Engaging users in briefing and design
a strategic framework

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Engaging Users in Briefing and Design: a Strategic Framework
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a Strategic Framework

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Acknowledgements

This report is the result of my final project at the Eindhoven University of Technology. Although the study is based on an earlier study of user involvement, studying the cases and literature on the topic of briefing, and user involvement, has provided me with an even more detailed insight in this concept. Personally I consider the involvement or engagement of the user an important aspect in creating buildings which better fit the user’s needs. Furthermore, I consider the engagement of users to add value to the project as well as the overall process.

This research-project is intended to contribute to the development of new knowledge and new experiences in the field of the involvement of end-users. It is my hope that others will use this report, and that it will contribute to the discussion of the value of involving the end-users.

I would like to thank the following persons for their support and contribution to my project. First of all my supervisors at the Eindhoven University of Technology: Dr. Den Otter for coaching me throughout this project, and for keeping a critical view on my work. His remarks have been an eye opener to new insights. Furthermore, he has been a valuable source of information and reviewer of my work on both this report as well as the article written for the CIB conference in Helsinki, Finland. Secondly I want to thank my other supervisors Professor Schaefer and Gustav Boissevain, for reviewing my work, and providing additional suggestions. Thirdly, since this research is based on an earlier study in Denmark, I would like to thank my supervisors at the Technical University of Denmark, Associate professor Jensen and Professor Balslev Nielsen for their support. Fourthly, I would like to thank all people who have been involved in the case-study interviews, especially Carl-peter Goossen for providing me with an in depth insight in the Muziektheater aan’t IJ case study. I appreciate your openness, suggestions and discussions, which have resulted in the final version of my framework.

Maarten Zwemmer

Eindhoven, June 2008
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Abstract

During the last few decades, interest has increased in the strategic and value aspects of a facility. It is now considered that a facility is part of overall business strategy, and should support the primary process of the organisation. Therefore, construction projects should be approached based on their additional value to this process. Many studies show that the concept of value and value management is best applicable throughout the development processes of a project; especially during the briefing, and design phases.

Historically, briefing was considered to be a static event of capturing the client's requirements, prior to any design activity. However, today briefing is considered to be an iterative and social learning process about the client organisation, primary and secondary processes and its spatial needs. Although there is a strong interaction between the client and the designers, clients have difficulties stating the requirements of the actual users of the building.

To better define these requirements, and processes, users are considered to be a valuable source of knowledge. Although there is sufficient information on this concept, less attention has been paid to the actual process of involving the end users. This study focuses on the active participation process of users throughout the different stages of briefing and design. Based on a literature study and a comparative case study research on four media and theatre project, a strategic framework is proposed.

The framework distinguished three different groups of users, who are differently engaged throughout the process. The first identified group are the external stakeholders who are engaged throughout the initial or strategic stages of the process. Although they have little detailed insight in the project, their input could contribute to the overall project commitment. The second identified group is the user study group, which contains users who have a specific amount of (technical) knowledge on the requirements of the organisation. The third identified group is the facility study group. This group consists of employees who are engaged during the detailed phases of the process. This overall concept is further developed into a 24 staged process proposal.

The concept of engagement should result in an open learning organisation, and therefore the users should be acknowledged as potential sources of information. However, the proposed framework should be designed in more detail, to meet the specific project conditions. Furthermore, since this process is based on four different cases, further investigation is required to validate, and further investigate the added value of this concept.
1 Introduction

During the last decade, there has been an increasing interest in the concepts of value and business strategy. Within this strategy, the facility should be considered a valuable asset to the company. Since the strategic facility needs are stated throughout the briefing and design phase of a construction project, interest has increased in the aspects of this phase. However, recent literature has emerged which discussed the different problems concerning the briefing process. Predominantly, these problems concern the communication of requirements between client, architect, consultants, and users.

Despite a sometimes intensive interaction between the client, designers and consultants; clients frequently have difficulties to fully capture the organisational requirements. In other words a discrepancy between the client's values -his conception of the organisational operational processes- and the values which originate from experience of use can easily occur. This problem can be divided in three sub-problems: first the unknown specific needs of user-groups and client stakeholders, second how to communicate these requirements and values to the designers, and third how to generate commitment to the overall process. (Nutt 1993; Shen and Chung 2006; Yu et al 2006)

To further define these needs, clients should consider user's being a source of knowledge not only on the processes of use, but also on specific requirements. Furthermore, involving users should increase the value of the briefing and design process, as well as the final design solution of the architect should better fit the user's needs.

This report focuses on the concept 'user engagement' (UE): the active participation of users throughout the different stages of the briefing and design process. Although client and user representation is considered to be a critical success factor of the briefing process (Yu et al 2006), little attention has been paid to the actual process of engagement. Based on literature and case study desk research, this report examines the process of user engagement from a professional client's perspective. Therefore, the central question of this report is:

Which process stages should be taken by the client organisation to engage user's throughout the briefing and design stages?

The goal of this framework is to distinguish the different user groups, state when they engaged throughout the process, their roles and responsibilities within the project organisation.

This report has been organised in the following way. Section 2 describes the methodology applied, and section 3 provides an overview of the current theory on the concept of briefing and user engagement. Section 4 elaborates on the studied cases, and section 5 describes the developed strategic framework in general. Section 6 describes the process model in more detailed. Lastly section 7 provides some concluding remarks.
2 Methodology

2.1 Introduction

This research was initiated by an earlier case study on DR-Byen, the new media centre (including a large concert hall); of the Danish broadcasting company DR. Since the users of DR-Byen were intensively involved throughout the briefing and design stages, this project provided a rare opportunity to evaluate this concept. Through a series of open ended interviews, and an analysis of a number of project documents, this study was finished in June 2007. (Zwemmer 2007)

2.2 Approach

To further develop the strategic framework, a two staged desk research has been started. Firstly an in depth literature study provided a detailed theoretical background on the topics of value, construction process, briefing and user involvement. See appendix I. Secondly, three other theatre and media projects, with different levels of engagement, have been studied: the AKN building in Hilversum, the New Luxor theatre in Rotterdam, and the Muziekgebouw aan’t IJ in Amsterdam. Two of these studies were based on earlier research work completed by ADMS1 students. (Demmers et al 1999; Scheltens et al 2002) The third case was analysed through a desk research, as well as several interviews.

2.2.1 Case study

The essence of a case study is to investigate a decision or set of decisions: why they were taken how they were implemented, and with what results (Schramm 1971, cited in Yin 2003). Four different case study approaches can be distinguished: (1) a single (holistic) approach, (2) a single (embedded) approach, (3) a multiple (holistic) approach, and (4) a multiple (embedded) approach. (Yin 2003) The DR-Byen case study, the case study on the Muziekgebouw aan’t IJ (which was completed during this study) and the case study reports of the ADMS students provided the opportunity to apply a multiple embedded case study approach.

2.3 Analysis

Yin (2003) describes specific analytical techniques to evaluate, and draw conclusions on the data: specific analytical techniques, pattern matching, explanation building,

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1 The Architectural Design Management Systems (ADMS) is a bi-annual postgraduate designers programme, and is part of the 3TU, School for Technological Design, Stan Ackermans Institute (SAI) (w3.bwk.tue.nl)
time series analysis, logic models and cross-case synthesis. Since this last approach can be best performed if previous studies have been conducted as independent research studies, this approach has been applied here. The cases were analysed on the briefing and design process, the project organisation; especially on the role of the client and users of the project. Using a SWOT analysis (strengths, weaknesses, opportunities, and threats) the four cases have been further analysed and compared.

2.4 Validity

aspects contributed to the validity of this research. Firstly, according to Herriorr and Firestone (1983, cited in Yin 2003), a multiple case study approach is results in more compelling results. Secondly, both the case studies of DR-Byen as well as the case studies of the ADMS studies are considered to be of sufficient validity. In case of the DR-Byen study altogether 18 hours of interview data was used; furthermore, the ADMS case studies are the result of a three month period of research.

Lastly, to test the external validity of the proposed framework, through open interviews, the model has been discussed with professionals working in the Dutch construction industry. Their comments are taken into account in the final version of the framework. A schematic overview of this research is shown in Figure 1.

![Figure 1: Schematic research overview (according to Verschuren and Doorewaard 2007)](image-url)
3 Literature

3.1 Introduction

Since the 1960's strategy has become more and more important to business and companies. Over the years, organisations have rapidly changed and should today be effective, efficient, productive, flexible and creative, to be able to survive (Lindahl and Ryd 2007; Van Ree 2002). In order to ensure their unique corporate advantages, companies increasingly focus on innovation and innovative strategies; which allows them to improve their flexibility and performance. (Jiménez-Jiménez and Sanz-Valle 2005)

However, a changing business strategy could also involve a revision of the organisational strategy as well as a change in the spatial strategy. Furthermore, a number of studies consider the building to be a key instrument in supporting an integrated business strategy; therefore becoming an asset which should add value to the primary process. (Rutten et al 1998; Kohnstamm and Regterschot 1994) However, according to Yu et al (2006) clients usually do not know how to proceed in a construction project. Since a well designed facility does not automatically lead to success, it should be integrated in the overall change strategy (Chilton and Baldry 1997).

3.2 Value in construction

A considered amount of literature is published on the concept of value, which usually focuses on value from an individual consumer point of view. Value is considered to be the expected performance of an object, often related to usability, technical quality, design costs etc. (Bouma et al 2006; Wandahl 2005) Predominantly, consumers will only purchase an object if their perceived personal value is larger than the selling price; furthermore, manufacturers will only sell the project if the price is higher than the actual production costs. The difference between price and value is referred to as consumer-surplus, and the difference between cost and price is referred to as producers-surplus. (Bouma et al 2006) considers that in order to create valuable and better products, the sum of the consumer-surplus and the producers-surplus should be maximized.

Generally, there are two approaches to analyse and apply the concept of value: value engineering (VE) and value management (VM). VE was introduced in the 1960's and outlines the concept of simplifying products, thereby focussing on reducing the production costs. The aspect of VM regards the management of the process of increasing value, in a dynamic and complex environment. (Green 1996, Green and Moss 1998 cited in Wandahl 2005)
Especially the concept of VM has been successfully applied in the construction industry. Male and Kelly (1998, cited in Kelly and Male 1999) identified four opportunities for VM throughout the construction process: (1) a pre-brief workshop, (2) a brief workshop, (3) a concept design workshop, and (4) a detailed design workshop. To conclude, since the largest opportunities to create value transpires at the project inception stage; it is imperative that an accurate definition of the project is essential to meet the users' requirements (Wandahl 2005; Kelly and Male 1999; Emmitt et al 2005).

3.3 Briefing process

Briefing is the process of capturing the purpose, intended use, requirements, objectives, and desired qualities of a construction project, resulting in an output document: the client’s brief. The brief is the explicit reproduction of the client’s needs, and serves as a guide to the output of the various phases in the process (Smith and Jackson 2000). Furthermore, since different stakeholders define the client, it is important to characterize the requirements of these different stakeholders. (Cheong et al 2003, cited in Yu et al 2005)

Van Der Voordt and Van Wegen (2005) list five different functions of the brief. (1) It requires the organisation to review its organisation and strategy, and re-consider their spatial needs. (2) It delivers information between client, designers, consultants and contractors. (3) The brief can be applied to evaluate the design, and lastly (4) since the brief should state the budget, it can be used to control the budget. In conclusion, the brief considered to be a control document for the client, designers, and project manager.

3.3.1 Briefing strategies

In general two theories about the function of the construction brief and briefing process can be distinguished. The first (traditional) theory considers the briefing process as a static pre-defined project stage, without any relation to other stages. This stage usually results in a detailed (technical) description of the building requirements, and serves as a set of design conditions. (Nutt 1993; Spekkink 2006; Yu et al 2006)

The second strategy considers briefing as a dynamic process, and the brief to be a document which is developed throughout several stages. (Nutt 1993; Luck et al 2001; Yu et al 2006) Instead of an event, briefing should be interpreted as a complex (social interactive) procedure. Furthermore, it is a method of iterative learning about the client’s organisation business processes, and should be a translation of these processes into actual building values and requirements. (Kelly et al 2001; Yu et al 2006) Consequentially, the briefing process interacts with the conception, design and construction stages of the process.
Since especially complex and extensive projects could benefit from this strategic approach, this study adopts the second approach, and considers briefing as an iterative process.

![Figure 2 Strategic briefing concept (based on Spekkink 2006)](image)

### 3.3.2 Stages

Within the strategic framework for briefing, as described by Blyth and Worthington (2000), three stages can be distinguished. The first stage is the **strategic phase**, in which the perceived business needs and client values are acknowledged. This first strategic analysis should preferably be executed in collaboration with as many stakeholders as possible, and should result in a list of options and values of the perceived project. Furthermore, throughout of this phase an agreed strategy which satisfies the organisation requirement, and results in a decision to commence and fund the project, should be produced. (Woodhead 2000; Smith and Jackson 2000) Ultimately, this phase should result in a **mission statement** and **strategic brief**. (Kelly et al 2001).

Throughout the **second phase, or preliminary phase**, the business strategy written down in the strategic brief is translated into an operational brief. This brief is used by the architect to create a scheme design; which is then used to write a more detailed **operational brief**. This iterative process provides the input to the preliminary design.

During the **third or detailed phase**, the operational brief evolves in a more detailed fitting out briefs, covering technical requirements, facility management requirements etc. This iterative process results in several designs and briefs, which will finally result in a concluding final design.
3.3.3 Problems and success factors

Recent studies have provided an insight in both the problems as well as the success factors of the briefing process. The problems concern the differences in perception of benefits (needs, values, expectations) between users (e.g. client, occupants) and providers (e.g. architects and consultants). This general conflict may be intensified by the fact that the two groups do not entirely understand each other's (facility) language. (Kernohan et al 1992; Luck et al 2001) In addition common problems concern the involvement of insufficient stakeholders, and the communication and information exchange between stakeholders (Yu et al 2005).

A study by Yu et al (2006) describes 13 success factors of the brief. (1) Projects. (2) Stakeholder management; both primary and secondary stakeholders. (3) Team and team dynamics. (4) Client representation. (5) Change management; defining the status quo, defining the future, and planning the transitional process. (6) Knowledge management or stakeholders' contribution to the project. (7) Risk and conflict management. (8) Post occupancy evaluation and post-project evaluation (POE/PPE). (9) Projects critical success factors and key performance indicators; time costs, quality. (10) Type of business and organisation theory; stakeholder's satisfaction will be influenced by the type of business. (11) Decision making; on project's requirements. (12) Communication of requirements to the designing actors. (13) Culture and ethics; the influences of languages, time orientation, power distance etc.

Furthermore, these success factors have been ranked according to their importance (Yu et al 2006):

1. Client representation; the brief should be flexible to reflect the changing requirements of the client.
2. Post occupancy Evaluation, and Post Project Evaluation; the consultation of facility managers and end-users.
3. Knowledge management; the understanding of the client's goals.
4. Project; the brief should be a document which should be available to all.
5. Change management; the operational processes of the client business should be understood.
6. Communication among stakeholders is crucial.

3.4 User engagement

A considered amount of literature has been published on the concept of participation throughout design or development. Especially in urban- and product design, there has been an interest in user experience and participatory design. The common objective of participatory design is to decrease the distance between the potential users and the designers. (Redström 2006; Carroll and Rossen 2007) An alliance between the different stakeholders should result in a common benefit; through the concept of dialogue.
stakeholders should benefit from each other's knowledge (Kernohan et al 1992).

The Swedish researcher Granath (2001) provided an overview of the experiences of involving workers in decision making processes, and distinguished three concepts of involvement. In formal participation design, involvement occurs via union representatives. Although people are represented in the decision making process, they will almost never be directly involved in the process. The data collection method uses interview session to extract useful information. Although the users are more directly involved in this process, a common problem with this approach is that the users do not understand the questions of suggestions of the designers. The third kind of user participation is requires the user to be recognised as co-designer. If the users consider themselves as experts, the commitment to the participation process should increase. Furthermore, the process should result in a learning organisation, in which users, clients and designer experts, contribute to the result (see Figure 3) (Granath 2001)

![Figure 3 The collective learning model of communication (Granath 2001)](image)

A more detailed division is described by Wulz (1986 cited in Horita and Yashiro 2006) who distinguishes seven different levels of participation. These levels cover passive participation (representation, questionnaire, and regionalism) and active participation (dialog, alternative, co-designs and self decision). Within the active participation, six different tools are considered: voting, post occupancy evaluation, workshop, focus group, planning cell, and self-build. Two other studies also suggest a workshop strategy to involve the users throughout the briefing and design process. (Overgaard and Davidsen 2006; Kjølle et al 2005)
Several of the proposed tools have been integrated in the framework (post occupancy evaluation, workshops etc.) However, since the number of the involved people increases, consequently the complexity of the project organisation will increase as well. This complexity could be considered as a threat to the effectiveness and efficiency of the project process, and should therefore be carefully managed. (Kernohan et al 1992).

### 3.4.1 Conditions of User Engagement

Several studies show different conditions to the process of user engagement. In total 10 conditions are summarized from these studies: Svetoft (2005) [1-2]; Horita and Yashiro (2006) [3-4 & 10]; Kernohan et al (1992) [5-8], Overgaard and Davidsen (2006) [9-10]

1. Professional architects must be prepared to involve the user, and develop a clear understanding of their needs.
2. Good communication between user and architect is vital.
3. An (independent) project manager should facilitate the process.
4. In order to ensure discussion during meetings and workshops, use a heterogeneous group composition, to ensure discussion during meetings and workshops.
5. Participants should involve themselves in the process, and should have an assertive attitude towards the process.
6. There should be enough commitment.
7. Enough resources (time and money) should be allocated.
8. Since client management usually is the final decider, they have a large role to ensure commitment.

9. The architect should be proverbial to work closely with the user, and who should be prepared to produce several design suggestions, without losing his artistic integrity.

10. Ensure a good initial stakeholder analyses to ensure a good choice of resourceful and representative stakeholders.

3.5 Conclusion

Recent literature shows a general interest in the strategic aspects of the building within the overall business strategy. The building is now considered to be a strategic asset in this strategy. To further ensure that the facility fits the strategic business processes and needs, the users should be considered valuable sources of information, and should therefore be engaged throughout the process of briefing and design. Jensen (2006) provides an overview of the current developments within the topics of briefing and design processes, Table 1.

Table 1 Traditional vs. strategic briefing (Based on Jensen 2006)

<table>
<thead>
<tr>
<th>Traditional briefing</th>
<th>New briefing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concerns new building/construction</td>
<td>Concerns all client/user needs in developing</td>
</tr>
<tr>
<td>A definite phase at an initial stage</td>
<td>A continuous process with changing focus in</td>
</tr>
<tr>
<td>An expert based information collection</td>
<td>different phases</td>
</tr>
<tr>
<td>Users mainly involved as data sources</td>
<td>A guided learning and dialogue process</td>
</tr>
<tr>
<td>The result is a brief, i.e. a requirement specification</td>
<td>Users actively involved as part of a corporate</td>
</tr>
<tr>
<td></td>
<td>change process</td>
</tr>
<tr>
<td></td>
<td>The result is acceptance of solutions based on</td>
</tr>
<tr>
<td></td>
<td>a brief</td>
</tr>
</tbody>
</table>
4 Cases Studies

4.1 Introduction

As stated in section 2 this study is based on an earlier case study on DR-Byen, the new building of the Danish broadcasting company DR. Furthermore, three other media and theatre cases have been studied, with different levels of user involvement. The cases were analysed on the briefing and design process, especially on the role of both the client as well as the users. Appendix 2 describes the studied cases in more detail. This section describes the relevant aspects of the four cases.

4.2 DR-Byen

DR Byen (approx. 130,000 sqm) is the new headquarters of DR, the Danish national broadcasting corporation. The completion of this new complex has been part of a more general business transition of DR, towards a fully digital broadcasting company. The briefing and design processes of this project have been iterative and fragmented. Furthermore, throughout the project stages different user groups have been involved. During the initial stages, especially top managers and union representatives were involved in the process; throughout the more detailed phases the actual end-users of the building were involved as well. Furthermore, the users were represented on a more formal level by the briefing project manager; not only during the briefing and design stage, but also during the construction stages. (Zwemmer 2007) The engagement concept can be compared with the collective learning model as presented in Figure 3.

Through several workshop sessions users collaborated with the designers and consultants. In total 21 users participating groups (6-10 pp) users discussed their requirements, and comment the architect designs. The goal of these user-workshops was that users had to evaluate their work processes, and predict the change in relation to the use of space, the new technology, and the business strategy of DR. Especially the production staff and technical representatives were able to provide valuable suggestions on how they would work in a digital broadcasting company to the architects and consultants. (Zwemmer 2007)

A preliminary evaluation has resulted in several initial conclusions of this project, and the concept of user involvement. Firstly, it is important to manage the workshops properly, prevent endless discussions, and ensure progress. Secondly, enough resources (time, budget and people) should be accounted to facilitate this process. Thirdly, a clear communication between the different stakeholders and a clear insight in the role and responsibility of the users is imperative as well. A more overall outcome of this process is that users consider that the involvement process has contributed to a build-
ing that better fits their needs. Furthermore, since they perceive to have contributed to the final results, and their input is recognisable in the result, the interviewed users consider that it has increased their level of ownership, and commitment to the facility and the transitional process. (Zwemmer 2007)

From a client perspective, the organisation of DR played a mediator role between the users on the demand site and the designing and consultant partners on the other site. Since this case study can be considered to be a success, several elements of this project are implemented in the final result. For a more detailed description of this project, project organisation, and process, see appendix 2.

4.3 AKN

Similar to DR-Byen, the AKN building has a media and broadcasting function, and houses three Dutch media broadcasting companies (AVRO, KRO, NCRV). Since all three organisations were represented in the project organisation, this resulted in a complex project organisation. In this case the client was represented by the project manager.

Within the client organisation the users were represented by user-representatives within the client steering group. The steering group was responsible for the everyday management of the project, and had to ensure that the projects conditions (budget, planning, information and quality) were met. This group initiated plans, and decided on conditions e.g. briefing terms. The user representative groups should ensure a positive feedback loop of information towards the actual end-users of the building. Primarily, this information was communicated from the designers to the users, and vice versa. (Scheltens et al 2002)

Although the users were not directly involved, but merely represented by the user representative groups, the case study showed the importance of communicating the roles and goals and responsibilities of all stakeholders.

4.4 The new Luxor theatre

Since a theatre is also part of the DR-Byen project, two theatre cases in the Netherlands have been studied. The first theatre case is the New-Luxor theatre in Rotterdam. The complexity in this case concerned the organisation, in which the paying client (Municipality of Rotterdam) was not the actual user of the building. The user organisation New Luxor Theatre, was primarily represented by two key figures, Mr. Wiegman and Mr. Oumas. They were experienced with the realisation of theatre projects; Therefore their task was to contribute their knowledge of user aspects of a theatre. Especially Mr. Wiegman ensured he had sufficient (informal) influence in the
project organisation. As follows he was able to apply his experience of managing a theatre project, and consequentially represent the users of the New Luxor Theatre organisation. (Demmers et al 1996)

Several elements of this study have been used in the proposed framework. This case showed a positive effect of involving the users on the process and project result. However, it is important to carefully define the roles of the users and stakeholder in the process. Furthermore, as suggested by Demmers et al (1999) a user representative manager should have contribute to a better performing project organisation.

4.5 Muziekgebouw aan’t IJ

The Muziekgebouw aan’t IJ is a theatre case in Amsterdam near the IJ-Lake. In this case two music organisations (De IJsbreker and BIMhuis), together with several smaller establishments, were accommodated in one building. Since the City of Amsterdam was the actual client, and an international architect was selected to design the building, this resulted in a complex project organisation.

Throughout the process, the users were represented by the director of the IJsbreker organisation, Jan Wolff. With many years of experience as a classical musician, he provided vital knowledge to the architect and consultants. Furthermore, he was heavily involved throughout the briefing and design stages, as well as the construction stages. His recommendations (e.g. acoustical requirements) were discussed with professionals and usually implemented in the brief and design. His contribution and commitment to this project is considered as an important success factor of this project.

Similar to the previous two cases the users were therefore involved through representation. Jan Wolff should therefore be seen as an engaged user expert, who represented others users of the organisation of De IJsbreker and BIMhuis. However, since the users can not be considered to be a professional, it is important to refrain a professional language to one that is also understood by the users. Other positive aspects of this project were the value based design, the collaborative design approach, and the flexibility of the Danish architects.

4.6 Conclusion

Several parallel elements between the cases are be distinguished. Firstly, the projects and especially the project organisations can be described as complex; existing of many different stakeholders. Secondly, the case studies show that there are different levels of knowledge within the project organisations, and that different numbers of users were involved. In the DR-Byen case managers and staff and especially the technical employees and the production employees could contribute to the process. Furthermore, many
other employees were able to decide on their direct work-environment. This resulted in a perceived increase of building quality, ownership and commitment to the transitional process of moving.

In the cases of the New Luxor theatre and the Muziekgebouw aan't IJ only a limited number of users provided additional design knowledge. In these projects this knowledge and experiences were applied during all the stages of the projects. Thirdly, similar to the project organisation of DR-Byen, a user representative was involved during formal meetings throughout the different stages of the processes of the New Luxor and Muziekgebouw aan't IJ case. This person ensured a smaller project organisation, and an indirect engagement of users on a higher level in the project organisation.

Together with the stated literature, the combination of these two user representation concepts provides an opportunity to design the intended framework, which is described in the next section.
5 Strategic framework

5.1 Introduction

As stated in the introduction, clients frequently have difficulties to fully recognise the users and stakeholders needs. Since little attention has been paid to the actual process of engaging users from a client perspective, the strategic framework focuses on this aspect. The model is intended to investigate and recognise the user's and client's needs, and communicate them with designers and consultants. Based on the described cases and literature study a general framework is proposed, which states the different user groups, their role and responsibilities throughout the process of briefing and design.

5.2 General description

5.2.1 Added value of User Engagement

Engaging the users provides the opportunity for designers to focus on the user's processes, extracting their requirements and translating these requirements into actual designs. Furthermore, engaging the users should decrease the distance between the potential users and professionals, and an alliance between the different stakeholders should result in a common benefit. Through the concept of dialogue stakeholders should benefit from each other's knowledge and experiences. (Kernohan 1992) Furthermore, it should provide the architect with a better insight in the processes of the users.

Especially the DR-Byen case showed the potential added value of this concept to the project as well as the briefing- and design process. Firstly, the users considered that the involvement process had contributed to a building which fitted their needs. Secondly, they perceive that it has increased their level of ownership and commitment to the facility as well as the overall transitional process. This obligation provides the opportunity to result in a more efficient process. Additionally different studies show that environmental satisfaction of users will result in an increase of motivation as well as productivity. (Turpin-Brooks and Viccard 2006; Leaman and Bordass 2005) The working environment can influence the users' perceived productivity by 15% (Leaman n.d.). The added value of an intensive engagement of the user is shown in Figure 5.
However, since the number of cases that engage users on a large scale, is relatively small, more case study research is necessary to further investigate the positive outcomes of this concept.

5.2.2 Target group

As mentioned in the general introduction this framework is intended to be applied by large and professional client organisations (e.g. municipalities, large private companies, governmental organisations). Since the framework is based on cases with relatively large and innovative client, and is still preliminary, no contemporary evidence is present to proof its value for smaller, less professional clients.

The strategic framework is based on two principles: the concept of strategic briefing (as described in section 3.3), and the concept of active participation of users as described in section 3.4. From recent studies on the strategic briefing process, three different process stages can be distinguished.

1. The strategic phase, in which the organisational business-strategy and process are analysed and translated in a perceived change of the existing spatial strategy. Throughout this stage, the values and outlines of the project have to be defined, preferable with as many relevant stakeholders as possible. This phase will result in a decision on the strategy to build and the strategic needs are written down in the strategic brief. (Woodhead 2000; Smith and Jackson 2000; Kelly et al 2001)

2. The preliminary phase, in which the values are translated into an operational brief and scheme design. Through an iterative process this brief and design will evolve into a more detailed brief and preliminary design. (Blyth and Worthington 2000)

3. The detailed phase, in which both the design, as well as the brief further increases in (technical) complexity. (Blyth and Worthington 2000). For the reason that the strategic briefing process interrelates with all stages of the process, the construction stage is represented as well.
Since this concept is based on the iterative process of briefing, the actual lengths of the three different stages depend on the actual project. Therefore, the framework does not represent any time scale. A general visualisation of the concept, and the amount of users engaged throughout the different phases can be interpreted by the graph shown in Figure 6. Although, the proposed graph suggests the number of engaged users, this number will also depend on the project (e.g. the dashed curve).

Two explanatory remarks should be taken into account. Firstly, the actual application of this framework is project dependent; therefore, the plotted graph in Figure 6 should be interpreted as a suggestion to the number of people involved. Secondly, since this concept is based on the iterative strategic concept of briefing, the detailed phase will be related to the construction phase. The studied cases have shown that involvement of a user representative in this phase is also imperative.

![Strategic framework](image)

**Figure 6 Strategic framework**

### 5.3 User groups and professionals

Within the general concept, three different groups of users are distinguished. The first group consists of people who may have an interest in the project, and who could influence the strategic phase of the project, but are not a direct member of the client organisation: the external stakeholders (e.g. neighbours, client suppliers, union-representatives etc.) Although the studied cases do not recognise this group, several studies state the importance of the involvement of this user-group (Bouma et al 2006; Smith et al 2001). Since the engagement of external stakeholders could introduce different threats; a thorough stakeholder’s analysis is required to analyse these threats. The dif-
Different stakeholders should be arranged according their level of interest versus their power level; and their power level versus the predictability they will use this power. (Newcombe 2003)

When engaging the external users two other aspects should be taken into account. Firstly, only external stakeholders who—according to the analysis—resemble the project values should be engaged. Only then the engagement of this user group can add additional value to the project. Other external stakeholders (e.g. pressure groups) should be carefully managed according to their role and power. However, since this study focuses on the briefing and design process of a project, this external stakeholder analysis will not described in more detail. Secondly, it is important to identify the added value to the stakeholders and convince them to engage themselves in the project.

The second identified group is the user study group. These people have a specific amount of knowledge on the operational requirements and internal processes of the building (e.g. construction-, technical- and processes) In the DR-Byen case this group consisted of the involved technical and production staff, and in case of the Muziekgebouw aan't IJ case, this was the director of the IJsbreker organisation, and in the New Luxor Theatre case this was the user representative project manager. These user groups provided specific project information which resulted in a better understanding of the general user-processes of the building.

The user study group should be considered as consultancy group, which is engaged during the preliminary phase of the project, and their input should improve the definition of the design problem (Granath 2001). According to the investigated cases, it is more likely that this group of users is relatively small, and therefore the framework tapers down towards the preliminary phase, see Figure 6.

The third identified group is the facility study group. This group consists of the employees and managers who are motivated to collaborate with the designers in the detailed briefing and design phases. Furthermore, these people could also be involved in the evaluation of the old facility. As mentioned in the previous section, the DR-Byen case showed positive experience involving this larger group of users throughout the process. The engagement of these users resulted in the fact that they had to evaluate their working processes, and had to predict changes in these processes especially in relation to spatial requirements. Therefore, these users should be considered as experts in their own working processes and could therefore provide valuable information to the designers and consultants of the new building.
5.4 Organisation

Although this framework focuses on the role of the end-user, several other internal stakeholders are involved in this framework as well. The proposed project organisation of this concept is derived from the case studies and exists of four different organisational groups. A schematic representation of this organisation is shown in Figure 7. The cyan lines represent the formal (contractual) relation between the stakeholders; the deep blue lines represent the informal relationships.

1. The client’s line organisation, especially the decisive organisational body (e.g. board of directors).
2. The client project organisation, especially a manager who represents the users’ interests; here separately indicated.
3. The project manager, architect and consultants
4. The user’s groups, including the relevant external stakeholders.

![Figure 7 Organisation User Engagement concept](image-url)
5.4.1 Roles and responsibilities

The different bodies within the organisation have different roles and responsibilities.

1. The client’s line organisation, especially the board of directors, and in case of public clients the aldermen, will state the overall project conditions (especially the overall budget, organisation and project deadlines). This stakeholder should consider being the highest decisional organ; therefore, should the project deviate from the stated conditions, this body will decide on the consequences.

2. The client project organisation represents the entire line organisation. The level of involvement depends on the chosen contract. The client’s has a predominant role throughout the briefing and design stages of the process. This client project organisation decides about the important project decision, and has to justify its actions to the board. (Prins et al 2000) The different cases showed a small first client organisation, which usually consisted of a project director, an assistant and a secretary.

3. The studies cases in which the users were actively engaged, a manager who represented the users was part of the project organisation. In the DR-Byen case this user representative manager, was also responsible for the entire briefing process. In order to decrease the number of directly involved users in the client’s project organisation, a user representative seems reasonable. His task would be to formally represent the interests of the user’s, and provide them with the necessary feedback on how their input has been formally applied. Furthermore, this person will be responsible for the different user engagement activities (see section 6) In the evaluation of this model the question arose if the user representative manager should be contracted to the project manager.

4. Since different professional stakeholders (designers, consultants etc.) are involved in the project, a project manager should be hired to control this process. He is responsible to manage the overall process of the project, represent the client in meetings, and has to assure that the project conditions are met. (Kohnstamm and Regterschot 1994)

5. Although many actors will be involved in the design process, the architect is responsible for the actual design of the project. Furthermore, the design team should interpret the values and requirements written down in the brief, and translate them into designs. The value of this collaborative approach is to share expertise, ideas, resources, and responsibilities among involved actors. According to Chiu (2002) the effectiveness of design communication becomes critical for designers in sharing design information, in decision making and coordinating design tasks.
6. The different user groups \((A, B)\) who should be used as sources of knowledge throughout the different stages of the process. However, the user will not have any real decision taking power. Next to the involved external stakeholders, there are many more external stakeholders who influence the process, and therefore need to be managed. Their external influence is represented by the crisscrossed arrow.

5.5 Conditions

The presented concept of user engagement is based on five different conditions.

(1) *Firstly*, the client needs to be aware that user engagement could deliver added value to the project, see section 5.2.1 Therefore, the client has to ensure that enough resources (time and money) are allocated to this process.

(2) *Secondly*, (as mentioned in the previous section) the engagement process needs to be a collaborative learning organisation, in which the client (representative) is the actual decider. As mentioned in section 3.4 if users are considered as experts, they will commit themselves to the process. However, since only the project's client organisation will be able to verify if the users' input corresponds with the overall business strategy; therefore, the client organisation should always be the final decider in the process. Nevertheless, to ensure that the users' values are taken into account, a user representative manager should be involved on a higher level in the project client organisation.

(3) *Thirdly*, the designers should be committed to collaborative process; however, the users should not be responsible for any design activities. The users provide input on the brief, and should describe their values and personal (working) processes. The designers should translate this into different design solutions, which can be evaluated by the engaged users. This requires the designers to have sufficient inter-personal competences; e.g. empathy, communication skills, and ability to motivate the engaged users.

(4) *Fourthly*, to retain users' commitment, it is important to provide them with feedback. Throughout the different stages, the users should be informed about how their input is used, and how it has affected the actual design. To ensure this, the user representative manager, should deliberate with the users and provide feedback on how the input is used, and how it has affected it the actual building.

(5) *Fifthly*, it is important to retain commitment of the higher body of the organisation (e.g. the board of directors or in case of governmental projects the municipality's aldermen). These bodies decide on the actual project conditions, and therefore have large decisive power. Should problems occur during the project (e.g. budget overruns), these bodies will decide the consequences.
5.6 Process Outline

The previous sections have elaborated the model in general; this section will describe the actual three stages of the process, the shape of the involvement-curve, and suggests how the process of involvement should be managed, and organised.

5.6.1 Strategic phase

Different studies showed the importance of the strategic and conceptual design stage, in which usually 80% of the total project costs are being determined. (Rutten and Trum 2000; CABE 2003) Therefore, the proposed framework strongly focuses on the strategic phase of the process. Furthermore, other studies suggest the involvement of many different stakeholders throughout this stage. (Woodhead 2000; Smith and Jackson 2000; Smith et al 2005) However, as mentioned in the previous section, before the different users and stakeholder groups can be engaged in the process, they need to be defined and recognised by the project organisation. Furthermore, the engaged users should be willing, and able to provide a surplus to the project, and in case of external stakeholders to their own organisation.

In order to secure general commitment by the users and stakeholders, three aspects are important. Firstly, the concept of UE should be explained in detail, including the conditions and goals of this concept. Furthermore, the successes of earlier projects that applied this concept will contribute to the commitment. Secondly the users should be trusted that their input and knowledge will be used throughout the process. Thirdly it is imperative to measure the effects of this concept on the perception of building quality and the process outcome in general. (Denton 1996) This provides the opportunity to improve this concept.

Organisation

Throughout this first stage, two specific user engagement concepts are applied; the strategic needs analysis, and the evaluation of the old-facility; also see section 6.2. Since the user study groups, as well as the facility study groups are the users of the old facility, they will be engaged to evaluate this building. To get an overall insight in the strategic values of all stakeholder groups (including the organisation) the strategic needs analysis should be attended by all three user-groups, also see Figure 6.

Smith et al (2005) describes the process of the strategic need analysis in more detail. Using a three-staged workshop approach, and a statistics software application, the strategic needs can be analysed both effectively as well as efficiently. To further ensure this, both the user representative manager, as well as the project manager, will have to manage this process of engagement. Since the client organisation will be the final decider on the strategic needs, the number of engaged users will decrease towards the end of this stage; represented as a concave shape in Figure 6. The result of this phase is
the strategic brief, in which the business outline of the project is described.

To ensure commitment and a transparent decision-making process, the final outcome (or strategic brief) should also be communicated with the engaged user groups. To conclude, the strategic phase results in a direct engagement between the users, the client organisation, the user representative manager, and the project manager. This direct relation is represented by the blue lines in Figure 8. The previously described relations are still present but are less significant; therefore represented in gray.

![Figure 8. Organisation concept of engagement throughout strategic phase](image)

### 5.6.2. Preliminary phase

Within the second or preliminary stage, two different stages of briefing and designing can be distinguished. Firstly, this phase will commence with an interpretation of the client's and users' values and project conditions in an operational brief. The brief is used to create a corresponding scheme design, this design is tested against the brief, and the project organisation decides if the brief should be altered. This iterative process should firstly result in a scheme design, and operational brief (Spekkink 2007). This similar process is used to create a more detailed brief, as well as the preliminary design.
Throughout this stage, the *user study group*—people who have a certain amount of specific knowledge on the internal processes of the organisation (e.g., construction-, technical-), are involved. If these users are considered as consultants, their knowledge should increase the designers' insight in the design problem(s) at hand. This should result in an intensive engagement concept between the users, the designers, and the project manager, and user representative manager; see Figure 9. The cyan lines represent the formal, contractual relationships, and the darker lines represent the informal relationships, the width of the lines represents the strength of the relationship in this phase of the process. The earlier described relations in the organisation are still existent, but are less strong; represented by the black and gray lines.

![Diagram](image)

**Figure 9**  *Organisation concept of engagement throughout preliminary phase*

According to the number of engaged users, this phase should be managed differently. In case the number of users within the user study group is large, the role of the user representative manager will be more dominant. Similar to the previous phase, he will represent, and provide feedback to this user group within the client project organisation. In the DR-Byen project organisation, a separate briefing project manager, who was responsible for managing the involvement and briefing process, was present during the design meetings.
Alternatively, in case of a smaller involved user study group (e.g. 1 or 2 individuals), the users study group could be directly engaged in the design meetings. According to the Muziekgebouw case, only one engaged user during these meetings resulted in valuable design input. This potential diversity of involved users throughout this phase, results in the concave lines (both solid as well as dashed) in the strategic framework in Figure 6.

5.6.3 Detailed phase

As mentioned in section 5.2 this framework adopts the strategic briefing theory; therefore, the preliminary stage transitions into the detailed phase. However, in the more detailed process description (see section 6) the detailed phase commences with the approval of the preliminary design. Throughout an iterative and interactive process, of briefing designing, re-briefing and re-designing, this phase results in the final design of the project. During this phase, the facility user groups, as well as the facility study groups will be engaged in the process. As displayed in Figure 6, the amount of involved users will increase following a concave line, which descends towards the construction phase. To ensure their contribution they should direct the designers with small detailed on their professional (work) environment, and processes.

To manage the input of the user-groups, a workshops strategy should be applied to create discussion and extract the values of the users on this detailed level. The case of DR-Byen showed positive results with this method, also see section 4.2. Small heterogeneous workshops (6-10p) ensured discussion during these meetings. The workshops were attended by members of the designer’s organisations. This should result in an interactive learning experience. The collaborative and iterative aspect of this process required the designers to develop different design solutions. During this phase the user representative manager will be responsible to set up and manage the processes of engagement during this phase.

However, the DR-Byen case showed that this concept should be carefully managed, to prevent the efficiency and effectiveness of this concept.

- The workshop process should be managed and planned.
- Since many users will be engaged, the amount of design input will increase. Therefore, this knowledge should be managed using a technical information management system (e.g. project website). This ensures that all participants are informed about the status of the project.
- To ensure a transparent process, feedback and information should be provided to the other user groups (external and non-involved users). For instance news-letters, bulletin boards, projects visits etc. will help to ensure commitment to the project.
Not only are these workshops intended to provide the designers with information on the users' working process, these workshops should be used to provide feedback on the designs, and point out the preferred design option. Finally, this process should result in an equal engagement concept between the users groups, the design team, and the user representative manager. However, the final decision will not be made by the individual user, but by the project organisation; see Figure 10. Nevertheless, since the user representative manager is part of this organisation, the user is represented here as well. The organisation shows the formal interactions in blue and the more informal interaction within the workshops in darker blue.

Figure 10  Organisational concept of engagement throughout detailed phase
6 Detailed process

6.1 Introduction

The previous section provided a general description of the strategic framework of user engagement. Within this three-staged framework, 24 detailed stages have been defined; see Figure 11, Figure 14, and Figure 15. The detailed process overview provides an insight into the different process steps, the output documents, and the different stakeholders involved. Furthermore, the roles and responsibilities of the different stakeholders are discussed.

6.2 Strategic phase

Figure 11  Detailed overview of the strategic phase
(1) Sense of Urgency. As mentioned in the previous section, this framework strongly focuses on the strategic phase of the construction process. In order to ensure their unique corporate advantages, companies increase their focus on innovation and strategy, which allows them to improve their flexibility and performance (Jiménez-Jiménez and Sanz-Valle 2005). Changes in the external business environment could influence business strategy, organisational strategy, as well as spatial strategy.

This part of the process is an element of a more general, continuous, flexible evaluation of the business strategy. To ensure their corporate advantages, companies have to analyse and react on changes in their market segment. Therefore, this sense of urgency can result in a perceived need to change the business, and more relevant to this framework, the spatial strategy. To communicate the business analysis and strategy, this phase results in a document that describes the long term vision on the general business strategies.

Since strategic changes can have consequences for the entire organisation, and business, they are planned and made by top-management; the board of the line organisation is responsible for these strategic decisions.

(2) Ensure commitment User Engagement and Strategic Needs Analysis. As mentioned in section 5.5, a successful implementation of this framework requires the commitment of the decision-making stakeholders (e.g. board of directors). This requires awareness by the client of the importance of the strategic phase, as well as its importance, and the added value of the input of the users. Different studies show that investing in the strategic stages can result in potential savings (10-20%) throughout the construction and occupancy stages (CABE 2003). In addition, successes derived from this engagement concept (e.g. the DR-Byen case) should contribute to the awareness of this concept.

As mentioned in section 5.6.1., the Strategic Needs Analysis is a participatory strategic analysis to define the strategic direction (decision to build), and the strategic facility needs and values (Smith et al 2003). In their study to this concept, Smith et al (2001) describe several case studies in which this concept has been successfully applied. These successes should contribute to the level of commitment to apply this strategy.

The suggestion to consider this SNA could be proposed by anyone within the top-management of the organisation who is convinced about the added value of this concept. Since the board of directors will decide on the application of this concept, the success should convince them of the added value of this concept.

(3) Define process SNA/UE and project conditions. Subsequently, after the decisive decision making organisation is committed to this concept, they will have to define
the general conditions of the project, SNA, and UE processes. These conditions will concern budget constraints, timeframe, and a possible risk-analysis of this concept. Furthermore, in this stage a client project organisation should be set up. This organisation represents the line organisation, and coordinates the project.

(4b) Define client organisation, (5) hire project manager (PM). In order to ensure an efficient decision making process, a client project organisation should be formed. This smaller organisation should be staffed with representatives from the client organisation. Depending on the amount of professional (building) experience, the client should be assisted by external professionals. Furthermore, this organisation has to decide if it is either able to manage the project itself, or if an external project manager should be hired. The PM should be responsible for the actual management of the process organisation of the project, and has to ensure that the project conditions are met.

(5a) Project plan In order to create an effective and efficient process, the iterative steps should be planned, managed, and the project manager should define the information which is needed throughout the different stages. He is responsible for the overall control of the project (budget, planning, organisation, information, quality and risks) and the management of the professional stakeholders (architect, consultants, contractor etc.)

Therefore, the project plan written by the project manager should contain a list of all the control aspects of the process. However, within this plan, it seems possible that project conditions are stated, which conflict with the project conditions stated by the client (e.g. budget, time etc.) The comparison of both documents should therefore result in a better project outline document. Furthermore, the project manager will be responsible to keep this document up to date and maybe change it. Since this research focuses on the role of the brief, the development of this document is no longer described.

(6) Decision to start SNA phase. After the project and processes are defined, and a project organisation is set-up, a final decision has to be made to commence the SNA phase. Since the project organisation will represent the overall client, it is important that the decision to commence the SNA phase is made by both organisations. Furthermore, this decision should be considered as the start of the project process. However, the outcome of the project is still unknown, and will depend on the SNA.

(7) Perform stakeholder analysis. As mentioned in section 5.3 it is imperative to define the different user groups (external stakeholders, user study groups and facility study groups). Together with the user-representative manager, the client organisation and the project manager should perform this stakeholder analysis, which should result in the definition of the three different user-groups. Especially, the external stakeholders should be studied on their level of interest to the project. Only if they acknowledge
a common value of engagement, and confirm to the project values, they will be able to ensure a surplus to the project.

The user study group(s) should be analysed and selected according to their profession, and ability to provide the designers with additional knowledge on specific (technical) processes. However, before engaging these users, the concept of UE, their tasks and responsibilities, and the added value of engaging them, should be carefully explained. Only if this user group is committed to the process, they will be able to provide additional value to the process.

Similar to the selection of the user study group(s) the facility study groups need to be selected as well. The interviewed participants in the DR-Byen case perceived that a participant did not have to have any special competences, other than commitment and sufficient time commit themselves. However, since engaging a large number of users will increase the complexity of the project, the total number of users should be carefully considered by the project organisation.

To ensure a transparent process, users should not only be informed about their own role and level of participation, but also about the roles and responsibilities of other actors. A useful tool to apply here could be the participation cards, as proposed by Van Heaff (2006), also see appendix I.

(8a) Perform Strategic Needs Analysis, (9) Decide on strategy. The initial step of the briefing process is the statement of (business) needs and values, which should be written down in the strategic brief (e.g. Blyth and Worthington 2000). In order to exclude any early design solutions, this mission statement should be described in business language. The project conditions and the long term business strategy should be used as input document to this phase.

The SNA consist of a three staged process, in which the values of the involved stakeholders are extracted, analysed and decided upon. To ensure an efficient process, the data is analysed via a statistical computer program. During this stage, all three user groups should be involved, and in order to implement the different needs and values of these stakeholders, several (statistical) tools have been developed. An example is the Strategic Needs Analysis tool described by Smith et al (2005). Figure 12 provides an overview of the three different stages in this process. The outcomes of the strategic needs analysis should be an agreed strategy, which satisfies the organisation requirements, and results in a decision to commence and fund the project. If the preferred strategy is new-build, the outcomes should be used to prepare the first project briefs. (Smith et al 2001)
Finally, having discussed all possible strategies, the client project organisation, together with the board of directors will decide on the preferred strategy. The project manager will report this decision. Furthermore this decision will be the start of the preparation of the strategic brief.

(8b) Perform POE analysis. In order to get an insight in the strengths and weaknesses of the old building, a stakeholder orientated evaluation tool (e.g. POE), should be used. The outcomes of this study should be used as input in the briefing process. Kelly et al (2001) considers POE and PPE to be important information sources of the briefing framework; however, these tools are seldom used in a new project process. This analysis is executed in collaboration with the two different users-groups (B-C). The result should be an evaluation document, which provides insight in the positive and negative aspects of the old building. A POE is considered to be an ideal source of (technical) feedback; therefore, the data and knowledge derived from this evaluation could be used during the briefing and design processes of new projects. (Mallory-Hill 2004; Eley 2001)
This POE analysis should be managed by the user representative manager (URM), and the project manager. The two managers report the findings to the client organisation, and prepare a document which can be used in later stages as input document during the briefing sessions.

(10) **Formulate strategic brief.** (11) **Approve brief.** Together with the data from the POE-evaluation, and the project conditions, the strategic needs analysis provides the input to formulate the strategic brief. Preferably, the strategic brief should be written in a business language, and should state the (architectural) values of both the client as well as the user’s groups. Furthermore, this brief should contain the project outlines, outlined in the project conditions document. This brief will be written by the two managers in collaboration with the client, and will be a more formal outline of the strategy decided during the SNA. The final decision on the text in this brief will be made by the board of the client organisation.

To ensure an open process, this output document should be communicated with engaged users throughout the SNA and POE analysis. The user representative manager should explain how the user’s input has been used in the strategic brief. During this stage the external stakeholder will no longer be actively involved; consequentially reducing the number of users. This deducting of engaged users is represented by the concave line in Figure 6. The actual approvers of the strategic brief are the project organisation, in collaboration with the board of the line organisation. See for a process overview see Figure 11.
6.3 Preliminary phase

The main activities within the preliminary phase are the translation of the strategic brief into an operational brief, and to commence the actual design process.

(12) Select architect and consultants. Before any design activities can be executed, the architect and consultants have to be selected. Since the users have to collaborate with the architect, designers and consultants, several special selection criteria have to be considered. The architect has to have an aptitude to involve the users, and develop a clear understanding of their needs (Svetoft 2005). Furthermore, in order to collaborate with the users, professional participants should not only have design qualities but, also require several social and management skills, e.g. communicational, and empathic skills. However, since this is a relatively new concept no real studies to the selection criteria are available.

Together with the project organisation, the project manager will be involved in this selection procedure. They will state the selection criteria of the architect and consultants, write the tender for the project, and finally select them. Depending on the contract, the architect will have a direct responsibility to the client or to the PM. However,
since this report does not focus on this selection criteria, this process is not described in more detail. To ensure an open communication process between engaged users, the client organisation and project manager, the users should be informed about the selected architect.

(13) Start-up meeting, (14) Ensure commitment. The start-up meeting is intended to introduce the different actors and user groups within the project. Since the different stakeholders (both professional as well as non-professionals) should work in collaboration with each other, a first start-up meeting should help to ensure commitment and cooperation. Therefore, the different user groups (B-C), the user representative manager, the client organisation, the PM, the architect and the consultants have to be present at this meeting. On similar grounds, a start-up meeting should be organised when the detailed phase commences (see stage 21).

The overall objective of the start-up meeting is to initiate and prepare the statement of needs, which will evolve in the operational briefing in the following stage. (Gray and Hughes 2001) Furthermore, this meeting should also be used to explain, and ensure commitment to the concept of user engagement throughout the process. Therefore the success of this concept should be presented again. Furthermore, the project manager should explain the roles and responsibilities of the different actors throughout this process.

(15b) Create operational brief, (16b) realise scheme design, (17) approve scheme design. This stage is intended to translate the strategic outline of the project, written down in the strategic brief into a document which describes the project in general construction and design terms. Next to the strategic brief, the executed POE analysis should provide additional input to this brief.

Throughout this stage, the user study group will be engaged. Through an intensive and iterative interaction between the designers, consultants, and these user study groups, they should be able to contribute their knowledge to the process. However, this requires the users to be acknowledged as consultants. Should the number of expert-users will be small; they will actively participate in design meetings, and communicate ideas, concepts, values and thought on how the building should be used. The studied cases have shown positive results on engaging these user study groups.

As mentioned in section 5.4 the user representative manager will have an active role throughout this stage. Especially, in case if the number of members in the user study group increases, he should consult with the user-group, and formally represent them during design meetings. The cases in which many users were engaged during this stages, confirm that this manager should be part of the project (design) organisation.
Given that this framework is based on a collaborative and iterative design method, the architects and consultants will have to present different designs. Since these designs should also be based on the values, and building requirements of the users, the architects should be able to explain how these values are incorporated in the design. It seems reasonable for the users to provide feedback on these designs, and collaboratively reflect them. However, the architect will be finally responsible for the design.

Furthermore, the client organisation, together with the PM, will have the final decisive power. In addition, the project manager is responsible for the overall management of this stage. To ensure overall project commitment the selected scheme design should be communicated with the engaged users. Furthermore, it should be clearly stated that the agreement on the scheme design is one of the milestones of the project, and that more detailed designs will be based on this design.

(18) Create detailed brief, (19) realise preliminary design, (20) approve preliminary design. Similar to the previous three stages, the brief as well as the design will increase in detail through an iterative process of briefing, designing etc. In this stage the user study groups (B) will be engaged as well.

However, the actual design responsibility will still be with the architect; furthermore, the client together with the PM will decide on the actual design. The role of the PM is to control, and manage the overall project processes and retain the overall project conditions. The user representative manager will ensure that the final decisions will be feed back to the engaged designers, ensuring commitment to the project.
6.4 Detailed phase

Figure 15 Detailed overview of the detailed phase

(21) **Start-up meeting.** Similar to the start-up meeting described in stage 12, this meeting is intended to introduce the different (new) actors in the process. Since in this detailed phase the facility study groups will be engaged, they will have to be introduced to the other stakeholder in the process. See for more detailed description stage 13.

(22) **Realise fitting out brief.** (23) **Realise final design.** As mentioned before the iterative and strategic character of the briefing process results in the fact that there is no decisive starting-point of the detailed phase. With the fitting out brief, this iterative process is continued throughout this phase. Through a similar process, both the brief and the design will increase in (technical) detail and complexity, and will ultimately result in the final design and briefing documents.

Throughout this stage, the *facility study groups* (C) as well as the *user study groups* (B) will be engaged. Via an interactive process of workshops, the users should be provided the opportunity to discuss the building aspects and processes of use, which affect their direct (working) environment.

This discussion should inspire the architect to provide a design which tries to meet these requirements/values. And since these requirements are written down, the designs can be reflected and evaluated afterwards. The role of the architect is to inter-
pret the user-processes and translate them into actual design, to which the users can relate him to. However, as mentioned before the users will only be allowed to engage with the architects, consultants and other designers, and express their preferred design solution. However, since the users are very much consulted in the design of their direct environment they should perceive a higher level of ownership and commitment to the building. The DR-Byen case confirms this. However, the client organisation will have the decision power.

In the DR-Byen case the study groups in the workshops and meetings consisted of 6-10 people from various departments. This ensured a lively discussion which had to be carefully managed. The user representative manager has the responsibility to manage this process; furthermore, he should represent the users in the more formal design meetings. In addition, after these meetings he should provide the user with the necessary feedback, since the users have given this manager their mandate to represent them in the formal organisation. The project manager is responsible to control the overall process.

(23b) Construction phase. Since this framework has applied the strategic briefing theory, the detailed briefing and design phases are related to the construction phase as well. According to the cases, (especially the New Luxor case and The Muziekgebouw aan’t IJ case) it is important to ensure a user representative manager in the project organisation during the construction stages. He should not only ensure that the specific user’s input will be implemented in the construction phase, but should also provide the user’s with the necessary feedback. This ought to ensure that the level of user-commitment is preserved. To warrant a small and manageable project organisation, the end-users will not be involved in these stages; which results in the concave deduction of users to a bare minimum shown in the general overview of the process (See Figure 6)

(24) Evaluate process and building. There are two reasons to evaluate this process. Firstly, it is important to evaluate the effect of the engagement of the users on the actual result; a second POE could therefore be executed. This should help to ensure their commitment and create a certain level of ownership to the building. Secondly, since this tool is only based on several cases, it is important to test the effectiveness and efficiency of the tool. Therefore it is important to evaluate the process, and to suggest changes to the process tool.

The project manager as well as the client organisation should initiate this process. Furthermore, the engaged user groups should be questioned to their opinion on the process of engagement, and the actual project result. The results of these evaluations should be published in an evaluation report, which can further be used to improve this concept.
7 Conclusion

The purpose of this study has been to develop a strategic framework for large innovative clients, and how to engage these users throughout the briefing and design stages of complex projects. Based on a literature- and multiple case study research, this report proposed a framework, which illustrates the stakeholders, their roles, and responsibilities. The application of this framework should lead to a better insight in the processes and requirements of the users.

This study, especially the DR Byen case, showed positive results of engaging the users throughout the briefing and design stages. Not only did the client and architect get a better insight in the user's needs, but the users also perceived to be more satisfied with the building and perceived that engaging them had led to a building which better fitted their needs. Furthermore, they perceived that the engagement had led to an increase in commitment and ownership of the building. Since this model is based on a similar approach, similar added values should be suspected. However, since there is no valid empirical data to support this theory, the concept of user engagement should be implemented in practice.

To increase the value of this framework, further research on more cases is therefore required. Different cases, with different functions and different client types should be thoroughly studied, and the effects of engaging the users should be reported, which should result in relevant data to increase the value of this framework and apply it to different project types.

7.1 Recommendations

As mentioned throughout the text, it is recommended that further research be undertaken in the following areas. Firstly, the criteria on which the designers and architects are selected, in this concept, have to be further defined. It seems reasonable to add additional social selection criteria. Secondly, since this model provides an overall insight in the different engagement elements, a detailed description of for instance a user-engagement workshop is not presented. Therefore, a more detailed workshop manual could be developed, to provide project organisations to apply this strategy in practice. Thirdly, the formal relationship of the user representative manager should be investigated.
References


Websites