

# **BEYOND SCORING: FACILITATING ENHANCED EVALUATION OF THE DESIGN QUALITY OF NHS HEALTHCARE BUILDINGS**

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## **ABSTRACT**

The evaluation of design quality using prescribed instruments, as now mandated by the UK National Health Service (NHS), provides a research opportunity to acquire understanding of the social interaction of the project stakeholder groups when they are engaged in design evaluation activities. This paper argues that there is a pressing need for such a study, as without it, such evaluations may be unnecessarily limited. This paper argues for a fresh and pluralistic approach to be applied to the evaluation of the design quality of NHS healthcare facilities which complements the methods currently used which are enshrined within prescribed instruments. The new approach uses an interpretative research paradigm to understand the social interactions of the project stakeholders whilst they use the prescribed instruments. The decision to adopt such a pluralistic approach is discussed. The users of this work may include those who seek to improve the design quality of NHS healthcare buildings.

## **KEYWORDS**

Design evaluation; design quality; epistemology; NHS policy intent; pluralism; social interaction

## **INTRODUCTION**

In the UK, the election of New Labour in 1997 initiated, as the subject of immediate political attention, the promotion of design quality specifically in relation to public-sector buildings. New Labour wanted better public buildings. ‘Good design’ and ‘design quality’ was placed, by its political leaders<sup>4</sup>, at the vanguard of a concerted number of government initiatives and unprecedented national programmes of capital investment. These were aimed at radically transforming both the performance of the UK public sector and the physical condition of its existing and future built estate.

In 2000 the NHS embarked upon a ‘once in a life-time’ national programme of capital investment into new healthcare facilities that is currently amongst the largest of its kind anywhere in the world. In doing so it has taken the opportunity, consistent with New Labour’s manifesto, to introduce in 2004, for the first time in NHS’s history, a

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<sup>4</sup> John Prescott’s speech in 1999 espouses this aim. *BBC website*. Available at: [http://news.bbc.co.uk/1/hi/uk\\_politics/460795.stm](http://news.bbc.co.uk/1/hi/uk_politics/460795.stm) [Accessed 4th April, 2011].

prescribed design quality policy. This policy mandates the collaboration of project stakeholders to iteratively undertake design evaluation workshops using prescribed instruments, in an effort to improve the design quality of NHS healthcare facilities.

The approach prescribed by this NHS design quality policy (including its prescribed design evaluation instruments, published guidance and associated initiatives and directives)<sup>5</sup> are for the sake of brevity in this research henceforth referred to as the NHS's 'design quality project'<sup>6</sup>. This design quality project (DQP) will be shown to represent a normative and confined approach that is premised on a theory based rationalist paradigm especially concerned with the notion of measuring design quality. Prior to construction commencing, the measurement instruments mandated by the DQP require the project stakeholders to score the design iteratively at key stages of the design, against predetermined criteria derived from the literature of evidenced based design and other notions of 'good' healthcare building design. The project stakeholders review the scores at each stage of the design. The scores are also required for inputs into business cases submitted for approval by NHS organisations to government departments.

Notwithstanding the acknowledged merits of the DQP, (which will be addressed below and shown to represent a significant step forward in the quest for NHS design quality), the principal claim of this research is that, prior to construction, *'the evaluation of the design quality of NHS buildings should not be limited to the principal consideration of scoring the design as promoted by the current approach enshrined in the DQP'*. In other words, whilst the DQP is regarded by this research to have merit and is considered necessary to the quest for design quality of NHS buildings, it is also considered to be insufficient, and in certain aspects, problematic. An argument for this claim is presented along with the proposal of a fresh approach to the design evaluation of NHS buildings that may address the perceived problems of the DQP.

The remaining part of this paper is organised in two parts. The first part will highlight the merits of them as key components of the DQP, followed by a critique that will unveil aspects of the prescribed DQP instruments that are perceived to be problematic or unproblematised. The second part will provide a justification for the introduction of a fresh approach to the design evaluation of NHS buildings that may help to address the perceived problems.

## **THE MERITS OF THE DQP**

To understand the merits and the significance of the DQP is to understand the history of design quality within the NHS since its inception in 1948. An inescapable conclusion of this history is the dominance of the NHS and its policies in relation to healthcare building design quality in the UK. Both are inextricably linked. This is evident from Francis *et al.*'s *50 Years of Ideas in Health Care Building* (Francis et al., 1999) in which it is clear that, prior to the introduction of the DQP, NHS building

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<sup>5</sup> Typified by NHS Scotland's Design Quality Policy CEL (19) 2010, available at [http://www.sehd.scot.nhs.uk/mels/cel2010\\_19.pdf](http://www.sehd.scot.nhs.uk/mels/cel2010_19.pdf) [Accessed 16th June, 2011]

<sup>6</sup> For the purpose of this paper references within the DQP to such NHS policies are confined to those policies provided by the Scottish Government Health Directorate (SGHD) as the post devolution governing body for the NHS within Scotland.

design quality was dominated by a narrow view of functionality that sought standardisation and systemisation of the construction of hospitals with attendant economies of scale. Little post-occupancy evaluation of buildings took place and research into design quality was limited<sup>7</sup>. Active participation in the project design process by clinicians or public-patient representatives simply did not exist as a policy or as any other requirement. A narrow functionalist approach fostered the proliferation of prescriptive design standards and codes that effectively constrained and dictated the practice of healthcare design within the NHS. This approach evidently took its toll: Prasad in Macmillan (2004, p176) indicated that this approach had inevitably led to a “*condition where there is so much mediocre and worse-than-average design*” and a need to “*reach in a direct way those commissioning buildings and provide them with the means to raise the game*” (*ibid*).

Noting the poverty of NHS building design quality prior to the introduction of the DQP, the most significant aspects of the DQP, apart from its status as NHS Policy,<sup>8</sup> has been its mandate for the evaluation of the design by project stakeholders. This raised the profile of design quality to all parties involved in the delivery of the capital programme and established a place for the consideration of values embedded in the prescribed instruments of AEDET and ASPECT. Lawson in Stark (2007, p93) cites unpublished systematic research suggesting that *AEDET*<sup>9</sup> and *ASPECT* are reliable<sup>10</sup> suggesting they can be used consistently and iteratively during design development. By way of endorsement, AEDET and ASPECT have been used in various by CABE in nation-wide research studies (CABE, 2008) to specifically assess design quality in particular types of procurement. Such studies show how these prescribed instruments have empowered<sup>11</sup> stakeholders and have allowed them to participate with designers at various (including early) stages of the design. Further aspects of the DQP included policy initiatives to mandate the creation of ‘Design Champions’ and ‘Design Reviews’ (NHS Estates, 2001; Francis, 2007) and the sponsorship of numerous studies aimed at improving design quality (CABE, 2011). There can be little doubt that the DQP has raised the profile and significance of healthcare design quality to NHS investment decision makers, NHS staff, public-patient representatives, the design community and the UK construction industry realising the current significant programme of capital investment in NHS healthcare buildings.

## **A CRITIQUE OF THE DQP: UNVEILING PROBLEMATIC ASPECTS**

### ***Problems With The NHS Guidance provided for AEDET and ASPECT***

Several problems are found within the NHS guidance for the prescribed instruments. These relate to privileging particular types of knowledge and advice that explicitly

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<sup>7</sup> Chiefly restricted to UK organisations such as the Nuffield Trust see <http://www.nuffieldtrust.org.uk>

<sup>8</sup> For example in NHS Scotland’s Design Policy (*ibid*) and the mandatory requirement to benchmark projects as stipulated in the Scottish Capital Investment Manual see <http://www.scim.scot.nhs.uk/> [Accessed 17<sup>th</sup> June 2011]

<sup>9</sup> Specifically the latest AEDET ‘Evolution’ version

<sup>10</sup> Lawson (*ibid*) states that this research show correlations between judges using ASPECT are higher than those who used AEDET “suggesting that the more detailed questions [of ASPECT] were less open to subjective interpretation” (*ibid*).

<sup>11</sup> ‘Empowerment’ is an important concept in the field of user involvement, with varied and contested meanings. See (Starkey, 2003) for a discussion of the meaning of this term

stifles debate. Furthermore, mindful of CRISP's<sup>12</sup> originating stipulation of 'intensive piloting', the NHS published guidance directing AEDET and ASPECT to design evaluation workshops is arguably ambivalent with CRISP's requirements.

The guidance (with emphasis added by the researcher's) comments that: "design evaluation workshops as *perhaps* the most common way of using ASPECT or AEDET". The technical advisors are required, at such workshops, to provide as much "pre-analysed information as possible" to give the evaluation team "more time to make key judgments". Again, conditionally, the guidance states that:

"User clients such as patient representatives and members of the general public *should* also be able to use AEDET. *However it may* be more appropriate for them to do so in workshops working alongside other more *experienced professionals*".

Furthermore the guidance states that at the same time "*it is probably desirable* that an experienced user of AEDET *should* facilitate the group *to avoid excessively lengthy debate*". These statements are considered problematical for two reasons. First, they indicate a privileging of the role of experienced professionals that could be construed negatively in relation to the importance placed on the role, voice and viewpoint of members of the public or other non-professionals; see Gesler, et al, (2004, pages, 118-119) and Gillespie, (2002, page 218) cited in Gesler (*ibid*, page 201). Second, what is the avoidance of excessively lengthy debate? It is difficult to reconcile the guidance material's comments on "avoiding lengthy debate" with comments regarding how, at the same time, the prescribed instruments "may be a helpful tool to enable a group to come to a common understanding". Furthermore these conflicting statements appear incongruent to the espoused aims of the originating CRISP's call for research that cites the Japanese organisational cultural example of "*listening and debating at length* before committing to a form or product", and the pursuit of "*understanding*, not knowledge alone and investing *time* in this process".

Apart from not indicating what is meant by 'lengthy', avoiding debate is regarded in this research as being profoundly contrary to the importance of social interaction between the project stakeholders: this also is discussed further below in the section that justifies the importance of social interaction to design evaluation.

The guidance stipulates that facilitators should be in attendance to ensure that "any representatives of the public or patients who *may lack experience of technical knowledge* are able to express their views and have them listened to". The possession of only 'technical knowledge' is thus privileged. This is further reflected by an analysis of the percentage of criteria concerned with clinical efficiency that dominates the questionnaires within the instruments. This is considered epistemologically problematic and is discussed further below.

The guidance also lacks explanation. For example, larger projects are required to hold "an interactive multidisciplinary decisions analysis workshop" but without further explanation. The guidance also omits any ample reference to the realities of the context and constraints of the project environment or to the sociology of any of the

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<sup>12</sup> Construction Research and Innovation Panel (CRISP) that in 1999 called for a detailed research programme specifically into design quality and to which arguably can be traced back the origins of the DQP's prescribed instruments.

relations between any of the project stakeholder groups. Any consequences of such social interactions between the project stakeholders are omitted. No scope or provision for any comments on the nature or extent of any social relations between the project stakeholder groups during the course of undertaking evaluation workshop is included in the guidance. No opportunity for the project stakeholder to discuss or communicate what their ideas of what is good design at any stage is suggested. The guidance limits itself to the comment that, conditionally, (with researcher's emphasis added) "AEDET [or ASPECT] *may* be a helpful tool to enable *a* group to come to a common understanding." (NHS Estates, 2008b; NHS Estates, 2008a). Any comments about the prospect or need for common understanding between groups however is not included. All of these omissions are therefore *completely inconsistent* with CRISP's comments previously highlighted above that stresses the need for such activities.

In contrast to these omissions about the social interactions or local project context, the guidance goes into relatively detailed instructions about the use of the scoring and weighting mechanisms. It also provides a pre-formatted user-friendly Excel spreadsheet complete with an in-built macro for the uniform recording and presentation of results.

Furthermore, noting that many of the project participants will have a professional background, the omission of any explicit theoretical basis within the NHS guidance material for the prescribed instruments may be considered remiss when compared, say, to the literature on good stakeholder engagement practice. See Foy et al. (2011) for an example of the role of an appropriate theoretical basis when improving best practice initiatives for clinicians within a NHS healthcare context. Grol et al (2007) and Wilkson and Powell (2011) present current arguments for including such a theoretical basis and its benefits in terms improving clinical engagement respectively.

### ***Problematic Epistemological Aspects Of AEDET/ASPECT: Their Narrow Rationalist Basis***

Epistemologically, AEDET and ASPECT are similar. AEDET is theory based. It is endowed with a theory of architecture developed by Marcus Vitruvius based on Platonic and Aristotelian ideals of beauty and symmetry contained in his architectural treatise, *De architectura libri decem* (Ten Books of Architecture) published probably in 15 BC (Vitruvius, n.d.), and for this research as translated by Morris Hicky Morgan in 1914. Vitruvius' theory is conceptually based on an idealistic triad of abstractions that must be referenced when preparing any design for all 'good' buildings. These abstractions are *firmitas*, *utilitas*, and *venustas* (*ibid*, p.17).

Sir Henry Wotton (1568-1639) is remembered for the definitive declaration made in his book 'The Elements of Architecture' published in 1624 that translates the Vitruvian triad, respectively as conditions of firmness, commodity and delight.

Wotton's triad is further Anglicised and operationalised specifically for the evaluation of modern building design in the Construction Industry Council (CIC)'s Design Quality Indicators (DQI's) as build quality, functionality and impact. NHS Estates, CIC and the University of Sheffield mirrored this triad of abstractions into AEDET. By virtue of being based on Vitruvian theory derived itself ultimately from Platonic and Aristotelian ideologies, AEDET is thus by definition, epistemologically deemed universal, rationalistic, atemporal and context-independent.

Epistemologically, ASPECT is based on a “database of 600 pieces of research” (Department of Health Estates and Facilities 2008a, p.2) and an ‘Evidence Layer’ (*ibid*, p.21) which in turn refers to a UK Department of Health website, although this evidence is not presented directly in the published NHS guidance supporting ASPECT. The Department of Health website however lists only a total of 15 published research articles drawn principally from behavioural and environmental psychology ‘evidenced-based design’ (EBD) studies spanning between 1977 to 2003. This reliance on EBD is considered problematic and is discussed below.

In summary, AEDET and ASPECT are unveiled as being epistemologically rationalistic in approach and deterministically based on theory. As indicated above, the guidance privileges ‘technical knowledge’. This research regards these epistemic preferences as confined, narrow and problematic because they ignore, without justification, the significant body of literature that contests what counts as ‘*design knowledge*’ (Simon, 1996; Schön, 1995; Rowe, 1991; Krippendorff, 2007; Dorst & Dijkhuis 1995; Forlizzi et al. 2008; Webster and Brookes, 2008).

As an example of this contested literature, Rowe (1991) refers to the form of knowledge used in design as intuitionism. AEDET or ASPECT makes no reference to such design knowledge. The paradigm of intuitionism differs significantly from the paradigm used adopted by AEDET and ASPECT. Intuitionism is considered a received source of knowledge, which is to say that integrated knowledge may be intuited, - acquired - in a ‘flash of insight’ as a gestalt<sup>13</sup> (although the constituent patterns assembled may have been gestating for some time) that is both complete and holistic (Duggan, 2007). This relationship between the design problem and intuition is described by Rowe (1991) who, like Rittel and Weber (1973), characterises design problems as ill-defined or wicked and messy, precluding their resolution by a simple, orderly rational theoretical approach (such as that assumed in AEDET and ASPECT). In practice such problems are resolved using heuristic reasoning embedded in a priori knowledge.

Design problems are projective in nature. That is, they do not already exist waiting to be discovered, as is the practice in rational paradigm typical of scientific ‘discoveries.’ The buildings and other artefacts that later manifest themselves as realities are not yet in physical existence during design. The use of intuitionism invokes creative insight that can move towards a solution that resolves an ill-defined problem. Truth in this paradigm is regarded as the eventual correspondence of the finished design of the finished building with the intended outcome as envisaged a priori: the actual outcome is not as important as this correspondence with intentionality.

***Problematic Epistemological Aspects Of AEDET/ASPECT: Questions Of Validity Of Healthcare Evidenced Based Design And Epistemic Incommensurability With ‘Design Knowledge’***

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<sup>13</sup> A gestalt is a German word meaning the whole (as being more than the sum of its parts) and the pattern. As an approach it sees people as an inextricable part of their environments. See <http://edinburgh-gestalt-institute.moonfruit.com/#!/what-is-gestalt/4509313638> [Accessed 20th June 21, 2011}].

Significantly, AEDET includes references to Evidenced Based Design (EBD) as the basis of idiocratic criteria in its and ASPECT's questionnaire instruments used by the project stakeholders to evaluate a design scoring its performance against an abstracted, generic notion of 'good.'. EBD is regarded "the natural and parallel analog to evidenced based medicine (EBM)" (Hamilton, 2004). EBM is defined as "the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients" (Sackett et al., 1996).

The practice of evidenced based medicine means "integrating individual clinical expertise with the best available external clinical evidence from systematic research" (*ibid*, 1996). Such systematic research is based on a well-established, science-based epistemology, which conceptually is context independent and pursuant to universal truth. As such, it can be considered (in the Kuhnian sense) commensurate with the Vitruvian theory adopted by AEDET and ASPECT. The worldwide adherence by the medical profession to such research and the systematic scientific philosophical approach is evidenced and manifest by The Cochrane Collaboration<sup>14</sup>.

The references to evidenced-based design made by AEDET and ASPECT represent an epistemological privileging of the greater use of scientific based evidence to support decision making (Codinhoto et al., 2010). However EBD, in stark contrast to EBM, is not well established and does not enjoy the same systematic review underpinning EBM because, amongst other reasons, it lacks an organisational equivalent to the rigor of the Cochrane Collection for EBM. Thus for EBD (in contrast to EBM) there is no universally accepted standard for what actually constitutes best evidence raising questions as to how that adopted by AEDET and ASPECT was selected.

Recent and extensive Dutch and American studies have questioned the validity and reliability of EBD used in healthcare design *per se* (Dijkstra et al. 2006; Dijkstra, 2009; American Society for Healthcare Engineering, 2009). These studies found that, when scrutinising the effects of specific environmental stimuli, conclusive evidence of the rigour of EBM is still very limited and difficult to generalise. In practice then, EBD must not be used uncritically and without caution because it may be incommensurate with the more stringent and rigorous practice of EBM. Significantly, this profound issue of incommensurability is not discussed in the current DQP discourse.

### **Problems With The Notion Of Measuring Design Within the DQP And Conflation Of Subjectivities and Values With 'Objective' Scores**

Notwithstanding the historical importance of its place to represent subjective values in the DQP (as noted above setting out the merits of the DQP), nevertheless the use of the word 'Impact' as an Anglicisation for Vitruvius's *venustas* is problematic for numerous reasons. Prasad comments that it is less than a poetic interpretation (in Macmillan, 2004, p181) however this paper regards it as being more problematical in that it is as more of adaptation than an interpretation. That the use of 'Impact' is an adaptation and not a translation is evident from an exegesis of the Ten Books of Architecture (*ibid*), which reveals that Vitruvius' concept of *venustas*, is both subjective and complex. Vitruvius develops this in his theory of architecture to mean

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<sup>14</sup> See: <http://www.cochrane.org/index.htm> [last accessed: 1st June 2011]

"when the appearance of the work is pleasing and in good taste, and when its members are in due proportion according to the correct principles of symmetry" (*ibid*, p.17). It is therefore centred on matters of symmetry and proportion as experienced visually. The Vitruvian principles of symmetry are concerned with a "proper agreement between the members of the work itself, and relation between the different parts and the whole general scheme, in accordance with a certain part selected as standard" (*ibid*, p.15). In a genealogical sense, Vitruvius' conception of *venustas* is entirely consistent with the pervasive oculo-centric paradigm originated by the Greeks<sup>15</sup> in western culture (Pallasmaa, 2005) that is likely to have influenced him.

Impact as used in the DQP is concerned with several values and opinions. It is addressed by a total of 22 questions within the AEDET questionnaire instrument. These questions gather scores from stakeholders on subjective matters such as "does this building appropriately express the values of the NHS" and numerous other questions using the same adverb (for example in relation to levels of dignity; to a caring image). Space does not permit any further listing but three points are relevant here. First, there are multiple considerations of Impact far beyond the considerations of visually pleasing symmetry and proportion represented by *venustas*. Second, is the more substantive fact-value problem: AEDET's 'Impact' section refers to the evaluation of subjective elements. These subjective elements necessitate consideration of values. The evaluation of objective elements involves the consideration of facts. Values do not lend themselves to measurement in the same manner as objective facts by virtue of their inherent subjectivity. This is referred to in the philosophical literature as the 'fact-value problem' (Michlewski, 2008; Schwartz, 2006; Schwartz 2009; E. House 2001). Philosophically, values are not capable of being quantitatively measured objectively: they are always subjective and must be regarded as originating from the first person. Furthermore, existentially, values implicate and invoke sense of commitment, or strong personal emotions. As Pascal once eloquently put it, the "heart has its reasons which reason does not know" (Pascal, 2007, p73). Values are also intrinsically temporal (Harris, 2005).

The originators of the Design Quality Indicator upon which AEDET is based - Gann et al. (2003) - discuss at length and admit to this essentially axiological difficulty several times (*ibid*, p319, 320, 322). They conclude that, at best, scores from the [DQI] "cannot provide an absolute measure of the design quality of a building but can be used to articulate the subjective qualities felt by different stakeholders". Lawson (in Stark, 2007, p90) states, "a great deal of what is in the [...] Impact section is not yet substantiated by empirical knowledge and is largely informed [by what he calls] 'best practice'"

In contrast to the above authors, this important axiological problem is not addressed at all in the published AEDET or ASPECT guidance. Third, 'scores' of subjective impact are simply, but erroneously, 'conflated' with those from objective functionality and build-quality criteria. This fact-value measurement problem is in practice yet further exacerbated as another problem within the DQP by the insistence

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<sup>15</sup> For example from Plato's 'Theory of the Forms' as being idealistic, atemporal and universal. The connection with Plato's beauty and *venustas*; *utilitas* and good; and *firmitas* and true is provided by Prasad (in Macmillan, p180)



and apparent preoccupation<sup>16</sup> of AEDET and ASPECT with ‘scoring’ the design by the project stakeholders. Gelser, et al., (2004) provides a detailed discussion of the detrimental consequences of such preoccupation with scoring in relation to public accountability and axiological concerns for ‘scoring’ within prescribed instruments.

Another facet of this concern of reconciling subjective values with objective facts raised by Prasad (Macmillan, 2004, page 177) is the human preference for ocularcentric symmetry and visual appearance as an inversion of any functionalist doctrine. Subjective values *may be represented* by numerical values in a well-understood context but far more important axiologically is to ensure that the relationship of such subjective fields to the objective is made explicit within any evaluation framework. This is not the case within the DQP. This problem of itself raises the importance of the context of use of such measures within evaluation instruments. The published guidance for AEDET does not acknowledge any of these problems of scoring.

In practice, this issue means that the cumulative scores or outputs from DQP design evaluation workshops cannot be regarded as being in any way ‘scientifically’ valid but this is then somewhat incongruent with the conventions typical of the rationalist paradigm that sits behind the DQP. The scores are essentially a convenient ranking of judgments, and in effect an unproblematised operationalisation of the real problem of dealing with subjective matters within a predominately objective framework. It is not then quantification against an interval scale (Lowson et al., 2006). There may be three risks here. First, that which Prasad (*ibid*, p183) called the “intrinsic ossification of evidence orientated bureaucracies” and, second, the erosion of creativity, innovation, novelty, the ineffable, the surprising, the civilising, the rebellious - none of which are included in the Impact quality field – that is found to distinguish architecture from mediocre building design (Shai et al., 2009; Hatchuel. 2002). The third risk is that of the possibility of reification<sup>17</sup> of scores as output from the prescribed instruments if used uncritically by the project stakeholders as inputs as ‘quality thresholds’ for approval purposes, as for instance as indicated by CABE (2008) or as currently prescribed within the DQP for business case and gateway approvals.

### **Problems With The Operationalisation of Intentionality Within the DQP**

The importance of intentionality in relation to the contested nature of design knowledge and an intuitive paradigm is discussed by Rowe (1991). Rowe draws attention to the habitual logic of enquiry used typically in the practice of design that employs heuristic, intuitive reasoning coupled with use of experience and tacit knowledge. This is applied iteratively and compared with intentionality during design development. In this the practice of design is concerned with finding solutions to problems that are holistic, projection and which correspond with original intentionality. The emblematic story concerning architect Matt Fineout tearing up plans as described previously provides a vivid example of this quest for correspondence with intentionality in the practice of design. Designers are not content

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<sup>16</sup> Space does not permit but there is an argument that cites NPM (New Public Management) reforms and the pervasive influence of a UK government ‘performance management’ ethos behind this preoccupation with scoring.

<sup>17</sup> Marx refers to the dangers of reification as *Versachlichung*: the transformation of the outputs of man-made actions into properties that then govern his life, see Bottomore (1991, p463).

with finding a solution: they strive for the solution that resonates in the first instance with their intentionality.

This is considered to be quite different from the effort to capture intentionality structured by the DQP's use of a weighting criteria prescribed by Gann et al. (2004) as being either 0, 1 or 2 in quantitative terms within the DQI's rationalist paradigm. The representation of intentionality by objectively weighting criteria in AEDET and ASPECT departs from the iterative act typical of the actual practice of design in which the designer subjectively and periodically compares the projected design with the original intentionality known to the designer. Thus the rationality and objective logic used in AEDET and ASPECT amounts to, in essence, an attempt to operationalise and, by virtue of scoring design, conflate intentionality. This is problematic as it ignores and departs from the actuality of intentionality of design practice. This problem is caused by a fundamental discord between the understanding of intentionality as known by designers to that held by project stakeholders who, as non-designers, are simply following the prescriptions of the AEDET and ASPECT instruments. These instruments do not acknowledge the designer's understanding. Again, the NHS guidance fails to articulate the nature of design practice in the requirements of the prescribed instruments.

### **The Adverse Consequences of Context Independence Within the DQP: The Omission/Unarticulation Of the Social Interactions Of The Practice Of Design**

In the literature, many assertions as to what design *is* focus on the descriptions of the activities of individual designers forwarded by Herbert Simon's (1969) seminal work. Simon's view of design is grounded in the concern of the artificial and the influential in characterising design as a rational problem-solving activity with attendant similarities to the rationalist and determinism of 'science' based approaches. On the basis of the above critique, Simon's influence can be seen in the development of the DQI and similarly within the prescribed instruments of the DQP by virtue of the absence of consideration of the social context of design evaluation. More recently, Dorst and Dijkhuis (1995) reframed and contested Simon's view to regard design as dialectic between Simon's paradigm of technical rationality and the reflective approach of Schön (1983). Schön's approach embraces the inherent complexity of the act of design and regards the reductivist tendencies found in Simon's paradigm (and, as shown above, embedded in the DQP's rationalist paradigm) as failing to acknowledge the realities of design in practice.

Many successful designs begin with very little external information yet the practice of design creates highly influential outputs and ideals. Intuitive knowledge used in the practice of design involves designers applies knowledge in a way that even the designer does not understand or can articulate (Lawson, 2006). This suggests the presence and use of tacit knowledge as an important part of design practice (Tsoukas, 2002; Gourlay, 2006; Peile, 2006).

What is not contested within the wider design discourse, other than in a purely theoretically context (or if say, designing for oneself alone), is that design within a project environment *is essentially a social activity between the stakeholder groups and the stakeholder groups and the emerging artefact*. Therefore communication and language play an important part, as do the various social interactions between the

groups of project stakeholders engaged in the activity of evaluating design. This view of design is substantiated by the significant body of literature drawn from ethnographic, linguistic and sociological studies (for examples see Bucciarelli (1998), Whyte et al., (2006) and Luck (2007)) and the supporting interaction, discourse and semiotic analyses (for examples of these see the work done on the DTSR7<sup>18</sup> dataset within Luck and McDonnell, (2006)).

As such, it is noted that these important social aspects of design practice are missing in the NHS published guidance on the use of the prescribed instruments. There is therefore a risk that the potential influence of these fundamental social interactions on the appropriate practice of NHS design evaluation workshops remains unarticulated. Reflections on the reality of the actual practice of design suggest the need to understand these social interactions and interpretations; especially those related to values and subjectivity.

In summary, the prescribed instruments of the NHS published guidance and other aspects of the DQP raise numerous concerns. These relate to: generic limitations; omission of any explicit theoretical basis; epistemic and axiological incommensurability; limitations and concerns associated with ‘scoring’ *per se*; attempts to conflate the scores of subjective values with objective facts; the apparent unarticulation of the importance of social interaction in relation to design knowledge; and the failure to explicitly regard design knowledge as being distinct from other types of knowledge found in rationalist and scientific discourses that are incommensurate with the practice of design.

This critique concludes by stating that the above discussion shows that, while confining the design evaluation of NHS healthcare facilities to the instruments prescribed by the current DQP may be argued to be necessary, it is not sufficient. This supports the claim, that prior to construction: *‘the evaluation of the design quality of NHS buildings should not be limited to the principal consideration of scoring the design as promoted by the current approach as enshrined in the DQP’*. This is because to do so may unnecessarily limit the understanding of what, *from the perspective of each of the different groups of project stakeholders*, constitutes *valid design knowledge* and *acceptable design practice*. As noted previously such knowledge and practice is both contested and varied across different groups of project stakeholders. In this research what each group of stakeholders constitutes as *valid design knowledge* and *accepted good design practice*, will be referred to henceforth as their *legitimate design perspective* (LDP).

## **TOWARDS A REORIENTATION OF THE CURRENT DQP**

### **The Need For Understanding (Verstehen)**

At the core of the argued limitations of the current paradigm used within the DQP is the need to ensure that all project stakeholders attain a high level of mutual *understanding* of each other’s epistemic positions, and different practices of design. This is significantly complicated by the “totality of disciplines, phenomena,

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<sup>18</sup> This is the dataset that came from the 7<sup>th</sup> Design Thinking Research Symposium, <http://www.design.open.ac.uk/dtrs7> [Accessed November 2008]

knowledge, analytical instruments and philosophies [...] that the design must take into account” (Vitta and Nelles, 2007) that contributes to what will be referred to as the *design evaluation context*. On-going research may show that these epistemic and practice disputes and prevalent contextual complexities may remain as what will be referred to as *unarticulated latencies* within the current DQP discourse. And, unless efforts are made to identify, elicit and fundamentally, *understand* the potential for their existence and possible consequences, (i.e. if left unattended), their existence is likely to be fundamentally problematic to the pursuit of evaluating the design quality of NHS buildings. This problem of unarticulated latencies also points to the need for all project stakeholders to attain a high level of mutual understanding. The challenge, then, to improving the DQP may be to ensure, prior to engagement for a design evaluation workshop or similar collaborative vehicle, that all project stakeholders attend to any unarticulated latencies within the local project context and to strive to actively seek and acquire a mutual understanding of them and their respective LDPs.

An interpretative paradigm is one that adopts the position that knowledge of reality is a construction of the social interactions of the human actors and the local context in which such interactions take place. An interpretative paradigm strives to acquire understanding is sought in contrast to causal explanations that can be derived from the use of a rationalist paradigm. *Verstehen* as originally introduced by Weber (Walsham, 1995) is regarded as a synonym for such understanding. *Verstehen* refers to the understanding of another’s point of view. *Verstehen* in relation to design evaluation recognises that to fully understand each project stakeholder group’s attitude and beliefs are in relation to ‘good design’. From this interpretative paradigm, to evaluate design is to understand design. As a means of possible improvement of the current DQP this suggests privileging the social interactions of the project stakeholders (rather than solely the current DPQ’s preoccupation with scoring) as a means of acquiring knowledge, via *verstehen*, to pluralistically augment and possibly improve the evaluation of NHS healthcare buildings.

## **CONCLUSION**

In conclusion, the potential to understand the social interactions of project stakeholders engaged in the evaluation of NHS building design justifies the introduction of an interpretative paradigm to pluralistically augment the current rationalist paradigm of the DQP. Ongoing research will pursue the potential dimensions of an interpretative paradigm congruent with the reality of the social interactions forming the local project context of ‘design.’ It is anticipated that this will inform future empirical studies.

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