Urban design is the most significant environmental design discipline. Wherever new masterplans are developed or towns and cities are extended or changed, the daily lives of thousands of people are affected. These changes have an impact that lasts for decades or even centuries. Urban design encompasses other environmental design disciplines: landscape, architecture, highway engineering, environmental engineering and more. It is in urban design that these professions have their most profound interface with politics, sociology and economics. Theories and ideologies in urban design are often imported from architecture and architects frequently become urban designers. The ideas of small professional groups and the passions of famous professionals are extended from individual works of architecture to a city-wide scale. With the globalisation of architecture, urban design ideologies are having a worldwide impact and with the growth of global marketing for new city development, urban design has become fashionable. Two broad directions have emerged in contemporary urban design; we can call these conventional and traditional. Conventional urban design is commonly practiced by national and international urban design firms and is the inheritor of modernist urban design principles. Traditional urban design, in spite of its name, is a relatively recent phenomenon and has arisen in response to a perceived failure in both conventional urban design and the bureaucracies and systems that have grown up around it.

**Conventional Urban Design**

Modernist urban design, based on isolated buildings, traffic and pedestrian separation and strict functional zoning, was discredited in the later 1960s and early 1970s as post-war modernist schemes started to fail socially and functionally. The principles of street-based layouts, high density and mixed use became widely accepted. Modernist ideology was not, however, abandoned by the design professions. A constant drive for novelty and a belief that modernity is represented only by innovation continues to motivate the architectural and urban design profession. This modernising and rationalising philosophy has been translated into the new street-based layouts and mixed use by the introduction of a combination of wide streets, rationalist plans and object buildings.
The principle that space is a benefit - just as space - and that the modern character of a place lies in the modernity of its buildings, has led to the use of large squares and wide boulevards, laid out in geometric grids, usually orthogonal or nearly orthogonal, often with significant diagonals focused on existing or new features. In between these spaces, sometimes surrounded by their own display space, are big blocks or large buildings often of unusual design. This is big-box-and-boulevard planning and is the stock in trade of most international conventional urban design firms (Figs. 1&2).

The growth of city-to-city competition to attract global corporations has made urban design fashionable and cities have used the designs of star architects for promotion. Computer generated images of unbuilt urban schemes with visually arresting iconic buildings have become routine advertisements for cities anxious to display their global credentials. Conventional urban design lends itself well to marketing illustration.

The Traditional Urban Design Movement

Since the early 1990s a new and less glamorous urban design movement has come to prominence. This can be called traditional urban design, although it has other names – most significantly “New Urbanism” in the United States but also “Sustainable Urban Design” or just “Urbanism” (as a contrary to Urban Design). Urban design that was concerned with the small-scale texture of places and street-level pedestrian character had been practiced for some time but the aggressive promotion of this type in the 1990s increased its influence and turned it into a movement. While it is usually based on the more intense layouts found in historic places, the outcome is not necessarily based on historically derived design throughout. Malmö in Sweden has, for example, become a famous example of traditional urban design with non-traditional architecture. Nonetheless, the principle that the layout of historic places is a good model for modern places often leads to a similar attitude being taken to buildings.

The decade from the early 1990s to the early 2000s saw the foundation of a number of organisations and initiatives that promoted traditional urbanism. Possibly the most significant starting point was the creation of the Congress for the New Urbanism in 1993. This consolidated the association between a messianic American promoter, Andres Duany and the important traditional urban theorist from Luxembourg, Leon Krier.
They had first come together in 1981 when the owner of Seaside, a Florida holiday town, had asked Duany’s firm to prepare a masterplan and asked Krier to act as a consultant (Figs. 3&4). Leon Krier’s influential publications backed by the example of Seaside had a powerful influence on the heir to the UK throne, The Prince of Wales, who had in 1984 taken a public stand against modernism in the UK architectural profession. In 1988 Leon Krier was commissioned to prepare a masterplan for a new urban extension to the country town of Dorchester on part of the Prince of Wales’s extensive landholdings in the south west of England. As this has grown in the last 15 years it has acted as an exemplar for the success of traditional urbanism in practice. To support and promote his ideals in the built environment, The Prince of Wales established The Prince of Wales’s Institute of Architecture in 1992, which was changed to The Prince’s Foundation for the Built Environment in 2001 with a more defined urban direction. In the UK, the benefits of traditional urban design were recognised by the then Deputy Prime Minister and in 1999 the UK government commissioned a report entitled “Towards an Urban Renaissance” chaired by the elderly high-modernist architect, Richard Rogers. Notwithstanding this chair, the report promoted many of the principles of traditional urbanism for future UK planning policy.

In 1992, under the energetic guidance of Gabriele Tagliaventi, a series of exhibitions and conferences all under the title “A Vision of Europe” was launched in Bologna. The name was a deliberate allusion to the Prince of Wales’s architectural thesis published in 1989, entitled “A Vision of Britain”. Although A Vision of Europe was both an architectural and urbanist organisation, quite rapidly the urban component took the lead. Following a Vision of Europe conference and exhibition in Bologna in 2000, a group of architects, urban designers and interested participants resolved to give the traditional architectural and urban design movement an international organisational base. With a donation from the Norwegian activist and philanthropist, Petter Olsen, the International Network for Traditional Building Architecture and Urbanism (INTBAU) was founded in 2001. This now has chapters in 13 countries and promotes traditional urban design at a global level.

In 2002, European members of the New Urbanist movement and a group of reforming German urbanists set up the Council for European Urbanism to promote the principles of traditional urbanism in a European context. It was felt that the background to urban design and the urban condition was so different in Europe that the American movement was not always relevant and the CEU was launched in Stockholm. It has representatives in a number of European countries and is associated with INTBAU and A Vision of Europe. In 2006 George Ferguson, at that time the president of the Royal Institute of British Architects, decided to “put urbanism at the heart of the RIBA”. The established UK traditional urbanist, John Thompson, was delegated to lead this process and he assembled 100 urbanists and supporters to create the Academy of Urbanism.

The traditional urban movement has become progressively more influential and, as sustainability has come to the foreground in all aspects of urban design, traditional urbanism has shown itself to be uniquely placed to deliver high-density, mixed use, pedestrian-centred, locally distinctive places that, through precisely these ingredients, are particularly sustainable.

Architecture, Time and Urbanism

Conventional urbanism puts maximum emphasis on buildings. Cities such as Rotterdam can read as much as a collection of famous architect’s buildings as an urban plan. Plans themselves are often illustrated by concentrations of, so-called, ‘iconic’ buildings and masterplans by star architects are common (Fig. 5).
An architectural emphasis has particular consequences in urban design. Architectural or building-based design responds to the priorities and discipline of architecture. Architects themselves derive their reputation principally from the design of completed and striking buildings. Urban design as urban design (as a contrary to a group of buildings) is slow to deliver and cannot guarantee to produce dramatic buildings unless the urban designer-architects design some buildings or at least the key buildings themselves. This leads architect-urbanists to produce designs that concentrate on the delivery of prominent buildings. This architectural emphasis also affects urban priorities. Architects operate in a professional culture built around a methodology of building procurement set out in accordance with the priorities of their clients - building developers and owners. A building owner will be primarily concerned to ensure that the building performs its design function, will then have an interest in the fabric of the building he or she will own and finally will have an interest in the context. The function delivers income, the fabric is the investment that provides the function, and while the context is important it is largely out of the control of the owner or developer.

This is the opposite sequence of priorities to those appropriate for urban design. The context of urban form is the foundation of urban design and has the longest life. Indeed, urban form – streets, squares and plots – can have a life of centuries and even millennia as services and ownership are hung around this urban armature. While urban form can remain unchanged, individual buildings come and go. Some may last for centuries and some for decades but the survival of most buildings often has only an ephemeral effect on urban form. The function of buildings is even less permanent. Many buildings change their use in a few years and changes in the social or economic condition can rapidly alter functional priorities.

The time sequence and so the priorities of the urban environment goes from the long duration of urban form, to the medium duration of built fabric or buildings and then to the short duration of function. These are the times sequences identified by the influential urban geographer MRG Conzen and correspond to the three significant levels of time as identified by the French analiste historian Fernand Braudel (Fig. 6) - environmental time, cultural time and events.

This helps to explain the huge psychological and social disruption created by the deliberate re-making of urban form together with built fabric and function. These events normally occur simultaneously only in war or natural disaster and, in effect, attempt to comprehensively re-make towns and cities, reproducing the conditions of a natural or man-made catastrophe.

In summary, the time and priority sequence of urban design and architecture are diametric opposites. Urban design and architecture are different if related disciplines and, if the emphasis in urban design is on the architectural component, the urban design is likely to be compromised. Buildings are less permanent than the urban fabric and a masterplan that relies for its success on the quality of the buildings within it is not a good masterplan.

The urban environment is influenced by the different behaviour over time of form, fabric and function and the priorities this engenders. Urban design is, to a significant extent, the management of time. Urban designers need to understand the way time influences the urban condition and how our concept of time affects our decisions.
Traditional Urban Design

Tradition and History

Traditional urban design must be concerned with tradition. Tradition is a time-based concept but it is not the same as history.

Our view of history and where we all stand within the historic process is fundamental to the way we plan for the future. History is generally seen today as a constant and even progress through time where the past is less and less relevant as it becomes more distant (Fig. 7) and in the present we must concentrate on the future. Since the eighteenth century there has been a view that this progress through time is also a process that leads to a better future. While the immediate future has often, for various reasons, been looked at with despair, the aim and anticipation is for a longer term future quite different and much better than the present. There is a belief that this is a constant, if sometimes bumpy, progression. The increased speed of technological advance and dramatic improvements in physical wellbeing in the twentieth century have added impetus to the idea of constant and inevitable improvement based on innovation and change. It was not always like this. Up until the later eighteenth century the past was often seen as an ideal and the place where guidance and inspiration were to be found. While this view is unlikely to return, the translation of change and innovation into beneficial forces, regardless of what they produce, can lead to a reluctance to learn from the past, a destructive attitude to what has gone before and a tendency to reckless experiment. It also fails to recognise that, at any time, there are more similarities with the immediate past than differences and, indeed, that we are essentially the same creatures, with the same physical and psychological needs, as our pre-industrial and even pre-agricultural ancestors.

Attitudes to tradition have become fused with attitudes to history. Indeed, as the idea of progress turned to futurism and modernism, tradition was seen as a brake on advancement and something to be destroyed. This is still a prevalent attitude in the design professions and any attempt to make literal links with the past, either as history or tradition, is often viewed with active hostility as a betrayal of an inevitable historic progression. Whether or not the modern view of history is correct, however, tradition is not history and certainly not history as currently perceived and described above.

While the historical past is seen as a forward movement, where each period is a contained collection of objects, actions and ideas that will not return, tradition is an enduring relationship with the past. Historical past is past never to return. Tradition is the past living through us. As tradition is a living phenomenon, it does not stand still; it grows changes and develops, but it does so by the gradual (and often imperceptible or unrecognised) modification and positive recognition of what has gone before. These changes are the way that tradition adapts in a non-destructive fashion to changing physical, social and psychological circumstances. As we can only be made by our personal and social past and as our identity can only come from that personal and social past, our ideas of who we are and where we belong are always drawn from traditions. Unlike the modern view of history, the past can be very relevant indeed in a traditional framework but its relevance is not dictated by distance from the present. Long past phenomena can remain relevant for significant periods of time and quite recent events can be ephemeral or irrelevant.

Fig. 7 Different relevance of time with history and tradition.
Four Principles

Traditional urban design, as it is traditional, looks at the past positively. Not only is the past a source of information and inspiration, it is also an essential part of the identity of existing places and, most significantly, it is an essential part of the way people identify themselves with the places where they live and visit. But, as this is tradition not history, traditional urban design will develop, adapt and change that past to suit contemporary circumstances. The origins of these developments will be visible in their new but traditional form, either physically or symbolically.

At Robert Adam Architects we have come to understand that today’s discipline and practice of traditional urban design can be brought together under four broad headings: repeat success, life is complicated, don't waste space, and save energy locally. Each will be discussed in turn.

1. Repeat Success.

The principle that you find out what works and copy it is a common sense approach to most aspects of life. It underlies all teaching and learning. It is the means by which we manage risk for our day-to-day survival. Undertaken uncritically, however, it can lead to stagnation and inhibit the introduction of newly available benefits. Finding something that has worked and adapting it for use today is a discriminating process.

A sympathetic but critical assessment of the past and the deliberate incorporation of what works best for the present is precisely the nature of tradition. Equally, the belief that the past can only be taken as precise and intact, its consequent rejection and the belief that the future should only be expressed in innovative experiment and novelty is the hallmark of the modernism that underlies conventional planning and architecture. While experiment and innovation may deliver an acknowledged benefit in product development and methods of manufacture, to transfer it to the physical structure of the way of life of large groups of vulnerable inhabitants is positively irresponsible.

The observation of successful and similar urban conditions in similar cultural and geographic locations is the most elementary exercise in any urban design process. It would be hard to think of any responsible urban designer who would omit such a procedure. There are almost certain to be straightforward practical lessons in the observation but there is always a danger that the lessons become abstracted beyond recognition to fit in with ideology, preference or ease of application. The fine grain of existing successful urban conditions, which have usually grown up over several generations, will contain a level of pragmatic response to local conditions that may not at first be evident and would be easily lost by over-rationalisation and observation by outsiders. It is even possible that features that have come about to serve obsolete functions have proved to be successful in changed conditions. Indeed, their survival in new circumstances may be empirical evidence for their adaptive success. The benefits of such features can be overlooked through over-rationalisation based on a functional and historical analysis. An acknowledgement of the accumulated wisdom of our predecessors and of the fallibility of our own understanding will draw a responsible designer more towards critical imitation than gratuitous invention.

As an example, an imitation of the layout of historic North Sea coastal settlements in a new traditional masterplan in Edinburgh resulted in the location of the principal street one block back from the water’s edge and connected to the water by non-orthogonal narrow streets (Fig. 8). The origins of this may have been in part due to the unpleasant aspects of the fishing industry and an historic lack of interest in the romance of the seaside but, when the new layout was tested for wind speed, the plan proved to be highly effective in reducing the strong winds that commonly blow over this coast. On the other hand, similar testing on a big-box-and-boulevard plan indicated an acceleration of wind speed into the centre of the area. The benefits of the traditional layout for wind control were unknown at the time of its introduction into the new plan but it was only by accepting the principle of the imitation of what appeared to produce a satisfactory urban environment that the effects were discovered.

Fig. 8 Studies of existing ports on the eastern Scottish seaboard used to guide a new masterplan in the area.
Traditional Urban Design

There is more to the principle of repeating success than practical learning. Almost all communities have grown up over several generations in an existing urban environment. The community will identify with their unique surroundings with a perception of the unique not easily transmitted to strangers.

This identity is likely to lie with all aspects of the place and will be functional as well as symbolic and will include the accidents of time as well as deliberate representations of community life. Identity with a place and the feeling of belonging is important at all times but it is of particular importance when people are introduced to a new urban environment.

While any new place may eventually come to be just the kind of accident of time with which people identify, an initial rejection or feeling of alienation can be highly destructive and take generations to overcome. While most people will wish to see their way of life improved and any innovation or change that brings that about will be considered desirable, there is no evidence that people seek a radical transformation of all that is familiar (Fig.9).

Repeating success can be both practically and culturally effective. At the very least it is a responsible attitude to both the almost certain inability of an urban designer to understand everything about the local urban condition and also to the sentiment and identity of the people for whom the whole urban design procedure is intended.

2. Life is Complicated.

All urban and architectural design involves rationalisation. Urban design in particular has to create a comprehensible and controllable series of phenomena to house the daily lives and interactions of numerous unknown people which will have in aggregate an infinite complexity incapable of full comprehension, let alone control.

Existing towns and cities of any age will have accumulated the impact of this complexity over several generations in ways sometimes forgotten and sometimes still active (Fig.10). If existing successful places are to be repeated to any extent, if there are lessons to be learnt from them because they are successful or culturally relevant, or even if there is just a desire to observe an existing place as context, this complexity will be evident and significant. It is highly unlikely that any rationalisation will be able to capture it.

The urban design process draws the urban designer relentlessly towards rationalisation. At the most elementary level the designer must understand the site and the functions to be accommodated and to do so must put them into a usable mental framework. Not only must any designer work towards comprehensible objectives but he or she must also communicate these objectives to other participants in the design process and demonstrate a grasp of the problems and the effectiveness of the design to clients and stakeholders. There are, therefore, compelling reasons to set down the analysis and solutions in a rational and simplified manner. That rationale will inevitably be much simpler than any existing urban condition and much more rational than the way that any completed design will be occupied and used.
When a belief that simple and apparently rational designs are in themselves desirable is added to a process that unavoidably operates through simplification and rationalisation, it is not surprising that many urban designs look like nothing more than built diagrams (Figure 11). These built diagrams have the intrinsic attractiveness of graphic clarity but there is a great danger in suggesting that a seductive diagram can stand in for a real place. While the use of any space, however consistent and monotonous, will be complicated by the complexity of human use and interaction, it is likely that spaces that offer few alternatives for unexpected opportunities will inhibit the full range of possibilities for its users. This is the curse of newness.

This rationalisation of the urban design process often involves the suppression of competing forces. A simplified diagrammatic design has usually come about by allowing one objective, function or ideology to dominate. For example, the plan may principally represent the uninhibited movement of vehicles, the desire to segregate uses, the facilitation of land distribution, or worst of all the personal vision of just one person. In all such cases competing forces such as retaining existing buildings, the most convenient pedestrian routes, universal proximity to services or varied occupancy requirements for future landowners will have been relegated to a secondary status. Furthermore, in the interests of simplicity and efficiency, extraneous factors are often forgotten or brushed aside. These can include topographic detail, existing landscape, traces of historic features or patterns of occupation.

With a design process that recognises each of these competing or forgotten forces and draws its character precisely from the compromised resolution of their apparently opposing demands, it is possible to introduce some of the complexity of human interaction and existing places into new designs. Indeed, if this is recognised as a worthy objective, other factors can be introduced deliberately such as the introduction of historic features from nearby buildings and landscape, the plan types of adjacent settlements or the contribution of local communities. This complexity will be not that of a place that has developed through the interaction of generations of inhabitants, nor could it be. It is, however, a natural complexity drawn from the interplay of properly identified forces that will or should have an impact on the design of the place (Fig. 12).

The non-determinate nature of a complex design outcome also reflects the non-determinate nature of the development of a new urban area over time. Any urban plan of any size will take a number of years to construct. Indeed, as construction is generally subject to outside economic conditions, the length of time is itself indeterminate and can take anything from a few years to decades.
Traditional Urban Design

In that time, social, political and economic conditions are likely to change in a way that may not have been anticipated in the original design. The singular determinacy of the rational design may have been so far superseded that the design itself is obsolete. It is possible that conditions could change so dramatically that even a scheme with high levels of variety can become obsolete, but this is much less likely. Complexity delivers more variety and more variety creates more opportunities for the unexpected and so more flexibility in outcome. Indeed, recent financial analysis comparing a big-box-and-boulevard plan with a complex traditional plan indicated a significant increase in land value as the complexity of the traditional scheme allowed much more flexibility in the development process, protecting the scheme against failure in times of reduced economic activity.

Flexibility also serves sustainability. The key definition of sustainability is the Brundtland Commission definition of 1987: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. This is based on a fallacy. As we cannot with any certainty know or define the needs of future generations, the Brundtland definition is based on an unknown. You cannot have a definition based on an unknown. If this is reworded as: “Sustainable development is development that meets the needs of present and is adaptable to changing needs and functions”, it would address the intention of the original but operate as a functioning definition. On this basis, adaptability delivered by flexibility creates a condition most likely to be sustainable.

3. Don’t Waste Space

Modern urban design in developed countries is still influenced by the late-twentieth-century reaction to the squalor, overcrowding and disease of the nineteenth century. In developing countries this is still a live issue. The response to the overcrowding of slums and illegal settlements is the provision of more urban space: wide streets, space between buildings and large urban squares. Out of this has come an assumption that, as an extreme lack of living space is damaging, space itself is an unqualified benefit.

It was precisely this misdirected reforming spirit that drove the errors of modernist urban design in the mid-twentieth century. While the vision of cities in the sky surrounded by parkland is discredited, the underlying idea that large spaces are an irrefutable benefit to modern urban life survives in conventional urban design (Fig. 13). Huge plazas, large areas of landscaped intermediate space and over-wide boulevards are the signatures of big-box-and-boulevard urban design. Furthermore, the large and unusual buildings that also characterise these plans can only be displayed in full by the long views opened up by wide foreground space.

As with simplicity and rationality, the urban design process has an inbuilt tendency to over supply intermediate space. Highway engineering, emergency access allowances, standardised daylight and privacy regulations and codes, services providers and others each demand their own functional space. Regulators and engineers all too often have an interest only in securing quantitative standards and allowances within their remit and have no interest in or understanding of the aggregate quality of urban space. For urban designers, the most expedient course is to accept these demands and simply add one spatial allowance to another.

For good practical reasons, the development of urban plans and staged approval processes move from large to small scale plans. Open space and street widths are necessarily large to be seen graphically when illustrated at 1:5000. At this and lesser scales large spaces appear insignificant. In fact, it is only at a scale of about 1:500 that space can be examined critically but most plans never reach this scale until the commencement of development, by which time standards and sizes have often been established.

The idea that more public space is always good and less public space is bad has influenced the drafting of standards and fomented an uncritical attitude to space. Not all public space is good and there are many occasions where more space is actively damaging.
At a most basic level, too much public space either inhibits increased densities or the provision of private space. Large little-used spaces prevent informal supervision and offer opportunities for anti-social activity and crime. Any increase of distance between people is, to some degree, bound to limit personal contact and the sense of community. Over-large urban spaces feel empty unless occupied by crowds (Fig. 14). The lack of proprietary ownership of space at a large scale can be a needless public expense and unclaimed space at any scale is often eventually left unmaintained, physically degrading the urban environment.

When space was constrained by city limits and fortification and distance was almost exclusively covered on foot no-one could afford to be profligate with space. Space was consumed not with reference to scaled plans but on the ground and every square metre of available land could be put to good use (Fig. 15). Where space was left open or deliberately created it usually had a purpose: large spaces were for markets, communal assembly or ceremony; small spaces were at intersections of streets, accessible from all points; and gardens were for the benefit of identified users. Narrow streets provided shelter from extremes of weather - strong winds, rain and sunshine according to the climate. These are amongst the factors that brought into being many of the most admired historic places.

Paradoxically, in the developed world, the drawbacks of these close-knit cities have been overcome at the very time their principles were abandoned: overcrowding is rare; running water and proper sewage disposal are universal; parks have been provided for recreation; and public and private transport gives inhabitants easy access to the countryside.

While the limitations of fortification and enforced pedestrian movement are unlikely to return, the benefits of carefully consumed space remain. This does not mean that urban design should provide universally cramped conditions but that the use of space should be designed to serve identifiable functions and that the creation of space should always be viewed critically (Fig. 16).

Space is valuable, it should not be wasted. Public space should only be provided where it can be shown to have a positive benefit and should be physically and visibly differentiated from private space. Streets should be as narrow as function permits, minimising the speed of traffic and maximising personal contact. Privacy can still be maintained by the careful design of frontages. Squares should be designed only at the intersection of three or more streets, proportioned or shaped to avoid dead or inactive corners. Landscape and planting should only be used in streets and squares where there is a direct benefit to adjacent occupants. Gardens and parks should be overlooked or otherwise controlled or monitored.

Land should always be used responsibly and with care. The critical design of space allows for increased density without high buildings and creates an intimate urban environment conducive to pedestrian use, ease of maintenance and a sense of local identity.

4. Save Energy Locally

Urban design should always be a contributor to the efficient use of energy. Mechanical and technically complex methods of conserving and generating energy are themselves often high energy consumers at some stage in their production, frequently requiring specialised and distant manufacture or the complex assembly of materials obtained from around the world. These devices require specialist maintenance and are subject to developmental obsolescence and waste. Passive energy conservation, on the other hand, is efficient and long lasting and can be naturally incorporated into traditional urban design.
Fig. 16 Testing designed space against historic urban spaces can avoid the creation of over-large public space. Test diagrams of North Square, Western Harbour, by Robert Adam Architects.

Fig. 17 The use of existing buildings types and patterns can be part of the methodology for sustainability. Pattern book guidance for extensions to the western English seaside town of Newquay by Leon Krier and Robert Adam Architects.
Traditional urban design is based on the principle that the past is a practical and cultural resource, to be actively recognised and developed. There are important lessons to be learnt from past urban development. Historic cities generally came into being when energy was expensive and the consequences of this are a part of their character. The existence of the cities themselves were based on the need to gather large numbers of people in close proximity to support a total way of life encompassing work, residence and social interaction. The majority of people were limited to pedestrian movement and this restricted the spread of essential services. Building materials were sourced as locally as possible as the movement of heavy goods was difficult and expensive, with the partial exception of water transport. In both hot and cold climates high-mass wall construction evened out night-to-day temperature fluctuations and retained heat. Narrow and irregular streets gave shelter from strong winds and in hot climates provided shade (Fig. 17). The principle that unites all these measures is that the materials and methods were necessarily local. The sourcing of materials and climatically specific urban and building form were necessarily based on the locality. Sustainability is unavoidably tied to local character.

As energy becomes more expensive and as we increasingly recognise the long-term damage of the excessive use of fossil fuel, we can recognise the advantages of these traditional measures for the conservation of energy. To these we can now add new benefits such as improved health, servicing and communication. Advanced knowledge adds to methods which were unavoidably technically limited and additional measures such as solar gain, lightweight insulation and controlled air percolation have improved the efficiency of traditional design. All of these new developments augment the advantages of traditional passive low-energy design. Indeed, an increased technical understanding of what had been learnt in the past has added to recent advances in materials and techniques (Fig. 18).

As with all tradition, traditional urbanism is both a recognition and a development of the past. Restriction to the locality is no longer a necessity or even socially, politically and economically possible but the recognition that energy is best saved at a local scale before considering the less reliable benefits of energy conservation is now widely accepted. Traditional urbanism, unencumbered with the ideological need to reinvent, is uniquely placed to take advantage of locality in sustainability.

Conclusion.

As the advantages of traditional urban design are increasingly recognised, it has become one of the major forces in the design of new places and the remaking of towns and cities. Conventional urban design continues nonetheless and, as issues such as pedestrian priority and street-based design become more widely recognised, the division between conventional and traditional urbanism becomes less clear. This has improved some of the worst effects of conventional urbanism but it has also encouraged the survival of damaging features in traditional urbanism. Wasteful attitudes to space or an over-rationalisation of form, however, continue to influence traditional urbanism. At Robert Adam Architects, we believe that our four principles, set out above, are a logical consequence of the underlying ideals of traditional urban design and that their recognition and introduction to practice will advance the discipline.

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