Institutional work for new modes of evaluation

Emerging culture of assessment in evaluating sustainability in architecture

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ABSTRACT

This paper deals with the question of how understandings on criteria for evaluating sustainability develop in award winning architecture in 1990-2012 in the UK. Based on the concept of institutional work the paper examines the activities and actors that contribute to the negotiation and adoption of new modes of evaluating sustainability in this context. The findings show how institutional work activities change in emphasis over time from a political focus on acknowledging sustainability issues of wider societal importance to a cultural imperative of demonstrating sustainability credentials through scientifically measurable indicators. The urgency of demonstrating sustainability in fear of losing professional status in an increasingly technologically focused industry contributes to the rapid adoption of scientifically driven understandings of criteria for evaluating sustainability. The paper reflects upon the role of changes in emphasis between political, cultural and technical institutional work activities (Perkmann and Spicer 2008) in contributing to the adoption of new modes of evaluation in this context. The conclusion discusses implications for studies of institutional work as well as wider implications for the development of sustainability understandings within the domain of creative industries, and suggests directions for further scholarship on sustainability and organizations.

Keywords: institutional work, evaluation, sustainability, assessment criteria, architecture

1.0 INTRODUCTION

Evaluative constraints such as criteria, standards and rules are symbolic, uncertain and contested artefacts of wider cultures and traditions (Hoffman and Ventresca 1999). The institutional contexts as well as the actors and activities situated within them contribute to their negotiation and adoption (Hwang and Colyvas 2011). Studies examining how understandings on evaluative constraints develop have mainly focused on classification rules and categories (Bowker and Star 1999; Jones et al. 2011; Lounsbury and Rao 2004; Rao et al. 2003; Zhao 2005). Research has examined how new categories emerge (Jones et al. 2011; Rao et al. 2003) and classification systems develop (Zhao 2005). These processes have been studied primarily through examining shifts in institutional logics (Lounsbury and Rao 2004) emphasizing the importance of institutional logics as guiding principles giving content to new categories (Thornton and Ocasio 2008). In these studies criteria are viewed primarily as exogenous constructions guided by logics (Thornton et al. 2005) filtered by critics (Glynn and Lounsbury 2005) and recognized through established features (Jones et al. 2011). Few studies have addressed the question of how particular understandings on criteria emerge and develop over time.

Yet criteria are viewed as key evaluative constraints through which evaluation practices are made visible and certain types of knowledge are enabled or constrained (Camic et al. 2011; Lamont and Huutoniemi 2011). In a recent review of key work on evaluation Lamont (2012) raises important issues on the consequences of the widespread development of formalized evaluative practices and the possible flattening of evaluation across diverse disciplines. Her study draws attention to the importance of examining evaluation through a deeper analysis of understandings on criteria and calls for further empirical work on this topic. Similarly recent research in institutional work highlights the importance of studying the development of evaluative constraints through a closer inspection of the actors and activities involved (Slager et al. 2012). This paper responds to this call by examining the actors and activities that contribute to the negotiation and adoption of new modes of evaluating sustainability in award winning architecture in the UK.

The paper addresses the issue of how understandings on criteria used to evaluate sustainability emerge and become adopted in a creative industry such as architecture. In particular it examines drawing on concepts in institutional work the activities and actors that over time contribute to the adoption of scientifically driven understandings of evaluating

sustainability in award winning architecture in the period 1990-2012. Within this domain there has been an increased importance placed on evaluation of sustainability in particular as the industry finds ways to address issues of climate change and resource depletion. In this context assessment criteria are viewed by professional associations, policy-makers and building regulators as critical vehicles to resolving sustainability issues (Department for Environment 2005; Halliday 2007; RIBA 2011). Assessment criteria are widely formalized in policy, regulation, design guidance and various assessment measures with increased importance placed on their scientific technical features (Cole 2006). The RIBA[1] now includes a requirement for a sustainability statement and checklist with key assessment criteria for evaluating award winning architecture (Gething and Bordass 2006). The effect of this formalizing and privileging on scientific technical features is argued to be contributing to a restrained view of sustainability evaluation in architecture (Farmer and Guy 2002; Guy and Moore 2004). A culture of assessment is portrayed unable to deal with the problem of sustainability (Cole 2006). Yet little is known about how understandings on the issue developed over time, how a culture of assessment came to be and what role particular actors and activities had on its development.

The paper is structured as follows. The following section reviews evaluation in the context of the broader neo-institutional literature and introduces institutional work as the theoretical framework for the paper. This is followed by a description of the research background of evaluation of sustainability in architecture. The research setting is then introduced and discussed as a theoretically relevant empirical setting. The findings highlight the role sequencing of institutional work over time has on the development of particular understandings of sustainability evaluation in architecture. The analysis exposes how changes in emphasis between different institutional work activities and actors' participation over time contribute to the development of scientifically driven understandings of assessment criteria. Key activities of *acknowledging*, *appealing* and *verifying* are discussed as products of a change in emphasis between political, cultural and technical institutional work and actors' participation over time. Following on the discussion highlights the implications changes in emphasis between different types of institutional work and actors' participation have on the specification and justification of new modes of sustainability evaluation. Finally the conclusion discusses the key contributions to studies in institutional work as well as wider implications for research on sustainability and organizations.

[1] Royal Institute of British Architects

2.0 THEORETICAL CONTEXT

2.1 Institutional research and evaluation

Within institutional research on evaluation the focus of most studies has been on understanding evaluative processes of categorization and classification. Categorization is viewed as a process of determining in which group an entity belongs (Rao et al. 2003; Zuckerman 1999). As such categories act as sorting devices revealing the underlying conventions associated with actors' assumptions, values and interests (Jones et al. 2011). These assumptions, values and interests are argued by Thornton et al (2005) to be shaped by institutional logics. It is logics that are seen to provide the necessary selection features and criteria for justifying the particular category content (Jones et al. 2011).

The focus in most studies examining classification and categorization has been on the underlying institutional logics. Institutional logics viewed as "material-symbolic languages" (Friedland 2012: 583) are argued to provide content to actors on defining new or redefining existing categories (Thornton and Ocasio 2008). Research has examined the role shifts in institutional logics have in generating new categories of product (Lounsbury and Rao 2004), whilst Khaire and Wadhvani (2010) emphasise how the hybridization of components of existing logics make up a new category in a field. Glynn and Lounsbury (2005) highlight the role logics played out in critics' reviews can have on the categorization of an industry. The emergence of a new category in architecture is examined by Jones, Maoret, Massa and Svejenova (2011) whereby underlying institutional logics such as commerce, the state, religion and family associated with different clientele were found to be enacted by key architects. This in turn contributed to the emergence of a new category within architecture "modern architecture". Within these processes criteria are viewed primarily as exogenous constructions (Lounsbury 2007; Lounsbury and Rao 2004).

Slager, Gond and Moon (2012) shift the focus of criteria as exogenous constructions to the actors and activities that contribute to their development. Their study on the emergence of evaluation standards and underlying criteria for responsible corporate behaviour has theorized that standardization is a product of institutional work necessary to maintain the power of a standard (Slager et al. 2012). Although Slager, Gond and Moon's (2012) study focuses on standards it has significance for research exploring criteria as it reveals the institutional work involved in the development and maintenance of particular understandings on standards' underlying criteria. Key activities such as calculative framing, engaging and

valorising are found to contribute to the wider legitimation of the sort of evaluative constraints supporting and maintaining the regulatory power of standards (Slager et al. 2012). A key insight from their study is also that a wide range of actors including standard makers, users and third parties contribute towards the institutional work involved thereby shifting the focus of earlier institutional research on entrepreneurs and the work of the heroic few. Studies of institutional work are primarily concerned with a wide range of actors and activities that contribute towards the creation, maintenance and disruption of institutions (Lawrence et al. 2009) viewed as social conventions (Douglas 1986).

2.2 Institutional work-context, actions and actors

Institutional work is concerned with an endogenous view of these social conventions, rules and criteria suggesting actors situated at the field, organizational and individual levels can contribute towards their change as well as continuity (Lawrence et al. 2011). Institutional work is defined as "purposeful actions of individuals and organizations aimed at creating, maintaining and disruption institutions" (Lawrence and Suddaby 2006:215). Perkmann and Spicer (2008) suggest a typology of three clusters of activities- political, cultural and technical which contribute towards processes of institutional change and continuity. Within these clusters institutional arrangements are created, maintained and or disrupted (Lawrence et al. 2009) by actors who possess specific skillsets which enable them to engage into specific roles (Garud et al. 2002). Different types of activities are argued to be necessary mobilisers for new institutional arrangements such as criteria, rules and standards to emerge, become negotiated, persist or be disrupted (Perkmann and Spicer 2008). Similarly Hoffman (1999) hints at a cumulative framework involving cognitive, regulative and normative pillars as a necessary condition for new institutional entities to endure.

Political activities for instance are argued to be necessary for providing a social basis for new institutional arrangements to be constructed (Perkmann and Spicer 2008). In their study on forestry standards Zietsma and McKnight (2009) suggest political activities are informed by fragments of past arrangements enabling and constraining the survival of new institutional arrangements. Political activities such as advocating a practice, vesting, building rules and regulations or defining boundaries are seen as key to an institutional arrangement being created (Perkmann and Spicer 2008). Political activities are argued to be undertaken by actors who possess political skillsets such as forming alliances and coalitions, invoking

common interests and mobilising support or creating social boundaries via membership rules (Lawrence et al. 2009). Actors who are seen as possessing political skills are: the state, professional bodies and non-governmental agencies (Lawrence and Suddaby 2006).

Whilst political activities provide a social basis cultural activities involve shaping an institution in terms of its broader values, creating common identities and embedding normative attitudes (Zilber 2002; Zilber 2009). Cultural activities attend to the roles, values and norms which underpin institutions (Dacin et al. 1999). Actors who possess skills to undertake cultural activities are seen to be journalists, intellectuals and advertising agencies (Greenwood et al. 2002; Perkmann and Spicer 2008). Cultural activities are important for invoking professional values (Greenwood et al. 2002). In their study on the accounting professional association Greenwood, Suddaby and Hinings (2002) find that cultural activities such as appealing for change through invoking professional values enabled the specification and justification of a new organizational form in the accounting profession in Canada. Political and cultural activities can provide a social basis by which institutions are constructed and justified but they do not provide an understanding of an institution's functionality (Perkmann and Spicer 2008). This requires technical activities which relate to the cognitive pillar of institutions involving the construction of 'mental models' and shared world views (Scott 2001).

Technical activities are manifested through various ways such as building links between a new practice and established practices (Jones et al. 2011), mimicry as well as establishing abstract models of an institution (Lawrence et al. 2011). Mimicry requires prior and potential adapters to be understood as similar (Strang and Meyer 1993) through an entity's functionality (Greenwood et al. 2002). Jones, Maoret, Massa and Svejenova (2012) highlight the importance of examining functionality in their study on the emergence of a new category in architecture "modern architecture". Through examining how building materials were interpreted in exemplar buildings over time Jones, Maoret, Massa and Svejenova (2012) highlight the importance of technical work as a way of establishing a new category's content. Technical activities are enabled through techniques of demonstrating problems of efficiency by juxtaposing old and new templates for organizing (Greenwood et al. 2002). Actors who are seen to possess technical skills are those understood to have analytic capabilities and professional expertise such as consultants and knowledge-professionals (Powell and DiMaggio 1991). Technical work is aimed at reducing ambiguities and transforming a

loosely described practice into a precise one furthering the entrenchment of an institution (Perkmann and Spicer 2008).

In most studies institutional entities are not exogenous as previously understood but subject to transformation, interpretation and alteration of existing arrangements. Whilst the various activities that contribute to political, cultural or technical work clusters have been well described their relationship to each other and their context over time is less well understood (Perkmann and Spicer 2008). Understanding the relationship and sequencing between different types of activities and actors over time is particularly relevant in institutional transformative processes (Hoffman and Ventresca 1999; Perkmann and Spicer 2008). Hoffman and Ventresca (1999) suggest the most durable institutional changes are those underpinned by multidimensionality. However, it is less clear how multidimensional types of work clusters coexist and enable or constrain each other. Further empirical work is required to examine how these types of work clusters associated with the development of new institutional entities such as assessment criteria play out. The following section introduces the research background and setting for the empirical study.

3.0 RESEARCH BACKGROUND AND SETTING

3.1 Evaluation of sustainability in architecture

Within the broader context of architecture there has been much contestation on the issue of evaluating sustainability. Two approaches emerge from current research- one focused on reviewing evaluation as an issue of tool and technology development (Ding 2008; Haapio and Viitaniemi 2008) and one focused on examining the social and cultural considerations pertaining evaluative processes and practices (du Plessis and Cole 2011; Farmer and Guy 2002). Within the technologically determined literature the overwhelming emphasis is on tackling criteria as objective rational choices to be weighted, categorized and sorted. The sociologically driven research highlights the need for research that examines the social construction of evaluative processes including the use of criteria.

Within this stream of research there are recent calls for a deeper analysis of how criteria are interpreted and negotiated in this context (Cole 2004; Guy and Moore 2004). Guy and Moore (2004) argue that criteria for evaluating sustainability within architecture stem from world conferences in Rio in 1992 (United-Nations 1992) and Kyoto in 1997 (United-

Nations 1997). In their study on sustainable architecture in Europe and North America they argue that definitions of sustainable development such as the "Bruntland definition" have provided the guiding principles for key criteria for evaluating sustainability within architecture. The Bruntland definition developed from the World Commission on the Environment report in 1987 called upon two concepts: "future needs" and "resource demands" as necessary mobilizers for change to sustainable development (Williamson et al. 2003). It is argued that these concepts have dominated evaluation of sustainability within architecture and contributed towards a proliferation of scientifically driven understandings of assessment criteria (Guy and Farmer 2001; Guy and Moore 2004).

Others argue that assessment models such as BREEAM and LEED have contributed to the legitimacy of particular criteria and enabled their wider expansion (du Plessis and Cole 2011). Studies show how the use of these assessment models can make certain issues visible and hinder others thereby locking out possibilities (Schweber 2013). In her study on the use and effect of BREEAM on clients and construction professionals Schweber (2013) reflects upon its limitations and consequent "lock-down" of variation. In contrast Dammann and Elle (2006) focus on how assessment tools are interpreted by different stakeholders in construction. Their study concludes by suggesting consensus between different groups is unlikely. However, they argue by examining the different mind-sets new understandings of how assessment tools are positioned within this context could be made possible. Moore and Wilson (2009) examine the development of green building codes in America revealing how seemingly rational and objective codes reflect the social values that underpin them as well as the objects and spaces they regulate. The importance of examining local interpretations, values and culture is raised by Henderson (2007) in analysing the introduction of straw bale technology into building codes in the US. The paper follows through an ethnographic study the practices and discourses on ecology and sustainability in two states suggesting that classifications and standards need to be regarded as "points of departure" rather than rigid standards.

In most studies, issues of interpretation and negotiation of evaluative constraints are highlighted as important aspects of examining how understandings of sustainability develop. What has been overlooked is an analysis of how particular understandings on criteria emerge and how new modes of evaluation develop as well as what role actors and their activities have on their negotiation and wider adoption.

4.0 RESEARCH METHOD

4.1 Research design

The starting point for the research was an interest in exploring the way understandings on assessment criteria used to evaluate sustainability develop in high quality architecture. In order to study how understandings on evaluative constraints develop over time Jones, Maoret, Massa and Svejenova (2011) suggest an analysis of exemplars using archival research methods. Ventresca and Mohr (2002) characterise archival methods as formal methods that treat archives as data to be collected, analysed and measured directly. For instance in their study on the emergence of understandings on modern architecture Jones, Maoret, Massa and Svejenova (2011) analysed discourses on key critiques and reviews of award winning buildings and architects in the period 1870-1975. This provided historical evidence of the evolution of understandings in architectural practice and the emergence of modern architecture. The methods for this paper draw from this line of research focusing on the institutional work that contributed to the development of understandings on assessment criteria for evaluating sustainability within award winning architecture.

4.2 Data collection

The focus is on discourses that mention criteria for evaluating sustainability in award winning architecture. Data was collected from 90 published articles (out of 232) from one of the leading UK architectural journals the *Architects Journal* in the period (1990-2012). The *Architects Journal* was chosen as it offers coverage for a mainly architectural audience and reports on issues pertaining award winning buildings. Publications offer coverage for a specialized audience, providing information through the "frames of reference of the focal industry's readership" (Hoffman 1999:356). They provide a medium for discourse, space for showcasing latest approaches and precedents (Jones et al. 2011). The journal is regarded as a channel through which part of this discourse is conveyed. Furthermore, supporting material such as editorial commentaries on specific building studies, promotional material of awarded buildings, key policy and literature relating to evaluating sustainability in architecture was also consulted. From this process a chronology of key events related to issues on criteria development was generated (See Table 1).

The mid 1990's have been identified in the literature review as a defining period for the development of concepts relating to assessment criteria for evaluating sustainability in architecture. The study began in 1990, ensuring that the emergence and development of criteria within the context of awarded architecture was fully captured. The articles were selected by identifying discourses that mentioned assessment criteria searching for words including: sustainable architectural design evaluation, RIBA evaluation of sustainability, sustainability awards assessment criteria, eco design, and green design. From this process key assessment criteria issues (See Table 2) were derived.

Insert Table 1 about here

Insert Table 2 about here

4.3 Data analysis

Having identified themes within 90 articles (out of 232) that embody assessment criteria issues within specific time frames the initial stages of analysis focused on the archival data to derive a narrative of main developments. By using a narrative as an approach to organizing and validating data (Langley 1999) sense was made of the overall development of the criteria issues. Three periods were identified 1990-1997; 1998-2005 and 2006-present with break points between each marked by a key event; the completion of a particularly important awarded building and publication of particular policy which had an impact on the development of understandings on evaluating sustainability. The assessment of periods derives from the use of period effects which arise through the occurrence of particular events in studies of institutional theory such as political shifts, completion of particular exemplary buildings or the publication of a particularly relevant policy (Jones et al. 2011). Next, the

author worked between the data and the literature on institutional work, coding the archival data for the various activities undertaken by key actors.

From this process three constructs developed by Perkmann and Spicer (2008) were used to examine the shifts in criteria understandings over time. The first construct of "political work" captures the continuous activities related to aligning and supporting latest initiatives related to promoting particular understandings of assessment criteria within award winning architecture. The second construct of "cultural work" relates to activities undertaken to ensure the architectural community accept and employ the new sustainability assessment criteria. The third construct "technical work", refers to activities that support promotion of exemplar projects that employ the new criteria (See Table 3). In the next section the development of the institutional work constructs in relation to the criteria issues are described.

Insert Table 3 about here

5.0 FINDINGS

Institutional work for evaluation

The initial part of the data analysis focused attention on exploring how different types of institutional work shaped understandings of assessment criteria over time. The second part explored the typology of actors who participated within particular work clusters as well as the activities that dominated particular time frames within each cluster. These are outlined in Table 4.

5.1 Political work

Political work can be observed predominantly in the early period 1990-1997. During this phase there are great efforts placed by those linked to the professional association as well as governmental agencies to encourage a sensitive response to context; support a drive towards eco friendliness as well as instil a sense of hope and optimism. Despite acknowledgements that knowledge on how environmentalism can be achieved is scarce

positive attitudes are encouraged. Political work is marked by efforts such as those by governmental agencies to encourage procurement of "environmentally friendly" buildings. The building industry as a whole is directed towards adopting green principles.

> "The concept of…a building industry…committed through legislation…to green principles is the direction in which todays designers…need to be moving" (Edwards December 8th 1993)

The need to address building design in an environmentally sensitive way is demonstrated in political statements by those linked to the professional association as well as the government which call for protection of the earth and "pioneering new ways of building, working and living". Several activities directed towards encouraging this type of sensitive approach to design can be observed such as: *advocating* contextual sensitivity, *supporting* eco friendliness, *instilling* sense of hope, *promoting* exemplar projects, *supporting* unique design approaches and *highlighting* importance of environmental responsibility. The activities indicate a dominance of actors linked to the professional association and governmental agencies as well as understandings of criteria enveloped in concerns with nature, health and context. Awards judges partake in a number of activities linked to supporting unique designs and promoting particular eco-friendly design approaches.

The turning point of this period was in 1997 which witnessed the completion of the first eco-friendly office building for the BRE. The primary objective of the project was to demonstrate that environmental principles can be applied to design, construction and management, to give a comfortable, healthy environment that is also energy efficient. 1997 also witnessed a shift in government with a new political party taking over office. These two events were to mark a move towards a period of increased investment into sustainability concerns, demands for demonstrable projects and type of scientific rigorous architectural approach towards evaluating sustainability issues. During the phase 1998-2005 the political work is limited to supportive roles; the cultural work dominates this period and becomes the domain of multiple actors ensuring the dominance and strengthening of a move towards understandings of criteria as assessment steeped in units of measurement, concerns with efficiency and carbon reduction indicators.

Insert Table 4 about here

5.2 Cultural work

The turn of the century marks the start of "calculating carbon" and "measuring efficiency". The rhetoric of the period is rooted in "warnings"; calls for change in practice and acknowledgement that architects should be at the "forefront of this campaign, demanding that they consider energy efficiency at all steps of the design process". Whereas the early 1990's marked a type of cultural work which was about creating common identities such as calling upon "British architects" as having a particular environmental aesthetic", the new millennium paves the way for a more normative type of cultural work dominated by activities such as *warning*, *cautioning* and *sanctioning*. Whereas the political work dominant in the early 1990's was the domain of select actors, the cultural work at the turn of the century shows the participation of multiple actors. Criticisms of the RIBA Stirling Prize from designers and awards judges for awarding buildings whose designs "go against the principles of sustainability" begin to question how sustainability is judged in high quality architecture. The turn of the century paves the way towards emphasizing the need for a sharpened focus on calculating and measuring performance by the professional association and governmental agencies. Designers and awards judges warn of impeding loses to the profession as well as the loss of quality of design for the built environment should architects not embrace the increasingly scientifically driven culture of assessment.

> "And it calls on architects to be at the forefront of this campaign, demanding that they consider energy efficiency at all steps of the design process and advise clients on all sustainable options." (Dorrell 27th February 2003)

The architectural profession is criticized for not embracing sustainable design and giving over responsibility to engineers. The community is warned of consequences to the profession as well as the wider construction industry if they do not take hold of sustainability issues.

> "Architects could find themselves facing liability suits from clients, if their designs do not live up to the needs of the future. Smith anticipated some resistance from the

> profession, but said it should consider the tightening up of CPD rules as an opportunity to revise its practice, rather than as a burden."(Blackler August 29th 2002)

This shift coincides with both international events such as The UN Millennium Declaration adopted in 2000 as well as national events such as the publication of policies designed to promote and deliver a scientifically testable sustainable built environment such as the CIB "Agenda 21 on Sustainable Construction". The Climate Change Programme was launched in November 2000 by the British government in response to its commitment agreed at the 1992 United Nations Conference on Environment and Development. Although not part of the central government programme, in local government, a growing number of councils signed up to the Nottingham Declaration, launched on 25 October 2000, committing them to work towards reducing carbon emissions. In 2003 a "Better Buildings - Summit" was held with the aim of understanding how the industry could "decarbonise building stock". This in turn led to the adoption of various energy related acts such as The Sustainable Energy Act in 2003, The Energy Act in 2004 and the Climate Change and Sustainable Energy Act in 2006.

Environmental buildings are described through typologies and collective responses to ethical issues of reducing carbon and saving energy. Particular award winning buildings are identified and promoted as environmentally credible design approaches. The completion of the first energy efficient office building in 1997 paves the way for further commercial and larger scale residential buildings such as award winning Wessex Water offices completed in 2001 and the renown BedZed Housing Project completed in 2002. The growing number of policies and acts devoted to reducing carbon and energy efficiency as well as the wider spectrum of building typologies signifies a mainstreaming of a scientifically rigorous sustainable design.

> "Bedzed…has been described as an exemplar of sustainable housing design and shows the architect's great determination in turning ideas that a few years previously seemed purely theoretical into a constructed project" (RIBA Press Office, 27th November 2003)

However, in order for the increased requirement for performance, calculations and value to become accepted and take full ground there had to be significant efforts by a variety of actors to reinforce the changes and let them become negotiated within the architectural community. This occurred through the use of a variety of technical work activities by a wide range of actors most of which had an affiliation or link to the professional association.

5.3 Technical work

The technical work is less dominant than other work clusters and can be observed throughout all the phases. The early 1990's feature activities such as showcasing unique ways environmentalism can be achieved. This eco friendliness is promoted through self-sufficient natural ways of living in exemplar buildings such as the first autonomous building in the UK by Robert and Brenda Vale completed in 1993 as well as the Hockerton Housing Project, five one-story residential units using the same design tactic of natural eco-friendly living. Similarly, The Findhorn foundation, one of the first examples of eco-friendly communities, is advocated for its natural way of building and living. In this case the professional association changed its criteria to award an exemplar project and thereby endorsed its design as a way of achieving sustainable architecture and promoted its ideas across the architectural community. The concern with materiality, health and a balanced approach to living coincide with wider national and international efforts to tackle these issues. Between 1990 and 1995, the USGBC for instance worked with the American Society of Testing and Materials in order to create a rating system for sustainability. The 1991 Building regulations in the UK are solely concerned with health and safety, welfare and resource conservation. Natural materials such as straw, wool and clay were propagated as "sustainable" choices that would help achieve an eco-friendly look.

> "Buildings which are benign in terms of environmental impact, non-damaging to the health of users and frugal in the use of finite resources will gradually become more commonplace" (Edwards, 8th December 1993)

The turn of the century shows a shift in the technical work towards a streaming of activities towards *validating* and *verifying* designs that adopt a more scientific design approach. In the last period (2006-2012) manifest a discourse embedded in criteria mainly concerned with financial value. Sustainable architecture is described as one of responsible economic design, one that needs to resonate with financial global concerns and ultimately add value to its stakeholders. Measurement based criteria are still a relevant part of this rhetoric and continue to be reflected in the discourses however, are increasingly seen as value adding components themselves.

> "Energy-efficiency and other aspects of sustainability such as low embodied carbon and low waste underpin a new generation of buildings that not only have better environmental impacts but are also more pleasant to use, more productive and increasingly valuable compared to their predecessors."(Bennetts, 13th January 2011)

Interestingly all activities between work clusters are shared equally; whereas the early period signified a domain of political work and the mid period a cultural work emphasis towards the last period all work clusters experience a type of flattening and a shared motivation on value-adding. The technical work is manifest in *verifying* projects that show a way towards recognition of the "existing building stock". The RIBA is seen for the first time to award the Sustainability Award to a retrofit project Upper Twyford Barn showing a deeper recognition of wider economic problems and a motivation to tackle issues within the existing building fabric. Activities focused on *verifying* can also be observed in supporting designs that are seen to add value to the profession by adopting a more scientific design approach.

> "By trialling new designs, novel technologies and materials, and monitoring energy performance and occupant satisfaction, the exemplar building provides us with valuable knowledge that will inform and improve future design, allowing architecture to evolve." (Strong, August 3rd 2006)

Cultural work is also centred on *reinstating* importance of cost efficiency and financial value as well as protecting professional ideals. This coincides with major economic and political shifts with the UK officially entering recession in 2008 and a new Coalition Government taking office in 2010 with major public sector cuts and an agenda focused on tackling deficit, welfare and tax reform .

5.4 Summary

How did understandings on criteria for evaluating sustainability develop in award winning architecture? The early stages of the process were surprisingly not marked by a need for definition; although it was acknowledged that there was a lack of knowledge on how to evaluate sustainability activities were not geared towards necessarily solving this problem. Instead activities were motivated by addressing wider issues of societal importance that went beyond architecture and were concerned with issues of health, nature and local context. The lack of problem definition resonates with Greenwood, Suddaby and Hinings' (2002) study where early stages of theorization are marked by a need for innovation rather than problem definition. In terms of emerging understandings on criteria the early stages were marked by *acknowledging* broad issues- a fluidity of issues and a broad terminology. The motivation is not for innovation but a need to acknowledge issues of importance to all and not just the profession. Here political activities are emphasised and in this instance show actors who tend

to engage in political work- professional association and governmental agencies (Perkmann and Spicer 2008).

As the focus shifts to a need for demonstrating sustainability credentials- cultural work becomes emphasized and understandings on criteria take on a scientific focus and drive. The need for demonstrating sustainability in a scientific way is generalized to the profession (Greenwood et al. 2002) and activities are clustered around warning, sanctioning and cautioning. The architectural profession is seen as losing a foothold in an industry increasingly concerned with measurement, carbon and efficiency. Key events mark the shift in emphasis from political to cultural work. The completion of the first energy-efficient office building enables forms of technical work as it shows how issues of energy efficiency, carbon and performance can be achieved. In this period the cultural work is buttressed by political and technical work and undertaken by diverse actors not ordinarily associated with cultural skills such as the professional association, government agencies as well as journalists, designers and awards judges. This period is marked by *appealing for compliance*- here the need is not to acknowledge issues but to demonstrate sustainability credentials through tightly defined scientifically driven criteria.

In the last period the work clusters seem to flatten as the overarching focus is on value across all activities. By responding to sustainability in a scientific way and adopting measurement criteria projects are seen to add value to the profession, the field and wider society. Responding scientifically to sustainability is also seen to add financial value- increasingly important in times projected as austere, tough and debt-ridden. Here the task of justification (Greenwood et al. 2002) is elaborated and moves beyond justifying a need to demonstrate sustainability to justifying the now widely accepted criteria of efficiency, carbon and performance as necessary indicators of value. In this period activities are clustered around *verifying* outcomes of past activities.

6.0 DISCUSSION

Criteria are commonly understood as evaluative constrains (Lamont 2012) rather than enabling devices of change. Understanding the enabling and constraining role of evaluation is of central concern to social science research (Douglas 1986). However, less is known about

how particular approaches to evaluation and underlying criteria emerge and evolve over time and more importantly what is enabled and what is constrained.

This paper has begun to explore how understandings on assessment criteria emerged, how they were sought out, justified and verified in the context of evaluating sustainability in award winning architecture. The analysis reveals how understandings on criteria were not initially motivated by a need for definition or as a way of solving problems or necessarily initiating innovation. Understandings on assessment criteria emerged and became defined through a need to acknowledge wider sustainability issues and more importantly thereafter demonstrate some ideal of sustainability. These mechanisms resonate with processes of theorization such as justification tasks. The unbundling of theorization that Greenwood, Suddaby and Hinings (2002) suggest can also be examined through an analysis of sequencing of institutional work over time. The importance of theorization is particularly relevant to highly institutionalized fields such as professional settings (Scott 2008).

Separating activities appear trivial- by examining their sequencing and relationships meaning and order is made apparent (Jarzabkowski et al. 2009). In this case changes in emphasis between institutional work activities contributes to the way evaluation of sustainability is theorized in this field as a scientific technical assessment of key parameters such as efficiency, carbon and performance. The *acknowledging* relates to a pre-specification task where issues are scoped out and recognized. The specification task as highlighted by Greenwood, Suddaby and Hinings (2002) is less apparent in the early period where the problem as such was not initially framed but rather broader issues were sensed. Problem framing started to occur when the profession was identified as under threat needing to reinstate their original position and status in the wider construction industry. The *appealing for compliance* was carried out in a dramatic way through normative justification observing activities such as warning, sanctioning and cautioning. This justification was then elaborated further through a process of *verifying* where prior activities are validated and reinstated in alignment with particular values of the period such as economic concerns.

7.0 CONCLUSION

This study contributes to institutional work studies in revealing the sequencing of institutional work clusters over time that enable the emergence of particular understandings

of evaluating sustainability in architecture. Of particular importance is the discussion of the ways certain work clusters become more dominant over time. Our data show that the three types of work: political, cultural and technical change in emphasis over time. When certain clusters become dominant such as cultural work at the start of the millennium activities take on a normative tone and participation becomes the domain of multiple actors. The result of this is the advancement of understandings on criteria dominated by concerns with a scientific approach to design, measurement and value-adding. For this reason the paper suggests that institutional work plays a significant role in the shaping of evaluative practices by influencing the way understandings on criteria develop.

Previous studies have found that various actors are situated within specific institutional work domains with political work deployed by those actors who possess political skills (Garud et al. 2002); technical work by those who possess analytical skills (Perkmann and Spicer 2008) and cultural work the domain of organizations such as professional associations (Greenwood et al. 2002). Though actors may possess specific skills and ordinarily participate within their particular domains, this study suggest that bridging of domains by multiple actors pursuing the same work enables wider expansion of certain understandings of criteria ensuring their ultimate embedding and institutionalisation. Existing accounts have suggested that a range of actors pursuing a variety of work are more likely to enable forms of institutionalization (Zietsma and McKnight 2009), however, what is less clear is the ways in which multiple actors form diverse domains at times engage in the same work. At those instances the work becomes more powerful and in this study enables the emergence and advancement of particular understandings on evaluating sustainability.

Although the sample was substantial for case study research of this type, there are limitations. This research did not analyse the use of evaluative constraints within other construction domains and was instead limited to use of evaluation of award winning architecture. Also the research focuses on architecture which though situated within the domain of construction has wider implications on the built environment within which evaluation of sustainability is being questioned. By collecting data regarding the ways evaluation systems are understood and practiced by various participants within the wider construction domain confidence and generality could be added to the findings. Understanding the makeup of criteria, their influences as well as effects would further enrich future research. Overall, this study is intended to increase the understanding of evaluation as a product of changes in emphasis between different types of institutional work over time. In addition it

highlights the role of actors bridging institutional work domains and engaging in types of work they are not ordinarily associated with. A number of studies have highlighted the importance of studying institutional work longitudinally (Hoffman and Ventresca 1999; Perkmann and Spicer 2008) in order to understand the sequencing of different activities and the role certain actors play. This study contributes by revealing some of the effects sequencing between different types of work and participation of actors can have on the negotiation and justification of new modes of evaluation in a creative industry such as architecture.

The problem of how sustainability is evaluated and how understandings on criteria that shape its assessment develop has not been adequately addressed thus far. As questions of performance and its evaluation are increasingly addressed through scientifically driven benchmarks and indicators in diverse contexts examining the understandings and conventions that underpin the criteria that shape them is critical (Lamont 2012). This study provides an initial understanding of the activities and actors that contribute to the emergence and development of understandings on assessment criteria in evaluating sustainability in award winning architecture. Future studies could benefit by attending more closely to how understandings on criteria develop in settings where award winning architecture is evaluated such as awards ceremonies. Seemingly widely accepted and formalized approaches do not always create desired results and the need to examine the processes that contribute to their development is of particular relevance in the context of sustainability and creative domains.

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TABLES AND FIGURES

Year	Description of event
1990	First BREEAM assessment
1992	Rio Conference
1993	Award for the first self-sufficient house- The Autonomous House
1996	Completion of first energy efficient office for the BRE
1997	New political UK government Kyoto protocol
1998	Award for BRE Building 16- first energy efficient office in the UK
1999	Award for Doxford Solar Offices-first large PV solar offices in UK
2000	Award for First energy efficient supermarket store–Greenwich Sainsbury's
2001	Sustainability Award by RIBA for Wessex Water energy efficient offices
2002	Sustainability Award for Cardboard School
2003	Sustainable Energy Act Sustainability Award for first carbon-zero housing BedZed project
2004	The Energy Act Sustainability Award for Stock
2005	Orchard St
2006	Sustainability Award for Cobtun House
2007	The Climate Change and Sustainable Energy Act First Sustainability Award for retrofit
2008	building-Upper Twyford Barn The UK officially enters recession
2010	New political government Rio Conference 2012
2012	

Table 1 Chronology of key events related to development of criteria

Criteria issues	Percentage of Articles		
	1990-1997	1998-2005	2006-present
Eco Friendliness	27.2	36.0	36.8
Health	66.6	33.3	0.1
Global impact	33.3	66.6	0.1
Setting precedents	0.0	80.0	20.0
Green legibility	50.0	50.0	0.0
Performance	0.1	33.3	66.6
Carbon	7.6	15.3	77.1
Energy efficiency	0.0	81.6	18.4
Protection of nature	50.0	50.0	0.0
Financial value	0.0	10.0	90.0
Measurement	0.0	28.5	71.5

Table 2 Key evaluation criteria issues

	Political work	Cultural work	Technical work
Key Activities (definition)	the continuous activities related to :advocacy, lobbying, vesting, negotation, legislation and endorsement (Lawrence and Suddaby 2006; Perkmann and Spicer 2008)	activities undertaken to ensure propagation of professional norms, association building, constructing collective identities (Perkmann and Spicer 2008; Zilber 2002)	activities that support elaboration and specification of a practice, classification, theorizing and publicization (Perkmann and Spicer 2008)
Key Actors (definition)	Must posess political skills: The state, Profesional bodies, Non-governmental agencies (Lawrence et al. 2009)	Must possess cultural skills: Journalists, Intellectuals, Advertising agencies (Greenwood et al. 2002; Perkmann and Spicer 2008)	Must posess technical skills: Consultants Professionals Academics(Perkmann and Spicer 2008)

Table 3 Process of first order constructs coding

Institutional work	Actors	Activities			Sample quote
		1990-1997	1998-2005	2006-2012	
Political work	*Professional Association Awards judges*	***Advocating*** contextual sensitivity, ***Supportin****g* eco friendliness, ***Instilling*** sense of hope, ***Promoting*** exemplar projects, ***Supporting*** unique design approaches, ***Highlighting*** importance of environmental responsibility	***Mobilizing*** Globalism, ***Positioning*** in support of governmental initiatives	***Favouring*** importance of financial value	"*The aim is to encourage building customers to take active steps to procure environmentally friendlier building*" (Technical Note February 7th 1990)
Cultural work	*Professional association, Awards judges Designers, Journalists Governmental agencies*	***Appealing*** to broader issues ***Raising*** importance of health, eco-friendliness and greenness	***Warning*** of impeding professional losses if scientific design approach is not widely adopted, ***Sanctioning*** architectural community if issues of efficiency and emissions reduction are not tackled, ***Cautioning,*** ***Highlighting*** obstacles, ***Emphasizing*** failures, ***Upholding*** environmentally credible building typologies, ***Initiating***	***Reinstating*** importance of cost efficiency and financial value, ***Protecting*** professional ideals, ***Retaining*** professional status	"*Architects need to 'measure and understand' carbon emissions from existing civic buildings before designing new public-sector infrastructure, CABE has said*"(Walker, March 26th, 2007) "*We will make every effort to interpret a building's carbon efficiency by comparing it against standard and best practice for a given building type and to explain the particular features of a given project which may influence its energy efficiency*" (Hartman October

			scientific response to design, ***Emphasizing*** need to measure, ***Instilling*** value of eco betterment		25th, 2007)
Technical work	*Designers, Awards judges*	***Highlighting*** importance of contextual design and sensitive response to nature, ***Showcasing*** Green legibility	***Validating*** projects that are intrinsically sustainable and can be measured accurately against emissions and efficiency benchmarks, ***Mainstreaming***	***Verifying*** projects that are value-adding	"*The Hockerton Housing Project is one of the few built examples in the UK which addresses sustainable housing*"(Edwards, July 15th 1999)

Table 4 Institutional work clusters development over time