

# *Values in urban design: A design studio teaching approach*



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*Since 2000, research into the value of urban design has been utilised in consultancy and policy-making with regard to understanding the value of public investment. This research informs an emerging approach to teaching urban design appraisal within a MA urban design studio, in which variations of the residual method are deployed to assess developer value, private good and public good. Here, the relationship of the appraisal and design elements is articulated by an iterative model of design decision and design judgement making. By situating this approach in a broader theory of societal value, we reconceptualise from first principles, the concept of 'value in urban design'. This also suggests a corresponding definition of urban design in terms of value.*

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Questions around 'value added' by design have been at the forefront of urban design policy practice for the past decade and a half. This reflects a growing concern around accountability scrutiny, an interest in 'public value' within public policy discourse in the UK and elsewhere (Kelly, Mulgan, & Muers, 2001; Moore, 1995). Most of the studies of value of urban design, however, assume 'value' to be a single number to be arrived at, which is then usable as an input to decision-making. This common and 'mid-range' concept of 'value as instrument' is found in the real estate, performance measurement and accountancy spheres, and often results in the reductive dismissal of design considerations that are important, but difficult to couch in terms of numbers.

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This paper explores the implications of applying to urban design a high, rather than mid-range concept of value. A 'high' concept of value is closer to some foundational ideas of what value is, and allows us to link urban design to value

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in a way that serves ‘design’ as well as it does ‘value’. Such a concept sees value in urban design to be irreducibly made up of three components: urban design’s contribution to private property value, to value in use, and to the value of what economists call ‘externalities’. Externality is cost or benefit that affects a party who did not choose to incur that cost or benefit (Buchanan & Stubblebine, 1962). The paper explores the potential of such a high conceptualisation by reflecting on the teaching of development appraisal as an integral element in an MA urban design studio. In conclusion, apart from reconceptualising what value is in urban design, we are able to propose a new definition of urban design itself, in terms of value.

### *1.1 The research and practice contexts of value in urban design*

In the UK, a growing body of research has investigated the economic value of urban design. Building on the seminal work of Lichfield (1970; Lichfield, Kettle, & Whithbread, 1975; Lichfield, Barbanente, & Borri, 1998; Lichfield, 2005) which dealt with the economics of planned development, best known as the ‘Planning Balance Sheet’, and on the tradition of cost benefit analysis in land use transport models, these ‘value and design’ studies can be seen as the elaboration of ‘value’ within the design dimensions of urban planning (Punter & Carmona, 1997). In the period since 2000, a number of literature reviews on urban design value have been published (CABE, 2003; McIntyre, 2006; Ministry for the Environment, NZ, 2005), as have research on topics ranging from the impact of street public realm improvement on business rates, business rents and property values (CABE, 2007; Transport for London, 2011), to the social and environmental value of parks and public spaces (CABE Space, 2003), from the value of green space on property price (CABE Space, 2009; Dunse, White, White, & Dehring, 2007, pp. 1–8; GLA Economics, 2003, 2010; Jim & Chen, 2010; Rogers, Jaluzot, & Neilan, 2012) and the value of blue space (Fisher, 1999; Garrod & Willis, 1994; Goetgeluk, Kauko, & Priemus, 2005; Rouwendal, Van Marwijk, & Levkovich, 2014), to the value of station investment (Network Rail, 2011); the value of housing and urban layout (CABE, ODPM, & Design for Homes, 2003; Chiaradia, Hillier, Schwander, & Barnes, 2013; The Prince’s Foundation for the Built Environment, 2007) to the value of mixed use streets (Chiaradia, Hillier, Schwander, & Wedderburn, 2012; Jones, Roberts, & Morris, 2007) and the value of urban design more generally (British Council for Offices, 2006; CABE, UCL, & DETR, 2001). More recently there has been work on resilient urban form, governance and the creation of long term value (Grosvenor, 2013). All of these studies link design characteristics of the built environment to economic value, by calculating each characteristic’s contribution to ‘net benefit’ (i.e. benefit less cost, a classic definition of value) for a given locality or stakeholder. Most of the studies investigate the relationships between physical configuration or condition (e.g. layout, perceived street quality, etc.) and economic value. In some

cases, they also examine the relationships between configuration and social and environmental value. The studies employ various methodologies, drawing on different data sources in different ways. However, they all link 'urban design' with 'value' by inferring relationships from a small sample and there is an explicit recognition of the values attributable to design features. Overall they are more robust and detailed than earlier research examining the value of urban design (CABE et al., 2001), research which nevertheless scoped the debate.

Although these results are yet to be consolidated by further research, they have already been integrated into mainstream practice and operationalised in order to capture the value of public investment in good urban design. This has largely been facilitated by consultancies (Amion Consulting, Taylor Young, Donaldsons, & the University of Liverpool, 2007; Colin Buchanan, 2008; Tribal Urban Studio & Colin Buchanan, 2008) through advice provided to local authorities. This mainstreaming has been further supported by UK government guidance on valuing public programme investment, including through a new section in the 'Green Book' on non-market goods (HM Treasury, 2011), on valuing townscape, health and other wider economic benefit of transport improvement projects (Department for Transport, 2013) and more recently, by government interest in capturing value with Tax Increment Financing (UK Parliament, 2014).

This spate of activity in the professional practice of design valuation can be explained by increased policy interest in urban design issues in the UK coupled with a public sector culture of measuring for accountability. However, while Adams and Tiesdell (2013) have claimed that "there is now much greater consensus among both commentators and practitioners about what needs to be done to deliver the quality places of the future" (p. 37), they acknowledge the pragmatic challenge for practice of linking urban design to the real estate development process (Tiesdell & Adams, 2011).

The research described in the preceding paragraphs has highlighted the inadequacy of conventional property valuation methods for assessing the value of urban design (British Council for Offices, 2006). Most of the methods deployed do not have adequate descriptive mechanisms for dealing with those physical, spatial and configurational characteristics that are the essence of urban design. Compound this with the complexity of the central concerns of urban design such as 'public good' and 'externalities', and the fact that not all urban design features that are important and meaningful to users are relevant for arriving at 'market price', and you have a situation where valuation methods geared towards price do not always pick up on issues important to urban design (British Council for Offices, 2006). Put another way, conventional valuations articulate private value in form of market price for purposes of the transaction of exchange, and do not always have a way of accounting directly for public value and value in use, which are so central for urban design.

This is slowly changing (Department for Transport, 2013; HM Treasury, 2011). Consequently, one feature common to more recent ‘value of design’ studies, and to the pedagogic design of the studio described in this paper, is that they innovate away from mainstream valuation processes. In trying to articulate values specific to each design-in-its-particular-context, these move away from the reliance on the narrow instrumental form of value as a singular and static number that was the basis of many earlier cost-benefit accounting methods.

This paper takes this move further, by embracing the idea that value is the visible expression of multi-dimensional and often irreconcilable preferences and beliefs. It also explores the process by which values come about. It looks at how values produce and are produced by unique and specific places and situations, through incessant reformulation of values resulting from the interplay of place and people assemblages. By thinking about broader ‘urban design value’ in this way – as co-constructed between place and its stakeholders – we can also better understand the influence of the urban designer in the process of creating value in places.

### *1.2 In depth case study: an urban design master’s studio as an opportunity for reflecting on value in urban design*

Urban design educators are increasingly responding to the developments described in the literature review above, by recognising that the valuation of property and an understanding of the value of design features, is an important part of an urban designer’s education. In the UK context, cross comparing course directories from the Royal Institute of Town Planners (RTPI, 2014), the Urban Design Group (UDG, 2014) and the Resource for Urban Development International (RUDI, 2014) for the year 2014–15, we identified 14 courses that have ‘urban design’ in their titles. A review of the course description content on the respective websites, and some limited personal communication from course leaders showed that only four courses have explicitly described a development appraisal (DA) component related to urban design. This does not mean that DA is not included in the curriculum in the rest of the courses. It may just indicate that DA is not explicitly described in the course marketing. Of these four courses, three have a Royal Institution of Chartered Surveyors (RICS) planning and development accreditation.

Using the case of Studio 1 in the Cardiff University MA Urban Design (MAUD) course as an in depth case study, the present paper engages with the challenge of linking urban design and economic valuation within an urban design studio pedagogy. The ‘design studio’ is an approach also deployed in architecture and planning education. Studio pedagogy typically “begins with an open-ended problem, often taking account of current issues in the ‘real world’ with ‘real clients’, and gives students some choice in their direction

within the scope of the problem. This is followed by a series of structured conversations between the instructor(s), students, and often, a collection of outside experts with knowledge specific to the problem under examination” (Grant Long, 2012, p. 433).

The pedagogic design challenge of ‘valuation-in-the-design-studio’ represented an opportunity to explore value created by design and how considerations of value are incorporated by designers in making design judgements. It also allowed us to consider how those hard-to-describe urban design values can be communicated to, and perhaps deployed by those who evaluate urban design.

### *1.3 The scope and definition of value, and the contribution of this paper*

At this point, it is important to expand on earlier remarks on what we mean by ‘value’, although a fuller discussion is set out in Part 1.4 and elsewhere in this paper. ‘Value’ is related to ‘worth’, in that it is an assessment of whether something (an object, an idea, a state of affairs) matters to us or not, and how it matters. ‘Value’ can be contrasted with ‘meaning’. Whereas ‘meaning’ may encompass that which is important to us, it includes that which is private, unsaid, and perhaps unsayable, ‘value’ may be seen as ‘meaning articulated’ and therefore closer to being instrumental. With a ‘value’, it is possible to communicate meanings succinctly; if meaning is not communicable, it is arguably not a value yet, as Munn (1986) suggests. So, value here is defined as **‘the disciplined representation of meaning’**.<sup>1</sup>

Those seeking to talk about value in urban design tend to grasp for the traditional language of economic value used in real estate and environmental economics, since the relationships between property or the environment and urban design seem most obvious. However, value can exist within a range of contexts not all of which are best discussed in economic terms. It is possible and tempting to put a price tag on cultural, social or environmental forms of value, and this has indeed been the focus of public value of design work so far. Price tags are useful one-liner aids for investment decision-making, but far less useful for design decision-making, especially for design that requires extensive consideration of the difficult-to-measure public good or of non-commensurable benefits. However, the in depth study of value as an instrument, and the implications of deploying such an instrument in urban design is still lacking. The focus on measurement and price has prioritised urban design as ‘measurable urban investment’ rather than as the shaping of physical configuration for difficult-to-measure public goods. This narrow investment-instrumental focus in the urban design value discourse has meant that some fundamental concepts, including that of value

itself, has remained poorly contextualised into the wider discourses of societal value.

Our present use of the concept of value as ‘the disciplined representation of meaning’, is designed to wrest the frame of debate away from measurement and economic value. It is wider than but encompasses ‘economic’ value, and it may or may not be operationalised in the language of price or numbers. Value may be expressed ordinally (‘is this option better or worse than that option’) or nominally (‘what type of thing is this’) as well, and to admit such modes of expression is important in urban design, not least because urban design is still only poorly described by numbers. A key contribution of this paper is to explore a more considered approach that contextualises urban design value within the broader discourses of societal value and spatial configuration.

### *1.4 Methodology and the structure of this paper*

This paper is a systematic and theory-based reflection on the teaching of valuation within an urban design studio. The aim of the paper is to deepen our understanding of the role of value in the urban design process, to clarify the definition of value in urban design, and to develop a corresponding definition of urban design itself. The work that underpins this paper is equally weighted between a discursive consideration of theory and an analysis of empirical observations. In the course of this research, we have moved to and fro between theory and empirics in a process described by [Eisenhardt \(1989\)](#) in her paper on methodology of theory building. In addition to bringing theory and empirical data into ‘confrontation’, as she suggested, we also bring our own experience as instructors into the mix of admissible knowledge, to achieve our aims of re-defining urban design and its value.

This paper is structured as follows. In Section 1 we set out the value framework. In Section 2, we introduce the in depth case study, Studio 1 in the Cardiff MA Urban Design (MAUD), as well as the ‘value appraisal in design studio’ exercise. Section 3 describes a range of iterative models that help articulate how value is constructed, and how the design process proceeds. This is the basis of the analytical lens through which we interrogate the student work, and demonstrates how the pedagogic design of the Studio plays out in the work produced. This is evidenced by three examples of student design and development appraisal work, and by interviews with students regarding their insights. In Section 4 we discuss how the Studio embodies concepts of value in urban design, and how the triangulation of theory, practice and empirical evidence points to a conceptualisation of value that is relevant to urban design. Section 5 sets out what we learnt from reflecting on student learning and the derivation of a definition of urban design in value terms. We consider the implications of defining urban design in this way. Finally, in Section 6, the discussion reflects on emerging insights and sets out possibilities for future research.

### *1.5 What is value? Three conceptualisations of societal value*

Before proceeding, we need to expand on the definition of value introduced earlier, as ‘the disciplined representation of meaning’, and to discuss the foundations of the concept. What forms do values actually take in urban design? What sorts of values are there? What do they look like? What are values that are of concern to urban designers when designing? As designers of a module that teaches valuation in the context of urban design, we situated our understanding of urban design value in a broader theory of universal societal value, suggested by the anthropologist David Graeber. This allows a re-conceptualisation from first principles, of the idea of ‘value in urban design’. This suggests what values designers ought to consider, even as they participate in the iterative cycle of designing and evaluating.

In Graeber’s meta-review on value (2001), he suggests that there are three ways human societies, in all their diversity, have tended to conceptualise and consequently, deploy value.

The first is the most familiar in contemporary everyday use: ‘*value as net benefit*’, or benefit minus cost, “measured by how much others are willing to give up to get (that which is valued) ...” (Graeber, 2001, p. 1). This classic economic conception is useful because it provides a device that allows us to turn the abstract concept of value into an instrument to measure the worth of everything, from our house, to how much we would pay for a bottle of shampoo. Monetary value, or numbers, or even rankings, become the means by which we reduce complexity to expedite decisions. The reduction of complex and contested realities in pursuit of expediency and the smooth exchange of goods or services as enabled by ‘value as net benefit’ can often mean that important but not easily articulated aims are simply ‘reduced out’.

Graeber’s (2001) second and more general conceptualisation, ‘value’ as a psychological construct (Wallace, 1994) of something that is meaningful, can be deployed to counter this. Meaning arises from making conceptual distinctions, which may or may not be reduced to a number. Value is a ‘meaningful difference’. ‘Difference’ implies that nothing can be analysed in isolation: meaning is ascribed to an object/action only when it is placed and compared within some larger system of categories (Graeber, 2001); value is necessarily relational. This definition of value is less easily operationalised than value as net benefit, but it subsumes value as net benefit; ‘price’ can be seen as one way amongst many of expressing meaningful difference.

Thirdly, Graeber identifies value as ‘moral principle’. ‘Values’ refer to the “conceptions of what is ultimately good, proper, or desirable in human life” (Graeber, 2001, p. 1), “one’s principles or standards” (Stevenson & Waite, 2011), which are manifested in “one’s judgement of what is valuable or

important in life.” Societal value does not just comprise psychologically or physiologically ideal states of meaning (Wallace, 1994) but also morally ideal states (Kluckhohn, 1951). Therefore, societal value involves, not simply what people want, but also what people *ought* to want. In other words, ethics is an essential aspect when defining worth.

The following section describes the in depth case study, the observation setting that has allowed us to reflect on and consolidate these ideas on value in urban design.

## *2 The urban design studio*

### *2.1 The Cardiff MA urban design studio 1*

The MAUD in Cardiff University is offered jointly by two Schools, the Welsh School of Architecture (ARCHI) and the School of Geography and Planning (GEOPL). Studio 1 was one of the two design studio projects within the one-year programme. While property valuation has been taught since the course's inception a decade ago, it was initially a discrete element, separate from the design aspects of the programme.

As the student cohort became increasingly international, the design project was changed from a greenfield urban extension in the outskirts of Cardiff to a mixed use high quality, super dense residential development on the edge of the City of London: the Golden Lane and Barbican Estates (together designated 'the Barbican site' for the purposes of this paper). This took place in 2011.

At the same time as the change of design site, the leadership of the Studio was taken over by Chiaradia and the MAUD became a course accredited by the Royal Institution of the Chartered Surveyors (RICS). At this time, a decision was made to integrate property valuation into the Studio. Consequently, Studio 1 had two components: Urban Design Project (70% of the mark) and Development Appraisal (DA) (30% of the mark).

Reflecting the original Barbican design competition which produced the existing scheme, the urban design project component of Studio 1 was set up as a design competition run over 12 weeks. The project brief was succinct:

“The brief then: to comprehensively re-plan an inner city area and to encourage people to live there: high density (750 persons per hectare), high quality living in central London as an attractive alternative to suburban living for middle income people. To create within the study area a genuine mixed use / residential neighbourhood, incorporating schools, shops, open space and amenities .... and to ignore the context.

The brief today: Considering the context, what would be an urban design proposition in response to this brief today?”

The brief assumed that the study area was free of existing buildings, the same situation as the original competition in which participants were faced with in a World War II bomb site. The brief contained a set of conflicting requirements that enabled students to explore, amongst other things, the limits and interactions of super density versus privacy and high quality living, public permeability, public programme and relation to context versus residential quietness, mitigating public green space deprivation versus residents only green space, and local high street vitality. This was not an attempt at improving the existing scheme (LSE Cities Programme, 2013) but a call to envision anew. The main difference between the original competition brief and that set for Studio 1 was that the latter was concerned with how to relate the development to its context. This was the question of ‘designing out’ the enclave discussed by Harwood (2011, pp. 22–33).

For the Urban Design Project component, the students received at the start of the studio, an extensive information pack relevant to the design site, which contained: relevant detailed regional and local policies including those on affordable housing, the detailed land use and quantum programme, including a minimum unallocated density increase, key market considerations including privacy, contextual historical, social and economic information, an electronic 2D plan and electronic and physical 3D models of the surrounding areas, a bibliography, and required deliverables and their format.

For the Development Appraisal component, all the extensive information necessary for completing the assignment was contained within a Valuation Handbook (VH), so that students could concentrate on designing and value assessment, rather than on collecting information. The information provided included residential sales data for the last year in the Barbican and in the recently built Heron, pre-analysed by the module leader to show the magnitude of price variation by dwelling size and type, and in relation to particular design configuration conditions. For instance, whether there are views of the garden, the water, or both; what height the view is from; whether the property is a corner flat, and whether it is an outward-facing or inward-facing corner; whether there is noise exposure; the flat layout and aspect; and so on. Details on social and environmental values were also given in the VH.

Students designed and evaluated throughout the phases below:

- I. **Immersion and strategies generation:** understanding of the challenges; identification of performance criteria for the design; diagramming of potential design strategies for key aspects of the site; screening of potential strategies to select preferred ones.

- II. **Options and variation generation:** having internalised strategies, worked on physical model to generate three overall design options; post-option screening of strategies and evaluation of options, culminating in an interim review, a verbal and graphic presentation to an external professional urban designer reviewer; selection/generation of a preferred option.
- III. **Preferred option refinement and finalisation:** evaluation and refinement of the preferred option culminating in a final review, followed by submission.

These three phases and the corresponding ‘steps’ in the presentation of the empirical data is summarised in [supplementary material ‘Figure SM 1a–1c: Overview diagram and organisation of the studio’](#).

## *2.2 Evaluation and valuation in the design studio*

In order to help the students articulate value, evaluation in the design process was practised all the way through the Studio. Students were required to deploy numerous informal and three formal evaluation techniques. The first formal evaluation was the consideration of pros and cons of each initial potential design strategy, of which three were produced for each aspect of the context identified as being critical for structuring the design proposal. The second formal evaluation was the use of a Scorecard to evaluate design options, within the design process itself. The third was the aforementioned Development Appraisal itself.

- (1) **Pros and cons** of initial potential design strategies: This encouraged students to jot down their thoughts on each of the strategies they have generated. These jottings became the basis of a screening of these initial strategies, by which one of the three strategies were selected to go forward into the option generation stage.
- (2) **Scorecard:** The Scorecard acted as a ‘bridge’ between the design project and DA elements. A seminar delivered several weeks into the module set up this Scorecard in form of a qualitative evaluation framework for assessing their evolving design options. Referencing the findings of the value-urban design relationships in the literature, the seminar introduced the different types urban design values and the beneficiaries of those values. The seminar also discussed how qualitative evaluation frameworks can be organised using a combination of techniques: criteria matrix, spectrum grading, compatibility matrix (Barton & Grant, 2010), and weighted and unweighted criteria (RICS/Environment Agency, 2001). The actual variables within the Scorecard – an example of which can be seen in the [Supplementary Material \(SM\) Figure SM 6](#) – were extracted from the literature and cross-referenced with the Valuation Handbook. Students were provided with an EXCEL version of the criteria matrix, which they could weight according to their design-proposal-specific performance

criteria set and then use to evaluate their design option and variations. EXCEL also allowed the live translation of their evaluations into a spider diagram, which were immediate visualisations of their evaluations. Students presented these evaluations as part of the Interim Design Review, and used them as a way of selecting and articulating a preferred design option to take forward.

- (3) **Development Appraisal (DA):** This component of the module was delivered in parallel with the design teaching, through lectures and workshops by a chartered valuation surveyor, the third co-author, who is a lecturer and member of the RICS. These lectures introduced the concept of value in real estate, the economic background of UK property development, the nature and processes of property development, stakeholders in the development process, development viability, the role of policy, methods of property valuation and the idea of property sub-markets.

For this component, each student was asked to assess the following three types of value within their preferred option:

- i. **private value in exchange.** This accrues to the property developer and to the property owner.
- ii. **private value in use.** This arises in the use of ‘paid for’ amenities. For example, the use of the dwellings by residents, the enjoyment of concerts by audiences, and the consumption of food and drink by restaurant customers.
- iii. **public value.** This arises in the use of ‘not paid for’ amenities. This is often thought of as accruing to ‘the public’, which, of course, also include those who live and work there as well.

These were correspondingly addressed by the three-part DA assignment, in which students were asked to:

- A. using the residual method, estimate the purchase price of the site, assuming a reasonable financial return, to enable their client to carry out the development;
- B. using information related to the added value of urban design, revise the residual valuation and to discuss additional costs and added benefits in relation to the revised anticipated development value, and potential land purchase price; and
- C. using information related to social and environmental values provided in their Valuation Handbook, give an indication of the nature and quantity of public good, and to reflect on how they achieved this indication.

Before we present student outputs of the Studio to illustrate this abstract description, we need to introduce the idea of designing and valuation as two

acts that inform or even cause one another, and to demonstrate the derivation of this model from conceptualisations of inquiry and of design.

### *3 Designing for value and valuing design*

#### *3.1 The process of valuation and designing are mutually constructed and cyclical*

If value is ‘the disciplined representation of meaning’, then there is no value without perception of and knowledge about it. Value “can only happen through ... being recognized by someone ...” (Munn, 1986 in Graeber, 2001, p. 3). Munn also recognises however, that value can emerge through action, where “people represent the importance of their own actions to themselves” (Munn, 1986 in Graeber, 2001, p. 3). Value is meaningful difference that is constructed; that it, it requires intention and effort to arrive at a ‘value’. It is therefore arguable that meaning can be changed through influencing how, in what manner and for what purpose the valuer values. That is, value does not inherently reside in the object/process/idea being valued, but in the mind of the beneficiary, then value must accrue to the beneficiary (even if he/she has an ‘agent’ to do the technical valuing). This ‘person’ may be an organisation or a group of people. Note that this is a separate question from that of whether particular benefits could be accessible or is even actually accruing to a particular stakeholder; the person might be benefiting, but may not be aware of the fact that he/she is. In which case, it may be argued that there is benefit which is realised, but not valued or appreciated. Therefore, value and operations based upon it, is at the heart of how we make intentioned, if not always intentional decisions.

The construction of meaning has often been conceptualised as an iterative cycle, in which ideas inform actions, and actions ideas, for example, as described by among others, Garfinkel (1967), Weick (1995), Follett (1924 in Weick, 1995) and hinted at by Graeber (2001). Sieh (2014) argued that it is the search for acceptable value that is both the fuel and the result of this continual process of creating intangible and as yet untested ‘beliefs’ which then inform the tangible actions, which in turn test and modifies beliefs, and so on. She goes on to label beliefs as ‘a state of mind’ and the tangible results of actions as ‘a state of things’ (Figure 1), and it is in this continual cycle that value is constantly constructed and reconstructed.

The pedagogic design of Studio 1 and the resulting student work demonstrates how this iterative cycle can be adapted to the specific case where the ‘action’ is that of ‘designing’, which is an action to shape the city. The Development Appraisal can be seen as an exercise in belief formation, or the making of the ‘state of mind’. The pedagogic design encouraged the students to use

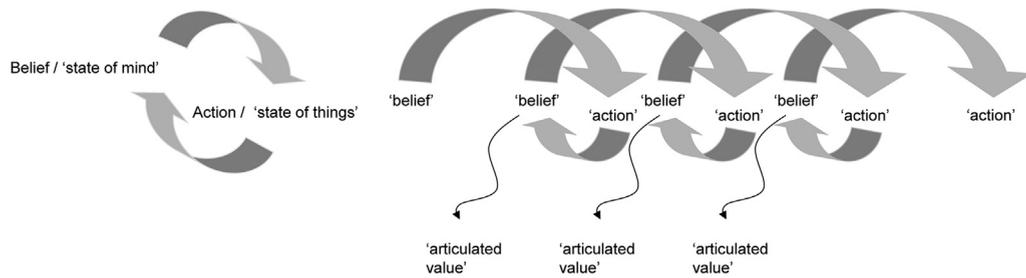


Figure 1 An iterative cycle of belief and action that precipitates value

this 'belief' or 'evaluation' to inform their own design proposals, and in turn, to be informed by the students' own design proposals.

Indeed, this also reflects the classic cyclical models of the design process. In the design process literature, the iterative cycle of belief and action is ubiquitous. Zeisel (2006) for example, described the built environment design process as a spiral (Figure 2) and Hillier, Musgrove, and Sullivan (1972) described designing as a process of 'conjecture' producing 'proto-models' of forms, which produces intangible beliefs. These can be 'tested' or 'evaluated' which lead to modifications of the proto-models, and so on. March (1976) and others

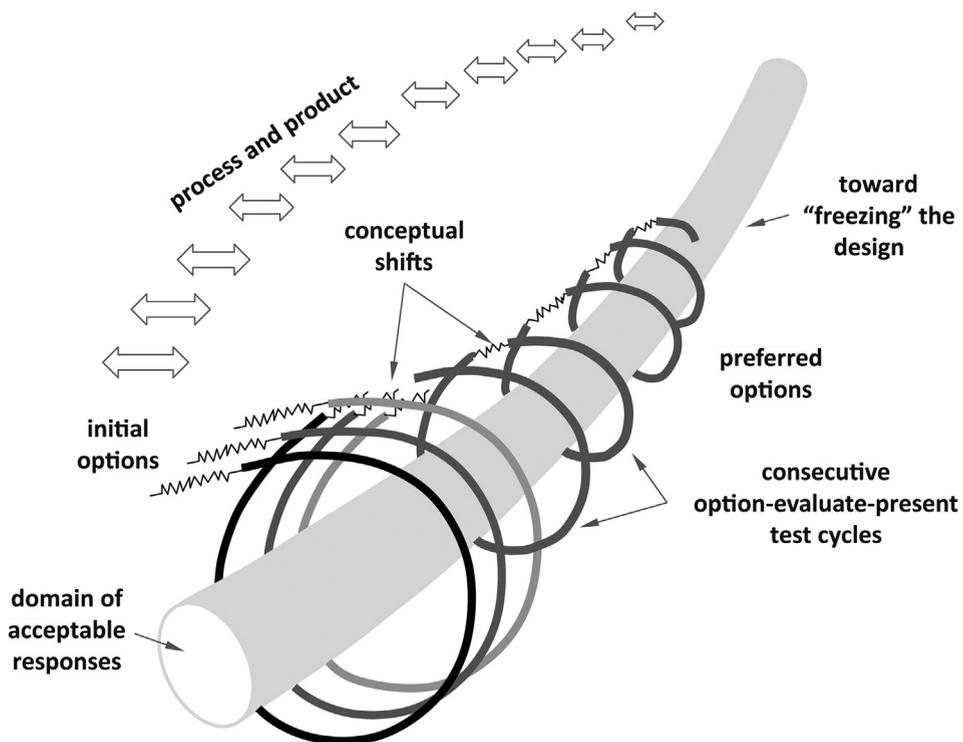


Figure 2 The built environment design process as a spiral (Adapted from Zeisel's spiral of design, 2006).

(Cross, 1997; Dorst, 2011) further elaborated on this model (Figure 3). All of these models see evaluation as being continuously entangled in the design thinking process, even as part of the design thinking process itself is to design the evaluation frames. The ability to extend design intention to the evaluation frames themselves, to attitudes and to breadth and/or depth of proto-models may be part of what distinguish the novice from the expert designer. This is a difference that needs to be reflected in the design of studio pedagogy for Master's students, and one that is often not recognised by experienced design tutors themselves (Curry, 2014).

It is beyond the scope of the present paper to explore the details and dynamics of each of these models. However, the general iterative model allows us the following: the 'belief-forming' side of the cycle, which represents the judgement made by the valuer, is the focus of activity that aims to find out, or enquire, about things. Such activity includes valuation, which is finding out about the worth of something, and research, which is simply 'disciplined inquiry' (Guba & Lincoln, 1989). In contrast, the 'action-enacting' side of the cycle is the focus of all activity that aims to make tangible change in the world, based on those valuations. Such activity includes everything we do with intention, including articulating and communicating ideas, and in this specific subset of the iterative model that describes a design, the 'action' in the cycle must necessarily involve the manipulation of physical configurations that are then associated with a given value outcome. A value outcome happens when the beliefs and tangible results reach a stable state in which there is no (or sufficiently minimal) cognitive dissonance caused by beliefs and design that are

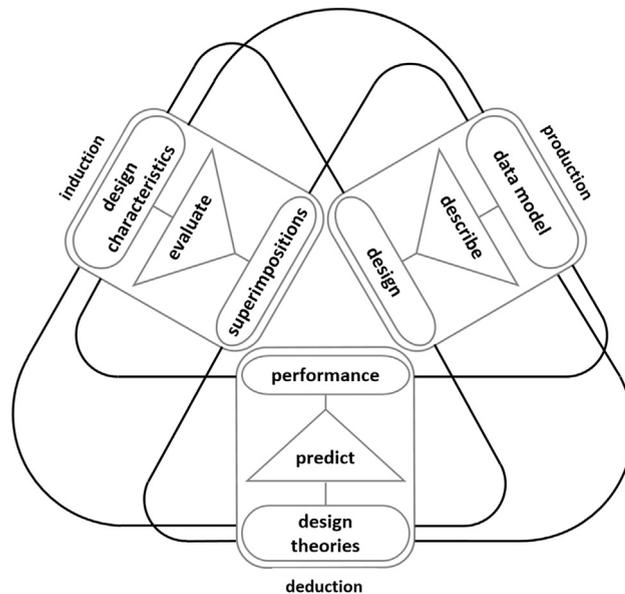


Figure 3 The production/deduction/induction model of the rational design process (redrawn from March, 1976)

contradictory, or that offend the rational or moral sense of the valuer. Note that this iterative model applies whether value is defined as ‘net benefit’, ‘meaningful difference’ or ‘moral principles’.

It is this ‘mutual causality’ that underpins Studio 1’s pedagogic design, which can be understood as alerting students that the action of designing and the belief arising out of (e)valuation are two sides of the same coin. They are steps in constructing and reconstructing the values in urban design using a set of valuation ‘scaffoldings’. They are also steps in the making and refining of spatial configurations.

Thus, by the ‘*designing for value*’ of this Section’s title— the shaping of ‘a state of things’ — we mean the designing of physical shapes with knowledge of and in response to what value these shapes might entail. In this paper, we reflect on how students rehearsed the insertion of value information into their acts of designing tangible configurations, specifically, how they developed options and density variations, and how they selected and refined their preferred option. By ‘*valuing design*’ we mean the determination of value of an urban design proposal, the formation of the valuer’s ‘state of mind’ regarding the proposal. In seeking to understand this process of valuation, we explored how the students extract, from tangible designed configurations, values of various urban design features through the evaluation of their options via Scorecards, and the DA exercise. The concept of value is therefore both the ‘fuel’ and the ‘result’ of an iterative process in urban design. The analysis of information to determine value, and the synthesis of information to set up design configurations are two sides of the *same* iterative cycle.

This model served as the framework to present the work of three students that illustrates evaluation and valuation in the design studio, and also the relationship between valuing and designing.

### 3.2 *Three student projects: an illustration*

The examples of student work are presented here both to ‘bring to life’ for the reader the abstract structure of the Studio module, and to provide the evidence of how students developed their mastery of value in urban design. The students’ drawn work is provided as [supplementary material](#) to this article, but referenced here in the main text.

- **Figure SM 1a–1e:** Overview diagram and organisation of the studio

This provides the reader with an overview of the module and helps them to navigate the empirical data, presented below in the following steps, which fit in with the phases of learning discussed earlier.

**Step 1** How did the students design?

**Step 2** How did the students evaluate their design?

**Step 3** How did students modify their design configurations in response to the Scorecard evaluation?

**Step 4** How did students arrive at a valuation of their design?

**Step 5** How did students modify their design configurations in response to the DA results?

Step 1 is associated with phase A, steps 2 and 3 with phase B, and steps 4 and 5 with phase C.

The five steps occur over the period between the Interim and Final Reviews, and coincides with the DA exercise completion. The steps alternate between ‘designing’ and ‘valuing’. Each student example evidences three steps, 3–5 in the cycle. Steps 1 and 2 are only demonstrated through the work of one student, Wang Wei, as they are the background steps to how valuation and designing inform one another.

• **Figure SM 2:** Example of a whole student project

This provides a graphic example of the whole body of work each student is expected to produce.

### *3.2.1 Step 1: how did students ‘design’?*

Unlike the common practice of analysis preceding design, the ‘designing’ action was enabled right at the start of the Studio, counter-intuitively, as part of the ‘context analysis’ process. This was a highly prescribed procedure for generating design strategies. This step saw the dimensions of relevant urban design concern identified for the students. The dimensions include demographic projections and associated land use, pedestrian and vehicular movement patterns, green space distribution, land use and so on. These effectively asked students to explore configurationally, in context, the relevant design dimensions of planning.

**Illustrations for Step 1** are found in the following [Supplementary Material](#):

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*The work of Wang Wei*

- **Figure SM 3a to 3e:** Example of initial design strategies
  - **Figure SM 4:** Example of manipulating the density of forms using a physical model of pre-sized building blocks
  - **Figure SM 5:** Example of resolving block models into three workable proposed options
-

**Discussion:** Requiring students to respond quickly with three alternative ‘initial design strategies’ to each of these discrete aspects of the site achieved two things: first, the students engaged more intimately with site information and were less likely to simply regurgitate data. Second, the students began generating substantive design configurations, right from the start, and this forced them to translate textual guidelines and parameters into configuration, which is the central intellectual act in designing. Students were then asked to bring together the discrete aspects into overall integrated configurational proposals. These took the form of alternative design options to achieve ‘acceptable’ solutions in each of the component dimensions by using a physical model of pre-sized building blocks. Following this they were asked to explore each option’s possible density variations (See [Figure SM 4](#)). The next step involved resolving these explorations into three workable proposed options, with associated density variations, for the site overall (See [Figure SM 5](#)). All of these early steps can be seen as *actions of ‘designing’*.

### 3.2.2 Step 2: how did the students evaluate their design?

While students were asked to consider the pros and cons of each of the initial discrete dimensional design strategies, subjecting the three design options to an evaluation using the Scorecard (See [Figure SM 6](#)) was the first substantive evaluation. This evaluation was the basis of selecting the preferred option to take forward. This evaluation took place against ‘ideal values’ which were concerned with those dimensions of urban design relevant to the site. These values were established by a wide range of empirical studies that students were made aware of. The evaluation results were presented by the students at the Interim Review of student work by external critics.

**Illustrations for Step 2** are found in the following [Supplementary Material](#):

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*The work of Wang Wei*

• **Figure SM 6:** Detail of Scorecard spreadsheet and weighted spider diagram

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**Discussion:** This ‘evaluation’ involved coming to an acceptable assessment of, and acceptable belief about the particular design configuration. The use of this initial evaluation may be seen as the first formalised ‘**valuing of design**’ in Studio 1, consideration of pros and cons of initial dimensional strategies apart. In having to weight each assessment dimension, students were challenged to develop attitudes towards various issues that urban designers need to deal with.

### 3.2.3 Step 3: how did students modify their design configurations in response to the Scorecard evaluation?

Students selected, modified and presented their preferred option, based on feedback from Scorecard evaluation (See [Figure SM 7a & 7b](#)). At this point in the Studio, the Development Appraisal exercise was embarked upon and applied to the students’ preferred option. The preferred option was then, modified by the students based on the appraisal results.

**Illustrations:** Step 3 is illustrated by the following [Supplementary Material](#)

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*The work of Wang Wei*

- **Figure SM 7a & 7b:** Option 1 of 3 and preferred option
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*The work of Feng Shihao*

- **Figure SM 11:** Preferred option at the interim design review
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*The work of Lu Yi*

- **Figure SM 14:** Preferred option, post interim review
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**Discussion:** This step describes **how students ‘designed for value’**. In other words, students modified designs in response to a renewed understanding of values created/destroyed, and in pursuit of a design that produced a better, or more balanced result in the evaluation. We turn now to describe the ‘valuing design’ action.

### *3.2.4 Step 4: how did students arrive at a valuation of their design?*

The Development Appraisal exercise was designed to help students determine the impact on the three types of value of their proposed urban design configurations by posing the question, “What was the revaluation in each case?”

**Illustrations:** Step 4 is illustrated by the following [Supplementary Material](#)

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*The work of Wang Wei*

- **Figure SM 8:** Development Appraisal **Part A:** residual valuation
  - **Figure SM 9a:** Development Appraisal **Part B:** summary of positive and negative values added through design features
  - **Figure SM 9b:** Development Appraisal **Part B:** private use value added to/subtracted from housing by positive (table at left)/negative (table at right) urban design characteristics
  - **Figure SM 9c:** Development Appraisal **Part B:** private value added to housing by positive urban design characteristics, as set out in tables in [Figure 9b](#)
  - **Figure SM 9d:** Development Appraisal **Part B:** private value subtracted from housing by negative urban design characteristics, as set out in tables in [Figure 9b](#)
  - **Figure SM 9e:** Development Appraisal **Part C:** public good values added by urban design characteristics
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*The work of Feng Shihao*

- **Figure SM 12a:** Development Appraisal **Part B:** private use value added to housing development by positive urban design characteristics
  - **Figure SM 12b:** Development Appraisal **Part B:** scheme partitioning that allocates private value added to housing development by positive urban design characteristics, as set out in table in [Figure 12a](#)
  - **Figure SM 12c:** Development Appraisal **Part B:** private value subtracted from housing by negative urban design characteristics
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*The work of Lu Yi*

- **Figure SM 15a:** Development Appraisal **Part B:** scheme partitioning that allocates private use value added to or subtracted from development by positive/negative urban design characteristics
  - **Figure SM 15b:** Development Appraisal **Part B:** private use value added to or subtracted from housing development by positive/negative urban design characteristics summarised from the DA Handbook
  - **Figure SM 15c:** Development Appraisal **Part B:** private use value added to or subtracted from retail development by positive/negative urban design characteristics
- 

**Discussion:** This step essentially describes **how students ‘re-valued design’**. The ‘valuing design’ action was enabled in the Studio by the Development Appraisal assignment.

### *3.2.5 Step 5: how did students modify their design configurations in response to the DA results?*

This step shows what students did to change particular spatial configurations in response to the results of the DA, including those affecting land use locations, views of green space or water, access to high streets, access to green space and a sense of privacy.

**Illustrations:** Step 5 is illustrated by the following [Supplementary Material](#)

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*The work of Wang Wei*

- **Figure SM 10a:** Overall masterplan at interim design review compared to final submitted version. The next images provide detailed illustration of some key changes
  - **Figure SM 10b:** Detail of changes between interim design review and submission: block layout, density, massing
  - **Figure SM 10c:** Detail of changes between interim design review and submission: water features added
  - **Figure SM 10d:** Detail of changes between interim design review and submission: retail link strengthened
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*The work of Feng Shihao*

- **Figure SM 13a:** Overall masterplan at interim review compared to final submitted version. The next images provide detailed illustration of some key changes
  - **Figure SM 13b:** Detail of changes between preferred option at final design review and submission: changed the proportion and location of affordable housing to market housing
  - **Figure SM 13c:** Detail of changes of the preferred option between interim, final design review, and submission: addition of special feature – covered retail arcade
  - **Figure SM 13d:** Detail of changes of the preferred option between interim, final design review, and submission: green space, block types, access, and street trees
  - **Figure SM 13e:** Detail of changes of the preferred option between interim, final design review, and submission: realising the value of historical features
  - **Figure SM 13f:** Detail of changes of the preferred option between interim, final design review, and submission: green space, block types, access, street trees, and roof gardens
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*The work of Lu Yi*

- **Figure SM 16a:** Overall preferred option masterplan at post interim design review compared to final submitted version. The next images provide detailed illustration of some key changes
  - **Figure SM 16b:** Detail of changes between preferred option stage at post interim design review (left), after development appraisal (middle) and submission (right): street alignment and block configuration
- 

**Discussion:** This step essentially describes how students ‘*redesigned for value*’.

The student work shows us design changes that were in response to projected increase/decrease values, such as ‘access to views’, ‘access to views of water’, ‘access to green space’ or ‘proximity to particular land uses’. For ‘valuing design’, the examples describe not only the actual change in value resulting from the design change, but also the student’s reasoning for the valuation made.

### *3.3 Interview evidence: what and how students learnt*

Apart from following the procedures for valuation, what insights did students gain into ‘value and urban design’? After all, the point of teaching appraisal is not to substitute the property surveyor’s expert appraisal, but to educate

designers in the language of property. This is in line with our position, stated earlier, that ‘value appraisal’ or ‘property valuation’ is simply a formalised way<sup>2</sup> of dictating how information feeds back from the interim design proposal, which is a configurational proposition, or, in designer parlance, a sketch scheme. This informs the designer’s own critique of the proposition, and each subsequent modification of that proposition. So, in shadowing how different stakeholders of a development think, including property developers and their valuation agents, the eventual purchaser or dwellers of the residential units, the business occupiers, the local authority, and the general public user, urban designers are able to inform their design decision process in pursuit of the creation of *valuable* spatial configurations.

Did we succeed in our educational mission to enable students to take into account a range of stakeholder values? We interviewed eight students from the 2015/16 academic year, and four from the 2013-14 year to find out. [Table 1](#) summarises students’ interview responses regarding what changes were made and why.

These interviews confirmed how instrumental value informed design decision-making for ‘designing value’. In response to the residual valuation in Part A, which articulated private value in exchange, some students changed the mix of uses, for example, changing the location/balance of market and affordable housing, and between retail and residential uses, such as the restriction of retail to ground floor spaces only. In response to the evaluation of the proposal for private values not normally addressed by conventional valuation but which are nevertheless important values in use, students changed the configuration of the layout to enable more views and specifically more views onto green and water. In relation to the evaluation of the public value of design, all students recognised that this was the most difficult type of value to assess, and this reflects the very nature of ‘public’ values, in that they are difficult to capture.

**Table 1 Summary of student interview responses regarding what changes were made and why**

	<i>Mention of</i>	<i>Number of students who mentioned this</i>
Configurational changes made	Open/green space	11
	Massing/roof heights	10
	Land use mix or distribution	7
	Block layout	6
	Other	6
	Water bodies/features	5
	Movement network	4
Reasons for changes	Better views (of skyline, water, park etc)	10
	Access (incl. permeability, proximity and legibility)	4
	Noise	1

In relation to ‘valuing design’, the use of residual valuation as the principle context in a value discussion was effective in achieving learning objectives. All the students interviewed were clear that the concepts of cost and value were important in urban design decision-making. Students got a sense of the magnitudes of value in a development context such as the Barbican. They understood that the reduction of costs was important to developers. They also understood how it is possible to have high costs and low value, and vice versa, or neither. “I noticed that the high cost didn’t mean... high value sometimes and you should know the profit percentage and try to have a lower cost (in order to) have a higher value .... I have this experience that I add something in the cost but I haven’t got much value” (sic) (Student 2). They were able to demonstrate, in some detail, the use of evaluation results in making modifications to their design proposals, as the three projects above showed.

In Part B of the DA, where students were asked to consider the private value in use of their proposal, in contrast to value in exchange, the students noted that economic value becomes trickier to measure with any confidence (Student 19). Nevertheless, they gained a sense, if not of magnitude, then certainly of the direction in which value changes with design configurations.

In Part C of the appraisal exercise, students were asked to consider the public value of their preferred design option. While, estimating public value precisely was unsurprisingly difficult as it defeats even the most determined and well-resourced professional researcher, the students gained insights into design situations where value demands were conflicting, and resolution required a trade-off between different value goals held by different stakeholders. For example, an increase in public value could destroy private value, and vice versa. “I think that the designer should balance it and balance the urban design better, and public value, because they should both make the people living there have a high quality life and help the developer increase their value and also make a contribution to the whole society” (sic) (Student 4).

However, sometimes configurational iterations led to an increase in both public and private values, for example, “the public garden and the private garden is separated by a river of water that the private people and the public people can also benefit from the water” (sic) (Student 2). This student proposed a water body that separated public and private open space, thus adding private value both by excluding the general public but also by providing water which is desirable. At the same time, public value was also increased by the presence of water. The same student modified the angle of the corner of a residential block so that the values of the corner units are optimised. Other examples were discussed in the three student project illustrations. This demonstrates fruitful synthesis of rich information in aid of innovative solutions to urban design form-making.

Overall, students interviewed confirmed that a key message of the Studio was the importance of being able to trace design decisions to ensure accountability, which most of them had not explicitly considered prior to the Studio (Students 1, 2, 3, 4). Some of the more advanced students were able to articulate the role of urban designers in this process of accounting for design decisions. "... in some circumstances we also need to know not just (to) do your own work; you need to communicate (to others about it) .... You need to act as a bridge connecting to other fields" (Student 3).

Studio 1's pedagogic design scaffolds students' accelerated journeys through the iterative cycle of designing and evaluating, and appears to enable learning of design and valuation skills. "In Studio 1 all the drawing, all the diagrams are (set out) in a very logical way ... before that my project, my layout is not that logical. It is a bit of this, a bit of that and (I) knit them together, but (now) I know first is the analysis and then it is the strategy ... the process of design is more clear for me. May be this is the most useful thing (I learnt in the Studio)" (Student 1).

The observations and insights presented here, including the method's effectiveness from students' point of view, strengthen the case that the iterative design and evaluation model is a useful description of how design expertise evolves and how design actually works (Lawson & Dorst, 2009). Furthermore, as will be explored below, on the points of accountability, the education of judgement and dealing with the internationalisation of urban design education, this iterative 'value' model proves useful in reflecting upon how students learn.

#### *4 A definition of 'value in urban design'*

"There are these two young fish swimming along and they happen to meet an older fish swimming the other way, who nods at them and says 'Morning, boys. How's the water?' And the two young fish swim on for a bit, and then eventually one of them looks over at the other and goes, 'What the hell is water?'"

— David Foster Wallace. *This is Water*, (2009).

The clueless young fish are not, as one might suspect, our students. Instead, they are all of us — urban design practitioners who deploy 'value' instrumentally day in day out and are immersed in it within every decision we make. Yet we do not sufficiently reflect on what value in urban design actually means, and what the implications of deploying value arguments are. This paper is about what the hell value is.

The process of scaffolding our students' learning and the insights that they have thrown back at us allow us to address the objectives for this paper. Firstly, to (re)define what value could be in urban design; that is, to develop a definition of value that is relevant to urban design. Secondly, to derive a corresponding definition of 'urban design' itself, in terms of value. This Section discusses the former, an 'urban-design-relevant' definition of value.

The Development Appraisal is an urban design-sensitive value appraisal. It seeks to bring into explicit consideration the questions of 'to whom value accrues' whether private and public, 'what the function of value is', 'whether it is value in exchange or in use that is being considered', 'the different aspects of urban design', and 'identification of sources of value from amongst possible urban design features'.

In fact, the three Parts, A, B and C of the Development Appraisal were structured around the trio of concepts of societal value (Graeber, 2001) discussed in Section 1.5. These three value concepts underpin the types of values created/destroyed by doing urban design (see Table 2) and are therefore value concepts that designers should be conversant with if they are to deploy them.

In the first column from the left, the three concepts of value — *net benefit*, *meaningful difference*, *moral principles* — categorise the aspects of societal value with which urban design may have any conceptual interaction with.

The second column describes the *manifestation of this type of value in urban design practice* and sets out those values that urban design activity typically affects, and with which urban designers need therefore to be concerned. One could consider whether these values are associated with tangible and intangible *urban design outputs*, or the *processes* of designing.

The third column maps who these types of values typically accrue to, and whether this can constitute private value, or public value (Kelly et al., 2001; Moore, 1995; Talbot, 2008). This is a fundamental issue because arguably, there can be no value without someone to which that value would be valuable; knowing who the beneficiaries are helps us understand the equity of a given value configuration.

The fourth column identifies those instances when the urban design-specific value concepts might be useful. These are classified according to common concepts in public economics, primarily around the question of whether it is value in exchange, value in use, or more exotic types such as non-use value or existence value (CABE, 2006).

**Table 2 Three conceptualisations of value in society and in urban design**

<i>Societal value conceptualisation (Graeber, 2001)</i>	<i>What is it that is valuable that concerns urban design?</i>	<i>Who does value accrue to? Is it private or public value?</i>	<i>For what purpose is the value used?</i>	<i>Where is it in Studio 1 Development appraisal?</i>	<i>What the students end up focussing on in terms of design</i>
Net benefit	Property value	Private value accruing to developer and/or property owner	Value in exchange	Conduct of residual valuation (Part A), the analysis of sale prices	Density, land use and layout, which are assessable through residual valuation and ancillary analysis
Meaningful difference	How the space is used	Private value accruing to user of paid for benefits	Value in use	Evaluating user value/ appraisal (Part B)	Issues that matter to users/residents but which may not be reflected in residual valuation.
Legitimacy and Moral principles	Externalities	Public value accruing to users who do not pay for benefits	Social value, existence value, environmental value, educational value, cultural value, prestige	Evaluating public good value (Part C)	Urban design principles, variables, indicators or principles of 'good design' or wider quality of life or quality of place targets

The fifth column simply states where in the Studio 1 processes this value is in play, respectively, Parts A, B and C. As already discussed, in Part A, we introduced students to the idea of value in exchange via ‘developer’s value’. In Parts B (added value of urban design) and C (public good), students were asked to make explicit in monetary terms, values which usually remain unarticulated (Biddulph, 2007).

The sixth column is about what, as a result of having considered this value in the valuation exercise, the student ends up focussing on in their design.

This table demonstrates how value can be used as a central instrumental concept to help ensure site-specific urban design responses. A ‘value’ approach starts with who the stakeholders are, what value and what forms of value accrue to them, how do they apprehend that value, and what do they do with valuable assets, and stakeholders are always site-specific. Thus, the three definitions of value in the first column and top row headings are general questions applicable anywhere, but the table content in Columns 2, 3 and 4 would be context-specific. The urban designer needs to know about the system that governs the rights to benefit from different aspects of the development, and therefore the type of stakeholders and the nature of their interest in those benefits, about its property development processes and how value transfers between stakeholders in such a system, and the role of physical configuration in this system.

The highly coherent and plausible multi-way triangulation between the different manifestations of value, stakeholders and purposes of value, based on non-urban design-specific literature (Graeber, 2001), urban design specific literature (British Council for Offices, 2006; CABE, 2006), the authors’ own investigations into values in the Barbican sub-market that underpinned the Valuation Handbook and the pedagogic design of the Studio, and the reflection on student work and student experience gives us confidence that this framework is robust.

For urban designers and valuers chugging along in the middle-range concept of ‘value as net benefit’, the links to the higher level concepts of ‘value as meaningful difference’ and ‘value as moral principles’ should inform everyday practice. Given that urban design is often dependent on property development, given its status as a ‘public art’ (Marshall, 2015), its influence over social goods and its political nature, all three conceptualisations of value are important, *at the same time*, for a concept of value in urban design. For an urban designer, all three notions of value should remain in play and underpin urban design practice, not just the easy-to-measure ‘value as net benefit’. A designer should always be at least aware, if not in control of value as an instrument, and not the other way around.

## 5 *What could urban design be in terms of value?*

### 5.1 *What we learnt from reflecting on student learning: insights and implications for a definition of urban design itself*

A number of insights for the wider ‘value of urban design’ discourse flow from observing how students learnt. These insights bring to the centre stage some important characteristics of urban design, but which are either usually peripheral in urban design discourse, or hide in plain sight of practice. Foregrounding these characteristics also point to a new definition of urban design.

First, designing entails moving beyond listing abstract dimensions that describe parameters, to generating dimension-led *configurations*. The abstract lists do not provide the facility to relate one item on the list to another, so the guidance proffered is only ever general (DETR & CABE, 2000). The designed product, on the other hand, is a context-specific spatial and formal relational configuration. To get from dimensional parameters to configurations, ‘leaps’ of reasoning are necessary for innovative form-generation. Interviews with students confirmed that this ‘leap’ is often the first step in the cycle, with the evaluation as the second and confirmatory step (e.g. Student 19, Student 17). Designers do not proceed from high level design principle to evaluation dimension to ever more detailed specification of form. This insight calls into the question the role of ‘design principles’ and ‘good practice checklists’ in training designers, as a ‘logical’ procedure of ‘analysis to form’ is a design dead-end. Instead, leaps involve putting pen to paper (or mouse to mousepad, or scalpel to cardboard) to venture a configuration. In Studio 1, this was achieved by leaping from a set of three configurational strategies for each dimension, which respond to a given parameter’s spatial implications, putting this together with the sets for all other dimensions, and venturing three configurational options. This constitutes a ‘traumatic’ insertion into the iterative cycle of design and valuation by the action of proposing a form, almost any form, to begin with. However, we do need to contrast this to a pure ‘form to programme’ approach to designing in architecture (Rhowbotham, 1995) and state that urban design is ‘form-to-programme-to-analysis-to-form’. In this mode of abductive reasoning, design checklists do indeed have their uses, but as aids for evaluating design, rather than as starting points for the generation of form.

Studio 1’s site or project-specific lists of articulated parameters used in the evaluations served to help students make their design process explicit, to ‘represent value to themselves’ (Munn, 1986 in; Graeber, 2001) as well as to its multiple stakeholders. In so doing, urban design students begin to exercise value in pursuit of accountability; the accountability function of value. By ‘making visible’ their design and evaluation processes, students develop skills in accounting for their design decisions. This is our second insight. Since urban design unavoidably impacts upon the public realm, urban designers should

recognise that the assessment of their design proposal can and should be subject to some form of public accountability. For a discussion on public accountability, see [Bevir \(2010\)](#), [Hughes \(2003\)](#) and [O'Neill \(2002\)](#).

Public accountability is itself a strategy for manoeuvring through multi-stakeholdered urban situations to arrive at an acceptable proposal or solution. Value, in its three guises, is its central mechanism. In urban design, which is politicised and contested, solutions involve physical configurations, which are both the subject of and an ingredient in the multi-stakeholdered negotiations of 'what should be done'. 'Value' therefore, needs to be geared up to admitting physical configurations. This is our third insight, which is about physical configuration and awareness of a configuration's value. As the literature review showed, 'value', which could bring these two actions of 'configuring' and 'evaluating' together, is often put into the 'too difficult to deal with' box by practitioners, even by the experts who deal with 'value in design'. Yet urban designers *are* aware of the importance of value, they may just not have the language to speak about it. Our observations showed that even students, who are novice designers, very quickly became aware of the tensions between public and private values as they were forced to formulate their own ideological positions with regard the public–private good balance. While students were unanimous in noting how difficult it is to 'put a number' on social and environmental 'public' values, they were all forced to 'take a position' to complete the DA exercise in Part C. In terms of the designer's role in mediating the public and private urban goods, students typically made statements such as, "I think that the designer should balance ... (private) and public value because they should both make the people living there have a high quality life and help the developer increase their value and also make a contribution to the whole society" (Student 4), and "I think this is about ethics as an urban developer. There is a responsibility (to balance between profit and public good) that you have to undertake" (Student 3). Thus, students deepened their understanding of urban designing as a political act.

It may be argued that designers need an education of judgement, and an urban designer's judgement should be based on a broad-based evaluation of the values – the meaningful differences – that urban design gives to its multiple stakeholders. In other words, political as well as technical and aesthetic judgements. Students may be said to undergo this education in the Studio, although in a rather abstract and technicalised way, as no actual stakeholder contact is involved. This is our fourth insight. Throughout the Studio process there is an inbuilt requirement to make judgements. We have already discussed the 'leaps' required for designing, which require judgement. So do the execution of Parts B and C of the Development Appraisal. In these parts of the exercise, it is quite clear that the 'answer' cannot be arrived at by simply following procedures, and in design, this is certainly the case. So, despite the apparent straightjacket of procedure involved, no requirement in Studio 1 involves the abdication of

judgement or creativity in design decision-making in favour of the robotic making of shapes. The student designer is guided to remain in control of the value tools and the values created, not the other way around.

The fact that students were encouraged to take their own value positions and to incorporate them in a modification of the Scorecard to reflect this, meant that they rehearsed the abstraction and reinsertion of values into their own readings of the specific project site and context. This introduces skills applicable in any site or social context, so that the disciplined expression of meaning, which is what value is, may be a technique potentially applicable anywhere in the world.

In a context of the internationalisation of urban design education, this addresses the challenge of making pedagogic content relevant in a subject where context-specific knowledge is important. The Studio was pitched at a level of generality where transferability is possible across a wide range of contexts. Notably, in the Studio, students were not taught principles, which could be thought of as heuristics of the normative, but how to value benefits and disbenefits to shape a design response. The pedagogic innovation in the Studio 1 was that students are taken through evaluation via techniques – Scorecard, DA – through which parameters enable the determination of spatial fixities on the site. So while dimensions and principles can only remain abstract and general, dimension-led configuration enabled by evaluation is a way of bringing those abstracted concerns to bear on the specificity of each site and its stakeholders' preferences.

## *5.2 A definition of 'urban design, in value terms'*

All of this calls to attention two features of urban design that have often been side-lined, if not in practice, then in much urban design teaching. The first is that urban design is configurational. The second is that its processes necessarily require taking public accountability seriously. This is because urban designing is a political activity, as well as a configuration-making one, so designers themselves need to develop their judgement skills to be effective. A definition of urban design in value terms allows us to put these two features centre stage again.

The earlier discussion demonstrated how design proposals and corresponding values relate iteratively in the design studio, where design processes are made visible to the novice designers. The interview evidence demonstrated that this was successful in engendering insights about the design process and the roles of value within it. The students understood that design involved the shaping of spatial configuration; this is essentially what the generation of initial spatialized strategies, and later, options, were about. In this context, the evaluation results of those configurations may be themselves seen as configurations of beliefs about those spatial shapes, and the

iterations between form and belief seen to precipitate a ‘configuration of values’. Urban design is not ever a singular value, or even a set of values about complex issues held by one person, but a *configuration* of values held by multi-stakeholders (‘people’) about multiple complex issues (‘place’). These value configurations accompany the spatial physical configurations. So, a definition of urban design in terms of value should be about managing value configurations. Specifically, it is managing values to ensure that corresponding values held by multiple stakeholders are ones that are sufficiently acceptable to all stakeholders. Urban design may thus be defined, in value terms, as *‘the activity which involves manipulating spatial form and marshalling the corresponding multiple stakeholders’ values to deliver acceptable spatial configurations and achieve acceptable value configurations’*. Arguably, ‘good’ urban design delivers ‘maximum’ possible value configuration overall for all stakeholders, and ‘optimal’ value to each stakeholder individually, with inevitable trade-offs between what is desired by the individual and its impact on everybody else.

## 6 *Future research*

It has been argued that “a concrete term for environment is place” (Norberg-Schulz, 1980, p. 6). Yet the apparent legacy of the generalising and averaging tendencies of much social science (Yanow & Ybema, 2010) impairs our ability to apprehend the ‘concrete’ and the ‘specific’ within our valuation models. If the ability to make specific is lost, even if we talk about ‘making place’, we can only produce another piece of ‘environment’. This is a depressing prospect for urban design. Can the idea of value be instrumental in bringing the specific and concrete back into a social scientific discourse of urban design? How might this be achieved?

There are at least two possible ways forward from this point for such a theory of value in urban design.

The first focuses inwards, and explores the specific dynamics of the design—evaluation cycle. This could examine what factors affect the dynamics, what the resulting values could be, and whether such a micro-level understanding of the mechanisms of meaning-making holds any promise for a move ‘away from the average’ discussed earlier. Examples of such evaluation approaches to inform design include ‘a day in the life’ narratives, and the range of techniques deployed in the ethnographic research tradition.

The second looks outwards to the many urban design discourses in which applying value could bring insight. Urban design is a discipline whose theory has been fragmenting around ‘place’ (Banerjee & Loukaitou-Sideris, 2011) and ‘people’ (Banerjee & Loukaitou-Sideris, 2011; Cuthbert, 2006), and processes (Haas & Olsson, 2014). In the face of this theoretical fragmentation, value is

potentially a localised common currency which can relate, in a clearly articulated framework and theoretically dynamic relationships, people and places, states of minds and states of things. The model makes visible the incessant reformulation of the values themselves and highlights their uncertainties brought about by ‘people’ assemblaging with ‘places’ over times (Latour, 2005). Value is a concept that links place and people and their assemblages, and can therefore be instrumental in opening up avenues for both place and people specificity.

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### *Appendix A. Supplementary data*

Supplementary data related to this article can be found at <http://dx.doi.org/10.1016/j.destud.2016.10.002>.

### *Notes*

1. This is inspired by Guba and Lincoln's (1989) definition of research as ‘disciplined inquiry’.
2. It is one of many possible formalisations of feedback process within design. Any form of review protocol is one.

### *References*

- Adams, D., & Tiesdell, S. (2013). *Shaping Places: Urban Planning, Design and Development*. London: Routledge.
- Amion Consulting, Taylor Young, Donaldsons, & University of Liverpool. (2007). *Economic Value of Urban Design*. Liverpool: Amion Consulting.
- Banerjee, T., & Loukaitou-Sideris, A. (Eds.). (2011). *Companion to Urban Design*. Abingdon: Routledge.
- Barton, H., & Grant, M. (2010). *Shaping Neighbourhoods: For Local Health and Global Sustainability* (2nd ed.). Abingdon: Routledge.
- Bevir, M. (2010). *Democratic Governance*. Princeton(NJ): Princeton University Press.
- Biddulph, M. (2007). *Introduction to residential layout*. London: Routledge 29–39.
- British Council for Offices. (2006). *Offices, Value and Design*. Online. Retrieved from. <http://www.bco.org.uk/Research/Publications/Officesv2606.aspx> (Accessed 01 July 2014).
- Buchanan, J. M., & Stubblebine, W. C. (1962). Externality. *Economica*, 29(116), 371–384.

- CABE. (2003). *A Bibliography of Design Value*. Online. Retrieved from. <http://webarchive.nationalarchives.gov.uk/20110118095356/http://www.cabe.org.uk/files/a-bibliography-of-design-value.pdf> (Accessed 01 July 2014).
- CABE. (2006). *The Value Handbook, Getting the most from Your Building and Spaces*. Online. Retrieved from. <http://webarchive.nationalarchives.gov.uk/20110118095356/http://www.cabe.org.uk/files/the-value-handbook.pdf> (Accessed 01 December 2014).
- CABE. (2007). *Paved with Gold: The Real Value of Street Design*. Online. Retrieved from. <http://webarchive.nationalarchives.gov.uk/20110118095356/http://www.cabe.org.uk/files/paved-with-gold.pdf> (Accessed 01 July 2014).
- CABE Space. (2003). *The Value of Public Space, How High Quality Parks and Public Spaces Create Economic, Social and Environmental Value*. Online. Retrieved from. <https://www.designcouncil.org.uk/sites/default/files/asset/document/the-value-of-public-space.pdf> (Accessed 01 July 2014).
- CABE Space. (2009). *Making the Invisible Visible the Real Value of Park Assets*. Online. Retrieved from. <https://www.designcouncil.org.uk/sites/default/files/asset/document/the-real-value-of-park-assets.pdf> (Accessed 01 July 2014).
- CABE, ODPM, & Design for Homes. (2003). *The Value of Housing Design and Layout*. Online. Retrieved from. <http://webarchive.nationalarchives.gov.uk/20110118095356/http://www.cabe.org.uk/files/the-value-of-housing-design-and-layout.pdf> (Accessed 01 July 2014).
- CABE, UCL, & DETR. (2001). *The Value of Urban Design. Analysing Commercial Developments to See How Excellent Design Adds Economic, Social and Environmental Value*. Online. Retrieved from. [www.designcouncil.org.uk/publications/the-value-of-urban-design/](http://www.designcouncil.org.uk/publications/the-value-of-urban-design/) (Accessed 21 November 2013).
- Chiaradia, A. J. F., Hillier, B., Schwander, C., & Barnes, Y. (2013). Compositional and urban form effects on residential property value patterns in Greater London. *Urban Design and Planning – Proceedings of the ICE, June, 166*(3), 176–199.
- Chiaradia, A. J. F., Hillier, B., Schwander, C., & Wedderburn, M. (2012). Compositional and urban form effects in centres in Greater London. *Urban Design and Planning – Proceedings of the ICE, March, 165*(1), 21–42.
- Colin Buchanan. (2008). *A Programme-level Evaluation of One NorthEast's Quality of Place activities, 2002–07*. Online. Retrieved from. <http://www.onenortheastlegacy.co.uk/file.aspx?id=75> (Accessed 01 July 2014).
- Cross, N. (1997). Descriptive models of creative design: Application to an example. *Design Studies, 18*(4), 427–455.
- Curry, T. (2014). A theoretical basis for recommending the use of design methodologies as teaching strategies in the design studio. *Design Studies, 35*(6), 632–646.
- Cuthbert, A. R. (2006). *The Form of Cities, Political Economy and Urban Design*. Oxford: Blackwell Publishing.
- Department for Transport. (2013). *Transport Analysis Guidance: WebTAG*. Online. Retrieved from. <https://www.gov.uk/transport-analysis-guidance-webtag> (Accessed 01 July 2014).
- DETR, & CABE. (2000). *By Design Urban Design in the Planning System towards Better Practice*. Online. Retrieved from. <http://webarchive.nationalarchives.gov.uk/20110118095356/http://www.cabe.org.uk/files/by-design-urban-design-in-the-planning-system.pdf> (Accessed 01 July 2014).
- Dorst, K. (2011). The core of 'design thinking' and its application. *Design Studies, 32*(6), 521–532.

- Dunse, N., White, M., White, M., & Dehring, C. (2007). *Urban Parks, Open Space and Residential Property Values*. London, RICS Research Paper Series.
- Eisenhardt, K. M. (1989). Building theories from case study research. *The Academy of Management Review*, 14(4), 532–550.
- Fisher, D. R. (1999). *Waterside Properties*. Online. Retrieved from. [https://www.waterways.org.uk/pdf/restoration/trh\\_waterside\\_properties\\_2](https://www.waterways.org.uk/pdf/restoration/trh_waterside_properties_2) (Accessed 01 July 2014).
- Foster Wallace, D. (2009). *This is Water: Some Thoughts, Delivered on a Significant Occasion, about Living a Compassionate Life*. London: Little Brown Book Group.
- Garfinkel, H. (1967). *Studies in Ethnomethodology*. Englewood Cliffs (NJ): Prentice Hall.
- Garrod, G., & Willis, K. (1994). An economic estimate of the effect of a waterside location on property values. *Environmental and Resource Economics*, 4(2), 209–217.
- GLA Economics. (2003). *Valuing Greenness, Green Spaces, House Prices and Londoners' Priorities*. Online. Retrieved from. [http://www.london.gov.uk/mayor/economic\\_unit/docs/valuing\\_greenness\\_report.pdf](http://www.london.gov.uk/mayor/economic_unit/docs/valuing_greenness_report.pdf) (Accessed 01 July 2014).
- GLA Economics. (2010). *Working Paper 42 Valuing Housing and Green Spaces: Understanding Local Amenities, the Built Environment and House Prices in London*. Online. Retrieved from. <http://www.london.gov.uk/sites/default/files/GLAE-wp-42.pdf> (Accessed 01 July 2014).
- Goetgeluk, R., Kauko, T., & Priemus, H. (2005). Can red pay for blue? Methods to estimate the added value of water in residential environments. *Journal of Environmental Planning and Management*, 48(1), 103–120.
- Graeber, D. (2001). *Toward An Anthropological Theory of Value: The False Coin of Our Own Dreams*. New York (NY): Palgrave Macmillan.
- Grant Long, J. (2012). State of the Studio: Revisiting the potential of studio pedagogy in U.S. based planning programs. *Journal of Planning Education and Research*, 32(4), 431–448.
- Grosvenor. (2013). *Evolving Cities, Resilient Urban Form, Governance and the Creation of Long Term Value*. London: The London School of Economics and Political Science.
- Guba, E., & Lincoln, Y. (1989). *Fourth Generation Evaluation*. Newbury Park (CA): Sage Publications.
- Haas, T., & Olsson, K. (Eds.). (2014). *Emergent Urbanism, Urban Planning & Design in Times of Structural and Systemic Change*. Farnham: Ashgate.
- Harwood, E. (2011). *The Barbican, City of London*. In: *Delft Architectural Studies on Housing (DASH), July – The Urban enclave, Vol. 5*.
- Hillier, B., Musgrove, J., & Sullivan, P. O. (1972). Knowledge and design. In W. J. Mitchell (Ed.), *Environmental Design Research and Practice*. Los Angeles (CA): University of California Press.
- HM Treasury. (2011). *The Green Book: Appraisal and Evaluation in Central Government*. Online. Retrieved from. <https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government> (Accessed 01 July 2014).
- Hughes, O. (2003). *Public Management and Administration: An Introduction* (3rd ed.). Basingstoke: Palgrave MacMillan.
- Jim, C. Y., & Chen, W. Y. (2010). External effects of neighbourhood parks and landscape elements on high-rise residential value. *Land Use Policy*, 27(2), 662–670.
- Jones, P., Roberts, M., & Morris, L. (2007). *Rediscovering Mixed-use Streets the Contribution of Local High Streets to Sustainable Communities*. Bristol: The Policy Press.

- Kelly, G., Mulgan, G., & Muers, S. (2001). *Creating Public Value, An Analytical Framework for Public Service Reform*. London: Cabinet Office.
- Kluckhohn, C. (1951). Values and value-orientations in the theory of action: An exploration in definition and classification. In T. Parsons, & E. Shils (Eds.), *Toward a General Theory of Action*. Cambridge(MA): Harvard University Press.
- Latour, B. (2005). *Reassembling the Social*. Oxford: Oxford University Press.
- Lawson, B., & Dorst, K. (2009). *Design Expertise*. Oxford: Architectural Press.
- Lichfield, N. (1970). Evaluation methodology of urban and regional plans: A review. *Regional Studies*, 4(2), 151–165.
- Lichfield, N. (2005). *Community Impact Evaluation: Principles and Practice*. London: Routledge.
- Lichfield, N., Kettle, P., & Whithbread, P. (1975). *Evaluation in the Planning Process*. Elmsford (NY): Pergamon Press Inc.
- Lichfield, N., Barbanente, A., & Borri, D. (Eds.). (1998). *Evaluation in Planning: Facing the Challenge of Complexity*. Heidelberg: Springer.
- LSE Cities Programme. (2013). *Cities Studio Publications, Local City*. London: The London School of Economics and Political Science.
- March, L. (1976). The logic of design and the question of value. In L. March (Ed.), *The Architecture of Form*. Cambridge: Cambridge University Press.
- Marshall, S. (2015). Refocusing urban design as an integrative art of place. *Proceedings of the Institution of Civil Engineers: Urban design and Planning*, 168(1), 8–18.
- McIntyre, M. H. (2006). *A Literature Review of the Social Economic and Environmental Impact of Architecture and Design*. Edinburgh: Information and Analytical Services Division, Scottish Executive Education Department.
- Ministry for the Environment, NZ. (2005). *The Value of Urban Design: The economic, Environmental and Social Benefits of Urban Design*. Online. Retrieved from. <https://www.mfe.govt.nz/publications/urban/value-urban-design-full-report-jun05/index.html> (Accessed 01 July 2014).
- Moore, M. H. (1995). *Creating Public Value Strategic Management in Government*. Cambridge (MA): Harvard University Press.
- Munn, N. D. (1986). *The Fame of Gawa: A Symbolic Study of Value Transformation in a Massim (Papua New Guinea) Society*. Cambridge: Cambridge University Press.
- Network Rail. (2011). *The Value of Station Investment*. Online. Retrieved from. [http://www.steerdaviesgleave.com/sites/default/files/newsandinsights/Station\\_Investment\\_Report.pdf](http://www.steerdaviesgleave.com/sites/default/files/newsandinsights/Station_Investment_Report.pdf) (Accessed 01 July 2014).
- Norberg-Schulz, C. (1980). *Genius Loci: Towards a Phenomenology of Architecture*. New York: Rizzoli International Publications.
- O'Neill, O. (2002). *A Question of Trust: The BBC Reith Lectures 2002*. Cambridge: Cambridge University Press.
- Punter, J., & Carmona, M. (1997). *The Design Dimensions of Planning: Theory, Content and Best Practice for Design Policies* (1st ed.). London: Routledge.
- Rhowbotham, K. (1995). *Form to Programme*. London: Black Dog Publishing Ltd.
- RICS/Environment Agency. (2001). *Comprehensive Project Appraisal – Towards Sustainability*. London: Royal Institution of Chartered Surveyors.
- Rogers, K., Jaluzot, A., & Neilan, C. (2012). *Green Benefits in Victoria Business Improvement District*. Online. Retrieved from. [http://www.victoriabid.co.uk/wp-content/uploads/2012/10/VBID\\_Green\\_Benefits\\_2012.pdf](http://www.victoriabid.co.uk/wp-content/uploads/2012/10/VBID_Green_Benefits_2012.pdf) (Accessed 01 July 2014).

- Rouwendaal, J., Van Marwijk, R., & Levkovich, O. (2014). *The Value of Proximity to Water in Residential Areas*. Online. Retrieved from. [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2427687](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2427687) (Accessed 01 July 2014).
- RTPI. (2014). *Accredited Qualifications*. Online. Retrieved from. <http://www.rtpi.org.uk/education-and-careers/information-about-universities/accredited-qualifications/> (Accessed 01 July 2014).
- RUDI. (2014). *University Courses in Urban Design and Related Subjects in the United Kingdom*. Online. Retrieved from. <http://www.rudi.net/node/20709> (Accessed 01 July 2014).
- Sieh, L. (2014). *Public Space Governing as the Management of Meaning Making*. London: UCL. Unpublished PhD.
- Stevenson, A., & Waite, M. (Eds.). (2011). *Concise Oxford English Dictionary* (12th ed.). Oxford: Oxford University Press.
- Talbot, C. (2008). *Measuring Public Value A Competing Values Approach*. London: the work foundation.
- The Prince's Foundation for the Built Environment. (2007). *Valuing Sustainable Urbanism, A Report Measuring & Valuing New Approaches to Residentially Led Mixed Use Growth*. Online. Retrieved from. [http://www.princes-foundation.org/sites/default/files/0707vsureport\\_0.pdf](http://www.princes-foundation.org/sites/default/files/0707vsureport_0.pdf) (Accessed 01 July 2014).
- Tiesdell, S., & Adams, D. (Eds.). (2011). *Urban Design in the Real Estate Development Process*. Oxford: Wiley-Blackwell.
- Transport for London. (2011). *Valuing Urban Realm*. Online. Retrieved from. <https://toolkit.urban-realm.co.uk/> (Accessed 01 July 2014).
- Tribal Urban Studio, & Colin Buchanan. (2008). *Baseline Report of the Quality of Place longitudinal study (Capturing the Impacts of Quality of Place)*. London: CBuchanan.
- UDG. (2014). *Universities*. Online. Retrieved from. <http://www.udg.org.uk/directory/disciplines/Universities> (Accessed 01 July 2014).
- UK Parliament. (2014). *Local Government in England: Capital Finance – Commons Library Standard Note*. Online. Retrieved from. <http://www.parliament.uk/business/publications/research/briefing-papers/SN05797/local-government-in-england-capital-finance> (Accessed 31 July 2014).
- Wallace, W. L. (1994). *A Weberian Theory of Human Society*. New Brunswick: Rutgers University Press.
- Weick, K. E. (1995). *Sensemaking in Organizations Foundations for Organizational Science, California*. Thousand Oaks (CA): Sage Publications.
- Yanow, D., & Ybema, S. (2010). Interpretivism in organizational research: On elephants and blind researchers. In D. Buchanan, & A. Bryman (Eds.), *The Sage Handbook of Organizational Research Methods* (pp. 39–60). London: Sage Publications.
- Zeisel, J. (2006). *Inquiry by Design: Environment/Behavior/Neuroscience in Architecture, Interiors, Landscape and Planning* (2nd ed.). London: W. W. Norton & Company.