major sources of information about competitions. A well-developed network is a strategic resource, both for learning about competitions and for being invited to participate as part of a design team.

4. *The fourth conclusion is that the Gothenburg competition teams revolve about a core of key persons from developers and architectural firms who have known each other for a long time.* Only two out of thirteen describe themselves as a new constellation. The other eleven are made up of persons who had collaborated on earlier projects as clients, project managers and consultants. A success factor is also the combination of competence in housing architecture, building construction and facility management. In this case the team building is a self-organized process conducted by the participants in the competition. The design teams' organization also reveals a contradictory pattern. On the one hand there are seemingly well-organized teams of individuals with clear roles. In the description of the collaborators on these teams there are even persons who have had some influence in the development of the proposal. On the other hand there are temporary constellations just for developing the competition proposal. In both cases the constructions of the design teams appear to be informal organizations with oral promises of continued assignment if the competition is won.

The initiator forming the team is often from the client even if the answers from the informers reflect examples of driving forces from the architectural firms. For developers participation in competitions represent uncertain investments for the future. Companies compete at their own expense without any compensation from the organizer despite the specific application requirements. Therefore the amount of unpaid architectural work varies in the competition. Continued cooperation after winning is an oral promise and is based on the partners trust for each other – not a written agreement. This is an informal commitment that is highly credible when the developer and the architectural firm share the development costs. Clients, constructors and real estate managers, which view the design of the competition proposal as an architectural assignment and pay a consultancy fee are less willing to discuss the continuation of the assignment.

5. *The fifth conclusion is that there is a variation in the design teams' cooperative motives for participating in the Gothenburg competition.* The competition was attractive from several points of view. The organizer's planning of the developer competition was based on the municipality having an attractive site which could be offered to companies in the consulting, building and property sector. This turned out to be a correct assumption. Thirteen design teams chose to participate in the competition despite objections from the Swedish Property

Federation in Gothenburg. The Swedish Property Federation was strongly against the rental demand in the brief. Large international firms as well as small local building and housing firms with ties to West Sweden were part of the teams. A majority of promoters have their headquarters in Gothenburg. The same dispersion was also true for architectural firms. The majority are Gothenburg-based consulting firms. With a few exceptions there is a local imprint on the composition of the design teams for both architectural firms and developers.

The organizer's impression of the attractiveness of the competition corresponds in part with the design teams' motive for participating. The jury, assessment team, architects and developers all found the assignment and the location of the site at Högsbo appealing. The jury explained the surprisingly high number of participants as follows: (a) attractive site with favorable location in the Högsbo area, (b) challenging competition assignment, (c) freedom in the choice of solution, (d) prospect of attention. The architects in the design teams were very attracted by the challenge which they considered an experimental arena for attempting something new. Other motives for their involvement were the hope for new assignments and the desire to be seen on the local market. The Developer cited the possibility for land and desire to establish themselves in Gothenburg as reasons for participating. Since only the firms submitting proposals can become a winner the competition is marked by expectation and uncertainty over the jury's eventual decision. Chances for success are difficult to calculate in advance. Even if it is possible to estimate the number of competitors, it is impossible to predict which teams will decide to participate and what their eventual design solutions to the competition task will look like. That is one reason why the competition is always marked by a moment of genuine uncertainty and tense expectation about the jury's decision.

6. The sixth conclusion is that the competition's rent requirement appears as a source of criticism and an inspiring challenge. From the organizer's point of view the limit of 1 400 SEK per square meter and year was a means for the politicians to challenge the market. This represents a reduction in the average level of rent of 20-25 % as compared to other rents in the area. The design team experienced the strict rent requirement both as a hinder to the design and a driving force for new thinking. The hinder was not so great. Ten design teams were able to deliver proposals that met the requirements, why the "must-have" demands in the brief should be looked upon as a source of inspiration. Another interpretation is that the design teams would submit overly optimistic, unrealistic bids and design solutions which are not possible to build with rational methods. However, criticism from the design teams is mainly related to the organizer's attempt to steer the rent level, which in turn is explained by the aim of the housing politics in the competition; good housing for reasonable rent.

7. The seventh conclusion is that on the whole the competition process includes innovative proposals. The organizer as well as the design teams in the competition contributed to new thinking. The organizer's innovation lies with the maximum rent requirement in the brief and the administrative quality assurance of the guaranteed rent in the winning proposal. The method can be summarized as the must-have demands in the brief and consequent regulation of the initial rent through the developer competition. The aim of the innovation is to steer the participants' design in advance as well as afterwards guarantee the quality of the best solution. At the same time the case study shows there is a need to further develop the method for transforming qualities in the design proposal to long-term achievable results. The meeting between architecture, political housing goals and the market represents an experimental arena which has not yet been given a clear and thought through form.

Two of three design teams experience the Gothenburg competition as a professional laboratory which encourages new thinking and creative solutions. Two types of innovations are highlighted by the informants:

a) New types of housing solutions. One such a creative solution is called a combo apartment which is an apartment with two equally large bedrooms, a common kitchen and a room for socializing/living room. (Design team: Bygg Vesta + Kirch and Dereka Arkitekter). Another proposal with shared rooms is “Three farms” (Design team: Stena Fastigheter and Tornstaden + Kanozi Arkitekter and jagvillhabostad.nu).

b) Refining standard solutions and module thinking. Examples of housing built with modules may be found in the winning proposal “Wooden it be nice” (Design team: Svanström and Almgren + Okidoki). Development and refinement of sparse apartment area/size and production-friendly building also represent a refinement of standards. (Design team: Botrygg + Tengbom).

8. *The eighth conclusion is that there is a surprisingly positive attitude on the part of the key players towards using developer competitions as a tool for design and building.* Organizers, architectural firms and developers find the competition element attractive. That is surprising when you think about how promoters compete at their own expense and must deliver a proposal which is thoroughly worked out without receiving any economic compensation from the organizer. Therefore greater criticism concerning the high development cost involved in a developer competition could be expected. The explanation probably lies with the fact that the competition gives access to buildable land. The majority of promoters view participation in the competition as a means of getting access to land and at the same time renewing housing construction. The positive attitude of the key players towards the competition is in sharp contrast to the number of planned and executed developer competitions in Gothenburg. There have only been a few competitions during recent years. This is a paradox. Why doesn't the municipality organize more competitions when the key players are so positive? The study does not provide any clear-cut answer to this question. Why isn't there a greater desire for experimentation on the part of politicians and officials when objectives on good housing to reasonable rent can be achieved? The low competition level in Gothenburg cannot be explained by criticism from a few companies on high development costs and their aversion to the municipality attempting to steer rents. The answer must be sought outside the competition culture.

Acknowledgment

This conference paper has been supported by FFNS Foundation for Research, Development and Education.

References

Literature

- Andersson, J.E., Bloxham - Zettersten, G., and Rönn, M., 2013. *Architectural competitions - histories and practice*, Hamburgsund: Rio Kulturkooperativ and Royal Institute of Technology.
- Anthony, K. H., 1991. *Design Juries on Trial: The Renaissance of the Design Studio*. University of Michigan: Van Nostrand Reinhold.
- Attoe, W., (1978) *Architecture and Critical Imagination*. Chichester, New York, Brisbane, Toronto: John Wiley & Sons.
- Biau, B., et al., 2002. *THE ATTRIBUTION OF PUBLIC CONTRACTS TO PROJECT CONSULTANTS IN EUROPE*, École d'Architecture de Paris-Val de Seine. CENTRE DE RECHERCHE SUR L'HABITAT (LOUEST, UMR n°7544, CNRS)

- Chupin, J.-P., Cucuzzella, C., and Helal, B., 2015. *Architecture competitions and the production of culture, quality and knowledge. An international Inquiry*. Montreal: Potential Architecture Books.
- Darke, J., 1979. The primary generator and the design process. *Design Studies, No1*.
- Hansson, M., 1988. *Förenklad byggande inom kv Sjövik, Norra Gullviksborg i Malmö, utvärdering 11*. Malmö: Fastighetskontoret.
- Forlati, S., Isopp, A, Piber, A. (Eds) 2012 *Wonderland Manual for Emerging Architects*. Vienna, New York: Springer.
- Fisher, p., Robson, S., & Todd, S., 2007. The disposal of public sector sites by “development competition” *Property Management, Iss: 4*.
- Guilherme, P. & Rocha, J., 2013. Architectural competition as lab – a study on Souto de Moura’s competition entries in Andersson, Bloxham Zettersten, Rönn (Eds) *Architectural competitions – Histories and practice*. Hamburgsund: The Royal Institute of Technology and Rio Kulturkooperativ.
- Katsakou, A., 2009. Collective Housing Competitions in Switzerland. The Parameter of Innovation in Architectural Conception, *Nordic Journal of Architectural Research, No 2/3*
- Katsakou, A., 2013. The competing generation in Andersson, Bloxham Zettersten, Rönn (Eds) *Architectural competitions – Histories and practice*. Hamburgsund: The Royal Institute of Technology and Rio Kulturkooperativ.
- Katzenbach, J. R., & Smith, D. K., 2003. *The wisdom of teams: creating the highperformance organization*. New York, NY: Harper Business.
- Kreiner, K., 2013. Constructing the in Architectural Competition in Andersson, Bloxham Zettersten, Rönn (Eds) *Architectural competitions – Histories and practice*. Hamburgsund: The Royal Institute of Technology and Rio Kulturkooperativ.
- Lahdenperä, P., 2008. Synchronizing urban and building design: Experiences form competitive planning in partnership. Paper presented at: *The CIB W55/65 Transformation through Construction Conference*, 15-17 November 2008, Dubai.
- Lahdenperä, P., 2009. Conceptualizing a two-stage target-cost arrangement for competitive cooperation, *Construction Management and Economics, No 13*.
- Liske, H. 2008. *Der “Bauträgerwettbewerb“ als Instrument des geförderten sozialen Wohnbaus in Wien – verfahrenstechnische und inhaltliche Evaluierung*. Wien: Magistrat der Stadt Wien.
- Lymer, G., 2010. *The work of critique in architectural education*. Gothenburg: University of Gothenburg. Faculty of Education.
- Polanyi, M., 1966. *The Tacit Dimension*, New York: Doubleday and Co.
- Persson, E. 2013. *En studie av förekomst och innehåll i markanvisningspolicyer*. Stockholm: Institution Fastigheter och byggande, KTH.
- Rönn, M., 2012. A theory for assessing quality in Architecture competitions. *Nordic Journal of Architectural Research, No 1*.
- Rönn, M., 2012. *Prekvalificering – arkitektävling vs markanvisningstävling*. Stockholm: TRITA-ARK-Forskningspublikationer 2012:3.
- Rönn, M., 2014. *Restricted developer competitions - three cases in Sweden*, Forskningspublikationer 2014:1, KTH.
- Rönn, M., 2014. Choosing architects for competitions - Reviewers experiences from the selection of design teams in Sweden. *FORMakademisk, No 1*.
- Stenberg, A.-C., 2006. *The Social Construction of Green Building*. Gothenburg: Chalmers University of Technology.
- Svensson, C., 2009. Speaking of Architecture. A study of the Jury’s Assessment of an invited Competition. *Nordic Journal of Architectural Research, No 1*.
- Svensson, C., 2012. *Architectural Persuasion: On Quality Assessment in an Architectural Competition*. *Nordic Journal of Architectural Research, No 1*.
- Weiss, D. H., 1993. *Effective Team Building*. New York: Amacom Books
- Östman, L., 2014. An explorative study on municipal developer competitions in Helsinki. *FORMakademisk, No 1*.

Homepage

Information in Gothenburg on the developer competition 2016-06-15

<http://goteborg.se/wps/portal/invanare/bygga-o-bo/kommunens-planarbete/plan--och-byggprojekt!/ut/p/z1/hYtNDolwEIXP4gmmRKK4xAUoGKCRKHRj>

Archives

Town planning office and property department:

Bedömningskriterier, (criteria for judging) (Fastighetsnämnden, Göteborgs Stad)

Juryutlåtande, (*jury report*) november 2013, Fastighetsnämnden, Göteborgs Stad

Markanvisningsavtal, (land allocation agreement) dnr 500-4975/11

Markanvisningstävling för bostäder vid Guldmyntsgatan. Frågor och svar, (*Developer competition for housing, questions and answers*) 2013-09-17.

Markanvisningstävlingen – Guldmyntsgatan, avprickningslista (developer competition, list on design teams) (Fastighetsnämnden, Göteborgs Stad)

Protokoll från juryns slutmöte anseende Markanvisningstävling, Bostäder vid Guldmyntsgatan, (*protocol from the final jury session*) Fastighetskontoret 2013-11-05, Göteborgs Stad

Protokoll (protocol), Fastighetskontoret 2013-11-04, Göteborgs Stad

Tävlingsprogram, (competition brief) juni 2013, Fastighetsnämnden, Göteborgs Stad

Tävlingsförslag (*design proposals*)

Detaljplan för bostäder med mera vid Guldmyntsgatan, (detailed plan for housing) augusti 2015, reviderade 2015-12-15, Stadsbyggnadskontoret, Göteborgs Stad

Appendix

Design proposals



Figure 1. Design team: ByggVesta + Kirh and Dereka Arkitekter.



Figure 2. Design team: Nordfeldt Invest, WSP, Propå Projekt and White Arkitekter



Figure 3. Design team: Tornet Bostadsproduktion and Contekton Architects & Planners



Figure 4. Design team: FO Peterson & Söner, Robert Dicksons Stiftelse, Meter Arkitektur and F O Arkitektkontor



Figure 5. Design team: Stena Fastigheter, Tornstaden and Kanozi Arkitekter



Figure 6. Design team: Wallenstam, Sjögren Arkitekter and Sweco Management

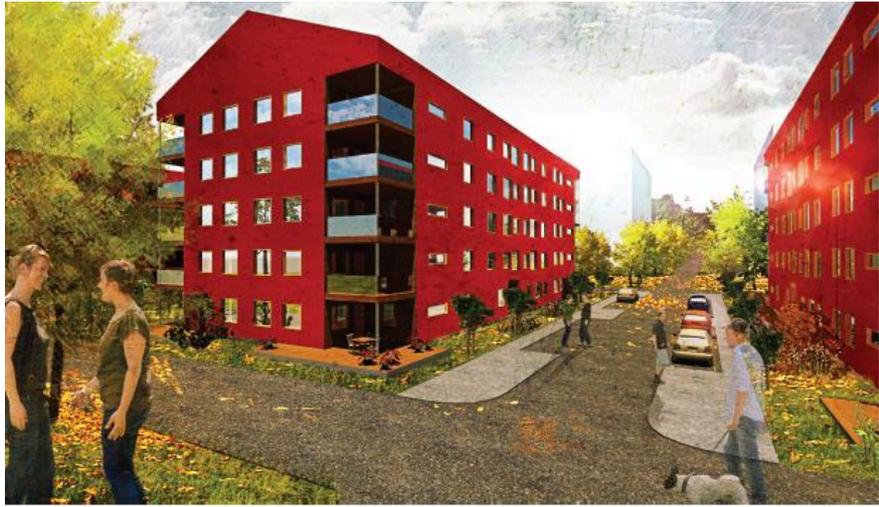


Figure 7. Design team: AB Bygg Mölnlycke and Inobi Analys & Arkitektur



Figure 8. Design team: Husvärden, K21 Entreprenad and Fredblads Arkitekter



Figure 9. Design team: Sverige huset i Göteborg and White Arkitekter



Figure 10. Design team: Familjebostäder i Göteborg, Skanska Sverige and White Arkitekter



Figure 11. Design team: Botrygg i Göteborg and Tengbom Arkitekter



Figure 12. Design team: MS Strand and Tengbom Arkitekter



Figure 13. Design team: Svanström Fastigheter, Almgren Fastigheter and Okidoki Arkitekter