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FOR THE BUILT ENVIRONMENT

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VALUING SUSTAINABLE URBANISM

An Overview of the Report

Measuring & Valuing New Approaches
to Residentially Led Mixed Use Growth

Commissioned by The Prince's Foundation for the Built Environment from Savills plc
with support from English Partnerships.

The Prince's Foundation is an educational charity which exists to improve the quality of people's lives by teaching and practising timeless and ecological ways of planning, designing and building.

We believe that if we can understand and apply time-tested principles, building in a sustainable way, we will reap improvements in public health, in livelier and safer streets and in a more affordable lifestyle for families and individuals. We also believe that neighbourhoods exhibiting these sustainable characteristics will increase, rather than decrease, in value over time.

The Foundation has four core areas of activity. Our Education Programme teaches skills in successful place-making through seminars and workshops. The Projects & Practice department is engaged on a series of live developments in partnership with the private sector and public agencies. Our Chief Executive Team runs strategic initiatives with several major policy partners. Our Design Theory & Networks department develops and disseminates new examples of practice by our global network that evidences innovation and tested tools for building successful communities.

This report was commissioned by The Prince's Foundation to help to add to the understanding of the financial implications of pursuing development to these principles and reviewing the more widely appreciated added-value that such development can bring.



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The Princes Foundation wishes to thank the following individuals and organisations for their participation in the steering group which guided the development of the research for this Report:

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This Report has been assembled by Hank Dittmar, Chief Executive, The Princes's Foundation; Gail Mayhew, James Hulme, Director of Public Affairs; and Christine Goupil, Graphic Design, The Princes's Foundation.



[Christopher Smallwood,
Chair for the study on Valuing
Sustainable Urbanism]

An Overview of the Report

As the housing market becomes ever more pressurised, Britain is embarking on a series of massive urban developments under the banner of the government's growth agenda. There is a great opportunity to take advantage of this development and regeneration programme to change the face of the country for the better – to produce walkable communities on a human scale, with local character and a sense of identity, which provide for social balance and show respect for the environment. But equally there is an enormous danger that the mistakes of previous waves of 20th century comprehensive development may be repeated, and more 'nowhere' places produced offering no particular identity or sense of community cohesion, no new hopes or possibilities for our weakest social groups.

There is plenty of evidence about the right and wrong ways to go about planning our future, and there is a gathering consensus – led by the Prince's Foundation for the Built Environment, and increasingly adopted by government in successive white papers – that the way forward is 'sustainable urbanism' (or in American parlance 'new urbanism'). Yet the principles of sustainable urbanism are not yet being widely applied on the ground. The problem of delivery is multifaceted, however we would underline two key aspects: Property investors, developers and landowners suspect that sustainable communities, with their mixed use, mixed tenure layouts and precedence for pedestrians and public transport users over the car, are more costly to plan and develop; and planning authorities are not well enough informed about the social, environmental and economic benefits which are associated with sustainable development, to incorporate these more enlightened principles more robustly in their guidelines, nor confident enough to work to actively procure this form of development

Accordingly this report, which presents the case for sustainable urbanism, has been written with two audiences in view – property investors, developers and landowners on the one hand and the public authorities on the other. The greater part of the report is devoted to establishing the commercial case for sustainable development, which can certainly be commercially viable albeit recognizing the need for new procurement routes to achieve this end. The final part surveys the social case for designing developments in accordance with sustainable principles, and sets out the benefits in terms of health, the environment, reduced crime, social inclusion and jobs which can accrue as a result of good urban design.

The bleak urban future which is otherwise in prospect can be avoided by timely and clear-sighted thinking about the form which urban development in the UK should take over the next couple of decades. But there is no time to lose.



Our own observations, and those of property market specialists, are that the most value accrues to the timeless places.



The Commercial Case for Sustainable Development

Developers are being encouraged to provide large numbers of houses in a limited number of huge, designated housing growth areas, and the consequences for the UK will be disastrous if these developments are rolled out thoughtlessly, by simply implementing conventional development practices.

In view of the scale of prospective development, it is vital that we mobilize the knowledge which now exists to build communities in which people can lead happy, successful and sustainable lives, and which add to rather than detract from our civic and cultural heritage. Many of the development models used in the second half of the twentieth century failed to achieve these outcomes, and the theme of this report is that the principles of sustainable development must be observed in future if similar urban disasters are to be avoided in the coming decades.

A reasonable question to ask, however, is why, if sustainable urbanism represents such an attractive option, and the principles of sustainable communities have been looked upon so favourably by government in recent years, developers so often choose to stick with their conventional layouts and house types, and appear so reluctant to adapt their approach. There does seem to be an element of market failure here, as suppliers fail to deliver what it might be thought their customers would be prepared to pay more to enjoy.

A number of elements conspire to produce this outcome. One is a view on the part of some developers that sustainable developments are more complex and are therefore likely to be less commercially attractive than simply rolling out conventional layouts. Another is that maximizing the value which sustainable developments are capable of creating may require a longer-term commitment on the part of landowners, investors and developers than many are comfortable about making, subject to current business conventions and practices. Indeed, the very limited involvement of the investment sector within this area of the market is perhaps a symptom of the problem. These reservations are considered in this section of the report.

The main question addressed here – and it is at the heart of the entire report – is whether it is right to assume that sustainable urbanism need be less commercially attractive than its conventional counterpart. In fact, the analysis which we have conducted indicates that in many circumstances development in accordance with the principles of sustainable urbanism can be at least as commercially attractive as development on standard lines, and in some cases notably more so. Developers need not therefore be so cautious in their approach to sustainable urbanism and should find it in their own commercial interest to adopt new and imaginative approaches as they lay out the new communities which will be built in coming decades. A principal purpose of this report is to demonstrate to landowners and developers that this is the case, and in this way encourage them to change the face of Britain for the better.

The three elements of sustainability:

- ENVIRONMENTAL
- SOCIAL
- ECONOMIC

The Approach Taken by Our Analysis

In order to quantify the benefits and costs of sustainable urbanism in comparison with its conventional counterparts, it is necessary to explain first what is meant by each of these terms, and then to define a series of metrics which enables sustainable and conventional developments to be compared in a systematic way, and their relative development values established.

Sustainable urbanism – a phrase which is widely used, not always consistently - has three basic aspects: environmental, social and economic. An urban form which is environmentally sustainable enables its inhabitants to adopt a more ecologically aware, lower carbon lifestyle. In particular, a sustainable layout will enable people to walk to amenities, rather than be forced to use a car. Whereas many 20th century developments made car use a necessity by separating different activities and indeed social groups into different neighbourhoods, sustainable urbanism puts dwellings, retail, leisure and commercial uses into much closer, walkable proximity, and supplements this approach with effective public transport connections, in many ways reflecting the urban structure of traditional, pre-car neighbourhoods. In social terms, sustainable urbanism involves an appropriate mix of dwellings of different tenures, sizes and types, and a variety of spaces and buildings for recreational and community activities, as well as for service providers and commercial enterprises. Such a set of activities can enable self-sustaining and balanced communities to develop. In economic terms, sustainable developments contain business activities and opportunities capable of providing jobs for many of their inhabitants. The environmental, social and economic benefits of sustainable development are set out in more detail in the following section of the report.

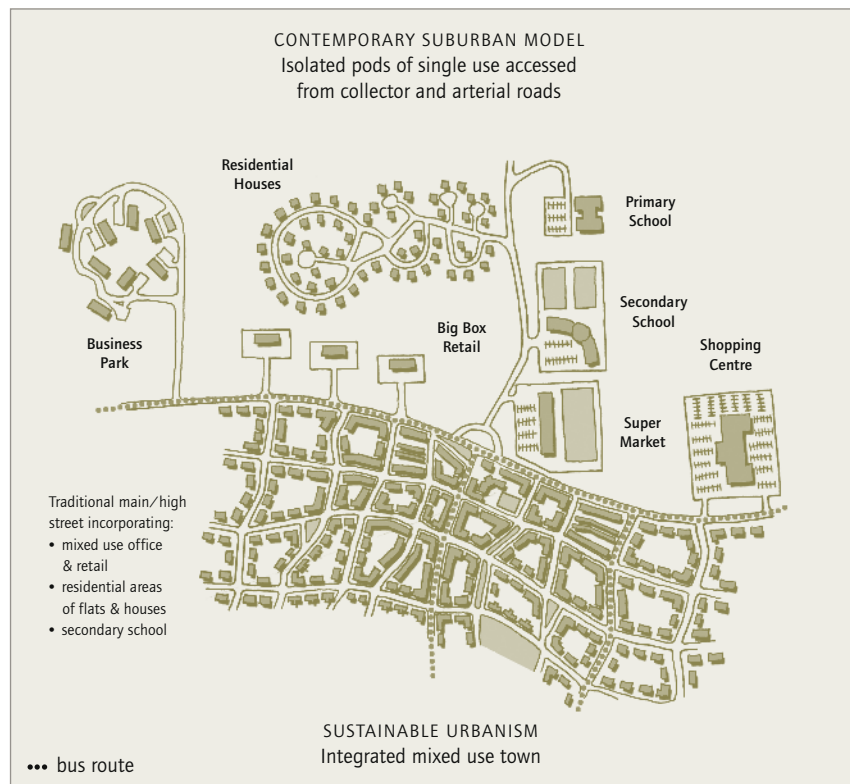
Such characteristics are usually expressed in quite general terms based on a process of observation, but in order to establish whether the attractiveness of such features is sufficient to generate a commercial case in favour of sustainable development, they need to be defined more precisely. The Prince's Foundation for the Built Environment has sought to produce a more exact definition of sustainable urbanism – in line with the characteristics just outlined – in terms of the types of land use. They identified the following as features of 'sustainable urbanism':

- **MIXED USE:** while the schemes will be predominantly residential, they will also contain a mix of other uses such as retail, business and community;
- **MIXED TENURE:** a variety of income groups and occupations;
- **MIXED HOUSING TYPE:** to support movement within the neighbourhood and thus encourage community stability;
- **GOOD PUBLIC TRANSPORT CONNECTIONS:** to encourage walking and cycling and reduce car dependency;
- **WALKABLE NEIGHBOURHOODS:** community and commercial facilities accessible by foot, and a street layout which is well interconnected and avoids cul-de-sacs and so encourages a range of routes for pedestrians (and vehicles);
- **RELATIVELY HIGH NET DENSITIES:** high enough to support the viability of mixed use areas; and convenient public transport;
- **WELL INTEGRATED OPEN SPACE:** this should have a clearly defined use and a long term management regime, as well as being easily accessible;
- **OPPORTUNITIES FOR A RANGE OF WORK/LIFESTYLE CHOICES:** accommodating economic as well as residential activity.

Given this framework, it is possible to develop a series of land-use measures on the basis of which developments can be objectively characterised as 'sustainable' or 'standard'.

Developments can be analysed in terms of the proportion of land used for example for: roads, pavements, parks and other open spaces, playgrounds, public buildings, commercial premises, driveways, front gardens, rear gardens, car parks, garages, open water, and so on. They can also be analysed in relation to residential and commercial mix and demographic differences by calculating for example the number and type of dwelling units, the number and type of businesses and other organizations, the type of households and housing tenure and population numbers. Hence the analysis of sustainable urbanism can be put onto a more analytical footing – not only can such metrics enable sustainable developments to be identified and distinguished from other forms of community, but by measuring the proportions of specific uses of land in different schemes, they can enable one type of development to be compared with another and valued quite systematically. Valuations can be attached to the measured features of each type of development, and the development value associated with each calculated. On this basis, reasonably robust conclusions about the relative land use efficiency of different models of urbanism can be reached, along with an overall conclusion on the commercial viability of sustainable urbanism. This is the approach adopted for this section of the report.

Comparison of Neighbourhood Models



Choosing Matched Developments

In order to examine the value of sustainable urbanism, and compare it in commercial terms with more 'standard' developments, we first identified three examples which met many of the criteria for sustainable development. These were in three different parts of the country – Fairford Leys near Aylesbury, Poundbury near Dorchester, and the Crown Street regeneration project in Glasgow. These were the 'exemplars', and they were each matched with two comparators: a standard new build development and an example of 'old urbanism'. The purpose of including the latter was to see if we could learn from a more

traditional urban form, both in terms of the disposition of land use within a scheme and in terms of values generated.

It was not possible to find a set of exemplars displaying the full range of sustainable characteristics, but in each case the majority of the required characteristics were represented, and far more than in the case of the standard comparators. In each case, the exemplar and comparator schemes were part of the same town; the exemplars and standard comparators were completed in the last ten years; they were similar in size and where possible were in a similar location; they displayed similarities in build quality and their housing markets. The old comparators – Victorian or Edwardian urbanism - were in some respects less similar to the exemplars. In particular, the modern developments tend to be on the periphery of towns, whereas the old urban communities were built (before the age of the car) closer to old town centres - although this is not true of Glasgow, where our example of old urbanism was part of the Victorian expansion of the city and was therefore much closer in terms of context to the large scale development opportunities we are anticipating as part of the growth agenda.

The case studies are set out in detail in the full report, but although the exemplar developments naturally differed in various respects, as did the examples of standard developments, a number of general statements can be made about the features which the exemplars shared and which had an impact on their development value, and the ways in which they differed from their conventional counterparts.

Characteristics of Sustainable, Standard & Old Urbanism Compared

The most obvious feature of sustainable urbanism impinging on development value is density. Relative density is a central characteristic of sustainable urbanism because it enables a critical mass of inhabitants to be assembled, sufficient to sustain local commercial and community activities, together with viable public transport provision. It is vital for 'walkability', which is a concept at the very heart of the sustainable urbanism model. Two of our three exemplars demonstrated high degrees of density relative to their standard comparators, and although the third did not, the comparator site was much smaller than the example of sustainable urbanism, and it is doubtful that a standard development on the same scale could have maintained similar values. In all the schemes studied, densities exceeded the national average (14.3 dwellings per hectare) by a considerable margin (Fairford Leys 39.6, Poundbury 28.5, Crown Street 66.8), with density in the more suburban locations naturally being below that in the urban location of Glasgow. All schemes,

including the standard and old comparators, achieve gross densities in the top 70th percentile, so that by modern standards all the schemes studied can be considered high density.

Clearly, density has a direct impact on the value of a development, as the land effectively yields more units. But this is far from the end of the story. Unlike more conventional approaches to high density, sustainable urbanism embodies a variety of property types, which allows large scale expansion to be sustained by creating desirable places in which people want to live. Larger scale sites can face a problem of local oversupply. Diversifying the residential types and as well as uses of property on offer creates an attractive place for potential buyers, and is an important means of spreading market risk across a series of property categories and sub markets and we suggest, maximises potential value for large scale developments. Put another way, there is a limit to the extent to which standard

[Crown Street, Glasgow]



housing types can be rolled out in standard layouts before values begin to suffer. Developers need to get the balance right between density and other features both to maintain values and to use land efficiently.

The second feature of sustainable urbanism which is important for value is therefore mixed use. When a new population occupies a particular site, especially a large one, a wide range of activities is generally required. The need is not just for dwellings. At least a third of jobs in small towns are supplied from the residential population, not from inward investment and relocation. This is particularly true if sustainability principles guide the development: a raft of facilities and amenities need to be provided close by if reliance on cars is to be minimised. Our three exemplars are all characterized by 'intensity of use'. In all three cases, a higher proportion of land is devoted to non-residential uses than the standard forms of new development, although interestingly the old urbanism outperforms the exemplar in this respect in two of the three cases suggesting that even in the identified exemplars the mixed use component had not gone far enough to match the walkability of a traditional neighbourhood.

A third common set of characteristics concerns the use of outdoor space. In two out of the three case studies the standard comparators had a greater public space provision than our exemplars: in Aylesbury, for example, a high level of provision of open space arose from the inclusion of playing fields and a golf course as part of the development. However, in order to confer value, open space needs to be 'defined' space, such as a park or garden square to which surrounding buildings have a direct relation. Research undertaken by Savills for CABE shows that properly integrated open space can produce an uplift in the values of properties on adjoining streets of as much as a third. Additional value can also be conferred on residential properties one or two blocks away from a park, depending on sight lines, street landscaping and an effective management regime. By contrast, diffuse, amorphous open space can lead to management and maintenance problems, with minimal and sometimes negative impact on property values.

[Parking layouts and problems
at Poundbury and Fairfield Leys]



In terms of private outdoor space, the amount of land given over to front gardens and driveways is generally much smaller in the exemplars than that provided for rear alleys, courtyards, garages and back gardens. This intensifies the street frontage, enabling greater density in some cases, and provides the street with more natural surveillance and intimacy. In this respect, the exemplars are quite different from the standard developments, where more space is devoted to front gardens and driveways. This may however be an area where the sustainable model has something to learn from the old urbanism, which often manages to provide a high level of density and a unified street façade whilst also providing a higher percentage of garden space in each case.

Parking on two of the three exemplar schemes was restricted in line with sustainability principles in order to reduce dependence on the car. This was counterbalanced by the provision of local amenities on the site, within walkable distances. It has to be recognized that the provision of parking space is a contentious issue, with many residents finding it inadequate in new developments. But the fact is that this feature of new build is now inescapable: government policy supports a reduction in car dependence and reduced provision is now being sought on all new schemes. A point for consideration is that the Glasgow exemplar was the only one in which the level of parking is considered adequate by its residents – it must be noted that the location of the Crown Street scheme within central Glasgow means that the site benefits from access to an established and generous public transport system (and other social and economic infrastructure). The suburban examples at Poundbury and Aylesbury by contrast, exist within an environment of limited public transport provision and multiple car ownership is necessarily a feature of these developments.

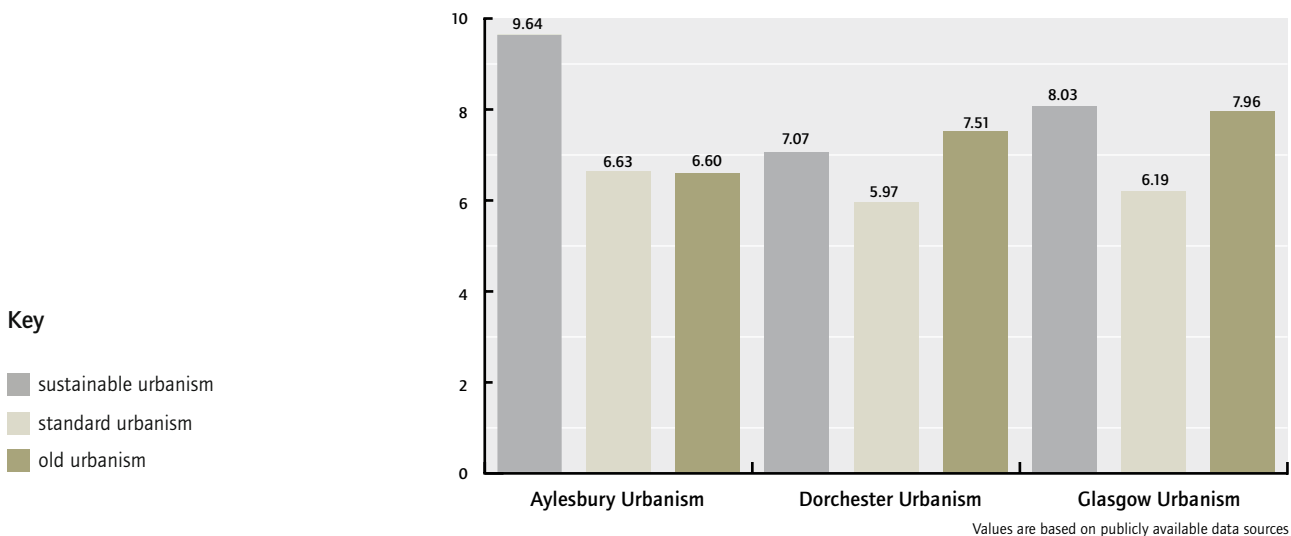
What about the comparison between sustainable and old urbanism? Our case studies suggest that old urbanism tends towards higher densities in terms of buildings per hectare and display considerably higher 'land use efficiency' than either the exemplar or standard schemes. But none of our chosen studies highlighted prime examples of old urbanism, the better examples of Victorian urban extension, which continue to retain a high level of walkability, mixed uses and strong urban form. It is no coincidence that these neighbourhoods are amongst the highest value residential property in the UK.

Valuation of the Three Types of Urbanism

In order to estimate the value generated by each of the three approaches to urban development, the different types of land use were measured for each, residential and commercial, and values attached to them. The value of each of the schemes was derived by calculating an average value across property types on each of the sites. Values were obtained using recent sale information from the land registry, and were then grossed up based on the mix of properties. This provided a basic value expressed in terms of £s per hectare of the total site area, and of £s per hectare of the built area only.

The table below shows the total market value of all the buildings per hectare of built land for each of the case study areas: Aylesbury, Dorchester and Glasgow. It includes the value of commercial property and affordable housing as well as residential and any other type of property built on the site.

Total Market Value of Buildings per Hectare of Built Residential Land (Value £m)



The main finding is clearly that building to include many of the features of sustainable urbanism can enhance total development value. Developing to sustainable principles can be commercially viable.

Indeed, the analysis of market value for each exemplar demonstrates the value of sustainable urbanism under three different scenarios:

- creating value out of nothing in a moderate demand market (Fairford Leys);
- enhancing value in a high demand market (Poundbury);
- creating value out of nothing in a high supply market (Crown Street).

It is clear from these case studies, while acknowledging the small size of the sample, that particular market circumstances have an impact on the level of value enhancement associated with sustainable urbanism. This model appears to provide the greatest value enhancement where development is taking place in a moderate demand market. For example, there was a 46% uplift in values per hectare for Fairford Leys over the standard comparator. For Crown Street, there was a 30% uplift, despite the release of units on the exemplar taking place in a market which was experiencing an oversupply of large two-bedroom new build flats. Poundbury demonstrated an 18% uplift, despite that development's taking place in a very buoyant local market.

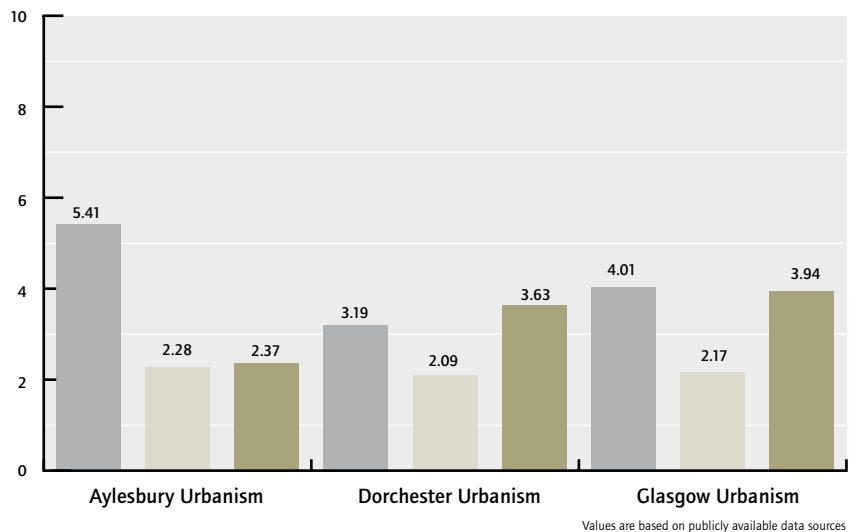
The examples of traditional urbanism only exceeded the exemplar case studies in terms of total development value per hectare in the case of Dorchester which may be attributable to the relatively greater level of gentrification experienced in Dorchester as compared to Aylesbury or Glasgow. In the case of old urbanism, density has paid off, since it presents a highly efficient built footprint in terms of land use, whilst at the same time accommodating large private gardens and a higher proportion of mixed use than standard developments. It is important to stress, however, that density alone does not necessarily create higher values. Density works for our exemplars because they are developed in accordance with a master-planned scheme, which embodies quality open space and adapts to local conditions.

Costs & Financing

Of course, establishing the superior development value of sustainable urbanism per hectare of land cannot be done without taking proper account of build costs and developer margin. Developers will need to take their own decisions regarding build costs, but based on the case studies presented here, there would appear to be a compelling financial incentive to look at sustainable models of development.

The financial analysis of the three case studies here suggests that there is likely to be a sufficient revenue surplus, after developer margin is allowed, to fund substantial additional build costs without the commercial viability of the sustainable model being threatened.

Residual Revenue per Hectare of Built Land (£m)



It was outside the scope of our research to measure the build costs of any of the chosen developments specifically, but this table shows the theoretical residual revenues for each case – the additional money available for land and additional build costs. There is far more in this category for the exemplar schemes than the standard developments. It is not necessarily the case that additional build costs are associated with a 'sustainable' layout of buildings (an observation confirmed by the developers taking part in our study), but to the extent that they are, there is an excellent chance that funds can be generated on a scale sufficient to cover them.

A further financial consideration for developers is that sustainable urbanism can diversify risk, by spreading market exposure to single building types, and even sectors (eg owner occupied residential, build to let, retail and offices) and allowing for flexibility in switching uses as the market changes. Developers have increasingly looked to diversify their product in order to enhance rates of sales, and the sustainable urbanist model of development fits in with this as it embodies a range of property types. In the case of Aylesbury and Dorchester, both exemplars enjoyed healthy annual rates of sale of approximately 10 and 36 per hundred units respectively. In each case, the developer concerned believed it was the property diversity of the schemes which maintained sales rates.

Finally, it emerged from interviews with landowners and promoters that the initial appraisals of Poundbury, conventionally backward looking and failing to take account of the potential future uplift in values, significantly under-estimated the value of the development. As the attitudes of the property industry change and the prospect of value uplift becomes more widely appreciated, this type of 'sustainable urbanism discount' may disappear. This could be helped by more landowner involvement in sustainable urbanism and the development of longer term financing mechanisms as well as the emergence of new valuation methods as more examples of sustainable urbanism are produced.

It is clear from the report that investment in early master planning and associated quality control confers potentially higher land value. The added value of large sustainable schemes tended to come towards the end of the development (although this is often the case in relatively standard schemes), so that it may be the case that a developer who is also an investor and holds properties for the medium to long term can reap the greatest rewards. Since, however, much of this early work requires upfront costs - although it can also bring benefits, by for example expediting the achievement of planning permission - new and creative approaches to funding may be needed to ensure value capture is maximized: these could include vehicles enabling landowners to maintain a stake in the development and as a result realise some of the end value generated by it. In all cases, it was observed that the exemplar schemes enjoyed healthy 'rates of sale' – a further measure of value, reducing a developer's exposure on the scheme.

In view of our findings that the value of sustainable developments may take longer to be fully realised than the value of some standard developments, that greater upfront costs may be involved, and that more outlay may be involved in the form of ongoing estate management activity, it is interesting to note that in all three of our exemplar schemes, there was a single landowner with an over-arching vision for the site. The landowners delivered their vision through a series of different agreements, including phased sales of the land, which meant that developers could only secure later phases if they stuck to the masterplan for the earlier parts. Development briefs combined with leased site sales were also used, as were licence agreements. Our conclusion from these experiences is that a single vision combined with single ownership appear to have been an important key to delivery.

[TOP PHOTO: An example of urban sprawl in the United States. BOTTOM PHOTO: Local character and front garden at Poundbury]



Conclusion on the Commercial Case

This part of our report concludes therefore that sustainable urbanism can enhance development value and may potentially enhance land value, and that while build costs need not necessarily be higher than for conventional developments, where they are they can in many cases be met out of enhanced revenues. All developments now face higher build costs in any case in the face of regulation on green issues and planning policies relating to housing mix. Moreover, developers are now having to provide non-residential units on site for local amenities in order to be given planning permission for large sites. Development procured to the principles of sustainable urbanism turn this necessity into a virtue and through careful masterplanning these features can assist to create value rather than operate as a burden on development. In terms of project procurement, the process of development is likely to be assisted by a single landowner or 'master developer' fulfilling the role of masterplanner and promoter, releasing tranches of land over time, and controlling the pattern and quality of development through tightly controlled development agreements, design codes and other quality control mechanisms.

Looking to the future, in the face of competition from competing sites in growth areas such as North Northants, Stansted Corridor, Milton Keynes and the Thames Gateway, variety and quality of design and build will increasingly be necessary for success. The outcome of our study presents a challenge to both public and private sectors: to planning authorities to help promote sustainable urbanism; to financiers to find suitable long-term funding mechanisms to enable value to be maximized for the landowners and developers involved and to developers themselves, to put in place new procurement practices that will assist rather than hinder sustainable urbanism emerging as the rule rather than the exception.





A country that still offers the richest opportunities for a contended life on our over burdened planet.

The Social Case for Sustainable Development

If there is a good commercial case for sustainable urbanism, of which landowners and developers need to be aware, it is equally true that many social benefits are associated with good urban design, which governments and planning authorities need to take note of when issuing guidelines for urban developments in the coming years.

These fall into five main categories: environmental benefits, especially in the form of reduced carbon emissions; reductions in crime and the fear of crime; improvements in health and well-being; and the reductions in social exclusion and economic benefits associated with important features of sustainable urbanism such as mixed tenure and mixed use.

The principles of sustainable urbanism cannot solve such problems on their own, and it is important to be clear that the report does not make exaggerated claims in relation to any of them. But a series of well constructed studies carried out in different countries, highlighted in the report, give grounds for confidence that good urban design can help to ameliorate them. The five main areas of benefit can be considered in turn.

Transport, Carbon Emissions & the Environment

Good urban design can help to reduce carbon emissions, in particular by reducing wasteful transport patterns. A key feature of sustainable communities is that there should be walkable catchment areas, within which the daily needs of a household can be met. They should also have a permeable street network, and street design which favours pedestrians and cyclists. As explained earlier, walkable catchment areas require relatively dense developments, and current government guidelines are helpful in this respect, but there also needs to be a well-designed pattern of public transport providing easy access to households' needs – shops and community facilities – a little further afield. As a result, dependency on the car, and hence the carbon footprint of new communities, can be reduced.

The common practice of 'zoning' towns into separate use areas is especially undesirable in this respect, as it inevitably increases the need to travel, particularly by car. A number of studies quoted in the report demonstrate a high correlation between low residential density and dependency on the car. They show that permeable street networks, together with overlooked streets animated by a broad range of activities, encourage walking and cycling. They also show, unsurprisingly, that proximity to public transport influences car ownership, with car-based commuter journeys falling markedly as public transport in cities is improved.

Crime

The next area where good urban design can generate social benefits is in relation to the prevention of crime. Sustainable urbanism aims to create connected and permeable communities, which in consequence offer opportunities for natural surveillance and a helpful level of street activity, which in turn help to reduce the incidence of criminal behaviour and the fear of crime in urban areas. Obviously, the incidence of crime is affected by socio-demographic factors such as income, racial composition, youth concentration and levels of education. But it is also true that design factors such as lighting, lines of sight, the orientation of entrances and the intensity of street usage will have an impact. The police are currently offering advice on design characteristics likely to reduce crime through their 'Secure by Design' initiative.

The literature surveyed in the report provides support for the view that a carefully designed, well surveyed street network which encourages movement of people and where residents communicate well with each other and are within sight of each other's properties, in other words the type of street network consistent with the principles of sustainable urbanism, is likely to reduce the risk of crime. The studies suggest that particularly vulnerable streets are deep cul-de-sacs or systems of interconnected cul-de-sacs. This is not to say however that 'defensible space' has no role to play in the discouragement of crime. Highly protected environments may be necessary to accommodate particular activities or vulnerable groups – for education or health campuses, for example, or communities of elderly people. Courtyards shared by a number of dwellings may also be secure environments. But the important thing in all these cases is that such examples of defensible space should be carefully designed into the permeable street network.

The same is true in relation to open space within communities – landscaped parks, playgrounds or playing fields. Such space should be carefully designed to ensure it is well integrated with the broader community and well overlooked, so that it has a sense of place and purpose. If an open and permeable grid of streets, squares and open space is used as the first principle of masterplan design, planners can avoid the "dead spaces" which, lacking natural surveillance, become a focus for anti-social and criminal activity.



Health

There is a clear relationship between health and well-being and the nature of the built environment. Urban development which observes sustainable principles can be expected to increase the rate of physical activity in the community as walking and cycling replace the car as the favoured means of accomplishing short journeys, thereby helping to reduce obesity and the many adverse physical conditions associated with this. There is also an association between the provision of attractive streets, public squares and multi-purpose green spaces and an improvement in mental well-being.

Among the evidence reviewed in the report, Department of Trade statistics show that walking and cycling have declined markedly over the past 20 years. Although diet is clearly part of the story, the decline in exercise is also associated with the onset of what the Department of Health has described as an 'obesity epidemic' in Britain. On current trends, one third of British children will be classified as obese by 2010. The British Heart Foundation found that more than a quarter of a million deaths in the UK could be accounted for in terms of diseases which could be linked to physical inactivity, angina and heart attacks being particularly serious, and that regular walking can reduce the risk of stroke by 30%. So the increase in physical activity associated with the provision of walkable, cycle-friendly mixed use communities is a directly relevant response to one of the most serious health issues of our time. There need to be improved links between health professionals and the planners, so that zoning, low density and car dependent suburbs can be avoided in future.



A number of studies suggest that proximity to nature and green space can relieve some of the stress of city living

The built environment, particularly in respect of the provision of parks and high quality green public space, can also have a favourable impact on mental well-being. A number of studies suggest that proximity to nature and green space can relieve some of the stress of city living, and good public space can foster beneficial social interaction, which can also improve a sense of well-being. Others, across a variety of countries, suggest that living near green space is associated with fewer health complaints. Most spectacularly, the redevelopment of Holly Street, Hackney (a blighted 1960s housing estate) to produce something much more like a sustainable community, incorporating a traditional street pattern and well defined open spaces, saw the demand for NHS services fall by a third, as well as an improvement in measures of mental well-being.

Creating Inclusive Communities: Mixed Tenure

Good urban design can assist social integration and help to reduce social exclusion. The sustainable urbanism model, incorporating as it does a range of housing sizes and types, creates an environment in which mixed tenure can thrive. Mixing income groups is a key component of the DCLG sustainable communities agenda and endorsed in planning policy, which requires developments to incorporate an element of social or affordable housing.

However, the successful integration of different income groups within a scheme requires thorough analysis of local housing need in order to provide a workable balance of housing types appropriate to the specific local market. Another key element in creating successful, balanced communities is the way in which different housing types are accommodated in the neighbourhood plan. Experience at Poundbury suggests that "pepper potting" tenure types, rather than segregating affordable housing within a development helps to promote social inclusion. It can also help to establish communities which are easier to manage and maintain.





This approach is quite different from the one which has traditionally been adopted. Studies surveyed in the report show that two-thirds of social housing is currently located within areas originally constructed as council estates, in spite of policies aimed at housing diversification. Concentrations of deprivation attract huge social costs. Large disadvantaged areas are associated with poor school standards, relatively high levels of crime and marked health inequalities, exhibiting for example an unusually high incidence of chronic medical conditions. There is also evidence that lack of competition among retailers in low income communities exacerbates the levels of deprivation, since those with most need of support actually pay more for basic goods and services than middle income families.

Mixed tenure and pepper potting cannot on their own solve the problems of social exclusion and poverty of course, but they can contribute significantly towards creating sustainable communities which offer a higher quality of life and an opportunity for those who are economically challenged to break out of concentrations of poverty and social disadvantage.

It is also helpful for the creation of thriving communities if developments are designed to support a range of individuals and families at all life stages, so that people who move into a community as a young couple or family, for example, have the opportunity to adapt their property or move within the area as their circumstances change, so enabling the community to retain its successful residents. This simple principle was neglected in the dependence of post-war social housing policy on flatted developments which were quite inflexible and forced those who could afford to move away to accommodate growing families.

In short, mixed tenure developments offer one key to the reduction of deprivation and a more equitable distribution of opportunity within the UK.

A development incorporating a mix of uses for land and property - business-related as well as residential - creates a community which is diverse, independent and adaptable

Social & Economic Benefits of Mixed Use Places

A central feature of planning policy for many years was 'zoning', which segregated industrial property, residential property and sometimes retail activities into different areas. This policy was facilitated by the advent of cheap, reliable and flexible transport (the car), which meant that people no longer had to be able to access work or shops on foot from their homes or rely on public transport. In recent years, however, the policy has begun to change, most notably as a result of Richard Roger's Urban Task Force (1997) and the planning guidance from the ODPM which sprang from this. Government now acknowledges that a mix of uses does much to promote sustainable, interactive and attractive places to live and work although to date, relatively few schemes have incorporated significantly high levels of mixed use outside the context of urban regeneration.

A development incorporating a mix of uses for land and property - business-related as well as residential - creates a community which is diverse, independent and adaptable, and encourages the development of a lively local economy, providing jobs for a good proportion of the people who live there. Ideally, housing, office and retail accommodation should be integrated in the overall design within legible blocks and streets.

According to the research reviewed in the report, locating businesses within developments which exhibit other characteristics of sustainable urbanism - particularly walkability, permeable street networks and affordable public transport - results in significantly reduced car use and car ownership, since for many people cars are not needed for the journey to work. The reduction in transport costs also represents an economic benefit to the inhabitants. Research by the New Economics Foundation has established that, where households and retail and other businesses are in close proximity, an economic multiplier effect is generated, whereby money spent in the local economy is amplified by subsequent cycles of spending. If money is spent outside the locality, this effect is lost. The design of mixed use sustainable developments can therefore make a contribution to the revival of depressed communities. Moreover, since mixed use sustainable urbanism offers opportunities to live near to the workplace, especially where jobs are low skilled or part time, it facilitates employment for those for whom commuting is not a viable option, for financial or other reasons - for example for working mothers.

At present, these outcomes can be achieved most easily in town centre developments as the dominant radial structure of our towns and corresponding transport systems mean that the town centre resident has a greater choice of potential destinations available via public transport than the suburban resident. The greater challenge is to develop a sustainable approach to the remodelling of outer urban areas, which do not have the benefit of convergent public transport systems nor the density to sustain them. This requires the development and intensification of outer suburbs to the 'walkable neighbourhood' model, although there will need to be adequate public sector investment, for example in well-sited schools and health centres and in appropriately designed local public transport.

At present, the property market exhibits a strong preference for single-use schemes, because developers often perceive them to be less complex and therefore more profitable. Mixed use schemes are generally developed in response to planning policy. The valuation study at the heart of this report challenges the view that sustainable developments which include a mix of uses, are commercially unattractive. In many circumstances they will certainly be commercially advantageous, and will increasingly be recognized as such, since the housing growth agenda involves developments on such a scale that a mixed use approach will be inescapable.





Conclusion

This social and environmental case for sustainable urbanism complements the commercial case presented earlier.

Good urban design does not offer a complete solution in any of the social areas discussed, but the evidence suggests that it can contribute to worthwhile improvements in all of them. If a bleak urban future is to be avoided as the country sets out on a series of massive urban developments, it is vital that these should be informed by the principles of good urban design set out by the Report. ■



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