5 Competitive tenders for integrated contracts for social housing renovation projects

Explanatory note

The findings in the two previous research papers show that Design-Build-Maintain is the project delivery method that can offer the best process performance in the case of social housing energy renovations. The analysis of two Design-Build-Maintain energy renovation projects in the previous research paper highlighted the crucial importance of the tender procedure in order to profit from all the potential of integrated project delivery methods. The following research paper aims to gain insight in the characteristics of the tender procedure for integrated contracts, DB and DBM (the process tender for different types of integrated contracts is the same). The previous papers also identified the constrains imposed by public procurement regulations for the tender procedure of integrated contracts. The selected case studies for the following research paper are all from the Netherlands. In all selected cases there is a clear commitment for transparency during the complete tender procedure, but Dutch social housing organisations are not obliged to comply with public procurement regulations. The reason Dutch social housing renovation projects were selected is to analyse tender procedures with an aim for transparency but with less constrains to apply innovative mechanisms. This analysis could be of special interest to the Dutch and also to the European social housing organisations.

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Abstract

In recent years European Social Housing Organisations and European authorities have devoted particular attention to the renovation of the European social housing stock. The reasons are twofold: first, the stock is aging, and secondly, it offers potential for energy savings. Recently, in the Netherlands, where social housing accounts for 32% of the total building stock, the national government and the social housing organisations signed an energy-saving covenant in which the social housing organisations agreed to upgrade the entire social housing stock to an average energy performance certificate rating of B. The terms of the covenant have forced social housing organisations to embrace integrated contracts and competitive tender procedures in an effort to find ways to improve the efficiency of renovation processes and increase the outputs.

These contracts focus particularly on energy savings. In this research project eight competitive tenders for integrated contracts for social housing renovation projects were studied via a tender document analysis and in-depth interviews with the social housing property managers. Tender procedures were analysed by comparing the schedule, the preconditions for the candidates, the minimum requirements, and the award criteria. Characterisation of the tender elements enabled the researchers to identify the mechanisms applied by the social housing organisations to influence the ambition, collaboration and long-term view of the companies concerned.
The ambition was sharpened by the competitive nature of the tender but the potential for minimum requirements and award criteria in this regard was not fully exploited. The collaboration was clearly promoted by setting a short deadline for developing the design proposals. Other strategies, involving, for example, the number and type of meetings with the social housing organisation, and conditions for the nature and composition of the consortia were applied by only some social housing organisations. The long-term view was broached by the inclusion of an optional maintenance contract in some cases, but the elective character of the contract stood in the way of any influence it may have exerted.

Key words: competitive tender, Design-Build, energy efficiency, integrated contracts, social housing

§ 5.1 Introduction

In recent years European Social Housing Organisations and European authorities have devoted particular attention to the renovation of the European social housing stock. The reasons are twofold: first, the stock is aging, and secondly, it offers potential for energy savings. Most of the European social housing stock dates from before the 1980s and is in need of an upgrade in order to meet current health and comfort standards (UNECE, 2006). European authorities, who are under pressure to achieve their own ambitious CO_2 emissions targets by 2020 – a 20% reduction compared with 1990 (CEC, 2007) – have drawn attention to the potential energy savings that can be won from the social housing stock, which accounts for 9.4% of the total European housing stock (Dol and Haffner, 2010). At present, there is a wide gap between the actual renovation ratio of the European social housing stock and the ratio needed to meet the European targets. A recent study by Bastiaanssen et al. (2014) has estimated that, in order to achieve the targets, the annual investment in renovation should be increased almost fourfold.

The Netherlands is no different in this regard, where the majority of the social housing stock dates from before the 1980s (Majcen and Itard, 2011). The national government has highlighted the potential energy savings in the social housing stock by entering an agreement (Energy Saving Covenant, signed in 2008, upgraded in 2012) with the Social Housing Organisations (SHOs) on the realisation of energy efficiency improvements via maintenance and renovation projects (Nieboer et al., 2013). The concrete aim defined in the agreement is to upgrade the whole of the Dutch social housing stock to an 'average' Energy Performance Certificate (EPC) rating of 'B'. The involvement of SHOs in the energy saving strategy is crucially important in the Netherlands as they represent 32% of the national housing stock (Dol and Haffner, 2010). The need for greater and smarter investment in social housing renovation projects with a view to obtaining a more energy-efficient housing stock has also been covered in an analysis carried out by the Taskforce CO_2 Foundation (2013).

The need for greater efficiency in construction processes has been a burning issue for some time now. Construction processes are generally seen as adversarial, and there is an extensive body of literature on how to raise process efficiency by stepping up collaboration among the players. The reports by Latham (1994) and Egan (1998) have been described as wake-up calls for a pattern change in the construction sector. Several authors have since argued that integrated project delivery processes, such as Design-Build, offer the best potential for achieving quality improvements in projects (Bennett et al., 1996; El Asmar et al., 2013; Ibbs et al., 2003; Hale et al., 2009; Molenaar et al., 1999). Other authors have pointed out that integrated project deliveries are especially meant for construction projects that aim for innovation and high sustainability standards (Korkmaz et al., 2010; Molenaar et al., 2010; Straub et al., 2012). These authors further stress that the use of a specific project delivery method will not, in itself, suffice to raise the level of collaboration; a certain degree of commitment is also required from the players. Most of the current literature is based on experience of large new-build real estate and infrastructure projects. However, similar results have been reported by previous research based in two French social housing renovation projects which made use of Design-Build-Maintain contracts, namely: a shorter timespan for the project, guaranteed results, and almost the same costs (Salcedo Rahola et al., 2014).

The Dutch authorities have recently recognised the potential of integrated project deliveries for achieving higher sustainability levels in the housing stock. The suitability of such methods for housing renovation projects is outlined in the report "Cost-effective sustainable buildings renovation in the Netherlands" produced by the Netherlands Enterprise Agency, an offshoot of the Ministry of Economic Affairs (Tol and Balvers, 2012). The report pinpoints the complexity and the crucial role of the tender phase in Design-Build projects, since this is the phase in which all the important choices are made.

There are a few SHOs in the Netherlands which have already used integrated contracts in renovation projects in an effort to find a more effective construction process. A previous study on the role of architects in social housing renovation projects in the Netherlands identified two types of tender procedures that used integrated contracts: the competitive and the non-competitive procedure (Salcedo Rahola and Straub) (see Figure 5.1). It is customary in a tender for integrated contracts to select a group of companies to develop the project. This group may consist, for example, of a general contractor, specialised contractors, an architect's firm, and technical consultants, and is commonly referred to as a 'consortium'. There is no legal structure associated with consortia. Normally, in Dutch social housing renovation projects, the SHO has a contract with the general contractor, who has contracts with all the other consortium members. In some cases the group of companies create a joint company.

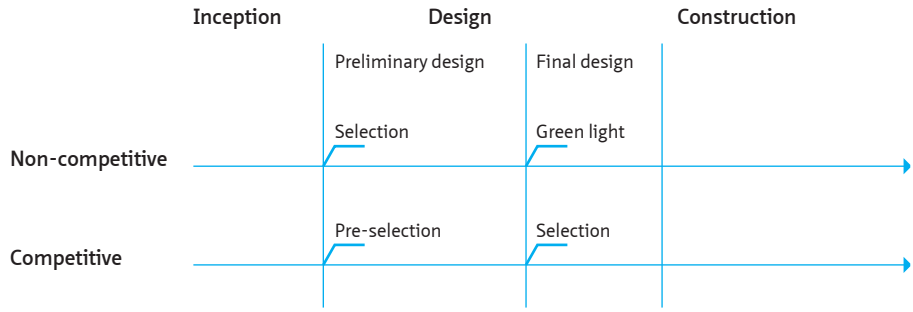

FIGURE 5.1 Phases of non-competitive and competitive procedures

In non-competitive procedures the consortium is usually selected on the basis of criteria unrelated to the project e.g., the capacity for team work, the sustainability vision, or the capacity to innovate and gain experience for similar work. The design work begins after the consortium has been selected. When the preliminary version is ready there is often a green light procedure – a moment when the SHO decides whether to proceed with the project, and when the budget is finalised. In competitive procedures there is a pre-selection and a selection phase. The pre-selection phase is again based on criteria unrelated to the project. The pre-selected candidates are then invited to participate in the selection process, which is based on an evaluation of the preliminary design proposals. Accordingly, most of the design work has been completed prior to the selection of the consortium. Once this phase is complete, some additional work needs to be done to turn the design into a definitive proposal.

It is assumed that a competitive tender will increase process efficiency by shortening the timeframe of the project. This is because construction companies are already involved in the early stages (the design phase) and there is a fixed time schedule

for selection (Salcedo Rahola and Straub). A competitive tender also boosts quality and innovation, thanks to the design competition character in the selection process (Hal et al., 2011; Savanović et al., 2012). The different elements of competitive tender processes have not been defined in previous studies. The main question in this research is: How do Dutch SHOs formulate optimal conditions for competitive tendering for integrated renovation projects?

An analysis of competitive tendering for integrated energy renovation projects that aim to improve process efficiency would be of interest not only to Dutch SHOs but also SHOs in other European countries, since they are all committed to raising the energy efficiency of their building stock with limited resources. Unlike Dutch SHOs, European SHOs are regarded as public bodies and must therefore comply with the EU Public Procurement Directive (2004/18/EC). Dutch SHOs are under no such obligation as they have not received direct government funding since 1995 (Priemus and Gruis, 2011). Accordingly, only a limited amount of tender procedures are available to European SHOs, but they can, however, make use of Competitive Dialogue for projects deemed to be 'complex'. Some European member states (including France and the United Kingdom) have indeed decided that projects which make use of integrated contracts can be categorised as 'complex' (Arrowsmith and Craven, 2012; Salcedo Rahola et al., 2014). As the competitive tender procedure used by Dutch SHOs strongly resembles the Competitive Dialogue procedure, the results of this study will also be of interest to European SHOs that make use of integrated contracts in their renovation processes.

The research method is described in the next section. This is followed by the presentation of the findings in Section 5.3, a discussion of some of the findings in Section 5.4, and conclusions and suggestions for further avenues of research in Section 5.5.

§ 5.2 Research method

Twenty-three Dutch social housing renovation projects which made use of integrated contracts that had either been completed or were in the construction phase were identified with a search of specialised websites and with assistance from experts in the field. The search included websites that list innovative construction projects: Agentschap NL (Agency of the Dutch Ministry of Economic Affairs), EnergieSprong (a programme for innovation in construction, initiated by the Dutch Ministry of the Interior and Kingdom Relations) and Passief Bouwen (Dutch passive house organisation). The experts belonged to SBRCURnet (a Dutch knowledge network in the construction sector), Vernieuwing Bouw (a Dutch renovation knowledge network in the construction sector) and Noorderberg (a firm of consultants specialising in integrating the construction supply chain).

Eight of the 23 projects were tendered by seven SHOs which applied the competitive procedure. All seven agreed to participate in this study. The tendering had taken place between 2005 and 2013. A summary of the main characteristics of the renovation projects is presented in Table 5.1.

PROJECT	SOCIAL HOUSING ORGANISATION	PROJECT LOCATION	NUMBER OF DWELLINGS	TYPE OF DWELLINGS	TENDER YEAR*	CON-TRACT TYPE	INVESTMENT PER DWELLING IN EUROS
1	Delta Wonen	Zwolle	148	Terraced houses and apartment blocks	2010	DB+M	70,000
2	OFV	Biddinghuizen	80	Terraced houses	2005	DB	40,000
3	Openbaar Belang	Zwolle	24	Terraced houses	2011	DB+M	108,00
4	Qua Wonen	Krimpen aan den IJssel	240	Terraced houses	2012	DB+M	80,000
5	Stadlander	Bergen op Zoom	300	Terraced houses	2013	DB+M	45,000
6	Wonion	Ulft	54	Terraced houses	2011	DB	80,000
7	Wonion	Ulft	115	Terraced houses	2011	DB	82,000
8	Woon Friesland	Leeuwarden	290	Terraced houses and apartment blocks	2013	DB+M	20,000

* Year of publication of the tender specifications

TABLE 5.1 Summary jof the main characteristics of the renovation projects

The study is based on an analysis of the tender documents of the eight projects and interviews with the SHO property managers or the project manager directly involved in the renovation project. These were structured interviews which sought validation for the data extracted from the tender documents and the choices regarding the type and number of pre-selected candidates, the preconditions for the nature of the candidates, the number and type of meetings with candidates during the selection process, the conditions for the collaboration methods of the candidates, the levels of compensation for non-selected candidates, the minimum project requirements, the award criteria, the evaluation of the award criteria, and whether to include maintenance in the contract. The interviewees were also asked if they would be likely to change these elements of the competitive tender procedure in future projects. In addition, some complementary information about the design proposals developed by the selected candidates was collected by interviewing the architects involved in seven of the eight projects. In all the interviews, with SHO managers and architects, a special emphasis was placed on the elements directly related to energy efficiency.

§ 5.3 Findings

The projects in this analysis were the first attempt by six social housing organisations to apply integrated contracts to their renovation projects. Only Wonion had previous experience of integrated contracts for new-building, and had applied it in two renovation projects. All the tender processes were in some way different, but they could be divided into two groups depending on whether they were based on the OFV model or the Wonion model. The OFV project, tendered in 2005, was taken as a reference by Delta Wonen and Openbaar Belang because all three organisations operated in the same region and were familiar with one another's projects. The Wonion projects, tendered by a process that became known in the Netherlands as the 'Soft Selection Method', inspired the tender processes of QuaWonen, Stadlander and WoonFriesland because the Slim & Snel (Fast & Smart) programme of the Dutch government which promotes the use of innovative construction processes in social housing renovations that aim to deliver high energy savings (Savanović et al., 2012) had used this method as an example.

§ 5.3.1 Pre-selection

The competitive tender procedure consisted of two selection rounds. The first, referred to in this study as pre-selection, was based on criteria unrelated to the project (e.g., the capacity for team work, the vision on sustainability, or the capacity to innovate) and previous experience. The main features of the pre-selection for the renovation projects in the analysis are presented in Table 5.2.

PROJECT	TENDER CALL	NUMBER OF PRE-SELECTED CANDIDATES	PRE-CONDITIONS NATURE OF CANDIDATES
1	Market search	4	Yes
2	Market search	3	Yes
3	Market search	3	No
4	Open call	3	No
5	Open call	3	No
6	Market search	3	Yes
7	Market search	3	Yes
8	Open call	3	Yes

TABLE 5.2 Main features of pre-selection of the tender candidates

As mentioned in the introduction, Dutch social housing organisations are not legally obliged to comply with the Public Procurement Directive, so they do not have to launch an open call for the first selection round. However, three of the projects, the ones participating in the Slim en Snel programme, did decide to launch an open call. The numerous candidates that responded were vetted on the basis of a short description of their organisation and its aims, which they had to present in the form of a video or 'live' for the SHO. The SHOs involved in these projects justified the use of an open call by pointing out that a new process would require a lot of changes in the working methods of their own organisation and of their contracted companies. An open call afforded opportunities for involving many people from their own organisation and allowed them to show numerous potential candidates their new way of working. For example, in one of the projects a large group of SHO employees participated in the selection of the candidates by voting for the best presentations. The three property managers said in the interviews that the open call had served its purpose and would probably not be used again as it requires substantial investments in time and energy. The five projects that did not launch an open call selected the candidates through a market search, which was limited in two projects to companies that often worked with the SHO and extended to other companies in the other three. In one project the SHO used the market search to draw up a short-list of candidates and then selected three on the basis of non-project-related criteria. The other four projects used the market search to select the three candidates directly.

The SHOs that made use of a market search to pre-select the candidates chose a general contractor first and asked him to set up a team that would participate in the competitive tender. The property managers said in the interviews that, in their opinion, the general contractor was the most suitable consortium member to take leadership and bear the risk. Conditions for the nature of the team were set in four projects: in two projects the team architect had to have experience of renovation projects; and in the other two, from the same SHO, the risks and benefits had to be distributed among the team. However, only one of these two projects required a specific formal arrangement for the distribution of risks and benefits. This condition prompted the consortium members to form a joint company. When the property manager was asked if they would again require the setting-up of a formal consortium, he replied: "It is not so much about the structure, it is about the mind-set." The same manager argued that there are several ways in which the level of collaboration among construction companies can be improved, but if the companies do not do this themselves they need to be pushed in that direction. Forcing the companies in the consortium to define new team structures is still an option, but other means could be applied in future projects.

Only one of the three projects that launched an open call set specific conditions for the nature of the candidates: a construction consortium formed by at least three companies, one of which could not be directly related to construction. In other words, it had to be, for example, a communication company, a social consultancy

or a design office. Moreover, it was specified that, after the selection procedure, the consortium members would be required to draw up a legal structure that would allow them to formally share the risks and benefits. The winning consortium did indeed form a joint company. The two other SHOs did not set conditions for the nature of the candidates, but they did express a preference for multiparty teams with shared risks and benefits.

In seven of the eight projects three candidates were pre-selected. The interviewees said that in future projects the SHOs would again pre-select three candidates, as a greater number would increase each candidate's risk of losing the tender, with all the associated costs. Fewer candidates, on the other hand, would hamper competition. Four candidates were pre-selected for one project. In this case the manager was of the opinion that the number of candidates should be determined by the size of the project; the risk of candidates losing out could be higher for larger projects.

§ 5.3.2 Selection process

Schedule

The winner was selected from the pre-selected candidates on the basis of a set of award criteria that were defined in the tender specifications. In this research the selection period was the time that elapsed between the release of the tender specifications by the SHO and the signing of the contract with the selected candidate. The selection period was further divided into four sub-phases: the design proposal (time between the release of the tender specifications and the submission of the design proposal report), the design proposal evaluation (time between the submission and the presentation of the design proposal), the evaluation of the design proposal presentation (time between the design proposal presentation and the selection of the winning consortium) and the preparation of the contract (time between the selection of the consortium and signing the contract) (see Table 5.3).

	1	2	3	4	5	6	7	8	AVERAGE
Design proposal (weeks)	11	9	7	16	11	11	10	12	10.875
Evaluation of the design proposal report (weeks)	1	1	1	3	1	0	1	2	1.25
Evaluation of the design proposal presentation (weeks)	2	3	0	0	1	0	0	0	0.75
Preparation of the contract (weeks)	2	1	4	27	16	12	12	24	12.25
Total	16	14	12	46	29	23	23	38	25.125

TABLE 5.3 Duration of the selection process (in weeks) from release of tender specifications to contract signing

On average, the selection process took 25 weeks, but with a wide variation between the projects. The shortest process took 12 weeks, the longest 46. The variation in the duration of the selection phase occurred primarily in the contract preparation. The duration of the projects based on the OFV model (projects 1 to 3) was considerably shorter than that of the projects based on the Wonion model (projects 4 to 8).

The significant difference in the time required for the preparation of the contract once the candidate had been selected can be explained by the fact that projects 1 to 3 clearly specified that the main contractors bore sole responsibility for the contract among the consortium members, whereas the other projects specified that the consortium as a whole was responsible for the contract. The distribution of responsibilities among the consortium members was decided in different ways in projects 4 to 8. Only two of the five projects required the consortium to adopt a formal, legal structure, but three consortia decided to create a joint company for this purpose. It took a long time to define the legal structure in two cases, as this was the first time for both the companies and the SHOs.

Another notable aspect of the selection schedule is the short deadline – an average of 11 weeks – set by all the SHOs for the development of the design proposals. The consortia participating in Design-Build social housing renovation projects, which did not use a competitive selection process, took an average of 39 weeks to elaborate on the design proposals, according to a study by Salcedo and Straub (2014).

Collaboration

Only in two projects had the client set a condition that was specifically designed to influence the collaboration among the consortium members (see Table 5.4). In both cases the SHO recruited and paid a team coach to assist the three consortia during the selection phase. Even though both SHOs described the experience as positive they could not say for certain whether they would repeat it in subsequent projects, as it is difficult to tell companies how to work and equally difficult to find the right person to assist as coach. The other SHOs saw no need to intervene in the working methods of the consortium. One of the interviewees said: "I think that collaboration between market parties should be a precondition. It is ridiculous to have to bring in a coach to ensure collaboration. I am not saying that this strategy won't work but I don't think it is the task of the client to facilitate the collaboration. The market parties have to do it by themselves."

PROJECT	COLLABORATION CONDITIONS BETWEEN CONSORTIUM MEMBERS	NUMBER OF MEETINGS CONSORTIUM-SHO	TYPE OF MEETINGS
1	no	0	n.a.
2	no	1	Bilateral
3	no	1	Bilateral
4	no	4	Plenary
5	yes	6	Plenary
6	no	6	2 Plenary + 2 Bilateral + 1 with tenants + 1 with Building Aesthetics Committee
7	yes	6	2 Plenary + 2 Bilateral + 1 with tenants + 1 with Building Aesthetics Committee
8	no	7	Plenary

TABLE 5.4 Main characteristics of the pre-selection of tender candidates

A wide difference emerged between the projects based on the OFV model and those based on the Wonion model when it came to the number of meetings between the SHO and consortia during the selection procedure. The projects based on the OFV model held one bilateral meeting (two projects) or no meeting at all (one project). On the other hand, the projects based on the Wonion model held, on average, six meetings. In three projects the SHO met with all the consortia at the same time. In the remaining two the SHO had some bilateral and some plenary meetings. One SHO also organised meetings between the consortia and the tenants and between the consortia and the Building Aesthetics Committee (Welstandscommissie), which assists the municipality in planning permission processes by advising on whether the design of a building fits in with its surroundings.

Plenary meetings with all the pre-selected consortia during the competition phase were held in five of the projects. Plenary meetings are not allowed in public projects that make use of Competitive Dialogue. Surprisingly, the main reason the property managers gave for holding plenary meetings is also the main objective of public procurement: transparency. The property managers said that, in order to avoid giving different information to each candidate in a bilateral meeting, they had opted for plenary meetings. The plenary meetings were described by the property managers as collegial, but they also said that the candidates were cautious with their comments as they had no intention of sharing their best ideas with their competitors.

Minimum requirements and award criteria

The minimum requirements for the project and the award criteria were set out by the SHO in the tender documents. On the whole, the minimum requirements were not clearly specified because they were mixed with the project aims. In the same

description of requirements it was not unusual to find a general requirement, such as improving sustainability or improving the floor plan, alongside a specific minimum requirement such as the achievement of 45% in energy savings to obtain a police safety certificate or a certain energy performance certificate rating. In fact, the only topic with specific minimum requirements in all the tender documents was energy efficiency. The main parameter for evaluating energy efficiency was the energy performance certificate (EPC) rating. In five projects an energy performance certificate with an A rating was defined as the minimum requirement, one level higher than the level agreed with the national government in the Energy Saving Covenant. In the other three projects the minimum energy requirement was a B rating. The managers of these projects stated in the interviews that these requirements had been set a long time ago, and that the minimum energy requirement for all current projects would be an A rating (see Table 5.5). Other parameters were also used to evaluate the energy performance. A specific energy savings percentage or energy performance improvement target was set in two projects. The property manager for the project that set a minimum requirement of 45% for energy performance improvement commented in the interview that in future projects they would be more specific about the minimum requirement, as they wanted a 45% improvement in energy consumption and the consortia understood a 45% improvement in the reduction of CO_2 emissions. The other parameter – used in only one project – to evaluate the energy performance was the GPR rating, which is a Dutch sustainable building rating system that helps managers of new construction and renovation projects to evaluate solutions to sustainability issues during the design and construction phase. The system scores the performance in five different fields: energy, environment, health, user quality and future value. The energy evaluation is based on several indicators, such as the EPC value, energy savings, or the renewables that are used. The score is given on a scale of 0 to 10, with a score of five for a design satisfying all the minimum values of the current Dutch building regulations (Vreenegoor et al., 2008).

PROJECT	MINIMUM ENERGY REQUIREMENTS	TYPE OF AWARD CRITERIA	ENERGY AWARD CRITERIA
1	EPC rating B	Subjective + Objective (with weights)	Energy savings 7.5%
2	EPC rating B	Subjective (no weights)	Energy performance 1/6 *
3	EPC rating A Energy cost per tenant< €75 excl. electricity GPR average>8, energy GPR>8	Subjective + Objective (with weights)	Energy consumption 11% Quality of installations 7%
4	EPC rating A 45% energy savings	Subjective (no weights)	Energy 1/5
5	EPC rating A	Subjective (with weights)	Aim for energy neutral 4%
6	EPC rating B	Subjective (no weights)	Energy 1/16 *
7	EPC rating B	Subjective (no weights)	Energy 1/16 *
8	EPC rating A 45% Energy performance improvement	Subjective (no weights)	Energy Performance 1/5 *

* In this case there was no weighting system; it was assumed that all award criteria at the same level were weighted equally.

TABLE 5.5 Minimum requirements and award criteria characteristics

The SHOs used two types of award criteria, objective and subjective. The objective criteria were the ones in which the ratings were defined in a formula or a table. Hence, the score for a specific design proposal could be calculated beforehand. The subjective criteria were evaluated by a jury determined by the SHO. The tender documents included a description of what would be taken into account when a specific award criterion was evaluated, but it was not possible to know the score beforehand. Two projects made some use of objective criteria, the others used only subjective criteria. In five projects the importance of each criterion for the final decision was not specified. The property managers participating in these projects argued that they did not want the consortia to focus disproportionately on the elements that are rated higher; what they wanted was a balanced design proposal.

The importance of energy efficiency in the award criteria varied widely, with values ranging between 4% and 20%. Only one project requested a specific methodology from the consortia to check out the targeted energy performance aside from the EPC rating. Even in projects where a specific minimum value in energy savings or energy performance was requested the calculation method was chosen by the consortium.

Compensation for non-selected candidates

The amount of compensation offered to non-selected candidates differed considerably from one project to another, ranging from €5,000 to €50,000 (see Table 5.6). All property managers said that the offered compensation would not cover the costs incurred by the consortia for producing the offer, but the majority reckoned that they would offer similar compensation in future projects if a similar amount of effort was required from the consortia to produce their offers. In one project, however, the amount of compensation was not chosen by the SHO, but by consensus among the consortia participating in the selection process. The three consortia in this project were asked to agree on the level of compensation for the non-selected consortia, taking account of the fact that the money had to be extracted from the total project budget. The total agreed amount was €45,000.

PROJECT	1	2	3	4	5	6	7	8	AVERAGE
Compensation	€5,000	€5,000	€7,000	€50,000	€35,000	€20,000	€35,000	€45,000	€25,250

TABLE 5.6 Compensation for non-selected candidates

§ 5.3.3 Maintenance as part of the integrated contract

Maintenance was included in five of the eight projects, but only as an option to be taken up a posteriori. The consortia were asked to hand in a maintenance plan complete with the anticipated costs as part of the design proposal. Only one of the five project managers said that the selected consortium had taken the longer time horizon into account. The other four said in the interviews that it did not work out as expected. One said: "We thought that the consortia would look for a good balance between the construction and maintenance costs, that they would think about the total cost of ownership. What we have seen in practice is that no consortium has adopted an integral approach. They have not related the costs of the construction phase to the costs of the maintenance phase. And that is a pity." The managers could not say for sure if they would keep including maintenance as an option in similar projects in the future. The managers who had not included maintenance as an option also said that they were not certain whether maintenance could be included in the future. In both cases the property managers drew attention to the dilemma of including maintenance to promote a long-term view in the decision-making or excluding it to avoid a conflict with existing maintenance contracts. It is common practice among SHOs to enter maintenance contracts with different maintenance providers for the entire housing

stock. If they started contracting for maintenance contracts with different companies on a project basis, integrating the two approaches could get very complicated. Moreover, some SHOs have in-house maintenance teams for daily maintenance work. If maintenance were included in the contract these teams would have less to do.

§ 5.4 Discussion

It may be concluded from the findings that SHOs make use of different tender mechanisms to influence the working methods of consortia and thus raise the bar for a higher quality design proposal. More specifically, the analysis indicates that the SHOs looked for ways to influence the ambition, collaboration and long-term views of the consortia. The different mechanisms applied to influence consortia are highlighted and discussed in the next section.

§ 5.4.1 Ambition

In the first place the ambition of the consortia was sharpened by the competitive character of the tender. The fact that every consortium was competing with other consortia pushed each of them to offer something that the competitors did not. The findings show that the optimal number of consortia invited to the selection process was three. This outcome does not differ from the optimal number of candidates found by studies of other construction sectors that used similar competitive tender procedures (Nagelkerke et al., 2009; Thompson et al., 2001). In addition, the SHOs employed a few mechanisms to shape the competition. The entrance level was defined by the minimum requirements of the project and the selection mechanism was established through the award criteria.

It may be inferred from the analysis that the potential of the minimum requirements is not yet being used to the full. Some of the requirements were outlined as general aims, such as improving sustainability, so they were difficult to evaluate. All projects set a minimum energy performance certificate rating for the energy requirements. However, it is still possible to arrive at a much sharper evaluation of the energy performance, which would make for greater certainty in the anticipated results, such as a certain ratio of air infiltration or a certain insulation rate for the facades which can be confirmed via air infiltration tests and thermal photography respectively.

The use of subjective award criteria increased the workload for the SHO because it required evaluation by a selection committee. At the same time it gave the SHO more scope for making common sense decisions, especially when the award criteria were not weighted. However, the use of subjective award criteria did require a very transparent selection process in order to dissuade the non-selected candidates from contesting the selection.

There was a considerable difference between projects with regard to the relative importance of the energy criteria, which could indicate that even though energy efficiency is a key issue at national level, it was not accorded the same degree of importance by all SHOs. A more specific evaluation method for the award criteria for energy would increase the certainty of the results.

§ 5.4.2 Collaboration

It emerged from the analysis that the SHOs applied three main strategies to influence the collaboration level among the consortium members and between the consortium and the SHO:

1. They set conditions for the nature of the consortium.
2. They defined the duration of the selection phase.
3. They proposed meetings during the selection phase.

A few organisations set conditions for the nature of the consortia; for instance, they wanted the consortia to define a formal structure that would allow them to share responsibilities. Fulfilling this condition prolonged the period between the selection and the signing of the contract for these projects. The consortia needed extra time to decide on and implement the formal agreements. On the other hand, the creation of a formal structure, such as a joint company, opened up a whole array of possible services that could be offered to the SHO. For example, in one project the consortium offered energy services by selling the electricity generated by solar panels on the roofs of the renovated houses.

A short deadline for tenders appeared to be the most effective way to step up the collaboration between the companies in the consortium. The time pressure forced the team members to engage in intensive communication and to trust each other's expertise in the search for a fast and smart design decision that would give them a good chance of winning the tender. The short timescale that the consortia were given to produce a detailed design proposal did in fact promote team-building and reportedly generated benefits for the project as a whole. The interviewees said that the intensity of collaboration diminished after the contract was signed, but they added that there were fewer issues to

discuss during the construction phase because of the good collaboration in the design phase. If a specific matter needed to be discussed, the communication lines were very short. These experiences contradict reports from organisations involved in public projects that make use of integrated contracts. These organisations say that after the contract has been signed, the trust that has been built between the demand and the supply side is lost. This might be due to the fact that, in public projects – which are often large projects – the teams participating in the selection process on the demand side and the supply side are not the same teams that develop the project. Lenferink et al. (2011), who analysed four infrastructure projects in the Netherlands that made use of Competitive Dialogue, concluded: "Once the Competitive Dialogue process is completed and the phase of (preparation for) construction begins, substantial changes in personnel take place. This causes tacit knowledge, obtained during the informal moments in the competitive dialogue process, to be lost, as well as any personal trust-relations that were formed" (Lenferink et al., 2011, p. 256).

The aim of the meetings between the SHO and the consortia during the selection process was to prevent the consortia from misinterpreting the tender documents. It was generally assumed that more meetings would increase the probability that the consortium would offer the SHO what it wanted. What is not clear is if the use of plenary meetings instead of bilateral meetings increased or decreased the level of communication between the consortia and the SHO during the selection phase. The use of plenary meetings excluded the risk that one of the candidates would accuse the SHO of not giving them the same information as the competitors. In this scenario the SHO managers did not need to weigh up every single word and could express themselves more freely. Public organisations that use bilateral meetings in Competitive Dialogue procedures have reported that keeping track of all the communications in bilateral meetings in order to avoid the prospect of litigation in the future is one of the most complicated parts of the procedure (Nagelkerke et al., 2009). However, the use of plenary meetings hampers communication from the consortia side. The consortia at plenary meetings tend to be cautious about what they say, as they must, at all costs, avoid disclosing their ideas to the competitors.

§ 5.4.3 Long-term view

The long-term view was promoted in five projects by including an optional maintenance contract and by requesting, in some cases, a whole life costing report for the design proposal. But, as reported in the interviews, the response from the consortia was not as expected. There was only one project in which the consortium had really taken account of the long-term view in its design decisions, proposing building products and systems with higher investment costs but lower maintenance costs.

One possible strategy for exerting more influence on the long-term view of a consortium is to have maintenance included in the contract from the very start and not as an option a posteriori. Most probably, a consortium that is unsure of reaping benefits in the future will not invest more heavily than necessary in the construction phase. However, the SHOs were reluctant to embrace Design-Build-Maintain contracts because they would conflict with their current maintenance strategy, which was based on maintenance contracts for their entire building stock, and with the fact that some SHO have in-house maintenance teams. Moreover, they were hesitant to engage in long-term contracts. A similar situation has been reported from the initial experiences of Design-Build-Maintain contracts for social housing renovation in France, which were analysed in a study by Salcedo Rahola et al. (2014).

§ 5.5 Conclusions

Dutch SHOs that use competitive tender procedures for integrated contracts apply different mechanisms to influence (1) the ambition, (2) the collaboration and (3) the long-term view of the consortia participating in the selection procedure. The aim is to improve the quality of the construction process and the output. (1) The ambition is sharpened by the competitive character of the selection procedure, by setting high but achievable minimum requirements and by award criteria that value a higher performance. The findings show that the SHOs are not all singing from the same songsheet when determining the level of ambition they want from the market in the key issue of energy saving. (2) The collaboration is encouraged mainly by setting a very short deadline for the design proposals. This, in turn, forces the various consortium members to work intensively together in order to get the proposals out on time and to make a convincing pitch in a presentation. The number of meetings during the design proposal period also appeared to increase collaboration with the SHO. Other mechanisms such as setting conditions for the nature of the candidates or proposing team coaches were implemented to a lesser extent and were not regarded as appropriate by all SHOs. (3) The long-term view was promoted by the inclusion of a long-term maintenance contract for the renovated dwellings. However, the fact that the SHOs included maintenance services only as an option and not as an integral part of a single Design-Build-Maintain contract hampered its potential benefits. The SHOs were afraid of the possible implications of a long-term maintenance contract on a project basis for their general building stock maintenance strategy and their in-house maintenance teams.

These research findings are based on just eight renovation projects. In addition, most of the SHOs in the research were reporting their first experience of such contracts and tender procedures. The comments should be therefore approached with caution, but they are still highly valuable to Dutch and European SHOs. An analysis of the effect of these types of tender procedures from the perspective of the consortium members would be of great interest.

Acknowledgments

The authors would like to thank the interviewed property managers for their time and effort in providing all the requested information and for replying extensively to all the questions during the interviews.

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