ETHICS OF THE DESIGN PHASE – A DESCRIPTIVE APPROACH

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ABSTRACT

This paper reports on a pilot study on the design phase in Norwegian construction projects using elements from lean construction approaches. The ambition has been to establish a descriptive picture of ethical challenges in the design phase in general, and of projects characterized by lean design in particular. In addition to a literature review and a document study, interviews with key participants were carried out according to a qualitative approach. The study was undertaken in order to address both general questions of ethics in construction project management, and more specific questions pertaining to the design phase of such projects. This research finds indications of actors manoeuvring in the design phase for own benefit at the expense of other actors. The findings indicate that the design phase poses significant challenges in light of tender documents pricing and exploiting cost reimbursement contracts. In some of the projects examined, participants were found to shift loyalty after transfer of contracts and they actively tried to steer the decision processes in their own favour. There does in fact seem to be a room of manoeuvre between what is unlawful and what is ethically sound in this phase.

KEYWORDS

Ethics, design, lean design, hidden agendas, trust.

INTRODUCTION

This paper intends to outline an understanding of ethics in the design phase as part of a more general enquiry within the field of the ethics of the Norwegian AEC (Architecture, Engineering and Construction) industry. The importance of increasing the awareness among practitioners, however, seems crucial to attaining what Mirsky and Schaufelberger (2014) maintain as the most important topic to the future of the AEC industry, notably "honourable, professional practice" (Mirsky and Schaufelberger, 2014 :vi). More recently the industry have witnessed an increasing interest in the field of applied ethics in general and in professional ethics in particular

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(Christoffersen, 2010). Different professions establish rules and regulations, such as medical doctors, teachers, social workers etc., and the number of publications is ever increasing. The authors of this paper have so far not seen this trend reflected strongly in publications concerning the AEC industry in general, or in actual industry agreements in Norway. Notable exceptions from this general statement include the writings of (Ray, et al., 1999; Fellows Liu and Storey, 2004; Collier, 2005; Bown, et al., 2007; Bröchner, 2009; ; Corvellec and Macheridis, 2010; Hill, et al., 2013).

Considering that the AEC industry in general and in Norway in particular typically receives attention as an industry of doubtful virtue, 1) where neither the police, the tax authorities nor the professional organisations fully master the challenges posed by professional practice (Andersen, Eldring and Roed Steen, 2014), 2) where the inherent complexity in itself opens the opportunity for suspicious dealings (Gunduz and Önder, 2012), 3) where fraudulent business practices undermine the reputation of the industry (Slettebøe, et al., 2003) and 4) that lacks a clear vision based on a fortified ethical foundation (Wolstenholme, et al., 2009), we find this strange. As Hill, et al. (2013) comments, there is probably no simple solution, no "quick fix", to the challenges of ethical nature that the industry face. Tackling such challenges necessitates, it seems, both insight and endeavour. We believe this proves especially true when considering the design phase of construction projects.

In this paper, we analyse ethical challenges in the design phase for the construction industry from a structural perspective. The underlying idea is that the manner in which the industry is organised and certain inherent characteristics form specific challenges of an ethical nature. Rather than presenting any clear (normative) framework of what is good and bad behaviour, we intend to outline the challenges posed in a descriptive manner. In other words: our ambition is to present certain elements pertaining to how industry practitioners judge practices with which they are familiar. The research questions we intend to address are:

1) What challenges of an ethical nature are commonly encountered in the design management phase of construction projects?
2) What are the structural (systemic) reasons for such challenges appearing?

Figure 1 illustrates a simplified categorisation of different behaviours, depending on whether they are lawful and ethical. It also illustrate that the distinction between behaviour perceived as ethical and behaviour perceived as unethical is not always clear-cut. If the behaviour is lawful and perceived as ethical, nothing is wrong. If the behaviour is not lawful, then it is clear that something is wrong. Our research is limited to lawful behaviours perceived as unethical, because this is where we expect to find the challenges of ethical nature.
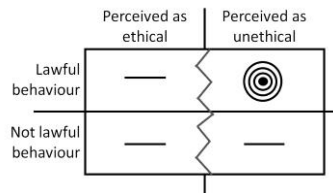
Figure 1: Extension of the law and ethical behavior, where this paper concentrates on lawful behavior perceived as unethical.

METHOD

The analysis presented in this paper is mainly based on interviews with actors with considerable experience from construction projects, in line with the recommendations of Yin (2014) – notably with key actors in four different Norwegian AEC-firms (a consultant firm and three contractors). In addition, a literature review of general literature on the subject of the design phase and ethics in construction management has been carried out in accordance with the procedures described by Bloomberg (2011). The initial academic footwork of the research presented here was carried out by two master students of project management analysing two case studies, particularly chosen on basis of their understanding of the field and personal initiative. Their interest in design management was of a generic nature – a sub-set of questions posed during the interviews addressed the concerned ethical aspects. Interestingly, these first interviews did not yield significant results – the students found the respondents to be unwilling to comment on the questions concerning ethics. Consequently, a more personal approach was chosen, where two of the authors of this paper contacted colleagues with whom they shared professional background. This approach proved largely more fruitful, even though the value-laden questions necessitated a certain period of convincing before the interviewees revealed pertinent information.

Semi-structured interviews with 14 professionals were carried out – four in group interviews, ten individually – with contractors and advisors in the construction industry having a broad experience in project based endeavours. All interviewees have played key roles in project execution teams. The interviews were open and flexible enough to include the possibility to encompass interesting observations.

All interviewed in this study were consultants or design managers, participating (or formerly participated) in projects using lean construction. The material presented constitutes a pilot study to the study of unethical behaviour in design. The limited scope of the study does not permit for generalising the results. However, as Flyvbjerg (2006) points out, even a small number of interviewees can constitute a powerful source of information to generate new knowledge.

THEORETICAL FRAMEWORK

In order to understand properly what is involved, a scrutiny of the concepts of ethics and design management respectively imposes itself. This scrutiny includes differentiating ethics and the law; normative and descriptive ethics; individual and socially oriented ethics; and the implications such delimitations will have for the study of the design process of construction projects.

ETHICS

Though often concurrent with, ethics must be separated from the field of the law in order to be fully understood. What is perceived as unethical can – in certain circumstances – be lawful, whilst what is perceived as ethically laudable can be deemed unlawful.

Ethics can be separated into normative and descriptive ethics. The first of these profess judgments concerning the manner of acting in the world. This is ethics as most have encountered it, the lessons promulgated being from different traditions such as deontology (Kant etc.), consequentialism (Mills etc.), virtue ethics (typically in the tradition from Aristotle) or various contemporary approaches (Habermas, Sartre, Lévinas , Foucault etc.). Analyses of this sort seem in fact – more or less consciously – to reveal how little that has been done of ethical analysis within the project management literature. See for instance Helgadóttir (2008) for an example of an analysis inspired by Aristotelianism. Descriptive ethics, on the other hand, typically analyses the judgments of behaviour in the world according to the vocabulary of ethics. Rather than developing a framework for judging the appropriateness of actions, such analyses typically investigate the reasons underlying such judgements in specific contexts. In this paper, we proceed according to a fully descriptive analysis.

Depending on which analytic level the analysis is situated, it is possible to distinguish individually oriented and social ethics (Ray, et al., 1999). The first of these concerns the individual as moral actor, whilst the latter concerns the ethical qualities of social systems. The intention of this paper is not to carry out any sort of blame game on a personal level. What occupies us here is rather judgments of interviewees as representatives of a group, that is, as professionals within the AEC industry analysing it as a social system.

In order to address questions as the above posed, with the limitations more or less explicitly outlined here, we base our analysis on Taylor (2004), who has developed the idea of a so-called social imaginary. The term denotes the common perceptions of what is acceptable behaviour and not within a certain social community. Such perceptions and opinions are often not properly articulated and therefore transmitted from individual to individual as "silent knowledge". The central point of Taylor's argument is that individual actions in the world – that is, why we act as we do – can be made understandable in light of a narrative explaining the function of these individuals within a greater whole. The analysis of such social imaginaries can thus help the analyst to understand why actors act as they do, and why certain actions are judged condemnable whilst others are judged laudable by the actors themselves. Applied on the AEC industry, it does, in effect, provide a tool for comprehending the judgements of professionals towards specific practices.

Taylor is not entirely unique in this undertaking, a fact he himself acknowledges. The concept of a social imaginary correspond to some degree to what Wittgenstein calls "background" or what Gadamer calls a "horizon of understanding" – for a discussion of these thinkers, see Dreyfus (1991) and Searle (1995). The appeal of the concept of Taylor – and which distinguishes it at least to some extent from these other conceptions – is the underlining of the social nature of this imaginary. To our purpose it is exactly this social anchorage we are seeking; notably, we want to examine how

certain practices occur and are judged within a social relationship such as that of the AEC industry.

According to the literature study carried out in the research process leading up to this paper, neither ethical frameworks nor juridical ordinances suffice for understanding the challenges the actors of the industry face. By nature, such frameworks or ordinances enter the scene post-conflict. In the following pages we intend to carry out a descriptive analysis of the design management and specific challenges posed in the design phase.

DESIGN MANAGEMENT

The design processes constitute a key linkage point between the expressed needs of the client and the actual realization of the construction project. Not surprisingly, this is a phase where priorities predictably clash, most notably where actors can be suspected to follow their own agendas rather than the general project objectives. Understanding the nature of the challenges involved in this phase constitute a necessary step in the progress towards the development of measures against unethical behaviour. In the following, we therefore outline some of the features found to be the most influential to the understanding of the design phase in contemporary literature, before summarizing the implications of these for the field of ethics in the design phase.

Eikeland (2000) tend to divide the building process into three sub-processes; brief process, design process and the production process. Riba (2013) divides the building process further down to seven phases; Preparation & Brief, Concept Design, Design Development, Technical Design, Construction, Handover and Close Out and In Use. Although these models are usually shown as a linear sequential stage models, Eikeland (2000) points out that the brief-, design- and construction process in practice function more in parallel and overlap than what can be expressed by such a sequential representation.

The building design process consists of pooled, sequential, reciprocal and intensive dependencies between tasks (Thompson, 1967; Bell and Kozlowski, 2002). A standard project management approach (e.g. Pinto, 2013; PMI, 2013) are suited to manage the pooled and sequential dependencies, whilst the reciprocal dependencies can be challenging to manage with such approaches. However, it is important that the design manager knows that the different interdependencies will vary throughout the design phase and sometimes the design phase consists of all four types. Consequently, making the design phase complex to manage as different tools and methods might not be capable of handling them all simultaneously. By identifying the different interdependencies, the manager can use the right tools to improve the design team performance (Knotten, et al., 2015) Further, trust is crucial for the performance of a design team (Mila and Aki, 2012), lack of trust between the participants will have a negative impact on communication and the productivity (Erdem, et al., 2003). According to Larson and LaFasto (1989), trust consist of four elements: honesty, transparency, consistency and respect. Trust is broken if one or more of these elements is absent. Consequently, just adding a method or a tool is not adequate, there needs to be a basis for trust between the participants. According to Martin and Songer 2004, cited in: Ghassemi and Becerik-Gerber (2011) traditional contractual models (contract models like Design/Build, Design/Bid/Build (Lædre, 2009)) encourage each project member to concern itself with its own interest rather than the interest of the

project as a whole. The design team therefore needs a contract model that engages the four elements of trust to gain an open and transparent process with high degree of collaboration. According to AIA (2007) mutual respect and trust is the single most important principle of Integrated Project Delivery (IPD). However, according to Smith and Rybkowski (2012), trust is currently rear on projects with traditional contracts and additional research is needed to determine if IPD and other relational contracts are capable of systemically supporting higher levels of trust. In sum: the design phase of a complex construction project is coordinated by mutual adjustment. For this to be efficient, you need direct communication and trust. This creates an environment for rapid design, but also possibilities of unethical behaviour.

RESULTS AND DISCUSSION

Not surprisingly – in light of the theoretical framework presented above – several ethical challenges are found to arise in the design phase. A main characteristic of this phase consists in its being potential in nature, making an unethical decision usually not detectable before far later in the building process. According to the impression of the interviewees, the ramification of such unethical decisions usually ends up costing both parties more than it would have if they had acted ethically in the first place. At least it feels like it cost more, in cases where such behaviour end up in court and the parties end up fighting for scraps.

All of the interviewees acknowledge the ethical challenges in the design phase. As described in the methodology chapter, however, getting them to talk about it was to some extent challenging. Nonetheless, certain highly interesting points came out of the interviews. Contracts and tender documents were identified as main points of contagion, and, consequently, creating the room for unethical decisions in the design phase. With insufficiently developed tender documents not describing the interfaces between the work packages, different disciplines can speculate on that and be awarded the contract on a price that seems cheapest. The final price can be totally different from the initial price. We can summarise the main findings as follows:

- **Pricing the tender documents**: If the tender documents are poorly described or even wrong (not buildable), they give the different disciplines opportunity to speculate and price their work package cheaply in coherence with the tender documents knowing that the client will have to order more. During the design process they know a lot of variation orders will appear, and that they can price changes high. Inversely, the client can omit necessary specifications, or include imprecision in the tender documents, in order to transfer risk to the contractor concerning the choice of solutions actually chosen. "*Pricing of the tender documents is only done of what is described, and not of what should be included to deliver a complete offer. That is the way the industry is. Procurement competence at the client is a problem*" n.n Consultant.

- **Exploiting cost reimbursement contracts**: Each discipline is responsible for logging its own hours in the project, and this logging is to some extent difficult to control for the client's project manager. Interviewees have experienced that the disciplines exploit that it is hard to predict how long it takes to come up with a solution and to design it. Although none admitted that they did it themselves, they were sure someone did log more hours than

actually spent on the project. *"Usually, a consultant firm has several projects at the same time and if one of them is larger than the others it can be easy for the consultant in the firm to allocate resources from the smaller ones to the largest one."* n.n Owners representative.

- **Shifting loyalty after transfer of contracts**: Designers can sign an initial contract with the client, which is transferred to a contractor later on. The designers shift from being contracted by the client to being contracted by a contractor. The client transfers their contract to the contractor. The interviewees perceive this as a problem for the designers, as the contractor will have considerable more focus on productivity than the client in the early phase. After the contractor has taken over the design contracts, the client still approach the designers directly with questions about design alternatives and technical solutions. However, even though the designers still feel obligated to answer the client since they had a former relationship, the contractor – which pays their bill – do not want to pay for this. The loyalty shifts from being with the client – who cares about the effectiveness – to being with the contractor – who cares about the productivity. The client tries to bypass the contractual frames of the contract to achieve something.

- **Sub optimising**: The decision process and the information needed to make a decision can be biased, so that the decision will gain the designer rather than increasing value for the total project. For instance, the structural engineer in a project can put severe constraints on the architect's room to manoeuvre when recommending the client to choose between cast in situ and precast concrete. Another example is when the designer knows about a better design solution, but deliberately ignores it because it involves extra work and the benefit comes to the other participants. According to the interviewees, this problem becomes larger the more specialist designers that are contracted in the project." *"I have experienced that consultants has withheld informations so they can use an easier solution. They do not want to explore the possibilities."* N.n Architect.

To these main points, several interesting stories concerning ethical challenges experienced in the design phase emerged. For instance, there was one case where the contractor in a design build contract discovered a questionable solution to fire safety. The contractor hired in a third party fire consultant and got him to look over it and come up with a safer solution. The contractor sent a variation order request to the client, who rejected it because of a higher price and a reference to the first fire consultant that had written a note about his solution being in line with fire safety regulations. The contractor was therefore posed with the following ethical question; should he just follow the contract, or should he upgrade the fire safety. This was a large shopping mall, so a fire can have large consequence. The contractor did not want to take this risk (even if he – according to their contract – can argue that he is not responsible) so he upgraded the system. Now, after the commissioning of the building, the client still does not want to pay the upgrade bill. The case ended up in court.

According to our comprehension of the problem field, a close reading of contracts and tender documents form a main structural reason that open room to act in what is perceived to be unethical practices. The lack of trust among team members –

especially concerning their loyalty to the project – does equally seem to play an important role. The theoretical framework has illustrated that the reciprocal and iterative design process is challenging to manage properly with traditional management tools. There is a need for a more collaborative management style with a high degree of trust between the participants. In complex projects the ethical challenges are easier to misuse the more participants there are in the design team. Consequently, the participants can hide behind a "false" trust, and this opens for ethical challenges.

Of a more general nature, the access to information in construction projects is typically askew. Such projects involve a high number of actors, creating interfaces between roles where influence over the decision making process is characterized by lack of transparency on the subject of loyalties. Specialists are in general found to drive costs upwards, as their superior knowledge in parts of the project lead to increased costs in these particular areas.

CONCLUSION

From this preliminary study we have observed that what is characterised as unethical behavior arise among all the three main parties in the design phase i.e. client, contractor and designers (architects and consulting engineers). We have not in the analysis found sufficient evidence to conclude that certain forms of unethical behavior are particular to projects using lean principles. Rather, the principles seem generalizable to the design phase in the industry as a whole.

The main challenges encountered in the material consist in poorly described tender documents, biased logging of work hours, shifting and unclear loyalties among design team members, and sub-optimizing of work processes for own gain. Not surprisingly, the interviewees were reluctant to share such information with the initial analysts involved in the study leading up to this paper. Interestingly, the interviewees came up with several anecdotes revealing the true potential for unethical practices in the design phase, when enquired further.

A close reading of contracts and tender documents were revealed as a main structural reason that open room to act in what is perceived to be unethical practices. The lack of trust among team members – especially concerning their loyalty to the project – was equally identified as playing an important role.

As long as what is perceived unethical is not described, the field of design will be exposed to unethical behaviour. This paper constitutes one step to filling this knowledge gap. The limited number of interviews poses an obstacle to the generalisation of the results. More research therefore is needed to comply with this need. However, the findings seem to correspond to the limited research carried out internationally.

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