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11. Thinking about Architecture

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Architecture is, like all areas of the arts and humanities, a complex affair, and involves a very wide range of people and personalities, ideas and philosophies, theories and actions. But, more than any other artistic endeavour, architecture is also an inherently interdisciplinary and multidisciplinary practice, and is inextricably linked to our everyday world of business, work, leisure, health, environment and social life. We can do almost nothing in our lives without encountering architecture, whether as offices, housing, hotels, sports facilities, hospitals, train and bus stations, or architecture in drawings, films and video-games, or architecture as part of the hidden world of communications and virtual technologies. For this reason, the UK's research into architecture must – and does – deal with a wide spectrum of concerns, all of which have the potential to impact directly on our lives today.

Architecture and architects

Architecture is perhaps most often thought of as being the product of architects – that is as the product of a single person or of small groups of people, and of their thoughts, designs and actions. One of the most important areas of architectural research is, therefore, into who these figures were in the past, and who they are now and in the future. Who is 'the architect' and what does he, she or they do? (Saint Andrew 1993; Hughes 1996; Kostof 1987). There are, of course, many important architects in the UK who have made a major contribution to our society and cities. From Christopher Wren in the seventeenth century and John Soane in the eighteenth century through to Zaha Hadid and Norman Foster today, architects have used their considerable artistic imagination, technical innovation and entrepreneurship to produce some of the most significant and lasting constructions in the contemporary world. These are important figures to understand, not only in terms of themselves but also in terms of how their ideas and designs have reached out far beyond their own buildings and have had a pervasive influence throughout the world of art, design and the creative industries. Much of what we see and understand as 'architecture' in the world today is because of a relatively few number of architectural designers and thinkers, and, as a result, we need to record and explore this important historical and cultural legacy.

The more detailed results of this research are, however, frequently quite surprising, for they tell us that 'the architect' is, very often, not a single kind of person at all. Such research reveals, instead, that an architect might be a builder, a developer or a technician, or that an architect might be an artist,

a sculptor, a writer. Or that they might have come from different kinds of background, whether the son of working-class parents (like Soane and Foster) or the daughter of aristocrats (like Hadid). This kind of research demonstrates, then, that our architects are not just one sort of person, and that anyone has the potential to produce and create architecture. Anyone, given the right education and training, may contribute to the design and construction of the physical world around them.

Even more tellingly, research into architects and what they actually do shows that the 'architect', rather than being an individual working solely on their own, as is so often thought to be the case, is very frequently the leader or figurehead for a much larger group of people. Or the architect is revealed as being part of a much more complex interdisciplinary team of not only architects but also engineers, planners, environmental consultants and financiers. As a consequence, this kind of research shows that there is no single way to design and produce architecture, and that many of the most prevalent forms of building design and construction in the UK today are – although perfectly rational and appropriate for their specific context – not necessarily appropriate for all buildings, in all cities and at all moments in history. Instead, this kind of architectural research shows how the design team may be formulated from different forms of contract, management and organization – such as one research project, funded by the Arts & Humanities Research Council (AHRC), on the systemization of design practices (Julier 2007), or the 'VivaCity 2020' research into how key decisions are made with regard to urban sustainability (VivaCity 2020 2010). It can also show the possibilities for different kinds of operation of the building site, for the supply of materials and for ways to extract maximum economic value from a particular building or type of construction. This kind of architectural research thus has an immediate impact on the way in which the construction and creative industries work together in the UK, leading not only to new economic efficiencies but also to new ways of creating and designing in collaborative and team-based contexts.

There is even the possibility that we do not need architects at all. After all, several research studies have shown that many of the greatest medieval cathedrals and some of the most successful contemporary housing developments have been produced entirely without the presence of anyone who might be readily equated with the figure that we traditionally understand to be an 'architect' (Rudofsky 1987). Our present-day creation of architecture has much to learn from such seemingly radical scenarios.

Buildings and design

In many ways, however, it is of little or no concern to our life in the UK if a professionally qualified architect is involved or not in the design and creation of architecture. For wider society, what matters much more than the presence of an architect is the *quality* of the actual buildings that are produced, and

how these buildings impact upon all of us. As one prominent client has put it, 'All buildings are capable of good design. Good architecture should not just be reserved for signature buildings' (Loe 2000: 30). But how do we measure this quality of 'good design'? How do we know what is a good building and how do we understand its degree (or occasional lack) of success? How, we might ask, do all kinds of buildings – from housing to art galleries, from hospitals to sports stadia – contribute to the well-being and sustainability of our communities?

Writing in the first century BC, the Roman architect and theorist Vitruvius famously asserted that good architecture should have the three qualities of *firmitas*, *utilitas* and *venustas* (firmness, commodity and delight). In many ways, this trio still holds up well today, and it bears a brief explication here in the context of the value of architectural research.

Firmitas, or firmness, refers to how well a building is constructed, and to technical aspects of architecture such as structure and how a building 'stands up'. Much architectural research is then directly concerned with this essential quality, looking not only at the safety aspects of a building's construction and eventual operation (such as possible risks in housing from over-exposure to carbon monoxide) (Croxford 2010), but with how different materials are used (one AHRC-funded project shows how recycled glass can be utilized as a new building material, with considerable economic as well as environmental benefits) (Roddiss 1999), or at how different kinds of structure (columns, domes, arches, vaults, grid-shells, etc.) allow for different kinds of enclosure and spaces to be created. Much important architectural research is also concerned with the more environmental conditions of building design, investigating how architecture lets in light, or how it controls sound, air and heat. In addition, given that buildings are currently responsible for approximately 40 per cent of the UK's carbon emissions (Carbon Trust 2010), this research has increasingly focused on maximizing the energy performance of buildings, whether through technological advances or through changing the way users inhabit and control their buildings (such as research into why building users choose to incorporate air conditioning) (Young 2004).

It is no good, of course, if a building stands up and has an adequate environmental and energy performance if it still does not meet our human requirements. Research into what Vitruvius called *utilitas*, or commodity, therefore enquires into the functional and social performance of a building. Does, for example, a hospital adequately meet the various and complex demands of its medical staff and patients? Do our museums meet the widely differing needs of their various groups of visitors? Is our aged housing stock, much of it over 100 years old, appropriate to the rapidly changing profile of our population? As one study has argued, 'Good design in itself does not guarantee sustainability within an urban context unless, over time, adaptability is inherent within the design' (Loe 2000: 35). For example, one piece of award-winning AHRC-funded research, called 'Flexible Housing',

used over 150 historical examples to investigate ways of adapting housing to different uses and technologies over time, with the potential to considerably increase the annual rental income and reduce maintenance costs in the UK's Registered Social Landlord (RSL) sector (Till 2004). This kind of architectural research crosses the boundaries between the economic, technical and social aspects of architecture, and, given the interdisciplinary and multidisciplinary nature of architecture, shows how we cannot look at one without the others. It shows how buildings must certainly meet our needs in terms of the quantity of space and equipment, but they must also be of the right *kind* and *quality* in order to properly address our various social requirements and cultural predilections.

This is also where Vitruvius' third category comes in, that of *venustas* or delight. Very often, this kind of research is treated simply as a matter of aesthetics, and asks questions as to whether a building appears to be beautiful, or of how it fits in with the rest of its surroundings. But architectural research is generally much more ambitious than this, and shows how aesthetics is in fact about far more than what a building looks like, about how it appears to the eye. Rather, architecture can 'delight' in a great number of different ways, such as by representing ideas (the democracy of parliament, the justice of law courts), history (the commemoration of famous events and people), memories (the marking of local and personal traces), cities (the spectacular iconic buildings that make many of our great cities immediately recognizable) and communities (providing places of focus and inspiration for different peoples and groups). This is the kind of architectural research and innovation that, as the Royal Institute of British Architects (RIBA) has put it, 'transforms the demands of economic production and control into a vision of art that the spirit can respond to' (Loe 2000: 28). Thousands of books, articles, exhibitions, film documentaries, television and radio programmes are produced every year on these kinds of artistic and cultural questions, and which do a great deal to help raise our understanding of architecture in the context of UK arts of humanities.

Despite this impressive range of research activity, it is worth stressing here that much architectural research is not just a study *about, of, upon* or *into* architecture (where architecture is the subject being studied). As many experts in architectural research have shown, architectural research can also be *for* architecture (where research is conducted in order to help with a specific design application or problem) and, in addition, it can also be conducted *through* architecture, where certain kinds of architectural practice can themselves be the vehicle for undertaking research (Rendell 2004: 141–7; Frayling 1993: 1–5). That is, in creating new buildings and other projects that reflect on, respond to and help to change our rapidly developing society – see, for example, the 'BedZed' eco-community initiative described below – architecture as a form of complex and inherently interdisciplinary

and multidisciplinary practice is constantly asking new questions and finding new answers to some of our most pressing technical, environmental, social and cultural problems. Much of architecture is then not just the subject of research, it *is* research.

The everyday urban environment

So far I have considered mostly the kinds of buildings which if not always designed by architects are at least a conscious attempt at producing 'architecture' – that is, I have been concerned mostly with architecture as a deliberate creative act, where someone or some group has set out to change the world around them through a new building.

In recent years, however, there has been an ever-increasing interest in other forms of building, with the kind of architecture that is created almost accidentally, seemingly without any degree of deliberate intent. This kind of architectural research considers more ordinary forms of architecture, such as mass housing and street signs, or street markets and bus shelters. What is the value, this research asks, of all of the buildings and spaces in our communities today?

The answers are often obvious, and yet are also too often overlooked. For example, some research shows that everyday street markets are just as important – or indeed more so – to a local community than might be any number of designer-focused high-street boutiques. Similar research shows that art does not have to be placed within an art gallery to have a profound effect on people – buildings can have murals, sculpture on their facades and gardens outside that allow for all manner of artistic events (Rendell 2004). Or that playgrounds and other neighbourhood sports facilities can have a more immediate local impact than Wembley Stadium, or that a good and well-designed secondary school is more connected to the specific educational achievements and standards within a particular community than may be a new national museum hundreds of miles away. Conversely, this kind of architectural research can also show the terribly debilitating and negative impact that such things as vandalism, poorly maintained housing or even just inadequate street lighting can have upon the perceived safety of a local environment.

Research in these areas thus goes straight to the very heart of our local neighbourhoods and communities throughout the UK. It shows what matters to all of us as we go about our lives, and it shows what needs to be done in order to improve the quality of life. It is research which recognizes that 'architecture' can and does encompass all of the built environment, and thus is research which directly connects, which has an immediate value, which makes a difference to all parts of our cities.

Interaction with architecture

One of the problems faced by this kind of architectural research – that which is concerned with people's ordinary and everyday lives – is that simply

identifying the different ways that architecture (whether architect-designed or not) connects with different people's lives is a hugely complex affair. For this reason, much architectural research is now concerned with one of the most central problems facing us today: namely, how do we all live in a way which, while recognizing and celebrating the many differences between us both as individuals and groups, also emphasizes the equally numerous things which many of us enjoy, share and participate in together?

To properly engage with this problem – and great opportunity – of cultural interaction, much new architectural research (some of it, for example, contained within the 'Cultures of Consumption' five-year research programme co-funded by the AHRC and the Economic and Social Research Council) is now recognizing that architecture and the built environment often mean different things to different people. This kind of research therefore looks into many of the various ways architecture can give inspiration, pride, memory and a sense of community to different people, whether through their substantive characteristics of gender, class, ethnicity, age, physicality and sexuality, or through more culturally diverse criteria as to whether one might be an opera, cinema or a football fanatic, a driver, walker or a skateboarder, or an aficionado of video-games, shopping or knitting.

All of these cultural characteristics make a difference, such that to all people, of whatever group or interest, the same piece of architecture will always mean something slightly different. It is therefore one of the tasks of architectural research to track and understand this difference. This, for example, has been the focus of some of my own personal and collaborative research into public perceptions of public space (Borden *et al.* 2001), while AHRC-funded projects have looked at such diverse subjects as how people are now meeting less and less in offices and more and more in informal places like coffee houses and transportation hubs (Coyne 2009), or at how the office workplace can be adapted in order to accommodate the increasing percentage of older people who are now contained within the workforce (Myerson 2006). Given that architecture often incorporates a whole range of differing cultural and aesthetic components, large-scale research initiatives are sometimes required in order to pursue this complexity, as for example with the AHRC Centre for the Study of the Domestic Interior. This centre has developed new histories of the home, its contents and representation, led research into the changing appearance and layout of rooms in a range of buildings, as well as explored the objects that furnish those rooms, the ways in which rooms and objects are depicted, the manner in which people use them and how they think about them.

Only through these kinds of investigation are we now beginning to understand, design and create truly modern twenty-first-century architecture – architecture which meets the needs not just of a few relatively affluent and privileged individuals, but of the various cultural interests, tastes and demands of all UK citizens.

The city context

As this last area of research suggests, architecture is about far more than just individual buildings or even important building types such as houses, schools or museums. We must also appreciate and understand the relevance of architecture on a much larger, urban scale. In particular, some of the most important architectural research is now concerned with how architecture can contribute to the development of cities and urban forms.

In many ways, this is a kind of larger scale version of Vitruvius' categories concerning technical performance, social amenity and aesthetics. But the stakes here are, if anything, even higher. Regarding technical performance, the key focus of research is that of sustainability, particularly environmental sustainability (such as arrangements for private and public transport), overall energy consumption patterns (for the construction, operation and eventual demolition of projects around the UK), and new technological inventions that can be prototyped and, for the first time, properly tested on a relatively large scale. For example, UK housing schemes such as 'BedZed' in south London (Beddington Zero Energy Development (BedZED 2010), the carbon-neutral eco-community developed by the Peabody Trust, Bill Dunster Architects and environmental consultants BioRegional Development Group), or, on an even greater scale, the ongoing development of Thames Gateway to the east of London, thus offer an unrepeatable opportunity to undertake true architecture-as-research on a scale and in a manner that is already having, and will continue to have, a major impact on the ways in which we think about and create new kinds of UK city living.

But just as important is research into the social and cultural sustainability of these kinds of new forms of urban forms. For, as with buildings, there is no point in creating something which functions technically if no one actually wants to live and work there. How, then, can we create new forms of urban design and local neighbourhoods which, while meeting the demands of energy, land use and construction costs, also create the same sense of rich culture, excitement and adventure that many of us experience in our major UK cities and cultural projects? This is why groups such as the Commission for Architecture and the Built Environment (CABE) have undertaken research on the value of cultural risk-taking in architecture and public space (Commission for Architecture and the Built Environment 2005b), and it is also why the Higher Education Funding Council for England recently funded the university-led 'Urban Buzz' project in order to help bring UK academic researchers and business partners together and so help bridge the knowledge gap that too often prevents the creation of truly thriving and vital sustainable communities (UCL and the University of East London 2010). As the government's 'Best Value Programme' made clear in 1998, projects like these are those which drive up service standards, which put 'the interests of local people, who both use and pay for environmental services, ahead of other vested interests' (Loe 2000). Architectural research here is changing

not only architecture as buildings, but architecture as cities and urban design, and making our future places of work and living more sustainable both environmentally and socially.

Exploring cultural discourse

As I have already shown, architecture has a pervasive presence in our cities today in physical terms, creating new spaces, buildings and technologies that we all use on a daily basis. Architecture also has another role to play, this time in a more dispersed yet equally pervasive manner. This is architecture as it engages with the wider context of other creative arts, design practices and cultural activities. Research here thus enquires into the engagement between architecture and all manner of other cultural fields, such as art, film, photography, dance, literature and industrial design.

Some of this work is historical. For example, one substantial piece of AHRC-funded research has recently been undertaken by an architect turned filmmaker, exploring the landscapes of early films made in 1895–1905, taken from the National Film and Television Archive; it investigates ways in which the city has changed over the past century, and suggests a critique of present and possible future spatial experience (Keiller 2007). Other historical work deals with similar relations between architecture and painting, architecture and sculpture, architecture and music, or, in a more modern context, with how architecture and cities are represented in photography, video, retail design and other contemporary arts (Marcus and Neumann 2008). All of this helps us to understand our creative history in greater depth, and to appreciate the considerable artistic achievements that make up the UK's cultural heritage.

Other research work in this area is more focused on kinds of creative practice, and frequently explores the different ways in which creative producers might learn from each other, work with each other and so produce new forms of artistic and design expression. For example, the recent programme 'Designing for the 21st Century', jointly funded by the Engineering and Physical Sciences Research Council and the AHRC, has supported the development of design practice so that it can play its part in tackling the exigencies of modern world (Arts and Humanities Research Council and Engineering and Physical Sciences Research Council 2010). One component, 'Spatial Imagination', brought together practitioners and academics from such diverse fields as architecture, computer sciences, creative arts, electronics, engineering design, environmental consultancy, product design, management, graphic design, psychology and urban design in order to propose new uses for drawing, writing and modelling as ways of creating spatial design (Rawes 2006). Other projects in this initiative have looked at more technical intersections of the different arts, showing how our world of increasingly virtual-and-physical spaces and communications is creating new forms of artistic invention, from video-games and creative computer software, to mobile phone interfaces and websites. Outcomes of this kind of interdisciplinary

architectural and design-based research have been considerable, and have enabled the proposition and creation of, *inter alia*, new human-technology interfaces, secure ways of parking bicycles in UK cities, tensioned fabric as a material for sculpturing architectural enclosures, and interior spaces that use visceral qualities of images, sounds, lighting and other sensory factors in order to help people to personalize their individual experiences.

Through this kind of research, architecture and all of the creative arts and industries are able to learn from each other. This leads both to new and inventive ways of working among creative professionals, and to new ways for all people to engage with the arts and humanities in the UK.

Architecture is made by everybody

As I have suggested above, despite the considerable and significant contributions made by architects and other professionals, as well as by academic architectural researchers, architecture is not just the product of these relatively limited groups of people. Rather, architecture is made by all of us, everyday of our lives – for every time that we use, look at, visualize or think about a building then we are in effect remaking that architecture again in our own context, according to our views and interests. How, then, can we understand this phenomenon, and what are the ramifications of it for architecture and our cities?

Hence we have the kinds of architectural research which, for example, investigate how different people use their senses of smell, taste, touch and motion as well as vision in order to make judgments about architecture and urban spaces (Sonne 2007), or how different kinds of road offer greater numbers of human encounters to pedestrians (Worpole 2000: 38). Or research which considers the different ways in which members of the public perceive and understand their places of work and other local buildings, or research which explores the different ways in which building users might engage and interact with architecture and cities in different ways. One AHRC-funded project, for example, has looked at how digital technology can help create more socially acceptable and democratic architectural environments, such as through the use of automated monitoring in care homes or ways to vote from home through SMS text-message technology (Weaver 2010).

This kind of architectural research has profound consequences for the design of buildings and cities, for it suggests that architects and other urban managers are neither the sole producers of, nor are solely responsible for, the buildings around us. It suggests instead that not only should the thoughts, fears and aspirations of local people, buildings users and other interest groups be taken fully into account in the planning and construction of architecture, but also that these self-same people might also have a greater role to play in the continuing life of buildings, that is in the way that buildings are used once they have been constructed, and how these uses might change and develop as our society also changes and develops. The 'Designing for

the 21st Century' programme, for example, has included research into participatory design practices in the UK's Building Schools for the Future (BSF) initiative, leading to increased satisfaction and greater respect for the environment among schoolchildren (Woodcock 2010). This kind of architectural research suggests a much wider responsibility for both the creation and utilization of architecture, and, above all, shows how our buildings, through the whole of their useful life, might provide the maximum benefit to the widest possible sections of the community, from the moment of construction right through to the time of major refurbishment or demolition.

The value of architectural research

Clearly, architectural research is concerned with an extremely wide range of subjects and questions. As such, it rightly deals with some of most undeniably important and pressing issues facing us today, whether they are about environmental and social sustainability, about climate change and cultural interaction, or about the role of architects and other design professionals.

Architectural research therefore investigates new technologies that help meet the challenges of climate change, it suggests new kinds of buildings that meet changing new social needs and patterns, and it proposes new ways of working that help produce buildings more efficiently and in a manner that responds to the increasingly complex cultural makeup of our diverse and integrated community groups. Following research commissioned by CABI and the RIBA (Macmillan 2006; Commission for Architecture and the Built Environment 2005a; Loe 2000; Worpole 2000), we can then say that, as a result, architectural research in the UK makes a quantifiable and specific difference in five distinct areas:

1. *Economically* (exchange value), through increasing the market or book value of a building for the owner, or through increased profit and/or rents.
2. *Functionally* (use and business values), by helping to raise productivity, profitability and competitiveness, or by making environments that are safe and which promote staff health, well-being and job satisfaction.
3. *Professionally and creatively* (practice or process value), by finding new ways of working in architecture and design, either within the architectural profession itself, within the context of the construction process, or in relation to the wider context of the creative arts and industries.
4. *Environmentally* (environmental value), through a concern for intergenerational equity, bio-diversity, management of finite resources and climate change, and through immediate benefits to local health and pollution.
5. *Socially* (social value), by creating opportunities for positive interaction, identity and pride, encouraging social health, neighbourly behaviour, safety and security.

Yet architectural research also addresses still more than these five areas. This is because of the role that architecture itself has within

society – whereby architecture does not just provide for our needs, or simply reflect what we already believe in, but actually challenges us to find new and improved ways in which we might all live together. To these five areas above, and still in part following CABE and the RIBA, we then can add two other areas in which architectural research in the UK makes a difference:

6. *Aesthetically* (image value), through a contribution to the identity, vision and reputation of groups, institutions, cities, companies, and individuals, or through ways in which we can express our varied ideas, ambitions and intentions.
7. *Culturally* (cultural value), by connecting with the local grain and heritage of cities, through a concern with location, context, patterns of historical development and a sense of place, and through a consideration of less tangible issues such as cultural symbolism, inspiration and social meanings.

There is one final thing to add. Given the extremely wide scope of these seven different kinds of value, it is clear that architectural research, while focusing on architecture and buildings, necessarily not only engages with but also makes new proposals for much wider aspects of our society, whether they are new and inventive ways of working, original and successful ways of meeting environmental challenges, or creating stimulating forms of cultural expression. Research is, after all, nothing if we do not in some way change ourselves as well as our buildings. The best architectural research, of which there is a great deal going on in the UK today, is therefore that which asks us to consider not only what we understand and undertake by way of architecture and buildings, but also who we think we are and how we want to reside, play and work together. Architectural research here speaks to the very heart of our contemporary society in the UK, and not only allows us to better appreciate and understand our cultural heritage, but also asks us to consider how we want to live today and in the future.

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