

# DECISION MAKING DURING A TENDERING PROCEDURE: CASE STUDIES OF RESTRICTED EUROPEAN TENDERS IN ARCHITECTURE

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As they are spending public money, public organisations are bound by national and European rules and regulations. In the case of the built environment representatives of authorities make decisions about future buildings that can substantially impact the wellbeing of building users and the general public. These decisions deal with design quality within a frame of time and money and could cause conflict with the regulations. Most of the conflicts in design decision making have to do with the psychological and managerial aspects of decision making. Although theoretically tangible and intangible costs and benefits could have equal weight in decision-making, in practice tangible factors are more often regarded as a valid basis for decision making than intangibles. Based on findings from two cases studies, a framework is proposed that aims to improve the decisions made by public clients by incorporating perception of architectural quality without violating European tendering procedures. Both case studies concern the selection of an architect and are based on observation, interviews and document analysis; in one case for a town hall and in the second case for a large sized elementary school. The resulting framework can be seen as a first step towards guidelines for better decision making in these tendering processes.

Keywords: architecture, decision making, design quality, public clients, tendering.

## INTRODUCTION

When spending public money, public organisations are bound to national and international tendering rules and regulations. In the case of the built environment public clients make decisions that could have a tremendous impact on the wellbeing of many people or groups of people. To organize a tendering procedure, a client needs to decide about the size and the content of the assignment, the kind of tendering procedure, the announcement of the assignment, the selection and awarding criteria and the awarding conditions. The procurement system currently being used for architectural and design services has its roots in three distinct systems of selection: tendering for the work, the selective search to identify a suitable designer and the architectural competition (Strong 1996). Design competitions have a long history (Fisher *et al.* 2007). However, applying the principles of the design competition in the context of EU tendering regulations could cause conflicts. These conflicts are partly related to the fact that the outward preference for rational decision making procedures

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does not always reflect the way these procedures are implemented in practice. Therefore arguments used to justify the final decision often do not reflect the actual considerations of the client underlying this decision. The decisions made during these kind of tendering processes deal with the perception of design quality within a framework of time and money. Some of these arguments might be in conflict with the official tendering procedures as interpreted at the moment. Judgements about design quality can be seen as a type of decision making. In the case of an architectural design however, the frame of reference in which decisions are made is rather vague and complex by nature (Simon 1969). In Western societies rational(-istic) decisions appear to be more acceptable and easier to defend than decisions based on the intuition (Sinclair and Ashkanasy 2005). Results of this preference for procedural quality over quality of outcome become more visible every day. In the Netherlands a dispute over aggregated rating points and a difference of a tenth of a percent led, in one case, to a repetition of the entire selection process.

The legal requirement is that services above the amount of € 133.000 for central governmental organisations and € 206.000 for non central government should be tendered according to EU rules and regulations. EU law requires transparency, non discrimination, proportionality and equal information during all tendering procedures. Most of the tenders in the Netherlands involve a restricted tendering procedure for the economically most advantageous offer. The client has to publish the criteria on which the decision will be based beforehand. If applicable also the relative weight of the criteria should be mentioned. In practise this process as required by the law seems hard to operate. Criteria are often finalised and confirmed by the lawyers before the selection process begins and can not legally be modified in the light of discoveries made through the design process. The fear of clients for lawsuits resulting from ambiguities in tendering processes increases and therefore the need for transparency. The regulations further encourage the use of rating schemes with criteria and weighing factors, which do not always cover the architectural value of the design as presented. Therefore the aim of identifying the most appropriate architect based on the best design approach can become secondary to the objective of a transparent and non discriminating decision process according to EU law.

The restricted tendering consists of a mixture of elements of selection procedures. The first round of selection, the selection phase, concerns the financial, organisational and experience based elements of selection. During the second round of selection, the awarding phase, the client can choose different scenarios to base their selection on. The choice of scenario is to a large extent based on the organisational preferences of the client, the stage of the project, the complexity of the project, the political sensitivity of the project and the willingness to provide financial compensation to the participants. Different arguments can be distinguished that influence the structure of the procedure. For example, if the client has a clear idea about the assignment, is willing to pay a reasonably amount of money, invest considerable time and effort in the organisation of the tendering procedure, and/or the assignment is very complex, they will ask the participating firms for a full sketch or concept design. Sometimes the designs are judged anonymously, but most of the time the client request that the designers explain their submission during a presentation or short discussion. The procedures which include full designs are similar to a traditional design competition with pre selection. If public clients need a new town hall, library or other public building centrally located in the city, they often involve the citizens or other stakeholders in the process. Most of the time experts in architecture and city planning

are asked to advise the client. So in total a ‘circus’ of advisors and decision makers is rigged. With other building types or projects with a smaller politic impact, clients typically prefer a less complicated and extensive procedure. In that case they often only ask the participants to present themselves as a firm and their view on the location and assignment. The client then selects the architect with a limited amount of decision makers.

Because of the subjectivity of architectural design quality, it is accepted in the field of architecture that only the names of the jury members are published beforehand instead of the exact procedure and criteria of decision making. In case of an experienced and therefore well known jury, the names actually provide the submitters with the information they need to take their chances in the competition. However, most public clients decide on the members of the ‘jury’ themselves during design tenders. Often these include members of the board or city council without professional design experience. Because these people are less experienced, they may get distracted more easily by criteria that are less relevant to the assignment. Often a matrix with the criteria is used to organise and ground the final decision. Most experts in design disagree with this approach because they feel too restricted in their judgement. They rely on their experience during judgment of design instead of the preset criteria developed by the client. So the criteria to award the contract should fit the assignment given to the participating firms. But these criteria should also fit the actual process of decision makers. The level of professional experience and the composition of the group of decision makers could influence the process of decision making and the criteria that are used during the process. Publication of the criteria for decision making does not automatically guarantee that a process will fulfil the requirements of transparency, non discrimination and equal information. A matrix with segregated judgement could reflect the final outcome of the decision but does not reflect the actual process of decision making. Transparency should not be interpreted as a criterion to evaluate the final outcome but more so to construct the process of decision making. Just like with the principles of non discrimination and equal information, the focus should lie on a general acknowledgement than on the strict interpretation of the word.

In this paper a framework is suggested based on the findings from two case studies. In both cases the restricted European tendering procedure was applied. Results of the cases are implemented in a concept framework for decision making during restricted architectural tendering procedures.

## **RESEARCH METHODS**

To collect data about the decision making process during a restricted tendering procedure two instrumental case studies with different kind of data were used (Table 1). A so-called instrumental case study is an intensive study of a single unit for the purpose of understanding a larger class of (similar) units (Flyvbjerg 2004). Managerial decision making is a complex phenomenon that can only be understood in the specific contexts in which it takes place. The case research method answers the need for an exploration of the complex relationships, and associated causal mechanisms (Gerring 2004) between decision making in design and the perception of design values. A specific context, like the selection of an architect or the evaluation of a design proposal, is very difficult to simulate or trace. Therefore restricted European tendering procedures provide an excellent situation for comparing design perceptions in a fixed period of time and can be seen as a kind of experiment in a natural setting. Several

designs based on the same design brief are evaluated by different stakeholders against their design values and the fulfilment of the original criteria provided in the brief. The stakeholders report their evaluations according to fixed procedures. For our research these documents were content analysed, the quality judgements were observed and analysed. Reflecting interviews with key stakeholders in the decision process were used for interpretation and triangulation of the data.

*Table 1: Overview of research methods and data per case*

<b>Case/Data</b>	<b>Deventer Town Hall</b>	<b>Vleuten School</b>
Observations	3 meetings (7 hours in total.) 10 presentations	2 meetings (14 hours in total). 6 presentations
Documents	6 documents (guidelines, advises, press release)	8 documents (guidelines, matrix, official correspondence)
Interviews	9 interviews	8 interviews

One of the consequences of using a case study method could be the relatively limited generalisability of the results. However, these case studies was set up according to the principles of Yin (1984) and Stake (1995) for validity and reliability as much as possible. The interviews were recorded and transcribed. The coding and analysis of all documents was done in NVivo and checked by the second author. In the Vleuten case the observations were the main source of information, while in the Deventer case the documents and interviews were most important. In the Deventer case study (Volker *et al.* in press), the framework of the Design Quality Indicator (Gann *et al.* 2003; Whyte and Gann 2003) was used to analyse the arguments for selecting the best design for this town hall.

## **DESCRIPTION OF THE CASES**

This paper reports the findings from two case studies. The first case concerns the selection of an architect for the new town hall and library for the historical city centre of Deventer. Deventer is a city of 100 000 inhabitants in the eastern part of the Netherlands. The assignment consisted of a full sketch design including clarification, a plan of action and a scale model. Three stakeholder groups were involved: the citizens, the employees of the City and the board and employees of the library. The designs were also evaluated by an expert committee. A selection committee consisting of representatives of the political parties of the city council took the final decision. Awarding criteria were the degree of flexibility of the programme, the intelligence and creativity of the solution and the contribution tot the diversity and restoration of the city centre. During the process the architects had to present their designs three times for different audiences of decision makers, advisory groups and citizens. The architects received 15 000 Euros compensation for their activities.

The second case is about the selection on an architect for a large sized primary school in the middle of the Netherlands, in a town called Vleuten. The location also includes a sports facility with two halls and facilities. The client consists of the school board, two departments of the City (Sports and Education) and representatives of the holding company that develops the whole area (GEM). Officially only the school board and the department of Sports form the official awarding authority. They hired a consultant to organise the tender, provide a brief and manage the project in total. In the first round of the Vleuten case, the official selection criteria for decision making were: legal requirements, financial requirements and professional requirements. Most of the requirements were checked by the consultant based on the portfolios and additional information submitted by the interested firms. The four parties of the client decided

collectively about the portfolio, the reference projects and the CVs, and a weighing factor was added to these criteria. The contract was awarded based on the most economically advantageous bid. In the Netherlands it is very common in the field of school design to only ask for a presentation of the design vision about the assignment. This means that the selected design parties only have to prepare a presentation and don't hand in designs beforehand. Official awarding criteria were: vision on the job (the brief, total engineering, sustainability and the urban planning context), professional competences of the designer and the firm (presentation of the portfolio and of the vision on the job), communicative skills, additional information (written vision on the job and estimated costs). Officially these criteria had different weighing factors. The client required that the future project architect performed the presentation. The design firms did not receive financial compensation for their activities, which is also common in the field of primary school design. After each round the consultant informed the participants about the results.

## **FINDINGS ABOUT THE PROCESS OF DECISION MAKING**

In Deventer the final decision was made by the selection committee by voting behind closed doors. However, this was preceded by a public debate in which the members of the selection committee informed the public about the arguments that were considered during the process of decision making. Document analysis on the design aspects used by the different stakeholders in their judgements showed differences between the groups in number and type of aspect. The prospective building users with no professional background in architecture - the citizens and the employees - used fewer criteria than the expert committee and the selection committee. The final preferred design also seemed to differ per stakeholder group. But in the public debate it became clear that the majority of the members of the selection committee preferred are certain design, which was announced as the winner in the press release also.

In Vleuten the relatively great amount of submissions created some managerial difficulties during the selection phase. Still all parties involved in the tender are convinced that they acted according to the EU law and the principles of transparency, non discrimination and equal information. Especially the official principals (the school board and the department of Sports) were satisfied with the final decision. In their perception the selected architect was by far the best person for the job. The other tendering firms didn't file a complaint and accepted the decision communicated by a matrix with all the judgements of the criteria. The observations of the first selection round show that this matrix was actually used and discussed by all parties to support their decision making process. Most persons used also the matrix as an administrative tool for their personal judgement during the preparation phase before the discussion. During the awarding phase this matrix was only used individually by some decision makers but not discussed in general in the group. The final decision was made based on a round table discussion among the parties, which led to a almost unanimous decision to select the winning architect.

Based on the observation of the Vleuten case, the process of decision in the selection phase to select the final 5 firms can be summarised as:

1. Individual judgement of the submissions by looking at the documents and names of the firms (phase 1). Some people made very detailed use of the matrix; others used it for a general impression. The submissions were judged within the frame of the other submissions as laid out on the table (phase 2).

2. The members of a party discussed their personal judgement per submission (phase 3). These collaborative judgements were inserted in a general matrix with all parties. The different clients groups felt that they agreed on most judgements (phase 4).
3. The final selection was made by a joint discussion with all parties (phase 5). First all parties were asked to take a look at the matrix and see if the image presented fitted their personal general image. Then the bigger discrepancies between the parties were detected and discussed.

In total four different decisions were made in the selection phase to reduce all entries into a manageable selection for the awarding phase: from all entries to potential candidates, the best firms as agreed by all parties, the worst firms as agreed by all parties and the final selection.

The process of decision making in the awarding phase to select the winning architect can be summarised as:

1. Listening individually to the presentations and asking questions about elements that missed or were unclear (phase 1). Most people just wrote down some notes, other tried to fill out the matrix with the official criteria.
2. During the discussion with the members of their own party they made an inventory of the individual preferences for a winner (phase 2). Some parties used a top 5 system, others used the grading system of the matrix. Within the group they came to a decision about their winner.
3. All parties come together to make an inventory round of the final decisions of the parties (phase 3). Most parties preferred the same architect. Only the GEM preferred another firm but accepted the other architect as a winner (phase 4).
4. The next day of department of sports and the school board came together to finalize the decision (phase 5). They wanted to check the price of the tendering firms. The winning architect turned out to be one of the cheapest so they only needed a few minutes to finalize their winner.

So both the selection and the awarding phase consisted of five phases: gaining information individually, inventory of opinions per party, inventory of opinions of the other parties, the collective decision making and finalizing the decision. Reflecting interviews in Deventer seem to confirm these phases and kind of decisions.

The selection phase has a different aim than the awarding phase. In the selection phase the client aims at a selection of all parties that showed interest in their project to give them the opportunity to give a vision about the content of the project. The awarding phase is aimed at selecting the best architect to award the contract to. In general awarding concerns a conscious trade-off between quality and price, while selecting means looking for candidates with potential to meet the requirements of the client in general. However, the Deventer case showed that emotional responses to the designs influenced the final decision. Priorities shifted during the process. Also the Vleuten case study showed the progress of the interpretation of the criteria. Decision makers need time to interpret the criteria that are built by other people. By building a frame of references interpretation of the criteria grows. The frame of references is dependent of the group members and the submissions.

In the reflecting interviews most of the decision makers seemed certain about their decision and the amount of information that was given. Only one of the less experienced members of the school board expressed to have felt a bit more convenient with more information and time to think about the right decision. Apart from the fact

that managerial it would have been almost impossible to get the group together for more than two days, the question remains if more information would have improved the decision. One of the GEM members describes this dilemma as: “If an architect cannot sell his ideas in half an hour for a small client panel, how then can he sell an idea in a construction meeting of one and a half hour?”

## **FINDINGS ABOUT THE CONTENT OF THE DECISION**

Based on the framework of the DQI (Whyte and Gann 2003), its resource envelope (Gann *et al.* 2003) and insights from these cases, the following five factors were identified that function as arguments for the decision to select an architect in the awarding phase: the functionality, build quality, and impact of the proposed design, the project constraints, and the professional abilities and reputation of the design partner. The case of the Deventer town hall showed a broad range of criteria used to ground the decision. Among the Vitruvian values, most attention was given to the impact factor of the design (delight) and secondarily to the functionality (commodity) of the design. Hardly any attention was paid to build quality (firmness). The project constraints and professional abilities and reputation of the architects were of mediocre importance. However, in the Deventer case a sketch design and model of the new building were available, which means that the decision of the client was based on different kind of information. In the Vleuten case the professional abilities and reputation of the architects seemed more important than the content of the vision as presented by the architects. The constraints of the project were sometimes mentioned, but more or less as a secondary argument. So within the same restricted tendering procedure fundamental differences appear in decision making depending on the nature of the assignments.

According to almost all decision makers involved, the criteria used in the first phase to select the potential candidates mainly considered experience and reputation of the firm (especially their project architect). The decision makers were trying to retrieve as much information as possible about the firms who showed interest in their project. They used the portfolios of the firms and their own experience. Although in Vleuten educational experience was not an official selection criterion, the school board and Department of Sport used this argument most frequently during their judgement. Also previous experience with certain firms was used to judge the suitability of the firm. The level of experience in the field of architectural design differed greatly among the decision makers. In contrary to Deventer, the decision makers in Vleuten used a matrix to fill in their judgements. At the end of the day this matrix with the judgements of all parties was projected on a big screen and weighing factors were applied. Based on the observations one could conclude that the weighing factors were not applied explicitly and everybody trusted the excel sheet. After the ranking in the matrix, original judgments seemed not important anymore. The discussion pursued on a more general level to find a balance between the selected firms and the personal interests of the decision makers.

In the interviews almost all decision makers in Vleuten reported that the final decision was based on their intuitive judgement about the person and their potential competences. Experience with a certain firm played a role in the discussion but in a lesser extend than in the selection round. Communication skills and sympathy seemed more important. Some of the decision makers used the matrix to come to a judgement but the majority only wrote down notes of striking elements of the presentation or person. The final phase of decision making seemed more like an exchange of

preferred firms than a content based discussion because most parties agreed on the winner of the selection. Only the GEM preferred a different firm over the preferred winner of the other parties. In Deventer the final preference of most stakeholder groups and the expert committee seemed based on an overall judgement of all separate qualities, the potential qualities and possibilities of the design, and the functionality, flexibility and originality of the design. They also looked for the cleverness of the design, the impact of the design on the public, users and urban surroundings, and emotional associations such as “love at first sight” and “surprising and exciting concept”. For example one of the members of the selection committee stated that “it was love at first sight. First I wondered what it was; a bee hive, a space ship, maybe a centipede. But then I saw it: It is an Ark. Wade-able. The heart was touched....”.

Although the extent to which the firms could differ in both cases in the amount of information about the assignment, the firms can be divided into two groups: presenters of themselves with a rather open idea about the assignment and presenters of a complete solution for the assignment. According to the school board and the departments of the City in Vleuten ‘inflexibility’ was shown by the architects who presented a complete solution. One of the members of the school board literally mentioned ‘possibilities’ as a reason to select this winner of the tender. In Deventer reactions to open ideas were variable. Some people reacted very strict to a detailed solution while others did not appreciate options that were sketched to show the client their flexibility. More experienced decision makers state in the interviews that one should not judge too much detail during the tendering procedure because each firm ‘will throw the design as presented into the wastebasket’ if the real process starts. Presenting a complete solution is seen as a good way to judge the potential competences of the firm in the context of the assignment. According to the GEM the current winner in Vleuten presented a weak vision in comparison with other firms but the choice of the client is understandable: the architect had a very charming personality and focused on the needs of children instead of architecture in general. This charm was also noted by another member of the school board. He felt that the main reason to select a winner should be the ‘click’ between the architect and the client, and this click was clearly shown in the reactions of the other members of his party. This click however was not an official awarding criterion but can be seen as ‘communicative skills’. In Deventer the term of ‘falling in love’ was used to describe the ‘click’ between the members of selection committee and the design.

## **A CONCEPT FRAMEWORK FOR DECISION MAKING**

Based on the two cases we would like to postulate the following framework (see figure 1). The framework describes four important steps in the tendering procedure in which the demand and supply side interact: Initialization of the process, Confrontation of the product to the client, Communication of the argumentation to the architects, and Contracting the agreement. The main activities of the architect are the interpretation of the problem, the presentation of the design solution, the perception of the argumentation and the acceptance of the decision. Style, ambition, strategy, communicative skills and experience seem important aspects of influence. The argumentation includes aspects of the product, the person and the project. The client starts the process with a definition of the problem. When they are confronted with possible solutions, they perceive the products, make an individual judgement and discuss this judgement in a group. Parts of these processes are unconscious while others are based on rational thinking and conscious decision making. After the decision making, justification leads to the intention to sign a contract. The choice of



tendering procedure, the conditions of the project, the expertise, experience and personal features of the decision makers, the political situation and time pressure can also influence the process of decision making.

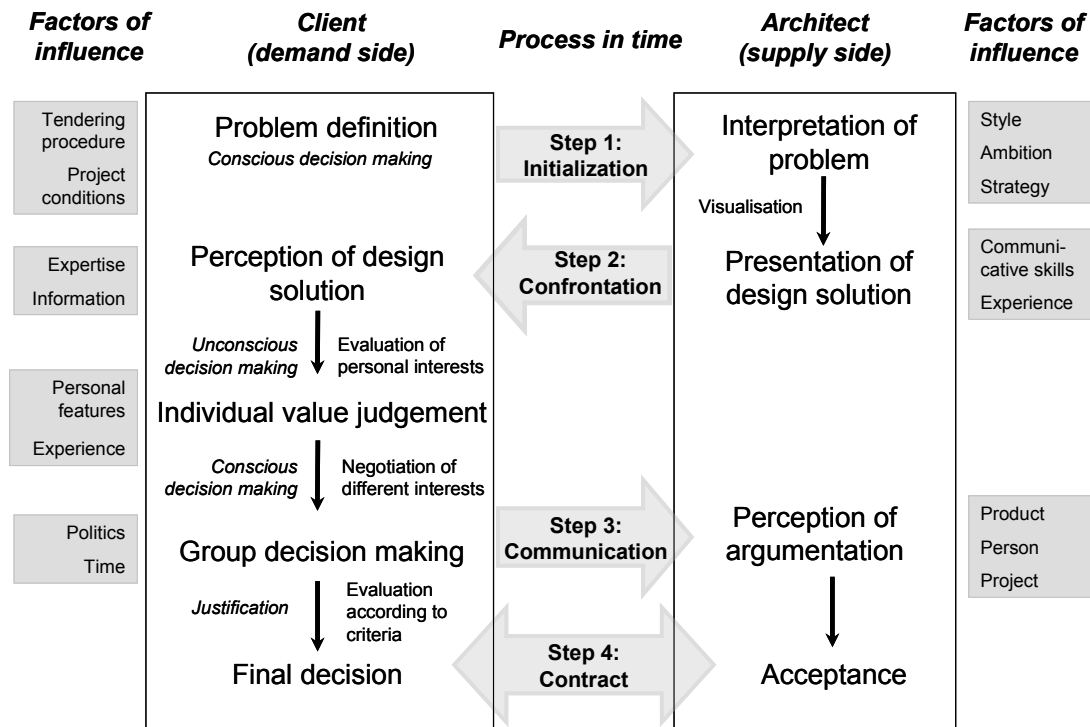


Figure 1: Framework of decision making during a restricted tender in architecture

## DISCUSSION AND CONCLUSION

Although the process of decision making seems similar in the selection and the awarding phase, different criteria were used. Therefore different kinds of information were needed in the different rounds. While the selection was based on an impression of experience and the reputation of a firm, in the case of Vleuten the most important criteria in the second round seem to be personal charisma and professional design competencies. The Deventer case showed that most arguments in the discussion for a winner were based on design related aspects instead of personal and professional aspects of designers. We can therefore conclude that the format of the assignment - design vision or concept design - has major implications for which reasons are used to ground a decision.

A verbal presentation of the ideas about an assignment seems essential in choosing the right partner. One could argue that the tendering procedure is akin to a job interview for a project partner. So the question remains, what should be the best way to hire an architect: his or her track record in combination with a personal conversation, or a foretaste of this output in the shape of a design? And if the kind and amount of information plays an important role in decision making, should submissions that contain more or less information than asked for in the assignment be excluded in the further procedure to create an equal chance for the remaining parties?

An underlying discussion in the field of decision making is the role of intuition. In case of rational and conscious decision making, the use of Multi Criteria Analysis and matrices seems acceptable. However, part of the decision seems to be based on an integrated judgement that balances the different criteria in an intuitive way. Emotions

seem to be an important aspect in this phase of decision making. The law prescribes the use of separate criteria in both the selecting and the awarding phase. The kind of information and the amount of submissions in the selection round seems more suited for a matrix system with different weighing criteria than the information in the awarding round. This information is not personalized and visualized yet and therefore emotions seem to have lesser impact.

The postulated framework is so far based on two cases. As case studies are the most appropriate research method for understanding this types of decision making, a further case study is planned in which politics, user participation and the consequences of an integrated contract appear to be important aspects. The findings from this third case will be used to test and improve the framework. Then interviews with experienced jury and committee members will be held to validate the framework. The final aim of the research is to derive guidelines to improve the decision making process during tendering procedures in architecture.

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