

# BEYOND NATIONAL BUILDING REGULATIONS: EXPLORING PUBLIC-PRIVATE NEGOTIATIONS OVER SUSTAINABILITY REQUIREMENTS

Melissa Candel<sup>1</sup>, Tina Karrbom Gustavsson<sup>2</sup> and Per Erik Eriksson<sup>3</sup>

<sup>1&2</sup> *Department of Real Estate and Construction Management, School of Architecture and the Built Environment, KTH Royal Institute of Technology, Teknikringen 10B, SE-100 44 Stockholm, Sweden*

<sup>3</sup> *Department of Business Administration, Technology and Social Sciences, Department of Civil, Environmental and Natural Resources Engineering, Luleå University of Technology, 97187 Luleå, Sweden*

Municipalities in Sweden govern construction projects on municipal land through requirements that sometimes go beyond national building regulations in order to advance sustainable building practices. The purpose of this paper is to explore the process of negotiating such project specific requirements for construction projects built by private housing developers on municipal land. The paper builds on a case study of an innovative urban development programme in Stockholm where interviews with private housing developers and municipal representatives and observations of meetings, seminars and forums were conducted. Emerging negotiations between the municipality and private housing developers over project specific requirements set by the municipality were explored and analysed using the concepts of product and process innovation. Findings reveal that housing developers try to remove or change those requirements that are considered to increase costs, increase risks and decrease the value of their final product. This paper illustrates how project requirements for construction projects on municipal land are dependent upon early phase negotiations between the municipality and housing developer.

Keywords: municipality, innovation, sustainability, negotiations, procurement

## INTRODUCTION

Construction clients are considered to play a key role in initiating innovations in construction because they set requirements for construction projects through procurement (Nam and Tatum, 1997; Hartmann *et al.*, 2008; Harty 2008; Haugbölle *et al.*, 2015). However, local governance research has revealed that municipalities use land allocation agreements to govern construction projects on municipal land in order to advance sustainable development (Bulkeley and Kern, 2006; Smedby, 2016; Smeby and Quitzau, 2016). Through land allocation, municipalities can place requirements on construction projects that go beyond national building regulations (Caesar, 2016; Smedby and Quitzau, 2016; Smedby, 2016). Hence, in construction projects developed on municipal land, construction clients (here called housing developers) do

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<sup>1</sup> candel@kth.se

not alone decide on the requirements for their projects (Caesar, 2016; Smedby and Quitzau, 2016; Smedby, 2016).

During the early planning phases of these construction projects, after land has been allocated to a housing developer and before a definite development right is established, the municipality's requirements are subject to modifications (Caesar, 2016). This means that housing developers have an opportunity to negotiate and influence modifications of the municipality's requirements, making the governance of these projects, and the initiation of innovation in construction, a dynamic process. The purpose here is to explore the process of negotiating project specific requirements for construction projects built by private housing developers on municipal land.

A case study of an urban development programme was carried out. This programme includes several construction projects with project specific requirements set by the municipality intended to necessitate sustainable innovation. Through interviews and observations, the negotiations that arose as a result of project specific requirements set by the municipality were studied. To understand why these specific requirements proved to be especially problematic for the housing developers, they were analysed using the concepts of product and process innovations. The findings contribute to advancing construction management literature by showing how project specific requirements for construction projects on municipal land are established before the procurement process takes place. Contributions are also made to the understanding of the early project phases in innovative urban development programmes and the importance of these phases. The findings have practical implications for housing developers since project requirements are integral to their ability to govern construction projects. The findings also have implications for municipalities since they illustrate what happens when public actors challenge the private sector with sustainability requirements that go beyond the national building regulations.

Construction procurement can be seen as a governance mechanism that enables clients to incorporate sustainability requirements in their construction projects (Varnäs *et al.*, 2009; Petersen and Kadefors, 2016). Previous research on procurement often takes the perspective of the construction client, focusing on procurement strategies and their effects (e.g. Eriksson *et al.*, 2017). However, Ivory (2005) argues that clients are risk averse and act as barriers because the high risks associated with construction innovations make them unprofitable. Further, Harty (2008) argues that adoption and implementation of innovation in construction projects involves a complex process of negotiations with project stakeholders. Hence, the general view of the client as having the key role in driving innovation in construction warrants further investigation. This view is challenged by construction projects developed on municipal land where a municipality places their own requirements on sustainability (Caesar, 2016; Smedby and Quitzau, 2016; Smedby, 2016). The role that housing developers play in driving innovation in these construction projects will instead depend on the negotiations over project specific requirements set by the municipality. In order to understand the process of negotiating these project specific requirements, it is first necessary to explore the reasons why the housing developers decide to challenge them in the first place. These considerations raised the first research question:

RQ1: What type of project specific requirements are contended by private housing developers and why?

In order to gain an understanding of how these requirements stand out, the nature of the innovation that the housing developers anticipated would be involved in meeting

them is investigated. This enabled a better understanding of the differences between these project specific requirements and what make them especially problematic and challenging. Here we distinguish between product and process innovations, which is a common classification or categorization found in the innovation literature (Hullova, *et al.*, 2016). Damanpour and Gopalakrishnan (2001; 47-48) define product innovations as “new products or services introduced to meet an external user or market need” and process innovations as “new elements introduced into an organization’s production or service operations...to produce a product or render a service”. The various requirements from the municipality would trigger innovation efforts that can be categorized as product or process innovations, or both. The arguments used to discuss and negotiate these requirements are then investigated and the way these negotiations unfold is explored in order to answer the second research question:

RQ2: How are project specific requirements negotiated between private housing developers and the municipality?

## **METHOD**

The findings build on an on-going case study of Stockholm Royal Seaport (SRS), an urban development programme with high requirements on sustainability that have been set by the municipality. The specific stage that was studied (Stage X) consisted of twelve private sector housing developers. The case study enabled us to develop in-depth context-dependent knowledge of the process of negotiating requirements (Flyvbjerg, 2006). This process was studied during the phase following the allocation of land to specific housing developers. Two sets of requirements were pointed out as special for Stage X by the municipality. One concerned low-flushing toilets that were to be connected to a self-sorting sewer system, and the other concerned a shared garage. These requirements were also pointed out by the housing developers' project managers as the most problematic and challenging requirements set by the municipality. In order to provide a more comprehensive picture of how these negotiations unfolded, both the housing developers’ and the municipality’s perspectives were explored.

The empirical material consists of 16 semi-structured interviews, non-participant observations and document analysis. Interviews were conducted with ten project managers from the housing developers in Stage X (HD1-10). These developers most notably varied in size and experience. Two housing developers had little to no experience building in Stockholm, two had experience building in Stockholm, and six had experience from previous stages in SRS. To gain the municipality’s perspective and show the dynamic nature of these negotiations, interviews with three programme managers from the City Planning office (M1-3) were also conducted. A sustainability strategist (ST), a consultant (C) and a contract lawyer (CL) from the municipality were also interviewed because they were involved in this process of establishing requirements. All interviews were between one and two hours in duration and were carried out between March 2018 and March 2019. The material also consists of non-participant observations from meetings, competence seminars and forums, which were organized by the municipality for the housing developers.

The material from the interviews and observations was categorized into groups of major ongoing discussions over requirements using NVivo, which were then analysed using the concepts of product and process innovations. To gain more general knowledge about the urban development programme and its context, the sustainability programme, the action plan in the land allocation agreement containing most of the

sustainability requirements, and the municipality's policy for land allocations were also studied.

SRS is a large, long and complex urban development programme in Sweden initiated by Stockholm municipality. It is located in an attractive and sought-after area of the city where the municipality has chosen to use their land as a testbed for innovative sustainable solutions. The central location also gives the programme publicity that enables the municipality to use it as a way of promoting their vision of being a sustainable city. The publicity and sustainable profile also provide the housing developers with good prospects for marketing themselves. Both the municipality and the housing developers therefore recognize this publicity as one of the main incentives for the housing developers to partake in the urban development programme.

In this programme, there are two important change agents. The municipality is the owner of the programme and sets high requirements on sustainability for the housing developers' construction projects that entail various forms of innovation. The housing developers have thereby taken on a more passive role as change agents in this case. The municipality's objective with the SRS programme is to, among other things, develop knowledge of sustainable solutions and construction practices (Stockholms Stad, 2017). SRS can therefore be considered an innovative urban development programme. One of the programme managers (M1) explained that: "Specifically for [Stage X] we are testing many different things. As part of this we have the mobility index and the self-sorting sewer system". These are the two sustainability requirements set by the municipality that sparked the negotiations explored in this paper. These requirements were considered the most problematic and challenging for the housing developers during the time of the study.

The study took place after the housing developers had been allocated land (Figure 1). During this phase, the municipality and housing developers work together in an inter-dependency-based relationship to produce a definite development right (Caesar, 2016). This process precedes the housing developers' procurement process and the municipality's establishment of a detailed plan for the neighbourhood. As the municipality developed a detailed plan, their understanding of the building conditions sometimes changed, resulting in modifications to their requirements. As the housing developers conducted pre-studies and developed their design and production solutions, they also became aware that certain requirements would be more challenging and expensive than initially expected and therefore tried to persuade the municipality to either remove or change them.

## **FINDINGS**

### *Vacuum toilets (water and energy) - Implementing new technologies*

One of the requirements that the housing developers negotiated concerned low-flushing toilets. The initial requirement from the municipality stated that "building should be prepared for sorting sewage fractions. Installed toilets should be extremely low-flushing (maximum one litre per flush) and connected to a separate pipe" and was under the heading "requirements that will be clarified later" (Stockholm Stad, 2015). Although, the technology required for the vacuum toilets is available on the market, it is new to the housing developers. Challenges would therefore involve the procurement of suppliers, fitting additional costs into the budget and managing risks involved in adopting a new technology. This requirement would, in other words, mostly require process innovations from the housing developers. One project

manager (HD4) explained that “there are very many questions so the costs to implement this are very high.

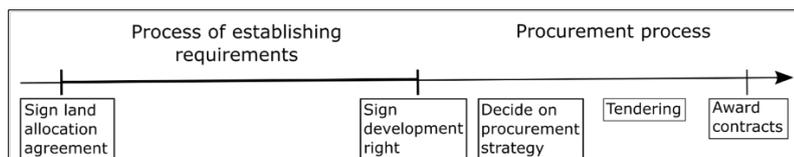


Figure 1: The process of establishing requirements from land allocation to procurement.

Labour costs and alternative costs because this drain chute needs to be included". From the housing developers' perspective, the risks associated with this requirement are to a large extent related to implementing a new system on a large scale, because “this has not been done on such a big scale before” (HD4). A common argument used to oppose this requirement regards maintenance. The housing developers argue that the new system would place unreasonable responsibilities on the housing corporations. For example, one project manager (HD5) pointed out: “What happens if they get clogged? It is the housing corporation that will manage these apartments and there are no housing corporations that have knowledge about it”.

The vacuum toilets and sewer system became a major concern after the municipality presented their solution during a competence seminar. One project manager (HD6) said: “It turns out that they basically do not know what they will do with the waste... We have frustrated architects as well that we cannot give a time plan to. They cannot plan, we cannot plan”. To make their expectations clear, the municipality also decided to specify what they wanted in an updated version of the land allocation agreement. The housing developers' project managers however perceive this as a change in requirements because “it said that you ‘can’ use them, and it said ‘should’, and now it says that we are ‘supposed to’. That is a really big difference. From the municipality's perspective it is just a way to clarify, but from the housing developers' perspective this means additional costs" (HD10).

Throughout the time of the study it remained uncertain whether or not the municipality would actually build another system to support the additional drain chutes that they require the housing developers to build. This became a major concern for the housing developers. As one of the project managers (HD5) explained: “They [the municipality] say ‘you should build this system in this way but then we also want you to prepare for a tank because in the future we might decide that we also want to do a collected system or a closed system’... That means that it is not enough with only normal drain chutes, but we need additional drain chutes for these toilets”. The municipality decided that the requirement would remain but are unable to say whether they will be able to build the treatment plant. One of the programme managers (M1) expressed some frustration over this saying that “it is difficult with this treatment plant. We cannot get more information about them, so we are stuck... It is a little bit difficult to stand behind something when we have not really decided what we will do”.

Most of the critique from the housing developers concerns increased costs and value for money, which they argue is especially problematic due to the falling housing market. For example, one project manager (HD5) said: "What you have reduced is that one flush takes one litre of water instead of four litres of water and then we have a cost of quite a few million. And it is then you have to think, is this really what we should focus our efforts on?" The municipality however tried to rationalise the

benefits by arguing that "if you have sorting sewer systems you can recycle warm water and save a lot of extra energy in the buildings" (M2), which they thought might help them meet the high energy requirements. This point was continuously stressed by municipal representatives during a competence seminar that they had organised. The response from many of the housing developers was however that the cost for recycling this warm water would outweigh the benefits gained from saving energy.

Many of the housing developers also argue that the municipality has not considered the negative impact that these toilets will have on the indoor environment for the people living in the apartments. One project manager (HD10) asked: "Do customers that buy something that is so extremely expensive... want to have a toilet that sounds like an airplane toilet"? Another argument that the housing developers use is that more important concerns receive less attention due to this requirement and that "perhaps they [the municipality] should focus on certain questions. The noise is of course a deciding factor. If that is not resolved, we cannot build" (HD4). In response to all this criticism, the municipality held a meeting to discuss the various viewpoints regarding the requirement in order to decide what they should keep. One programme manager (M1) explained: "We had a meeting about these self-sorting sewer systems with different requirements. You might say a bit of a crisis meeting, because we have received a lot of comments. Based on these we had a discussion and took in the various comments to make a decision on what we should keep". The municipality also held a forum for the housing developers to meet suppliers of vacuum toilets.

*Garage solution (transportation) - A collaboration and coordination challenge*

The municipality placed a number of requirements on the garages as part of a mobility index and specified that each garage should have one entrance and be shared between several blocks. The garage solutions for Stage X can be seen as another instance where process innovation would be required from the housing developers. The challenge with this requirement is however not related to the implementation of any new technology, but rather finding ways to collaborate with many other housing developers and to coordinate with the municipality's construction of infrastructure in this tight inner-city urban development. One project manager (HD6) explained: "To build three blocks along with streets and to get the legal aspects with easements and shared facilities and ownership in the garage... All seven housing developers are not the same and do not think the same, so this creates conflict, not just between the housing developer and the municipality but between housing developers too". It is evident that many of the housing developers do not understand why the municipality chose this solution. For example, project manager HD10 said: "It is unnecessarily problematic... the problem or the circumstances could have been made easier from the beginning". In response to these concerns, the sustainability strategist (ST) and programme managers from the municipality point out that "this was included as a requirement already in the competition, that collaboration with both the municipality and with other housing developers [...] it said that this was an important part" (M2).

Early in the process one housing developer took the initiative to investigate an alternative solution. Their project manager (HD2) said that they were hoping to use existing caves "instead of building a very expensive and very complex [garage], both in planning, production and property management phases, which we are forced into since this is a car free city district". Their argument was that this would make more sense "out of both a resource and economic perspective" and that by using "already existing resources, these caves, we could cover the whole city's parking needs" (HD2). The municipality however decided to reject this proposal. It turned out that

this was never an option since the requirement was connected to the mobility index and had been developed as a part of larger strategic decisions regarding the planning of traffic in the city.

The negotiations with the municipality however mainly revolve around trying to change the solution so that there will be one garage per block with separate entrances. One of the project managers (HD5) explained how “the big question has been whether it should be three separate garages with three separate entrances with one block that is responsible for its part and then we become a joint facility.... And the municipality wants it to be one entrance, so the connections lay under the ground”. Another question that made the discussion about the garage solution go around in circles was the order in which the garage should be built. One project manager (HD4) explained that “there are culverts under the street, so we need to build in a certain order for the garage to work and in this case in another order for the noise requirements to work” so “the question was resolved but now it has come back again because in terms of practical implementation the solution does not hold either” (HD7). The municipality's response to the questions and criticism, for both the garage and vacuum toilets, typically involve resolving issues through dialogue and offering support in the form of competence seminars and forums. One programme manager (M2) said: “We get a lot of questions and then we need to handle that, create meetings and forums to meet their eventual critique and engage in dialogue. We also have additional competence seminars that are organised for the housing developers”.

The major risks perceived by the housing developers are from the other housing developers since they are dependent on each other to build the garage. For this reason, much of the process innovation for the housing developers concerns the formulation of contracts. Project manager HD5 said: “How do we form contracts for this? Otherwise the biggest risks are related to what happens if somebody is unable to start or does not get financing. How does one handle that? Especially now when the municipality forces us together in this way”. The requirements are therefore also negotiated between the housing developers. They decided to form their own forums to enable collaboration with the other housing developers they will be building the garage with and discuss possible solutions.

It is evident that there are many conflicting opinions. This is for example expressed by project manager HD2 when reflecting over discussions regarding access to the garage: “Someone maybe thinks it is ok to place one in the middle of the courtyard, but someone else think ‘no they will pay so much they should have direct access’... A third thinks it is ok to walk 200m... Which solution should we have? And we need to agree around one product”. The housing developers also have very different strategies regarding their collaboration. For example, one project manager (HD4) explained: “We have mostly been thinking about what things we can do together to make this easier and what would cost less if we did it together, but others in the group have thought more about ‘what are the least possible things we can give away? What do we need to sign to be able to handle this on our own and not be dependent?’”. While the larger housing developers with more experience seem to drive many of the discussions, the strategy for some of the smaller and less experienced housing developers is to not get involved because “there are so many with opinions so we do not need to voice ours because everyone else does that.” (HD10).

The negotiations have led to some changes to the requirements regarding the garages. For example, one project manager (HD4) said: “The visitors parking was initially

supposed to go down in the garage and made this a lot more difficult. So it was a big advantage that they decided to remove that". The housing developers however decided that they would stop working on questions regarding the garage for the time being and "together we have said that now we do not want to do anything more. Stop spending money on something that we cannot use" (HD7).

## **DISCUSSION**

In SRS, the power and authority typically associated with the construction clients' procurement is challenged by the municipality's requirements and authority. This goes against the general perception of the construction client and the role of their procurement found in previous literature (e.g. Nam and Tatum, 1997; Hartmann *et al.*, 2008; Varnäs *et al.*, 2009; Havenvid, *et al.*, 2016; Eriksson *et al.*, 2017). The housing developers are however challenging some of the municipality's requirements during the early planning phases after the land had been allocated and before a definite development right is produced. Their role rather resembles that of a gatekeeper as they attempt to control what aspects of the municipality's initiative will be implemented in their construction projects. The findings support Ivory's (2005) conclusion that construction clients will act as barriers to those innovations that they consider risky and unprofitable.

The housing developers are mainly opposed to those requirements that are perceived to result in increased costs, increased risk, and decreased value of their final product. The two requirements that they try to renegotiate are perceived to involve all these three drawbacks. This might mean that requirements that are thought to increase costs and risk while also increasing value, or vice versa, are not considered problematic enough for the housing developers to challenge. The negotiations mainly involve discussions about process innovations, which might be a result of the product innovations being something that is either outsourced or the responsibility of parties other than the housing developers' project managers. It is also important to remember that the requirements that they want to renegotiate are set by the municipality and go beyond the national building regulations. This is perhaps the main reason the housing developers consider these requirements as negotiable in the first place.

The housing developers' justification for challenging requirements are for the most part related to minimising risks and controlling the costs of their project. For this reason, the falling market has impacted their concerns over these requirements in different ways. For example, the main concern with the vacuum toilets is that the market will not pay for the new technology. For the garage, however, the concern is that the other housing developers will not be able to finance their projects. Since they are dependent on each other to build the garage this could negatively impact the other housing developers. The ways in which these negotiations are initiated and unfold is however more complex and dynamic. For example, the housing developers came together to challenge the municipality with one voice in discussions about the vacuum toilets. Here their intentions and wishes are well aligned with one another. For the garage, however, they all have very different opinions, which has led to a large variation in negotiation strategies. This variation could be equated to the difference in how well defined the final product is. The design of the final product for the garage had to be developed and negotiated to a larger extent.

The findings show that there are requirements for construction projects in innovative urban development programmes that are negotiated and established before the housing developers' actual procurement process begins. This means that the considerations

over sustainability observed in Swedish construction clients' procurement (e.g. Varnäs *et al.*, 2009) will in some cases have been established beforehand by a municipality. The process of establishing requirements from land allocation to the signing of a development right will influence the procurement strategy a construction client chooses to use. This has largely been overlooked in previous research on procurement strategies (e.g. Eriksson *et al.*, 2017). Findings also illustrate how project specific requirements are negotiated between housing developers and the municipality during the early phases of construction projects on municipal land. This means that the complex process of negotiations with project stakeholders over the adoption and implementation of innovation in these construction projects (Harty 2008) begin already during the early planning phases in discussions over requirements.

## CONCLUSIONS

The process of negotiating project specific requirements for construction projects built by private housing developers on municipal land are explored. Findings illustrate that private housing developers attempt to negotiate requirements that they believe will increase costs, increase risks and decrease the value of their final product. As a means of understanding their concerns and arguments against these requirements, the concepts of product and process innovations are used to analyse the innovations that the housing developers expect will be necessary in order to meet them. It is demonstrated that requirements for construction projects in innovative urban development programmes are established in a process of negotiations that take place before the housing developers' procurement process. In these projects, the imperative role of the construction client and their procurement process is therefore downplayed in comparison to previous research (e.g. Hartmann *et al.*, 2008; Varnäs *et al.*, 2009; Havensvid, *et al.*, 2016; Eriksson *et al.*, 2017). The development of these requirements was however not followed through the housing developers' procurement process. Future research could therefore explore the development of requirements from these early phases through the procurement process as well.

Findings provide practical implications for both municipalities and private housing developers in innovative urban development programmes. The requirements set by the municipality allow them to promote the district as a sustainable and innovative part of the city, showcasing their efforts to improve sustainability. They should however also be aware that requirements that have a high risk of increasing costs, increasing risk and decreasing value for private housing developers will likely lead to negotiations. Municipalities would therefore benefit from considering how their requirements could affect the costs, risks and value of the construction projects in their programme to be prepared for the efforts needed to persuade private housing developers. This study also shows that private housing developers building on municipal land in innovative urban development programmes should be prepared to be faced with some requirements that might increase their costs, increase their risks and decrease the value of their final product. Negotiations can in some cases lead to requirements being modified or removed completely, but this is not a certainty.

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