AN ANALYSIS OF 'THE ARCHITECTURAL PRACTICE' IN THE CONSTRUCTION INDUSTRY

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This paper presents an analysis of the continued existence of the Architectural Practice in order to determine issues that allow its survival. Wider activities are identified which are not declared in rational models of construction, such as supply chain management which see only the creation of the physical entity of the building. Practices are shown to operate in three dimensions: the task, the social relations of the project and in the longer term the 'professional project' of architecture. The 'professional project' in relation to the social and economic orders ensures its longer term authority in a market situation. This is complemented by an exploration of the transaction costs of the construction supply chain which are high because of the existence of latent objectives and indeterminate activities due to the cultural work of design. These hidden tasks are analysed in four transaction economies: symbolic, functional, social and financial where the objectives are negotiated as the project transpires. This process induces considerable uncertainty into projects which professional practices are able to bound and so dispel much of the anxiety. Thus, the social transaction skills required to negotiate within these economies ensure the survival of the practice, however they also provide the opportunity for manipulation that generates the severest criticism of the practice.

Keywords: architectural practice, supply chain, transaction economics

INTRODUCTION

The internal operation of architectural practices has received some research (e.g. Winch and Schneider 1993, Blau 1984, Cuff 1992) however, little research has looked at how this organisational form exists and operates generally in the construction supply chain. This research is made difficult by the seduction of architectural practices themselves where some of their idiosyncrasies draws attention to them and is easy to become the exclusive subject of research. Although these activities are by no means unimportant, this paper is seeking to look more broadly at the activities of architectural practices.

A number of anomalies to the existence of practices are evident. The external social and business relationships have changed significantly in the last 200 years however architectural practices exhibit many characteristics of their earliest existence. The complexity of the task both in relation to technological knowledge and organisational arrangements has increased substantially meaning that smaller practices struggle to keep up to date. The individualistic value system displayed by practices make it difficult to manage themselves effectively and can cause power conflicts with other parties even including the client. There is also much criticism of practices' abilities to perform: poor time and cost management, inappropriate designs, poor buildability of design, latent defects and poor integrative management skills. More pressure has been

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exerted by the limiting of duties and the abandonment of scale fees. However, practices are still complimented for their flexibility, creativity and energy.

Our consideration of the architectural practice arises from a desire to improve the delivery of buildings through an understanding of the realities of current practice. Our methodology has been to synthesise a number of ideas from the literature. The paper considers the failure of the supply chain concept to deal with architecture. It presents a new model of practice which shows practices negotiating within hidden social and cultural agendas. This discourse allows us to examine why architectural practices exist today and whether they will continue to do so in the future.

ARCHITECTURE PRACTICE IN SUPPLY CHAIN MODELS

The in-vogue analysis of operations in the construction industry is supply chain management. This model has a history of solving problems in logistics management and the car industry (Womack et al 1990). The nature of the model is that information or resources pass through agents who manipulate it. Each agent is seen to have a particular activity which they perform in a standardised, and so expected way, from information supplied by a customer at the end of the supply chain. It is the meeting of the customer needs and objectives that define the process and are used later to evaluate success of the enterprise. The basis of supply chain management is that the delivery of objectives can be considered as a whole determinate process. Agents are connected together in a known and fixed manner based on a generic process model of relationships and information flow. The isolation of particular agents, like the architectural practice, identifies a specialisation of activity to fulfil a purpose towards the wider task. The declared specialism of the architectural practice in the supply chain is *design* (Root et al, 1999).

In many ways the reification of design as an activity in society has a long history. Design has produced symbols initially of authority and subsequently of class which reveal its intimate connection with ‘cultural work’ that is as the expresser of, and reproducer of, the social status quo. Thus the social appreciation of design is connected with its production and these are set within a social milieu where people use it to identify themselves and separate themselves from others. Our current social level of development in this has seen the symbolism driven between classical and the ‘avant garde’ (backward looking against forward looking) almost to the extent that the culture cannot understand its own products. Indeed there has been the use of a priesthood of aficionados and cultural commentators who identify with the understanding of such signs in isolation from the rest of the world.

The Supply Chain is a rationalistic model (Seymour and Rooke 1995) of production and is presented as what business SHOULD be. It is seldom questioned whether it is possible or desirable to impose such a model on existing arrangements. The ability to do this is often referred to as ‘cultural change’(Seymour and Rooke 1995). The requirement for this change is explicit in both Latham and the Egan reports on the industry. However, neither appears to appreciate nor analyse why current processes exist and how they might be changed. The isolation of the architectural practice has not occurred, nor continues to exist, by chance. That is, the format of the supply chain itself and the compartmentalisation of sets of activities into identifiable specialisms, has developed in time not just through the nature of the wider task but also from the social relations of the parties involved. If there are inadequacies such that these tasks are not fulfilled then the format and specialism will continue to evolve. Thus a model

of practice must acknowledge the changes in practice from internal and external influences

The supply chain model focuses exclusively on the objective task subjugating all other activities to disturbances that must be eliminated. The aspect of design as 'cultural work' puts considerable pressure on this requirement of the supply chain model. The extent to which architectural practice is involved in this 'cultural work' may be questionable, thus, it is tempting to categorise buildings simply into degrees of design input (e.g. corporate HQ to industrial shed) (Fox and Cockerham 2000). However, it must be recognised that both corporate HQs and industrial sheds concern cultural symbolism even though the latter may be more commodified. Thus the nature of the task of architectural practice needs more exploration than the supply chain model can offer.

Winch and Schnieder (1993) take an architectural practice as being a 'knowledge based organisation trading in a distinctive competence of creativity'. Gray (1998) is critical of the simplicity of the supply chain model indicating that the linearity of the conception does not acknowledge the other interactions in the process. Many design activities do not obey these rules and so Gray (1998) suggests modifying the model with 'technology clusters' which group activities and agents together around larger tasks. In this Gray suggests that 'Design is the integrator (*of*) the supply chain'. In addition, as complex as design is as a task in itself, it only has cultural meaning in relationship to the other actors in the process. Thus the third inadequacy of the supply chain model is the way it fails to see the social setting of the project. Somehow the supply chain model requires objectives to exist outside the actors, except the client, who has them in a clear fixed form. However, we believe that as the projects evolve, the objectives evolve with them.

This idea that the task of architecture is more than building design is shown by Zukin (1996) and Cuff (1992). Somehow these additional activities are seen as illegitimate in the supply chain model and either must be hidden or stamped out in order to make the building delivery system work in the idealised model. However as Seymour and Rooke (1995) identify, such sentiments arise from a purely rationalist models of the world and are inadequate. They go on to speculate that appreciation of these wider activities is essential for effective 'cultural change' and an improvement in the industry.

A MODEL OF PRACTICE

In our initial analysis of literature and pilot interview data, we considered that three dimensions of activity where required to understand practice. These dimensions of activity are shown in figure 1. One is to undertake the task as determined by the supply chain although this is wider and more complex. Another is to operate the social relationships in the short term associated with the task. The last is to enable the long term existence of the specialism, namely architectural practice.

Professional practice is an ambiguous activity; namely it is the promotion of the professional project at the same time as the undertaking of the expected specialised task with the other actors in the process. We believe that to understand the operation of practice then the constitution of each of these dimensions needs to be understood plus the way they interact in a particular circumstance.

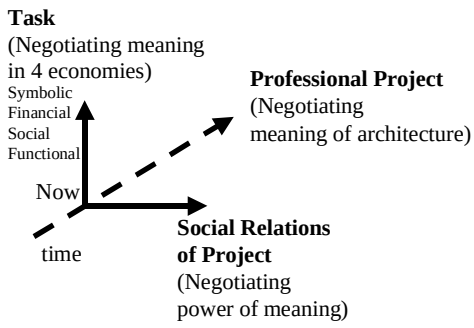

Figure 1: An Operational Model of Architectural Practice

ARCHITECTURE AS PROFESSION

Architectural practice exists as an organisational form because of the specialism that the profession can offer. However, Greenberg (1993) asks 'why, then, do architects need this extra baggage of being a profession? Wouldn't they be better off just being a business'.

The delivery of large scale enterprises was mainly associated with the establishment and continuity of power (Macdonald 1995). This has until the renaissance been exhibited either in the state/ruling hierarchy or in a religious hierarchy. Within these organisations there existed individuals with specialist knowledge which was used to meet the objectives of those in the higher strata of the hierarchy. Although not necessarily at the top or even within the power struggles of these hierarchies, such individuals had individual power through association with those in power. This mutual relationship between specialist power and hierarchical power presents one important characteristic of professional practice. Such people selected and trained 'apprentices' in the specialism as well as in the tacit knowledge of operating the balance between specialism and hierarchy. It is with the renaissance that the feudal hierarchies starting breaking down into infant capitalist organisations allowing professionals to separate themselves from the hierarchical power (Macdonald 1995). The changing nature of the commercial world required these specialism for its existence and profit. This transition first occurred in legal, medical and financial fields before in building construction. As Root et al (1999) state, these professionals gave a service and could be distinguished by those who delivered a product for example in an agricultural, manufacturing or trading position.

The long term position of a profession is well represented by the notion of the *professional project* (Larson 1977, Macdonald 1995). Professionals use their special knowledge to have command over the *economic order* and the *social order*. In the economic order, professions compete with other professions to be given legal monopolistic jurisdiction over a defined set of activities. This competition is arbitrated by state authority. In the social order, society develops a trust in the professions' use of its knowledge which is associated with symbols of social status such as appearance, manner and certification from academic institutions. This class position is solidified in the structural features of society giving the profession power to act in particular situations.

In maintaining this monopoly the profession will defend their economic order in the social order with a rhetoric of achievement and of the dangers of others failure. They will also establish a reproduction of this position from education and training, and from the solidarity of their membership against others and in support of themselves. It is the ability to achieve command of the social and economic order which establishes the overall professional project as *social closure*, namely the maintenance of their position. Architecture, unlike other professions within the construction industry, has achieved this social closure. This enables it to maintain legitimacy within the supply chain.

THE WIDER TASK OF PRACTICE

It is our belief that the actual task of building is fundamentally more complex than the obvious production of a building. As Boyd and Wild (1999) show, construction is not really about building, it is about organisational development. This means that many objectives are latent. This is contrary to most of the literature. For example, Root et al (1999) focus only on the physical outcome of the process in their model of delivery so that they state that it is possible: 'to isolate the non-deterministic elements of design activity from those that readily fit a deterministic model.'. We believe that this is wrong as it focuses on the apparent objectives and requires that these are separable from the latent objectives of the task processes.

The exercise of the professional skill utilises both abstract knowledge (Abbott 1988) and judgement (Larson 1977). However, it is the standardisation of skills which allows the identity of the professional service. Most professions have a recognised base of complex, systematic, codified and generalised knowledge that they bring to bear on activities and which also form the basis of training. However, the exercise of judgement is not amenable to standardisation. This 'indeterminacy' (Jamous and Peloille 1977) is significant for all professions but a balance is struck between technical and indeterminate knowledge for the operation of both the task and professional project (Macdonald 1995).

For architecture, its service is particularly intangible. To some extent it has more alignment as an activity with craft knowledge where these particular skills were called a 'mystery' (Macdonald 1995 p160). What is being purchased is a capacity to produce and the nature of creativity has resisted codification. This has implications for the way that a task can be undertaken. As Winch and Schnieder (1997) state 'it also means that the client interacts continually with the architects during the provision of the service – the market transaction with the client is relational rather than junctural.' It is this duality of the objective task and the negotiation of the task that means that design is not a deterministic activity. Such notions are not just important in architectural practice but are also evident in any process of design, innovation or research and development.

When professional practice is separated into deterministic and non-deterministic activities, problems are created. Once activities are categorised, they can be sequenced often such that the non-deterministic ones come before the deterministic. This imposes a false structure on design that can limit its operation. Such a model of the world sees the analytical categories as having existence and meaning in isolation, i.e. they are not just analytical categories but functional activities. Clearly, it is possible to identify deterministic activities of design. This does not mean that they are isolated and hence have meaning (other than for the activity of defining) separated from the whole. This

also does not deny that a deterministic model can be useful nor even that design can be done in a deterministic way.

Uncodifiable and latent transactions do not involve explicit communication in words rather they are a product of a deeper understanding and empathy. The languaging of the latent is culturally and class specific and it is itself less about words and more about implied understanding ('you know what I want'). This idea adds to Roots et al (1999) separation of product and service where they state that the languaging of the objectified process causes division in the construction team; in our conception no players other than the architect are aware of, or involved, in the latent objectives. This allows architecture to work unchallenged in the cultural arena both of where it is currently and where it could go to in an acceptable way.

ECONOMICS OF LATENT AND INDETERMINATE ACTIVITIES

The continued existence of firms with particular roles within a supply process requires them to have acceptable transaction costs. The notion of *transaction costs* acknowledges that communication of information between parties (i.e. transactions) requires time, resources and money (Williamson 1975). *Information impactedness* results when, because of excessive quantities of information parties do not know that their information is needed or where to look for information (this is termed *bounded rationality*) or when parties intentionally withhold information to take advantage (this is termed *opportunism*).

As shown in the last section, transactions in design are both latent and indeterminate. This means that much information is impacted in the construction process. Thus, as Winch (1989) states: 'in a situation where the environment is too complex or uncertain for all alternatives to be fully specified, the ability to take rational decisions is limited, or bounded, and transaction costs tend to be higher'.

Transaction cost analysis is part of organisational economics (Griesanger 1990). We use the term 'economy' to identify the subject area of the set of negotiated transactions that are involved in the task of the architectural practice. This notion also arose from Zukin (1996) who introduces the term *symbolic economy* that we have taken as one aspect of the architectural practice world. In her discussion she discusses other factors which we feel need to be brought to the fore and categorised in the same way. These include the *social economy* and *the financial economy*. Finally following Cuff (1992), we feel that architectural practice has not abandoned *the functional economy* that is making buildings work as social settings and technical products even though many commentators see this as architects' weak area. We shall outline in more detail these economies then show how they can be used together.

Symbolic economy

Buildings do not just perform a technical function; nor are they simply aesthetic artefacts. Indeed as Zukin (1996) describes 'Framing architecture is not primarily a visual problem; it is a problem of social power'. The symbolic economy involves creating and exchanging information between a wider society and 'by social groups and institutions that compete to appropriate space' (Zukin 1996). Thus we see, on the one hand, design as a commodity to be packaged and sold for mass consumption and, on the other, an exclusive statement to declare individual difference and importance to anyone else.

Social economy
Alongside the creation of social power, architectural practices have found a place within the wider social order as protectors of the built environment. This has ranged from a belief that buildings can be part of an engineering of society (Le Corbusier's cities in the sky, Oscar Newman's defensible space) to the upholding of a wider social identity in towns and cities through the planning system (Prince of Wales' model village Poundbury, Richard Roger's discovery of sustainablity). They can, therefore, portray themselves as servants of society engaging in altruistic development. Indeed this activity is part of what Macdonald (1995) requires in the professional project to command the social order whilst at the same time being legitimised by the government.

Financial economy
Clearly as the symbolic economy can be commoditised, it becomes an aspect of selling of space. However, in a more fundamental way property is a significant part of our financial markets both at a domestic and commercial scale. Property is stored wealth to be activitated when needed or passed on in an hereditary system. It still forms the bedrock of capital defining ones rights as a citizen whether political or economic. That the building delivery process is also concerned with creating and exchanging within this financial economy means that it is often indistinguishable from it. It is within this economy that management efficiency over time and resources is critical for success. However, it can always be argued that the issue about initial building cost is negligible against the substantial profits that property has shown in the long term and this opens the door to reasoning from the other economies.

Functional economy
The needs of buildings to perform functionally are multifarious. There is the task of protection from the environment, there is structural integrity of standing up on firm ground, there is the ergonomics of space and there is the capability of the building being built and maintained. The proposition that detailing and construction method can be completely accommodated within a determinate technical knowledge base undervalues the complexity of the technical and social task. This is made worse by influences from the other economies, such as when the symbol of the new or the desire for lower costs, forces the adoption of novel technologies. Further, the functional economy, particularly in Britain, does not have high social status. Even though vociferous clients proclaim its virtues, they are unwilling to reward it either financially or as 'cultural work'. To that extent, there is a limited skill base to do this successfully. In other countries, building engineering has more status and hence attracts more reward and more cultural reproduction and so there is greater entry by people with the right abilities. This is the case within the USA where the functional economy is a significant part of its 'cultural work' providing identity and social regard so that here excellence in technical codified activities is valued.

THE EXISTENCE OF THE ARCHITECTURAL PRACTICE

Considering figure 1, architectural practice involves working on the task, the social relations of the project and on the professional project. This is done not in a supply process where objectives are handed down to be delivered but in a symbiotic act of negotiation. In a negotiated world, futures are co-produced by the participants in relation to their power over meaning. For the task, the negotiation is around the meaning of the objectives in the competition within the social, functional, symbolic and financial economies. For the social relations, the negotiation is around the power

over meaning. For the professional project, it is around what is architecture and who can define it.

Thus, the real complexity and skill of practice is in the management of a continuous evolutionary process of negotiating meaning in the four economies alongside the evolving character of the social relations. Cuff (1992) introduces a similar notion which she calls 'translation as a social art'. This she sees as being an activity that architects have undertaken but have not cultivated. Thus, architects may not be good at it, however, we believe success will exhibit this. In this translation, everything is basically indeterminate we just extract determinacy out in order to cope with the stress of activity and also as way of eliminating or testing solutions in a form of iteration. The final product is just one acceptable, compatible, coherent, and consistent solution. For social and psychological reasons people let themselves believe that there is a determinate approach which just needs to be found. This situation of an uncodifiable process induces an uncertainty into the supply chain that needs to be managed. As organisations build, they are particularly underbounded and exhibit emotional uncertainty (Boyd and Wild 1999). As a task becomes bigger and more complex our bounded rationality makes it feel out of control and so it depends on others whom we cannot trust. Our uncertainty rises two fold: the complexity of the task and the lack of trust in the relationship.

The emotional potential of projects is too high; it needs to be broken down and handed on to cope. Professional practice bounds uncertainty in functional areas and so dispels some of the anxiety of development. If practice was delivered in a hierarchy then the uncertainty would be handled by hierarchy. In such a case it either, is suppressed by the bureaucracy or explodes in value conflict. It is the variety of desires which maintains the need for practices, however, this process encourages hidden desires for more symbolism and/or financial deliverables by all parties. This is a seductive situation for architects to act on their own desires for self-affirmation and allows them to believe that clients' really want what they want to give. It also allows them to argue from one economy to another to convince the client of the immutability of the design.

Architectural practice's ability to undertake 'cultural work' and at the same time maintaining its class position has enabled it to avoid the commercial ravages of codification and accommodation within a deterministic arena. However, there is a continuous vulnerability as 'cultural work' is redefined outside the architectural practice. Power is placed differently and operates differently from the early days of the profession in the mid 19th century. For example, architectures current avoidance of technical codified knowledge gives it problems in the functional economy. The supply chain model problematises (Wright 1994) the deterministic activities of architectural practice. Problematisation is a process of interpreting problems from a particular perspective, normally the power perspective e.g. worker non-co-operation is a problem for managers as seen by managers and researchers employed by managers. Thus, this conceptual reductionism of the supply chain model problematises design as part of a political dialogue and the supply chain concept is a weapon in this re-negotiating of power. The power arena used to include an alliance between architects and clients because of architectures class position. Because of corporatism, this alliance has substantially broken and vociferous 'captains' of commerce hold the power (Green 1999).

However, successfully configuring a new supply process by creating new organisations with different groups of activities, requires a thorough awareness of new

transaction costs. As Griesanger (1990) observes: 'For each case *(of re-configuring)* the logic is the same: first the dimensions of frequency, uncertainty and asset specificity and next, efficient governance relationships are sought that will protect against opportunism'. The construction supply chain is fundamentally uncertain, requires a high frequency of transactions and is very dependent on particular relationships (i.e. asset specificity). Thus any change in the supply chain format will involve for some considerable time extremely high transaction costs as the system evolves to cope with the new arrangements. In the end, these costs are unbearable and the old arrangements are reformed.

CONCLUSION

Architectural practice does not exist contrary to its ability to perform however much the social/political arena suggests it does. The current fragmented delivery system is successful in relationship to the real and wider task in hand. Indeed, it has evolved to cope with the exigencies of this task alongside the social and psychological necessities of the fragmented position. Society has a need to create buildings, all of which exhibit a tension between symbolic, financial, social and functional economies. Architectural practice has evolved to create buildings within these tensions. Many activities in construction have hidden objectives and involve indeterminate skills. Thus projects involve multiple on-going negotiations which can look out of control. The supply chain model fails to acknowledge these. The uncertainty and anxieties induced are managed by the actors (including the client) in the construction process. Each actor needs the other, however, the meaning of the task and social relationship can change in time depending on power. At the moment, the architectural practice is ensured existence because of the excessive transaction costs of re-configuring delivery in areas of latent objectives and indeterminate tasks together with the emotional security in the current arrangements.

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