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## Construction Clients Challenges - Emphasizing Early Stages

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### Abstract

The built environment sector faces many challenges in terms of urbanization, energy efficiency, climate and demographic changes, etc. In addition, future today unknown challenges. Meeting these - and create sustainable, attractive cities and regions - cannot be done without the knowledge of architects, engineers and urban planners. Characteristic of a sustainable built environment is that there are many actors involved, both for professionals, policy makers and concerned parties. Among all these, the construction client has a significant role, a position that largely allows for the influence and change in attitudes, behaviors and procedures required for managing a sustainable transition.

The paper consists of three parts, a basic survey of client's role's future challenges in managing construction projects based on questionnaire and interview studies, and a part where national and international examples are investigated. The third part develops new models of explanation.

Although there is consensus on the importance of long-term and sustainable approach to urban development, much remains before this is reflected in the processes and patterns of organization for project implementation and management of the built environment. Ex. the short-term effectiveness in individual construction projects combined with long-term innovation to support sustainable development.

An important question is how the understanding of social structures and activities can be integrated with technical and scientific knowledge for the assessment of costs in relation to public benefit.

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## 1. Background

The challenges facing the built environment area include urbanization, increasing energy efficiency, and climate and demographic changes. We can add future, as yet, unknown challenges to this list. Meeting these challenges and creating sustainable, attractive cities and regions is not possible without the knowledge of architects, engineers and urban planners.

Sustainable built environment involves many parties – professions, political bodies and stakeholders. The construction client has an important role amongst these parties. This role lets the client exert pressure to influence and change the attitudes, behaviours and procedures that must be addressed to achieve sustainability.

There is general agreement on the importance of long-term and sustainable development of our built environment. A great deal remains to be done, however, before this conviction is reflected in the processes and organisational patterns of project execution and property management. For example, one question is how to combine short-term efficiency in individual construction projects with long-term innovation that supports sustainable development.

### 1.1. *Costs and benefits*

Another important question is how insight into social structures and activities can be integrated with technical and scientific knowledge to evaluate costs in relation to society benefit. The way clients can work together across the built environment sector and improve their environments, buildings in use, and delivery of buildings, have become an increasing challenge over the last decades. Furthermore, the tradition across construction industry has been to manage for cost minimization rather than value optimization. Consequently, fixation solely on cost, or compliance with self-set budgets, is shown not to be acceptable in any society that sets high store by sustainability – to procure the wrong building cost-effectively is waste of money. There are several reasons for this failure, such as split incentives between actors and organizations, lack of evidence and knowledge as well as a complex distribution of the resources (internal capacity for construction clients to act and control the outcome effects of the built environment) in the decision-making process, are some explanations.

The built environment industry is one of Sweden's largest industry. The industry has a turnover of around SEK 1 trillion and employs around 500,000 people. In 2010 national construction investment was 266 billion SEK, representing about 8% of Sweden's GDP. Thus, the industry has a large impact upon society and the construction client function plays an important role within the industry, with its responsibility to govern this.

### 1.2. *Clients defined*

In this instance, the construction client means the entity that, at its own expense, initiates building, construction, or infrastructure projects (in accordance with PBL: the Swedish Building and Planning Act). The construction client is also the entity that interprets and translates an organisation's needs, expectations and wishes to set requirements and conditions within building and construction projects. However, the concept of a construction client is ill defined as it is merely set meaning by the client's actions related with initiating building or operating a physical facility. Clients use a facility as a means for conducting the business or service; thus, the facility is an instrument or a technology for meeting a purpose and this actually gives buildings a secondary interest to the client. In addition, the difference among clients (and users) when it comes to qualifications, institutional settings, discretionary powers etc. point towards a strategic overlook that will identify and possible even encourage multiplicity, divergence and heterogeneity rather than homogeneity, including aspects of the diverse characteristics of national construction business systems.

## 2. Aim and objectives

The overall purpose of the project is to improve the conditions for construction client organisations so that they are able to create lasting value for users and society through the implementation of sustainably-built environments which meet actual requirements.

The expected result of the project is an evidence-based and value-focused survey of the construction client's future challenges and value chains, special emphasis being placed on the early stages. The goal is to fill the knowledge needed to ensure that construction clients and built environment industry players are equipped to meet the future. This fundamental understanding-based research and competence development approach is a very important factor in achieving a more long-term change which affects many players at several levels, not least in the early stages of planning. This is also emphasised in the Government bill 'Forskning och Innovation' (2012), which prioritised this research area. The result is also closely linked to and has a decisive role in higher education within architecture and civil engineering to supply in the long term the necessary expertise within the built environment area.

The aim is to carry out the work in dialogue with construction clients (by established and innovative contacts with national and international client associations and networks for practitioners) and other key-stakeholders.

The results should be of value for academia as well as national and international agencies and stakeholders in private and public companies and client organizations.

### 2.1. Key objectives :

#### *Key objectives are:*

To identify key challenges for Constructing Excellence in the built environment with respect to different client's roles and capacity to act in between the end-users operational needs and the project managers of the construction process in order to transform the needs into value based requirements as basis for design, planning and production.

To investigate and identify the clients capacity to act in the decision making and planning process to fulfill the targets in the client brief/program, considering control of operational objectives according to core business goals vs. construction projects internal targets (such as time and cost). This will consider the value effect - in terms of better built environment delivered - focusing on how construction clients add core value. The amount spent on buildings, in initial capital and in use, is small compared to the value added by their occupants/end-users. The focus is on enabling occupier performance and minimizing whole life costs.

To provide a methodology which defines how construction clients can gain capacity to take action to deliver the goals laid out in the brief/programme consistent with business targets and users' needs, as well as technical specifications, required by the construction industry.

This involve establishment of a reference group, including identification of key-stakeholders involved in active executive management of construction projects (focus on both operational managers: "user-clients" and construction managers: "developers"). Aiming at investigating ways in which clients can define their value goals and achieve them by improving the usual quality of brief/programme making.

## 3. Overview of the research area, including key references

Study into construction clients is in its beginnings. In addition, much of the construction client literature can be said to be of a descriptive nature. Empirical evidence has been incomplete and anecdotal in nature and without counter argument (Boyd and Chinyio 2006, Bertelsen 2002). Nord (2012) believes that increases in construction client understanding require the black box to be opened and important challenges to be identified. Barrett (2008) has criticised the way the construction client role is conceptualised. Barrett wants to see a more pluralistic approach and explorative studies of the social and organisational aspects of the construction client function. Siva and London (2012) emphasise the importance of a better understanding of the mechanisms that coordinate core activity planning with construction planning. Wennström and Eriksson's (2006) criticism focuses on how the construction client role function has been seriously overlooked and Haugbölle and Boyd (2012) support this

criticism. There is a clear lack of dissemination of the construction client role function both downwards and upwards in the value chain. This criticism is based on the difference between what large construction client organisations say and what they do.

### *3.1. Positioning the client's purpose*

Earlier literature on the construction client role often emphasised the building process's own logic and misses the link with the core activity with respect to how to best design the actual working environment. Outlining the theoretical framework for research into clients entails putting the client's purpose central to research. As stressed by Haugbølle and Boyd (2013) such a placing is unique to earlier research - in which construction clients appear - as they rather reflect how other stakeholders see clients from their world. For example; in construction management research clients are seen as a problem for the operation of the construction industry (see for example Cherns & Bryant 1984). Earlier references in architecture emphasises provision of an aesthetic environment for clients (see for example Cuff 1992). Planning theory perceives clients as needed to be moderated in order to advance public jurisdiction (see for example Healey 1991). Work on Facilities Management sees clients as owners or providers of facilities (McGregor and Then 1999). Real Estate research understands clients as suppliers of assignments for specialist and consultants (Fisher and Collins 1997) or as funders of assets or property (Isaac 1996). Business and management research rarely see facilities worthy of comment however reflects on business operations (Huczynski and Buchanan 2007), hence does not state the field for research. Research on construction clients must be cognisant of, and having knowledge as well as understanding of these views, but need to move the research focus to the clients' perspective.

### *3.2. Construction client as an influential co-creator of sustainable built environment*

The construction client is responsible for interpreting and translating the core activities' goals and value creation to create good working conditions in our buildings and premises. This includes working environment design with a good understanding of the organisation's activities in combination with changes in technology, working conditions and building production organisation. A success factor is considered by Ang (2008) to be the ability to transform future company requirements into the built environment requirements at the strategic, tactical and operational level. Already, Thomas Kuhn's 1962 book, *The Structure of Scientific Revolutions* states that technology is socially formed and shaping. The starting point in Kuhn's science and technology studies is that technical objects and social relationships are bound together, that players and technology are developed at the same time. The difference between the social and the technical is not given in advance, but is a result of a reciprocal forming process. This project therefore highlights the construction client as an influential co-creator of sustainable built environment of the future.

### *3.3. Relationship to future international research*

Based on the systematic criticism of the 2000's relatively limited research on the role of the construction client, researchers from Denmark (DTU), The United Kingdom (University of Salford) and Australia (RMIT University) have made recommendations on the future focus of research (Haugbølle and Boyd 2012; Barrett 2008; Hampson 2006). Of particular importance is: a) to define what a construction client and user/stakeholder in the built environment industry is; b) determine the content and scope of construction clients' and users' value chains within different national and institutional contexts; c) identify different construction client strategies for procurement and management of built environments based on a life cycle perspective; d) classify methods for involving user categories in the design and decision process, e) analyse how construction clients and users achieve socio-technical change (International Council for Building Research, Roadmap, Clients and Users in Construction.)

However, this work also take departure in a number of recent projects that the author have been or are still involved (in charge of) and which together have given a good understanding of construction client roles and responsibilities associated with the complexity of the early stages in design and construction planning processes.

#### 4. Project description and methodology

Based on the existing methods and experience used by construction clients in the early stages, the project perform in-depth analysis of the clients decision making process and develop a methodology which can identify and assess the output effects of a building project targeting clients business- and user goals.

The project consists of 3 parts: a fundamental survey of the future challenges facing construction clients based on questionnaires and interview studies, the investigation of national and international examples, and the development of new explanatory models.

- A) Studies of how the construction client function is carried out in different types of companies and organisations (questionnaire and interview study): Focusing on: Which units handle the practical implementation of the construction client function within the company/organisation? How should the construction client function be organised to ensure that the company's or organisation's goals are achieved? What experience and expertise do the people who de facto hold the construction client role possess? How are business/organisational goals related to premises project goals with respect to financial, ecological and social sustainability? How is the construction client function implemented within the company, specifically the following construction client roles: facility manager, developers, user managers? What are the attitudes of company management to premises planning issues and the construction client function within the organisation (of strategic importance or not)?
- B) Studies of the role of the construction client function as requirement stipulator for the building and property industry with respect to the core operation's requirements for functional, long-term practicable and low-resource premises (Case studies): Including analysis of national and international examples. This part of the work will also be based on workshops with key stakeholders. Based on the outcome of the above stage examples where building design measurably contributed to achieving the goals of the core operations are scrutinized. Evidence-based criteria for building design similar to international experience (e.g. healthcare buildings) are to be developed in the future.
- C) Early stage: mapping and analyzing methods for need identification (systematic international literature study: International study (Denmark, The United Kingdom, Australia) of the construction client role in issues relating to determining an organisation's functions and its needs with respect to premises resources. Construction client's role as adviser to the core operations. Current practice is evaluated with respect to: Which requirements are set for the construction client function internationally and what expertise is required to achieve this? What level of knowledge of the core operations versus method knowledge does the construction client require in construction planning? The difference between client and user needs to be carefully acknowledged and their relationship better understood. Of importance is to generalize the results of the analyses.

From this and the above analysis, the aim is to develop new explanatory models and methodology which can support construction client's decision making in the early stages in order to support their capacity to take action to fulfill core business and user goals by sustainable outcomes, as well as strengthen the accomplishments on the demand-side of construction.

#### 5. Results

##### 5.1. Client Challenges in Denmark

The construction client organization Denmark organizes courses, seminars, thematic meetings and conferences to develop a professional client. During 2012 and 2013, they were concerned with "client and brand", "new forms", "clients' core competence", "business acumen" and "buildings as assets." Among the client member companies developmental characterizations of future yield have a high priority. Other requests have been focusing on

renovation issues and particularly focusing energy → efficiency at the initiative of the Danish energy-ministry. During the year they participated in various committees and working groups influenced the development on behalf of clients in the areas of agreement and terms of delivery, sustainability and energy efficiency.

### *5.2. Client Challenges in Finland*

RAKLI is Finland's Property Owners and Clients organization and its aims: to ensure that buildings and infrastructure meets the needs of its users, and that the built environment is functional and attractive. RAKLI believe that a sustainable building is increasing competitiveness and welfare - and that is important for Finland's success in international competition.

RAKLI is a major player when new standards are developed for the Finnish real estate and infrastructure. Legal and other advice related to the industry is available to members, and information on the Finnish market. RAKLI provides its members with ample support in R & D activities. It operates several projects annually in cooperation with its members, and is also actively involved in many common research projects in the real estate and infrastructure sector. RAKLI's recent research focuses on the development: asset management; property management and property investment. A major issue during 2012 and 2013 was to promote best practices and common standards. RAKLI contributes to the implementation of these in the above areas, as well as facilities management. It also supports the implementation of high standards for processes in the construction industry, real estate market relevant information and benchmarking.

### *5.3. Client Challenges in Norway*

NBEF is an association of clients, businesses and organizations operating in the building and property in Norway. They work to improve conditions for members in various fields. This includes defining and highlighting client and property owners' role. This provides scope for strengthening client member's influence on the Norwegian government, in matters NBEF want to promote. Through a joint organization created a professional environment that is based on the diffusion of knowledge and experience between members. Part of this is to protect the quality and process improvements within the construction sector and the promotion of good construction and good design. NBEF also works for the development, collection, analysis and systematization of indicators for benchmarking. They support their client members to maintain and develop values and create and enhance the benefits and efficiencies of the real estate business for the community and its members. In 2012 and 2013, the NBEF focused on input to the Norwegian construction policy; Digitization: BIM and independent control.

### *5.4. Client Challenges in England*

Construction Clients Group UK: After Sir Michael Latham's report *Constructing the Team* (1994) and Sir John Egan's report *Rethinking Construction* (1998) founded a number of different programs in England to drive the development of the domestic construction sector. One of these, which also received much attention in Sweden, was *Rethinking Construction*. In order to coordinate the various programs established *Constructing Excellence*. Client Group (Construction Clients Group) is a special part of *Constructing Excellence*. CCG is a forum where both private and public construction masters' interest. CCG is a British network promoting and combining public and private construction masters practice and improvements in construction. Its purpose is to: The client should be able to get higher value given procurement; Create opportunities for learning and sharing network for clients; Promoting best practice and industry improvement; Offering a portfolio of products and services for the client community; Influencing the British government's policies and future legislation; Being a common resource in key representative groups for private and public clients; seek to increase the client's expertise in procurement of the built environment; Strive for the best possible return on client's investment. The Construction Clients' Group" has in 2012 worked as a partner for recommendation 6.1 in the British government's "Low Carbon Action Plan" designed to: lead research through engagement of its developer community, to understand how the market values

low carbon, both today and in the future, and how incentives interact with the decisions of landlords and tenants, and investors for lower carbon emissions through our buildings and these are more energy efficient.

### 5.5. Client Challenges in Australia

In Australia, Construction Innovation organized several conferences with a particular focus on client issues. Cooperative Research Centre (CRC) for Construction Innovation is a national research, development and implementation center focused on real estate, planning, engineering, construction, and FM sector needs. CRC was established at the Queensland University of Technology in cooperation with the National R & D program for innovation in construction. It aims to develop tools and management systems to achieve efficiency in the construction sector with a focus on value for the client.

## 6. Conclusion

In summary it can be stated that the major future challenges facing the construction client consists of up to nine challenges, which were also and are interdependent. These were presented at the Swedish Construction Client Associations annual meeting in March, 2013 and summarized as:

- 1) Dealing with information overload
- 2) To identify, transform and communicate needs:
- 3) To develop models
- 4) Focus on safety
- 5) To develop sustainability
- 6) to address questions about the position and appeals
- 7) To define and communicate the benefits and value
- 8) To drive the development of BIM
- 9) to address interoperability

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