
# Building Companies in Design Built Competition aiming at circularity

# BUILDING COMPANIES IN DESIGN BUILD COMPETITIONS AIMING AT CIRCULARITY

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While the research of architectural competitions is rich, there is less focus on other frequent participants in competitions: Building contractors, project developers and real estate companies. This is the research gap this paper address. Moreover, project competitions are probably confounded with the more profiled architects' competitions. Here the focus is on competitions about the right to build on a real estate owned by a municipality. We wonder who are the actors participating in such competitions, what is their aim, what experiences do they get and do their participation strengthen sustainable and circular solutions? Using institutional change as theoretical frame we analyse 10 companies participating in three project /design build competitions in Sweden. Interviews and document analysis was used. It is remarkable that most participating building contractors, project developers and real estate companies are small local companies, which draw on their knowledge about the sites. The municipalities try to obtain circular and sustainable solutions, but get relatively rudimentary proposals, resonating with the participating companies that are also critical, even if the jury judge winning proposals having high quality. The implication of this research could be to develop national guidelines and organised exchange of experiences.

Keywords: design build; competitions; circularity; institutional theory

## INTRODUCTION

Competitions is a highly celebrated tool in public procurers' policy to provide housing in municipalities. Albeit slightly more ambivalent this is even celebrated by the main bidding participants, the architects. It seemed even fair to extend this ethos to the other bidders, the building companies. This is the research gap this paper address: we wonder who exactly are the other actors participating in such competitions, apart from the architects, what is their aim, what experiences do they get and do their participation strengthen sustainable and circular solutions?

Using institutional change as overall theoretical frame, the competitions process is understood as arena for tensions between logics, denoted dilemmas here. Thus, leading to the following question of interest:

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How does tensions between logics develop within an institutional field and what relations occur between apparently competing logics?

The empirical material come from 10 companies participating in three project /design build competitions in Sweden. All three competitions involved sustainability demands and two of them circularity. In this context circular processes in architecture and construction are about the reuse of design concepts and the reuse of building materials (Lüdeke-Freund *et al.,* 2018, Rönn and Koch 2022a). Circular economy is defined by the Ellen Macarthur Foundation (2015) as businesses that restore design and aim to keep products, components and materials at their highest possible utility and value. In total 30 interviews were carried out. Interviews and document analysis was used.

The results show remarkable high participation of local players. Building contractors, project developers and real estate companies are small and medium sized local companies to a much higher degree than national players (the participants are denoted building actors below). The municipalities on their side try to obtain circular and sustainable solutions but get relatively rudimentary proposals. Maybe slightly more surprising is that the disappointment from the municipality side resonate with the participating companies' opinion. They are also critical, also to their own proposals, even if the jury have ruled that the winning proposals had high quality. It therefore seems that even if a result is obtained that is a momentary stabilised constellation of logics, this precarious balance dismantles shortly after. This evaluation should trigger reflections on ways to learn from experiences across competitions, municipalities, and companies. Two possible avenues could be common national guidelines and organised exchange of experiences for example in industry associations.

## METHOD

The overall theoretical approach is interpretive sociology adopting concepts of institutional theory. Empirically the focus is on three design build competitions in Western Sweden. The R&D project seeks answers through the study of municipal documents, review of competition proposals and via interviews with organisers, architectural offices and building operators.

Because R&D projects are limited in time and scope, it has been important to report the motives behind the choice of research object in a transparent manner. Applicants for contemporary land designation competitions with stated requirements for design, sustainability and innovation have taken place in a selection process that includes the following five steps:

The first step is an online search for municipal competitions in West Sweden. Gothenburg is excluded due to the municipality's overly dominant role. The search terms used were "land allocation", "land allocation" and "competition". In terms of time, the search for contemporary competitions was limited to the years 2018-2021. This initial search resulted in a preliminary selection of 10 land designation contests of potential interest.

The second step in the selection process is a review of the competition program and land allocation policy of the competing municipalities. The requirement was that the competition programs should contain competition tasks, evaluation criteria and submission requirements aimed at quality in architecture and construction, ecologically sustainable solutions, and innovations. This analysis of the competition programs was combined with an investigation of how municipalities reported in their

policies the grounds for assigning land to housing construction. The review resulted in three competitions being considered suitable as a basis for planned studies.

The third step in selection processes includes collection of competition proposals, jury songs and documentation of participants in the competition processes. The competition proposals contain, in addition to architectural directions, illustrations and explanatory texts, information about the companies behind submitted contributions. The organiser's evaluation of the competition proposals reports both the composition of the jury and their ranking of the contributions. Based on this analysis of the competition documents, 12 competition proposals have been selected for in-depth review. The selection includes 3 winning proposals from one competition. The 3 highest ranking contributions from the second competition and 6 winning proposals from the third competition. The two first competitions in reflect practice. The third competition is part of a large urban planning project with design teams selected after prequalification. The competition task is to transform a centrally located industrial and harbour area into an attractive district with housing and businesses.

The fourth step in the selection process is the identification of key persons at municipalities and companies who had an active role in the competitions as representatives of the organiser and proposer. It was easy to obtain information about the names of the jury in the competition documents. To find out which people at the companies participated in the competitions, an in-depth analysis was required. There were 28 companies and 77 people named in the tender documents. Through direct contact with the companies in the design teams, it was identified which representatives had a leading role in the competition process. Interviews have then been conducted with people in a leading position in the 12 design teams.

The fifth step is the planning and execution of interviews with representatives of organisers, architectural offices and building operators in design teams. Selected people have been interviewed for 1-2 hours based on a questionnaire organised into four themes: 1) The Land Designation Competition (questions about the competition process in each municipality from the announcement to the competition program, competition task, submission requirements, assessment criteria, jury including the implementation of winning proposals), 2) Sustainability and climate (questions about business steps in the field, method and technology development, climate adaptation in the competition, climate declarations, circular principles and processes and certifications, 3) Strategic processes (questions about choosing participation in the competition, organisation of design teams and competence needs, risks and costs for the development work, solutions and benefits, 4) Innovation in architecture and construction (from about innovative elements in the competition programs, innovations in the competition proposals and the development work of the design teams, competition

The interviews have been analysed with the support of Kvale (2005). This applies both to the planning of interviews, analysis of collected interview data and critical reflections on the choice of interview methodology. The interviews have been transcribed prior to analysis through "close reading", a method developed in literary studies. The interviews have been supplemented with document analysis. The method has been used for reviews of the competition proposals, the organisers' competition programs and the municipalities' policy for land designations. The municipalities' competitions are examples of cases that need to be understood in their local contexts). The review of the design team's solutions to the competition task

includes analysis of architectural expressions. The competition site, together with the design team's understanding of the competition programs, has had a guiding function for the architectural work.

## Framework of Understanding

This section develops the framework of understanding starting with the introduction of the basics of institutional theory including complexity and pluralist approaches, approaches to institutional change introducing an institutional conceptualisation of the competition process.

## Institutional Theory

Institutionalist theory posits non rational, cultural socially constructed explanations of societal order and change (Scott 2001). Institutions can be understood as "social structures that have attained a high degree of resilience… [institutions] provide stability and meaning to social life…. Institutions connote stability but are subject to change processes, both incremental and discontinuous…". Scott (2001: 48). Institutionalists (Scott 2001, Thornton *et al.,* 2012) conceptualise institutions as consisting of three types of elements: cultural cognitive, normative, and regulative. Though aiming originally at explaining organisational homogeneity and stability, most recent contributions have underlined the more dynamic aspects of the formation of these institutions and focused on institutional change, such as the studies of institutional work ( "institutional entrepreneurs" as change agents (Garud *et al.,* 2007, Munoz 2011), or studies of deinstitutionalisation (Greenwood *et al.,* 2002, Røvik 1996) or institutions within societal and other non-organisational change (Thornton *et al.,* 2012). Even if most institutional theories tend to think in terms of one dominant institution in a field or organisation, possibly challenged by one other (Dimaggio and Powell 1987, Greenwood *et al.,* 2002, Scott 2002), there is an increasing number of contributions that conceptualise institutionalism in terms of two or more institutions that coexist is various ways (Gestel and Hillebrand 2011, Kraatz and Block 2008, Smets and Jarzabkowski 2013, Thornton *et al.,* 2012, Zietsma and McKnight 2009, Waldorff *et al.,* 2013). Thornton *et al.,* (2012: 13) initially observe that "the influence of one institutional order does not necessarily or completely replace another". They first note dual and dialectic coexistence of two institutions as a possibility, but then move on to appreciate jurisdictional overlap of institutional orders creating institutional complexity (Thornton *et al.,* 2012: 57).

### *Institutional Change*

Contributions to the understanding of institutional change provide concepts for how an existing institution would be deinstitutionalised, delegitimised, and how one or more future institution(s) could develop through gaining legitimacy and support (Greenwood *et al.,* 2002, Lawrence *et al.,* 2002, Zietsma and McKnight 2009). Legitimacy is not given but must be formed through conscious actions by various organisations, businesses, associations, and actors in a socio-political process (Greenwood *et al.,* 2002, Zietsma and McKnight 2009). Zietsma and McKnight (2009), drawing on Lawrence *et al.,* (2002), suggests thinking of the early institutionalisation process after a deinstitutionalisation occurs as a dynamic emergent coexistence and competition among institutional logics. Zeitsma and Mcknight (2013) note that deinstitutionalisation may occur without pointing to any new institution and may leave "litter" from the previous dominant institution such as associations, and after deinstitutionalisation it is plausible that more than one contester might arise. Actors' alliance(s) associated with the logics would develop the content

of the new emergent institutions, i.e., the practices, rules and technologies and adapt them to the surroundings. The processes of re-institutionalisation can be lengthy and involves a series of mechanisms of gaining legitimacy, power, and position, such as building alliances amongst actors and organisations. Distance to old institutions might be important for the emergence of a new proto institutions. As demonstrated by Zietsma and McKnight (2009) a range of symbolic and material resources and devices are brought in play to develop support for new institutions. This includes arranging events and establishing associations. As Zilber (2011) suggests "organisational field and the multiple institutions within them come alive through trans organisational sites and structures that serve as the medium through which actors, interests, and issues are identified and negotiated". The author describes the use of conferences to maintain institutions and thereby maintain institutional multiplicity. This can be seen as parallel to the process of competitions where a series of spaces and occasions for corroborating or weakening new institutions can occur.

*The Competition Process*

The competition process is here understood as interorganisational arenas where field and organisation interact. The different institutions in play would relate in different ways, conflictual and/or om dual dialectic coexistence. As a further conceptualisation of these coexistences, it is suggeste to view them as dilemmas. The following five dilemmas can be identified: 1. Organiser's dilemma: How to set a frame for innovation in the program phase? 2. Design team's dilemma: How to understand the brief and translate requirements into design-solutions in the competitions? 3. Professional's dilemma: How to support design teams' work with innovations? 4. Jury's dilemma: How to develop and appraise identified innovative solutions in the evaluation of proposals? 5. Client's dilemma: How to maintain innovative solutions throughout project implementation?

# FINDINGS

## Case

*(Only one case is described here due to space constraints)*

The organiser of this competition was M - municipality. They did not involve external consultants. The competition type "general competition" was chosen. The competition assignment was on residences with the possibility of business remises. The place was in the main town of the municipality with about 15 000 inhabitants. There were 5 competition plots. The competition program consisted of 12 pages + appendices: design program, Plan program, etc. The jury consisted of 7 people: 5 civil servants and 2 politicians. The assessment criteria have the following weights: Durability 30%, design 30%, implementation 40%, land price, max 10 p. The evaluation principle was a calculation of scores and an overall assessment. The proposal was handed in anonymous as a requirement from the municipality. The municipality received 6 proposals 6 from 5 companies, 3 became winners.

## Analysis

Many of the building actors primarily operate locally in Western Sweden. Several companies do projects in more than one region. Only two out of ten interviewed companies are nationwide. The building actors in the study work in three business areas; construction contract, project development/housing development and property management within own company. Some building actors in the design teams collaborate with other companies that, together with the architects, cover the

competencies that the competition requires. For example, the design teams in competitions may include a construction contractor, a real estate company and an architectural office. All three municipalities have legally adopted a land allocation policy (see Rönn and Koch 2022b). What is common is that the competitions for land designation in each policy is presented in an overview without further specification. Organisationally, responsibility for the land allocation competition lies with the municipalities' land and exploitation unit. Administrations/public servants involved in architecture and planning are absent from the policy. Their participation is dependent on the degree of design requirements in the respective competition program. One municipality has strengthened its architectural function after the competition. One in ten building actor express having developed the proposal in the competition about the municipality's political level. The building actors in general have no comments on the municipalities' land allocation policy or competition rules expressed in competition programs. This can be interpreted as the informants like the freedom and therefore do not want clear competition rules. The interpretations of competition programs are highly prioritised by building actor. Several readings and comprehensive dialogues in the design team are common to understand the municipality's intentions. The competition program is coordinated in the companies against their own business models, partly the actors make internal priorities of the competition program's orientation towards their own requirements, partly the competition is tested against comprehensive internal compilations. The design team sees the competition entry as a commercial product - the competition proposal is the basis for a business agreement that includes both costs for the development of the proposal and continued assignments in the event of a competition win. The competition contribution can be seen as a first negotiation, a reconciliation of the municipality's intentions in the competition program with the company's requirements, the location of the plot, land price and financial conditions for construction and management, etc. There are different values among building actor about the quality of the competition program. Some give the program a good rating, while others feel that the municipality makes too many demands without prioritising, which leads to the design team having to choose the focus of the competition proposal instead of the municipality. The site's location is decisive for the builders' decision to participate in the competition. The business opportunities in building a property on a specific plot of land are closely linked to how building operators value its geographical location. Then, at a detailed level, there are different viewpoints behind the valuation of the plot, such as proximity to the city/town, prospects, location in the region, forms of ownership, etc. In the three competitions, the organiser applied different combinations of quantitative and quantitative assessments of the proposals. Common is that the competitions contain assessment criteria for design and sustainability (social and ecological). The differences concern the view of land price, control of building actor and choice of competition form (Rönn and Koch 2022b). The relationship between price and quality varies in the competition programs. The building actors must tender for the land in two competitions. The third competition has a fixed price for land. The building actor must compete with quality. A second difference concerns how the companies' organisational and financial ability to implement their competition proposal should be followed up. One municipality of chooses to check the building actor' finances and competence in advance through prequalification. Another municipality requests that the building actor supplement their competition proposal with documents showing the company's financial status. The third municipality has chosen to follow up the finances of the builder behind the winning proposal after

settling the competition. There are no explicit requirements for circular solutions in the programs for the competitions in two of the competitions. Here, instead, it is the design teams who independently propose the reuse of materials. In the third competition, on the other hand, the organiser requests proposals that promote circularity. However, the concept appears unclear to the building actors. According to the program, the organiser wants the buildings in the competition area to participate in a circular transformation of society. Several building actors take responsibility for guarantees and quality when reusing materials. The responsibility depends on who is the developer and who is responsible for the operation of the property. Companies that build for an "own" real estate company interpret that the responsibility for reuse is easier to handle from a legal point of view. Several competition proposals include reuse of bricks and recycled cellulose material for insulation. A landscape proposal allows for paving with recycled granite. Reuse ideas and experiences from other projects in the competition. The location is unique, but the proposal is to combine the municipality's desire for variety in the development with a cohesive solution supported by experience from other assignments. Previous projects form a knowledge base that the companies reuse and implement in the proposal, such as ideas about sustainability, energy systems and blue-green perspectives. The design teams have reused layouts, technical systems, methods, and procedures from previous housing projects. Floor plans for apartment layouts in the competition proposals are based on known principles from the previous project that have been applied in a new context (Rönn and Koch 2022a). Corresponding in terms of house types and volumes. Design elements and concepts are processed to fit the competition plot. There are proposals in the competitions that involve applying the sharing economy for both businesses and housing. So, for example, bicycle workshops are included where residents share tools and rooms for changing things. These examples are also seen as expressions of circularity and reuse during the operation and management of housing. There is a need to systematise the reuse of materials in the construction sector. One way to overcome barriers could be to create 'donor buildings' for groups of materials that can be reused in the construction of winning competition proposals. Another complementary way is to increase cooperation with a platform for recycling such as "CC Återbruk" in Gothenburg (established in 2018). Corresponding platforms for recycling exist in Western Sweden which include logistics solutions. However, no such solutions to recycling can be found in the winning proposals. It therefore seems that even if a result is obtained in the jury decision, and the decision represent a momentary stabilised constellation of logics, this precarious balance dismantle shortly after as participants actors reiterate the dilemmas anew when interviewed afterwards.

## DISCUSSION

The building actors (which include the contractors) are busy with the next stage in the process where the concrete construction parts are to be produced. It is natural because the construction operators behind winning proposals are waiting for land approval followed by construction. Contractor representatives also believe that the construction phase may generate innovations, both in process and in product (for example material selection). In contrast to architects and competition organisers, innovation is a task that for building actors takes place later in the process, the implementation of the winning competition proposals. Sustainability and circularity are developing areas of knowledge. The competitions were announced in 2019, 2020 and 2021. Since then, both methods, solutions and alternative materials have emerged. For example, wooden frames in the proposals are less dominant compared to what we see in

competitions announced in 2022 that aim at sustainable solutions by minimising CO2 emissions. When the competition programs contextualise sustainability as a concept open to many different interpretations, proposals with green roofs, poles with electric chargers or rooms for the exchange of used furniture risk being perceived as 'greenwashing'. The competitions need to prioritise the climate challenges in society in a more systematic way. Reviewed solutions in are 'point-of-care' and are not accompanied by accounts of how the climate impact is calculated. But at the same time, too detailed sustainability requirements in competition programs can, on the other hand, lead to the construction operators only submitting proposals that confirm that confirm the municipalities' specifications. Renewal and improvement need to be promoted. A possible answer to the dilemma between open sustainability concepts with great scope for interpretation and detailed sustainability requirements is competition programs that more clearly invite design teams to creativity and innovation in the design of solutions to the competition task. Sweden has a national regulatory framework aimed at sustainable buildings through requirements for climate declarations. The Housing Authority has been commissioned by the government to develop the work with the transition to a circular economy in the construction sector. The new goals should give municipalities the opportunity, as organisers of competitions, to be more specific in their requests to building operators and architectural offices. The development of the competition as a municipal tool for innovation and designation of land means that the municipality can become a driving actor in the creation of a sustainable society. In the role of organiser, landowner and planning authority, the municipality has a toolbox that can be used in a more efficient way to drive turnover towards sustainable community building. An interesting paradox in the study is that, on the one hand, the competitions are presented as a tool to promote creativity and innovation, while on the other hand, we received cautious answers when we asked for examples of innovations in our own competition proposal. There are few companies that highlight innovative solutions in the competitions. This applies to both builders and architects. (Rönn and Koch 2022a). The informants also do not describe the competition programs as innovative or as support for new thinking and creativity in the work with the competition proposal. The jurors, on the other hand, see innovations in the competition, both in the development of the competition programs and in the design teams' response to the competition task. The conclusion is that the land designation competition has several faces from an innovation perspective. The key actors (organiser, jury, and competing companies) see different things in the competition processes. For the municipalities, the land allocation competition is a new and partly unproven tool for allocating municipal land to building operators. The municipality of Marks, the municipality of Laholm and the municipality of Varberg have only carried out a handful of land allocation competitions. By setting demands on design, the competitions have been organised as collaborative projects between administrations assigned the role of dealing with matters of land and development and architecture and planning respectively. The composition of the jury is a clear expression of this cooperation. Municipal policy documents with overarching goals have been translated in the competition programs into competition tasks, assessment criteria and requirements for submission of drawings, illustrations, and description of the proposal. The competition programs generate a diversity of solutions to the competition task that the jury receives for assessment. Some of these entries are more innovative than their competitors. The jury's task is to find a winner. To rank the proposals, the jury members must identify differences and value these as better/worse solutions to the competition task. This

encounter with proposals that deliver different answers to the competition task means that the jury sees innovations in the competition in a different way than construction operators and architects. The architects do not perceive the reuse of design elements and concepts in competition proposals as innovations, but rather as expressions of practice, although the competition is generally perceived as a tool that promotes innovation and creativity. To reuse solutions from previous assignments and adapt them to one. The ten competing construction operators included in the survey prioritise participation in land designation competitions to gain access to buildable land. The prioritisation is shown by the fact that the companies have internal decision-making processes when interesting competitions are announced. Then the construction actors draw up a budget for the development of the competition proposals. Most construction operators have regular partners, mainly architects and property companies. A few choose new partners for the concrete competition (Rönn and Koch 2022a). Most construction operators participate in 2 to 5 land designation competitions annually. This means that the companies are more used to competitions compared to the organising municipalities. The competitions are seen as costly. Architect offices and construction operators typically share hourly costs and risks. The building actors establish a budget for the development of competition proposals and the architects are expected to contribute their own time. The specific competition project is concluded for the architect's office through the submission of competition proposals. If the competition is won, the architect's office can receive full payment for the work plus bonus and future design assignments. For the builders, the implementation of winning proposals can take a long time as the land needs to be made available by drawing up a new detailed plan for the area. It is thus seen how the pre-existing dilemmas are prevailing and it appears the entering sustainability and circularity corroborates this. Even if a result of the jury is obtained that is a momentary stabilised constellation of logics, this precarious balance dismantled shortly after. This status raises the question of possible strategies for improvement. Two possible avenues could be common national guidelines and organised exchange of experiences for example in industry associations. The national guidelines should attempt to condense the experiences and lay out ways in which the dilemmas of competitions can find room to be solved locally, In other words detailed rule-like guidelines will have limited value if one appreciate the deep embeddedness of the dilemmas identified.

## CONCLUSIONS

We initially wondered who exactly are the other actors participating in design build competitions, apart from the architects, what is their aim, what experiences do they get and do their participation strengthen sustainable and circular solutions? And we framed the competition process as institutional, potentially involving change. However, recognising that dilemmas between logics exist, which led us to ask: How does tensions between logics develop within an institutional field and what relations occur between apparently competing logics? In our analysis of the competitition process we saw how the pre-existing dilemmas are prevailing and it appears the entering sustainability and circularity corrobates this. Even if a result of the jury is obtained that is a momentary stabilised constellation of logics, this precarious balance dismantled shortly after. We would maintain, along with the actors that design build competitions for land designation is a suitable tool used correctly to achieve a community building that is sustainable, attractive and with cost/value in balance. Municipalities and participating building actors can produce a legitimate basis for

local housing development. A difficulty lies in the fact that the organiser of the competition does not compensate the participating companies for their delivery of the approved competition proposals. This makes the competition a costly investment and will corroborate the conpetion dillemmas in the future. The profit for the builders is in the access to a buildable plot at market price. The competition as a tool for innovative, sustainable, and circular solutions requires continued development work, both in terms of national competition rules, competition programmes, competition proposals and the free transmission of competition documents that provide a more efficient exchange of knowledge. The goal should be to promote innovations (product, process, and organisational innovation) in collaboration with relevant business models in the building industry.

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